PROJECT DESCRIPTION

KUPARUK RIVER UNIT
KUPARUK CONSTRUCTION SERVICES
AND KUPARUK INDUSTRIAL CENTER
PAD EXPANSION PROJECTS

ConocoPhillips Alaska, Inc.
700 G Street
Anchorage, AK 99501

December 18, 2013

This page intentionally left blank

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ATTACHMENTS

This page intentionally left blank

1.0 APPLICANT

ConocoPhillips Alaska, Inc. (CPAI)
Post Office Box 100360
Anchorage, Alaska 99510-0360
Point of Contact: Samuel Widmer (907) 265-1450
Email: sam.widmer@conocophillips.com

2.0 PROJECT LOCATION

The proposed Kuparuk Industrial Center (KIC) and Kuparuk Construction Services (KCS) gravel pad expansions will be located in the Kuparuk River Unit. KIC is located approximately 1 mile northeast of the Kuparuk Main Camp and Central Process Facility No. 1 (CPF-1). The KCS pad is located approximately 3 miles west of Kuparuk Main Camp. The KIC project is an approximate 47.79-acre expansion on three sides of the existing pad and the KCS project is an approximate 10-acre expansion to the south of the existing pad. These sites are within a North Slope Borough Resource Development District and are approximately 25 miles east of the Village of Nuiqsut. None of the project facilities will be on, or near, any Native Allotments.

Table 1, along with Attachment 1, shows the project locations.

Table 2 shows the Alaska Department of Natural Resources (ADNR) - Oil & Gas Lease Numbers and the North Slope Borough.

Table 1: Project Location

Project Component	**Township**	**Range**	**Sections**
KCS Pad Expansion	11 North	9 East	1
KIC Pad Expansion	11 North	10 East	3 & 4
KIC Pad Expansion	12 North	10 East	34
Project Component	**Latitude**	**Longitude**	
KIC Pad Expansion	70.340086	149.584879	
KCS Pad Expansion	70.342256	149.731005	

Table 2: ADNR Div. of Oil & Gas Leases

KIC ADL 025639 ADL 026648
KCS ADL 025646

3.0 PROJECT OVERVIEW

CPAI proposes the placement of approximately 80,000 cubic yards of gravel fill material onto approximately 10 acres of tundra at KCS. CPAI proposes the placement of approximately 385,000 cubic yards of gravel fill material onto approximately 47.79 acres of tundra at KIC. This gravel placement is necessary for the expansion of the two pads accommodate continued development of the Greater Kuparuk Area. No new drill sites, cross country pipelines, or power lines

are to be constructed as part of this project. The development will utilize the existing Kuparuk road infrastructure for access to the gravel pit(s) and pads. Gravel for the KIC pad expansion will come from C-Pit. Gravel for the KCS pad expansion will come from either C-Pit or E-Pit.

The KIC Expansion is both on State and North Slope Borough Land. Under attachment No. 1 for KIC drawing number NSK 6.16-d103 part 2 of 3 it shows the boundary between state and NSB Land. 28.05 acres of the expansion is on state land and 19.44 acres are on NSB Land.

The proposed KCS gravel expansion is approximately 145-feet from Charlie Creek. Under attachment No. 1 for KIC drawing number NSK 6.16-d103 part 2 the pad expansion labeled F-3 is approximately 25-30-feet from Ugnuravik River. The proposed KIC gravel expansion for Area A-3 is approximately 180-feet from Ugnuravik River.

All of the proposed gravel expansions are within the existing Kuparuk River Unit (KRU) and will be used to support oil and gas production.

4.0 PROJECT PURPOSE AND NEED

The proposed action would place gravel fill material to expand the work surfaces of KIC and KCS pads to support growth necessary for the continued development and production of oil and gas resources within the KRU.

The placement of fill would accommodate continued development and maintenance activities by providing space for current and potential future shops, offices, camps, and equipment storage. Expansion at KIC would allow equipment to be staged next to shops for service and maintenance. Existing infrastructure would be used to support the Projects for access, egress, and power supply. No new drill sites, cross-country pipelines, or power lines are proposed as part of these projects.

Over the past 20 years, the work load within the KRU has increased by 4% to 4.5% each year and these pad expansions would increase efficiency to continue to meet this increasing demand. As a result CPAI is currently outsourcing some of the work to Deadhorse shops to keep up with the demand; there is a lack of space on this pad to support this work. Utilizing more of the Deadhorse shops increases travel time by travel an extra 1 hour ½ each way, increases the risk of having a vehicle or off road incident, and increase air emissions. Without allowing for growth, it will increase air emissions, added driving time and personnel exposure, and increase operating costs. Specifically, this new pad expansion will allow equipment to be staged adjacent to the Equipment Shops when being serviced or maintained, result in greater efficiency and lower cost, improved response time in the event of an incident, and provide for greater vehicle and pedestrian safety in this area.

The 2nd access road for the KIC Expansion will improve pedestrian and vehicle safety in the northwest area of the KIC pad. This is an area of frequent movement of large service company trucks, parked light plants, heavy equipment, and regular foot traffic to and from shops. Recently a new 400 man camp, which generates significant amounts vehicle and pedestrian traffic, was placed on the south west section of the pad and due to the restricted available pad space is a safety concern, especially during winter conditions. There are plans to add shop additions at the north end of the KIC pad, along with further camp additions, which will generate further traffic congestion in this area.

The proposed KIC & KCS gravel expansion projects will help meet the energy needs of the nation and economically benefit both private and public parties through taxes, royalties, employment, and contribute to the important revenues for schools, health care public facilities, and social services. The North Slope Borough would also benefit from tax revenues and increased employment opportunities.

5.0 PROJECT BACKGROUND

The proposed KIC and KCS Pad Expansion Project would allow for continued development of Kuparuk within the KRU. Development within the KRU began in the early 1980's. With additional development, supported by this Project, production is expected to continue for another 30 to 40 years. The KIC pad is located approximately 1 mile north of CPF-1 and the KCS pad is located approximately 3 miles west of CPF-1 within the KRU.

6.0 DEVELOPMENT SCHEDULE

Construction of the KIC and KCS pad expansions are schedule to begin in the second quarter of 2014. Most gravel would be placed in 2014 and would be allowed to season and dry in 2015. An alternate schedule would begin with construction of the KCS expansion prior to the KIC expansion. Under both the proposed and alternate schedules, the proposed expansion Projects would be completed by the end of 2015. Additional information can be found under Section 2.4 in the Environmental Evaluation Document.

7.0 PROJECT COMPONENTS

The overall scope of the pad expansions includes use of the following existing resources:

- Gravel from Mine Site C (ADL 419337);
- Gravel from Mine Site E (ADL 419337);
- Access Roads; and

- Fresh water from the KIC Reservoir (ADL 407812), Mine Site D (LAS 23894), and Lake K107 (TWUP A2011-166) for gravel compaction and dust control.

Expansion areas and new or replacement facilities proposed for these Projects would include:

- A 48 acre (19 hectare) expansion of KIC pad (Figure 2-2) to accommodate:
  - Access Road
  - Temporary Camp Additions,
  - Wells Chemical Building,
  - Construction Office Expansion,
  - Construction Shops, Roads and Pads Equipment Building,
  - Wells Shop and Offices, and
  - Field Services Shops, Office, and Parts Storage.
- A 10 acre (4 hectare) expansion of KCS pad (Figure 2-3) to accommodate:
  - Bulk Chemical Tanks,
  - Maintenance Office Building,
  - Drilling Office Building,
  - Fabrication Shop Office Building,
  - Wells Tool Shop,
  - Electrical and Instrumentation Shop,
  - Well House Assembly Shop, and
  - Consolidated Warehouse and Office Building.

7.1 PAD DESIGN

The proposed KIC pad expansion is about 47.79 acres and the proposed KCS pad expansion is about 10 acres. Impacted acreage includes area covered by the gravel pad side-slopes. The size and shape of the pads, and the details of the layout of the facilities, is shown in Attachment 1.

Table 3: Material and Impacted Area

	Gravel - Cubic Yards	Acres
KIC Pad Extension	385,000	47.79
KCS Pad Extension	80,000	10
Total	453,000	57.49

Gravel pad space will be provided at KIC & KCS for additional infrastructure to support oil production from the Greater Kuparuk Area.

The pad will be constructed to a minimum thickness of five feet of gravel fill, with additional depth as needed, for thermal protection of the permafrost. The side slopes will be constructed to a ratio of 2:1 to minimize surface impact. Space on the gravel pad will be provided for the bulk chemical storage, material storage, warehouses, shops, offices, equipment storage and temporary camps.

The APDES Stormwater Pollution Prevention Plan (SWPPP) would be required for the proposed Projects to minimize potential impacts of stormwater discharges to waters within or near the Projects. CPAI will comply with the existing North Slope APDES permit to ensure that no water quality impacts would occur during construction or operation of the proposed Projects.

7.2 MATERIAL SITEs (Mine Site)

The gravel required for the expansion of these pads will be obtained from the existing Mine Site C and Mine Site E. CPAI has existing material sales from the State of Alaska (ADL 419337) for the purchase of the fill material. Gravel will be hauled over the existing road system and no ice roads will be constructed for the haul.

7.3 CAMP REQUIREMENTS

No oil production or production processing will be conducted at either KIC or KCS pads and no permanent camp facilities are required on those pads. All gravel construction personnel will be housed at the Kuparuk Operations Center (KOC). Potable water will come from the KOC & KIC water plants. Waste water from the camps will be treated at the KOC waste water treatment plant for disposal. Food waste will be incinerated at Kuparuk and non-burnables will be recycled or trucked to the NSB landfill at Deadhorse.

8.0 ICE ROADS AND OTHER FRESH WATER REQUIREMENTS

The only freshwater that would be required for the proposed Projects would be for gravel compaction and dust control during construction of the pad expansions. The water would come from the KIC Reservoir, Mine Site D, and Lake K107. All sources would be permitted for water use. All freshwater sources and use would be authorized and would comply with state water withdrawal requirements and permit conditions.

9.0 FUEL STORAGE

Secondary containment for regulated fuel storage tanks will be sized appropriately for the container type and size. When necessary, secondary containment will be sized to allow for participation. Manifold tanks without

isolation valves will be treated as a single tank for calculating secondary containment requirements. Specific information on tanks and spill prevention details are contained in the contingency plans discussed in Section 13.0.

10.0 NORTH SLOPE ECONOMIC OPPORTUNITY PLAN

CPAI is committed to continuing its partnership with local contractors and businesses in the development of the Greater Kuparuk Area. This gravel will be placed by the existing maintenance contractor work force at Kuparuk. When reasonably foreseeable to do so CPAI has committed to hire and, where appropriate, to provide training to Kuukpik shareholders, Nuiqsut residents and Alaska Natives. When appropriate, local resident hire will continue to be coordinated through the Kuukpik employment coordinator to identify and place qualified individuals interested in working on the project. In addition, CPAI and its contractors assist with scholarships, career training and internship opportunities to further expand local workforce capabilities and ensure that local residents are hired and retained as CPAI's employment requirements increase. Attachment 4 is the Economic Opportunity Plan.

11.0 TRAINING

CPAI requires all North Slope employees and contractors to complete a minimum level of compliance training; however, the specific activities or tasks an employee is assigned to perform will ultimately determine the extent of training required. An 8-hour unescorted training program provided by the North Slope Training Cooperative (NSTC) is the minimum requirement for employees of all operating companies and contractors working in or on the North Slope facilities and consists of: a general camps and safety orientation, a review of the Alaska Safety Handbook and training focused on environmental excellence, HAZWOPER First Responder Awareness, personal protective equipment, and hazard communication (HAZCOM). Company or contract employees who require access to operating facilities and well pads/drill sites may also require hydrogen sulfide training. Job specific and special awareness training driven by regulation or company policy include courses in: confined space entry procedures, respiratory protection, energy isolation procedures, fall protection, asbestos awareness, benzene awareness, electrical safety, hearing conservation, naturally occurring radioactive materials (NORM), Toxic Substances Control Act (TSCA), National Petroleum Reserve Alaska (NPRA) Orientation, static electricity, and cultural awareness training.

12.0 CONTINGENCY PLANS

CPAI will amend the current approved Kuparuk River Unit (KRU) Oil Discharge Prevention and Contingency Plan (ODPCP) and Spill Prevention, Control, and Countermeasure (SPCC) Plan to address construction and operation of the new KIC and KCS Pad Expansions. The KRU ODPCP complies with State of Alaska

requirements in AS 46.03.020(10)(A) and 18 AAC 75 and federal EPA requirements in 40 CFR 112.

The intent of the ODPCP and SPCC Plan is to demonstrate CPAI's capability to prevent oil and hazardous materials spills from entering the water and land and to ensure rapid response if a spill event occurs.

13.1 SPILL PREVENTION MEASURES

CPAI has designed the project facilities to minimize the possibility of spills. CPAI will also implement pipeline maintenance and inspection programs and an employee spill prevention training program to further reduce the likelihood of spills occurring.

CPAI will provide regular training for its employees on the importance of preventing oil or hazardous material spills. CPAI will provide new-employee orientation, annual environmental training seminars, and appropriate certification classes about specific issues, including spill prevention and response. CPAI employees will participate in frequent safety meetings, which will address spill prevention and response issues, as appropriate. The CPAI Incident Management Team will also participate in regularly scheduled training programs and will conduct spill response drills in coordination with federal and state agencies.

13.2 STATE SPILL RESPONSE PLAN

CPAI will implement an oil spill contingency plan designed to minimize accidental oil spill impacts. The existing Alaska Department of Environmental Conservation (ADEC) approved KRU ODPCP will be amended to include the KIC & KCS Expansions. Through the amended KRU ODPCP, CPAI would ensure that readily accessible inventories of appropriate oil spill response equipment and personnel at Kuparuk will be available for use at the sites. In addition, the spill response cooperative, Alaska Clean Seas (ACS), will act as CPAI's primary response action contractor and will provide trained personnel to manage all stages of a spill response, from detection, to containment and cleanup.

13.3 FEDERAL SPILL RESPONSE PLAN

The KRU SPCC Plan will be implemented to prevent oil discharge to navigable waters of the United States. The KRU SPCC Plan will address spill prevention program to minimize the potential for oil discharges at these locations.

13.0 WILDLIFE ACCESS

The usual wildlife that could be in the area during the winter are: owls, ravens, arctic fox, musk ox, and possibly an occasional over-wintering caribou. These animals frequent all locations on the North Slope.

Grizzly bears also inhabit the general area but it is unlikely they will be active during the winter construction season. Polar bears are occasionally seen north of this area along the coast. Although encounters with polar bears, or grizzly bears, are unlikely, CPAI and its contractors will exercise caution while establishing the ice roads and watch for bear sign. If there is a sign of a bear, or a bear den is identified, the Alaska Department of Fish and Game (ADF&G) and US Fish and Wildlife Service (USFWS) will be notified and the transportation route altered to avoid any disturbance. CPAI will employ a Polar Bear/Personnel Encounter Plan approved by the USFWS. See Attachment 2. Also, CPAI previously applied for, and received, a Letter of Authorization (LOA) from the USFWS for the incidental take of polar bears during oil and gas operations within the Greater Kuparuk Area. See Attachment 3.

The probability of encountering a grizzly bear during winter drilling operations is remote. However, should a grizzly bear be encountered, the same procedures outlined in the attached Polar Bear/Personnel Encounter Plan would be applicable. Food will be kept inside buildings or containers that minimize odors. Hazardous materials will be kept in drums or other secure containers. Buildings and drill pad layouts will be designed to maximize visibility and minimize potential areas that a bear could crawl into or otherwise be hidden from view. Any sightings will be immediately reported to the site superintendent and personnel in the area will be warned of the location of the bear. Any grizzly bear sightings will be reported to Security & the Kuparuk Field Environmental Coordinators, who will then report to the ADF&G and the USFWS.

Project personnel will be instructed not to feed wildlife of any type or in any other way attempt to attract them either at the drill site or on the ice roads.

14.0 COMMUNICATIONS

The existing microwave telecommunications will support the KIC and KCS Pad Expansions. No new communications tower will be required.

15.0 SNOW REMOVAL

The current Kuparuk snow removal plan will be will be used for this project. KRU standard operating procedures require the use of snow blowing equipment to minimize gravel carry over to the tundra.

16.0 WASTE DISPOSAL

Sanitary wastes that may be generated from a temporary camp will be hauled to the Kuparuk wastewater treatment system. Food waste will be incinerated at Kuparuk and non-burnables will be recycled or trucked to the NSB landfill at Deadhorse.

17.0 AIR EMISSIONS

Crude production processing will not occur on either KIC or KCS pads. Minor air emissions during the gravel construction will occur and will include only mobile and temporary equipment such as dozers, trucks, loaders, light plants and temporary heaters. No air permit is required for this activity.

18.0 CULTURAL RESOURCES

An archaeological survey of the project areas has been conducted and a request for authorization was submitted and approved by Alaska Department of Natural Resources State Historic Preservation Office (SHPO). A request will be submitted to the North Slope Borough Department of Inupiat History, Language and Culture (IHLC). Cultural resources will not be significantly impacted by the proposed project. The NSB, State, and local entities will be notified immediately in the event that prehistoric, historic, or archaeological objects are discovered during construction activities or operations.

19.0 IMPACT MITIGATION

ConocoPhillips Alaska, Inc. intends to implement features and procedures designed to prevent or minimize impacts to the environment and human resources. The major features or procedures include:

Table 4: Impact Mitigation

Protection/Impact	Activity	Standard Design Feature or Practice
Bear Dens	Agency Coordination	CPAI coordinates with ADF&G and the USFWS to locate bear dens so that they can be avoided.
Cultural/archaeological Resources	Construction	Cultural/archaeological resource survey are conducted prior to ground disturbing activity
Dust Control	Road Watering	Gravel roads are watered to minimize dust and maintain the integrity of the roads
Minimal Foot Print	Road Design	Roads are built to the minimum width necessary for adequate operations and safety
Minimal Foot Print	Pad Design	Pad is designed for the minimum footprint necessary for the activity
Permafrost	Road and Pad Design	Gravel road and pad are a minimum of 5 feet thick
Ponding, runoff	Operations	Cleared snow is placed in designated areas
Predator Control	Food Waste	Predator-proof dumpster bins are used for accumulation of food wastes. Workers are trained regarding the problems associated with feeding wildlife
Predator Control	Training	CPAI prepared a Predator Plan to provide guidance to employees and contractors for managing predators
Runoff, ponding	Pad Design	Pad and facilities are orientated to minimize wind drifted snow accumulations
Socio-cultural	Jobs	CPAI hires Borough residents for jobs at Kuparuk

Socio-cultural	Training	CPAI employees and contractors receive cultural awareness training
Spills	Pipeline Operations	Pipelines are inspected and maintained regularly using inspection and maintenance pigs and other standard operating procedures
Spills	Spill Prevention and Response Planning	CPAI prepares Oil Discharge Prevention and Contingency Plans and Spill Prevention Control and Countermeasures Plans (or amends existing plans) to address spill prevention measures and response actions for all drill sites
Spills	Spill Response	Alaska Clean Seas is funded by CPAI and its partners to respond to spills
Subsistence	Hunter Access	Subsistence hunters are allowed access to CPAI's oil fields subject to safety policies
Waste Minimization	Waste Disposal	Wastes are managed according to the Alaska Waste Disposal and Reuse Guide (the "Red Book").
Wildlife, Safety	Speed Limits	CPAI maintains safe speed limits on all North Slope roads.

20.0 REQUIRED PERMITS

Table 5 lists the permits and associated plans and approvals potentially required for the proposed development.

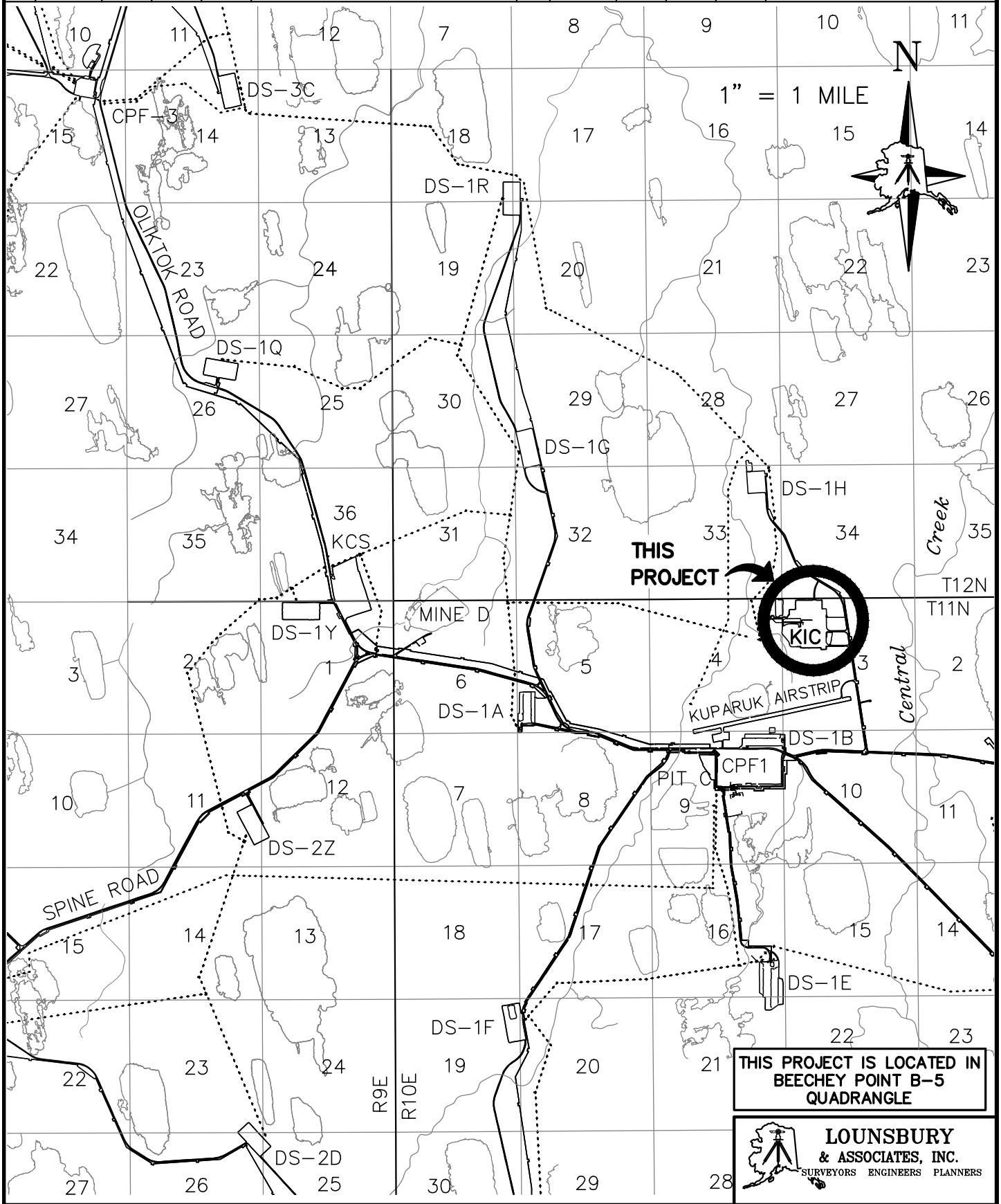
Table 5: Potential Permits and Associated Plans and Approvals

Agency and Permit	
US Army Corps of Engineers	CWA Section 404
US Fish & Wildlife Service	Endangered Species Act (ESA) Section 7 consultation
Alaska Department of Natural Resources	Lease/Unit Plan of Operations (DOG)
	Cultural Site Clearance (SHPO)
	Temporary Water Use Permit (DMLW)
	Land Use - Tundra Travel Authorization (DMLW)
	Material Sales Contract (DMLW)
Alaska Department of Environmental Conservation	CWA Section 401 Certification
	APDES Kuparuk Storm Water Pollution Prevention Plan (SWPPP) Amendment
	ODPCP Plan Amendment
North Slope Borough	Development Permit
	Cultural Clearance (IHLC)

Attachment 1
Vicinity Maps, Pad Layouts and Cross Sections

KIC Drawings

REV	DATE	BY	CK	APP	DESCRIPTION	REV	DATE	BY	CK	APP	DESCRIPTION
0											



THIS PROJECT IS LOCATED IN BEECHEY POINT B-5 QUADRANGLE

LOUNSBURY & ASSOCIATES, INC.
SURVEYORS ENGINEERS PLANNERS

ConocoPhillips Alaska, Inc.

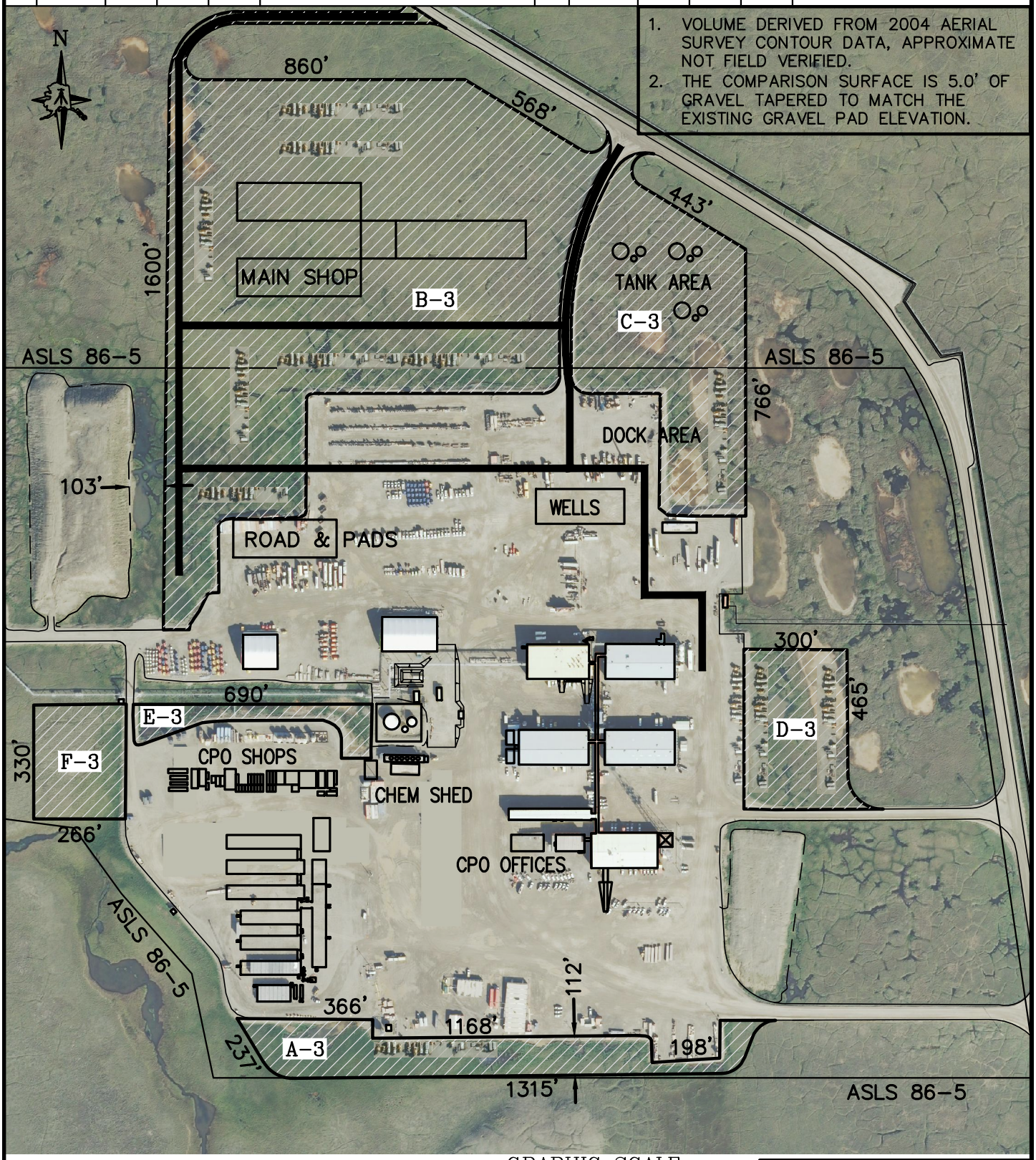
AREA: MODULE: XXXX UNIT:

KUPARUK INDUSTRIAL CENTER
FACILITIES EXPANSION PLANNING
ENVIRONMENTAL ASSESSMENT

CADD FILE NO.		DRAWING NO.	PART:	REV:
LK616D103	7/11/13	NSK 6.16-d103	1 OF 3	0

REV	DATE	BY	CK	APP	DESCRIPTION	REV	DATE	BY	CK	APP	DESCRIPTION
3	09/05/13	MBS	NRB		REVISED HATCHING	4	11/09/13	JAH	MBS		ADD ASLS 86-5

1. VOLUME DERIVED FROM 2004 AERIAL SURVEY CONTOUR DATA, APPROXIMATE NOT FIELD VERIFIED.
2. THE COMPARISON SURFACE IS 5.0' OF GRAVEL TAPERED TO MATCH THE EXISTING GRAVEL PAD ELEVATION.



VOLUME TABLE		
PARCEL	FILL	ACREAGE
TOTAL	385,500 Cu. Yd.	47.79 ACRES

GRAPHIC SCALE

0 200 400 800

1 inch = 400 ft.

LOUNSBURY & ASSOCIATES, INC.
SURVEYORS ENGINEERS PLANNERS

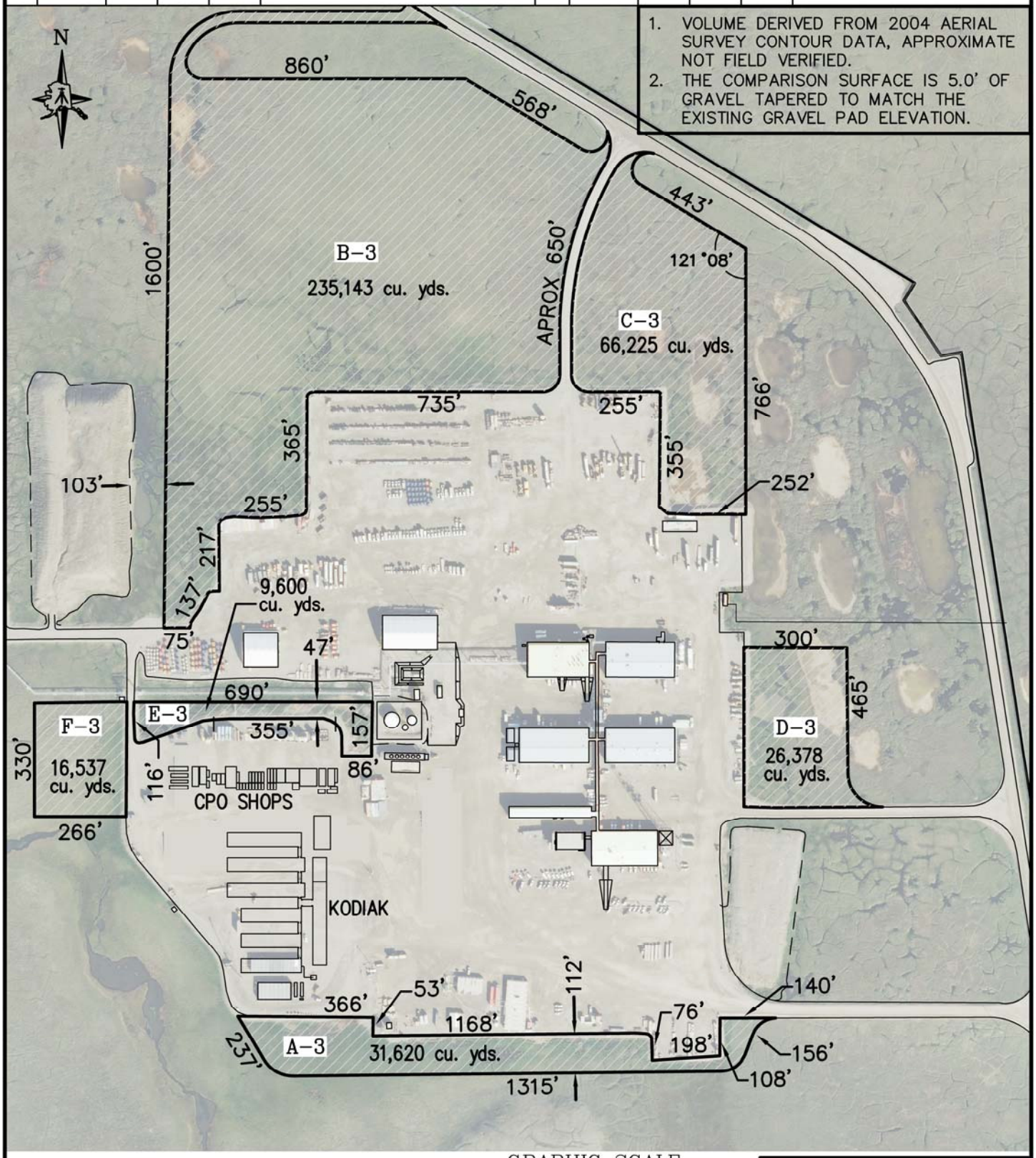
ConocoPhillips Alaska, Inc.

AREA: MODULE: XXXX UNIT:

KUPARUK INDUSTRIAL CENTER
FACILITIES EXPANSION PLANNING
ENVIRONMENTAL ASSESSMENT

CADD FILE NO.		DRAWING NO.	PART:	REV:
LK616D103	7/11/13	NSK 6.16-d103	2D OF 3	3

REV	DATE	BY	CK	APP	DESCRIPTION	REV	DATE	BY	CK	APP	DESCRIPTION



VOLUME TABLE		
PARCEL	FILL	ACREAGE
TOTAL	385,500 Cu. Yd.	47.79 ACRES

GRAPHIC SCALE

0 200 400 800

1 inch = 400 ft.

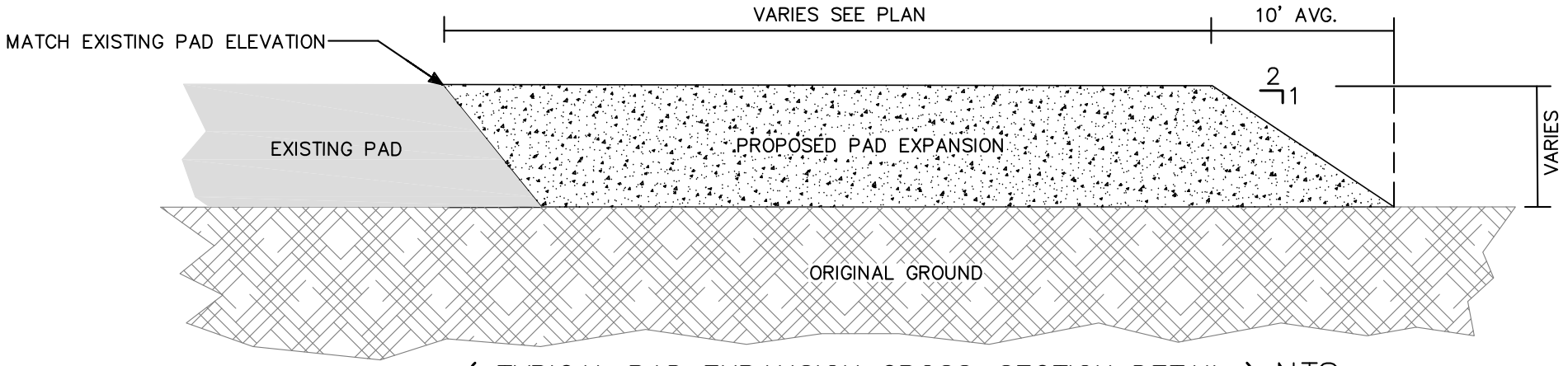
LOUNSBURY & ASSOCIATES, INC.
SURVEYORS ENGINEERS PLANNERS

ConocoPhillips Alaska, Inc.

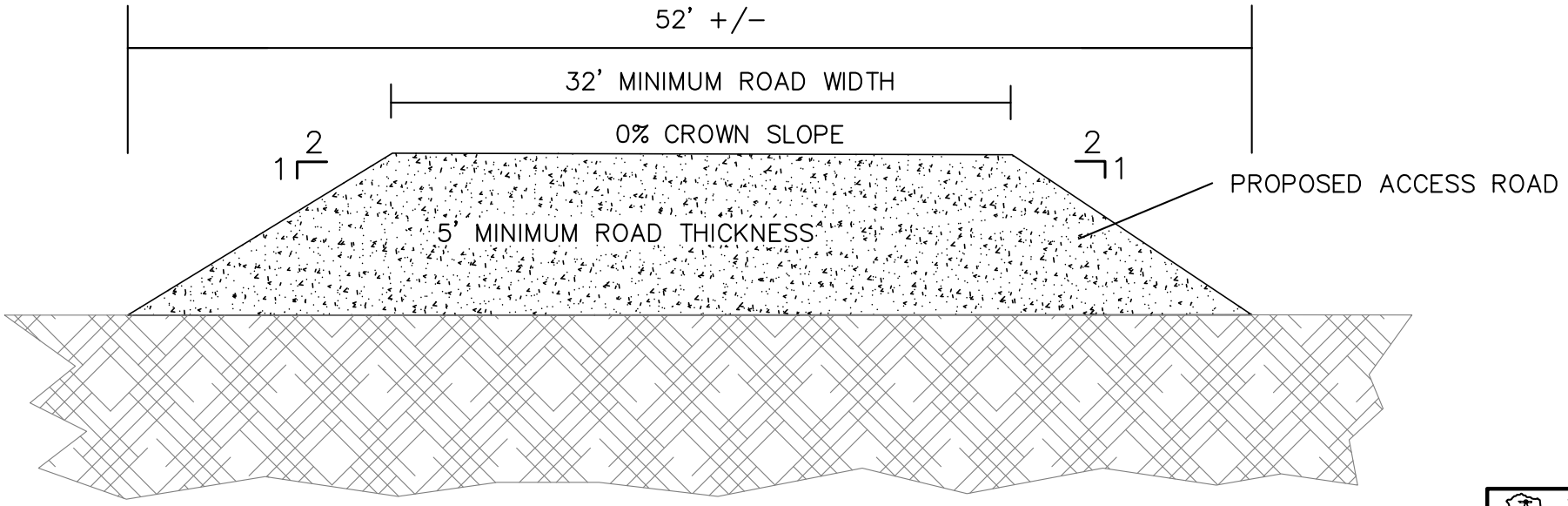
AREA: MODULE: XXXX UNIT:

KUPARUK INDUSTRIAL CENTER FACILITIES EXPANSION PLANNING PARCEL DIMENSIONS

CADD FILE NO.		DRAWING NO.	PART:	REV:
LK616D114	11/26/13	NSK 6.16-d114	1 OF 1	0



(TYPICAL PAD EXPANSION CROSS–SECTION DETAIL) NTS



(TYPICAL ROAD CROSS–SECTION DETAIL) NTS

LOUNSBURY & ASSOCIATES, INC.
SURVEYORS ENGINEERS PLANNERS

FORM: AsizeL–3L–Title

REV. NO.	CUST APP	DATE	REVISIONS	BY	CHK	JOB ENGR	PROJ ENGR
1		11/27/13	Added Shoulder to Toe Dimension	MEH	BGM		

ConocoPhillips Alaska, Inc.

APPROVAL: _

DATE: 7/11/13

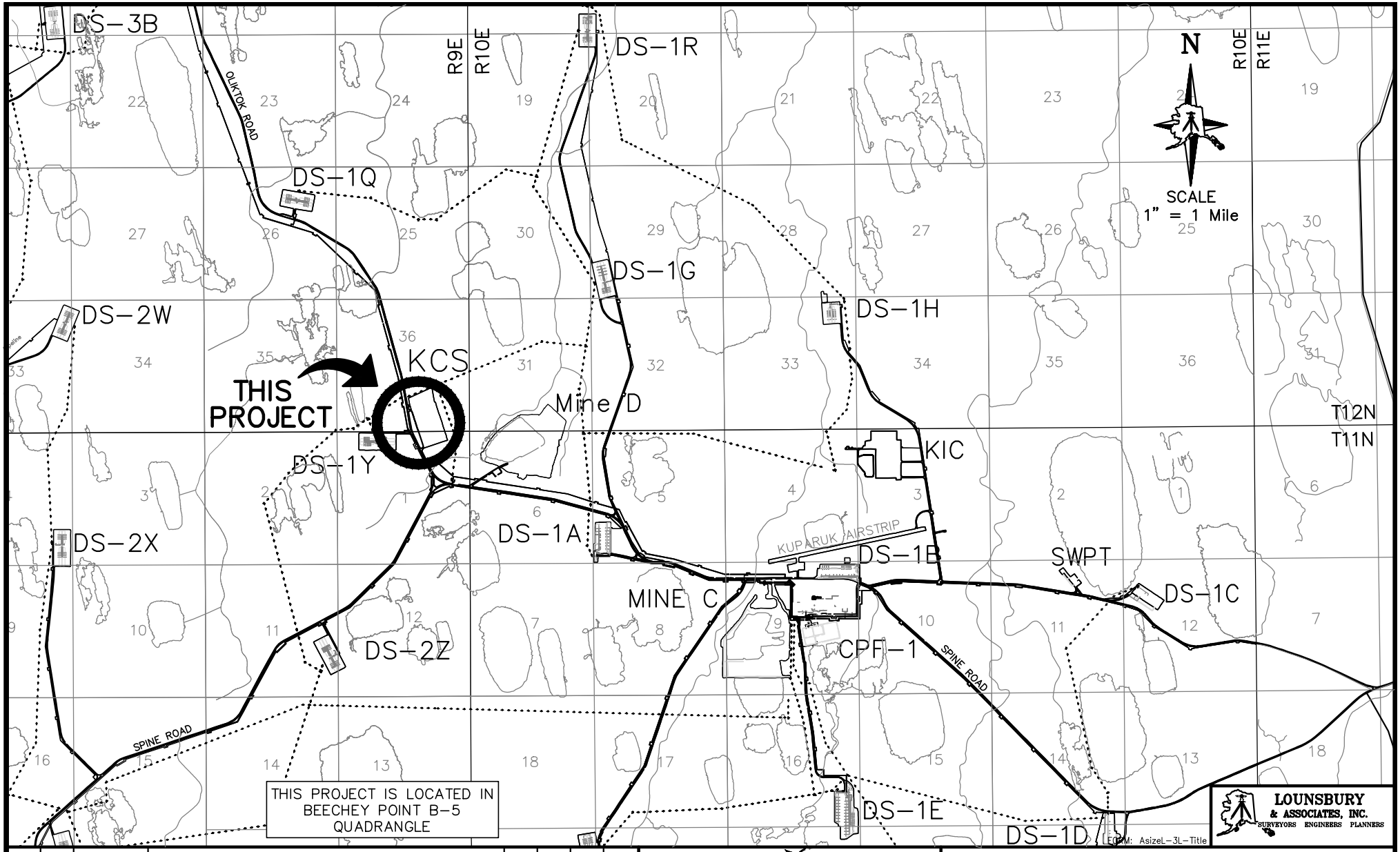
KUPARUK INDUSTRIAL CENTER FACILITIES EXPANSION PLANNING ENVIRONMENTAL ASSESSMENT

DRAWING NO. NSK 6.16–d103

PART: 3 OF 3

REV: 1

KCS Drawings



REV. NO.	CUST APP	DATE	REVISIONS	BY	CHK	JOB ENGR	PROJ ENGR

ConocoPhillips Alaska, Inc.

