

## **Exploration Plan of Operations**

**2018-2019  
EXPLORATION PLAN of  
OPERATIONS**



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

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## TABLE OF CONTENTS

<b>1.0</b>	<b>PROJECT DESCRIPTION .....</b>	<b>1</b>
1.1	PROJECT LOCATION .....	1
1.2	PROJECT SCHEDULE .....	2
<b>2.0</b>	<b>DETAILED DESCRIPTION OF ACTIVITIES .....</b>	<b>3</b>
2.1	WELL LOCATIONS.....	3
2.2	MOBILIZATION AND PROGRAM ACCESS .....	4
2.2.1	TEMPORARY ICE AIRSTRIP .....	5
2.2.2	ICE ROADS.....	6
2.3	WATER REQUIREMENTS AND SOURCES .....	8
2.3.1	WATER USE REQUIREMENTS .....	8
2.3.2	WATER WITHDRAWAL.....	8
<b>3.0</b>	<b>DRILLING &amp; TESTING.....</b>	<b>9</b>
3.1	NON-DRILLING WASTE.....	9
3.2	DISPOSAL OF DRILLING WASTE .....	10
3.3	DISPOSAL OF PRODUCED FLUIDS .....	10
3.4	AIR EMISSIONS .....	10
3.5	SUPPORT FACILITIES.....	11
3.6	FUEL AND CHEMICAL STORAGE .....	12
<b>4.0</b>	<b>WELL STATUS AND ABANDONMENT.....</b>	<b>13</b>
<b>5.0</b>	<b>HISTORICAL PROPERTIES AND CULTURAL RESOURCE .....</b>	<b>13</b>
<b>6.0</b>	<b>CONTINGENCY PLANS .....</b>	<b>14</b>
6.1	WILDLIFE PLAN .....	14
6.2	POLAR BEAR INTERACTION PLAN.....	15
6.3	OIL DISCHARGE PREVENTION AND CONTINGENCY PLAN .....	15
6.4	SPILL PREVENTION CONTROL AND COUNTERMEASURE PLANS.....	15
6.5	OTHER PLANS.....	15
<b>7.0</b>	<b>TRAINING .....</b>	<b>16</b>
<b>8.0</b>	<b>LOCAL HIRE AND COMMUNITY RELATIONS .....</b>	<b>16</b>
<b>9.0</b>	<b>PUBLIC INVOLVEMENT .....</b>	<b>17</b>
<b>10.0</b>	<b>COMMUNICATION AND SUPERVISION .....</b>	<b>17</b>
<b>11.0</b>	<b>PERMITS AND REGULATORY AUTHORIZATIONS.....</b>	<b>18</b>
<b>12.0</b>	<b>OPERATOR'S REPRESENTATIVE AND CERTIFICATION .....</b>	<b>21</b>

**LIST OF TABLES**

Table 1: Approximate Schedule of Activities ..... 3  
Table 2: Drill Site Location..... 3  
Table 3: Tundra Travel Route Location by Township, Range, and Section ..... 4  
Table 4: Temporary Airstrip Location ..... 6  
Table 5: Ice Roads ..... 6  
Table 6: Estimated Water Needs..... 8  
Table 7: Ice Pads..... 11  
Table 8: Expected Fuel Storage ..... 12  
Table 9: Stakeholder Engagement Meetings ..... 17  
Table 10: Responsible Contact Information ..... 17  
Table 11: Summary of Permits, Authorizations and Approvals ..... 18

**LIST OF ATTACHMENTS**

- Attachment A Project Orientation Plan
- Attachment B Subsistence Plan
- Attachment C Waste Management Plan
- Attachment D Bloodborne Pathogens
- Attachment E Hazardous Waste Plan
- Attachment F Invasive Species Control Plan
- Attachment G Economic Opportunity Plan
- Attachment H Proposed Rig Schedule
- Attachment I Water Source Table
- Attachment J Ice Road Stream and River Crossings Table
- Attachment K Tundra Travel Route Stream and River Crossing Table
- Attachment L Lake Access Ice Spur Roads Table (BLM)
- Attachment M Ice Pad Layout (Typical)
- Attachment N Drill Cuttings Storage (Typical)
- Attachment O Exploration Head Count Estimate
- Attachment P Communication Tower Design
- Attachment Q Equipment List
- Attachment R Wildlife Avoidance Plan

**MAPS**

Project Overview

Leases and Land Status

Source Lakes

Ice Road Stream Crossings

Tundra Route Stream Crossings

Ice Road Milepost (BLM)

Lake Spurs (BLM)

Site Topographic Survey's

<b>ABBREVIATIONS AND ACRONYMS</b>	
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish & Game
ADNR	Alaska Department of Natural Resources
AHRS	Alaska Heritage Resources Survey
AOGCC	Alaska Oil and Gas Conservation Commission
APDES	Alaska Pollution Discharge Elimination System
BLM	Bureau of Land Management
BMP	Best Management Practices
BTU	Bear Tooth Unit
BTUA	Bear Tooth Unit Agreement
CPAI	ConocoPhillips Alaska, Inc.
DMLW	(ADNR) Division of Mining, Land and Water
DS-2P	Drill Site 2P
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
gpd	gallons per day
MGP1	Minor General Permit 1
GMT1	Greater Mooses Tooth 1
GPR	Ground Penetrating Radar
HSE	Health, Safety and Environmental
IAP	Integrated Activity Plan
ICS	Incident Command System
IMT	Incident Management Team
KRU	Kuparuk River Unit
LOA	Letter of Authorization
MTRS	Meridian, Township, Range, Section
NPR-A	National Petroleum Reserve-Alaska
NSB	North Slope Borough

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NSTC	North Slope Training Cooperative
ODPCP	Oil Discharge Prevention Contingency Plan
OHA	Office of History and Archaeology
P&A	Plug and Abandoned
ROD	Record of Decision
SHPO	State Historic Preservation Office
SPCC	Spill Prevention, Control, and Countermeasure
TBD	To be determined
TLUI	Traditional Land Use Inventory
TWUA	Temporary Water Use Authorization
UOM	Unit of Measure
USFWS	U.S. Fish and Wildlife Service
VSP	Vertical Seismic Profile
XBC	Exploration Base Camp

## 1.0 PROJECT DESCRIPTION

ConocoPhillips Alaska Inc, (CPAI) plans to conduct a 2018-2019 National Petroleum Reserve – Alaska (NPR-A) Exploration and Appraisal Drilling Program (Program). The work will be conducted during the upcoming 2018-2019 winter season. The objective is to explore and appraise oil and gas potential on NPR-A leases operated by CPAI.