APPROVAL: _

DATE: 7/11/13 LK618D35

KCS PAD
FACILITIES EXPANSION PLANNING
ENVIRONMENTAL ASSESSMENT

DRAWING NO. NSK 6.18-d35

PART: 1 of 3

REV: 0

REV	DATE	BY	CK	APP	DESCRIPTION	REV	DATE	BY	CK	APP	DESCRIPTION
1	12/23/13	JAH	NRB		ADD SCALE BAR						

GRAPHIC SCALE

400 0 200 400 800

1 inch = 400 ft.

LOUNSBURY & ASSOCIATES, INC.
SURVEYORS ENGINEERS PLANNERS

ConocoPhillips Alaska, Inc.

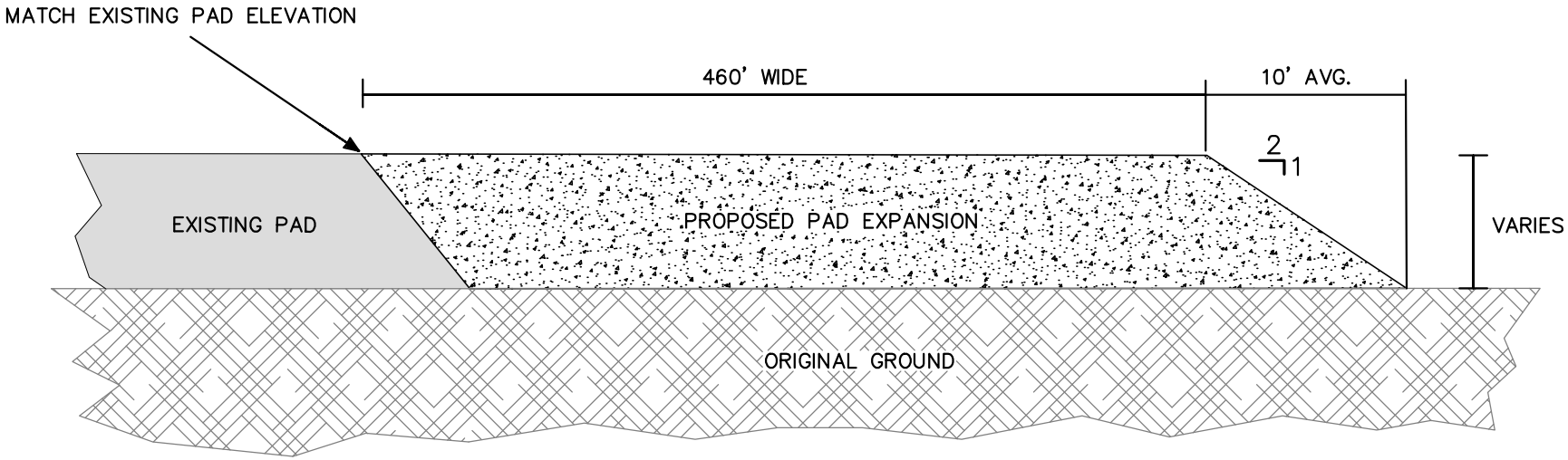
AREA: MODULE: UNIT:

KCS PAD
FACILITIES EXPANSION PLANNING
ENVIRONMENTAL ASSESSMENT

CADD FILE NO.		DRAWING NO.	PART:	REV:
LK618D35	7/11/13	NSK 6.18-d35	2 OF 3	1

IMPACTED AREA & VOL. OF FILL REQUIRED

LOCATION	AREA (ACRES)	VOL. OF FILL (C.Y.)
KCS	10.08	80,000



(TYPICAL PAD EXPANSION CROSS-SECTION DETAIL)

NTS

LOUNSBURY & ASSOCIATES, INC. SURVEYORS ENGINEERS PLANNERS

FORM: AsizeL-3L-Title

REV. NO.	CUST APP	DATE	REVISIONS	BY	CHK	JOB ENGR	PROJ ENGR
2		12/18/13	Revised Location Name in the table	MBS	BGM		
1		11/27/13	Added Shoulder to Toe Dimension	MEH	BGM		

ConocoPhillips Alaska, Inc.

APPROVAL: _

DATE: 7/11/13 LK618D35

KCS PAD
FACILITIES EXPANSION PLANNING
ENVIRONMENTAL ASSESSMENT

DRAWING NO. NSK 6.18-d35

PART: 3 of 3

REV: 2

Attachment 2
Wildlife Avoidance and Interaction Plan

ConocoPhillips

WILDLIFE AVOIDANCE

and

INTERACTION PLAN

April 2012

TABLE OF CONTENTS

LIST OF TABLES

APPENDICES

AMENDMENTS

ATTACHMENTS

ACRONYMS

AAC	Alaska Administrative Code
ACS	Alaska Clean Seas
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
AS	Alaska Statute
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
CPAI	ConocoPhillips Alaska, Inc.
EC	Environmental Coordinator
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEC	Field Environmental Compliance Coordinator
HSE	Health, Safety, and Environment
IHA	Incidental Harassment Authorization
LOA	Letter of Authorization
MMPA	Marine Mammal Protection Act
NMFS	National Marine Fisheries Service
NSB	North Slope Borough
OHMP	Office of Habitat Management and Permitting
OMBM	Office of Migratory Bird Management
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service

1.0 PURPOSE AND SCOPE

This document including attachments and amendments is intended for compliance with the United States Army Corp Permit POA-2005-1576 Special Condition #13 entitled "Predator Management Plan."

The purpose of the *Wildlife Avoidance and Interaction Plan* (Wildlife Plan) is to provide guidance to ConocoPhillips Alaska, Inc. (CPAI) employees and contractors working in the company's oilfields on the North Slope, Alaska oil fields in order, to assist them in implementing appropriate, standardized procedures when wildlife is encountered.

Many wildlife species occur on Alaska's North Slope; as such, industry personnel may encounter these animals. Oilfield activities have the potential to disturb or attract wildlife species. Some species of animals that inhabit the North Slope (e.g., caribou and fox) present a risk of injury or transmission of disease to field personnel. Some groups of animals are protected by federal regulations, such as migratory birds (e.g. Migratory Bird Treaty Act), and marine mammals (e.g. Marine Mammal Protection Act); individual species may also be affronted additional protection under the Endangered Species Act (e.g. polar bears; spectacled eiders, Steller's eiders, bowhead whales. Additionally, several species (e.g., polar bears, grizzly bears, and wolverine) can pose a serious risk of injury to field personnel. The avoidance and interaction guidance for polar bears and grizzly bears are discussed in separate documents. Grizzly bears are discussed in Attachment 1 of this Wildlife Plan, "*Grizzly Bear Avoidance and Human Encounter/Interaction Plan*". Polar bear avoidance and interaction guidance is discussed in Attachment 2 of this Wildlife Plan, "*Polar Bear Avoidance and Interaction Plan"* (CPAI, 2012).

The scope of this Wildlife Plan includes discussion of: the wildlife-related training requirements for all CPAI employees, contractors, and visitors (Section 2.0), general policies and guidance (Section 3.0), roles and responsibilities of key personnel (Section 4.0), and the species-specific detection, avoidance, and reporting procedures (Section 5.0). Amendments 1, 2, and 3 outline site-specific wildlife interaction prevention measures and procedures for drill sites CD3, CD4 and CD5, respectively. The regulations, policies, permit stipulations and hunting and subsistence activities pertaining to the wildlife species discussed in this document are provided in Appendix A.

The Wildlife Plan is intended for use by all CPAI personnel; this document provides procedures for reducing wildlife interactions and directs personnel to contact appropriately trained CPAI personnel (e.g. Security and Environmental Coordinators) in the event of a wildlife interaction or potential interaction. *Encountering Wildlife on Alaska's North Slope* (CPAI, 2011a) was developed as a companion guide to the Wildlife Plan and is intended for use by appropriately trained CPAI personnel (e.g. Security and Environmental Coordinators); as such, this document presents more detailed procedures for managing wildlife interactions as well as more detailed contact information for federal and state agencies. Table 1 lists the documents and information sources that compose CPAI's wildlife management program.

Table 1 Wildlife Management Program Documents

Document/Information Source	Pertinent Information Provided by the Document/Information Source
Wildlife Avoidance and Interaction Plan	• General wildlife interaction and avoidance techniques • Species-specific interaction and avoidance techniques • Proper management of food waste to minimize attraction of wildlife • Guidance for complying with wildlife regulations and permit conditions • Procedures for submitting wildlife interaction reports
Encountering Wildlife on Alaska's North Slope	• Field guide for CPAI Environmental Coordinators and Security personnel with in-depth, detailed information on managing and reporting wildlife encounters; this document is a companion to the Wildlife Avoidance and Interaction Plan
Attachment 1: Grizzly Bear Avoidance and Human Encounter/Interaction Plan	• Grizzly bear avoidance and detection techniques • Background and history of grizzly bears on the North Slope • Grizzly bear training program • Guidance for complying with wildlife regulations and permit conditions • Procedures for submitting interaction reports
Attachment 2: Polar Bear Avoidance and Interaction Plan	• Polar bear detection and avoidance techniques • Background and history of polar bears on the North Slope • Guidance for complying with federal polar bear regulations and specific permit conditions • Procedures for submitting sighting/activity reports • Description of polar bear training program(s) • Polar Bear Hazing and Deterrence Policies and Procedures
Predator and Waste Management (Computer-based course)	• Explanation of the consequences of increase predator presence and mitigation practices to limit wildlife interactions.
North Slope Environmental Field Handbook	• Summary of North Slope wildlife interaction policies and related topics such as garbage control, worker safety, and wildlife habitat protection • Summary of the occurrence and behavior of common North Slope species • Summary of approved waste management practices including use of proper wildlife-proof dumpsters
Employee Awareness Tools	• CPAI and contractor safety and tailgate meetings • Environmental alerts • Localized waste management posters and training material • CPAI HSE Training
Alaska Waste Disposal and Reuse Guide	• Summary of CPAI's approved waste management practices as detailed in the Alaska Waste Disposal and Reuse Guide

2.0 TRAINING REQUIREMENTS

All CPAI and contractor personnel working in the field will receive an environmental orientation before beginning work tasks in project areas. Field Environmental Compliance staff regularly attends CPAI and contractor safety meetings, and the CPAI Drilling Department's pre-spud meetings to reinforce the importance of proper food management to deter attraction of predator species to CPAI facilities.

Annual general awareness training will be given to all personnel in the oilfields using environmental alerts and updates, safety bulletins, safety meetings, tailgate meetings, and other methods as appropriate. Selected personnel (security, surveyors, Alaska Clean Seas) will also attend a Deterrence Training Program approved by the Alaska Department of Fish and Game (ADF&G) and the United States Fish and Wildlife Service (USFWS). The class consists of 1) classroom information covering predatory animal behavior, biology, and hazing techniques; and 2) hands-on hazing and deterrence techniques using actual equipment.

3.0 GENERAL POLICIES AND GUIDANCE

Many of the procedures outlined in this document fulfill the requirements of the regulations, policies, and permits listed in Appendix A, Section 1.0. While human safety is the top priority, it must be emphasized that the procedures described herein are also designed to prevent encounters that might also result in harm to wildlife.

3.1 Waste Management

3.1.1 Handling Food Materials and Waste

Feeding wildlife is against CPAI policy and is extremely dangerous; personnel found in violation of this policy are subject to disciplinary action, up to and including termination. All CPAI facilities and camps are obligated to reduce impact to local wildlife populations. Handling waste correctly limits the attraction of animals (e.g., foxes, gulls, ravens, and bears) to the project area. Personnel should contact the Field Environmental Coordinator (FEC) if they notice improperly managed food waste or have questions on refuse management.

Particular care should be taken to ensure that no food wastes are left in places that might attract wildlife. Taking food into vehicles is discouraged, but if food is taken into vehicles, it must be stored in containers that minimize odors, such as plastic bags or plastic containers with lids, and windows must remain closed. All food waste should be brought back to the appropriate disposal receptacle and all garbage, including used food containers, must be removed from the vehicles at the end of each shift.

The cleanliness of the project area will be strictly maintained and eating outside of buildings or vehicles is prohibited.

3.1.2 Handling Non-Food Materials and Waste

Non-food materials (e.g., plastic, rubber, motor oil, and chemicals such as antifreeze) can be attractive to some wildlife species, and if these materials are not handled properly, they can increase the likelihood of wildlife encounters. Potentially harmful materials will be stored in secure containers (e.g., 55-gallon steel drums) or inside secure buildings and they will be properly disposed of properly, away from the project area.

3.2 Infrastructure Design and Maintenance

Infrastructure associated with oilfield development can potentially provide nesting or denning cover for wildlife. The following list provides examples of infrastructure design and maintenance activities that can help minimize the attraction of wildlife:

- Infrastructure design should incorporate modifications to reduce the attractiveness of a site to wildlife. Where practicable, these could include installation of skirting under elevated buildings, proper lighting, capping of stored pipes, blocking culverts in the winter, and the placement of gates or other barriers on stairwells.

- Elevated structures, including roads and pads, can collect drifting snow that can potentially serve as artificial denning habitat if not properly managed. The prevailing wind is from the northeast and the direction of drifting should be taken into account when placing barriers or storing materials.
- If materials must be stored outdoors, they should be arranged in a way to minimize the space where animals could hide.
- Personnel areas, including all entrance areas, will be illuminated during working hours of darkness.

4.0 ROLES AND RESPONSIBILITIES

Only designated personnel may respond to wildlife incidents! As a general rule, the FEC will direct all wildlife collection and rescue efforts for CPAI. While you might see an injured or trapped animal and think that helping the animals is the most humane thing to do, this may actually prolong the animal's suffering or even kill it, create a health and safety risk, and/or be illegal. To avoid potential violations of laws or CPAI procedures regarding wildlife interactions, the FEC should be engaged in all decisions regarding wildlife management and interaction in CPAI-operated fields.

The key personnel and their responsibilities with regard to CPAI's wildlife management program are listed below; the contact information for these personnel are listed by facility in Table 2. Once contacted about a wildlife interaction, these staff can refer to the species-specific tab of the "Encountering Wildlife on Alaska's North Slope" field guide for detailed procedures and contact information for agencies in need of notification.

Environmental Studies Program Manager – Manages the overall environmental studies program.

North Slope Studies Coordinator – Manages field logistics for environmental studies for CPAI.

North Slope Health, Safety, And Environmental (HSE) Training Supervisor – Supervises health, safety, environment, and training on the North Slope.

Field Environmental Coordinator (FEC) – Oversees spill prevention, reporting, and cleanup; coordinates tundra travel, waste management, wildlife interaction, and environmental management systems.

Alaska Clean Seas (ACS) Technicians – Conduct wildlife hazing, capture, and stabilization during an oil spill response or upon EC request.

Security – Responsible for wildlife hazing and monitoring during routine oilfield operations in oilfields. Security responds to wildlife sighting and interaction reports as appropriate.

All Personnel – Responsible for participating in wildlife interaction and management training. All personnel *must*:

- Review Section 6 of the *North Slope Environmental Field Handbook* (CPAI, 2011b) and comply with CPAI policy regarding wildlife.
- Immediately report wildlife interactions to Security, their Supervisor, or the FEC.

Updates to this Plan will be provided as-needed basis. This document and all other wildlife interaction documents are maintained on CPAI's Environmental Studies website. Copies of these plans are provided to the Environmental Coordinators.

Table 2 Contact Information for CPAI Key Personnel for Wildlife

Alpine Facilities		
Security	907.670.4002	Main Security Line
	907.670.4900	Emergencies
Field Environmental Compliance Coordinator (primary)	907.670.4200	907.670.4930, pager 718
	907.670.4756	907.670.4930, pager 719
Field Environmental Compliance Coordinator	907.659.7242	907.659.7000, pager 669

(secondary)		
ACS Lead Technician	907.670.4586	907.670.4930, pager 402
Kuparuk Facilities		
Security	907.659.7997	Main Security Line
	907.659.7300	Emergencies
Field Environmental Compliance Coordinator (primary)	907.659.7212	907.659.7000, pager 669
Field Environmental Compliance Coordinator (secondary)	907.659.7242	907.659.7000, pager 669
ACS Lead Technician	907.659.7879	
	907.659.7926	907.569.7000, pager 801
Anchorage		
Environmental Studies Manager	907.265.6515	Office
	907.229.8972	Cell
North Slope Environmental Studies Coordinator	907.263.4333	Office
	907.252.7829	Cell
Anchorage Clean Seas Offices		
Anchorage	907.743.8989	
North Slope	907.659.2405	

4.1 General Guidance for Wildlife Encounters

Only designated personnel may respond to wildlife incidents!

When an animal is encountered dead, injured, sick, trapped, stranded, entangled or in any other situation, certain steps need to be taken depending on the species and the situation. This document helps to identify what you should do when encountering wildlife; more detailed species-specific information is contained in the field guide *Encountering Wildlife on Alaska's North Slope.*

First, identify the animal or animal group and find the species-specific protocols for that animal located in the following sections of this document. For example, if caribou are observed on the road, go to the Caribou section, find the steps in the text that apply to the situation and follow the instructions.

In most situations when encountering an unusual wildlife situation, the first call you should make is to Security relevant to the operating area (Kuparuk or Alpine). They will contact the FEC. Contact information is provided in the previous section (Table 2). Once Security has notified the FEC of the encounter, further communications and documentation may be required depending on the animal and the situation. If possible, make notes of the animal's location, condition, behavior, weather conditions, and other information you believe is relevant. The FEC will contact agency representatives where needed. As a general rule, CPAI has a non-interference policy regarding wildlife. If the cause of injury or stress is natural, CPAI will not get involved. Therefore if an injured animal is mobile, is not entangled with any oilfield related equipment or debris, and the injury does not appear to be caused by human interaction, it will be left alone.

If the injury is a result of oilfield activities or facilities, the FEC may decide to intervene, capture, or help wildlife when appropriate, but only with agency approval. Injured birds and mammals can be aggressive and may bite. Anyone who discovers an injured or dead animal in the oilfield should **NOT** touch it, attempt to treat it, or take it back to camp.

The observer must maintain a safe distance from the animal and not attempt to capture or contain the animal. The observer must immediately contact Security or the FEC and describe the species (if known), the location of the animal, and the type of injury or problem. Table 2 lists the titles of the appropriate response personnel and their contact information. Only Security and/or FEC personnel are authorized to take any action. The FEC will field verify the sighting, condition of the animal, and possible cause of the injury. If any potentially dangerous predatory species is present, no personnel should take action without agency consultation (excepting those actions required to maintain personal safety).

If an animal is observed to be tangled or otherwise trapped in oilfield related equipment (e.g., snow fence, wire), the observer should contact Security or the FEC. No personnel should attempt to approach the animal or take action. FEC personnel will work with the appropriate agency (ADF&G or USFWS) for authorization to move any bird or mammal.

If the animal is severely injured, it will likely be dispatched (i.e., killed) with permission from either ADF&G or USFWS. Endangered species (e.g., spectacled eiders) should not be dispatched without prior written authorization.

5.0 SPECIES-SPECIFIC DETECTION, AVOIDANCE, AND REPORTING PROCEDURES

Table 2 lists the contact information for appropriately trained personnel to contact in the event of a wildlife interaction. In cases of hazing, harassing, and deterrent activities, a short narrative is required that describes the incident and actions taken. The narrative can be handwritten and a copy must be given to the FEC. Security personnel also document hazing activities in the form of a log, and the FEC compiles and submits these logs to the regulatory agencies, per permit conditions.

5.1 Birds

Bird species are regulated by several federal acts and regulations. The Migratory Bird Treaty Act (MBTA) generally prohibits hunting, killing, wounding, possessing or transporting any migratory birds, their nests, eggs, feathers or other parts. The Bald and Golden Eagle Protection Act provides additional protection to all bald and golden eagles. All birds on the North Slope are migratory and protected under the MBTA, even birds that occur on the Slope year-round, such as ravens. Some species and their habitats are also protected under the ESA, such as the spectacled and Steller's eiders (the Kittletz's Murrelet and Yellow-billed Loon are Candidate species under the ESA).

All birds have the potential to collide with oilfield infrastructure, such as buildings, power lines, and fences. Additionally, birds pose a hazard to arriving and departing aircraft. Handling and collection of dead or injured birds requires permits, so do NOT touch any dead or injured bird that you may encounter. Permits that allow CPAI to deal with bird interactions are the ADF&G Public Safety Permit and the USFWS Depredation Permit. ACS has a USFWS Migratory Bird Rehabilitation Permit that allows them to handle, transport or temporarily possess birds protected under the MBTA.

5.1.1 Avoidance

Personnel should avoid any nesting birds or active bird nests (including ravens or gulls) by 200 meters where possible unless permission to be in closer proximity has been given by the appropriate agency (generally USFWS Office of Migratory Bird Management [OMBM]). Bird nests with eggs or chicks **cannot be moved** without a permit from USFWS. The sensitive nesting, molting, or brood-rearing season typically occurs from 15 May through 15 August. If work is to take place in an area where birds

commonly nest, the FEC must be contacted prior to the nesting season (defined as the period from when the first egg is laid through fledging of the last chick) to develop a strategy to discourage nesting in the area. Sensitive area maps have been compiled showing areas where travel and work must be avoided and are contained in the ACS Technical Manual.

Personnel are not allowed to approach birds or influence a bird's behavior to obtain a photograph at any time.

5.1.2 Interaction and Response

All birds have the potential to collide with oilfield infrastructure, such as buildings, power lines, and fences. Additionally, birds can pose a hazard to arriving and departing aircraft. If an aircraft strikes a bird, the strike should be reported to the Federal Aviation Administration (FAA). Aviation personnel complete FAA form 5200-7, and submit it to the FEC. The Bird Depredation Permit authorizes the take of several species by shotgun, in conjunction with control operations to prevent hazards to arriving and departing aircraft. Only Security personnel are authorized to haze birds. All records of salvage or rehabilitation must be kept on site, and maintained by the bird salvage permit holder (as per USFWS OMBM).

Known colonies of waterfowl, such as snow geese and brant should be avoided by all personnel. Any interaction with a threatened or endangered species listed under the Endangered Species Act (ESA) should immediately be reported to the FEC. Currently, Spectacled and Steller's eiders are listed as threatened under the ESA; Kittletz's Murrelet and Yellow-billed Loon are Candidate species under the ESA. Disturbing endangered and threatened species is considered a violation of the ESA, and must be reported to USFWS OMBM. The FEC will be responsible for this notification.

5.1.2.1 Bird Rehabilitation

Facilities are present on the North Slope that meet federal requirements for bird rehabilitation, however complete mobilization of these units are not practical for a small number of injured birds. For small numbers of birds, the Bird Treatment and Learning Center in Anchorage is equipped to accept and rehabilitate injured birds. Arrangements to transport injured birds to the Bird Treatment and Learning Center can be made through the FEC. The person conducting collection activity must be trained in bird salvage and rehabilitation and carry the Bird Rehabilitation Permit under which they operate. Only birds injured by CPAI activities should be collected and treated under this permit. If the cause of the injury is unknown, the advice of the EC will be sought.

5.1.2.2 Bird Salvage

If the bird carcass presents an attractant to other wildlife, it should be salvaged or moved from the area by an authorized individual (i.e., Security or ACS). Personnel should contact the FEC who will contact the permitting agency (USFWS OMBM) within 48 hours of the observance for guidance on proper disposal. If a bird carcass is found off of an oilfield area, and the death does not appear to be related to oilfield activities or is not in a location that would attract predators to operations, the bird should be left in

place. The salvage permit holder must also report annually to the OMBM, as per the permit requirements.

5.1.3 Reporting

If a banded bird is collected, the number on the band should be reported to the Bird Banding Laboratory at 1-800-327-2263.

Any birds that are collected that indicate suspected poisoning or other criminal activity should be reported to the FEC who will then contact USFWS Law Enforcement immediately as well as the USFWS OMBM .

Any ESA-listed species and/or bald or golden eagles (dead or alive) collected under the ACS Special Purpose permit are to be reported to a special agent of the USFWS Law Enforcement within 24 hours.

All bird electrocutions should be reported to USFWS Law Enforcement. The website address for on-line reporting is: https://birdreport.fws.gov.

5.2 ADF&G Public Safety and USFWS Bird Depredation Permits require submittal of annual reports. Foxes and Wolves

Arctic foxes, and to a lesser extent red foxes and wolves, are residents of the North Slope. Fox Pups are generally born in April and May, and fox numbers can increase during the summer when food is plentiful. Wolf pups are born in late May to early June and are rarely seen in the oilfields. Foxes are clever when it comes to obtaining food, especially from anthropogenic sources. Refer to Section 3.1 for guidance on handling food and waste.

Foxes and wolves are predators that can bite out of aggression or fear, and can transmit diseases such as rabies. CPAI's Public Safety Permit contains specific regulations and reporting requirements related to wildlife with a high likelihood of rabies. If human contact occurs with a live animal (e.g., bite), there is the possibility of rabies being transferred. Such animals must be sent to the Alaska State Virology Lab (ASVL) to test for rabies infection. Report all human-fox/wolf interactions or suspected rabid foxes and wolves to Security. Security will contact the FEC to determine the appropriate communications or actions to be taken.

5.2.1 Avoidance

Personnel should not leave open doors and windows unattended because foxes may enter unnoticed. Rabies is endemic in the fox population; therefore, all personnel should consider foxes to be dangerous and avoid them. Foxes will not show symptoms of rabies until they are close to death; therefore an animal may not appear to be rabid even though it may be infected. A cyclical virus appears to be present on the North Slope, killing off numerous animals on a 3 to 4 year cycle.

5.2.2 Interaction and Response

No hunting or trapping is authorized at CPAI's oilfields; however, foxes at Kuparuk have been occasionally trapped by licensed trappers with permission from the Camp Supervisor and the FEC. The FEC should be contacted for additional information on requirements for trapping within the lease areas.

Overly friendly, curious, aggressive (i.e., attacking individuals or other animals) or potentially rabid (i.e., has unusual amounts of mucous and/or blood coming from the muzzle area) animals should be reported to Security immediately. Only authorized personnel (i.e., Security or ACS) are permitted to respond to wildlife incidents. This includes foxes and wolves that approach a stopped vehicle on a road or pad. The FEC may request that Security dispatch an unusually aggressive or potentially rabid animal to protect personnel.

Hazing of foxes is authorized by Public Safety permits (hazing of wolves is not).

If a dead fox or wolf is observed on the tundra, it should be left in place unless it is in close proximity to infrastructure where it could attract bears and possibly result in a human/bear interaction. Once the FEC or Security is contacted, they may direct that, the carcass be retrieved by trained personnel (Security, ACS) and disposed of by incineration.

5.2.3 Rabid Fox Management

When Security personnel receive a report of a fox or wolf exhibiting abnormal behavior, they should:

- Tell the caller to keep personnel away from the animal, but to keep track of its location to the best of their ability.
- Determine if anyone has been bitten or otherwise exposed.
- Inform the caller to send any person who has been bitten to the medical clinic immediately.
- Document the details of the incident, including the animal's behavior, the location, and results of any hazing activities.
- Inform the FEC of actions taken to locate and kill the animal even if it has not bitten anyone and is only exhibiting unusual or abnormal behavior. Security should attempt to keep the head and neck intact when shooting the animal in order to ship to ADF&G for testing. The ADF&G suggests using plastic bullets, if available.

Occasionally, third parties will request that Security handle foxes on their behalf. This may only be done after consultation and approval from the ADF&G Wildlife Veterinarian (currently Dr. Kimberlee Beckmen). These actions fall outside of the scope of CPAI's hazing permits and the activities are not to be reported with CPAI's annual reports.

5.2.3.1 Treatment of Fox or Wolf Bites

The rabies virus is transmitted by saliva. Once it enters the body through a wound, it travels through the nervous system to the brain, causing seizures, severe pain, paralysis, and eventually death. Unless antibodies are administered quickly, the disease cannot be treated. The vaccine is a highly controlled substance and is not available on the North Slope.

Anyone receiving a bite should wash the wound thoroughly with copious amounts of soap and water and seek medical aid immediately.

5.2.3.2 Transportation of Fox and Wolf Carcasses

Dead foxes and wolves observed within the oilfield should be removed from areas of activities. If a fox or wolf is found on or near a roadway, and its presence could attract bears, birds, or other predators, the FEC may direct a designated person to triple bag all animal remains and have those incinerated immediately (only if the animal is not expected to be rabid, can it be incinerated).

The FEC will contact the ADF&G Wildlife Veterinarian for instruction on shipping foxes or wolves that were found dead or were killed due to signs of rabid behavior.

5.2.4 Reporting

If a fox or wolf is suspected to be rabid and it is determined that it must be dispatched, Security and/or the FEC must notify ADF&G within 48 hours. Hazing of foxes and wolves should only take place under stipulations outlined in the appropriate permit.

5.3 Caribou and Musk Ox

The Central Arctic caribou herd is found throughout the oilfield area. Caribou calve in early June and will be more sensitive to vehicle and foot traffic during that time. Large herds of caribou, numbering thousands of animals, may be seen during the summer, particularly on warm days when the insects are abundant. During warm days, caribou will often move to the coast or stand on gravel roads and pads seeking relief from insect harassment.

There are no specific permits in place from ADF&G related to caribou and musk oxen. However, under the Public Safety Permit, CPAI is required to report all mammals that are killed to ADF&G within 48 hours. Caribou are common in CPAI operational areas, which could result in human/caribou interactions. Although musk oxen are not as common as caribou, it is possible to encounter musk oxen in the oilfields. Most often, the best approach is to leave the caribou and musk oxen alone, and, depending on the situation, report their location to Security so additional interactions can be avoided. Musk oxen have on occasion charged humans and can be dangerous, so do not approach these animals.

5.3.1 Avoidance

Caribou and musk ox moving through the oilfields have the right-of-way. Traffic must slow to allow them to cross roads. Drivers must watch for caribou darting out from under pipelines and onto roadways. Personnel should not attempt to move groups of caribou or musk oxen off roads, pads, or runways. Honking horns, revving engines, yelling, and excessive speed are unacceptable and considered a form of harassment. If traffic is being unreasonably delayed, persons involved should contact Security, who will then take any necessary, appropriate action. Drivers who violate these policies are subject to disciplinary actions. Personnel should report any driver to Security that does not comply with the above directions.

It is CPAI policy that personnel do **NOT** approach caribou or musk oxen on foot or separate a cow and calf.

5.3.2 Interaction and Response

The following observed situations must be reported to Security: 1) dead caribou or musk ox, 2) vehicle-wildlife encounter, and/or 3) injured caribou or musk ox.

If necessary, dead caribou should be moved to a remote location within the field so as not to provide an attractant to other wildlife. If meat from a recent caribou or musk ox kill appears to be salvageable, the North Slope Borough (NSB) Wildlife Department should be contacted by Security, who may arrange for the meat to be provided to NSB community residents.

5.3.3 Reporting

Information on caribou and musk ox hazing is to be submitted with the annual report.

5.4 Ice Seals and Whales

Ice seals (i.e. ringed, bearded, and spotted) can be seen along the coast, on barrier islands, swimming offshore in open water, and hauled out on ice during winter. Ice seals are most likely to be encountered during on-ice winter operations conducted offshore, when working from boats, and along gravel causeways. The most sensitive period is during pupping in March. Seals are the primary prey of polar bears and the presence of seals may attract polar bears to the area.

All marine mammal species are protected under the MMPA by which seals and whales fall under National Marine Fisheries Service (NMFS) jurisdiction. Under the MMPA, it is prohibited to intentionally or unintentionally kill or harass whales or seals, unless authorized for specific activities. CPAI has not requested such authorization from NMFS for its onshore North Slope operations.

Additionally, some marine mammal species that can be encountered on the North Slope are listed under the ESA. Endangered species include the bowhead whale, the humpback whale and the fin whale, although it is rare to encounter humpback and fin

whales. A proposed rule to list the Arctic stocks of bearded and ringed seals as threatened under the ESA is currently under review (determination by NMFS is expected in June 2012). In addition, a status review of the ribbon seal was re-initiated in 2011 to determine whether listing the ribbon seal as threatened or endangered is warranted.

It is important to immediately report all seal or whale encounters or interactions as listed below to Security, who will contact the FEC. Depending on the situation, the EC will determine the appropriate action(s) to be taken. Under no circumstances should a seal or whale be approached, whether dead or alive, without consulting the FEC and before the FEC has obtained written authorization from NMFS.

In 2007 regulations were issued by the NMFS to allow for the incidental, but not intentional, taking of small numbers of marine mammals associated with BP's Northstar operation in the Beaufort Sea. Refer to Appendix A, Section 1.0 for a description of the federal regulations regarding ice seals. Regulations were petitioned by BP to address the potential for "take" of ice seals around its offshore operations. Other Operators pursue a project-specific Incidental Harassment Authorization (IHA) in lieu of regulations, which can be time consuming to obtain.

5.4.1 Avoidance

Prior to conducting work in ice seal and whale habitat (waters deeper than 3 meters) all personnel should consult the appropriate permits coordinator in the Permits and Sciences group.

Seals maintain breathing holes in the ice, and they build ice lairs where their pups are born. Breathing holes and lairs may be difficult to see, so caution must be taken when working on or near the sea ice to avoid these locations. In addition, many whales use nearshore polynas for migration, feeding and calving.

5.4.2 Interaction and Response

Ice seals and whales are protected under the MMPA; therefore, additional steps must be taken when any dead marine mammal is observed. A dead marine mammal should **NOT** be touched. Security should contact the Marine Mammal Stranding Coordinator at NMFS immediately (refer to the Contact Information table in the seals and whales tab of *Encountering Wildlife on Alaska's North Slope*. Approval to move the animal must be granted from NMFS on a case-by-case basis. CPAI prefers to obtain this approval from NMFS in writing, but if not possible, Security should submit an email to NMFS confirming the discussion about moving the mammal. A *Marine Mammal Stranding Report* (Level A) must be completed (see Appendix B) and faxed to NMFS. NMFS may request that samples be collected prior to moving the animal.

CPAI holds no permits for its onshore activities to collect, hold, capture, or intentionally disturb seals or whales. Should such a response be necessary, personnel will

coordinate with the Environmental Studies Program Manager, and/or appropriate FEC personnel, who will seek permission from NMFS prior to initiating any action.

5.4.3 Reporting

Ice seal and whale interactions must be reported to the FEC or Security immediately, as regulations require all marine mammal interactions to be reported to NMFS within 24 hours.

5.5 Wolverine

Wolverines are found on the North Slope and have been encountered recently in the oilfield areas. These mammals are solitary throughout most of the year and may be active at any time of day, year round. Wolverines have remarkable physical endurance and can travel up to 40 miles a day in search of food. They are primarily scavengers and have large teeth and powerful jaws to crush bones and eat frozen meat. Wolverines are opportunistic feeders meaning they will eat nearly anything they find or prey upon.

5.5.1 Avoidance

Avoidance measures for wolverine are similar to that for foxes and wolves: do not leave open doors and windows unattended because wolverines could enter in search of food. All personnel should consider wolverines to be dangerous and avoid them. Refer to Section 3.1 for guidance on handling food and waste.

5.5.2 Interaction and Response

No personnel should approach a wolverine and Security should be notified if a wolverine is observed. Security should also be notified after observation of a dead or injured wolverine, or if there is a vehicle-wildlife encounter.

5.6 Fish

Eleven species of freshwater fish are year-round residents of streams, rivers, and lakes of the North Slope oilfields. Twelve other species are migratory to the area (CPAI, 2005). Oilfield activities may affect fish habitat through altering habitat quality or impeding fish movements, if not properly permitted and managed. The Alaska Department of Fish & Game (previously the Alaska Department of Natural Resources Office of Habitat Management and Permitting) has jurisdiction over fish and fish habitat.

Prior to off-road crossing or working in fish habitat (e.g., work in or around streams, stream crossings, water withdrawal) in summer or winter, CPAI requires that personnel notify the FEC to ensure that the proper permits are in place.

5.7 Annual Report

Annual reports are submitted to the USF&WS for Bird Depredation and Polar Bear sighting/hazing reporting by the FECs. An annual report is also required by the ADF&G for COP public safety permits as addressed by the appropriate FEC.

6.0 AMENDMENTS

Table Amendment Log

Amendment Number	Development Name
Amendment 1	CD3
Amendment 2	CD4
Amendment 3	CD5

7.0 REFERENCES

(CPAI) ConocoPhillips Alaska, Inc. 2005. Fish and Wildlife of Alaska's North Slope – Freshwater Fish. Prepared by CPAI Environmental Studies Program, Anchorage, AK. June.

(CPAI) ConocoPhillips Alaska, Inc. 2011a. Encountering Wildlife on Alaska's North Slope…What should I do now? Prepared by Oasis Environmental Inc. 825 W. 8th Avenue, Anchorage AK 99501. October.

(CPAI) ConocoPhillips Alaska, Inc. 2011b. North Slope Environmental Field Handbook. Revision 1 (12/5/11). Prepared for ConocoPhillips Alaska, Inc., BP Exploration Inc., ENI Petroleum Company Inc., Exxon Mobile and Pioneer Natural Resources Alaska. December.

(CPAI) ConocoPhillips Alaska, Inc. 2012. Polar Bear Avoidance and Interaction Plan. January. pp 92. Prepared by Weston Solutions, Inc. 425 G St. Ste. 300, Anchorage, AK 99501.

Appendix A
Regulations, Policies
and
Hunting and Subsistence Activities

A1.0 REGULATIONS, POLICIES, AND PERMIT STIPULATIONS

A1.1 MMPA

The1972 MMPA as amended November 2001 (16 USC 1361-1407) explicitly states that it is illegal to “harass, injure, capture, kill, or to attempt to harass, injure, capture, or kill" a marine mammal (e.g., ice seals, whales, polar bears). The term used to describe any of these activities is "take". However, Section 101(a)(5)(A) of the MMPA includes an exception to the law by authorizing the Secretary of Commerce of NMFS to issue regulations to allow the incidental, but not intentional, taking of small numbers of marine mammals, upon request (as defined in 50 Code of Federal Regulations [CFR] 18.27(c)) for activities such as oil and gas development.

In addition, Section 101(a)(5)(A) of the MMPA, as amended, directs the U.S. Fish and Wildlife Service (Service) to allow, upon request, the incidental, but not intentional, take of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical area (referred to as Incidental Take Regulations (ITRs)). The incidental taking of marine mammals may be allowed if the Service finds, based on the best scientific evidence available, that the total of such taking associated with the specified activity will have a negligible impact on the species or stock and will not have an unmitigable adverse impact on the availability of the species or stock for subsistence uses. If ITRs are promulgated for a specific activity in a specific area, Service regulations [50 CFR 18.27(f)] provide for the issuance of Letters of Authorization (LOA) under the provisions of these regulations.

A Letter of Authorization (LOA) can only be issued if regulations are promulgated through a petition process by the interested party, under Section 101 (a)(5) of the MMPA (see 50 CFR 18). An LOA application must be submitted by oil and gas operators (i.e., CPAI) to NMFS in order to request an incidental take of marine mammals (in this case, ice seals) exemption to conduct specified activities (e.g., exploration, development, and production) in the development or production area. If NMFS approves of the activities, the agency will issue an LOA to the applicant. LOAs prescribe specific stipulations and monitoring requirements for each applicant and must be reviewed annually. CPAI has received LOAs for polar bears and walrus pursuant to its activities in the Beaufort Sea (see Attachment 2, Polar Bear Plan) and is currently pursuing renewal of ITRs for the planned operations in the Chukchi Sea.

An Incidental Harassment Authorization (IHA) can be issued without regulations and is authorized under the MMPA for NMFS (Section 1371(a)(5)(D)). NMFS typically issues an IHA for on-ice or open water exploration activities following peer review of proposed monitoring and mitigation procedures.

A1.2 Other

Several regulatory requirements, permits, and CPAI policies are applicable to the wildlife management program. The regulations include, but are not limited to:

Applicable State Regulations

- 18 Alaska Administrative Code (AAC) 60.010 – Treatment of solid waste
- 5 AAC 92.230 – Prohibition of baiting and feeding bears and other wild game
- ADF&G Policy on Human Food and Solid Waste Management and Bears in Alaska
- Armed Guard License (Security guards only)
- ADF&G Furbearer Hunting and Trapping Regulations
- Alaska Statute (AS) 16.05, 16.10 Fish and Game Code, Fish and fishing regulations

Applicable Federal Regulations

- The ESA (16 United States Code [USC] 1531-1544, 87 Stat. 884, as amended) - provides special protection to endangered or threatened species (e.g. polar bears Spectacled eiders, Steller's eiders, bowhead whales, fin whales and humpback whales). The following recovery plans were developed to aid in the conservation and recovery of the species listed below (no recovery plan exists for bowhead whales):
    - Spectacled Eider Recovery Plan
    - Steller's Eider Recovery Plan
    - Polar Bear Recovery Plan (currently being developed).
    - Humpback Whale Recovery Plan
    - Fin Whale Recovery Plan
- Section 7 Consultation (USFWS, as part of the ESA)
- MMPA (16 USC 1361-1407)
- 50 CFR 18 (implements the MMPA)
- Migratory Bird Treaty Act (16 USC 703-712) § 703
- LOA (issued by NMFS) - Pertinent only if the regulations that have been petitioned for are in place
- An IHA should be obtained for any activity in ice seal habitat where petitioned regulations are not in place

Applicable Local Regulations

- NSB Title 19 – Land Management Regulations

CPAI Policy

- Non-Interference Policy, Section 6 of the *North Slope Environmental Field Handbook*
- CPAI FEC Standard Operating Procedures

Permits that may contain stipulations for wildlife

- United States Army Corps of Engineers (USACE) Permits (i.e. Clean Water Act Section 404 and Rivers and Harbors Act Section 10 permits, issued by USACE)
- Land Use Permits (usually issued by ADNR and NSB)
- Pipeline right-of-way permits
- Ice road construction/winter vehicle travel (usually issued by ADNR, ADF&G, NSB, USACE, and the Bureau of Land Management [BLM])
- Tundra Travel (issued by ADNR, NSB, and BLM)
- Fish Habitat Permits-Title 41 (issued by ADF&G, formerly by ADNR OHMP)
- Water withdrawal permits (issued by ADNR ML&W)
- Waste Management Guidelines (issued by Alaska Department of Environmental Conservation [ADEC])
- Oil Spill Response (typically issued by ADF&G, ADEC, and/or USFWS)
- Hazing Permits (issued by USFWS for birds)
- Public Safety Permit (issued by ADF&G). This permit authorizes the take of various avian species by shotgun, in conjunction with control operations to prevent hazards to arriving and departing aircraft. The permit also allows field-wide hazing and takes of various mammals including brown bear, fox, wolverine, caribou and ermine.
- Bird Depredation Permit (issued by USFWS OMBM). Authorizes the take of several species by shotgun, in conjunction with control operations to prevent hazards to arriving and departing aircraft.
- Bird Rehabilitation Permit (issued by USFWS OMBM)
- Special Purpose Rehabilitation Permit (issued by Alaska Clean Seas). This permit applies to all rehabilitation and salvage activities on the North Slope.
- Bird Salvage Permit (issued by USFWS OMBM)
- Predator Management Stipulations in various Kuparuk and Alpine permits since 1998 (CPAI policy)
- Lease stipulations (issued by ADNR and BLM)

Wildlife-related permitting is an integral part of all projects. The project permitter and the FEC must ensure that all proper permit applications have been submitted to the appropriate agencies. Permits should be applied for well in advance of the planned project, as some require a long review time, public comment periods, and/or research requirements.

A2.0 HUNTING AND SUBSISTENCE ACTIVITIES

It is likely that a number of project team members, including CPAI personnel and contractor crews, will be Alaska Natives who would be authorized to take some wildlife species for subsistence use. However, Alaska Natives employed in CPAI programs are governed by rules and procedures set out by CPAI, which extend to all employees. During periods of their active employment, when traveling to and from the project area, and during their active service for CPAI projects, no subsistence hunting is authorized. Activities of CPAI employed Alaska Natives that are off-shift and not housed at CPAI facilities are subject to subsistence and hunting regulations.

Uncontrolled harvest of wildlife has not occurred in the North Slope oilfields, due in part, to the following restrictions: the oilfield road system of the North Slope is off-limits to all but industrial users and local residents, companies prohibit firearm use by employees in the oilfields, and ADF&G regulations prohibit big game sport hunting in much of the oilfield. As with subsistence hunting, no employee may recreationally hunt in the North Slope oilfield areas while actively employed by CPAI.

Appendix B
Marine Mammal Stranding Report

MARINE MAMMAL STRANDING REPORT - LEVEL A DATA

FIELD #: _____ **NMFS REGIONAL #:** _____ (NMFS USE) **NATIONAL DATABASE#:** _____ (NMFS USE)

COMMON NAME: _____ **GENUS:** _____ **SPECIES:** _____

EXAMINER Letterholder: _____

Name: _____ Affiliation: _____

Address: _____ Phone: _____

LOCATION OF INITIAL OBSERVATION
State: _____ County: _____
City: _____
Body of Water: _____
Locality Details: _____
_____
_____
Latitude: _____ N ☐ actual
Longitude: _____ W ☐ estimated
How lat/long determined (Check ONE):
☐ GPS
☐ Map
☐ Internet/Software

OCCURRENCE DETAILS ☐ Restrand GE#: _____ (NMFS USE)

Group Event: ☐ YES ☐ NO
If Yes, Type: ☐ Cow/Calf Pair ☐ Mass Stranding # Animals: _____ ☐ actual ☐ estimated

Findings of Human Interaction: ☐ YES ☐ NO ☐ Could not Be Determined (CBD)
If Yes, Check one or more: ☐ 1. Boat Collision ☐ 2. Shot ☐ 3. Fishery Interaction
☐ 4. Other Human Interaction: _____
Describe How Determined: _____
Gear Collected? ☐ YES ☐ NO Gear Disposition: _____

Other Findings upon Level A: ☐ YES ☐ NO ☐ CBD
If Yes, Check one or more: ☐ 1. Illness ☐ 2. Injury
☐ 3. Other Findings: _____
Describe How Determined: _____

INITIAL OBSERVATION
Date: Year: _____ Month: _____ Day: _____
First Observed: ☐ Beach or Land ☐ Floating ☐ Swimming

CONDITION AT INITIAL OBSERVATION (Check ONE)
☐ 1. Alive
☐ 2. Fresh dead
☐ 3. Moderate decomposition
☐ 4. Advanced decomposition
☐ 5. Mummified/Skeletal
☐ 6. Unknown

LEVEL A EXAMINATION ☐ Not Able to Examine
Date: Year: _____ Month: _____ Day: _____

CONDITION AT EXAMINATION (Check ONE)
☐ 1. Alive
☐ 2. Fresh dead
☐ 3. Moderate decomposition
☐ 4. Advanced decomposition
☐ 5. Mummified/Skeletal

INITIAL LIVE ANIMAL DISPOSITION (Check one or more)
☐ 1. Left at Site
☐ 2. Immediate Release at Site
☐ 3. Relocated
☐ 4. Disentangled
☐ 5. Died at Site
☐ 6. Euthanized at Site
☐ 7. Transferred to Rehabilitiation: Date: _____ Facility: _____
☐ 8. Died during Transport
☐ 9. Euthanized during Transport
☐ 10. Other: _____

CONDITION/DETERMINATION (Check one or more)
☐ 1. Sick ☐ 4. Deemed Healthy 7. Location Hazardous:
☐ 2. Injured ☐ 5. Abandoned/Orphaned ☐ a. To animal
☐ 3. Out of Habitat ☐ 6. Inaccessible ☐ b. To public
☐ 8. Unknown/CBD ☐ 9. Other: _____
Comments: _____
_____

MORPHOLOGICAL DATA

SEX (Check ONE)
☐ 1. Male
☐ 2. Female
☐ 3. Unknown

AGE CLASS (Check ONE)
☐ 1. Adult
☐ 2. Subadult
☐ 3. Yearling
☐ 4. Pup/Calf
☐ 5. Unknown

Straight Length: _____ ☐ cm ☐ in ☐ actual ☐ estimated
Weight: _____ ☐ kg ☐ lb ☐ actual ☐ estimated

PHOTOS/VIDEOS TAKEN: ☐ YES ☐ NO
Photo/Video Disposition: _____
_____

TAG DATA
Tags Were:
Present at Time of Stranding (pre-existing): ☐ YES ☐ NO
Applied during Stranding Response: ☐ YES ☐ NO

ID #	Color	Type	Placement * (Circle ONE)	Applied	Present
			D DF L LF LR RF RR	☐	☐
			D DF L LF LR RF RR	☐	☐
			D DF L LF LR RF RR	☐	☐

* D = Dorsal; DF= Dorsal Fin; L = Lateral Body
LF=Left Front; LR = Left Rear; RF = Right Front; RR = Right Rear

WHOLE CARCASS STATUS (Check one or more)
☐ 1. Left at site
☐ 2. Buried
☐ 3. Rendered
☐ 4. Towed: Lat _____ Long _____
☐ 5. Sunk: Lat _____ Long _____
☐ 6. Frozen for Later Examination
☐ 7. Landfill
☐ 8. Unknown
☐ 9. Other: _____

SPECIMEN DISPOSITION (Check one or more)
☐ 1. Scientific collection
☐ 2. Educational collection
☐ 3. Other: _____
Comments: _____
_____

NECROPSIED ☐ YES ☐ NO Date: _____
NECROPSIED BY: _____

NOAA Form 89-864 (rev. 2004)
OMB No. 0648-0178; Expires August 31, 2007

PLEASE USE THE BACK SIDE OF THIS FORM FOR ADDITIONAL REMARKS

ADDITIONAL REMARKS

ADDITIONAL IDENTIFIER: _____ (If animal is restranded, please indicate any previous field numbers here)

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

DISCLAIMER

THESE DATA SHOULD NOT BE USED OUT OF CONTEXT OR WITHOUT VERIFICATION. THIS SHOULD BE STRICTLY ENFORCED WHEN REPORTING SIGNS OF HUMAN INTERACTION DATA.

DATA ACCESS FOR LEVEL A DATA

UPON WRITTEN REQUEST, CERTAIN FIELDS OF THE LEVEL A DATA SHEET WILL BE RELEASED TO THE REQUESTOR PROVIDED THAT THE REQUESTOR CREDIT THE STRANDING NETWORK AND THE NATIONAL MARINE FISHERIES SERVICE. THE NATIONAL MARINE FISHERIES SERVICE WILL NOTIFY THE CONTRIBUTING STRANDING NETWORK MEMBERS THAT THESE DATA HAVE BEEN REQUESTED AND THE INTENT OF USE. ALL OTHER DATA WILL BE RELEASED TO THE REQUESTOR PROVIDED THAT THE REQUESTOR OBTAIN PERMISSION FROM THE CONTRIBUTING STRANDING NETWORK AND THE NATIONAL MARINE FISHERIES SERVICE.

PAPERWORK REDUCTION ACT INFORMATION:

PUBLIC REPORTING BURDEN FOR THE COLLECTION OF INFORMATION IS ESTIMATED TO AVERAGE 30 MINUTES PER RESPONSE, INCLUDIN(THE TIME FOR REVIEWING INSTRUCTIONS, SEARCHING EXISTING DATA SOURCES, GATHERING AND MAINTAINING THE DATA NEEDED, AND COMPLETING AND REVIEWING THE COLLECTION OF INFORMATION. SEND COMMENTS REGARDING THIS BURDEN ESTIMATE OR ANY OTHE ASPECT OF THE COLLECTION OF INFORMATION, INCLUDING SUGGESTIONS FOR REDUCING THE BURDEN TO: CHIEF, MARINE MAMMAL CONSERVATION DIVISION, OFFICE OF PROTECTED RESOURCES, NOAA FISHERIES, 1315 EAST-WEST HIGHWAY, SILVER SPRING, MARYLAND 20910. NOT WITHSTANDING ANY OTHER PROVISION OF THE LAW, NO PERSON IS REQUIRED TO RESPOND TO, NOR SHALL ANY PERSON BE SUBJECTED TO A PENALTY FOR FAILURE TO COMPLY WITH, A COLLECTION OF INFORMATION SUBJECT TO THE REQUIREMENTS OF THE PAPERWORK REDUCTION ACT, UNLESS THE COLLECTION OF INFORMATION DISPLAYS A CURRENTLY VALID OFFICE OF MANAGEMENT AND BUDGET (OMB) CONTROL NUMBER.

NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION U.S. DEPARTMENT OF COMMERCE

IOAA Form 89-864 (rev.2004)
)MB No. 0648-0178; Expires August 31, 2007

Appendix C
Rabid Fox Shipping Label

Biological Substances
Category B

Amendment 1
CD3 Development

WILDLIFE AVOIDANCE

and

INTERACTION PLAN

AMENDMENT 1

CD3 Development

April 2012

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

CPAI	ConocoPhillips Alaska, Inc.
FEC	Field Environmental Compliance Coordinator
FLIR	Forward Looking Infrared Radar

1.0 PURPOSE AND SCOPE

The purpose of the CD3 Amendment to the *Wildlife Avoidance and Interaction Plan* (CPAI, 2012a) (Wildlife Plan) is to provide site-specific guidance to ConocoPhillips Alaska, Inc. (CPAI) employees and contractors working in the CD3 oilfield on the North Slope of Alaska in order to assist them in implementing appropriate, standardized procedures when wildlife is encountered.

Many wildlife species occur on Alaska's North Slope; as such, industry personnel may encounter these animals. Oilfield activities have the potential to disturb or attract wildlife species. Some species of animals that inhabit the North Slope (e.g., caribou and fox) present a risk of injury or transmission of disease to field personnel. Some groups of animals are generally protected by federal regulations, such as migratory birds (e.g. Migratory Bird Treaty Act), and marine mammals (e.g. Marine Mammal Protection Act); individual species may also be protected by the Endangered Species Act (e.g. polar bears; spectacled eiders, bowhead whales-see species-specific sections of the Wildlife Plan for all listed species). Additionally, several species (e.g., polar bear, grizzly bear, and wolverine) can pose a serious risk of injury to field personnel. General management procedures detailing avoidance and interaction guidance for grizzly bears and polar bears are discussed in the Wildlife Plan Attachment 1 *Grizzly Bear Avoidance and Human Encounter/Interaction Plan* (Grizzly Bear Plan) (CPAI, 2012b) and Attachment 2, *Polar Bear Avoidance and Interaction Plan* (Polar Bear Plan) (CPAI, 2012c). **Site-specific measures for minimizing predator and other wildlife interactions are discussed in each of the amendments to the Wildlife Plan; see Table 2 of this amendment.** Amendments to the Wildlife Plan have been prepared by CPAI for the purpose of discussing site-specific characteristics, structures, and situations unique to any site(s) that may not have been specifically covered in the Wildlife Plan. The amendments written to date are listed in Section 6.0 of the Wildlife Plan and are as follows: Amendment 1 – CD3 Development (this amendment); Amendment 2 – CD4 Development; Amendment 3 – CD5 Development. This CD3 Amendment provides guidance specific to CPAI's CD4 facility and will be used by CPAI employees, contractors, and wildlife responders; this amendment is not a stand-alone document and is intended for use in conjunction with CPAI's Wildlife Plan, Polar Bear Plan and Grizzly Bear Plan, as appropriate to reduce the possibility of human-wildlife encounters at the CD3 site.

The Wildlife Plan is intended for use by all CPAI personnel; this document provides procedures for reducing wildlife interactions and directs personnel to contact appropriately trained CPAI personnel (e.g. Security and Environmental Coordinators) in the event of a wildlife interaction or potential interaction. *Encountering Wildlife on Alaska's North Slope* (CPAI, 2011) was developed as a companion guide to the Wildlife Plan and is intended for use by appropriately trained CPAI personnel (e.g. Security and Environmental Coordinators); as such, this document presents more detailed procedures for managing wildlife interactions as well as more detailed contact information for federal and state agencies.

The scope of the CD3 Amendment includes a description of the CD3 site (Section 2.0), discussion of the site-specific species of concern (Section 3.0), site-specific mitigation techniques (Section 4.0), and general policies and guidance (Section 5.0). CPAI employees, contractors, and wildlife responders must refer to the Wildlife Plan for the following information which is not included in this amendment: the wildlife-related training requirements for all CPAI employees, contractors, and visitors; roles and responsibilities of key personnel; general policies and guidance; and the species-specific policies, interaction guidance, and mitigation measures.

This amendment serves to facilitate compliance with existing wildlife regulations and permit conditions and is part of CPAI's overall wildlife management program. Table 1 lists the documents and information sources included in CPAI's wildlife management program.

Table 1 Wildlife Management Program Documents

Document/Information Source	Pertinent Information Provided by the Document/Information Source
Wildlife Avoidance and Interaction Plan	• General wildlife interaction and avoidance techniques • Species-specific interaction and avoidance techniques • Proper management of food waste to minimize attraction of wildlife • Guidance for complying with wildlife regulations and permit conditions • Procedures for submitting wildlife interaction reports
Encountering Wildlife on Alaska's North Slope	• Field guide for CPAI Environmental Coordinators and Security personnel with in-depth, detailed information on managing and reporting wildlife encounters; this document is a companion to the Wildlife Avoidance and Interaction Plan
Attachment 1: Grizzly Bear Avoidance and Human Encounter/Interaction Plan	• Grizzly bear avoidance and detection techniques • Background and history of grizzly bears on the North Slope • Grizzly bear training program • Guidance for complying with wildlife regulations and permit conditions • Procedures for submitting interaction reports
Attachment 2: Polar Bear Avoidance and Interaction Plan	• Polar bear detection and avoidance techniques • Background and history of polar bears on the North Slope • Guidance for complying with federal polar bear regulations and specific permit conditions • Procedures for submitting sighting/activity reports • Description of polar bear training program(s) • Polar Bear Hazing and Deterrence Policies and Procedures
Predator and Waste Management (Computer-based course)	• Explanation of the consequences of increase predator presence and mitigation practices to limit wildlife interactions.

Document/Information Source	Pertinent Information Provided by the Document/Information Source
North Slope Environmental Field Handbook	• Summary of North Slope wildlife interaction policies and related topics such as garbage control, worker safety, and wildlife habitat protection • Summary of the occurrence and behavior of common North Slope species • Summary of approved waste management practices including use of proper wildlife-proof dumpsters
Employee Awareness Tools	• CPAI and contractor safety and tailgate meetings • Environmental alerts • Localized waste management posters and training material • CPAI HSE Training
Alaska Waste Disposal and Reuse Guide	• Summary of CPAI's approved waste management practices as detailed in the Alaska Waste Disposal and Reuse Guide

2.0 SITE DESCRIPTION

The CD3 satellite drill site pad is located near the Beaufort Sea coast and within the Colville River Delta on the North Slope of Alaska. The unmanned CD3 site has an airstrip and taxiway, access road, boat ramp, storage buildings, emergency living quarter modules, and above ground pipelines. Figure 1 shows the layout of the CD3 site and identifies many of the locations listed in Table 2.

3.0 SPECIES OF CONCERN

Polar bears and grizzly bears are the main wildlife species of concern at CD3 due to the risk of serious injury to personnel. Refer to the Grizzly Bear Plan and Polar Bear Plan for a comprehensive overview of life history, distribution, and avoidance and management procedures for interactions with these species (CPAI, 2012b, 2012c). Mitigation measures for avoiding and minimizing interactions with these predators at CD3 are listed below in Table 2.

The USFWS designated critical habitat for polar bears on December 7, 2010 (75 FR 76086). Critical habitat was defined for a large acreage of sea-ice, terrestrial denning habitat (extending 20 miles inland east of the Kavik River, and 5 miles inland between the Kavik river and Barrow), and barrier island habitat, CPAI oil and gas activities occur largely within the designated habitat area (See figure A-1 in the Polar Bear Plan), however critical habitat does not include manmade structures (e.g., houses, gravel roads, generator plants, sewage treatment plants, hotels, docks, seawalls, pipelines) and the land on which they are located existing within the boundaries of designated critical habitat on the effective date of [the] rule (December 7, 2010). Although the CD3 drill site is located within polar bear critical habitat boundaries, it is not critical habitat as it was built prior to the critical habitat designation.

Infrastructure associated with oilfield development potentially provides artificial nesting or roosting habitat for ravens and glaucous gulls and denning cover for foxes and bears. Buildings, derricks, power lines, communication towers, and other elevated structures provide perches for ravens and gulls. Foxes are especially attracted to crawl spaces, culverts, and utility corridors, while bears have been found under buildings and in pipe casings or snow berms. Elevated structures, including roads and pads, also collect drifting snow that may serve as denning habitat if not properly managed. As on other drill pads, the infrastructure on the CD3 pad may provide nesting and denning areas. Migratory birds (including gulls and ravens and their nests) are protected under the Migratory Bird Treaty Act. Refer to the Wildlife Plan (CPAI, 2012a) for further information on these wildlife species and applicable regulations. The following section provides mitigation measures specific to CD3 for reducing and preventing interactions with wildlife species.

4.0 SITE-SPECIFIC MITIGATION TECHNIQUES

Table 2 identifies site characteristics, structures, and situations unique to CD3 wherein potential wildlife encounters may occur. Also listed are mitigation measures to reduce the likelihood of an encounter.

Table 2 Wildlife Encounter Mitigation Techniques for CD3

Structure/Situation	Encounter Mitigation
CD3 Access Road/Snow Accumulation: Snow banks and drifts may accumulate at the road edges and at the junction with the CD3 pad. Snow cleared from the pad will generally be stored at the south and west corner of the pad and runway.	• Ensure timely removal of large snow banks and drifts off the pad per the Alpine Snow Removal Plan. Care will be taken to prevent snow from piling on the pad to discourage denning or hiding habitat for bears. • Manage equipment and materials on pad in a manner to limit snow drifting. • When possible, visually inspect the snow bank before plowing to ensure no wildlife is in the vicinity. • Periodically inspect the snow-accumulation area to ensure no sign of wildlife usage. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
Polar Bear Denning: Proximity to the Beaufort Sea as well as being located within the Colville River Delta provides denning habitat for polar bears near or adjacent to the CD3 pad and runway.	Annual FLIR over-flights will be conducted (December-January) within a 1 mile radius of the CD3 pad and runway to determine the location of denning polar bear(s). •
Equipment and material staging on pad: Crowded or cramped equipment or material staging may provide hiding opportunities for bears on the pad.	• Pad operators will store equipment and materials in a manner to increase line-of-sight on the pad and limit potential hiding habitat for bears when possible. Staging should be done to allow for safe passage / escape for operators as well for wildlife (i.e. bears).
Intermittent levels of work activity: Because CD3 is a road-less facility that is unmanned the majority of time, long periods of inactivity exist. This may allow for an increased chance of bear visitation or denning on or near CD3.	• Prior to landing at CD3, aircraft will circle the pad and runway to visually survey for the presence of bears. • Upon arrival to the pad, and prior to beginning other work activities, operators will conduct a pad- wide inspection for visible signs of wildlife (denning imprint, footprints, etc…) • Contact Alpine FEC or Security if bears or sign of bears are discovered.
CD3 Pipeline Support Members/Pipe-racks: Birds can use these for nesting ledges.	• Visually survey pipeline support members during general pad activities. • Enclose ledges or install bird-deterrent mechanisms (must be initiated by the EC) as needed if support members appear to be used as wildlife habitat. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
CD3 Rig Derrick[1]: Birds can use these structures for nesting sites.	• Visually survey rig derrick while general pad activities are being conducted. • Enclose structures or install bird-deterrent mechanisms (must be initiated by the FEC) as needed if support members appear to be used as wildlife habitat. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.

Table 2. Wildlife Encounter Mitigation Techniques for CD3*(continued)*

Structure/Situation	Encounter Mitigation
Tanks and Tank Containment[2]: Accumulated rainwater may be an attractant for avian and other species.	• Ensure timely removal of snow and rainwater from secondary containments. • Contact Alpine EC or Security if any sign of wildlife use is apparent.
Culverts[3]: Foxes and/or bears are attracted to these enclosures and may use them as dens.	• Visually survey the area when driving past these locations and look for signs of wildlife. • Culverts are typically blocked off prior to winter (to avoid them being plugged with ice/snow) and dug out just prior to breakup. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
Stored Pipe[4]: Open pipe can be used by mammals, especially foxes, as dens.	• Ensure the ends of unused stored pipe are blocked to the extent possible to remove the denning opportunity. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
CD3 Parking Areas: Parking areas may be located next to structures where wildlife can hide behind or underneath.	• Visually survey the surrounding area, from a vehicle, when approaching parking areas. After parking, survey the area before exiting the vehicle. • When leaving a building, scan the surrounding area before walking away from the building to the vehicle. When possible, visually inspect the building exit area from inside the building, before exiting. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.

NOTES:
FEC –Field Environmental Coordinator
FLIR – Forward Looking Infrared
[1] Drilling rig location(s) are not shown on the drawings. Rig locations will vary but when present will typically be stationed on the north side of the pad adjacent to the well houses that are shown on the drawing.
[2] Tank(s) and containment. Additional tankage may be added in the future. Locations may vary.
[3] Culverts are not shown on the drawings.
[4] Stored pipe is not shown on the drawing. Pipe may or may not be actively stored on the CD3 pad in the future.

5.0 GENERAL POLICIES AND GUIDANCE

All of the policies, requirements, and procedures described in CPAI's three main wildlife plans (Wildlife Plan, Polar Bear Plan, and the Grizzly Bear Plan) apply to workers at all CPAI oil field facilities, including the CD3 site. All wildlife encounters must be documented by Security and included in the annual report (see Section 5.7 of the Wildlife Plan). The Wildlife Plan includes the Marine Mammal Stranding Report , the Polar Bear Plan includes the Polar Bear Activity/Sighting Form and the Grizzly Bear Plan includes the Grizzly Bear Activity/Sighting Form. After completing the form, Security must then fax the form to the Environmental Coordinator (EC). A listing of all

appropriate persons who must be contacted regarding wildlife interactions is provided in Table 2 of the Wildlife Plan.

The site-specific detection and avoidance procedures that apply only to CD3 are discussed below.

5.1 CD3 - Early Wildlife Detection and Avoidance Procedures

During the course of daily activities, facility workers who are trained in Predator Management will vigilantly keep watch for signs of any wildlife nesting or denning activities. Facility workers shall draw upon their previous wildlife encounter training to successfully identify potential wildlife encounter opportunities. If a worker detects an area that may be attractive to nesting or denning animals they will take action to prevent further nesting/denning such as covering the location; removing or repositioning equipment, relocating or removing stored materials (per Table 2). If they cannot take action to prevent further nesting/denning, they shall call the Alpine FEC for further instruction (refer to Table 3). If a nest or den has already been established, facility workers shall contact the Alpine ECs, who will determine the best course of action.

Guidance in this amendment and the Wildlife Plan does not necessarily ensure compliance with all wildlife regulatory requirements. When questions regarding wildlife issues arise, facility workers should contact an Alpine FEC.

Table 3 Wildlife Interaction Contact Information for CD3

Contact	Office Phone	Other
Alpine FECs	(907) 670-4423	Pager: 719
Alpine Security	(907) 670-4003	Radio Channel: 1

6.0 REFERENCES

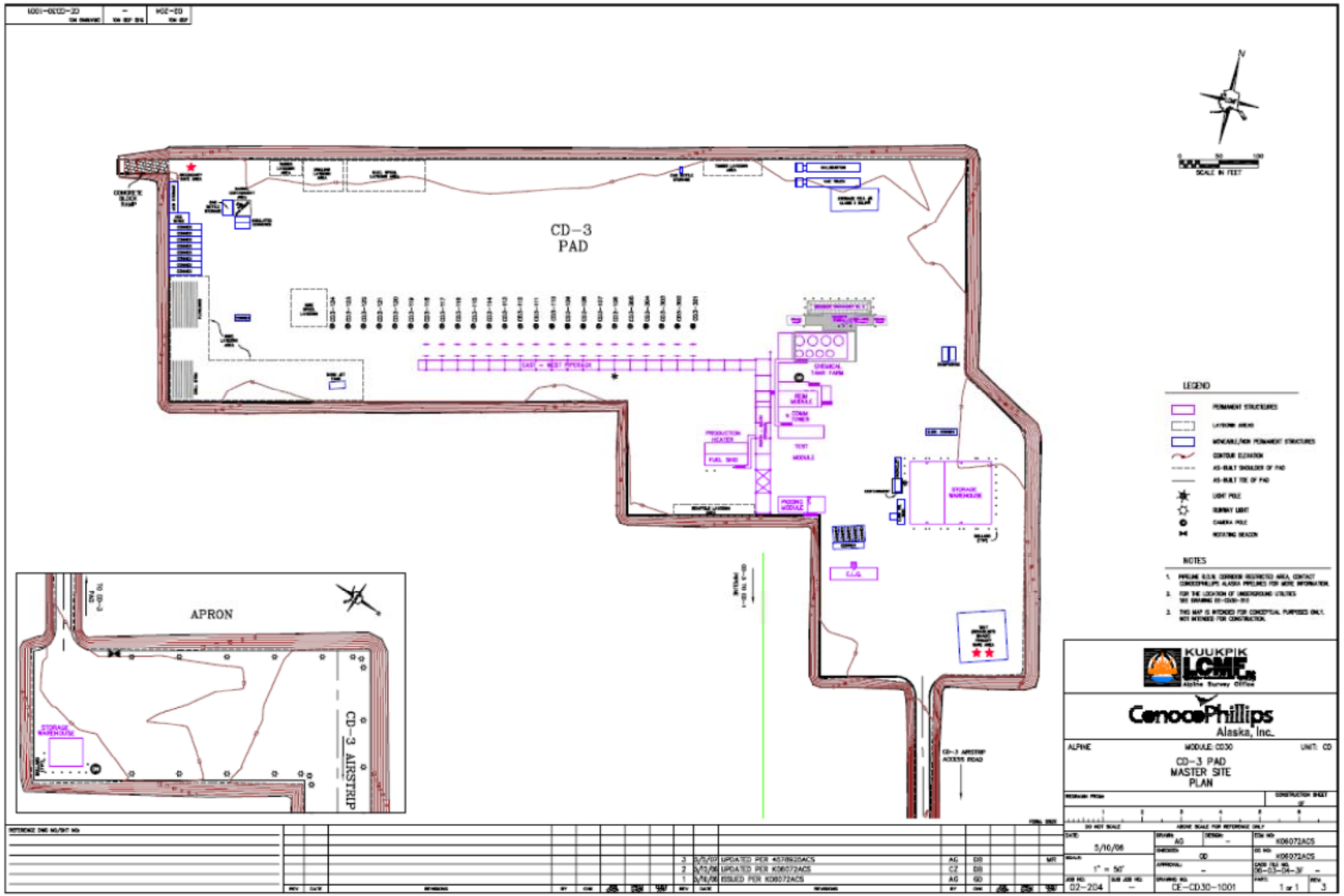
(CPAI) ConocoPhillips Alaska, Inc. 2011. Encountering Wildlife on Alaska's North Slope…What should I do now? Prepared by Oasis Environmental Inc. 825 W. 8th Avenue, Anchorage AK 99501. October.

(CPAI) ConocoPhillips Alaska, Inc. 20012a. *Wildlife Avoidance and Interaction Plan*. April. 43 pp.

(CPAI) ConocoPhillips Alaska, Inc. 2012b. *Grizzly Bear Avoidance and Human Encounter/Interaction Plan*. April. Attachment 1 to the *Wildlife Avoidance and Interaction Plan*. 17 pp.

(CPAI) ConocoPhillips Alaska, Inc. 2012c. Polar Bear Avoidance and Interaction Plan. January. pp 92. Prepared by Weston Solutions, Inc. 425 G St. Ste. 300, Anchorage, AK 99501.

Figure 1
CD3 Site Plan


CD-3
PAD
APRON
CD-3 AIRSTRIP
LEGEND
NOTES
ConocoPhillips
Alaska, Inc.
CD-3 PAD
MASTER SITE
PLAN

Amendment 2
CD4 Development

WILDLIFE AVOIDANCE

and

INTERACTION PLAN

AMENDMENT 2

CD4 Development

April 2012

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

CPAI	ConocoPhillips Alaska, Inc.
FEC	Field Environmental Compliance Coordinator
FLIR	Forward Looking Infrared Radar

1.0 PURPOSE AND SCOPE

The purpose of the CD4 Amendment to the *Wildlife Avoidance and Interaction Plan* (CPAI, 2012a) (Wildlife Plan) is to provide site-specific guidance to ConocoPhillips Alaska, Inc. (CPAI) employees and contractors working in the CD4 oilfield on the North Slope of Alaska in order to assist them in implementing appropriate, standardized procedures when wildlife is encountered.

Many wildlife species occur on Alaska's North Slope; as such, industry personnel may encounter these animals. Oilfield activities have the potential to disturb or attract wildlife species. Some species of animals that inhabit the North Slope (e.g., caribou and fox) present a risk of injury or transmission of disease to field personnel. Some groups of animals are generally protected by federal regulations, such as migratory birds (e.g. Migratory Bird Treaty Act), and marine mammals (e.g. Marine Mammal Protection Act); individual species may also be protected by the Endangered Species Act (e.g. polar bears; spectacled eiders, bowhead whales-see species-specific sections of the Wildlife Plan for all listed species). Additionally, several species (e.g., polar bear, grizzly bear, and wolverine) can pose a serious risk of injury to field personnel. General management procedures detailing avoidance and interaction guidance for grizzly bears and polar bears are discussed in the Wildlife Plan Attachment 1 *Grizzly Bear Avoidance and Human Encounter/Interaction Plan* (Grizzly Bear Plan) (CPAI, 2012b) and Attachment 2, *Polar Bear Avoidance and Interaction Plan* (Polar Bear Plan) (CPAI, 2012c). **Site-specific measures for minimizing predator and other wildlife interactions are discussed in each of the amendments to the wildlife plan; see Table 2 of this amendment.** Amendments to the Wildlife Plan have been prepared by CPAI for the purpose of discussing site-specific characteristics, structures, and situations unique to any site(s) that may not have been specifically covered in the Wildlife Plan. The amendments written to date are listed in Section 6.0 of the Wildlife Plan and are as follows: Amendment 1 – CD3 Development; Amendment 2 – CD4 Development (this amendment); Amendment 3 – CD5 Development. This CD4 Amendment provides guidance specific to CPAI's CD4 facility and will be used by CPAI employees, contractors, and wildlife responders; this amendment is not a stand-alone document and is intended for use in conjunction with CPAI's Wildlife Plan, Polar Bear Plan and Grizzly Bear Plan, as appropriate to reduce the possibility of human-wildlife encounters at the CD4 site.

The Wildlife Plan is intended for use by all CPAI personnel; this document provides procedures for reducing wildlife interactions and directs personnel to contact appropriately trained CPAI personnel (e.g. Security and Environmental Coordinators) in the event of a wildlife interaction or potential interaction. *Encountering Wildlife on Alaska's North Slope* (CPAI, 2011) was developed as a companion guide to the Wildlife Plan and is intended for use by appropriately trained CPAI personnel (e.g. Security and Environmental Coordinators); as such, this document presents more detailed procedures for managing wildlife interactions as well as more detailed contact information for federal and state agencies.

The scope of the CD4 Amendment includes discussion of: a description of the CD4 site (Section 2.0), discussion of the site-specific species of concern (Section 3.0), site-specific mitigation techniques (Section 4.0), and general policies and guidance (Section 5.0). CPAI employees, contractors, and wildlife responders must refer to the Wildlife Plan for the following information which is not included in this amendment: the wildlife-related training requirements for all CPAI employees, contractors, and visitors; roles and responsibilities of key personnel; general policies and guidance; and the species-specific policies, interaction guidance, and mitigation measures.

This amendment serves to facilitate compliance with existing wildlife regulations and permit conditions and is part of CPAI's overall wildlife management program. Table 1 lists the documents and information sources included in CPAI's wildlife management program.

Table 1 Wildlife Management Program Documents

Document/Information Source	Pertinent Information Provided by the Document/Information Source
Wildlife Avoidance and Interaction Plan	• General wildlife interaction and avoidance techniques • Species-specific interaction and avoidance techniques • Proper management of food waste to minimize attraction of wildlife • Guidance for complying with wildlife regulations and permit conditions • Procedures for submitting wildlife interaction reports
Encountering Wildlife on Alaska's North Slope	• Field guide for CPAI Environmental Coordinators and Security personnel with in-depth, detailed information on managing and reporting wildlife encounters; this document is a companion to the Wildlife Avoidance and Interaction Plan
Attachment 1: Grizzly Bear Avoidance and Human Encounter/Interaction Plan	• Grizzly bear avoidance and detection techniques • Background and history of grizzly bears on the North Slope • Grizzly bear training program • Guidance for complying with wildlife regulations and permit conditions • Procedures for submitting interaction reports
Attachment 2: Polar Bear Avoidance and Interaction Plan	• Polar bear detection and avoidance techniques • Background and history of polar bears on the North Slope • Guidance for complying with federal polar bear regulations and specific permit conditions • Procedures for submitting sighting/activity reports • Description of polar bear training program(s) • Polar Bear Hazing and Deterrence Policies and Procedures
Predator and Waste Management (Computer-based course)	• Explanation of the consequences of increase predator presence and mitigation practices to limit wildlife interactions.

Document/Information Source	Pertinent Information Provided by the Document/Information Source
North Slope Environmental Field Handbook	• Summary of North Slope wildlife interaction policies and related topics such as garbage control, worker safety, and wildlife habitat protection • Summary of the occurrence and behavior of common North Slope species • Summary of approved waste management practices including use of proper wildlife-proof dumpsters
Employee Awareness Tools	• CPAI and contractor safety and tailgate meetings • Environmental alerts • Localized waste management posters and training material • CPAI HSE Training
Alaska Waste Disposal and Reuse Guide	• Summary of CPAI's approved waste management practices as detailed in the Alaska Waste Disposal and Reuse Guide

2.0 SITE DESCRIPTION

The CD4 satellite drill site pad is located near the Beaufort Sea coast and within the Colville River Delta on the North Slope of Alaska. The unmanned CD4 site is connected to Alpine by gravel road and is serviced and maintained by crews based at Alpine. Figure 1 shows the layout of the CD4 pad and facilities, and identifies many of the locations listed in Table 2.

3.0 SPECIES OF CONCERN

Polar bears and grizzly bears are the main wildlife species of concern at CD4 due to the risk of serious injury to personnel. Refer to the Grizzly Bear Plan and Polar Bear Plan for a comprehensive overview of life history, distribution, and avoidance and management procedures for interactions with these species (CPAI, 2012b, 2012c). Mitigation measures for avoiding and minimizing interactions with these predators at CD4 are listed below in Table 2.

The USFWS designated critical habitat for polar bears on December 7, 2010 (75 FR 76086). Critical habitat was defined for a large acreage of sea-ice, terrestrial denning habitat (extending 20 miles inland east of the Kavik River, and 5 miles inland between the Kavik river and Barrow), and barrier island habitat, CPAI oil and gas activities occur largely within the designated habitat area (See figure A-1 in the Polar Bear Plan), however critical habitat does not include manmade structures (e.g., houses, gravel roads, generator plants, sewage treatment plants, hotels, docks, seawalls, pipelines) and the land on which they are located existing within the boundaries of designated critical habitat on the effective date of [the] rule (December 7, 2010). Although the CD4 drill site is located within polar bear critical habitat boundaries, it is not critical habitat as it was built prior to the critical habitat designation.

Infrastructure associated with oilfield development potentially provides artificial nesting or roosting habitat for ravens and glaucous gulls and denning cover for foxes and bears. Buildings, derricks, power lines, communication towers, and other elevated structures provide perches for ravens and gulls. Foxes are especially attracted to crawl spaces, culverts, and utility corridors, while bears have been found under buildings and in pipe casings or snow berms. Elevated structures, including roads and pads, also collect drifting snow that may serve as denning habitat if not properly managed. As on other drill pads, the infrastructure on the CD4 pad may provide nesting and denning areas. Migratory birds (including gulls and ravens and their nests) are protected under the Migratory Bird Treaty Act. Refer to the Wildlife Plan (CPAI, 2012a) for further information on these wildlife species and applicable regulations. The following section provides mitigation measures specific to CD4 for reducing and preventing interactions with wildlife species.

4.0 SITE-SPECIFIC MITIGATION TECHNIQUES

Table 2 identifies site characteristics, structures, and situations unique to CD4 where potential wildlife encounters may occur. Also listed are mitigation measures to reduce the likelihood of an encounter.