CPAI has identified the following work and alternates for the 2018-2019 Program:

### Appraisal Wells

Appraisal wells in the Willow area:

- Tinmiaq 10
- Tinmiaq 15
- Tinmiaq 11
- Tinmiaq 16
- Tinmiaq 12, Tinmiaq 13, Tinmiaq 14

Exploration wells in the West Willow area:

- West Willow 2, West Willow 4, West Willow 5
- Vertical Seismic Profile (VSP) at West Willow 2 and West Willow 5

**Note: Only six of the above listed exploration/appraisal wells are currently scheduled for execution.**

### Well Work on Existing Wells

Testing/recompletion at two existing Tinmiaq wells:

- Tinmiaq 2 (recompletion and well test)
- Tinmiaq 9 (well test)

Access only (gauge monitoring) at two existing Tinmiaq wells:

- Tinmiaq 6
- Tinmiaq 8

**CPAI is permitting all activities listed above in order to maintain operational flexibility. Not all activities listed above will be executed.**

In addition, CPAI will be constructing an ice pad approximately 300 feet by 300 feet (access by tundra travel only) to support equipment for retrieving a data logger from the existing plugged and abandoned (P&Ad) Stony Hill 1 well mound.

## 1.1 PROJECT LOCATION

The proposed Program is located on the North Slope of Alaska in the NPR-A in and around the proposed Willow Development area. All of the well locations are located in the Bear Tooth Unit (BTU), except West Willow 2, West Willow 4, and West Willow 5 which are located in non-unit areas of the NPR-A on CPAI leases.



The Bureau of Land Management (BLM) owns the surface as well as subsurface mineral rights of the lease tracts. The locations in the BTU are governed by the BTU Agreement (BTUA) between CPAI and the BLM. The non-unit wells are governed per the terms of their respective Oil and Gas Lease. All 2018-2019 NPR-A exploration/appraisal locations are located on oil and gas lease tracts leased by CPAI (100%). CPAI's BLM Oil and Gas Bond number is 5752570.

There is a traditional use area (cabin)<sup>1</sup> located 2.7 miles southeast of the West Willow 4 well. The cabin is located in township 10N, range 2W, section 28 and 33. The cabin will not be accessed as part of the Program. Crews and equipment will maintain a 500 ft setback from the cabin. The proposed project locations are not located on or near Native Allotments<sup>2</sup>.

The attached maps depict all proposed well locations, proposed ice road routes, and the initial tundra access route from Kuparuk River Unit (KRU) Drill Site 2P (DS-2P) ice pad. It is important to note that all ice roads, ice pads, and wells depicted on the maps are presented for operational flexibility but not all will be constructed/drilled.

Since the Program is being conducted in the NPR-A, the 2013 NPR-A Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) Final Record of Decision (ROD) Best Management Practices (BMPs) apply. CPAI will abide by the stipulations and BMPs, unless a deviation request or waiver is proposed from the requirements and/or BMPs.

CPAI has prepared and attached the BLM-required plans (Project Orientation Plan, Subsistence Plan, Waste Management Plan, Bloodborne Pathogens, Hazardous Waste Plan, and Invasive Species Control Plan, etc.) in accordance with the 2013 NPR-A IAP/EIS ROD BMPs. These plans are included as attachments to this document.

## **1.2 PROJECT SCHEDULE**

The work will occur between November 1, 2018 and May 1, 2019; however, the timing of the activity is dependent upon field conditions including tundra opening and logistical issues. The approximate schedule for the program is presented below in Table 1.

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<sup>1</sup> The cabin data was acquired from Johnathan Aiken with the NSB Planning/Permitting Department in 2018.

<sup>2</sup> The Native Allotment data was downloaded from BLM in May 2018. Per BLM, the dataset was created to provide an accurate, seamless portrayal of the PLSS native allotment network, based upon survey records. The dataset is intended for use as a base layer for mapping purposes, and as a framework for the portrayal of native land ownership. This data is intended for mapping purposes only and is not a substitute or replacement for the legal land survey records or other legal documents.

**Table 1: Approximate Schedule of Activities**

Project Milestone	Proposed Start Date	Proposed End Date
Pre-Packing of Ice roads and Pads	November 1, 2018	December 15, 2018
Ice Road and Pad Construction	December 15, 2019	March 31, 2019
Drilling, Completion and Testing (various wells)	January 15, 2019	April 15, 2019
Demobilization	April 15, 2019	May 1, 2019

The individual well schedule will vary depending on logistics, rig availability, well results and environmental conditions. A proposed rig schedule is located in the Attachments.

## 2.0 DETAILED DESCRIPTION OF ACTIVITIES

### 2.1 WELL LOCATIONS

CPAI has identified up to 10 potential new exploration and appraisal well locations; testing and recompletion is also planned at two existing Tinmiaq wells. CPAI is permitting several alternate locations to maintain operational flexibility. **Not all well locations will be accessed/drilled.**

Table 2 provides the exploration and appraisal well location coordinates; including the two existing well locations planned for recompletion and testing. A proposed layout of a typical exploration drill pad and topographic surveys of each well location are included in attached maps.

**Table 2: Drill Site Location**

WELL NAME	BLM LEASE NUMBER	LOCATION		
		MTRS	LATITUDE	LONGITUDE
Tinmiaq 2 (existing)	AA081807	U10N1W34	70.18143	-152.112967
Tinmiaq 9 (existing)	AA081747	U11N001W18	70.303029	-152.221433
Tinmiaq 10	AA-081810 AA-081808	U10N1W9	70.230472	-152.1511111
Tinmiaq 11	AA-081787	U9N1W32	70.096278	-152.208556
Tinmiaq 12	AA-090707	U8N1W15	70.053083	-152.12475
Tinmiaq 13	AA-081834	U12N2W35	70.357611	-152.330222
Tinmiaq 14	AA-090710	U9N1W22	70.117222	-152.103889

Tinmiaq 15	AA-081810	U10N1W9	70.235139	-152.132333
Tinmiaq 16	AA-092673	U9N1W8	70.14325	-152.203944
West Willow 2	AA-094413	U11N3W25	70.278361	-152.545889
West Willow 4	AA-094405	U10N2W19	70.202167	-152.50202
West Willow 5	AA-094413	U11N3W25	70.285389	-152.516556

**Note:** Coordinates are provided in NAD 83 ASP Zone 4

## 2.2 MOBILIZATION AND PROGRAM ACCESS

A tundra travel route will provide initial access into the NPR-A (via Ocean Point) for ice road construction equipment; then drilling rig and equipment access to the proposed exploration wells will be by ice road (see attached maps). The tundra travel route will begin at an ice pad on state land near KRU DS-2P, head west to the NPR-A boundary, cross the Colville River at or near Ocean Point, and enter the NPR-A area and continue northwest to the proposed Exploration Base Camp ice pad (XBC). The final tundra travel route will be refined in the field to avoid hazards such as steep terrain or environmental sensitive areas, including willow habitat, areas with thin snow cover, and culturally sensitive sites. The tundra travel route does not require water and is not an ice road.

There is a pre-determined alternative tundra travel route at the Ocean Point crossing that CPAI may utilize. The alternative route is necessary to allow flexibility depending on conditions at the crossing. The location of the alternative tundra travel route is depicted on the attached maps. The location description of the tundra travel route is provided in Table 3.

**Table 3: Tundra Travel Route Location by Township, Range, and Section**

Route	Length (miles)	MTRS	
DS-2P to Ocean Point	28.1	U8N4E	24, 25, 26, 27, 28, 29, 30
		U8N3E	9, 10, 15, 16, 22, 23, 24, 25
		U8N7E	7, 17, 18
		U8N6E	2, 3, 4, 5, 6, 11, 12
		U8N5E	1, 2, 3, 9, 10, 11, 16, 17, 19, 20
Ocean Point Alternate (NPR-A)	4.4	U8N3E	2, 11, 12, 13, 14, 15
Ocean Point Alternate (State)	5.9	U8N3E	16, 17, 20, 21, 22, 23, 27, 28

Ocean Point to XBC	27	U10N1W U9N3E U9N1E U10N1E U8N3E U9N2E	9, 10, 11, 12 19, 20, 28, 29, 33, 34 1, 2, 3, 12 7, 8, 16, 17, 21, 28, 33, 34 2, 3, 10, 15 7, 8, 15, 16, 17, 22, 23, 24
Ocean Point to Stony Hill 1	11.3	U8N4E U8N3E U9N4E	2, 3, 7, 8, 9, 10, 18 13 21, 22, 27, 28, 33, 34
DS-2P to Ocean Point Southern Alternate	9.9	U8N4E U7N4E U8N3E U8N5E	30, 31, 32, 33, 34, 36 1, 2, 3 25 19, 20, 30, 31

Note: all lengths are approximate.

### 2.2.1 TEMPORARY ICE AIRSTRIP

CPAI is planning to utilize lake M0007 as a temporary airstrip to support operations personnel transfers. The project will utilize CPAI Otter and CASA aircrafts. The airstrip will be prepared by grading the snow on the lake, adding additional water as necessary, and setting up lights and equipment. The airstrip will be on non-grounded ice (as grounded ice can buckle and present safety concerns), oriented in northeast/southwest direction and will be of sufficient length required for the aircraft to take off and land. Lake ice thickness will be confirmed using ground penetrating radar (GPR) or by ice check augering (hand drill).

There will be an apron area adjacent to the airstrip on the lake for the plane to turn around and to load passengers. The apron will be constructed similar to the airstrip (grading existing snow) and no fueling will take place on the apron or the airstrip. Fueling of the aircraft will occur at Alpine or Kuparuk.

CPAI will also construct a 100-foot by 100-foot ice pad (or equivalent acreage) (named Airstrip Support Ice Pad) adjacent to the airstrip lake access road. The ice pad will be utilized to support a connex (passenger shelter), and generators to power the airstrip lights. The ice pad will be constructed at least 150 feet away from the lake.

Approximately 5 flights are planned per week during the exploration drilling season. There will be no night flights, unless in the case of an emergency.

CPAI will request a deviation from BMP B-2g (compaction of snow cover or snow removal from fish bearing waterbodies) to utilize the fish-bearing lake M0007 as a temporary airstrip. CPAI will support the intent of BMP B-2g. The aircraft will utilize the airstrip for a short period of time during landings and takeoffs. Compacted areas on the airstrip will be long and narrow and encompass a small area of the total non-grounded lake/ice surface. Therefore, the total lake/ice surface area and the depth of the lake along with the minimal compaction of the snow

to create the airstrip should not have an adverse effect on the overall hydrologic regime of the lake and should not impact habitat or populations of fish, invertebrates, or waterfowl.

The location description of the temporary airstrip is presented in Table 4.

**Table 4: Temporary Airstrip Location**

LAKE NAME	LOCATION		
	LATITUDE	LONGITUDE	MTRS
M0007	70.22467	-152.03299	U10N01E7,18 U10N01W12,13

### 2.2.2 ICE ROADS

CPAI will construct an access ice road from the Greater Mooses Tooth 1 (GMT1) gravel pad west to XBC. From there, the ice road branches off to the various well locations. The ice road network will have lake spur ice roads to access water sources along the ice road. Pullout areas along ice roads or widened sections of ice road may be constructed at certain locations depending on field conditions.

In addition, there will be two ice bridges to bypass the existing bridges over the Tinmiaqsiugvik River and Crea Creek along the GMT1 gravel road. The bypasses are necessary to accommodate vehicles transporting wide loads. The ice bypasses will eliminate the effort to remove and replace the guardrails on the permanent bridge for each move of a drilling rig or mobile camp that supports the Program. The ice bypass bridges will be grounded across the Tinmiaqsiugvik River and Crea Creek.