Table 2 Wildlife Encounter Mitigation Techniques for CD4

Structure/Situation	Encounter Mitigation
CD4 Access Road/Snow Accumulation: Snow banks and drifts may accumulate at the road edges and at the junction with the CD4 pad.	• Ensure timely removal of large snow banks and drifts off the pad as per the Alpine Snow Removal Plan. Care will be taken to prevent snow from piling on the pad to discourage denning or hiding habitat for bears. Manage equipment and materials on pad in a manner to limit snow drifting. • When possible, visually inspect the snow bank before plowing to ensure no wildlife is in the vicinity. • Periodically inspect the snow-accumulation area to ensure no sign of wildlife usage. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
Polar Bear Denning: Proximity to the Beaufort Sea as well as being located within the Colville River Delta provides denning habitat for polar bears near or adjacent to the CD4 pad.	Annual FLIR over-flights will be conducted (December-January) within a 1 mile radius of the CD3 pad and runway to determine the location of denning polar bear(s). •
Equipment and material staging on pad: Crowded or cramped equipment or material staging may provide hiding opportunities for bears on the pad.	• Pad operators will store equipment and materials in a manner to increase line-of-sight on the pad and limit potential hiding habitat for bears when possible. Staging should be done to allow for safe passage / escape for operators as well for wildlife (i.e. bears).
Intermittent levels of work activity: Because CD4 will be unmanned for some of the time, periods of inactivity will exist. This may allow for an increased chance of bear visitation or denning on or near CD4.	• Upon arrival to the pad, and prior to beginning other work activities, operators will conduct a pad wide inspection for visible signs of wildlife (denning imprint, footprints, etc…) • Contact Alpine FEC or Security if bears or bear sign are discovered.
CD4 Pipeline Support Members/Pipe-racks: Birds can use these for nesting ledges.	• Visually survey pipeline support members during general pad activities. • Enclose ledges or install bird-deterrent mechanisms (must be initiated by the FEC) as needed if support members appear to be used as wildlife habitat. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
CD4 Rig Derrick[1]: Birds can use these structures for nesting sites.	• Visually survey rig derrick while general pad activities are being conducted. • Enclose structures or install bird-deterrent mechanisms (must be initiated by the FEC) as needed if support members appear to be used as wildlife habitat. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.

Table 2 Wildlife Encounter Mitigation Techniques for CD4 *(continued)*

Structure/Situation	Encounter Mitigation
Tanks and Tank Containment[2]: Accumulated rainwater may be an attractant for avian and other species.	• Ensure timely removal of snow and rainwater from secondary containments. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
Culverts[3]: Foxes and/or bears are attracted to these enclosures and may use them as dens.	• Visually survey the area when driving past these locations and look for signs of wildlife. • Culverts are typically blocked off prior to winter (to avoid them being plugged with ice/snow) and dug out just prior to breakup. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
Stored Pipe[4]: Open pipe can be used by mammals, especially foxes, as dens.	• Ensure the ends of unused stored pipe are blocked to the extent possible to remove the denning opportunity. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
CD4 Parking Areas: Parking areas may be located next to structures where wildlife can hide behind or underneath.	• Visually survey the surrounding area, from a vehicle, when approaching parking areas. After parking, survey the area before exiting the vehicle. • When leaving a building, scan the surrounding area before walking away from the building to the vehicle. When possible, visually inspect the building exit area from inside the building, before exiting. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.

NOTES:
FEC – Field Environmental Coordinator
FLIR – Forward Looking Infrared
[1] Drilling rig location(s) are not shown on the drawings. Rig locations will vary but when present will typically be stationed on the north side of the pad adjacent to the well houses that are shown on the drawing.
[2] Tank(s) and containment. Additional tankage may be added in the future. Locations may vary.
[3] Culverts are not shown on the drawings. Culverts are located along the road from the CD4 pad
[4] Stored pipe is not shown on the drawing. Pipe may or may not be actively stored on the CD4 pad in the future.

5.0 GENERAL POLICIES AND GUIDANCE

All of the policies, requirements, and procedures described in CPAI's three main wildlife plans (Wildlife Plan, Polar Bear Plan, and the Grizzly Bear Plan) apply to workers at all CPAI oil field facilities, including the CD4 site. All wildlife encounters must be documented by Security and included in the annual report (see Section 5.7 of the Wildlife Plan). The Wildlife Plan includes the Marine Mammal Stranding Report , the Polar Bear Plan includes the Polar Bear Activity/Sighting Form and the Grizzly Bear Plan includes the Grizzly Bear Activity/Sighting Form. After completing the form, Security must then fax the form to the Field Environmental Coordinator (FEC). A listing of all appropriate persons who must be contacted regarding wildlife interactions is provided in Table 2 of the Wildlife Plan.

The site-specific detection and avoidance procedures that apply only to CD4 are discussed below.

5.1 CD4 - Early Wildlife Detection and Avoidance Procedures

During the course of daily activities, facility workers who are trained in Predator Management will vigilantly keep watch for signs of any wildlife nesting or denning activities. Facility workers shall draw upon their previous wildlife encounter training to successfully identify potential wildlife encounter opportunities. If a worker detects an area that may be attractive to nesting or denning animals they will take action to prevent further nesting/denning such as covering the location; removing or repositioning equipment, relocating or removing stored materials (per Table 2). If they cannot take action to prevent further nesting/denning, they shall call the Alpine FEC for further instruction (refer to Table 3). If a nest or den has already been established, facility workers shall contact the Alpine FECs, who will determine the best course of action.

Guidance in this amendment and the Wildlife Plan does not necessarily ensure compliance with all wildlife regulatory requirements. When questions regarding wildlife issues arise, facility workers should contact an Alpine FEC.

Table 3 Wildlife Interaction Contact Information for CD4

Contact	Office Phone	Other
Alpine FECs	(907) 670-4423	Pager: 719
Alpine Security	(907) 670-4003	Radio Channel: 1

6.0 REFERENCES

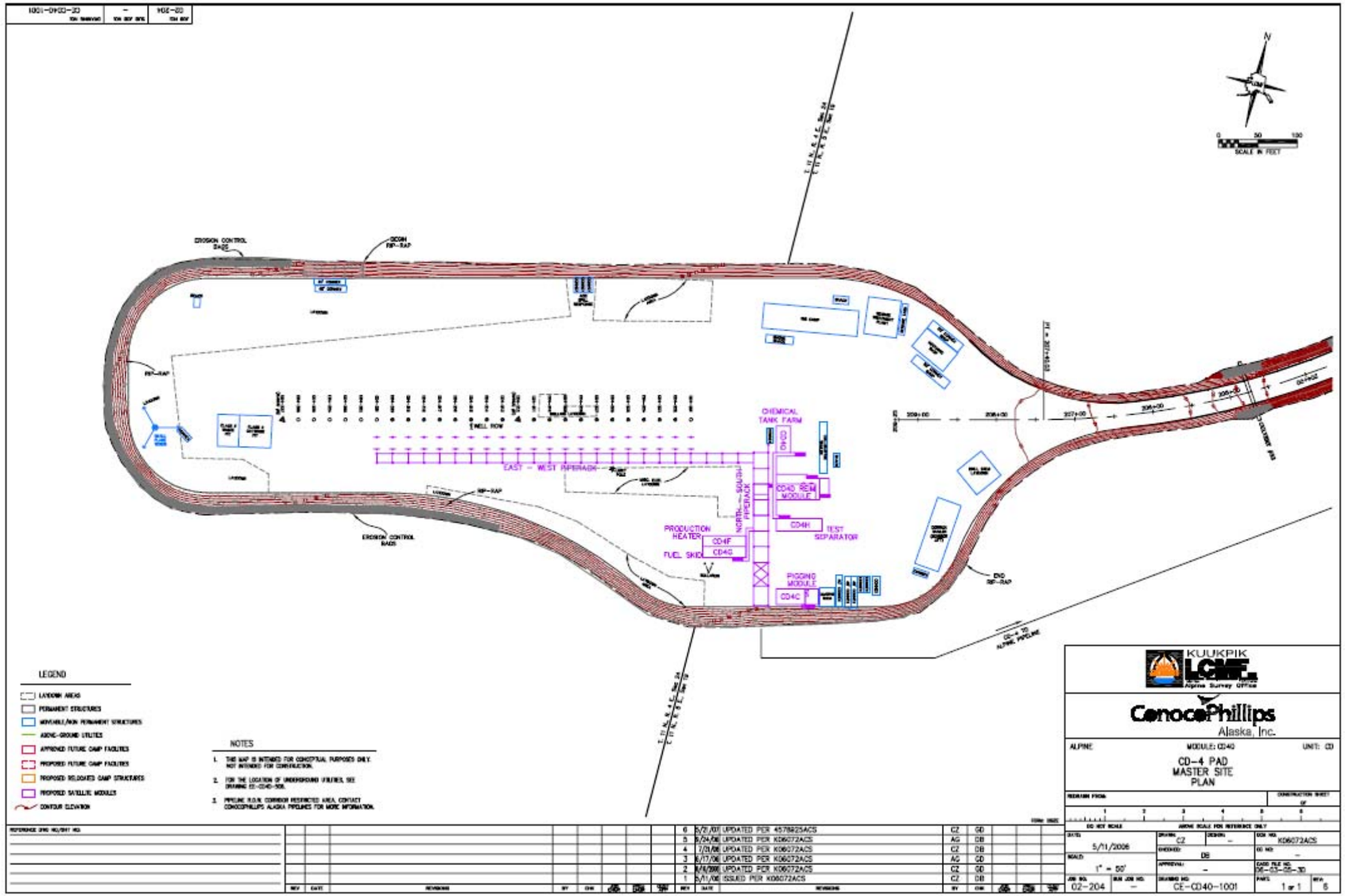
(CPAI) ConocoPhillips Alaska, Inc. 2011. Encountering Wildlife on Alaska's North Slope…What should I do now? Prepared by Oasis Environmental Inc. 825 W. 8th Avenue, Anchorage AK 99501. October.

(CPAI) ConocoPhillips Alaska, Inc. 20012a. *Wildlife Avoidance and Interaction Plan*. April. 43 pp.

(CPAI) ConocoPhillips Alaska, Inc. 2012b. *Grizzly Bear Avoidance and Human Encounter/Interaction Plan*. April. Attachment 1 to the *Wildlife Avoidance and Interaction Plan*. 17 pp.

(CPAI) ConocoPhillips Alaska, Inc. 2012c. Polar Bear Avoidance and Interaction Plan. January. pp 92. Prepared by Weston Solutions, Inc. 425 G St. Ste. 300, Anchorage, AK 99501.

Figure 1
CD4 Site Plan


N
0 50 100
SCALE IN FEET
EROSION CONTROL BAGS
GRAVEL RIP-RAP
RIP-RAP
CHEMICAL TANK FARM
CH1D
EAST - WEST PIPERACK
CD4G REM MODULE
NORTH - SOUTH PIPERACK
CD4H TEST SEPARATOR
PRODUCTION HEATER
CD4F
FUEL SKID
CD4G
PIGGING MODULE
CD4C
END RIP-RAP
CD-4 TO ALPINE PIPELINE
LEGEND
LAYDOWN AREAS
PERMANENT STRUCTURES
MOVABLE/NON PERMANENT STRUCTURES
ABOVE-GROUND UTILITIES
APPROVED FUTURE CAMP FACILITIES
PROPOSED FUTURE CAMP FACILITIES
PROPOSED RELOCATED CAMP STRUCTURES
PROPOSED SATELLITE MODULES
CONTOUR ELEVATION
NOTES
1. THIS MAP IS INTENDED FOR CONCEPTUAL PURPOSES ONLY. NOT INTENDED FOR CONSTRUCTION.
2. FOR THE LOCATION OF UNDERGROUND UTILITIES, SEE DRAWING CE-CD40-500.
3. PIPELINE R.O.W. CORRIDOR RESTRICTED AREA, CONTACT CONOCOPHILLIPS ALASKA PIPELINES FOR MORE INFORMATION.
6 5/29/07 UPDATED PER 4578925ACS CZ GD
5 5/24/06 UPDATED PER KD6072ACS AG DB
4 7/31/06 UPDATED PER KD6072ACS CZ DB
3 6/17/06 UPDATED PER KD6072ACS AG GD
2 4/4/2006 UPDATED PER KD6072ACS CZ GD
1 5/1/06 ISSUED PER KD6072ACS CZ DB
KUUKPIK LCMF Joint Venture Alpine Survey Office
ConocoPhillips Alaska, Inc.
ALPINE MODULE: CD4G UNIT: CD
CD-4 PAD MASTER SITE PLAN
DO NOT SCALE
5/11/2006
1" = 50'
02-204
CE-CD40-1001
KD6072ACS
1 of 1
5

Amendment 3
CD5 Development

WILDLIFE AVOIDANCE

and

INTERACTION PLAN

AMENDMENT 3

CD5 Development

April 2012

TABLE OF CONTENTS

LIST OF TABLES

Table **Page**

LIST OF FIGURES

Figure

ACRONYMS

CPAI	ConocoPhillips Alaska, Inc.
FEC	Field Environmental Compliance Coordinator
FLIR	Forward Looking Infrared Radar

1.0 PURPOSE AND SCOPE

The purpose of the CD5 Amendment to the *Wildlife Avoidance and Interaction Plan* (CPAI, 2012a) (Wildlife Plan) is to provide site-specific guidance to ConocoPhillips Alaska, Inc. (CPAI) employees and contractors working in the CD5 oilfield on the North Slope of Alaska in order to assist them in implementing appropriate, standardized procedures when wildlife is encountered.

Many wildlife species occur on Alaska's North Slope; as such, industry personnel may encounter these animals. Oilfield activities have the potential to disturb or attract wildlife species. Some species of animals that inhabit the North Slope (e.g., caribou and fox) present a risk of injury or transmission of disease to field personnel. Some groups of animals are generally protected by federal regulations, such as migratory birds (e.g. Migratory Bird Treaty Act), and marine mammals (e.g. Marine Mammal Protection Act); individual species may also be protected by the Endangered Species Act (e.g. polar bears; spectacled eiders, bowhead whales-see species-specific sections of the Wildlife Plan for all listed species). Additionally, several species (e.g., polar bear, grizzly bear, and wolverine) can pose a serious risk of injury to field personnel. General management procedures detailing avoidance and interaction guidance for grizzly bears and polar bears are discussed in the Wildlife Plan Attachment 1 *Grizzly Bear Avoidance and Human Encounter/Interaction Plan* (Grizzly Bear Plan) (CPAI, 2012b) and Attachment 2, *Polar Bear Avoidance and Interaction Plan* (Polar Bear Plan) (CPAI, 2012c). **Site-specific measures for minimizing predator and other wildlife interactions are discussed in each of the amendments to the Wildlife Plan; see Table 2 of this amendment.** Amendments to the Wildlife Plan have been prepared by CPAI for the purpose of discussing site-specific characteristics, structures, and situations unique to any site(s) that may not have been specifically covered in the Wildlife Plan. The amendments written to date are listed in Section 6.0 of the Wildlife Plan and are as follows: Amendment 1 – CD3 Development; Amendment 2 – CD4 Development; Amendment 3 – CD5 Development (this amendment). This CD5 Amendment provides guidance specific to CPAI's CD4 facility and will be used by CPAI employees, contractors, and wildlife responders; this amendment is not a stand-alone document and is intended for use in conjunction with CPAI's Wildlife Plan, Polar Bear Plan and Grizzly Bear Plan, as appropriate to reduce the possibility of human-wildlife encounters at the CD5 site.

The Wildlife Plan is intended for use by all CPAI personnel; this document provides procedures for reducing wildlife interactions and directs personnel to contact appropriately trained CPAI personnel (e.g. Security and Environmental Coordinators) in the event of a wildlife interaction or potential interaction. *Encountering Wildlife on Alaska's North Slope* (CPAI, 2011) was developed as a companion guide to the Wildlife Plan and is intended for use by appropriately trained CPAI personnel (e.g. Security and Environmental Coordinators); as such, this document presents more detailed procedures for managing wildlife interactions as well as more detailed contact information for federal and state agencies.

The scope of the CD5 Amendment includes discussion of: a description of the CD5 site (Section 2.0), discussion of the site-specific species of concern (Section 3.0), site-specific mitigation techniques (Section 4.0), and general policies and guidance (Section 5.0). CPAI employees, contractors, and wildlife responders must refer to the Wildlife Plan for the following information which is not included in this amendment: the wildlife-related training requirements for all CPAI employees, contractors, and visitors; roles and responsibilities of key personnel; general policies and guidance; and the species-specific policies, interaction guidance, and mitigation measures.

This amendment serves to facilitate compliance with existing wildlife regulations and permit conditions and is part of CPAI's overall wildlife management program. Table 1 lists the documents and information sources included in CPAI's wildlife management program.

Table 1 Wildlife Management Program Documents

Document/Information Source	Pertinent Information Provided by the Document/Information Source
Wildlife Avoidance and Interaction Plan	• General wildlife interaction and avoidance techniques • Species-specific interaction and avoidance techniques • Proper management of food waste to minimize attraction of wildlife • Guidance for complying with wildlife regulations and permit conditions • Procedures for submitting wildlife interaction reports
Encountering Wildlife on Alaska's North Slope	• Field guide for CPAI Environmental Coordinators and Security personnel with in-depth, detailed information on managing and reporting wildlife encounters; this document is a companion to the Wildlife Avoidance and Interaction Plan
Attachment 1: Grizzly Bear Avoidance and Human Encounter/Interaction Plan	• Grizzly bear avoidance and detection techniques • Background and history of grizzly bears on the North Slope • Grizzly bear training program • Guidance for complying with wildlife regulations and permit conditions • Procedures for submitting interaction reports
Attachment 2: Polar Bear Avoidance and Interaction Plan	• Polar bear detection and avoidance techniques • Background and history of polar bears on the North Slope • Guidance for complying with federal polar bear regulations and specific permit conditions • Procedures for submitting sighting/activity reports • Description of polar bear training program(s) • Polar Bear Hazing and Deterrence Policies and Procedures
Predator and Waste Management (Computer-based course)	• Explanation of the consequences of increase predator presence and mitigation practices to limit wildlife interactions.
North Slope Environmental Field Handbook	• Summary of North Slope wildlife interaction policies and related topics such as garbage control, worker safety, and wildlife habitat protection • Summary of the occurrence and behavior of common North Slope species • Summary of approved waste management practices including use of proper wildlife-proof dumpsters
Employee Awareness Tools	• CPAI and contractor safety and tailgate meetings • Environmental alerts • Localized waste management posters and training material • CPAI HSE Training
Alaska Waste Disposal and Reuse Guide	• Summary of CPAI's approved waste management practices as detailed in the Alaska Waste Disposal and Reuse Guide

2.0 SITE DESCRIPTION

The CD5 satellite pad is located west of the Colville River Delta and existing CD4 and Alpine facilities on the North Slope of Alaska. The proposed CD5 facilities include a gravel pad and access road, four bridges or waterway crossings, above ground pipelines, storage buildings, and emergency living quarter modules. The access road from existing Alpine gravel roads is approximately 6 miles. Figure 1 shows the layout of the CD5 site and identifies many of the locations listed in Table 2.

3.0 SPECIES OF CONCERN

Polar bears and grizzly bears are the main wildlife species of concern at CD5 due to the risk of serious injury to personnel. Refer to the Grizzly Bear Plan and Polar Bear Plan for a comprehensive overview of life history, distribution, and avoidance and management procedures for interactions with these species (CPAI, 2012b, 2012c). Mitigation measures for avoiding and minimizing interactions with these predators at CD5 are listed below in Table 2.

The USFWS designated critical habitat for polar bears on December 7, 2010 (75 FR 76086). Critical habitat was defined for a large acreage of sea-ice, terrestrial denning habitat (extending 20 miles inland east of the Kavik River, and 5 miles inland between the Kavik river and Barrow), and barrier island habitat, CPAI oil and gas activities occur largely within the designated habitat area (See figure A-1 in the Polar Bear Plan), however critical habitat does not include manmade structures (e.g., houses, gravel roads, generator plants, sewage treatment plants, hotels, docks, seawalls, pipelines) and the land on which they are located existing within the boundaries of designated critical habitat on the effective date of [the] rule (December 7, 2010). The CD5 drill site is located within polar bear critical habitat boundaries; please see the Polar Bear Plan (CPAI, 2012c) for a detailed discussion on polar bear critical habitat.

Infrastructure associated with oilfield development potentially provides artificial nesting or roosting habitat for ravens and glaucous gulls and denning cover for foxes and bears. Buildings, derricks, power lines, communication towers, and other elevated structures provide perches for ravens and gulls. Foxes are especially attracted to crawl spaces, culverts, and utility corridors, while bears have been found under buildings and in pipe casings or snow berms. Elevated structures, including roads and pads, also collect drifting snow that may serve as denning habitat if not properly managed. As on other drill pads, the infrastructure on the CD5 pad may provide nesting and denning areas. Migratory birds (including gulls and ravens and their nests) are protected under the Migratory Bird Treaty Act. Refer to the Wildlife Plan (CPAI, 2012a) for further information on these wildlife species and applicable regulations. The following section provides mitigation measures specific to CD5 for reducing and preventing interactions with wildlife species.

4.0 SITE SPECIFIC MITIGATION TECHNIQUES

Table 2 identifies site characteristics, structures, and situations unique to CD5 wherein potential wildlife encounters may occur. Also listed are mitigation measures to reduce the likelihood of an encounter.

Table 2 Wildlife Encounter Mitigation Techniques for CD-5

Structure/Situation	Encounter Mitigation
CD5 Access Road/Snow Accumulation: Snow banks and drifts may accumulate at the road edges and at the junction with the CD5 pad. Snow cleared from the pad will be stored at the Southwest corner of the pad.	• Ensure timely removal of large snow banks and drifts off the pad as per the Alpine Snow Removal Plan. Care will be taken to prevent snow from piling on the pad to discourage denning or hiding habitat for bears. Manage equipment and materials on pad in a manner to limit snow drifting. • When possible, visually inspect the snow bank before plowing to ensure no wildlife is in the vicinity. • Periodically inspect the snow-accumulation area to ensure no sign of wildlife usage. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
Polar Bear Denning: Proximity to the Beaufort Sea as well as being located near the Colville River Delta provides denning habitat for polar bears near or adjacent to the CD5 pad.	Annual FLIR over-flights will be conducted (December-January) within a 1 mile radius of the CD5 Pad and access road to determine the location of denning polar bear(s). •
CD5 Pipeline Support Members/Pipe-racks: Can be used by birds for nesting ledges.	• Visually survey pipeline support members as general pad activities are being conducted. • Enclose ledges or install bird-deterrent mechanisms (must be initiated by FEC) as needed if support members appear to be used as wildlife habitat. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
CD5 Communication Tower and Rig Derricks[1]: These structures can be used by birds for nesting sites.	• Visually survey rig derricks support members as general pad activities are being conducted. • Enclose structures or install bird-deterrent mechanisms (must be initiated by FEC) as needed if support members appear to be used as wildlife habitat. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
Tanks and Tank Containment[2]: Accumulated rainwater may be an attractant for avian and other species.	• Ensure timely removal of snow and rainwater from secondary containments. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
Culverts and Utility Corridors[3]: Foxes are attracted to these enclosures and may use them as dens.	• Visually survey the area when driving past these locations and look for signs of wildlife. • Culverts are typically blocked off prior to winter (to avoid them being plugged with ice/snow) and dug out just prior to

Structure/Situation	Encounter Mitigation
	breakup. • Enclose utility corridors when possible. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
Stored Pipe[4]: Open pipe can be used by mammals as dens.	• Ensure the ends of unused stored pipe have some type of cap to remove the denning opportunity. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
CD5 Parking Areas[5]: Parking areas may be located next to structures where wildlife can hide behind or underneath.	• Visually survey the surrounding area, from vehicle, when approaching parking areas; after parking, survey the area before exiting the vehicle. • When leaving a building, scan the surrounding area before walking away from the building to the vehicle; when possible, visually inspect the building exit area from inside the building, before exiting. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.
CD5 Building Clearance-Spaces[6] Wildlife may den, rest, or hide under elevated buildings and walk-ways.	• Visually inspect beneath buildings as general pad activities are being conducted, and when approaching buildings in vehicles. • Use skirting to enclose open spaces beneath raised buildings to deter wildlife from denning, resting, or hiding. • Contact Alpine FEC or Security if any sign of wildlife use is apparent.

FEC- Field Environmental Coordinator
FLIR- Forward Looking Infrared
[1] Drilling rig location(s) not shown on drawing – rig locations will vary but when present will typically be stationed on the North side of the pad adjacent to the well houses that are shown on the drawing.
[2] Tank(s) and containment not shown on drawing – tanks may be added in the future, locations may vary.
[3] Culverts and utility corridors not shown on drawing – a culvert battery is located along the CD5 road, 7200 feet from the pad.
[4] Stored pipe is not shown on the drawing - Pipe may or may not be actively stored on the CD-5 pad in the future.
[5] Parking areas are yet to be defined but will generally be located near building man-doors (e.g., between buildings 1 and 4; north of building 6; south of buildings 2 and 3)
[6] The clearance spaces of all elevated buildings on CD5 are sealed with a soffit panel; clearance spaces are present under open, grated structures and pipe-racks.

5.0 GENERAL POLICIES AND GUIDANCE

All of the policies, requirements, and procedures described in CPAI's three main wildlife plans (Wildlife Plan, Polar Bear Plan, and the Grizzly Bear Plan) apply to workers at all CPAI oil field facilities, including the CD5 site. All wildlife encounters must be documented by Security and included in the annual report (see Section 5.7 of the Wildlife Plan). The Wildlife Plan includes the Marine Mammal Stranding Report , the Polar Bear Plan includes the Polar Bear Activity/Sighting Form and the Grizzly Bear Plan includes the Grizzly Bear Activity/Sighting Form. After completing the form, Security must then fax the form to the FEC. A listing of all appropriate persons who must be contacted regarding wildlife interactions is provided in Table 2 of the Wildlife Plan.

The site-specific detection and avoidance procedures that apply only to CD5 are discussed below.

5.1 CD5 - Early Wildlife Detection and Avoidance Procedures

During the course of daily activities, facility workers who are trained in Predator Management will vigilantly keep watch for signs of any wildlife nesting or denning activities. Facility workers shall draw upon their previous wildlife encounter training to successfully identify potential wildlife encounter opportunities. If a worker detects an area that may be attractive to nesting or denning animals they will take action to prevent further nesting/denning such as covering the location; removing or repositioning equipment, relocating or removing stored materials (per Table 2). If they cannot take action to prevent further nesting/denning, they will call the Alpine FEC for further instruction (refer to Table 3). If a nest or den has already been established, facility workers shall contact the Alpine FECs, who will determine the best course of action.
Guidance in this amendment and the Wildlife Plan does not necessarily ensure compliance with all wildlife regulatory requirements. When questions regarding wildlife issues arise, facility workers should contact an Alpine FEC.

Table 3 Wildlife Interaction Contact Information for CD5

Contact	Office Phone	Other
Alpine FECs	(907) 670-4423	Pager: 719
Alpine Security	(907) 670-4003	Radio Channel: 1

6.0 REFERENCES

(CPAI) ConocoPhillips Alaska, Inc. 2011. Encountering Wildlife on Alaska's North Slope…What should I do now? Prepared by Oasis Environmental Inc. 825 W. 8th Avenue, Anchorage AK 99501. October.

(CPAI) ConocoPhillips Alaska, Inc. 20012a. *Wildlife Avoidance and Interaction Plan*. April. 43 pp.

(CPAI) ConocoPhillips Alaska, Inc. 2012b. *Grizzly Bear Avoidance and Human Encounter/Interaction Plan*. April. Attachment 1 to the *Wildlife Avoidance and Interaction Plan*. 17 pp.

(CPAI) ConocoPhillips Alaska, Inc. 2012c. Polar Bear Avoidance and Interaction Plan. January. pp 92. Prepared by Weston Solutions, Inc. 425 G St. Ste. 300, Anchorage, AK 99501.

Drawing 1 – CD5 Pad Layout

Drawing 2 – CD5 Facilities Layout

Attachment 1
Grizzly Bear Avoidance
and
Human Encounter/Interaction Plan

ConocoPhillips

GRIZZLY BEAR AVOIDANCE

and

HUMAN ENCOUNTER/INTERACTION PLAN

April 2012

TABLE OF CONTENTS

APPENDICES

ACRONYMS

ADF&G	Alaska Department of Fish and Game
CPAI	ConocoPhillips Alaska, Inc.
DLP	Defense of Life and Property
FEC	Field Environmental Compliance Coordinator

1.0 PURPOSE AND SCOPE

The purpose of the *Grizzly Bear Avoidance and Human Encounter/Interaction Plan* (Plan) is to provide guidance to ConocoPhillips Alaska, Inc. (CPAI) employees and contractors working at North Slope facilities where grizzly bears (*Ursus arctos horribilis*) or their dens may be encountered. Oilfield activities have the potential to disturb wildlife species during important life cycle events. To minimize disturbance, CPAI has developed a multitude of planning documents, Standard Operating Procedures, and training requirements for all personnel. The grizzly bear presents a potential serious risk of injury to field personnel. To protect the safety of personnel and grizzly bears, North Slope workers should avoid encounters with grizzly bears and their dens whenever possible. Should such an encounter occur during the performance of work, this Plan provides guidance to enhance personnel safety and minimize the effect of the disturbance.

The Plan includes the following information:

- Training requirements for all CPAI employees and contract personnel working on the North Slope (Section 2.0).
- Grizzly bear distribution, takes and hunting on the North Slope (Section 3.0).
- Roles and responsibilities of key personnel (Section 4.0).
- Regulations, Policies and Permit Stipulations (Section 5.0)
- Grizzly bear early detection and avoidance procedures (Section 6.0).
- Description of the grizzly bear alert system, deterrence, and reporting method (Section 7.0).

This Grizzly Bear Plan serves to facilitate compliance with existing grizzly bear regulations and permit conditions and is part of CPAI's overall wildlife management program. This Grizzly Bear Plan has been prepared as a separate attachment to CPAI's *Wildlife Avoidance and Interaction Plan* (CPAI 2012) (Wildlife Plan) because of the need for emphasis on avoidance and detection measures of grizzly bears. Amendments to Wildlife Plan will be written as needed for new developments with site-specific mitigation measures.

The Wildlife Plan is intended for use by all CPAI personnel; this document provides procedures for reducing wildlife interactions and directs personnel to contact appropriately trained CPAI personnel (e.g. Security and Environmental Coordinators) in the event of a wildlife interaction or potential interaction. *Encountering Wildlife on Alaska's North Slope* (CPAI, 2011a) was developed as a companion guide to the Wildlife Plan and is intended for use by appropriately trained CPAI personnel (e.g. Security and Environmental Coordinators); as such, this document presents more detailed procedures for managing wildlife interactions as well as more detailed contact information for federal and state agencies.

The documents and information sources that comprise CPAI's wildlife management program are listed in Table 1 of the Wildlife Plan. All of this information, with the exception of the polar bear training, also pertains to grizzly bears. Refer to the Wildlife Plan for this information.

2.0 TRAINING REQUIREMENTS

All CPAI and contractor personnel working in the field will receive an environmental orientation before beginning work tasks in project areas (or annually if on permanent North Slope assignment). A major feature of the orientation will consist of viewing the Alaska Department of Fish and Game (ADF&G) videos "Staying Safe in Grizzly Bear Country" and "Working Safe in Bear Country". CPAI personnel are also required to take an on-line course entitled "Predator and Waste Management". Site-specific instructions will also be given to the project team.

Field Environmental Compliance staff regularly attends CPAI and contractor safety meetings, and the CPAI Drilling Department's pre-spud meetings to reinforce the importance of proper food management to deter attraction of predator species, including grizzly bears, to CPAI facilities.

Annual general awareness training will be given to all personnel in the oilfields using environmental alerts and updates, safety bulletins, safety meetings, and other methods as appropriate. Selected personnel are required to attend a Deterrence Training Program approved by the ADF&G. The class consists of 1) classroom information covering grizzly bear behavior, biology, and hazing techniques; and 2) hands-on hazing and deterrence techniques using actual equipment.

3.0 GRIZZLY BEAR DISTRIBUTION, TAKES, AND HUNTING

3.1 Distribution of Grizzly Bears on the North Slope

Grizzly bears, (also known as brown bears in coastal areas), are typically found near riparian habitats (areas along rivers and streams) on the North Slope of Alaska as these areas provide the greatest diversity of foods. ConocoPhillips' major oilfield regions (referred to as Alpine and Kuparuk) are located between the Sagavanirktok and Colville rivers, two of the largest riparian areas on the North Slope, providing ample opportunity for bears to encounter oilfield facilities and personnel (CPAI, 2005).

The Alpine and Kuparuk oilfields largely occur within the ADF&G Game Management Unit 26B (the central-eastern portion of the North Slope) (Figure 1); the most recent bear densities within Unit 26B were estimated at 1.8 bears/100 square miles (Harper, 2009). During the winter when food is unavailable or scarce, most brown bears enter dens and hibernate through the winter. Along the North Slope, bears may spend from 5 to 7.5 months in dens (Eide and Miller, 2006). Pregnant females are usually the first to enter dens in the fall (around October) and, along with their newborn cubs, are the last to exit dens in April (Eide and Miller, 2006). Adult grizzly males usually enter dens later and emerge earlier than most other bears (Eide and Miller, 2006). Although the probability of encountering a grizzly bear during winter drilling operations is remote,

grizzly bears can emerge unexpectedly from their dens during the winter (CPAI, 2005). CPAI operations are required to maintain a distance of ½ mile from a known grizzly bear den during winter activities.

3.2 History of Grizzly Bear Takes

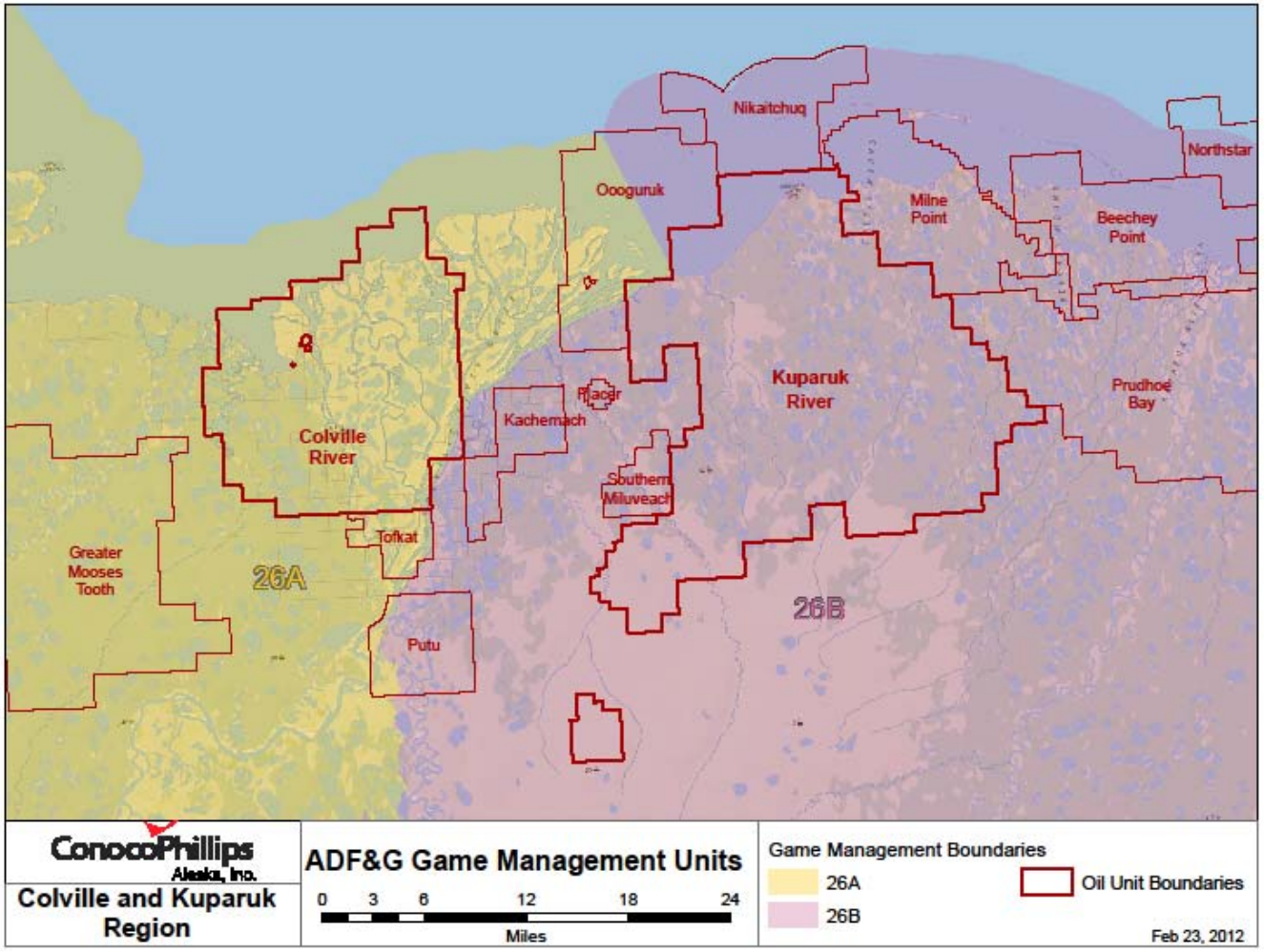
Unintentional feeding of bears due to poor food waste management procedures occasionally occurred during operations in the 1980s but stricter policies surrounding food waste management were enacted in the mid-1990s in consultation with ADF&G bear biologists. Subsequent to the development of revised protocols in the mid-1990s, CPAI and other oilfield operators' policies prohibiting bear feeding have been strictly enforced. Attraction of bears to garbage in the North Slope Borough-managed regional landfill, food waste and containers in open dumpsters, and improperly stored food at oilfield work sites were modified through development of proper waste management protocols (see section 3.1 in the Wildlife Plan). Bears will seek out food sources through a process called "food conditioning", around areas of human activity, thus putting them into potential conflict with humans. Oilfield bears that have become food-conditioned and habituated (i.e., learned to ignore) to humans became a potential safety hazard to both the humans and the bears in the late 1990s.

Historically, 16 food-conditioned bears were killed in defense of life and property (DLP) situations on the North Slope and along the Dalton Highway. Of these, 10 were killed by agency personnel in Deadhorse when the bears began to break into buildings. Six more food-conditioned and habituated bears were killed at villages in the region, or by hunters along the Dalton Highway. Most of the bears that became food- conditioned in the early 1990s have been killed. Since the late 1990s no new bears have become food-conditioned, and the surviving food-conditioned bears have been kept from DLP situations (CPAI, 2005; Dick Shideler, personal communication, February 27, 2012).

3.3 Grizzly Bear Hunting and Subsistence Activities

Uncontrolled harvest of grizzly bears has not occurred in the North Slope oilfields, due in part to the following restrictions: the oilfield road system of the North Slope is off-limits to all but industrial users and local residents; companies prohibit firearm use by employees in the oilfields; and ADF&G regulations prohibit big game sport hunting in much of the oilfield. As with subsistence hunting, no employee may recreationally hunt grizzly bears in the North Slope oilfield areas while actively employed by CPAI.

Figure 1 ADF&G Game Management Units Overlaid with CPAI Oil Fields



4.0 ROLES AND RESPONSIBILITIES

The key personnel and their responsibilities with regard to CPAI's wildlife management program are listed below in table 1 and in the Wildlife Plan (Table 2).

Table 1 Contact Information for CPAI Key Personnel for Wildlife

Alpine Facilities		
Security	907.670.4002	Main Security Line
	907.670.4900	Emergencies
Field Environmental Compliance Coordinator (primary)	907.670.4200	907.670.4930, pager 718
	907.670.4756	907.670.4930, pager 719
Field Environmental Compliance Coordinator (secondary)	907.659.7242	907.659.7000, pager 669
ACS Lead Technician	907.670.4586	907.670.4930, pager 402
Kuparuk Facilities		
Security	907.659.7997	Main Security Line
	907.659.7300	Emergencies
Field Environmental Compliance Coordinator (primary)	907.659.7212	907.659.7000, pager 669
Field Environmental Compliance Coordinator (secondary)	907.659.7242	907.659.7000, pager 669
ACS Lead Technician	907.659.7879	
	907.659.7926	907.569.7000, pager 801

Anchorage		
Environmental Studies Manager	907.265.6515	Office
	907.229.8972	Cell
North Slope Environmental Studies Coordinator	907.263.4333	Office
	907.252.7829	Cell
Anchorage Clean Seas Offices		
Anchorage	907.743.8989	
North Slope	907.659.2405	

Updates to this Grizzly Bear Plan will be provided by CPAI on an as-needed basis. This document and all other wildlife interaction documents are maintained on CPAI's Environmental Studies website (https://sptupcpai.econocophillips.com). Copies of these plans are provided to the Field Environmental Coordinators (FECs).

5.0 REGULATIONS, POLICIES, AND PERMIT STIPULATIONS

Several regulatory requirements, permits, and CPAI policies are applicable to the wildlife management program. The list provided in the Wildlife Plan includes all items pertinent to grizzly bears. Refer to Appendix A, Section 1.2 of the Wildlife Plan for this information.

6.0 GRIZZLY BEAR EARLY DETECTION AND AVOIDANCE PROCEDURES

Early detection and avoidance procedures for grizzly bears are generally the same for all of the oilfield activities. Many of these procedures fulfill the requirements of the regulations, policies, and permits listed in Appendix A, Section 1.2 of the Wildlife Plan. While human safety is the top priority, it must be emphasized that early detection and avoidance procedures are designed to prevent encounters that might also result in harm to a grizzly bear.

It is the responsibility of each worker to be aware of their surroundings and inspect the work area before leaving a vehicle or building. All CPAI and contractor field personnel should understand and follow the detection and avoidance procedures outlined below:

- Outdoor working personnel must arrange with their Supervisor to maintain either radio or visual contact with security so that they can be immediately alerted to select a secure place in the event a grizzly bear is sighted.
- Personnel with work assignments that require they be outside of areas secure from grizzly bears (buildings, heavy equipment cabs, etc.) must check directly with their Supervisor for the latest report as to whether bears or bear sign have been reported.
- All personnel will use the buddy system when working outdoors, and if necessary, designate a grizzly bear guard to stand watch.
- No personnel should come between a sow and her cub(s).
- Heavy equipment operators (using fork-lifts, loaders, etc.) working from inside protective vehicle cabs are well situated to visually detect and sound the alert in the event a grizzly bear is discovered within the site.
- Personnel should check behind doors prior to exiting stairs, access areas, and under structures to be sure no bears are present before moving to or from these areas.
- Beyond the illuminated drill site pad areas all personnel must be especially alert if conditions are dark and there is poor visibility.
- Notify Security of all grizzly bear sightings (see Section 7.0 for details).

6.1 Infrastructure Design and Maintenance

The infrastructure design and maintenance activities that can help minimize the attraction of wildlife are provided in the Wildlife Plan (Section 3.2). The mitigation examples relevant for grizzly bears are the same as those discussed in the Wildlife Plan (Section 3.2).

6.2 Waste Management

The discussion of food and non food materials and waste handling presented in the Wildlife Plan includes all of the information pertinent to grizzly bears. Refer to Section 3.1 of the Wildlife Plan for this information.

6.3 Den Avoidance

Avoiding maternal denning locations is standard operating procedure during winter work and travel activities. Grizzly bear den selection normally occurs during October or November. Should occupied dens be located, they will be physically avoided by a minimum of 0.5 mile during winter project activities. The purpose of this mitigation measure is to avoid any disturbance that might cause a sow to abandon her den early thus exposing recently born cubs to possible harm before they are physically ready to leave the den. Grizzly bear sows typically emerge from their dens with their cubs in April.

ADF&G provides oilfield operators with locations of radio-marked bears prior to the winter construction season so that operators can avoid these sites. However, this mitigation depends on precise location of the den, and because not all bears are radio-marked, there is potential to inadvertently come across a den.

7.0 GRIZZLY BEAR ALERT SYSTEM, DETERRENCE, AND REPORTING

The Notification Flow Chart (Grizzly Bear Plan Appendix A) lists the actions to be taken in the following scenarios: a) a grizzly bear is sighted; b) a grizzly bear remains in the area; and c) a lethal take occurs. Also included in Appendix A are the appropriate contact persons and their contact information. Actual grizzly bear sightings will be recorded on a *Grizzly Bear Activity/Sighting Form* (Grizzly Bear Plan Appendix B).

7.1 Grizzly Bear Alert System and Reporting

The primary source of grizzly bear sighting information will come from personnel conducting routine activities in the oilfields. Should a bear or bear sign (e.g., tracks or scat) be discovered within the vicinity of work areas, camp buildings, or storage locations, the observer must immediately report the sighting to their Supervisor or Security once refuge has been sought in a secure location. Personnel should not remain in an exposed position in order to view the bear. No one should attempt to photograph a sighted bear from an exposed location.

Security will initiate the alert system, which is provided by radio contact (personnel working outside will carry hand-held portable radios or will have close access to a vehicle radio). All personnel will be alerted to go immediately to pre-identified secure areas. Secure areas include buildings (except for warm-up shacks and other light structures) and cabs of large trucks or other heavy equipment. If only a pickup or other similar size vehicle is available, personnel should drive the vehicle at least 50 yards away from the bear and keep the engine running while observing the bear's behavior.

The alert will consist of voice communication, which will provide specific information on the location of the bear, instructions for who must evacuate, and evacuation instructions. The presence of a bear(s) will be announced to all personnel in this manner so that appropriate avoidance measures are taken. Only when it has been determined by subsequent inspection that bears are no longer present in the work vicinity will the alert be lifted.

Security will verify the grizzly bear sighting and complete a *Grizzly Bear Activity/Sighting Form* and submit it to the FEC, who then faxes the completed form to Dick Shideler (ADF&G, grizzly bear biologist-contact information is listed in Appendix A). Security should contact the FEC for any questions concerning completion of the form. An example of how to complete the "encounter description" section of the form would be: "Sighted two grizzly bears approximately 500 yards WSW of location walking in a NW direction. Stopped to sniff air three times, but otherwise ignored operations." If an injured bear is sighted, the FEC will contact appropriate ADF&G personnel.

7.2 Grizzly Bear Deterrence and Reporting

Project personnel should not undertake hazing or harassment actions to scare the bear(s) away from work areas. If active deterrence is necessary, Security personnel trained in these measures will perform the action. Whenever possible, Security should notify the FEC in advance of any grizzly bear hazing or deterrent activities. Security staff will prepare a report on the deterrence activities, including a short narrative that describes the incident and actions taken. The narrative can be hand-written and must be attached to the *Grizzly Bear Activity/Sighting Form*. Grizzly bear harassment/hazing events are to be reported via fax to Mr. Shideler at ADF&G within 24 hours. Records are to be completed by Security and submitted to the EC.

8.0 REFERENCES

(CPAI) ConocoPhillips Alaska, Inc. 2005. Fish and Wildlife of Alaska's North Slope – Grizzly Bears. Prepared by CPAI Environmental Studies Program, Anchorage, AK. June.

(CPAI) ConocoPhillips Alaska, Inc. 2011a. Encountering Wildlife on Alaska's North Slope…What should I do now? Prepared by Oasis Environmental Inc. 825 W. 8th Avenue, Anchorage AK 99501. October.

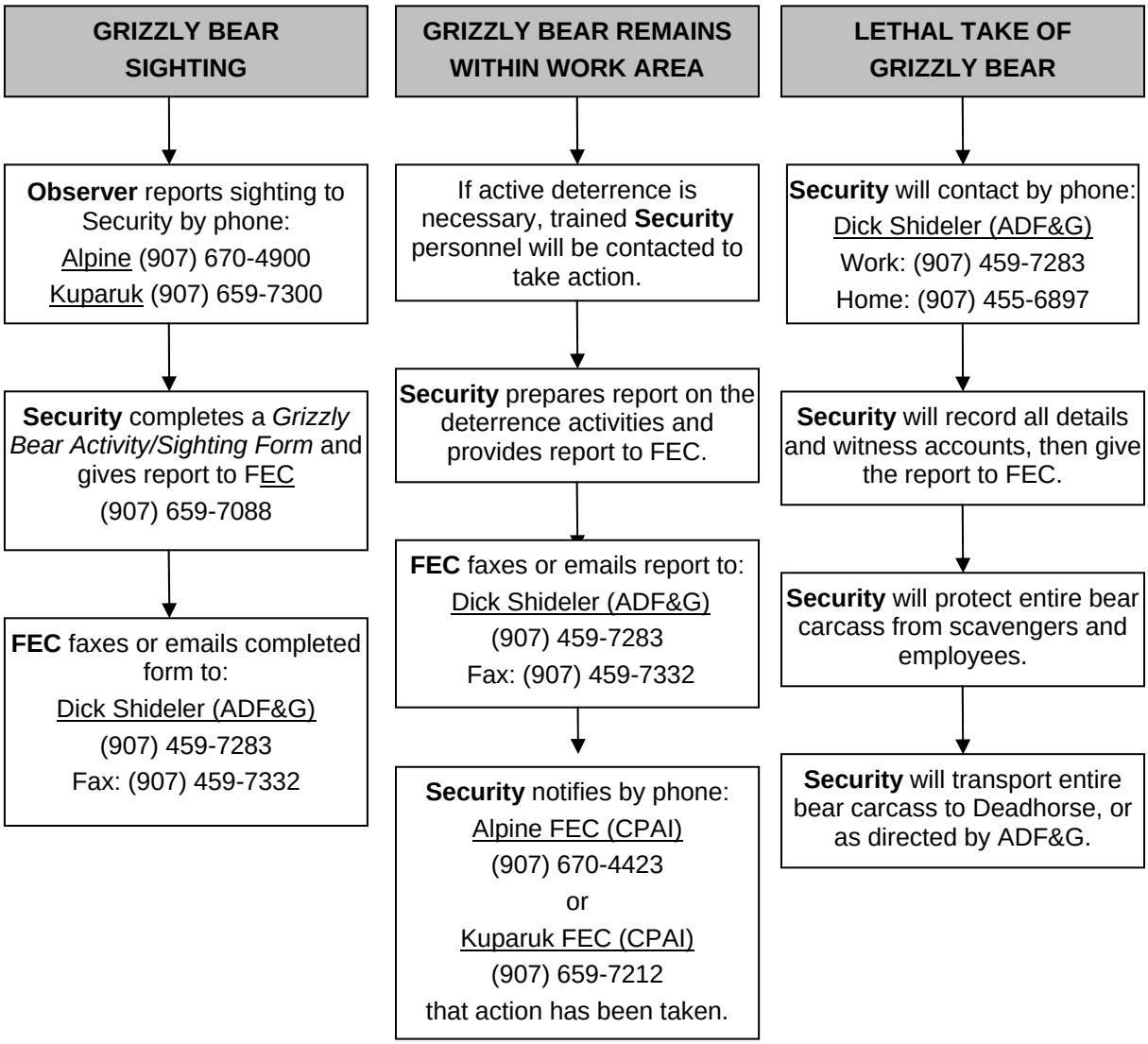
(CPAI) ConocoPhillips Alaska, Inc. 20012. *Wildlife Avoidance and Interaction Plan*. April. 43 pp.

Eide, S. and S. Miller. 2006. Brown Bear. Alaska Department of Fish and Game Wildlife Notebook Series. Revised by H. Reynolds and reprinted 1994, website revisions 2003. Accessed online at http://www.adfg.state.ak.us/pubs/notebook/notehome.php in June.

Harper, P. 2009. Brown Bear Management Report from 1 July 2006- 30 June 2008 Game Management Units 25A, 25B, 25D, 26B, and 26C. *In* Alaska Department of Fish and Game. 2009. Brown bear management report of survey-inventory activities 1July 2006- 30 June 2008. P Harper, editor. Juneau, Alaska pp. 300-324.

Appendix A

Notification Flow Chart



Appendix B

Grizzly Bear Activity/Sighting Form

Grizzly Bear Activity/Sighting Form

Activity/Sighting Date: _____ **Time**: _____

Location:

_____

Total number of grizzly bears: _____Adult _____Sub adult _____Juveniles _____Cubs

Estimated distance of animal(s) from personnel/facility: _____ft/_____ft

Behavior: _____ Curious, _____ Aggressive, _____ Predatory, _____ Other (explain):

_____

Description of encounter: _____

_____

_____

Duration of encounter: _____

Injuries sustained (personnel):_____

Injuries sustained (bear):_____

Deterrent(s) used: _____ Vehicle, _____ Noise-maker, _____ Firearms, _____ Other (explain):

_____

Weather conditions: _____ Fog, _____ Snow, _____ Rain, _____Clear, Wind speed: ____ mph

Wind direction: _____ Approx. temperature: _____°F / °C Maximum visibility: _____ft

Possible attractants present: _____

_____

Observer name: _____

Recorded by: _____ **Date:** _____ **Time:** _____

Printed Name

_____

Signature

Agency/CPAI Contacts:

ADF&G: _____ Date: _____ Time: _____

Client: _____ Date: _____ Time: _____

CPAI: _____ Date: _____ Time: _____

Fax completed reports, as applicable, to Field Environmental Compliance:

Alpine (907) 670-4507 or Kuparuk (907) 659-7088

Attachment 2
Polar Bear Avoidance
and
Interaction Plan

POLAR BEAR AVOIDANCE

and INTERACTION PLAN

FINAL

January 2012

Revision 6

Prepared for:

Caryn Rea

Sr. Staff Biologist

ConocoPhillips Alaska, Inc.

Prepared by:

Justin Blank

Environmental Scientist

Weston Solutions, Inc.

TABLE OF CONTENTS

Section **Page**

LIST OF FIGURES

LIST OF TABLES

Page

LIST OF APPENDICES

LIST OF ACRONYMS

AAC	Alaska Administrative Code
ACS	Alaska Clean Seas
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
AOGA	Alaska Oil and Gas Association
BCS	Bering/Chukchi Seas
BLM	Bureau of Land Management
BOEM	Bureau of Ocean Energy Management
BRD	Biological Research Division
CBS	Chukchi-Bering Seas
CFR	Code of Federal Regulations
COY	Cub of the Year
CPAI	ConocoPhillips Alaska, Inc.
DEW	Distant Early Warning
ESA	Endangered Species Act
FEC	Field Environmental Coordinator
FLIR	Forward Looking Infrared
FR	Federal Register
HSE	Health, Safety, and Environmental
LOA	Letter of Authorization
Manual	Industry and Denning Polar Bear-Human Interaction Manual
MMM	Marine Mammals Management (Office, USFWS)
MMPA	Marine Mammal Protection Act
NPR-A	National Petroleum Reserve – Alaska
NSB	North Slope Borough
NW	northwest
Plan	*Polar Bear Avoidance and Human Encounter/Interaction Plan*
SBS	southern Beaufort Sea
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WSW	west-southwest

ACKNOWLEDGMENTS

The preparation of this Planning document has been refined and updated over the years with contributions from many individuals. During the initial creation of this document, senior technical expertise was ably provided by Geoff York/USGS Biological Research Division (now with World Wildlife Fund, and Craig Perham, United States Fish and Wildlife Service (USFWS) Marine Mammal Management (MMM) Office. Technical assistance was provided by Christopher Putnam, USFWS MMM Office for this revision. This document has been reviewed by Caryn Rea, CPAI and MMM staff. The input provided by all parties mentioned above is greatly appreciated.

1.0 PURPOSE AND SCOPE

The main purpose of this *Polar Bear Avoidance and Human Encounter/Interaction Plan* (Plan) is to provide guidance to ConocoPhillips Alaska, Inc. (CPAI) employees and contractors working at North Slope facilities where polar bears (*Ursus maritimus*) or their dens may be encountered. Oilfield activities have the potential to disturb wildlife species during important life cycle events. To minimize disturbance, CPAI has developed a multitude of planning documents, Standard Operating Procedures, and training requirements for all personnel. The polar bear presents a potential serious risk of injury to field personnel. To protect the safety of personnel, and polar bears, North Slope workers should avoid encounters with polar bears and their dens whenever possible. Should such an encounter occur during the performance of work, this Plan provides guidance to enhance personnel safety and minimize the effect of the disturbance.

The Plan includes the following information:

- Training requirements for all CPAI employees and contract personnel working on the North Slope (Section 2.0).
- Distribution of polar bears on the North Slope (Section 3.0).
- Roles and responsibilities of key personnel (Section 4.0).
- Procedures for avoiding and detecting polar bears (Section 5.0).
- Description of the polar bear alert system, deterrence, and reporting method (Section 6.0).

The regulatory history of polar bears in Alaska, the associated authorizations from federal agencies, the history of polar bear 'takes' and a description of subsistence activities are provided in Appendix A. Appendix B includes Notification Procedures and Forms, The Industry and Denning Polar Bear – Human Interaction Manual is provided as Appendix C and Appendix D addresses CPAI's Polar Bear hazing and Deterrence Policies and Procedures.

This Plan will help maintain compliance with the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA) regulations as well as various project permit conditions concerning protection and monitoring of polar bears. This Plan is one component of CPAI's overall wildlife management program. This Plan has been prepared as a separate document from CPAI's *Wildlife Avoidance and Interaction Plan* (CPAI, 2006) due to the federal protection afforded polar bears and the significant risks and dangers associated with an encounter between humans and bears. Amendments to the *Wildlife Avoidance and Interaction Plan* must be written with site-specific considerations (if applicable) and may include additional polar bear avoidance and interaction procedures beyond those contained within this Plan.

Table 1 lists the documents and information sources included in CPAI's wildlife management program that pertain to polar bears.

Table 1 Wildlife Management Program Documents for Polar Bear Avoidance and Conservation Policies and Procedures

Document/Information Source	Pertinent Information
Polar Bear Avoidance and Interaction Plan (this document)	• Polar bear detection and avoidance techniques • Background and history of polar bears on the North Slope • Guidance for complying with federal polar bear regulations (Marine Mammal Protection Act) and specific permit conditions • Procedures for submitting sighting/activity reports • Description of polar bear training program(s) • Polar Bear Hazing and Deterrence Policies and Procedures
Polar Bear Management Training Course Materials (Appendix B-4)	• Consequences of increased polar bear presence • Prevention of polar bear attraction, including proper food and waste handling and disposal techniques • Methods for reducing artificial denning sites • Detection and avoidance of polar bear dens
Annual Polar Bear Awareness Training (Computer-based)	• For workers on the North Slope only with potential to work in coastal areas where polar bear and human interactions may exist • Includes video and computer-based learning
Deterrence Training	• Specific to personnel that are engaged in hazing or deterrence activities (polar bear watch designees, Security staff) • Classroom training • Training in use of deterrence methodologies such as cracker shells, bean bags, etc. • Training is done by federal and/or state wildlife biologists or others (e.g., Security) if trained by the aforementioned staff
Alaska Waste Disposal and Reuse Guide	• Summary of CPAI's approved waste management practices as detailed in the Alaska Waste Disposal and Reuse Guide
Predator and Waste Management (Computer-based)	• Explanation of the consequences of increase predator presence and mitigation practices to limit wildlife interactions.
North Slope Environmental Field Handbook	• Summary of North Slope wildlife interaction policies and related topics such as garbage control, worker safety, and wildlife habitat protection • Summary of the occurrence and behavior of common North Slope species • Summary of approved waste management practices including use of proper wildlife-proof dumpsters
Employee Awareness Tools	• CPAI contractor safety meetings (e.g., pre-spud, daily tailgate, etc.) • Environmental alerts (issued throughout camp at the onset of winter field season to heighten awareness of workers on polar bear avoidance measures)

2.0 TRAINING REQUIREMENTS

All CPAI and contractor personnel working on the North Slope where polar bear activity may occur should receive an environmental orientation before beginning work. Personnel who work on the slope recurrently or on a permanent basis should complete the orientation annually. All CPAI personnel with the potential to encounter polar bears during winter activities should take an annual awareness training refresher.

Field Environmental Coordinators (FECs) regularly attend CPAI and contractor safety meetings, pre-spud meetings, and pre-construction meetings to reinforce the importance of proper food management to prevent attraction of predator species, including polar bears, to our facilities. The presentation, included as Appendix B-4 to this Plan provides further training for construction and maintenance crews working in polar bear habitat. Development of these slides was a collaborative effort between CPAI's Environmental Studies lead, CPAI's Field Environmental Compliance coordinators, and United States Fish and Wildlife Service (USFWS) staff responsible for polar bear management and conservation.

General awareness training must be given annually to all personnel using environmental alerts and updates, safety bulletins, safety meetings, and the training modules as appropriate. Select personnel are required to attend a Deterrence Training Program approved by the Alaska Department of Fish and Game (ADF&G) and the USFWS. The class consists of three hours of classroom information covering polar bear behavior, biology, and hazing techniques, as well as hands-on hazing and deterrence techniques using actual equipment. Staff with this specialized training typically includes security personnel, survey contractors, and Alaska Clean Seas (ACS) staff in remote locations.

3.0 DISTRIBUTION OF POLAR BEARS ON THE NORTH SLOPE

The total numbers of polar bears worldwide is estimated to be 20,000-25,000 (Aars, et al., 2006). Currently there are two polar bear [sub] populations in the United States; the southern Beaufort Sea population (SBS), which extends into Canada; and the Bering-Chukchi Seas (BCS) population, which extends into the Russian Federation. Although the two U.S. [sub] populations are not distinguishable genetically, the population boundaries are thought to be ecologically meaningful and distinct enough to be used for management (75 Federal Register [FR] No. 234).

The SBS polar bear population is shared between Canada and Alaska. Radio-telemetry data, combined with earlier tag returns from harvested bears, suggest that the SBS region comprised a single population with a western boundary near Icy Cape, Alaska, and an eastern boundary near Pearce Point, Northwest Territories, Canada. A population analysis of the SBS stock was completed in June 2006 through joint research coordinated between the United States and Canada. That analysis indicated the population of the region between Icy Cape and Pearce Point is now approximately 1,500 polar bears (95 percent confidence intervals approximately 1,000–2,000) (USFWS, 2011).

The BCS population winters in the northern Bering Sea and southern Chukchi Sea adjacent to Russia and western Arctic Alaska and seldom enters the Beaufort Sea. Telemetry data indicate that polar bears marked in the Beaufort Sea spend about 25 percent of their time in the northeastern Chukchi Sea, whereas females captured in the Chukchi Sea spend only 6 percent of their time in the Beaufort Sea (Amstrup, 1995). Movements of polar bears within these areas are extensive, often covering several thousand kilometers annually and occupying areas in excess of 500,000 km^2 (nearly 200,000 $mi^{2)}$ over years. (Garner, et al., 1990; Amstrup and Durner, unpublished data).

The most recent population estimate for the [B]CS population is 2,000 animals. This was based on extrapolation of aerial den surveys from the early 1990s; however, this crude estimate is currently considered to be of little value for management. Reliable estimates of population size based upon mark and recapture are not available for this region and measuring the population size remains a research challenge (Evans et al., 2003).

Native Alaskans have co-existed with polar bears in the Arctic for many generations. Sightings in the Beaufort Sea area by non-Natives have occurred since the initial development of the Distant Early Warning (DEW) Line site at Oliktok Point in the 1950s. Since development of Prudhoe Bay in the1970s and all subsequent fields, the number of polar bear/human interaction by North Slope workers has been minimal. This is due in part to the education/outreach efforts of company health, safety, and environmental (HSE) personnel, in concert with state and federal biologists, improved food waste management procedures by industry and improved landfill management practices by the North Slope Borough (NSB).

Until recently, the U.S. and Russia have managed the shared [B]CS polar bear population independently. Now, U.S and Russian bear researchers and managers are currently working to update and enhance the collective knowledge of polar bears in the [B]CS stock. On September 21, 2007, the United States ratified the “Agreement Between the Government of the United States of America and the Government of the Russian Federation on the Conservation and Management of the Alaska–Chukotka Polar Bear Population,” signed at Washington, D.C., on October 16, 2000. The purpose of the agreement is to assure long-term, science-based conservation of the polar bear population and determined necessary includes the imposition of binding harvest limits; implementation of the Agreement allows for unifying management (USFWS, 2011). Due to the paucity of information on the BCS population, the majority of discussion surrounding knowledge of polar bear movements is thus focused on the Beaufort Sea bears. As more information becomes available on the BCS bears, it will be incorporated into this Plan.

The two most important factors influencing polar bear distribution in Alaska are sea ice and food availability. Polar bears migrate south with the advance and north with the retreat of sea ice each fall/winter and spring/summer, respectively. Seasonal distribution of polar bears is largely restricted by the southern edge of the pack ice. Drifting pack ice, particularly heavy offshore pack ice, probably supports more polar bears than either shore-fast ice or pack ice, probably because seals and walruses are

abundant in this habitat (Martin and Jonkel, 1983; Stirling, et al., 1993; Stirling, 1988; and Amstrup, 1995). During late autumn to spring, polar bears are distributed widely, occurring on pack ice, land-fast ice, and land. They are most abundant in the active thaw zone where ringed seals, their principal prey, are most available (Burns, et al., 2001). During the open-water season, polar bears are usually associated with the pack ice, although they could be seen on land or swimming in open water at considerable distances from the ice. As pack ice comes closer to the coast during autumn, a small percentage of the polar bear population (less than 10%) commonly swim ashore and scavenge beach cast carcasses or the remains of bowhead whales taken by subsistence hunters (Kalxdorff and Proffitt, 2003).

Polar bears are most likely to encounter humans on the coastline during the fall (August to mid-November) and spring (March to May) periods of the year when bears are found on the land-fast ice and along the coastline (Perham, 2005).

Unlike other bears, males and non-pregnant female polar bears are active all winter. Pregnant females make maternal dens in deep snowdrifts during late October to early December (Durner, et al., 2003; Amstrup and Gardner, 1994). Female polar bears usually do not use the same den sites each year, but they often do use the same geographic areas (Ramsay and Stirling, 1990). Between 1985 and 2005, the proportion of dens on pack ice declined from 62% in 1985 to 1994 to 37% in 1998 to 2004 ($P = 0.044$), and among pack ice dens, fewer occurred in the western Beaufort Sea after 1998. Denning distribution changed in response to reductions in stable old ice, increases in unconsolidated ice, and lengthening of the melt season. Further declines in sea ice availability are predicted, and the number of polar bears denning on land is forecast to increase (Fischbach et al., 2007).

The USGS has conducted mapping efforts of potential polar bear denning habitat in Prudhoe Bay, Kuparuk, and, most recently, is completing efforts to finalize a map for portions of the Northeast National Petroleum Reserve – Alaska (NPR-A). This information is maintained on the USGS website at:

http://alaska.usgs.gov/science/biology/polar_bears/pubs.html.

Mapping of denning habitat in the Colville River, the location for the remote Alpine production pad and associated satellite drill sites, has not been accomplished as of the winter 2011/2012. Historically, polar bears have denned in the Colville River Delta region in low numbers. The USFWS maintains records of historical den locations, and the den locations change annually.

Female polar bears generally produce two cubs that are born in dens between December and January. Some females have produced three cubs; however, this is a less common occurrence (Ramsey and Stirling, 1982). The mothers and their cubs emerge from maternal dens from late March to early April, and those that were on land typically head to the sea (Amstrup, 2000). This emergence timing coincides with seal pupping in under-ice lairs; ice seals are a key prey species for the polar bear. Polar bears usually forage in areas where there are high concentrations of ringed seals and

bearded seals (Larsen, 1985; Stirling and McEwan, 1975). They primarily prey on ringed seals and, to a lesser extent, bearded seals; walruses, and beluga whales are taken opportunistically (Amstrup and DeMaster, 1988).

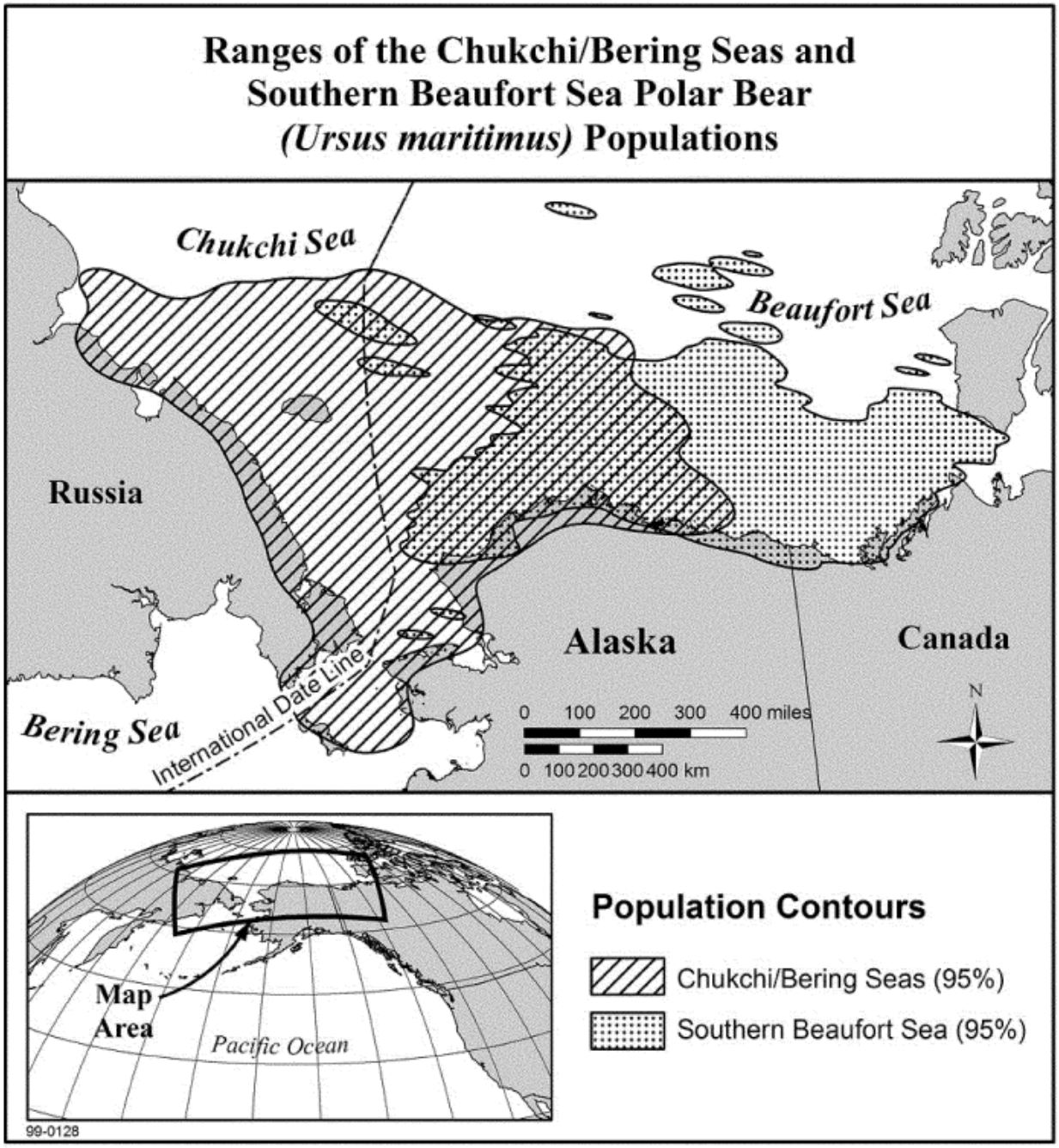


Figure A: Ranges of the polar bear populations present on the North Slope of Alaska. 75 FR No. 234.

4.0 ROLES AND RESPONSIBILITIES

The key personnel and their responsibilities with regard to CPAI's general wildlife management program are as follows:

Environmental Studies Program Leader – Manages the overall environmental studies program, provides final review of reports and plans, and is the primary point of contact with USGS polar bear researchers and USFWS polar bear regulators.

Environmental Scientist – Manages environmental studies contractors, assists with development of study designs, reviews plans and reports.

Environmental Studies Coordinator – Manages field logistics for all biological and wildlife studies for CPAI, including coordination of logistics for USGS polar bear researchers. Annually coordinates with representatives of CPAI-sponsored winter construction activities and USFWS to develop and implement a plan for documenting and/or monitoring potential polar bear dens.

North Slope HSE Training Advisor – Coordinates health, safety, and environmental training for personnel at CPAI-operated fields at Kuparuk and Alpine fields as well as exploratory drill sites or seismic shoots on the North Slope of Alaska.

Field Environmental Coordinator (FEC) – Oversees spill prevention, reporting, and cleanup; coordinates tundra travel, waste management, wildlife interaction, and environmental management systems. FEC is also the main contact with USFWS regulatory personnel regarding logistics associated with onsite training or site surveys prior to exploration or construction activities.

ACS Technicians – Oversee wildlife hazing, capture, and stabilization during an oil spill response.

Security – Has overall responsibility for wildlife hazing and monitoring during routine oilfield operations in oilfields. Security responds to wildlife sighting and interaction reports as appropriate.

Polar Bear Watch Personnel – Personnel that accompany exploration crews during winter drilling or capital construction projects may receive deterrence training in addition to annual awareness training with responsibility for monitoring around work site for polar bear presence. These personnel could also be subsistence representatives from local villages working under CPAI guidance regarding avoidance and mitigation for polar bear interaction.

All Personnel – Responsible for participating in wildlife interaction and management training. All personnel *must*:

- Complete the polar bear training requirements for all CPAI employees, contractor personnel, and unescorted visitors prior to their work in the North Slope oilfields. Refer to Section 2.0 of this Plan for a description of the training requirements.

- Review Section 6 of the *North Slope Environmental Handbook* and comply with CPAI policy regarding wildlife.
- Immediately report polar bear interactions to Security and their Supervisor.

This Plan will be updated on an as-needed basis. This document and all other wildlife interaction documents are maintained on the Environmental Studies website. Copies of these plans are available to the environmental coordinators for use in training North Slope field personnel prior to conducting winter work. Additional training on avoidance and reporting will be given to crews operating in or near potential polar bear habitat during the winter.

5.0 POLAR BEAR EARLY DETECTION AND AVOIDANCE PROCEDURES

Early detection and avoidance procedures for polar bears are generally the same for all of the oilfield activities. Many of these procedures fulfill the requirements of the regulations, policies, and permits listed in Appendix A, Section 1.0. While human safety is the top priority, it must be emphasized that early detection and avoidance procedures are designed to prevent encounters that might also result in harm to a polar bear.

It is the responsibility of each worker to be aware of his/her surroundings and inspect the work area before leaving a vehicle or building. As a precautionary measure, and taking into account the shifting preference for denning to land features, personnel should have a heightened awareness about the potential for encounters with polar bears within the oilfields and proposed exploration areas). All CPAI and contractor field personnel should understand and follow the detection and avoidance procedures outlined below.

- Outdoor working personnel must arrange with their Supervisor to maintain either radio or visual contact with Security so that they can be immediately alerted to select a secure place in the event a polar bear is sighted.
- Personnel with work assignments that require they be outside of areas secure from polar bears (buildings, heavy equipment cabs, etc.) must check directly with their Supervisor or Security for the latest information on polar bear sightings in their project area.
- All personnel must use the buddy system when working outdoors during winter construction, exploration, and operations activities. If necessary, a polar bear watch should be designated to monitor the work site after consulting with a Supervisor and Security.
- Truck drivers should sweep their headlights around work areas or use portable light plants to look for polar bears before exiting their trucks.
- If possible, drill site personnel should park their vehicles at a well house for protection if a polar bear is sighted.

- Heavy equipment operators (using forklifts, loaders, etc.) working from inside protective vehicle cabs are well situated to visually detect bears and sound the alert in the event a polar bear is discovered within the site.

- Personnel should check behind doors prior to exiting stairs, access areas, and under structures to be sure no bears are present before moving to or from these areas.

- Beyond the illuminated drill site pad areas, all personnel must exercise special alertness if conditions are dark and there is poor visibility.

- For personnel working on an offshore vessel, extra vigilance must be followed when transiting through broken ice conditions as polar bears may be using this platform for eating (walrus, seal) or resting. A crew member(s) should be assigned to keep watch on any polar bears observed near the vessel to alert the crew of the potential to board the vessel (by the polar bear).

- **Notify Security (or the Vessel Captain if offshore) of all polar bear sightings** (see Section 6.0 for details).

5.1 Infrastructure Design and Maintenance

Infrastructure associated with oilfield development can potentially provide denning cover for polar bears. Following are some examples of infrastructure design and maintenance activities that can help minimize the attraction of polar bears:

- The design of the infrastructure of any site should incorporate modifications to reduce the attractiveness of the site to bears as appropriate (e.g., installation of skirting under elevated buildings, visual aides such as mirrors, proper lighting, capping of large diameter pipes stored onsite, and placement of gates or other barriers on stairwells). For facilities located adjacent to the coast, the installation of a gated enclosure outside the exit door (similar to West Dock and Oliktok Point) should be considered to minimize the likelihood of encounters between humans and bears.

- Elevated structures, including roads and pads, can collect drifting snow that can serve as artificial denning habitat if not properly managed. The prevailing wind is from the northeast, and the direction of drifting should be taken into account when placing barriers or storing materials.

- If materials must be stored outdoors, they should be arranged either very close together or very wide apart to minimize the space where bears could hide.

- Personnel areas, including all entrance areas, must be illuminated during working hours of darkness.

5.2 Handling Food Materials and Waste

Particular care will be taken to ensure that no food wastes are left in places that might attract polar bears. Taking food into vehicles is discouraged, but if food must be taken into vehicles for remote operations (from camp), it must be stored in containers that minimize odors, such as plastic bags or plastic containers with lids. All food waste must be brought back to the appropriate disposal receptacle, and all garbage, including used food containers, will be removed from the vehicles at the end of each shift.

The cleanliness of the project area must be strictly maintained, and eating outside buildings or vehicles is prohibited. These food waste disposal practices should ensure that no bear attractants are present.

5.3 Handling Non-Food Materials and Waste

Although the main food sources of polar bears are marine mammals such as ice seals, non-food materials (e.g., plastic, rubber, motor oil, and chemicals such as antifreeze) have attracted bears in the past. If these materials are not handled properly, they can increase the likelihood of polar bear encounters. An incident occurred in 1987-1988 at Leavitt Island where a polar bear apparently ingested ethylene glycol, which resulted in its death (Amstrup, et al., 1989). Potentially harmful materials will be labeled appropriately and stored in secure containers (e.g., 55-gallon steel drums) or inside secure buildings and they will be properly disposed of away from the project area.

5.4 Den Avoidance

Avoidance of active maternal denning locations is standard operating procedure during winter work and travel activities. Den selection by pregnant sows can occur during late November through mid-December. CPAI will engage with USFWS MMM personnel to identify potential den survey locations and protocols on the basis of proposed winter activity. On the basis of these discussions, CPAI will engage trained observers to conduct aerial surveys from a fixed wing aircraft or other aerial platform using the Forward Looking Infrared Radar (FLIR) or some other method approved by USFWS over the proposed work area. If USFWS or USGS biologists cannot accompany the crew, the flight tapes will be provided to these agencies for review.

Satellite-collared bear locations are downloaded by the USGS on a weekly basis and provided to CPAI throughout the winter season upon request. The USFWS mandates that a one-mile buffer be placed around known maternal dens to limit disturbances to the sow and cub(s) caused by activity, thus:

Should occupied dens be identified within one mile of activities, work in the immediate area will cease, and USFWS will be immediately contacted by FEC (or their designee) for guidance. Twenty-four-hour contact numbers have been provided to CPAI by USFWS personnel to assure immediate response. Specific details regarding the level of activity (number and type equipment, personnel, activity type) shall be provided to USFWS during this initial contact. All guidance from USFWS personnel will be documented and shared with the USFWS representative(s) and the Camp Operations Manager. Refer to Appendix C for more details on interactions with polar bear dens.

The purpose of this procedure is to avoid any disturbance that might cause a sow to abandon her den early, thus exposing recently born cubs to possible harm before they are physically ready to leave the den. Polar bear sows typically emerge from their dens with their cubs between early March and mid-April and may remain in the area for days or weeks before moving out to the sea icepack. Refer to Appendix C for more detail concerning bear dens and the importance of dens to bear survival.

6.0 POLAR BEAR ALERT SYSTEM, DETERRENCE, AND REPORTING

The Notification Flow Chart (Appendix B-1) lists the actions to be taken when: a) a polar bear is sighted, b) a bear remains in the area, and c) a lethal take occurs. Also included in Attachment 1 are the appropriate contact persons and their contact information. Actual polar bear sightings will be recorded on a *Polar Bear Sighting Form* (Appendix B-2). Note that these procedures are primarily for onshore operations by ConocoPhillips personnel and contractors. There are no approvals in place for active deterrence or hazing of polar bears from offshore vessels. If there is the potential for a life-threatening interaction, Section 101(c) of the MMPA allows, without specific authorization, the take (including lethal) of a polar bear if such a taking is imminently necessary in self-defense or to save the life of a person in immediate danger and such taking is reported to the USFWS within 24 hours.

6.1 Polar Bear Alert System and Reporting

The primary source of polar bear sighting information will come from personnel conducting routine activities in the oilfields. A team member may be designated as a Polar Bear Watch if warranted by the project location. The Polar Bear Watch will receive specific training in bear detection and avoidance procedures, and some may also be trained in deterrence procedures. Should a bear or bear sign (e.g., tracks or scat) be discovered within the vicinity of work areas, camp buildings, or storage locations, the observer must immediately report the sighting to his/her Supervisor and Security once refuge has been sought in a secure location. Personnel should not remain in an exposed position in order to locate the bear.

When a bear is sighted near a work area Security will initiate the alert system, which is provided by radio contact (personnel working outside will carry hand-held portable

radios). All personnel will be alerted to go immediately to pre-identified secure areas. Secure areas include buildings (except for warm-up shacks and other light structures) and cabs of large trucks or other heavy equipment. If only a pickup or other similar size vehicle is available, personnel should drive the vehicle at least 50 yards away from the bear and keep the engine running while observing the bear's behavior. No one should attempt to photograph a bear from an exposed location.

The alert will consist of voice communication, which will provide specifics on the location of the bear, instructions for who must evacuate, and evacuation instructions. The presence of a bear(s) will be announced to all personnel in this fashion so that appropriate avoidance measures are taken. Only when it has been determined by subsequent inspection that bears are no longer present in the work vicinity will the alert be lifted.

After the pertinent alerts have been issued, and all personnel are safe, the following steps will occur to notify USFWS of the event.

Security will verify the polar bear sighting and complete a *Polar Bear Sighting Form* in the field. Security should contact the respective FEC staff for any questions concerning completion of the form. An example of how to complete the "encounter description" section of the form would be: "Sighted two polar bears approximately 500 yards west-southwest (WSW) of location walking in a northwest (NW) direction. Stopped to sniff air three times and continued walking."

If a designated Polar Bear Watch is on duty when a bear is sighted, that person will be responsible for filling out the *Polar Bear Sighting Form* (rather than Security) and will also be required to keep a journal of all polar bear sightings. Two separate records are kept so that the data can be cross-checked in the data quality control process. The journal should include a record of time spent undertaking polar bear observations and documentation of sightings of bears or bear sign. The designated Polar Bear Watch must give the completed *Polar Bear Sighting Form* to security for reporting purposes.

- Sighting information is then entered (by Security) into the CPAI Alaska Wildlife Sightings database found at the following link:

  http://upapps.conocophillips.net/AlaskaWildlifeSightings/

  The database will automatically submit a sighting notification via email to the appropriate FEC.

- The FEC then transmits the sighting notification to: USFWS Marine Mammals Management, and, for information only (not a regulatory requirement), ADF&G Wildlife Conservation Division (see Appendix B-2.0).

An annual polar bear observance monitoring report will be submitted by the appropriate FEC staff to Mr. Perham by **December 15th** at 1011 E. Tudor Road, Anchorage, AK 99503. Sightings observed during the last two weeks of December shall be provided as

an addendum to the above report and submitted to USFWS as soon as possible. An Environmental Studies program representative will submit an annual request to the USFWS for approval to deter polar bears (MMPA Section 1371(a)(5)(D)) in early December to assure that renewed coverage is in place by January 1st of each year.