Table 5 below provides location descriptions for the main ice road network by segment (Segment IR1-IR11). A table providing location descriptions for each lake spur access ice road is located in the Attachments to this document. **Note that not all ice road segments and source lake ice access spurs will be constructed as part of the Program.**

**Table 5: Ice Roads**

LABEL	DESCRIPTION	LENGTH (MILES)	MTRS
IR1	GMT1 to XBC	18	U11N2E36 U11N3E31 U10N1W1, 9, 10, 11, 12 U10N1E2, 3, 4, 5, 11, 12 U10N2E1, 2, 3, 4, 7, 8, 9
IR2	Tinmiaq 8 Access Road	7.6	U10N1W10, 15, 22, 27, 33, 34 U9N1W4, 5, 8, 17

IR3	Tinmiaq 11 Access Ice Road	6.1	U9N1W4, 9, 16, 21, 28, 29, 32
IR4	Tinmiaq 12 Access Ice Road	6.3	U8N1W2, 3, 10, 15 U9N1W21, 22, 26, 27, 35
IR5	Tinmiaq 9 Access Ice Road	6.3	U11N1W17, 19, 20, 29, 30, 32, 33, 34 U10N1W3, 4, 10
IR6	Tinmiaq 13 Access Ice Road	5.4	U11N1W7, 17, 18 U11N2W1, 2, 11, 12 U12N2W35
IR7	West Willow 5 Access Ice Road	9.3	U11N3W25 U11N1W31, 32, 33 U11N2W27, 28, 29, 30, 34, 35, 36
IR8	West Willow 2 Access Ice Road	1.1	U11N3W25 U11N2W30
IR9	West Willow 4 Access Ice Road	6.1	U11N2W34 U10N2W3, 4, 9, 16, 17, 18, 19
IR10	Tinmiaq 10 Access Ice Road	0.3	U10N1W9
IR11	Tinmiaq 15 Access Ice Road	0.6	U10N1W9
<b>TOTAL</b>		<b>67.1</b>	

Note: all lengths are approximate.

Pre-packing of ice roads and ice pads may be required and will be conducted by compressing existing snow with snow machines, rolligons, or smooth tracked tuckers. Side-casting of water on the route may also be conducted.

Ice roads will be constructed using a combination of existing snow, water, and ice chips from approved water sources along the route. Ice roads will generally be 25-35 feet wide and 6-inches thick, depending on drilling rig and vehicle requirements. Rig mats or other similar items may be used on or in the construction of ice roads at selected locations as necessitated by field conditions encountered during ice road construction or during equipment movement. Such devices will be removed prior to the end of the operating season.

Ice construction activities, including pre-packing, will be performed in accordance with Alaska Department of Natural Resources (ADNR) approvals and water will be obtained from permitted sources. Minor re-routes may be required depending on site specific conditions at the time of construction.

Upon completion of use, ice road stream crossings will be slotted, breached, or weakened to facilitate breakup and minimize potential impacts to stream banks. Any snow or ice used as fill for ramps will be removed from banks in a manner that does not disturb the natural stream bank.

## 2.3 WATER REQUIREMENTS AND SOURCES

### 2.3.1 WATER USE REQUIREMENTS

Water and ice chips from local permitted lakes will be used for the construction and maintenance of ice roads, ice pads, the ice airstrip (if needed), drilling operations, and camp use. Water will be pumped from lakes and transported by truck or rolligon. Water may also be hauled from additional approved sources (Kuparuk, Alpine or Prudhoe Bay).

Most potable water for human use will be hauled to the Program area from an Alaska Department of Environmental Conservation (ADEC) approved water system outside the NPR-A (Alpine).

Table 6 depicts the total estimated water needs for construction and maintenance of ice roads, ice pads, drilling operations, and camp use.

**Table 6: Estimated Water Needs**

ACTIVITY	ESTIMATED QUANTITY	UOM	WATER USE/UNIT	ESTIMATED TOTAL (GALLONS)
Ice Roads <sup>1</sup>	57	Miles	1,500,000	85,500,000
Ice Road Spurs	24.4	Miles	200,000	4,880,000
Ice Pads <sup>2</sup>	150.91	Acres	250,000	37,727,500
Rig Use <sup>3</sup>	7	Wells	300,000	2,100,000
Alaska Camp <sup>4</sup>	80	days	2,500	200,000
<b>TOTAL</b>				<b>130,407,500</b>

1. The anticipated total constructed ice road network will be approximately 57 miles. However, CPAI is permitting all alternate ice road routes which totals 67.1 miles (actual plus alternates). Therefore, the water use reflects construction and maintenance of ice roads planned to be constructed.

2. See Table 8 for individual ice pad names and dimensions.

3. Six new wells are planned in addition to the existing Tinmiaq 2 well workover for a total of 7 wells requiring drilling water.

4. All of the camps except Alaska Camp will haul their water from Alpine or Kuparuk. The camp is estimated to be onsite beginning in mid-Jan through early April 2019.

**Note: Water use is estimated and actual water use is based on environmental conditions including snow cover, temperature, and maintenance needs. Actual water use is expected to be less than estimated water use.**

### 2.3.2 WATER WITHDRAWAL

Water withdrawal will be authorized under new or existing Temporary Water Use Authorizations (TWUA) from ADNR Division of Mining, Land and Water (DMLW) and Alaska Department of Fish and Game (ADF&G) for fish-bearing water bodies.

The Attachments section contains a table describing new and existing permitted water sources that may be utilized. A map depicting the water sources is provided in the attached maps. Not all permitted water sources will be used, CPAI permits additional sources to maintain operational flexibility (e.g. ice chip vs. water).

CPAI will request a deviation from BMP B-2 for water withdrawal volumes in excess of the standards in BMP B-2. The deviation request will include a table clearly identifying the lake withdrawal permit requests and a justification for how the request will meet the objectives of B-2. CPAI will support the intent of BMP B-2.

Water and ice chips will be pumped from permitted lakes and transported by trucks. All water intake hoses will have screens at the intake points to prevent entrapment of fish, regardless of whether the lake has been identified as fish-bearing. CPAI will comply with ADF&G screen designs (including screen mesh no greater than ¼-inch) and will implement 0.5 feet per second or less intake velocity.

Snow cover may be removed from portions of lakes approved for water withdrawal and/or ice mining. The purpose of snow removal is to provide access for water trucks and ice chippers, installation of temporary water pump houses, and truck turnaround areas. Additional snow removal (beyond the minimal amount required for vehicle access and water/ice withdrawal) is allowed from any non-fish bearing lake and grounded portions of fish-bearing lakes without additional approvals. Snow and ice chip removal from non-grounded portions of fish-bearing lakes must be approved by ADF&G-Habitat Division on a case by case basis.

### **3.0 DRILLING & TESTING**

Wells will be drilled similar to previous North Slope exploration and appraisal wells. The wells will be authorized by drilling permits issued by the BLM and Alaska Oil and Gas Conservation Commission (AOGCC). Due to the exploratory nature of the wells (and federal regulations); nearly all down-hole information is confidential.

Well evaluation through hydro-fracture stimulation and production testing may be performed after completion of well drilling operations.

All drilling activities will be conducted using drilling rigs suitable for arctic operations (Doyon 141 and Doyon 142). A general rig schedule is provided in the Attachments.

#### **3.1 NON-DRILLING WASTE**

Solid, non-burnable waste will be deposited in large containers (dumpsters). These containers will be back-hauled to the North Slope Borough (NSB) landfill at Prudhoe Bay. Food waste that could attract wildlife will be placed in secured wildlife proof container while waiting for pickup.

CPAI will utilize the Nabors 'Alaska' Camp to support the Program. This camp is permitted to discharge treated wastewater (~2500 gallons per day (gpd)) under ADEC Alaska Pollutant



Discharge Elimination System (APDES) permit AKG572000. The permit expires on September 30, 2022. No other camps or facilities will discharge wastewater.

The non-discharging camps are equipped with wastewater tanks that will be hauled to the Kuparuk or Alpine permitted wastewater treatment facilities outside the NPR-A. All treatment systems used will meet ADEC requirements.

### **3.2 DISPOSAL OF DRILLING WASTE**

Water-based drilling muds will be used, muds include additives used to maintain desired drilling fluid properties and density. Excess drilling muds and drill cuttings will be disposed by of injection into an approved Class II well at Kuparuk or through a grind and inject facility Prudhoe Bay or Milne Point.

During drilling, CPAI anticipates having up to 6 leakproof cutting bins inside permitted ice cells at each drilling location to store cuttings prior to hauling away for disposal. Each of the cutting bins will be located within an ice cell as secondary containment. The Ice-bermed storage cells will be permitted by the ADEC Solid Waste department.

A figure depicting the design of a typical cutting storage area is provided in the Attachments. It is anticipated that up to 20,000 cubic feet of cuttings and up to 20,000 gpd of waste fluids could be generated from each well. Typical ice-bermed waste storage cell dimensions are approximately 100 feet x 150 feet x 3 feet. The ice thickness underneath the temporary drilling waste storage areas will be approximately 2 feet. The volume of wastes stored in each storage cell will be minimized; as will snow accumulation in the cell.

Upon completion of the drilling activities at the well sites, the ice-bermed drilling waste storage cells will be trimmed and the ice will be hauled to Kuparuk , Milne Point or Prudhoe Bay for disposal in an approved Class II injection well.

### **3.3 DISPOSAL OF PRODUCED FLUIDS**

Production tests at each well may be performed as needed after production casing is set/cemented and the well is completed. Following completion, the well may be hydro-fractured to enhance productivity. Testing may include extended flow periods to determine the productivity of the well. Produced fluids will pass through an adequately sized separator system to prevent oil carryover into the gas stream. Oil from testing will be held in tanks (within ice berms) until the testing is completed. After testing, the oil will either be injected back into the formation from which it was produced or hauled to Alpine or Kuparuk and processed through their facilities. Produced gas will be flared.

### **3.4 AIR EMISSIONS**

Sources of air emissions from the Program include rig engines, camp generator engines, steam generators, mobile non-road engine and construction equipment, used oil burners, hot-air heaters, light plants, and well testing and flaring equipment. CPAI has applied for ADEC

authorization for the drilling locations under Minor General Permit #1 (MGP1) for Oil and Gas Drilling Rigs (18 AAC 50.390).

### 3.5 SUPPORT FACILITIES

Well activities will be accommodated by an ice pad, there are also various exploration support ice pads proposed. Ice pads may accommodate staging, drilling, testing and completion activities and support facilities. Support facilities may include safety stations, satellite offices, camps, storage areas (e.g., fuel, equipment, miscellaneous tanks, etc.), and maintenance buildings.

Each ice pad will be situated so that the pad edge is no closer than 100 feet from the shoreline of any nearby water bodies. Furthermore, CPAI will not manipulate surface topography to construct ice drilling pads. Upon completion of Program activities, ice pads will be chipped or scraped to pick up any incidental spills and the scrapings will be hauled to an approved disposal well. Table 7 below provides location descriptions and dimensions of the ice pads.