For offshore operations, a weekly report of polar bear sightings is submitted to the USFWS by the Environmental Studies Lead or their designee.

6.2 Polar Bear Deterrence and Reporting

In the event that a bear must be deterred CPAI is permitted by Letters of Authorization (LOAs) to haze polar bears (see Appendix A-2.1.1). Only trained personnel should undertake hazing or deterrence actions to move bear(s) away from work areas. Hazing policies and procedures are discussed in Appendix D. Whenever possible, Security will notify the FEC in advance of any polar bear hazing or deterrence activities. Pre-notification would not be feasible in a situation where deterrence is required immediately for the protection of personnel or bears.

Security staff will follow the same reporting procedures detailed in Section 6.1 to report hazing events. Polar bear harassment/hazing events are to be reported to USFWS MMM Office within 24 hours. Records will be maintained within the Alaska Wildlife Sightings database.

7.0 REFERENCES

Aars, N. J., J. Lunn, and A. E. Derocher. 2006. Proceedings of the 14th Working Meeting of the IUCN/SSC Polar Bear Specialist Group, 20-24 June 2005. 32, 198 p.

Angliss, R. P., and K. L. Lodge. 2004. Alaska marine mammal stock assessments, 2003. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-144, 230 p.

Amstrup, S. C. 1995. Movements, distribution, and population dynamics of polar bears in the Beaufort Sea. Ph.D. Dissertation. University of Alaska-Fairbanks, Fairbanks, Alaska, 299 p.

Amstrup, S.C. 2000. Polar Bear. In The Natural History of an Arctic Oil Field, Development and the Biota. J.C. Truett and S.R. Johnson, Eds., San Diego, CA: Academic Press, pp. 133-157.

Amstrup S.C., C. Gardner, K.C. Meyers, and F.W. Oehme. 1989. Ethylene glycol (antifreeze) poisoning in a free-ranging polar bear. *Veterinary and Human Toxicology*. 31(4): 317-319.

Amstrup, S.C. and C. Gardner. 1994. Polar Bear Maternity Denning in the Beaufort Sea. *Journal of Wildlife Management.* 58:1-10.

Amstrup, S.C. and D.P. DeMaster. 1988. Polar bear (Ursus maritimus), p. 39-56 In: J.W. Lentfer, (ed.) Selected marine mammals of Alaska: Species accounts with research and Evans, T.F., A.S. Fischbach, S. Schliebe, S. Kalxdorff, G. York, and B. Manly. 2003. Polar Bear Aerial Survey in the Eastern Chukchi Sea. Arctic 56(4):359-366.

Brooks, J.W., J.C. Bartonek, D.R. Klein, D.L. Spencer, and A.S. Thayer. 1971. Environmental influences of oil and gas development in the Arctic Slope and Beaufort Sea. Bureau of Sport Fisheries and Wildlife. USFWS. US Department of the Interior: Washington D.C.

Burns, J., C.B. Johnson, and S.R. Johnson. 2001. Marine Mammals. *In* Environmental Report for Trans-Alaska Pipeline System Right-of-Way Renewal, Trans-Alaska Pipeline System Owners.

ConocoPhillips Alaska, Inc. 2006. Wildlife Avoidance and Interaction Plan.

Durner, G.M., Amstrup, S.C., and A.S. Fischbach. 2003. Habitat Characteristics of Polar Bear Terrestrial Maternal Den Sites in Northern Alaska. *Arctic* 56(1):55-62.

Evans, T.F., A.S. Fischbach, S. Schliebe, S. Kalxdorff, G. York, and B. Manly. 2003. Polar Bear Aerial Survey in the Eastern Chukchi Sea. Arctic 56(4):359-366.

Endangered and Threatened Wildlife and Plant; Designation of Critical Habitat for the Polar Bear (Ursus maritimus) in the United States, Final Rule, 75 Fed. Reg. 76086-76137 (December 2, 2010)(50 C.F.R. pt. 17)

Fischbach, A.S., Amstrup, S.C., Douglas, D.C. 2007. Landward and eastward shift of polar bear denning associated with recent sea ice changes. Polar Biology 30:1395-1405.

Garner, G.W., S.T. Knick, and D.C. Douglas. 1990. Seasonal Movements of Adult Female Polar Bears in the Bering and Chukchi Seas. International Conference on Bear Research and Management 8:219-226.

Kalxdorff, S., and K. Proffitt. 2003. Demography and Behavior of Polar Bears Feeding on Stranded Mammal Carcasses. *In:* Presentation Summaries of the U.S. Department of the Interior Minerals Management Service Information Transfer Meeting, March 10, 11, and 12, 2003, Anchorage AK.

Larsen, T. 1985. Polar bear denning and cub production in Svalbard, Norway. J. Wild. Manage. 49(2):320-326.

Martin, S.K., Jonkel, C.J. 1983. Use of sea ice habitat by polar bears. Internatonal Conference of Bear Research and Management 5:255-259

Ramsay, M.A. and I. Stirling. 1982. Reproductive biology and ecology of female polar bears in Western Hudson Bay. Naturaliste Canadien 109:941–46.

Ramsay, M. A., and I. Stirling. 1990. Fidelity of female polar bears to winter-den sites. Journal of Mammalogy 71:233-36.

Regehr, E.V., S.C. Amstrup, and I. Stirling. 2006. Polar bear population status in the southern Beaufort Sea: U.S. Geological Survey Open-File Report 2006-1337, 20 pp.

Perham, C.J. 2005. Proceedings of the Beaufort Sea Polar Bear Monitoring Workshop. OCS Study MMS 2005-034. Prepared by U.S. Fish and Wildlife Service-Marine Mammals Management, Anchorage, AK. Prepared for the U.S. Dept. of the Interior, Minerals Management Service, Alaska OCS Region, Anchorage, AK. 26 pp. plus appendices.

Schleibe, S., T. Evans, K. Johnson, M. Roy, S. Miller, C. Hamilton, R. Meehan, and S. Jahrsdoerfer. 2006. Range-wide status review of the polar bear. USFWS. Anchorage, AK. 262

Stirling I., D. Andriashek, and W. Calvert. 1993. Habitat Preferences of Polar Bears in Western Canadian Arctic in Late Winter and Spring. Polar Record 29:13-24

Stirling, I. 1988. Attraction of polar bears *Ursus maritimus* to off-shore drilling sites in the eastern Beaufort Sea. Polar Record 24(148): 1-8.

Stirling, I., and E. H. McEwan. 1975. The caloric value of whole ringed seals (Phoca hispida) in relation to polar bear (Ursus maritimus) ecology and hunting behavior. Can. J. Zool. 53:1021-1027.

USFWS. 2011. Final Environmental Assessment: Final Rule to Authorize the Incidental Take of Small Number of Polar Bear and Pacific Walrus During Oil and Gas Activities in the Beaufort Sea and Adjacent Coastal Alaska. May 10, 2011.

This page intentionally left blank

Appendix A

Polar Bear Regulations, History of Takes, and Subsistence Activities

A-1.0 REGULATIONS, POLICIES, AND PERMIT STIPULATIONS

Several regulatory requirements, permits, and CPAI policies are applicable to the wildlife management program. The specific requirements for protection of polar bears are discussed in this Plan. These include, but are not limited to:

Applicable State Regulations

- 18 Alaska Administrative Code (AAC) 60.010 – Treatment of solid waste
- Armed Guard License (Security guards only)

Applicable Federal Regulations

- Endangered Species Act (ESA)
- Marine Mammal Protection Act (MMPA) (16 United States Code [USC] 1361-1407)
- 50 Code of Federal Regulations (CFR) 18 (implements the MMPA)

CPAI Policies and Procedures

- Non-Interference Policy, Section 6 of the *North Slope Environmental Field Handbook*
- CPAI FEC Standard Operating Procedures
- Permits and other approvals that may contain stipulations for polar bears
- United States Army Corps of Engineers (USACE) Permits (i.e., Section 404, Permits, issued by USACE)
- Land Use Permits (usually issued by Alaska Department of Natural Resources [ADNR] and NSB)
- Pipeline right-of-way permits
- Ice road construction/winter vehicle travel (usually issued by ADNR, ADF&G, and the Bureau of Land Management [BLM])
- Tundra Travel (issued by ADNR, NSB, and BLM)
- Waste Management Guidelines (issued by Alaska Department of Environmental Conservation [ADEC])
- Oil Spill Response (typically issued by ADEC for onshore, Bureau of Ocean Energy Management [BOEM] for offshore)
- Hazing Permits (issued by USFWS)
- Letters of Authorization (LOA) (issued by the USFWS)
- Lease stipulations (issued by ADNR, BLM, and BOEM)

Polar bears are a USFWS Trust species protected by the 1972 MMPA as amended November 2001 (16 USC 1361-1407). The MMPA explicitly states that it is illegal to “harass, injure, capture, kill, or to attempt to harass, injure, capture, or kill" a marine mammal. The term used to describe any of these activities is "take." However, Section 101(a)(5)(A) of the MMPA includes an exception to the law by authorizing the issuance of regulations to allow the incidental, but not intentional, taking of small numbers of marine mammals, upon request (as defined in 50 CFR 18.27(c)) for a specified activity (other than commercial fishing) in a specified geographic region. Refer to Appendix A2.0 for a discussion of LOAs and conditions for a legal “take.”

On May 15, 2008, the USFWS published a Final Rule in the Federal Register (73 FR 28212) listing the polar bear as a threatened species under the Endangered Species Act (ESA). According to USFWS, this listing is based on the best available science, which shows that loss of sea ice threatens and will likely continue to threaten polar bear habitat. Any significant changes in the abundance, distribution, or existence of sea ice could have effects on the number and behavior of these animals and their prey. This loss of habitat could put polar bears at risk of becoming endangered in the foreseeable future, the standard established by the ESA for designating a threatened species.

Additionally the USFWS designated critical habitat for polar bears on December 7, 2010 (75 FR 76086). Critical habitat was defined for a large acreage of sea-ice, terrestrial denning habitat (extending 20 miles inland east of the Kavik River, and 5 miles inland between the Kavik river and Barrow), and barrier island habitat, CPAI oil and gas activities occur largely within the designated habitat area (See figure below), however critical habitat does not include manmade structures (e.g., houses, gravel roads, generator plants, sewage treatment plants, hotels, docks, seawalls, pipelines) and the land on which they are located existing within the boundaries of designated critical habitat on the effective date of [the] rule (December 7, 2010).

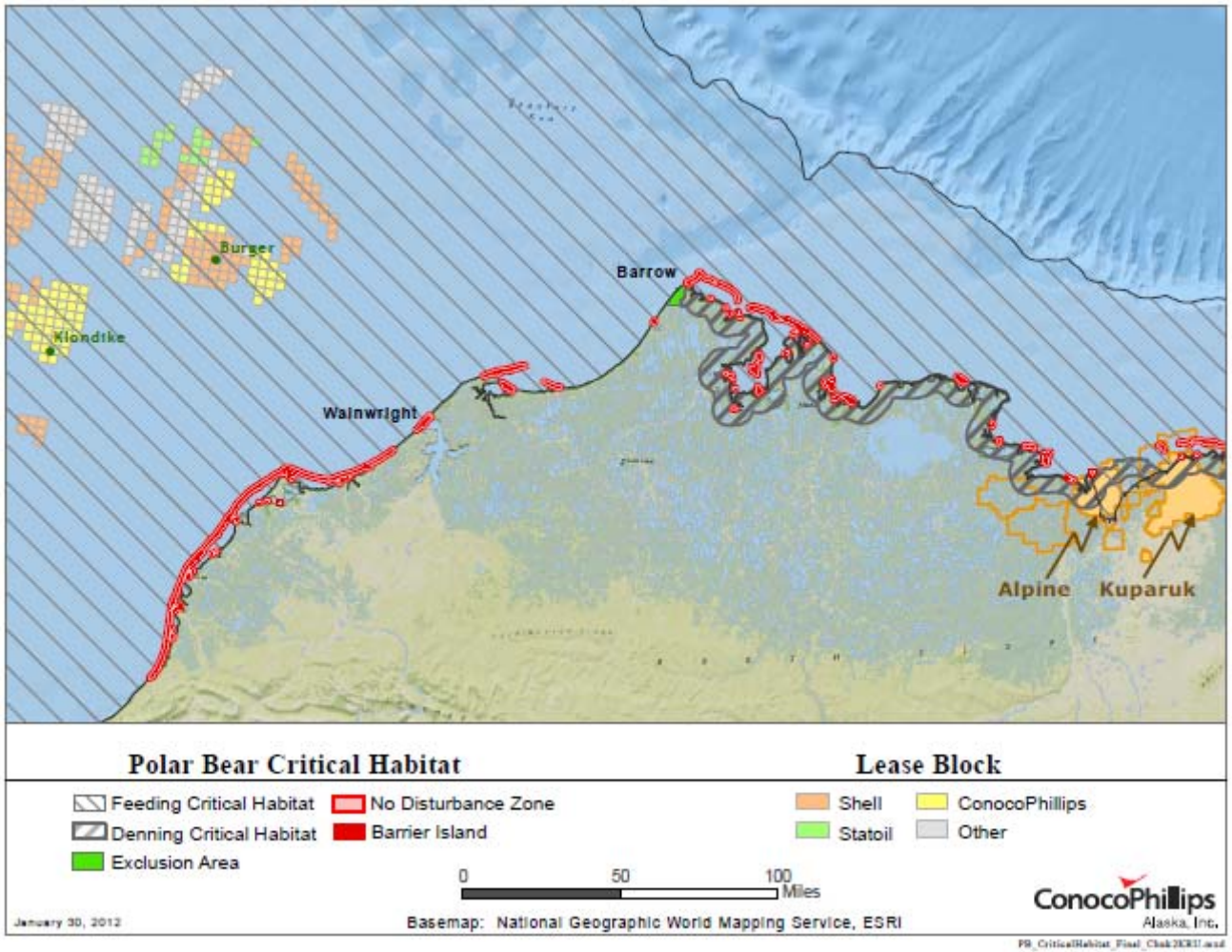


Figure A-1: Location of CPAI Operations in Relation to Designated Polar Bear Critical Habitat

This page intentionally left blank

A-2.0 AUTHORIZATIONS FOR TAKE

As allowed by the MMPA, the USFWS publishes in the Federal Register (FR) the regulations that allow for the incidental, unintentional take of polar bears during certain activities, such as oil and gas activities. These regulations set forth permissible methods of take and requirements for reporting and monitoring. Although not required by law, the oil and gas industry operators submit petitions to USFWS for renewal of published regulations every five years or so. Every three to five years and prior to the issuance of such regulations, the USFWS must complete an assessment of oil and gas development impacts on polar bears (Perham, 2005).

On November 16, 1993, the USFWS published final regulations (58 FR 60402) authorizing the incidental, unintentional take of small numbers of polar bears and walrus during oil and gas industry operations year round in the Beaufort Sea and the adjacent northern coast of Alaska. Since publication, these regulations have been continuously reissued and extended. The most recent regulations were issued in response to a request submitted by the Alaska Oil and Gas Association (AOGA) on April 22, 2009. The regulations (76 FR 47010) are effective August 3, 2011 through August 3, 2016.

On June 11, 2008 similar regulations were published by USFWS for the Chukchi Sea and adjacent western coast of Alaska (73 FR 3212). These regulations are effective from June 11, 2008 through June 11, 2013. A petition requesting renewal of the regulations in 2013 is currently being prepared by AOGA for submission to USFWS.

A-2.1 LOA

Oil and gas operators submit letters to USFWS requesting an incidental take exemption to conduct specified activities (e.g., exploration, development, and production) in a development or production area (Perham, 2005). If the USFWS approves of the activities, they will issue a Letter of Authorization (LOA) to the applicant. LOAs prescribe specific stipulations and monitoring requirements for each applicant and are in effect for production operations during the period of the regulations. LOAs for exploration activities are issued annually. One of the major requirements of an LOA is that the applicant has a current polar bear interaction plan. This Plan serves as the programmatic plan for CPAI; amendments to this plan may be required by USFWS for some site-specific exploration activities depending on their location.

CPAI applies to the USFWS for two types of LOAs that grant unintentional or intentional take.

A-2.1.1 LOA for Unintentional Take

The USFWS may issue an LOA for unintentional/incidental take under the provisions of incidental take regulations, petitioned for by the oil and gas industry (50 CFR Part 18). Additionally, Section 101(a)(5)(A) of the MMPA gives USFWS the authority to allow the incidental, but not intentional, taking of small number of marine mammals. An LOA will typically include the following conditions:

- Follow all provisions in the polar bear interaction plan. This LOA is valid only for the activities and locations identified in the most recent petition by industry for regulations governing unintentional take.
- Operations crew managers must be fully aware, understand, and be capable of implementing the conditions of the authorization.
- Intentional take is not authorized by this LOA. Intentional harassment is granted through a separate authorization from the USFWS each year (see below).
- Activities will not operate or pass within one mile of known polar bear dens, and all observed dens will be reported to the Marine Mammals Management Office, USFWS, within 24 hours. The USFWS will evaluate these instances on a case-by-case basis to determine the appropriate action. Potential responses may range from cessation or modification of work to conducting additional monitoring.
- Polar bear monitoring, reporting, and survey activities will be conducted in accordance with 50 CFR 18 Section 18.128. An annual monitoring report of activities within CPAI's operating oilfields will be delivered to USFWS by December 15th. The previous year's monitoring reports will be required before the LOA is valid for another year; therefore, a request to extend this coverage should be submitted to USFWS shortly following submittal of the annual report. The basic monitoring and reporting requirements are as follows:
    - Cooperate with USFWS and other designated federal, state, or local agencies to monitor the impacts of oil and gas exploration activities on polar bears.
    - Designate a qualified individual to observe, record, and report the effects of the activity on polar bears.
    - At the discretion of USFWS, allow USFWS to place an observer on the site to monitor the impacts of the activity on polar bears.

For site-specific exploration programs, which vary annually, a report of polar bear sightings must be submitted to the Alaska Regional Director within 90 days after the completion of activities.

A-2.1.2 LOA for Intentional (Deterrence) Take

Another authorization issued to North Slope operators by USFWS allows qualified individuals to "take" polar bears by harassment (deterrence activities) while conducting oil and gas industry related activities in polar bear habitat. This authorization is granted annually by USFWS in a letter issued by early January. Intentional take is authorized under Sections 101 (a)(4)(A), 109(h), and 112(c) of the MMPA for both in-field activities, and remote operations.

- This authorization is restricted to deterrence activities.
- CPAI is responsible to ensure that designated personnel are adequately trained to conduct polar bear deterrence activities.

- Authorized personnel are responsible for reporting harassment or hazing events to USFWS as soon as possible but no later than 24 hours after the occurrence
- This authorization is for one calendar year and is renewed annually.

A-3.0 HISTORY OF POLAR BEAR TAKES

It is vitally important that opportunities are reduced to an absolute minimum for accidental encounters between bears and project personnel that might result in a "take," including takes by harassment. Experience highlights this need. In the winter of 1968-1969, an industry employee on the Alaskan North Slope shot and killed a polar bear (Brooks, et al., 1971). An incident occurred in 1987-1988 at Leavitt Island where a polar bear apparently ingested ethylene glycol, which resulted in its death (Amstrup, et al., 1989). In 1990, a female polar bear was killed when it approached workers unloading Rolligons at Stinson exploration drill site on the west side of Camden Bay. In late 2005, workers at Cape Simpson shot and killed a polar bear wounded by a subsistence hunter. These are the only lethal takes that have occurred in the oilfields in the past 30 years. The detection and avoidance techniques described in this Plan draw upon these incidents in an effort to prevent their recurrence during future oilfield activities.

A-4.0 SUBSISTENCE ACTIVITIES

The polar bear is a subsistence resource available to Alaska Natives. Alaska Natives, in cooperation with Canadian Native hunters have developed a management plan to ensure that subsistence takes from the jointly shared Beaufort Sea polar bear population do not exceed biologically acceptable limits. There has also been a recent agreement with the Russians for the Bering-Chukchi Sea polar bear population. It is likely that a number of project team members, including CPAI personnel and contractor crews, will be Alaska Natives who, as subsistence hunters, might otherwise be authorized to take polar bears. However, Natives employed in these programs are governed by rules and procedures set out by CPAI, which extend to all employees. During periods of their active employment, when traveling to and from the project area, and during their active service for CPAI projects, no subsistence hunting will be authorized. Should a Native project team member be assigned the task of Polar Bear Watch (Section 6.0) and, in the course of assigned duties be required to use deterrent measures, including the use of firearms, such use is authorized only on the basis of status as a team member designated and trained to carry out such measures and not because the team member might otherwise be entitled to subsistence hunting rights.

Polar bears are important in the subsistence economies of North Slope communities adjacent to the coast, including Barrow, Nuiqsut, Wainwright, Point Lay, Kaktovik, and Point Hope. The marine mammal harvests have a great influence on social relations by strengthening the sense of Inupiat culture and heritage in addition to reinforcing family and community ties. The harvest records of polar bears and their contribution to the subsistence diet of the communities (where data were available) are provided in Table A1.

Table A-1. Estimates of Alaska Subsistence Harvest for Polar Bear by Year and Village

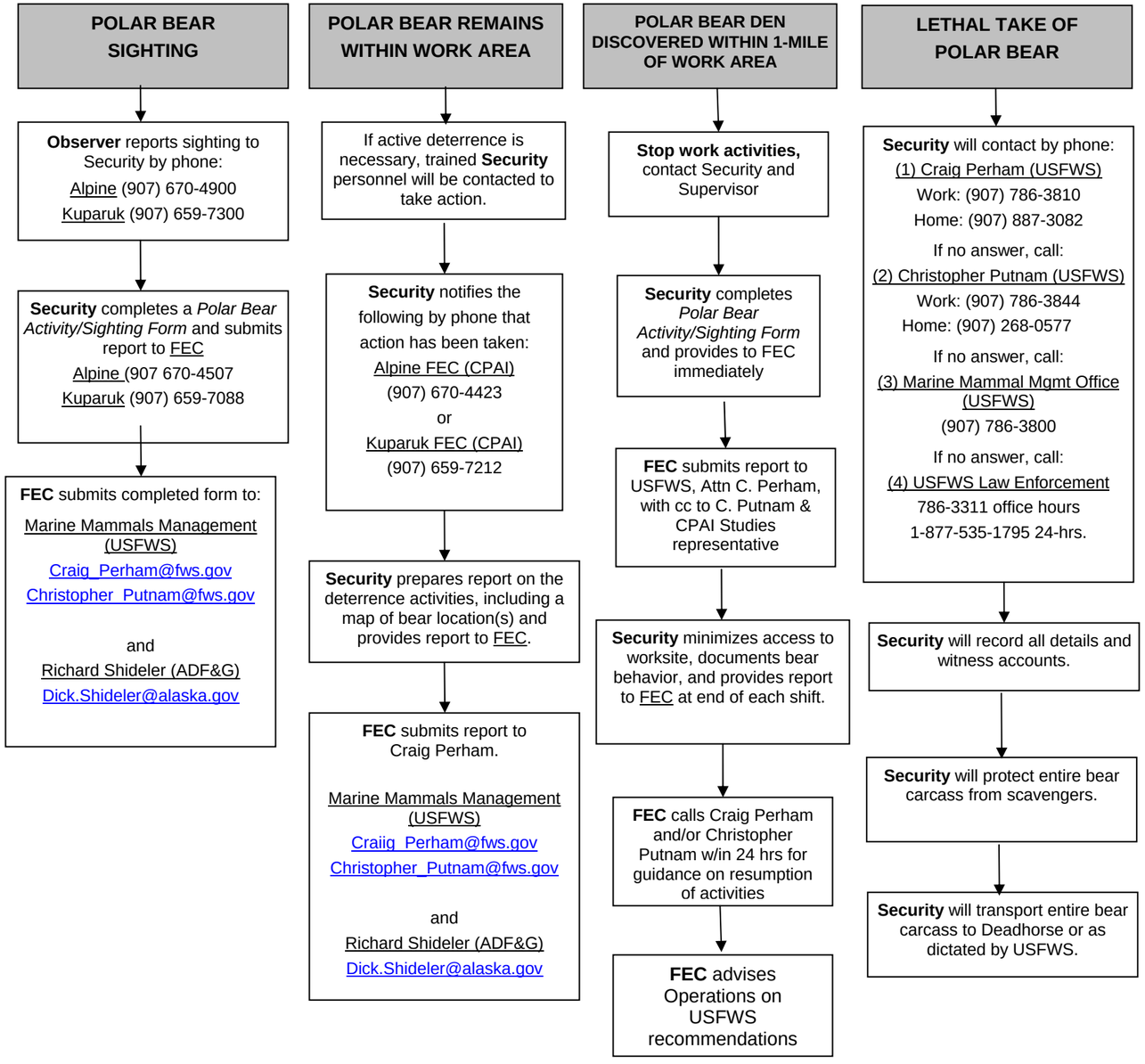
Subsistence Harvest of Polar Bears in North Slope Villages						
Year	**Barrow**	**Point Hope**	**Point Lay**	**Wainwright**	**Nuiqsut**	**Kaktovik**
2000	16	9	3	3	5	0
2001	28	18	0	9	3	4
2002	31	11	1	4	3	4
2003	29	10	2	4	2	7
2004	10	9	2	12	2	8
2005	22	11	5	10	8	1
2006	21	10	1	1	1	0
2007	9	9	0	1	0	1
Totals	166	87	14	44	24	25

USFWS 2008 Data

Appendix B

Notification Procedures and Forms

Appendix B-1.0
Notification Flow Chart



This page intentionally left blank.

Appendix B-2.0
Summary of Contact Information

ConocoPhillips Alaska

Alpine Facilities

Security: (907) 670-4900 (phone)
(907) 670- 4551 (fax)

FEC Coordinator

Primary:	(907) 670-4200
Pager information:	(907) 670-4930, pager 718
Secondary:	(907) 670-4756
HSE Fax:	(907) 670-4507
ACS Lead Technician:	(907) 670-4586
Pager Information:	(907) 670-4930, pager 402

Greater Kuparuk Area

Security:	(907) 659-7300
FEC Coordinator	
Primary:	(907) 659-7212
Pager information:	(907) 659-7000, pager 669
Secondary:	(907) 659-7242
HSE Fax:	(907) 659-7712
ACS Lead Technician:	(907) 659-7879
Pager information:	(907) 659-7000, pager 801

Anchorage

Environmental Studies

Caryn Rea	Robyn McGhee
(907) 265-6515(w)	(907) 265-1087(w)
(907) 229-8972 (cell)	(907) 632-1149 (cell)
(907) 653-1990 (hm)	(907) 529-1222 (hm)

Agency Contacts

U.S. Fish and Wildlife Service, Marine Mammals Division

Craig Perham: (907) 786-3810 (w)
(907) 887-3082 (hm)
Craig_Perham@FWS.gov

Christopher Putnam: (907) 786-3844 (w)
(907) 268-0577 (hm)
Christopher_Putnam@FWS.gov

Marine Mammals Management Office Fax: (907) 786-3816

Alaska Dept of Fish and Game

Richard Shideler: (907) 459-7283
Fax: (907) 456-3091
dick.shideler@alaska.gov

Appendix B-3.0
Polar Bear Activity/Sighting Form

United States Department of the Interior
Fish And Wildlife Service
1011 E. Tudor Road
Anchorage, Alaska 99503-6199

POLAR BEAR SIGHTING REPORT

Company: _____ **LOA #:** _____
Date: _____ **Observer Name:** _____
Time: _____**am / pm / 24** **Phone/Email:** _____

Location: _____
_____

Latitude: _____ **Longitude:** _____ **Datum:** _____

Weather Conditions: Fog_____ Snow_____ Rain_____ Clear_____ Temperature_____°F / °C

Wind Speed_____ mph / kts Wind Direction (from)_____ N NE E SE S SW W NW

Visibility: Poor_____ Fair_____ Good _____ Excellent_____

Number of Bears: (total number of bears & how many of each type) **Total # Bears** _____

	adult	sub-adult	2 year-old	yearling	cub of year
Male	_____	_____	_____	_____	_____
Female	_____	_____	_____	_____	_____
Unknown	_____	_____	_____	_____	_____

Closest Distance of Bear(s): from personnel_____ facility_____ m / yd / ft

Bear Behavior (Initial Contact): curious ignore aggressive walk run swim hunt feed rest other _____

Bear Behavior (After Contact): curious ignore aggressive walk run swim hunt feed rest other _____

Description of Encounter: _____
_____
_____
_____

Duration of Encounter: _____ **Possible Attractants Present:** Y / N

Describe Attractants: _____

Deterrents Used & Distance: Y / N m / yd / ft

_____ Vehicle	_____ Crackershell	_____ Other (describe)
_____ Horn/Siren/Noise	_____ Rubber Bullet	_____
_____ Spotlight/Headlight	_____ Bean Bag	_____

Agency/Contacts:
USFWS Craig Perham (786-3810) (FAX: 786-3816) _____ Time _____ Date _____
ADF&G Dick Shideler (459-7283) (FAX: 459-7332) _____ Time _____ Date _____
Other _____ Time _____ Date _____

Appendix B-4.0
Training Presentation on Regulatory Compliance with Marine Mammal Protection Act

Regulatory Authority for Management and Conservation of Marine Mammals

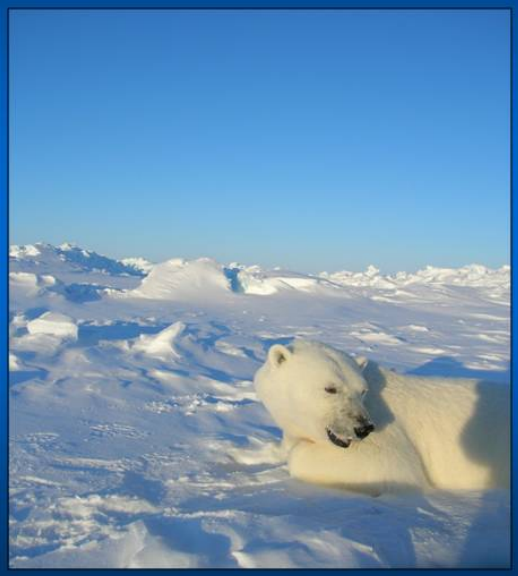
- Endangered Species Act
  - Lists Polar Bears as "Threatened"
  - Designates Critical Habitat
- Marine Mammal Protection Act (MMPA)
  - Prohibits the 'taking' of marine mammals
  - Take defined as:
    - *"..to harass, hunt, capture, collect, or kill, or to attempt to harass, hunt, capture, collect, or kill any marine mammal." (50 CFR 216.3).*
- US Fish and Wildlife Service manages
  - Polar bears & walrus
- National Marine Fisheries Service manages
  - Whales & seals
- International Treaties for Subsistence Harvest

Concerns Regarding Management of Polar Bear Populations in Alaska

- Hunting Pressure
- Ecotourism
- Protection of Denning Areas
- Potential impacts from Oil & Gas operations
- Concentration of bears at whale bone piles near human settlements
- Global Climate Change

Compliance with MMPA

- Industry can petition federal agencies for Incidental Take Regulations.
- Allows for incidental, unintentional 'take' of marine mammals. (Section 101(a)(5))
- Regulations were not in place at time of CD-3 polar bear incident in March 2006.
- Polar Bear Human Interaction/Avoidance Plan did not contain provisions for mitigation measures if an unidentified den is discovered during activities

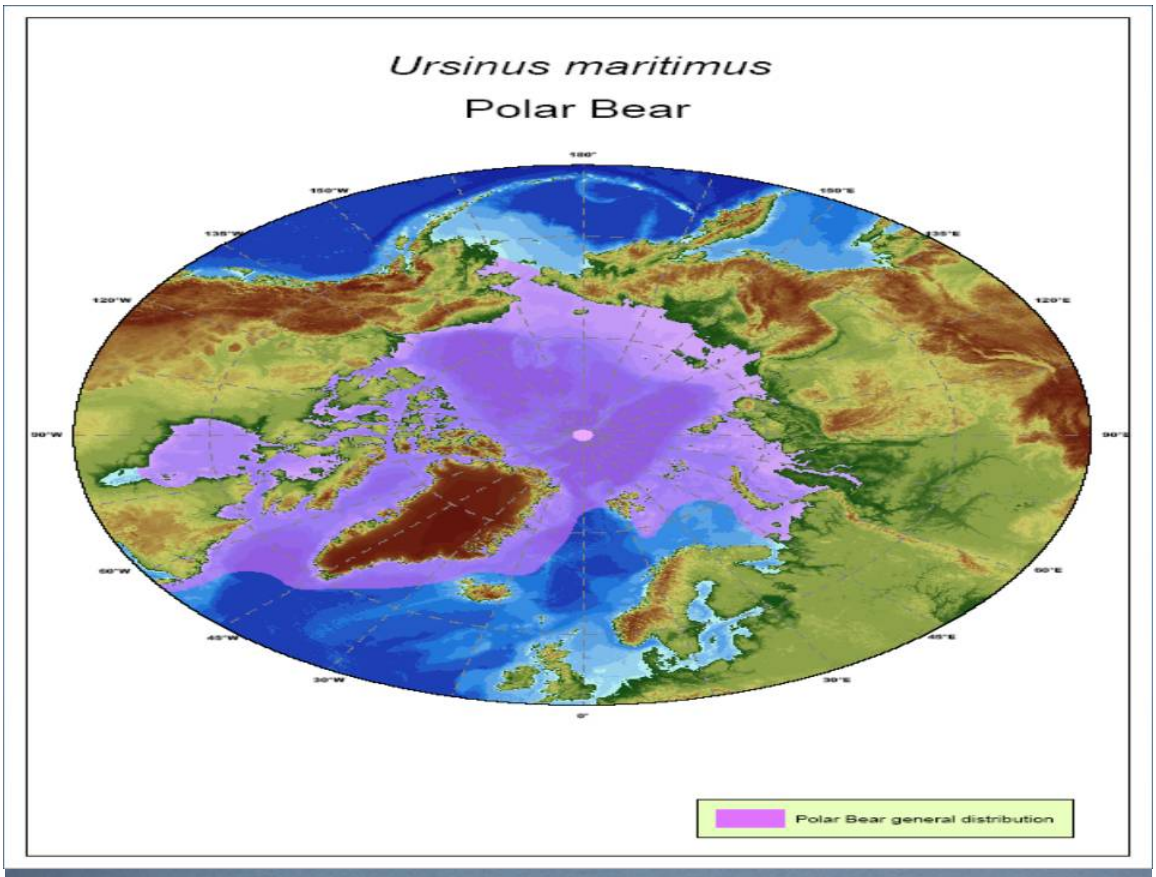


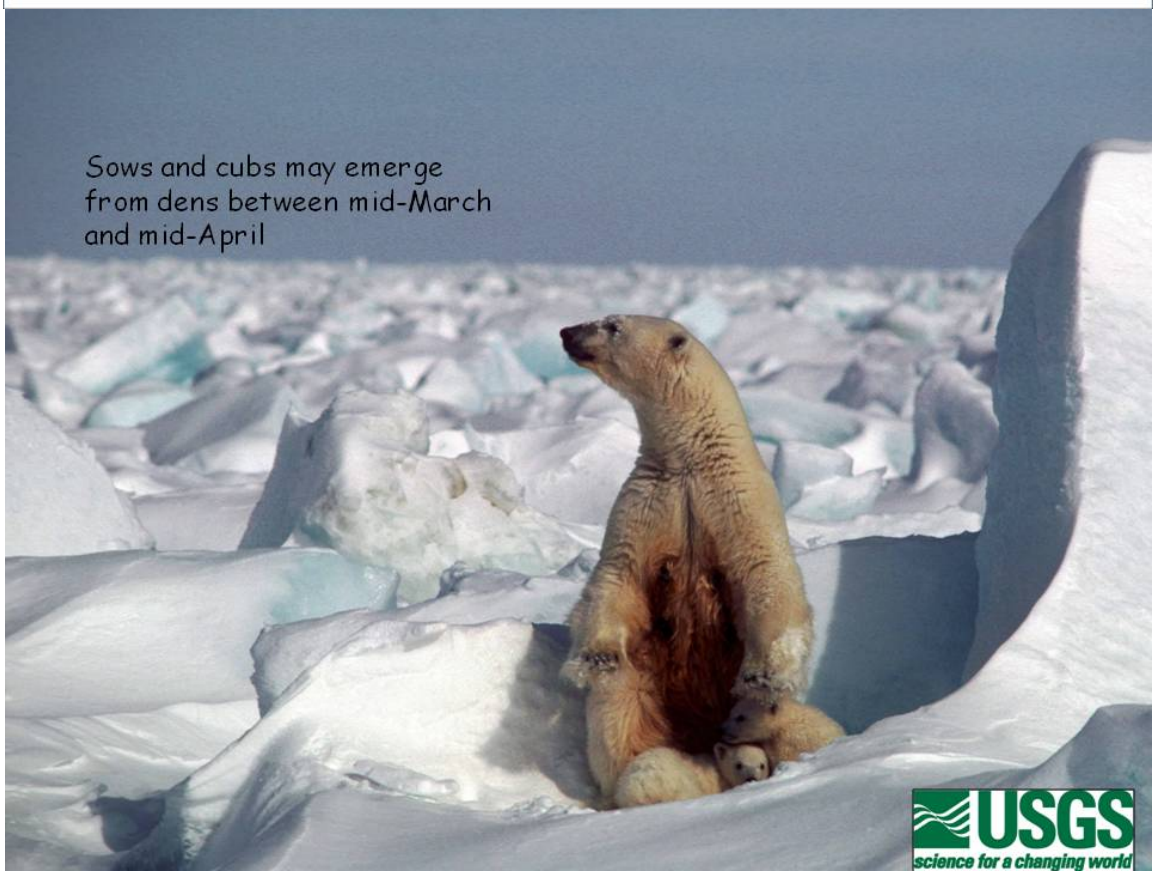
Compliance with Permit Stipulations

- Letter of Authorization Issued
  - Approved Polar Bear Interaction Plan
  - Operations Crew Manager understands and is prepared to implement conditions of authorization
  - Incidental and intentional take can be authorized
  - Activities will not operate nor pass within 1 mile of known polar bear dens
  - Report all sightings to USFWS within 48hours
  - Report sightings of polar bear dens within 24 hours
  - Place observers onsite to monitor bear activity
  - Submit reports within 90-days of construction completion
  - Submit annual reports for Operating Fields

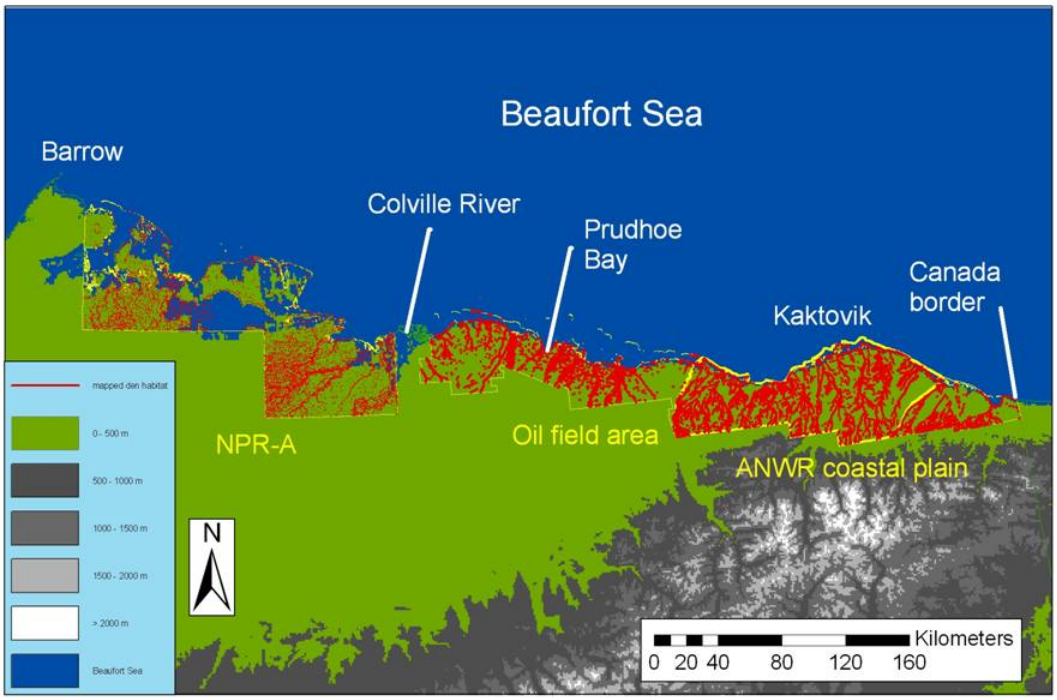
Implications for Industry

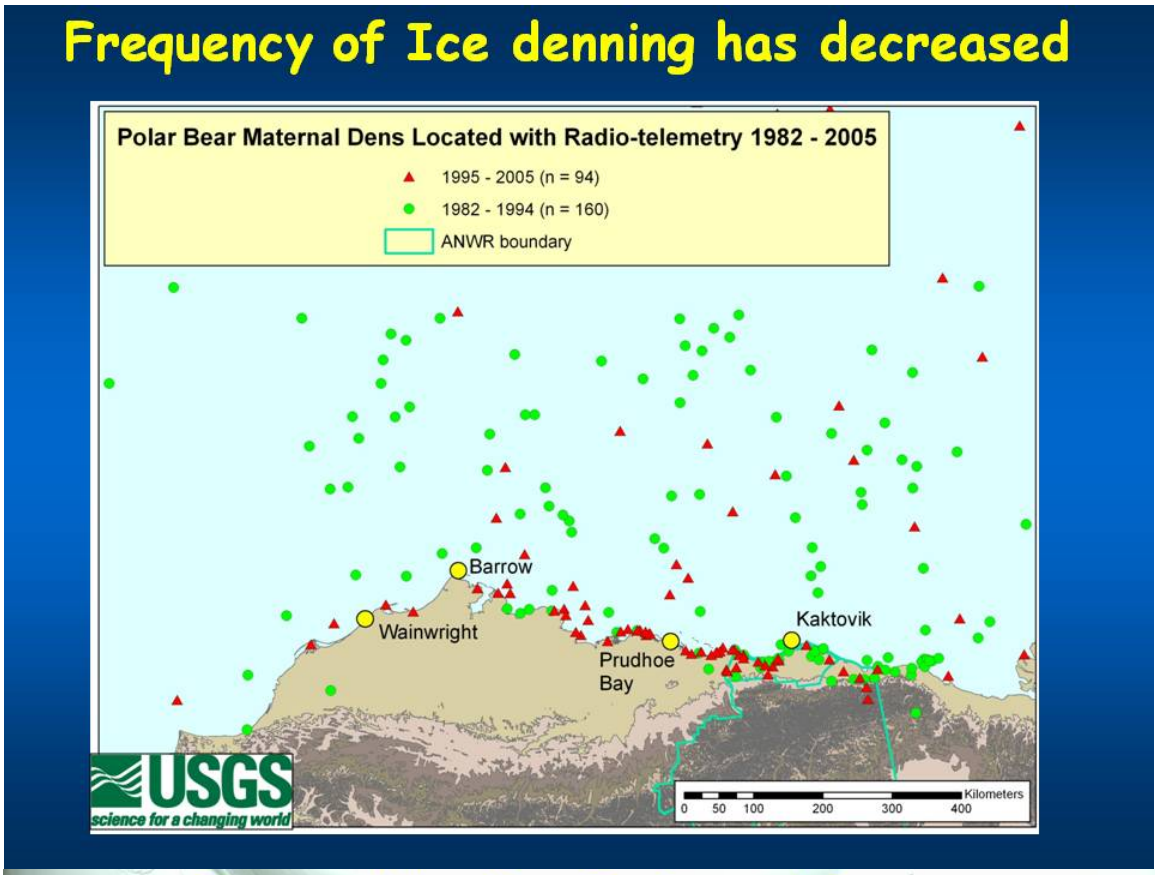
- Recent listing (2008) of polar bears under the Endangered Species Act has heightened awareness of the general public about our winter operations and future development
- "Charismatic Megafauna"
- Implications for other ice-dependent marine mammals
- Potential increase in stringent restrictions and stipulations for future exploration and development


Ursinus maritimus
Polar Bear
Polar Bear general distribution


Sows and cubs may emerge
from dens between mid-March
and mid-April
USGS
science for a changing world

Mapping polar bear maternal den habitat

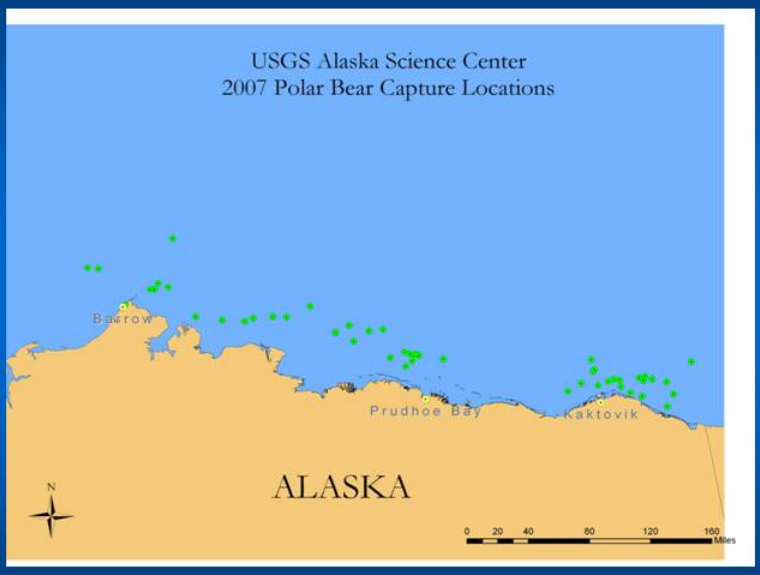



Frequency of Ice denning has decreased
Polar Bear Maternal Dens Located with Radio-telemetry 1982 - 2005
1995 - 2005 (n = 94)
1982 - 1994 (n = 160)
ANWR boundary
Barrow
Wainwright
Prudhoe Bay
Kaktovik
USGS
science for a changing world
0 50 100 200 300 400
Kilometers


Forward-looking Infrared Sensors
USGS
science for a changing world

CPAI has helped to advance FLIR technology for den detection

We get maps of known den locations each year from USGS, from 'collared females'.