**Table 7: Ice Pads**

ICE PADS	DIMENSIONS	MTRS
Tinmiaq 2 Recompletion/Test Ice Pad	600 feet by 600 feet	U10N1W34
Tinmiaq 6 Support Ice Pad	300 feet by 300 feet	U10N1W10
Tinmiaq 8 Support Ice Pad		U9N1W17
Tinmiaq 9 Test Ice Pad	600 feet by 600 feet	U11N01W18
Tinmiaq 10 Drilling Ice Pad		U10N1W9
Tinmiaq 11 Drilling Ice Pad		U9N1W32
Tinmiaq 12 Drilling Ice Pad		U8N1W15
Tinmiaq 13 Drilling Ice Pad		U12N2W35
Tinmiaq 14 Drilling Ice Pad		U9N1W22
Tinmiaq 15 Drilling Ice Pad		U10N1W9
Tinmiaq 16 Drilling Ice Pad		U9N1W8
West Willow 2 Drilling Ice Pad		U11N3W25
West Willow 4 Drilling Ice Pad		U10N2W19
West Willow 5 Drilling Ice Pad	U11N3W25	
XBC Ice Pad	1500 feet by 1000 feet	U10N1W9
Airstrip Support Ice Pad (M0007)	100 feet by 100 feet	U10N001W12
Exploration Support Ice Pad 1 (E1)	12.1 acres (irregular shape)	U10N3E6
Exploration Support Ice Pad 2 (E2)	500 feet by 500 feet	U11N3E31
Exploration Support Ice Pad 3 (E3)	400 feet by 200 feet	U10N2E3
Exploration Support Ice Pad 4 (E4)	420 feet by 210 feet	U10N1E12
Exploration Support Ice Pad 5 (E5)	420 feet by 210 feet	U10N1E4
Exploration Support Ice Pad 6 (E6)	420 feet by 210 feet	U10N1W12
Exploration Support Ice Pad 7 (E7)	420 feet by 210 feet	U11N1W33
Stony Hill 1 Ice Pad	300 feet by 300 feet	U9N4E21

Below is a list of camps that are expected to support the Program. In the Attachments, there is a population vs. time graph that depicts the estimated number of personnel supporting the Program throughout the season in the NPR-A. No project operations will be based in the nearby village of Nuiqsut.

- Canning Camp 25 man camp
- Alaska Camp 100 man camp
- Stallion RC-33 55 man camp
- Stallion RC-34 55 man camp
- Stallion RC-26 55 man camp
- Doyon 16 23 man camp
- Afognak-Brown Bear 55 man camp
- William Scottsman 62B 55 man camp
- William Scottsman 60A 55 man camp
- William Scottsman 60B 55 man camp
- Harrison Bay Spike 12 man camp

Two communication towers will be required to support the Program. A 120-foot high communication tower will be located at XBC and at E3 ice pad. Communication towers will be anchored with guy wires attached to concrete blocks (Deadman anchors) on the ice pads. The concrete anchors are approximately 11,000 lbs. and are 3.6 feet by 6 feet by 6 feet. All communication towers are temporary and will be removed at demobilization. Although bird presence during the winter is minimal, CPAI will install bird diverters on the guy wires. A depiction of a communication tower (with bird diverter detail) is included in the Attachments.

A list of equipment to support the Program is located in the Attachments.

### **3.6 FUEL AND CHEMICAL STORAGE**

Fuel will be stored in multiple fuel containers and placed in lined, bermed fuel storage areas. All fueling, and transfer operations will be performed in accordance with the Fieldwide Standard Operation Procedure (Kuparuk and Alpine) for Fluid Transfers (CPAI-005) and liners will be used as required by the Fieldwide Standard Operating Procedures for Liners and Drip Pan Use (F-006). Fuel storage of more than 1,320 gallons requires that a Spill Prevention and Countermeasure Control (SPCC) plan be developed and maintained on site. Each drilling contractor and well testing company maintains a SPCC plan for fuel storage associated with their operations, as applicable. Additionally, CPAI maintains a SPCC plan for exploration activities.

The expected fuel storage in support of the proposed project is provided in Table 8.

**Table 8: Expected Fuel Storage**

LOCATION	NUMBER OF TANKS		QUANTITY PER TANK (GAL)	TOTAL AMOUNT (GAL)
	GASOLINE	DIESEL FUEL		
XBC	1	2	9,800 Gasoline 30,000 Diesel	69,800
Drilling/Testing Locations (8) <sup>1</sup>	0	1	20,000	160,000
E3 Ice Pad	0	1	100	100
Airstrip Support Ice Pad	0	1	300	300

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	<b>TOTAL</b>	230,200
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<sup>1</sup> Includes the existing Tinmiaq 2 recompletion/test and Tinmiaq 9 test

Light plants and pump houses are required at permitted water sources; small portable generators power these lights and pumps. CPAI proposes to refuel light plants and pump houses on the surface of water source lakes (at the pump house). Moving light plants off of lakes for refueling is impractical as light plants would require an additional vehicle to move them every 12 hours for refueling. Moving pump houses off lakes for refueling is not practical or safe as they are self-contained modules which are heavy and would have to be moved using a winch truck and a flatbed truck. These are also fueled every 12-hour shift. All light plants and pump houses will have 110% containment. CPAI uses secondary containment during all fueling operations and the pump house fuel tank is also contained inside the pump house. CPAI has rigorous fuel transfer protocol and procedures.

The West Willow 2 ice pad straddles the 500 foot buffer line from the lake to the north. Fuel storage will occur on the south side of the West Willow 2 ice pad only.

The small airstrip support ice pad along the lake access road to support the ice airstrip has a generator with a capacity of 300 gallons of fuel. The generator will power a warm-up shack and airstrip demarcation lighting. This ice pad is located less than 500 feet (~150 feet) from lake M0007. The 150 foot distance is required in order to power lights along the airstrip. Therefore, a deviation from BMP A-5 will be requested for the airstrip support pad fuel storage within 500 feet of the lake.

#### **4.0 WELL STATUS AND ABANDONMENT**

The winter exploration well locations do not include development (producing) wells and the program is a continuation of previous exploration and appraisal efforts. Any well abandonment or suspension plans will be in accordance with applicable BLM and AOGCC regulations and will be approved prior to enactment. Final site closure will be approved by the appropriate regulatory agencies.

#### **5.0 HISTORICAL PROPERTIES AND CULTURAL RESOURCE**

A cultural resources study for site clearance was conducted in August of 2018 by Reanier & Associates, Inc. to assess any known sites, and to locate currently unknown sites. The resulting letter reports include background information on the history of the landscape and human use of the study area since the last ice age, descriptions of the NPR-A exploration area, the results of the reconnaissance survey, and conclusions and recommendations for cultural resource clearances. The records review includes the Alaska Heritage Resources Survey (AHRS) database, maintained by the Office of History and Archaeology within the ADNR; and the Traditional Land Use Inventory (TLUI) database, maintained by the NSB. Sites that exist within the exploration boundary will be protected with a 500-foot radius buffers to ensure no

inadvertent damage would occur during exploration operations. No known cultural resources would be affected by the proposed exploration activities.

A report detailing the cultural resource surveys will be submitted to BLM and the NSB TLUI is included with this application, however it is submitted under separate cover to maintain protection of sensitive cultural resource information.

## **6.0 CONTINGENCY PLANS**

### **6.1 WILDLIFE PLAN**

CPAI has in place a Wildlife Avoidance and Interaction Plan (Wildlife Plan) that is applicable for all CPAI's North Slope locations, including the Program area. The Wildlife Plan is included in the Attachments. The purpose of the Wildlife Plan is to provide guidance to CPAI employees and contractors working in the company's oilfields on the North Slope, Alaska in order to assist them in implementing appropriate, standardized procedures when wildlife is encountered. CPAI will comply with the requirements of the Wildlife Plan during activities associated with the Program. The Wildlife plan has been reviewed and approved by the U.S. Fish Wildlife Service (USFWS).

Wildlife that may be in the area during the winter includes owls, ravens, arctic fox, musk ox, and possibly an occasional over-wintering caribou. These animals frequent all locations on the North Slope. Applicable CPAI policies will be followed if these animals are sighted.

Grizzly bears also inhabit the general exploration area, but it is unlikely they will be active in the winter season. However, should a grizzly bear be encountered, the procedures outlined in CPAI's Wildlife Plan would be applicable. CPAI and its contractors will exercise caution while establishing the ice road route and watch for bear sign. Any sightings will be immediately reported to the site superintendent and personnel in the area warned of the location of the bear. Any grizzly bear sighting will be reported verbally within 24 hours to ADF&G.

Policies to prevent polar bear encounters are the same as for grizzly bears. The likelihood of encountering polar bears during the Program is unlikely, however CPAI has a polar bear plan applicable for all CPAI's North Slope locations including the Program area. See section 6.2 below for further details.

To prevent bear encounters, 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. Project personnel will be instructed not to feed wildlife of any type or in any other way attempt to attract them either at the exploration drill site(s) or on the ice transportation route accessing the area.

CPAI will use a local subsistence representative for the Program to avoid and minimize interactions with subsistence resources.

## 6.2 POLAR BEAR INTERACTION PLAN

CPAI has in place a polar bear plan titled “Polar Bear Avoidance and Interaction Plan” that is applicable for all CPAI’s North Slope locations including the exploration area. CPAI Polar Avoidance and Interaction Plan identifies the procedures in place to avoid attracting bears to project activities, reduce the risk of interactions with bears, and actions that will be taken if a bear is encountered. This document also identifies what responsibilities personnel have regarding bear interactions. CPAI will comply with the requirements of that plan during activities associated with the exploration program.

CPAI understands that authorization to take polar bears by harassment (deterrent activities) for the protection of both human life and polar bears while conducting the exploration activities in polar bear habitat remains in place, per sections 101 (a)(4)(A), 109 (h), and 112 (c) of the Marine Mammal Protection Act. CPAI has a Letter of Authorization for Intentional Take, 16-INT-14, to cover all CPAI North Slope activities and which expires January 15, 2019; a renewed permit to cover activities after January 15, 2019 will be obtained.

The Polar Bear Avoidance and Interaction Plan is included in the Wildlife Interaction Plan which is included in the Attachments. The Polar Bear Avoidance and Interaction Plan has been reviewed and approved by the USFWS.

## 6.3 OIL DISCHARGE PREVENTION AND CONTINGENCY PLAN

An approved spill control package and oil discharge prevention and contingency plan (ODPCP) will be kept on site at all times for use in controlling and cleaning up any accidental discharges of fuels, lubricants, or produced fluids. Information related to immediate response actions, spill cleanup mobilization response times, and well control can be found in that plan.

## 6.4 SPILL PREVENTION CONTROL AND COUNTERMEASURE PLANS

The drill rig contractors hold a SPCC for fuel storage facilities associated with their drilling operations. Testing contractors hold an SPCC plan for their testing tanks. Additionally, CPAI has a SPCC plan for exploration activities, which covers drilling, testing and P&A.

## 6.5 OTHER PLANS

The North Slope operating fields have an Incident Management Team (IMT) which follows the Incident Command System (ICS). The IMT is on call 24-hours per day. Personnel involved in an emergency situation will notify Alpine Security at extension 4900 (907-670-4900) who will direct the IMT to respond. An Environmental Health and Safety Policies and Procedures manual are available on CPAI’s intranet web page and emergency response plans and procedures developed for CPAI’s facilities and are generally applicable to an incident under this project.

## **7.0 TRAINING**

CPAI requires all North Slope employees and contractors to complete an 8-hour unescorted training program provided by the North Slope Training Cooperative (NSTC). All trainees receive a Field Environmental Handbook, an Alaska Safety Handbook, and a North Slope Visitor's Guide. The unescorted training includes review of the Alaska Safety Handbook, and sections on personal protective equipment, camps and safety orientation, hazard communication, HAZWOPER Level 1, and Environmental Excellence. The NSTC also provides specialized training in hydrogen sulfide, hearing conservation, electrical safety, respiratory protection, energy isolation, confined space entry, asbestos awareness, fall protection, toxic substance control, benzene, NORM, formaldehyde, and first aid/CPR.

Site specific training, such as CPAI's BLM-approved NPR-A orientation program, will be conducted as required. The program is required for all personnel who will be working in the NPR-A. Personnel receiving NPR-A training will be provided with additional information regarding CPAI's proposed winter operations. The NPR-A training module teaches awareness of the environmental, social, and cultural concerns that relate to NPR-A. Topics included in the training are: the importance of not disturbing archeological and biological resources and habitats; guidance on how to avoid disturbing of the aforementioned; and avoidance of conflicts with subsistence hunting and fishing activities, and pertinent mitigation. All involved personnel are required to attend the class once per year. CPAI and its contractors are required to maintain records of all personnel who attend the program for as long as the site is active, but not to exceed the 5 most recent years of operations.