How do we mitigate for human/bear interactions?

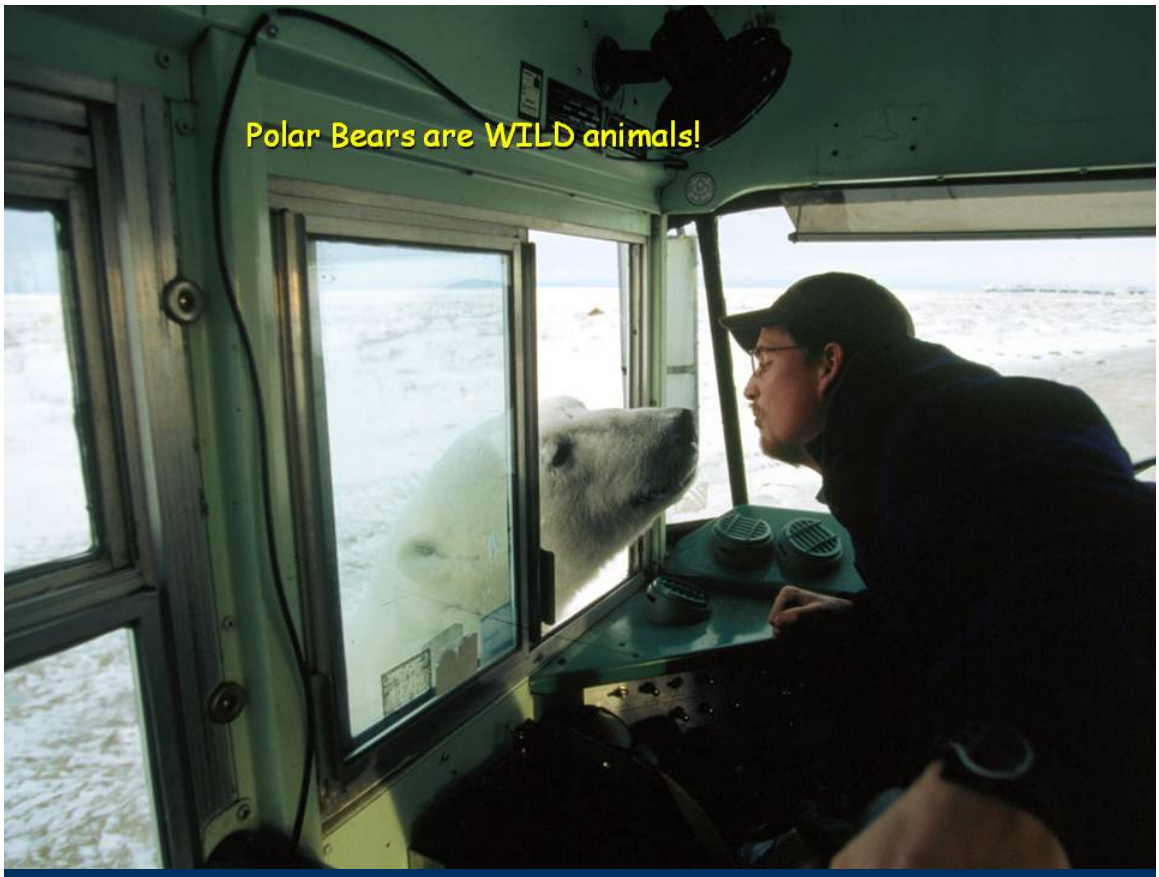
- Complete Annual Required Training
- Complete Additional Training for Projects in Polar Bear Habitat
- Conduct FLIR flights in areas of potential polar bear habitat
  - Use of Otter aircraft and trained pilots
  - Use of hand-held FLIR in smaller areas
- Obtain den location data for collared bears from USGS biologists

What to Do if Polar Bear Sow emerges from Den within 1 mile of activity

- Cease activities immediately
- Contact Supervisor and Security
- Field Environmental Coordinator will notify USFWS, Environmental Studies Coordinator and North Slope HSE Supervisor immediately
- FEC to coordinate with Operations management regarding resumption of activities

Training Requirements for North Slope Workers

- Annual refresher on polar bear awareness
- Safety Meetings
- North Slope Environmental Handbook
- This Training
- When in Doubt, Contact Your Field Environmental Coordinator!!



Preventing Interaction Protects both Humans and Bears

Insert bear attack photos


Photo courtesy of Geoff
York, USGS April 2007

Appendix C

Industry and Denning Polar Bear-Human Interaction Manual

ConocoPhillips

Industry and Denning Polar Bear – Human Interaction Manual

Prepared for ConocoPhillips Alaska, Inc.

by Canyon Creek Consulting, Inc.

Caryn Rea/CPAI

April 2008

Updated January 2012

Table of Contents

FIGURES

TABLES

I. INTRODUCTION

The Industry and Denning Polar Bear – Human Interaction Manual (Manual) has been developed in collaboration with the U.S. Fish and Wildlife Service's Marine Mammals Management Office in Anchorage Alaska, as an attachment to ConocoPhillips Alaska, Inc. (CPAI) *Polar Bear Avoidance and Interaction Plan*. The Manual was prepared as a separate document to provide detailed information on the aspects of denning and its importance to polar bears. This Manual was developed based on a settlement agreement between the U.S. Fish and Wildlife Service and ConocoPhillips Alaska, Inc. regarding a potential den disturbance event near the Alpine facility in 2006 in an effort to further minimize the likelihood of future disturbances. This Manual will constitute the best current management practices concerning denning polar bear — human interaction management for CPAI's North Slope activities identified in CPAI's current Letters of Authorization. This Manual is dynamic and may be updated with new information as appropriate because of the advancement of science regarding denning polar bear — human interaction or other relevant developments. It is important, both for the safety of humans and bears, that North Slope personnel understand the potential effects from disturbance on denning bears, and learn to recognize the signs of a potential den site during the execution of winter operations.

Prior to initiation of winter activities, CPAI will endeavor to identify bear dens through use of the Forward Looking Infrared Radar (FLIR) attached to our fixed wing aircraft or other methods acceptable to the US Fish and Wildlife Service (USFWS). The FLIR technology is not 100 % reliable in detection, thus the ability of personnel to identify signs of a den and alert others, will be essential for minimizing potential encounters during the denning season. If you have any questions concerning the information in this Manual, please contact your Field Environmental Coordinator.

II. LIFE HISTORY ASPECTS OF POLAR BEARS RELATIVE TO REPRODUCTION

a. Late age of sexual maturity

Polar bears have a late age of sexual maturity. Female polar bears in the Beaufort Sea first breed at age 5 years. Under this reproductive schedule, polar bears in the Beaufort Sea would give birth for the first time at age 6 years. Females in a number of areas in eastern Canada become sexually mature a year earlier than in Alaska. Productivity of polar bears is largely dependent on the numbers and productivity of ringed seals.

b. Long-lived

Polar bears are known to be long-lived mammals, generally immune to disease, parasites, or injury. The oldest recorded wild female and male polar bears were 32 and 28 years old, respectively, however, most polar bears die before 20 years old. Captive polar bears have been reported to live up to 41 years. The longevity of polar bears compensates for their low reproductive rates in order to maintain population levels.

c. Litter size

Polar bears generally have small litter sizes, averaging 1.4 to 1.8 cubs with litters of two cubs common. Litters of three cubs occur sporadically throughout the Arctic and most commonly reported in the Hudson Bay area. Actual litter size may vary among geographic locations because of environmental conditions and human activities affecting the condition of the bears.

d. Breeding Interval

Polar bears have a lengthy breeding interval, with females producing a litter about every three years. This is due to the length of time (2.3 years) that cubs remain with females between birthing intervals. Females continue to produce young until about 20 years of age whereas reproductive activity slows in males at around 17-19 years of age. However, some females may retain reproductive viability throughout their life as evidenced from a 29 year old female found to be in estrous at age 29. Given the usual age and length of sexual maturity and breeding interval, most females could produce 5-6 litters or about 10-12 cubs in a life time. However, only about 25% of the sexually mature females in the Beaufort Sea produce a litter each year. Only 46% of cubs produced will survive to adulthood in the Southern Beaufort Sea population.

e. Need for high survival rates

Polar bears need high survival rates in order to maintain healthy population levels. Survival rates have been reported to range from 35-75% for cubs-of-the-year, 63-98% for 1-4 year old bears, 95- 99% for adults age 5-20, and 72-99% for adults greater than 20 years of age. High survival rates are essential for population growth and stability for a species with low productivity.

f. Other aspects

Female polar bears may delay reproduction during years of poor food availability. Reproduction is delayed to increase the survival of the cubs to a later time where female body condition (fat) is improved. Repeated delay of reproduction could result in reductions in the size of the population.

III. DENNING ECOLOGY

a. Physical environment

Pregnant polar bears excavate dens in snow on land and sea ice during the fall to early winter. Pressure ridges on the pack ice and land fast ice provide primary den sites on the sea ice. Terrestrial maternal dens are found along coastal bluffs and river banks, but may also be found on lake shores and in one case an abandoned oil field gravel pad. These features are used for denning within approximately 25 miles from the coastline. These prominent surface features accumulate drifting snow which is used for den excavation and expansion.

The structure of terrestrial snow dens is highly variable. Most maternal dens in Alaska have simple chambers with one entrance/exit tunnel, while others have multiple chambers and entrance/exit tunnels. Dens are most often covered by less than 1 m of snow. These features are similar to dens elsewhere in the geographic range of polar bears, and they have essentially not changed in northern Alaska for over the 25 years data have been collected on den structure.

b. Physiology of Denning Polar Bears

Breeding has been recorded in early March and as late as mid June, but can last into July. Implantation is delayed until fall with total gestation lasting between 195–265 days, although active development of the fetus is typically suspended during most of this period. The timing of implantation and subsequently birth, likely depends on body condition of the female, which is affected by various environmental factors.

Only pregnant female polar bears den through the winter. It is not a true hibernation as the female exhibits a slightly depressed heart rate, respiration, and temperature, and lives off accumulated fat stores. Normal mineral levels are maintained, lean body mass is constant, blood electrolyte balance is preserved, and levels of blood metabolites are largely unchanged despite loss of almost half of their total body mass following den entry. The bears appear to use metabolic water produced from fat catabolism to maintain constant fluid levels.

c. Potential effects of disturbance

Oil and gas activities could potentially cause females to abandon dens and their cubs, but there are few recorded instances of such occurrences. The concern with abandonment is that it could affect the survival and development of cubs which depend on a stable environment within the maternal den.

Dr. S. Amstrup reported that occasionally bears emerge or abandon dens on ice or shorelines when on-ice traffic passes within a few hundred meters, but other bears continue to occupy dens when wheeled or tracked vehicles pass, sometimes

repeatedly within a few hundred meters. Most polar bears in snow dens continue to occupy their dens after close approaches by helicopter or other aircraft. Snow greatly attenuates helicopter noise. A female bear fitted with a satellite collar was monitored during on-ice vibroseis exploration in 1989. The female and her two cubs remained in their den when vibroseis operations passed within 1 km (0.6 mi) of the den.

d. Senescence

Senescence, or aging, is variable between males and females. Males exhibit aging characteristics earlier than females. Female senescence begins at about 20 years of age, while male senescence begins at about 17 years of age based on data from Western Hudson Bay. Senescence in females occurs when litter sizes decrease, and cubs exhibit a decrease in body mass. Senescence does not mean all bears cease to reproduce, but that fewer bears in older age classes are successful in reproduction.

e. Importance of Dens to Polar Bear Cubs

Newborn polar bear cubs are entirely dependent on their mother for survival. Cubs are weaned about two years after birth, after which they rapidly become much less dependent on their mothers for survival.

The importance of the den structure to cubs has been described by numerous polar bear researchers. The ultimate measure of the effect of den site disturbance is reproductive output, as expressed by cub survival. Dens protect cubs prior to emergence in the spring by providing shelter from weather, and insulative warmth to ambient air.

Young cubs may not survive exposures to ambient temperatures during mid-winter as a result of premature abandonment because cubs have not yet developed their body mass and fat to sufficiently maintain body heat. The survival of cubs using the den prior to natural emergence is dependent on the shelter provided by the den and the care by the female.

The timing of den emergence is thought to be related to a balance between maternal fat stores and the size of the cubs. By the time of emergence, cubs need to reach a certain body size so they have a higher chance of survival by being able to withstand temperature changes and through effective locomotion (movement). Furthermore, a high metabolic rate and fur insulation that is established as the cub grows in the den and at the den site are the mechanisms for cub survival once they leave the den.

f. Acclimation of cubs

Den residence from den emergence to den abandonment is thought to be important for preparing the cubs for their move and life on the ice. Following their emergence from the den, continued residency is beneficial for providing time for the cubs to acclimatize to their environmental surroundings, develop locomotor skills, and increase their body weight and size.

Den sites may also play a role in acclimating the cubs to their "new" environment after emerging and prior to the natural abandonment of the site by the family. Polar bear families can often remain at the den site for up to several weeks, but can be variable among various maternal groups. Dr. T. Smith found that the rate of residency of Southern Beaufort Sea bears ranged between 4 and 18 days before eventual site abandonment. During the time between emergence and abandonment, cubs will continue their rapid growth, learn to negotiate terrain, and acclimate to the arctic environment. Therefore, as stated previously, premature abandonment may reduce the cubs' survival on the ice because they are too young and weak to have adequately acclimated, or their body weight is too low for them to be strong enough to survive the rigors of the Arctic environment.

IV. DENNING RELATIVE TO THE SOUTHERN BEAUFORT SEA AND CHANGES OVER TIME

a. Timing

In the Beaufort Sea, pregnant polar bears enter maternal dens between approximately early November through mid December. In the Beaufort Sea researchers are finding that females generally emerge from dens from the second week in March through mid April, although in 2008 a female bear emerged from the den with an apparent healthy cub during the last week of February. Den entry and exit dates varied among years depending on ice and snow formation, in addition to weather conditions.

b. Location

Female polar bears in the Alaskan Beaufort Sea den in caves they create in snow drifts formed in area of topographic relief. Studies conducted between 1981 and 1994 of radio-collared bears found over half of the dens on sea ice (53% on pack ice and 4% on land fast ice) with the remainder of dens on land. Over 80% of maternal dens on land were within 10 km of the coast and over 60% were on the coast or coastal barrier islands. Bears do not show fidelity to specific den sites but certain bears do show fidelity to denning on either land or sea ice. Dens are typically scattered over a broad area in low density in Alaska.

c. Delineation of denning habitat

As previously stated, denning habitat is most commonly associated with coastal and river banks along the northern coast of Alaska. Banks typically have water or level ground below the slope and relatively level ground above which increases the likelihood of build-up of sufficient snow for denning. Bank height from 1.3 to 5.4 m is necessary to provide enough height to accumulate snow for successful denning. Figures 1 represents an example of den locations along the central Beaufort sea coast, Figure 2 shows potential denning habitat along the Beaufort sea coast, and Figure 3 represents typical denning landscape on the Beaufort sea coast. Figure 3 was obtained from the USFWS and USGS web sites.

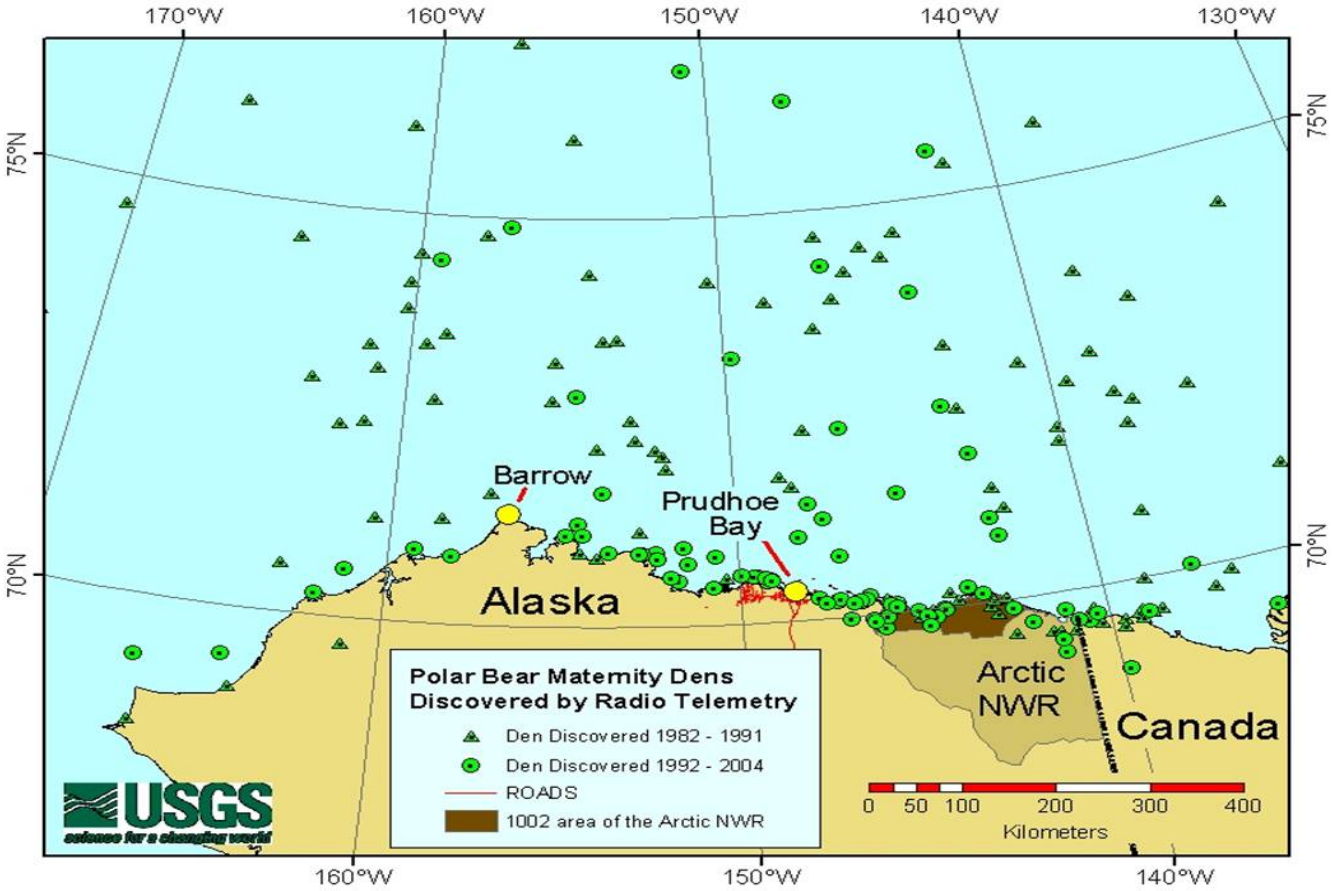


Figure 1. An example of terrestrial polar bear den locations of Beaufort Sea population (USFWS source).

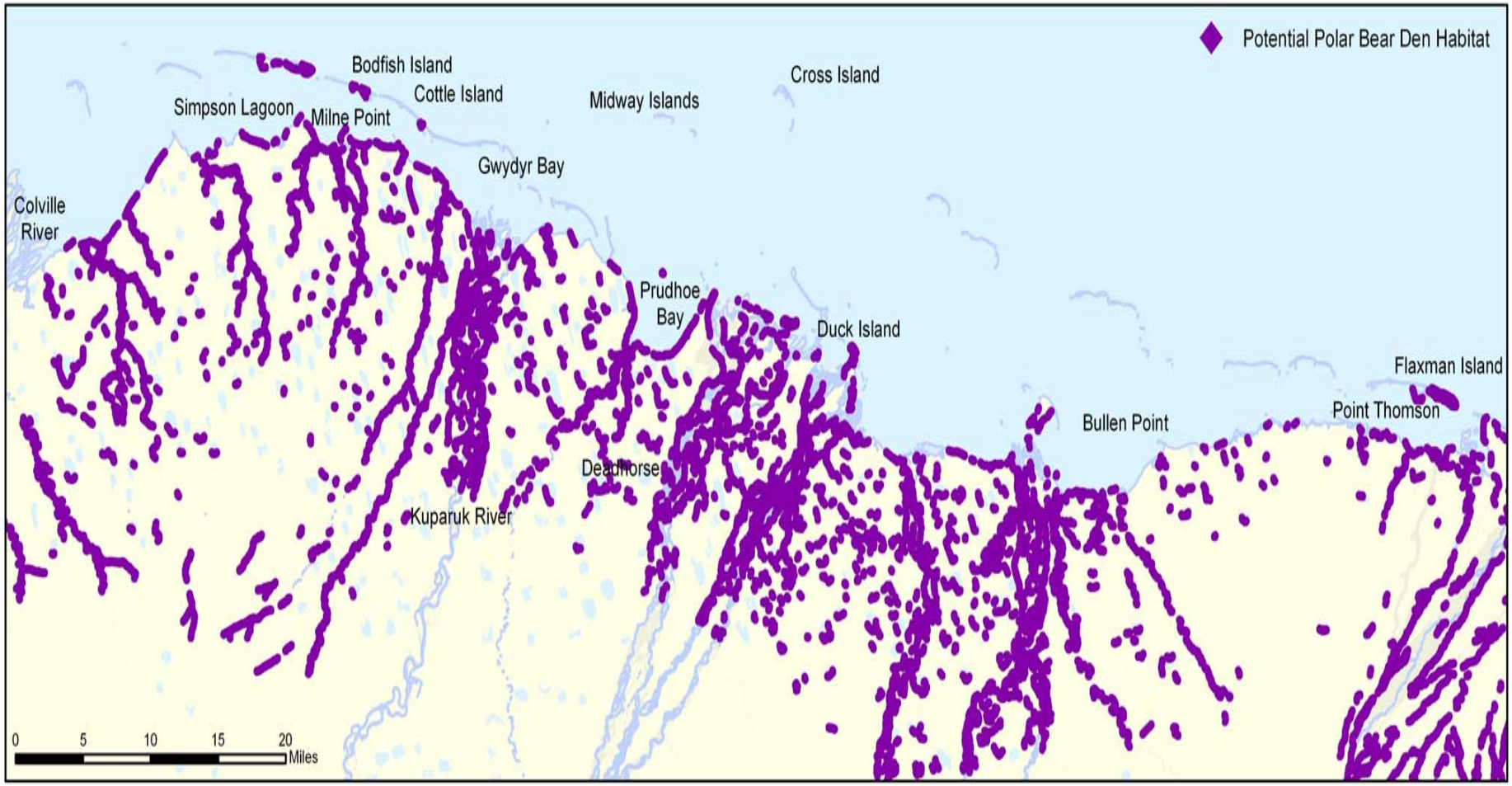


Figure 2. Distribution of polar bear maternal den habitat along the Arctic coast. Source: Durner, et. al, 2001.

This page intentionally left blank

Figure 3. Typical landscape feature underlying previous polar bear den site along Alaska coast (USGS source).

d. Recent patterns in den habitat selection

Studies of 89 satellite-tagged female polar bears off the Alaskan coast suggest the proportion of dens on the pack ice in the southern Beaufort Sea declined from 62% in 1985-1994 to 37% in 1998-2004. In addition, fewer dens occurred in the western Beaufort Sea after 1998 because of changing sea ice conditions. Sea ice changes included a decrease in stable old ice, an increase in unconsolidated ice, and a longer melt season, thereby reducing available denning habitat. The reason for the increased use of land for denning in recent years is thought to be due to the declining sea ice conditions. The proportion of female bears denning in coastal areas could increase with continuation of this pattern.

e. General description of industrial activities in denning habitat

Some industrial activities occur within or near denning habitat on the North Slope of Alaska. Figure 4 shows the locations of current and proposed development, production, and exploration sites relative to the coast with an

overlay of mapped den habitat developed by USGS scientists. As discussed earlier in this document, bears den in areas of topographic relief, which represents a relatively small proportion of the total area within 10 km of the coast.

As shown on the map (Figure 4), North Slope developed oilfields are presently interconnected from Alpine in the west to Badami in the east. Badami and Alpine are connected to the rest of the oil fields via pipelines and ice roads during winter; no permanent roads connect these two fields. All current oilfield developments are onshore, with the exception of Northstar, Oooguruk, and Nikaitchuq although a few offshore reservoirs are accessed by onshore facilities or from facilities connected to the mainland by gravel causeways. Possible future onshore developments which could occur within the next five to 10 years include Pt. Thomson, Liberty, Alpine satellites, and Northeast NPR-A. Recent lease activity in the Beaufort Sea and Chukchi Sea indicate potential exploration and development within the next five to ten years as well.

f. Relevance of polar bear dens to oil and gas activities

The relevance of understanding the importance of denning to polar bears is to heighten the awareness of North Slope personnel to the importance of dens to cub survival and ultimately survival of the polar bear population. With the decline in the use of sea ice for denning, the potential for human-polar bear interactions along coastal developments is increasing. Historically, a number of areas within and adjacent to the oil fields have been used for denning, including Pingok Island, Cross Island, the Jones Island group, Milne Point Staging Pad, Eskimo Island, Flaxman Island, and the Colville River delta. Figure 5 shows the locations of these den sites relative to oil and gas activity.

1. The Jones Island group	4. Milne Point Staging Pad
Pingok Island	5. The Colville River delta
Bodfish Island	6. Cross Island
Bertoncini Island	7. Canning River delta
Cottle Island	8. Eskimo Islands
2. Howe Island	9. Flaxman Island
3. Tigvariak Island	

Table 1. Areas of Known polar bear denning activity in the vicinity of oil and gas activities.

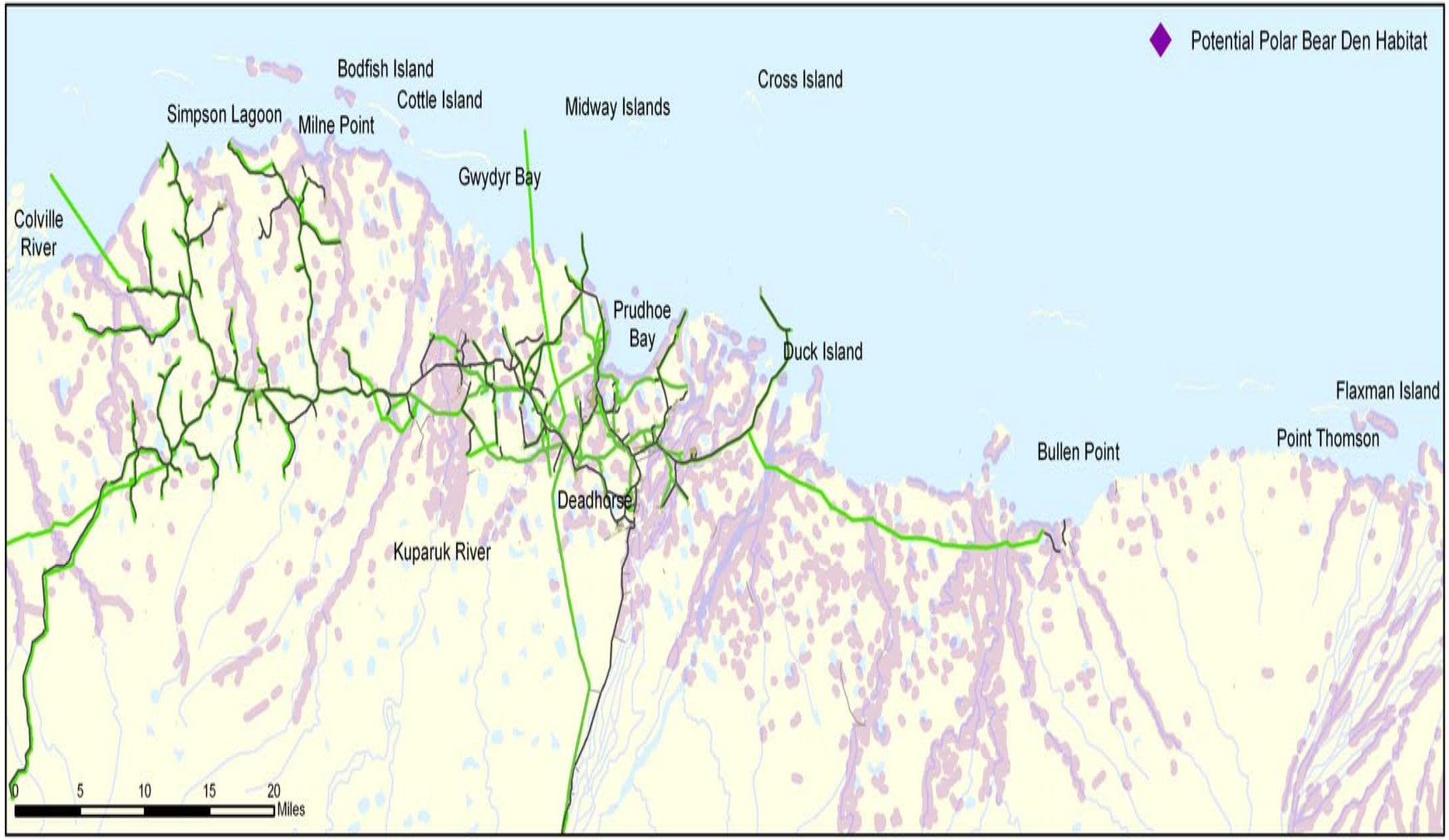


Figure 4. North Slope oil and gas fields and potential polar bear denning habitat along the Beaufort Sea Coast. Note: Green lines indicate existing infrastructure (roads, pads, pipelines) in Prudhoe Bay, Kuparuk and Colville River delta.

This page intentionally left blank

g. How we identify potential bear dens near our activities

If winter activities occur in areas not currently mapped by the USGS (e.g., Colville River delta, Northeast NPRA), CPAI will work with the Service to identify potential bear denning habitat based on knowledge of the landscape, proximity to coast, and other factors, to ascertain the need to conduct aerial surveys. If the surveys detect a bear den, the procedures cited below will be followed.

- Develop project description, including timelines and locations for construction of ice roads, and infrastructure.
- Modify air traffic patterns to avoid flying over the den, to lessen the potential for early abandonment if applicable;
- If den is within one mile of activity, limit industrial activity, such as ice chip harvesting, to minimize disturbance;
- Monitor the den site(s) for any bear activity as practicable. If the den is within a mile, use a video camera with telephoto lens to capture activity if practicable, and contact the USFWS immediately if any movement is detected. Continue to monitor until the bear(s) leave the den site;
- Communicate on a routine schedule (agreed upon through discussions with Service personnel) on the status of a polar bear(s) and den site(s) and for situational changes that may occur regarding a bear(s) during winter denning;
- If/when a bear(s) emerge, monitor the bear(s) activity and provide daily written reports of bear activity;
- If/once a bear(s) has emerged, monitor the bear(s) during any scheduled aircraft activity but avoid flying directly over the bear(s). Provide written daily reports to Service personnel.

h. What to do if a polar bear emerges from a den that was not previously known

In some instances, even though detection activities were conducted, a polar bear den may not have been identified, and yet a polar bear(s) emerges in the Spring. Once a bear den is encountered in the field it becomes a "known" den and all provisions of the LOA apply immediately (see sections IVg and Vb for guidance). When a polar bear(s) emerge from an unknown den located less than one mile from activities, activities must cease until a site specific Mitigation and Monitoring Plan is implemented by CPAI and the Service. Site specific Mitigation and Monitoring Plans will be developed by CPAI and the Service on a case by case basis and without delay.

The Field Environmental Compliance (FEC) personnel will contact the Service immediately by telephone to report the bear(s) emergence from the unknown den and to initiate discussions on protocols to be followed. The Mitigation and Monitoring Plan will be prepared as soon as possible to minimize disturbance to the bear(s) while allowing for some level of ongoing activity. For the safety of personnel and the bear(s), monitoring of the bear(s) will be conducted by security in accordance with the procedures outlined in the developed Mitigation and Monitoring Plan. If the den is located more than one mile from activities, a Mitigation and Monitoring Plan call for site specific mitigation/monitoring protocols will not be required.

Monitoring will be conducted by security personnel and where practicable, traffic closest to the den site will be re-routed and/or decreased to minimize disturbance. The details surrounding the specific procedures to be followed will be developed in consultation with Service personnel.

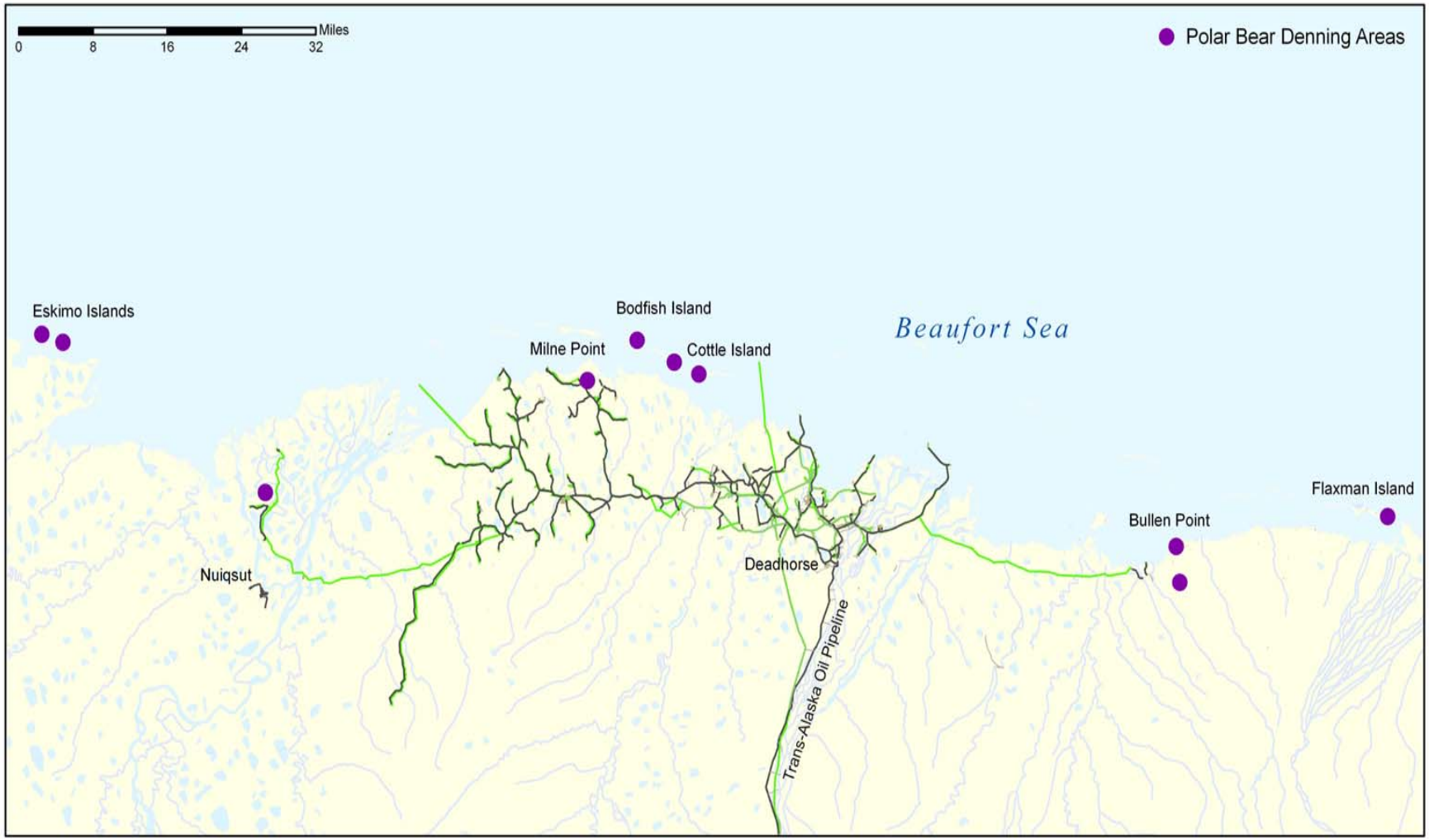


Figure 5. Locations of Historical Polar Bear Denning areas near oil and gas facilities. (USFWS source.)

This page intentionally left blank

V. LAWS AND REGULATORY REQUIREMENTS

a. Endangered Species Act

On May 15, 2008, the USFWS published a Final Rule in the Federal Register (73 FR 28212) listing the polar bear as a threatened species under the Endangered Species Act (ESA). According to USFWS, this listing is based on the best available science, which shows that loss of sea ice threatens and will likely continue to threaten polar bear habitat. Any significant changes in the abundance, distribution, or existence of sea ice could have effects on the number and behavior of these animals and their prey. This loss of habitat could put polar bears at risk of becoming endangered in the foreseeable future, the standard established by the ESA for designating a threatened species.