## **8.0 LOCAL HIRE AND COMMUNITY RELATIONS**

CPAI is committed to continuing its partnership with local contractors and businesses through competitive bid contracting opportunities. 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.

In previous years, CPAI has participated in job fairs held in the village of Nuiqsut. The job fairs are an opportunity for CPAI to inform Nuiqsut and other North Slope residents about jobs available with CPAI's winter activities on the North Slope. Attendees can gather information on the specific jobs available with CPAI and its contractors, the time period the jobs will be available, and the pay scales. The job fair is an excellent opportunity for local residents to become familiar with the planned winter operations and to talk with the people who will be hiring residents.

CPAI 2018-2019 Economic Opportunity Plan is included in the Attachments.

## 9.0 PUBLIC INVOLVEMENT

CPAI has and will conduct public meetings to help keep the local residents informed of CPAI's planned activities. Table 9 provides a list of stakeholder engagement meetings pertaining to the planned exploration program.

**Table 9: Stakeholder Engagement Meetings**

Organization	Date	Location
NSB Planning Commission Meeting	August 30, 2018	Utqiagvik, AK
NSB Planning Department Pre-Application	September 6, 2018	Utqiagvik, AK
BLM Pre-Application Meeting	September 25, 2018	Fairbanks, AK
NPR-A Subsistence Advisory Panel	October 3, 2018	
Village Community Meetings	October 10, 2018	Anaktuvuk Pass
	October 29, 2018	Nuiqsut
	November 1, 2018	Wainwright
	November 7, 2018	Utqiagvik
	November 8, 2018	Atqasuk
	November 15, 2018	Point Lay

Finally, the permitting actions associated with the exploration activities will be public noticed as required by agency specific regulatory programs. This action will provide opportunities for public input and involvement.

## 10.0 COMMUNICATION AND SUPERVISION

A CPAI representative will be on-site at all times during Program operations. Twenty-four-hour phone and internet service will be available at the drilling camp. Table 10 provides contact information for the 2018-2019 Program.

**Table 10: Responsible Contact Information**

NAME	TITLE	COMPANY	PHONE	MOBILE
Chip Alvord	Drilling Team Leader	CPAI	265-6120	244-5966
David Lee	Drilling Engineer	CPAI	263-3741	231-7613
Sarah Kenshalo	Environmental Permitter	CPAI-ANC	265-1550	632-5381
Mike Hauser/Mary Mae Aschoff	Exploration Field Environmental Coordinator	CPAI-Alpine	659-7217	943-0134
Donnie Lutrick/Dave Burley	Field Drilling Supervisors	CPAI	670-4763	N/A



In addition, CPAI maintains 24-hour security coverage at the CPAI Tower in Anchorage. Personnel on duty are trained to handle incoming emergency calls. The front desk number at the CPAI Tower is 907-276-1215.

Access to the existing operating field via the Dalton Highway is controlled at security checkpoints. The well sites would be closed to the general public for purposes of safety and confidentiality.

Site visits by government agency personnel (for purposes other than impromptu inspections) should be arranged through the CPAI Exploration Field Environmental Compliance Coordinators (907-943-0134).

## **11.0 PERMITS AND REGULATORY AUTHORIZATIONS**

The Program requires developing plans and obtaining permits and approvals from various agencies and organizations. Table 11 provides a list of permits and authorizations that are necessary for the overall project. The permits/approvals include but are not limited to the following:

**Table 11: Summary of Permits, Authorizations and Approvals**

<b>AGENCY</b>	<b>PERMIT TYPE</b>	<b>PERMIT NO.</b>	<b>NOTES</b>
<b>FEDERAL</b>			
BLM	Right of Way Permit	TBD	A new right of way permit will be obtained for activities conducted on federal lands.
BLM	Permit to Drill	TBD	A new permit to drill will be applied for and obtained for wells on federal lands.
USFWS	Letter of Authorization (LOA)	N/A	A new LOA will be applied for and obtained for the proposed project.
EPA	SPCC	N/A	Revise existing SPCC to include proposed activities.
<b>STATE</b>			
ADEC	Minor General Air Quality Permit	TBD	A new permit will be applied for and obtained to operate the drill rig(s) in support of the proposed activity.
ADEC	Temporary Storage of Drilling Waste	TBD	A new permit will be obtained for each drilling location.
ADEC	ODCPC	N/A	Revise existing ODCPC to include proposed activities.
ADEC	APDES	AKG572000	Nabors Alaska Camp APDES permit to discharge.

AOGCC	Permit to Drill	TBD	A new permit to drill will be obtained for each well drilled ( <i>applied for under separate cover</i> ).
ADNR	Temporary Water Use Authorization	TBD	See attached table for new TWUA.
ADNR DMLW	Land Use Permit – Off Road Travel	LAS 23007	This existing permit expires on 1/6/2020 and authorizes off road travel. No new land use permits are required for the proposed project.
ADF&G	Fish Habitat Permit	TBD	A new FHP will be obtained for new water sources, (if fish bearing), stream crossings and temporary airstrips will be applied for and obtained for the proposed Program.
ADF&G	Fish Habitat Permit	FH14-III-0078	The existing FHP authorizes the crossing of anadromous fish streams and lakes associated with summer and winter cross-country travel with summer tundra-approved vehicles used to support oil and gas exploration activities between the Canning and Ikpikpuk rivers.  The existing permit expires on 6/30/2019
ADF&G	Public Safety Permit	18-056	The existing public safety permit will be amended to include the 2018-2019 Program area.  The existing permit expires on 1/31/2019 and CPAI will request to extend the permit period from 1/31/2019 to 1/31/2020.
<b>LOCAL</b>			
NSB	Administrative Approval	TBD	New NSB permits will be applied for and obtained for the proposed activities.
NSB	Development Permit	TBD	New NSB development permits will be applied for and obtained for the proposed activities.
NSB TLUI	Cultural Clearance	TBD	A new TLUI Clearance will be applied for and obtained for the proposed project.

CPAI may also utilize other permits and approvals (e.g. temporary water use authorizations and Fish Habitat permits) that have been issued and are associated with other oilfield activities and operations.