Additionally the USFWS designated critical habitat for polar bears on December 7, 2010 (75 FR 76086). Critical habitat was defined for a large acreage of sea-ice, terrestrial denning habitat (extending 20 miles inland east of the Kavik River, and 5 miles inland between the Kavik river and Barrow), and barrier island habitat, CPAI oil and gas activities occur largely within the designated habitat area, however critical habitat does not include manmade structures (e.g., houses, gravel roads, generator plants, sewage treatment plants, hotels, docks, seawalls, pipelines) and the land on which they are located existing within the boundaries of designated critical habitat on the effective date of [the] rule (December 7, 2010).

b. Marine Mammal Protection Act

Polar bears are protected by the 1972 Marine Mammal Protection Act (MMPA), as amended November 2001 (16 USC 1361-1407). The MMPA explicitly states that it is illegal to “harass, injure, capture, kill, or to attempt to harass, injure, capture, or kill" a marine mammal. The term used to describe any of these activities is "take". However, Section 101(a)(5)(A) of the MMPA includes an exception to the law by authorizing the issuance of regulations to allow the incidental, but not intentional, taking of small numbers of marine mammals, upon request for a specified activity in a specified geographic region. Industry petitions the federal government to promulgate regulations to allow for incidental take of a marine mammal every 5 years. These regulations are important for the continued operation of oil and gas activities in polar bear habitat.

c. Incidental Take Regulations

The USFWS can issue a Letter of Authorization (LOA) for the incidental, unintentional take of a marine mammal under the provisions of incidental take regulations, petitioned for by the oil and gas industry. Examples of conditions

attached to an LOA are provided below. It should be noted, however, that an activity-specific LOA could have additional or different stipulations.

> "Follow all provisions in the polar bear interaction plan including training; roles and responsibilities; avoidance and protection procedures, alert system, deterrence, and reporting for all CPAI and contract personnel working on the North Slope. The LOA is valid only for the activities and locations identified in the most recent petition by industry for regulations governing unintentional take." Note, for operational fields such as Prudhoe Bay, Kuparuk and Alpine, the LOA is in effect for the period of regulations, typically 5 years. An LOA received for an exploration activity is only valid for the year of activity because these locations typically change on an annual basis.
>
> "Operations crew managers must be fully aware, understand, and be capable of implementing the conditions of the authorization."
>
> "Intentional take is not authorized." Intentional harassment (or deterrence) is granted through a separate authorization from the USFWS each year (see below).
>
> "Activities will not operate or pass within one mile of known polar bear dens, and all observed dens will be reported to the Marine Mammals Management Office, USFWS within 24 hours. The USFWS will evaluate these instances on a case-by-case basis to determine the appropriate action. Potential responses may range from cessation or modification of work to conducting additional monitoring."
>
> "Polar bear monitoring, reporting, and survey activities will be conducted in accordance with 50 CFR 18 Section 18.128." An annual monitoring report of activities within CPAI's operating oilfields will be delivered to USFWS by December 15. The previous years' monitoring reports will be required before the LOA is valid for another year; therefore, a request to extend this coverage should be submitted to USFWS shortly following submittal of the annual report. The basic monitoring and reporting requirements are as follows:
>
> - "Cooperate with USFWS, and other designated federal, state, or local agencies to monitor the impacts of oil and gas exploration activities on polar bears;
> - "Designate a qualified individual to observe, record, and report the effects of the activity on polar bears; and

- "At the discretion of USFWS, allow USFWS to place an observer on the site to monitor the impacts of the activity on polar bears."

For site specific exploration programs, which vary annually, a report of polar bear sightings must be submitted to the Office of Marine Mammals Management within 90 days after the completion of activities.

d. Intentional Take (deterrence, or hazing)

Another authorization issued to North Slope operators by USFWS allows qualified individuals to "take" polar bears, by harassment (deterrence activities), while conducting oil and gas industry related activities in polar bear habitat. This authorization is granted annually by USFWS to operating fields (Kuparuk, Alpine). For exploration activities, a site-specific LOA is requested by permitting.

- This authorization is restricted to deterrence activities.
- CPAI is responsible to ensure that designated personnel are adequately trained to conduct polar bear deterrent activities.
- Authorized personnel are responsible for reporting harassment or hazing events to USFWS as soon as possible and no later than 24 hours from the occurrence.
- This authorization is valid for one calendar year and is renewed annually.

e. Defense of Life

Employee training programs are designed to educate field personnel about the dangers of bear encounters and to implement safety procedures in the event of a bear sighting. Personnel are instructed to leave an area where bears are seen. If it is not possible to leave, in most cases bears can be frightened away using deterrents, such as pyrotechnics or aircraft. However, if human life is threatened and the above efforts are not successful, a lethal self-defense take may be necessary. Such an action would be immediately reported to the USFWS.

f. Mitigation measures under Incidental Take LOAs

CPAI has prepared and implemented a "Polar Bear Avoidance and Interaction Plan", to comply with the incidental take provisions of the LOA. The Plan addresses the objectives, process, and mitigation steps including pre-season planning, den site oil/gas activity restrictions, and communication protocols. The plan is on file with the USFWS for all CPAI activities. For new programs that may have additional mitigation or monitoring requirements (adjacent to coast, for example), an amendment to the plan may be submitted to the USFWS by CPAI permitting.

g. Site specific planning, scoping, and integration of mitigation measures

In areas identified as potential polar bear denning habitat by the USFWS, the following steps for engagement will be universally implemented prior to winter activities:

1. Develop project description, including timelines and locations for construction of ice roads, and infrastructure.
2. Engage with USFWS MMM personnel to identify potential den survey locations and protocols on the basis of proposed winter activity. On the basis of these discussions, CPAI will engage trained observers to conduct aerial surveys from a fixed wing aircraft or other aerial platform using the Forward Looking Infrared Radar (FLIR) or some other method approved by USFWS over the proposed work area. If USFWS or USGS biologists cannot accompany the crew, the flight tapes will be provided to these agencies for review.
3. If a polar bear den is identified through these surveys, CPAI will work with the USFWS to develop mitigation measures, examples of which are described below:

- "Modify air traffic patterns to avoid flying over the den, to lessen the potential for early abandonment". For example, this was a condition in 2007/08 when a potential bear den was identified approximately one mile from the Alpine airstrip;
- "Limit all industrial activity, such as ice chip harvesting, within the one mile den buffer to minimize disturbance". Similar to above;
- Monitor the den site(s) for any bear activity as practicable, by security. Contact the USFWS immediately if any movement is detected. Continue to monitor until the bear(s) leave the den site;
- Communicate on a routine schedule and medium (agreed upon through discussions with USFWS personnel) on the status of a polar bear(s) and den site(s) and for situational changes that may occur regarding a bear(s) during winter denning;
- If/when a bear(s) emerge, monitor the bear(s) activity and provide written daily reports to the USFWS;
- If/once a bear(s) has emerged, monitor the bear(s) during any scheduled aircraft activity but avoid flying directly over the bear(s). Provide daily written reports to USFWS personnel.

VI. LITERATURE CITED

Amstrup, S.C., G. York, T.L. McDonald, R Nielson, and K. Simac. 2004a. Detecting denning polar bears with forward-looking infrared (FLIR) imagery. Bioscience 54(4): 337-344.

Amstrup, S.C., T.L. McDonald, and G.M. Durner. 2004b. Using satellite radio-telemetry data to delineate and manage wildlife populations. Wildlife Society Bulletin 32:661-679.

Amstrup, S.C. 2003. Polar Bear (*Ursus maritimus).* Pages 587-610 *in* Feldhamer, B.C. Thompson, and J.A. Chapman, *eds.* Wild Mammals of North America- Biology, Management, and Conservation. John Hopkins University Press. Baltimore, Maryland.

Amstrup, S.C. 2000. Polar bear. Pp. 133-157 *in* J.J. Truett and S.R. Johnson, *eds.* The natural history of an Arctic oilfield: development and the biota. Academic Press, Inc. New York.

Amstrup, S.C. 1995. Movements, distribution, and population dynamics of polar bears in the Beaufort Sea. Ph.D. Dissertation, University of Alaska, Fairbanks, Alaska. 299 pp.

Amstrup, S.C., and G.M. Durner. 1995. Survival rates of radio-collared female polar bears and their dependent young. Canadian Journal of Zoology 73:13 12–22.

Amstrup, S.C., and C. Gardner. 1994. Polar bear maternity denning in the Beaufort Sea. Journal of Wildlife Management 58:1–10.

Amstrup, S.C. 1993. Human disturbances of denning polar bears in Alaska. Arctic 46(3):246-250.

Amstrup, S. C., and C. A. Nielsen. 1989. Acute gastric dilatation and volvulus in a free-living polar bear. Journal of Wildlife Diseases 25:601-4.

Amstrup, S. C., I. Stirling, and J.W. Lentfer. 1986. Past and present status of polar bears in Alaska. Wildlife Society Bulletin 14: 241-254.

Andersen, M. and J. Aars. 2005. Behavioral Responses of polar bears to disturbance by snowmobiles. *In* Abstracts: 16th Biennial conference on the biology of marine mammals. Society for Marine Mammalogy. 330 pp.

Atkinson, S. N., and M. A. Ramsay. 1995. The effects of prolonged fasting on the body composition and reproductive success of female polar bears. Functional Ecology 9:559-67.

Blix, A.S. and J.W. Lentfer. 1992. Noise and vibration levels in artificial polar bear dens as related to selected petroleum exploration and developmental activities. Arctic 45(1):20-24.

Blix, A.S. and J.W. Lentfer. 1979. Modes of thermal protection in polar bear cubs – at birth and on emergence from the den. American Journal of Physiology. 326:67-74.

DeMaster, D.P., M.C.S. Kingsley, and I. Stirling. 1980. A multiple mark and recapture estimate applied to polar bears. Canadian Journal of Zoology 58:633–3 8.

Derocher, A.E. and I. Stirling. 1994. Age-specific reproductive performance of female polar bears. Journal of Zoology. 234:527-536.

Derocher, A.E., I. Stirling, and D. Andriashek. 1992. Pregnancy rates and serum progesterone levels of polar bears in Western Hudson Bay. Canadian Journal of Zoology 70:561–66.

Derocher, A.E. and I. Stirling. 1992. The population dynamics of polar bears in Western Hudson Bay. Pages 1150–59 *in* McCullough, D.R. and R. H. Barrett, *eds.* Wildlife 2001: populations. Elsevier Applied Science, London, UK.

Durner, G.M., S.C. Amstrup, and A.S. Fischbach. 2003. Habitat characteristics of polar bear terrestrial maternal den sites in northern Alaska. Arctic 56(1):55–62.

Durner, G.M., S.C. Amstrup, and K.J. Ambrosius. 2001. Remote identification of polar bear maternal den habitat in northern Alaska. Arctic 54:115–21.

Fischbach, A.S., S.C. Amstrup, and D. Douglas. 2007. Landward and eastern shift of Alaska polar bear denning associated with recent sea ice changes. Polar Biology 30(11):1395-1405.

Folk, G. E., Jr., and R. A. Nelson. 1981. The hibernation of polar bears: A model for the study of human starvation. Proceedings of the International Symposium on Circumpolar Health 5:617-19 (Nordic Council for Arctic Medical Research Report Series 33).

Furnell, D.J. and R.E. Schweinsburg. 1984. Population dynamics of central Canadian Arctic island polar bears. Journal of Wildlife Management 48:722–28.

Guppy, M. 1986. The hibernating bear: Why is it so hot, and why does it cycle urea through the gut? Trends in Biochemical Sciences 11:274-76.

Harington, C.R. 1968. Denning habits of the polar bear (*Ursus maritimus* Phipps). Report Series 5, Canadian Wildlife Service, Ottawa, Canada.

Kingsley, M.C.S. 1979. Fitting the von Bertalanffy growth equation to polar bear age–weight data. Canadian Journal of Zoology 57:1020–25.

Lentfer, J. W., and L. H. Miller. 1969. Big game investigations: Polar bear studies (Project Segment Report, Vol. 10 (Federal Aid in Wildlife Restoration, Projects W-15-R-3 and W-17-1, Work Plans M and R). Alaska Department of Fish and Game, Division of Game, Juneau.

Lentfer, J.W. and R.J. Hensel. 1980. Alaskan polar bear denning. International Conference on Bear Research and Management 4:101–8.

Lentfer, J. W., J. R. Hensel, J. R. Gilbert, and F. E. Sorensen. 1980. Population characteristics of Alaskan polar bears. International Conference on Bear Research and Management 4:109-15.

Nelson, R. A. 1987. Black bears and polar bears—Still metabolic marvels. Mayo Clinic Proceedings 62:850-53.

Nelson, R. A., H. W. Wahner, J. D. Jones, R. D. Ellefson, and P. E. Zollman. 1973. Metabolism of bears before, during, and after winter sleep. American Journal of Physiology 224:491-96.

Ovsyanikov, N. 1998. Den use and social interactions of polar bears during spring in a dense denning area on Herald Island, Russia. Ursus 10:251-258.

Ramsay, M.A. and I. Stirling. 1990. Fidelity of female polar bears to winter-den sites. Journal of Mammalogy 71:233–36.

Ramsay, M.A. and I. Stirling. 1988. Reproductive biology and ecology of female polar bears (*Ursus maritimus).* Journal of Zoology (London) 2 14:601–34.

Ramsay, M.A. and R.L. Dunbrack. 1986. Physiological constraints on life history phenomena: the example of small bear cubs at birth. American Naturalist 127:735–43.

Ramsay, M.A. and I. Stirling. 1982. Reproductive biology and ecology of female polar bears in Western Hudson Bay. Naturaliste Canadien 109:941–46.

Richardson, E., E. Regehr, C. Davis, I. Stirling, and N.J. Lunn. 2005. Reproductive and survival senescence in polar bears: the effects of sex, age, and body condition *in* Abstracts: the 16th Biennial Conference on the Biology of Marine Mammals, San Diego, CA, December 12-16, 2005, 236 pp.

Schliebe S., T. Evans, K. Johnson, M. Roy, S. Miller, C. Hamilton, R. Meehan, S. Jahrsdoerfer. 2006. Rage-wide status review of the polar bear. U.S. Fish and Wildlife Service, 1011 E. Tudor Road, Anchorage, Alaska.

Smith, T.S., S.T. Partridge, S.C. Amstrup, S. Schliebe. 2007. Post-Den Emergence Behavior of Polar Bears (Ursus maritimus) in Northern Alaska. Arctic 60:187-194.

Stirling, I. 1990. Polar bears and oil: ecological perspectives. Pages 223–34 *in* J.R. Geraci and D.J. St. Aubin, *eds.* Sea mammals and oil: confronting the risks. Academic Press, San Diego, California.

Stirling, I. 1988. Polar bears. University of Michigan Press, Ann Arbor, Michigan, USA. 220 pp.

Stirling, I., W. Calvert, and D. Andriashek. 1984. Polar bear (*Ursus maritimus)* ecology and environmental considerations in the Canadian High Arctic. Pages 201–22 *in* Olsen, R., F. Geddes, and R. Hastings, *eds.* Northern ecology and resource management. University of Alberta Press, Edmonton, Canada.

Stirling, I., M. Kingsley, and W. Calvert. 1982. The distribution and abundance of seals in the eastern Beaufort Sea, 1974–79. Canadian Wildlife Service Occasional Paper No. 47, Ottawa, Canada.

Stirling, I., W. Calvert, and D. Andriashek. 1980. Population ecology studies of the polar bear in the area of southeastern Baffin Island. Occasional Paper No. 44. Canadian Wildlife Service, Ottawa, Canada. 30 pp.

Stirling, I., C. Jonkel, P. Smith, R. Robertson, and D. Cross. 1977. The ecology of the polar bear (*Ursus maritimus)* along the western coast of Hudson Bay. Occasional Paper No. 33. Canadian Wildlife Service, Ottawa, Canada. 64 pp.

Stirling, I., A.M. Pearson, and F.L. Bunnell. 1976. Population ecology studies of polar and grizzly bears in northern Canada. Transactions of the North American Wildlife and Natural Resources Conference 41:421–30.

Stirling, I., C. Jonkel, P. Smith, R. Robertson, and D. Cross. 1977. The ecology of the polar bear (*Ursus maritimus)* along the western coast of Hudson Bay. Occasional Paper No. 33. Canadian Wildlife Service, Ottawa, Canada. 64 pp.

Taylor, M.K. Unpublished data. Government of Nunavut, Iqaluit, Nunavut Territory, Canada.

Uspenski, S M., *ed.* 1977. The polar bear and its conservation in the Soviet Arctic. A collection of scientific papers. Central Laboratory of Nature Conservation, Moscow, Russia.

Wimsatt, W.A. 1963. Delayed implantation in the Ursidae, with particular reference to the black bear (*Ursus americanus* Pallas). Pages 49–76 *in* Enders, A.C., *ed.* Delayed implantation. University of Chicago Press, Chicago.

ATTACHMENT A

LIST OF CONTACTS

(Excerpt from Polar Bear Avoidance and Interaction Plan)

ConocoPhillips Alaska

Alpine Facilities

Security: (907) 670-4900 (phone)
(907) 670- 4551 (fax)

FEC Coordinator

Primary:	(907) 670-4200
Pager information:	(907) 670-4930, pager 718
Secondary:	(907) 670-4756
HSE Fax:	(907) 670-4507
ACS Lead Technician:	(907) 670-4586
Pager Information:	(907) 670-4930, pager 402

Greater Kuparuk Area

Security:	(907) 659-7300

FEC Coordinator

Primary:	(907) 659-7212
Pager information:	(907) 659-7000, pager 669
Secondary:	(907) 659-7242
HSE Fax:	(907) 659-7712
ACS Lead Technician:	(907) 659-7879
Pager information:	(907) 659-7000, pager 801

Anchorage

Environmental Studies

Caryn Rea	Robyn McGhee
(907) 265-6515(w)	(907) 265-1087(w)
(907) 229-8972 (cell)	(907) 632-1149 (cell)
(907) 653-1990 (hm)	(907) 529-1222 (hm)

Agency Contacts

U.S. Fish and Wildlife Service, Marine Mammals Division

Craig Perham: (907) 786-3810 (w)
(907) 887-3082 (hm)
Craig_Perham@FWS.gov

Christopher Putnam: (907) 786-3844 (w)
(907) 268-0577 (hm)
Christopher_Putnam@FWS.gov

Marine Mammals Management Office Fax: (907) 786-3816

Alaska Dept of Fish and Game

Richard Shideler: (907) 459-7283
Fax: (907) 456-3091
dick.shideler@alaska.gov

ATTACHMENT B
ADDITIONAL REFERENCES

Document/Information Source	Pertinent Information
Polar Bear Avoidance and Human Encounter/ Interaction Plan	• Polar bear detection and avoidance techniques • Background and history of polar bears on the North Slope • Guidance for complying with federal polar bear regulations (Marine Mammal Protection Act) and specific permit conditions • Procedures for submitting sighting/activity reports • Description of polar bear training program(s)
Polar Bear Management Training Course Materials Videos-*Staying Safe and Working in Polar Bear Country*	• Consequences of increased polar bear presence • Prevention of polar bear attraction including proper food and waste handling and disposal techniques • Methods for reducing artificial denning sites • Detection and avoidance of polar bear dens
Annual Polar Bear Awareness Training (on-line)	• For workers on the North Slope only with potential to work in coastal areas where polar bear and human interactions may exist. • Includes video and computer based learning
Deterrence Training	• Specific to personnel that are engaged in hazing or deterrence activities (polar bear watch designees, security staff) • Classroom training • Training in use of deterrence methodologies such as cracker shells, bean bags, etc. Training is done by federal and/or state wildlife biologists or others (e.g. security) if trained by the aforementioned staff.
Alaska Waste Disposal and Reuse Guide Waste Management Certification Training Program (presentation)	• Summary of CPAI's approved waste management practices as detailed in the Alaska Waste Disposal and Reuse Guide • Comprehensive set of "best" waste management practices including proper handling and disposal of food waste.

Document/Information Source	Pertinent Information
North Slope Environmental Field Handbook	• Summary of North Slope wildlife interaction policies and related topics such as garbage control, worker safety, and wildlife habitat protection • Summary of the occurrence and behavior of common North Slope species • Summary of approved waste management practices including use of proper wildlife-proof dumpsters
Springtime Evidence of a Polar Bear Den Site/USFWS	• Photographs showing typical 'sign' of polar bear den during spring • Photograph from a FLIR flight showing initiation of digging a den (tailing pile) in December
Employee Awareness Tools	• CPAI contractor safety meetings (e.g., pre-spud, daily tailgate, etc.) • Environmental alerts (issued throughout camp at the onset of winter field season to heighten awareness of workers on polar bear avoidance measures)

Useful Websites:

USGS Alaska Science Center:
http://alaska.usgs.gov/science/biology/polar_bears/index.html

US Fish and Wildlife Service
http://www.fws.gov/habitatconservation/marine_mammals.htm

Polar Bears International
http://www.polarbearsinternational.org/

World Wildlife Fund
http://worldwildlife.org/polarbears/science.cfm

APPENDIX D

CPAI Polar Bear Hazing and Deterrence Policies and Procedures

Revision 1

January 2012

CPAI Polar Bear Hazing and Deterrence Policies and Procedures

Training Requirements

All North Slope security officers and/or personnel assigned to perform bear guard duties will receive the appropriate training needed to properly uphold their roles and responsibilities. Only properly trained personnel are authorized to conduct polar bear deterrence and hazing activities. Designated hazers will be firearms qualified and familiar with the capabilities and limitations of the tools (e.g., hazers will practice with actual deterrents during training classes).

Only United States Fish and Wildlife Service (USFWS) Marine Mammals Management staff, or individuals approved in writing by USFWS will provide the classroom deterrence module training. All personnel assigned as trainers for any bear monitoring/hazing or bear guard program will meet annually to review and revise the training curricula and standards to assure consistency among trainers. Any revisions or significant modifications of training will be reviewed and discussed with USFWS prior to implementation. Deterrence training for authorized hazers will occur, at a minimum, biannually. Deterrence and hazing training will include, at a minimum, the following:

- Regulatory background (e.g., review of Marine Mammals Protection Act, Endangered Species Act, and associated definitions) - annually.
- Review of the polar bear interaction plan - annually.
- Biology and behavior of polar bears and preventing bear conflicts - biannually.
- Hazing and deterrence principles, techniques and limitations - biannually.
- Accountability and reporting requirements of hazers - biannually.
- Identification of and field training with deterrent and lethal rounds - biannually.

Steps of Progressive Deterrence and Hazing

Any type of deterrence or hazing must be permitted by a Letter of Authorization for intentional take of polar bears, and should be conducted only as a last measure when needed to prevent escalation of an encounter and to ensure the safety of people and wildlife. If a bear is present at a work site but all personnel are able to retreat indoors to safety or otherwise leave the work site the bear shall not be hazed, regardless of hindrance of the progression of work activities. If altering the bear's behavior is the only way in which to ensure the safety of workers, the following steps of progressive deterrence and hazing will be followed:

1. Intimidate with size and movement – Position vehicle between bear and work area, shine headlights.
2. Startle with sound - Yelling, clapping, followed by horn honking, sirens, and finally cracker shells.
3. Non-lethal physical contact – Fire ammunition, such as a beanbag or fin-stabilized rounds, at bear.
4. Lethal contact – Fire lethal round at bear. This can only be used in defense of human life. Example scenarios include a charging bear leaving no avenue of escape for personnel, or a bear that has already attacked a person.

Ammunition Storage Inspection and Handling

Only the types of ammunition listed in the following table are authorized for bear hazing and are to be labeled and stored in containers as specified.

Type of Round	Type of Casing	Label	Manufacturer	**STORAGE CONTAINER** Label and Color
Shell Cracker	Transparent plastic	Explosive/Crimped shell nose	Stoneco, Inc/ Relabeled Northern Security Supply	"SHELL CRACKER" Orange
Bean Bag Round	Transparent plastic	CTS Super Sock/ Cardboard shell nose	Combined Tactical Systems/Super Sock	"BEAN BAG and/or FIN-STABLILIZED" Smoke Gray
Bean Bag Round	Light grey, not transparent	Ballistic System P/N 4020 Ballistic Baton	MK Ballistics System	
Fin-Stabilized Round	Transparent plastic	Fin Stabilized/Black rubber projectile visible at shell nose	Defense Technologies	
Lethal Round	Non-transparent plastic	Federal Rifled Slug/Lead shell nose	Federal	"LETHAL SLUGS" Forest Green
Lethal Round	Transparent plastic	Classic Magnum/Lead shell nose	Brenneke	

A maximum of twenty five rounds of each type of ammunition will be carried. The ammunition will be containerized as described in the table above. Containers will be inspected by the officer assigned to bear hazing duties at the beginning of each shift to verify the number and types of rounds in possession. Only lethal ammunition will be carried in a shotgun magazine (tube). If non-lethal rounds are to be used they will be loaded into the firearm immediately prior to discharge.

The preferred practice for ammunition handling in the field will be to leave the rounds in their color-coded containers at all times. The firearm handler must always inspect each cartridge casing for color and text to verify which type of round is being loaded. Rounds should be loaded into the firearm directly from the box immediately before use. Carrying ammunition in different containers (i.e.

coat pockets) should be avoided. If a situation arises where a hazer must carry ammunition out of the containers (such as they must walk to an area where the vehicle cannot travel and the plastic containers cannot be brought with them) then ammunition may be carried in other manners although should remain segregated (i.e. different coat pockets or bags for different types of rounds). It is vital to know exactly what type of round is in the firearm at all times so that they are used appropriately.

Fire Arms Discharge Reporting and Evidence Retention

Any discharge of a firearm will be thoroughly documented and reported to the CPAI Field Environmental Coordinator (FEC). The FEC will make the appropriate notifications to USFWS as detailed in Section 6.0 of CPAI's Polar Bear Avoidance and Interaction Plan, as required by the Letters of Authorization issued to CPAI for the intentional take of polar bears.

Any recoverable materials including spent shell casings, bean bags, etc. will be collected and preserved in accordance with standard law enforcement evidence collection and chain of custody protocols. The evidence will be maintained for a period of sixty (60) days. If no adverse reaction is brought forward as a result of the bear hazing, the materials will be disposed of following this sixty day period.

Additional Information

Any questions or clarifications should be directed to the Security Captain at Alpine (907-670-4003) or Kuparuk (907-659-7213).

Attachment 3
USFWS LOA for Incidental Takes

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1011 E. Tudor Road
Anchorage, Alaska 99503-6199

IN REPLY REFER TO:

AFES/MMM

JAN 15 2013

Ms. Caryn Rea
Senior Staff Biologist
ConocoPhillips Alaska, Inc.
P.O. Box 100360
Anchorage, Alaska 99510-0360

Dear Ms. Rea:

We have received your December 13, 2012, request for a Letter of Authorization (LOA) from the U.S. Fish and Wildlife Service (Service), Marine Mammals Management Office (MMM) for the intentional take of polar bears while conducting North Slope-wide activities in polar bear habitat.

In response, enclosed is an Intentional Take Authorization, LOA 13-INT-04, granting ConocoPhillips Alaska, Inc. (CPAI), and its representatives, authorization to take polar bears by harassment (deterrent activities) for the protection of human life and of polar bears while conducting activities in polar bear habitat. This LOA is issued specifically to CPAI who is responsible for ensuring that trained and qualified personnel are assigned the task to harass (deter) polar bears. It is the responsibility of CPAI personnel to report all polar bear harassment events to the Service, MMM within 24 hours. This LOA is effective for 2 years, from the date of issuance. An annual report detailing polar bear interactions will be required as part of this new procedure. Intentional take is authorized under sections 101 (a)(4)(A), 109(h), and 112(c) of the Marine Mammal Protection Act (MMPA).

CPAI's *Polar Bear Avoidance and Interaction Plan, Revision 5,* Revision Date: July 2009, contains appropriate safeguards to limit human/bear interactions and is incorporated by reference. Full implementation of this plan is expected. If questions or concerns arise regarding polar bears during the project period, Service, MMM biologists are available for consultation at the phone numbers listed below and noted in your Interaction Plan.

CPAI camps and personnel can limit encounters with polar bears by being observant of approaching animals (i.e., the use of polar bear guards) and breaking off interactions, if practicable, by allowing the animals to continue their travel. If a polar bear interaction escalates into a life threatening situation, section 101(c) of the MMPA allows, without specific authorization, the take (including lethal take) of a polar bear if such taking is imminently necessary for self-defense or to save the life of a person in immediate danger, and such taking is reported to the Service, MMM within 24 hours.

Further, the Service has completed intra-Service consultation under the Endangered Species Act of 1973, as amended (ESA), on the issuance of this LOA and has determined that the issuance this LOA is not likely to jeopardize the continuing existence of polar bears and is not likely to destroy or adversely modify polar bear critical habitat if designated. No additional authorization under the ESA is required.

If any changes develop in your projects during the 2013 or 2014 seasons, such as activities or location, please notify the Service, MMM prior to the planned operation. This will allow us to evaluate the activity and, if appropriate, amend your LOA. If you have any further questions, please contact Mr. Craig Perham, of the Service, MMM, at (907) 786-3800 or 786-3810.

Sincerely,

Acting Chief, Marine Mammals Management

Enclosures

cc: Mr. Richard Shideler, Alaska Department of Fish and Game (Email)
U.S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office
U.S. Fish and Wildlife Service, Office of Law Enforcement
North Slope Borough, Department of Law

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1011 E. Tudor Road
Anchorage, Alaska 99503-6199

IN REPLY REFER TO:

AFES/MMM

U.S. Fish and Wildlife Service

AUTHORIZATION TO TAKE, BY HARASSMENT, POLAR BEARS 13-INT-04

ISSUED: January 15, 2013
EXPIRES: January 15, 2015

Under sections 101 (a)(4)(A), 109(h), and 112(c) of the Marine Mammal Protection Act of 1972, as amended (MMPA), ConocoPhillips Alaska, Inc. (CPAI) is authorized to take, by harassment, polar bears during slope-wide activities in association with the CPAI-operated North Slope oil fields.

The purpose of authorizing taking by harassment, or deterrence, is to maintain human and bear safety and welfare in the North Slope oilfields. Authorizing Level B harassment take reduces the likelihood of death or injury of polar bears. For this reason, this authorization is guided by the following objectives:

- Prevent bears from associating food with humans and facilities.
- "Condition" bears to avoid people (avoidance conditioning).
- Allow bears to use travel routes (natural and man-made) to move along the coast.
- Prevent bears from extended use of areas around facilities.
- Prevent bears from entering the developed parts of the oilfield.

This harassment Letter of Authorization (LOA) is subject to the following conditions:

1. The Polar Bear Interaction Plan (*Polar Bear Avoidance and Interaction Plan, Revision 5, July 2009)* is approved and all provisions, unless noted specifically, are incorporated into this LOA by reference. A copy of the Polar Bear Interaction Plan must be available on site for all personnel.

2. CPAI Operations Managers, or designates, must be fully aware of, understand, and be capable of implementing the conditions of this authorization.

3. This LOA is restricted to harassment activities and is valid only for those activities identified in the request for an LOA dated December 13, 2012, for the 2013 - 2014 slope-wide operating area.

- Any additional projects planned for the 2014 season not included in the current request will be presented to the U.S. Fish and Wildlife Service (Service), Marine mammals Management Office (MMM) as an addendum prior to commencement to be included in the current authorization.

4. This authorization is issued specifically to CPAI who is responsible for ensuring **trained and qualified** personnel are assigned the task to harass (deter) polar bears. A list of trained personnel responsible for deterrence will be on file prior to initiation of activities with the Service Incidental Take Coordinator.

5. CPAI is solely responsible for ensuring that personnel operating under this authorization meet all Federal and State of Alaska laws and regulations regarding the use and carry of firearms should firearms be used for bear deterrence.

6. CPAI, or its designated agent, is responsible for documenting and reporting to the Service, MMM, at (907) 786-3800, all instances involving harassment activities as soon as possible and no later than 24 hours after the occurrence.

7. An annual report of all encounters and hazing events must be submitted to the Service, MMM by the end of the calendar year of the first year. A final report of all encounters and hazing events during the 2 year duration must be submitted to the Service, MMM within 60 days from the expiration date of this LOA.

8. Hazing techniques must not cause the injury or death of a bear. Types of hazing techniques may include, but are not limited to:

    - Bear Guards or Bear Monitors.
    - Air horns.
    - Electric fences.
    - Chemical repellents.
    - Acoustic recordings.
    - Vehicles.

9. Prior to conducting a harassment activity, operators must:

    - Make a reasonable effort to reduce or eliminate attractants.
    - Secure site; notify supervisor; move personnel to safety.
    - Ensure bear has escape route(s).
    - Ensure communication with all personnel.

10. When conducting a harassment activity, operators must:

    - Choose the method that will have the least effect on the bear and increase the intensity of the method or use additional methods only if necessary.

- Shout at the bear before using a deterrent.
- Move bear in proper direction; continuing with minimally necessary deterrents to receive desired result.

11. After a harassment event has occurred, operators must:

    - Monitor bear's movement (to ensure no return).
    - Notify supervisor and personnel when it is safe to resume work.
    - Fill out report to be sent to the Service as required above, (within 24 hours).

12. Any lethal take or injury of a polar bear must be reported to the Service immediately.

13. This Letter of Authorization is valid for the period indicated on this authorization, unless extended or terminated in writing by the U.S. Fish and Wildlife Service, Marine Mammals Management Office.

JAN 15 2013

Acting Chief, Marine Mammals Management — Date

Attachment 4
Economic Opportunity Plan

2013-2014 Economic Opportunity Plan
ConocoPhillips Alaska, Inc.

Introduction

This Economic Opportunity Plan ("EOP") describes the manner in which ConocoPhillips Alaska, Inc.'s ("CPAI") operations enhance locally based economic and employment opportunities for North Slope Borough ("NSB") businesses and residents. The EOP specifically addresses how CPAI satisfies the "Economic Development Policies" considerations set forth in North Slope Borough Municipal Code ("NSBMC") 19.70.030 and referenced in various exploration permits.

Company-Wide Activities

CPAI recognizes the importance of doing business locally and strives to procure goods and services from local Alaskan businesses whenever possible. CPAI is committed to giving local contractors and suppliers the opportunity to participate in its projects through competitively bidding contracts where appropriate. This strategy has been successful in awarding a substantial number of contracts to local and Native-owned businesses. CPAI maintains local offices in Nuiqsut and Barrow to facilitate communication between the company, the community, and potential job applicants.

CPAI Employment and Procurement Processes

CPAI operations involve local individuals hired directly by CPAI and indirectly by companies CPAI does business with through our contracting process. In both instances, CPAI processes and practices support local hire.

Employment

CPAI's efforts to provide employment opportunities for local individuals include, but are not limited to, the following:

- advertisement of Alpine and Kuparuk employment and internship opportunities through local employment managers;
- posting vacancy announcements through the North Slope Borough Job Center;
- maintaining the CPAI external Job Posting Website;
- notifying the Alaska Job Service of vacancies;
- maintaining a network of Alaska community organizations that receive notices of vacancies;
- advertising position vacancies in newspapers such as the Anchorage Daily News, the Fairbanks Daily News-Miner, and the Arctic Sounder; and
- Contractors who hire North Slope Borough residents may receive reimbursement for additional costs associated with transporting personnel to and from Anchorage, Fairbanks or Deadhorse, i.e. "point of hire". North Slope Borough residents may then continue to their respective ConocoPhillips work site via regular Share Services Aviation flights. Contractor travel reimbursement is

limited to residents living in Point Hope, Point Lay, Atqasuk, Anaktuvuk Pass, Barrow, Wainwright, Nuiqsut and Kaktovik.

CPAI also works with local villages to identify qualified individuals who are interested in working on CPAI projects.

Procurement Process

The CPAI procurement process includes Native corporations and their joint ventures and contractors in the bidding process related to CPAI operations and projects. CPAI has sent letters to all North Slope village corporations advising how they can access our bid and contract procedures. The CPAI procurement process also supports employment of local individuals by including specific language in bid documents which require bidders to submit information on how their company meets the "hire, train, and retain" considerations described in NSBMC 19.70.030.

CPAI also works with our contractors to provide opportunities for local individuals who have shown an interest in being trained for skilled positions on our projects. CPAI sponsors internships with Alaska Clean Seas, ASRC Energy Services (AES"), Kuukpik Arctic Catering, Nana/Purcell Security, Doyon Drilling, and Kuukpik LCMF (Umiaq) providing training opportunities for local residents to prepare for full time positions in the oil and gas industry.

Scholarships

CPAI assists local communities with the training and education of their residents. For example:

- CPAI and the Kuukpikmiut Foundation jointly support a scholarship program to help local individuals pursue their educational and career goals. Scholarships are available to those qualified individuals wishing to attend vocational and technical training as well as college classes.

- In Nuiqsut, CPAI created the Career Quest program that is designed to expose local youth to various careers available in the oil and gas industry. It is CPAI's hope that local youth will use the Career Quest to consider educational goals they might wish to pursue en route to the career of their choice.
  - Winter Career Quest allows local youth to perform short internships at Alpine in their area of choice. Since 2011, the season runs on weekdays following NSB school district curriculum standards. Students who completed the program earn vocational elective credit. In 2013, Career Quest will take place in fall with two new career choices: Drill Site Operations and Emergency Services. Since its 2004 inception, Career Quest has yielded several fulltime regular employees at Alpine.

- The Summer Career Quest program runs for three-months and enrolls approximately 10 high school students in job shadowing positions in the community.

- CPAI provides logistical and financial support to many Nuiqsut's Trapper School projects, activities and programs.

- CPAI provides funding to Ilisagvik College to support scholarship and program development for students entering the process technology program. In 2014, cumulative endowments to Ilisagvik College are expected to reach the $1 million mark.

- CPAI provides financial support to the University of Alaska educational system and is an active supporter of the Alaska Native Science and Engineering Program (ANSEP) through both hosting Summer Bridge students and in employing ANSEP summer interns.

CPAI Supports the Economic Development Policies Outlined in NSBMC 19.70.030

The following are specific actions CPAI takes to comply with economic development considerations outlined in NSBMC 19.70.030:

- CPAI continually looks for opportunities to contract with local businesses in support of our operations. CPAI has contracted with and utilized the North Slope tribal groups and ANSCA regional and village corporations, such as Inupiat Community of the Arctic Slope ("ICAS"), the Native Village of Barrow ("NVB"), Ukpeagvik Inupiat Corporation ("UIC"), Olgoonik Corporation, Cully Corporation, Tikigaq, ASRC nd the Kuukpik Corporation and their joint venture partners for many different types of work on the North Slope, including but not limited to:

    - ICAS/NVB/Kuukpik: Subsistence Representatives, Polar Bear Monitors, Supervision of Ice Road Monitors
    - Nanuq, Inc.& Peak: Ice road construction and maintenance and Career Quest Chaperones
    - Kuukpik/Arctic Catering: Catering at community meetings, year round camp support
    - Kuukpik Umiaq: Ice road and pad survey work
    - Kuukpik Northern Air Cargo: Transportation
    - Umiaq: Subsistence Advisor, Stakeholder Engagement and Environmental Studies support
    - Umiaq/Alaska Clean Seas – Emergency Response support
    - AES: Alpine and Kuparuk oil field support services
    - Olgoonik Fairweather – Chukchi Sea Environmental Baseline Studies
    - Olgooinik Oilfield Services – On-shore exploration support

  - Cully Corporation Beluga Consolidation and Logistics – community meeting translator services
  - Tikigaq – Logistics services

- CPAI's winter activities provide numerous job opportunities for local residents. Examples of such activities include ice road construction and monitoring, food service positions, seismic crew employment, and subsistence representative and polar bear monitor positions. CPAI supports its contractors' to use of the services of the Savaat Center when seeking local hire.

- Because of the nature of CPAI's exploration and development work, local residents are provided with opportunities to work on a seasonal basis, affording them the option to pursue subsistence activities during the off work seasons.

- CPAI's operations do not directly relate to Inupiat arts and crafts. However, Nuiqsut residents are provided opportunities to sell arts and crafts to CPAI employees and our contractor's employees lodging at Alpine and at the Kuukpik Hotel in Nuiqsut. CPAI personnel and CPAI contractor's employees who visit North Slope communities often purchase local arts and crafts.

- To support traditional values and community health CPAI contributed $250,000 to the NSB's Elder Housing Project and consistently supports Kivgiq, Nalukataq celebrations, holiday events and cultural and job fairs. In addition, CPAI and its contractors installed a playground adjacent to Trapper School in 2010; and followed up in 2011 and 2012 with additional improvements to the play area including permanent benches, teeter totters, trash receptacles and a sturdier sign. Grant funding was also provided to the City of Wainwright (through the Autaaqtuq Program) and the City of Pt. Hope (through the Arctic Slope Community Foundation) to support new playground installations in 2013 in these villages.

- CPAI, along with its partners Anadarko and Pioneer Resources, contribute to the North Slope Borough Autaaqtuq Fund program. Since its inception in 2005, over $1.4 million has been awarded to North Slope entities to support education and workforce development programs, subsistence activities, and substance abuse projects.

- CPAI utilizes locally obtained and produced natural resources in its construction and operations activities on the North Slope. Specifically, CPAI utilizes diesel fuel manufactured at Prudhoe Bay or Kuparuk. The majority of homes in Nuiqsut are hooked up to the natural gas supplied to the village from Alpine. This has resulted in significant energy savings to Nuiqsut residents.

- CPAI's oil and gas exploration and production, and construction, activities are key to generating tax revenues for the NSB. Finding and developing additional oil fields provide revenue and benefits to the NSB in the form of jobs, increased

infrastructure, education funding and to Kuukpik and ASRC shareholders in the form of royalties and dividends.

- Other benefits provided to local residents and the NSB from CPAI's operations and activities on the North Slope include ice road access to Nuiqsut for a four to five month period. This access provides a means for diesel fuel, food, clothing, vehicles, and other items to be transported to Nuiqsut at reduced costs when compared to other options (e.g. air freight). It also provides a means for Nuiqsut residents to travel by vehicle to places such as Fairbanks or Anchorage at a lower cost than by air. Finally, the ice roads provide a means for Nuiqsut residents to travel further into the NPR-A and other areas by vehicle allowing for easier access to subsistence resources and fish camps.