



LEASE PLAN OF OPERATIONS APPLICATION

State of Alaska

Department of Natural Resources, Division of Oil & Gas
550 W. 7th Ave, Suite 1100, Anchorage, AK 99501-3563

Phone: 907-269-8800 Fax: 907-269-8943

Permitting Email: dog.permitting@alaska.gov



SECTION I: APPLICANT INFORMATION

1. Applicant:

Name: Narwhal Exploration, LLC

Mailing Address: 310 K Street, Suite 400

City: Anchorage

State: Alaska Zip Code: 99501

Phone: Enter Phone. Fax: Enter Fax.

Email: Enter Email.

2. Applicant Contact:

First Name: Shawn Last Name: Gelsinger

Title: Chief Operating Officer

Is the Mailing Address the same as Applicant's Mailing Address? If "No", please provide information below: ☒ Yes

Mailing Address: 310 K Street, Suite 400

City: Anchorage State: AK Zip Code: 99501

Phone: (907) 229-3539 Fax: Enter Fax.

Email: shawn@narwhalexploration.com

SECTION II: THIRD PARTY INFORMATION

(Fill out this section only if you are applying for the Applicant)

Third Party Company Name: Boreal Environmental Services

First Name: Julie Last Name: Lina

Title: Permitting Team Lead

Mailing Address: 4300 B Street, Suite 510

City: Anchorage

State: Alaska Zip Code: 99503

Phone: (907) 440-0270 Fax: Enter Fax.

Email: jlina@boreal-services.com

Describe the affiliation to the Applicant:

Providing permitting services.

SECTION III: APPLICATION DATE AND NUMBER

(FOR OFFICE USE ONLY)

Application Date:

Application Number:

SECTION IV: PROJECT INFORMATION

1. Project Name: Winter 2026 – 2027 Narwhal Exploration West Harrison Bay Campaign

2. Proposed Start Date: 11/1/2026

3. Project Description:

Describe what and where:

The Narwhal Exploration West Harrison Bay Campaign is an exploration drilling project located in the nearshore waters of West Harrison Bay (WHB) in the Beaufort Sea, Alaska (Appendix C). Narwhal Exploration, LLC (Narwhal) proposes to conduct on-ice winter drilling operations with the plan to execute three wells in a single season. Wells will each be drilled from a bottom-founded temporary ice pad located in notionally two to five feet (ft) of water depth. Access to the area will primarily be achieved via a coastal sea ice trail from Oliktok Point to the project area. Temporary infrastructure will include camps, equipment storage areas, ice airstrips, ice roads/trails and ice pads. A portion of the temporary infrastructure is within the National Petroleum Reserve-Alaska (NPR-A). Due to the shallow water depths in the project area, all ice construction is expected to occur on grounded sea ice. Narwhal pre-staged critical drilling, fuel, and operational equipment in the project area during the open-water season (typically July through September). Pre-staging equipment will enable ice construction activities to commence in WHB while the coastal sea ice trail is being constructed and reduce the number of loads to be mobilized via all-terrain vehicles (ATVs) during the winter months. The exploration program will utilize one drilling rig to drill up to three wells during 2026/2027 winter season. Geological targets for the campaign will be the normally pressured Nanushuk and Torok formations with vertical wells drilled to depths ranging from expected 4,000 to 7,500 ft below sea level. The entire project area, from Oliktok Point through WHB, is characterized by stable, land-fast sea ice from freeze-up until break-up.

SECTION V: LAND STATUS

1. State Mineral Estate:

Are supplemental pages for land status included in Appendix C? ☒ Yes ☐ No

Affected ADL: See Appendix C Date Effective: Enter Date. Date Assigned: Enter Date.

Oil And Gas Lessee(s): Narwhal Exploration, LLC

Surface Ownership: See Appendix C for all Land Status Information

Do you have, or anticipate having an Access Agreement: ☒ Yes ☐ No

Special Use Lands: [Click here to enter text.](#)

Jointly Managed Lands: [Click here to enter text.](#)

Other Considerations: [Click here to enter text.](#)

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Project Components are detailed in Appendix C	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

Affected ADL: Enter ADL. Date Effective: Enter Date. Date Assigned: Enter Date.

Oil And Gas Lessee(s): [Click here to enter text.](#)

Surface Ownership: [Click here to enter text.](#)

Do you have, or anticipate having an Access Agreement: ☐ Yes ☐ No

Special Use Lands: [Click here to enter text.](#)

Jointly Managed Lands: [Click here to enter text.](#)

Other Considerations: [Click here to enter text.](#)

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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Oil And Gas Lessee(s): [Click here to enter text.](#)

Surface Ownership: [Click here to enter text.](#)

Do you have, or anticipate having an Access Agreement: ☐ Yes ☐ No

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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Oil And Gas Lessee(s): Click here to enter text.

Surface Ownership: Click here to enter text.

Do you have, or anticipate having an Access Agreement: ☐ Yes ☐ No

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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Affected ADL: Enter ADL. Date Effective: Enter Date. Date Assigned: Enter Date.

Oil And Gas Lessee(s): Click here to enter text.

Surface Ownership: Click here to enter text.

Do you have, or anticipate having an Access Agreement: ☐ Yes ☐ No

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

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2. State of Alaska Surface Lands:

Are supplemental pages for land status included in Appendix C? ☒ Yes ☐ No

Oil And Gas Mineral Estate Owner: Click here to enter text.

Access Authorization(s): Click here to enter text.

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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3. Private Lands:		
Are supplemental pages for land status included in Appendix C? ☐ Yes ☒ No		
Oil And Gas Mineral Estate Owner: Click here to enter text.		
Surface Ownership And Access Agreement(s): Click here to enter text.		
Special Use Lands: Click here to enter text.		
Jointly Managed Lands: Click here to enter text.		
Other Considerations: Click here to enter text.		
Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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SECTION VI: BOND INFORMATION

Bonded Company: TBD

Type: Enter Bond Type. Number: Enter Bond Number. Amount: Enter Bond Amount.

Bonding Company: TBD

Mailing Address: Enter Mailing Address.

City: Enter City. State: Enter State. Zip Code: Enter Zip Code.

Phone: Enter Phone. Fax: Enter Fax. Email: Enter Email.

SECTION VII: SEQUENCE AND SCHEDULE OF OPERATIONS

Project Milestone #	Project Milestone	Proposed Start Date	Proposed End Date
1.	Polar Bear Den Surveys	12/1/2026	1/10/2027
2.	Coastal sea ice trail construction	12/1/2026	12/31/2026
3.	Local ice road/trail, ice airstrip and ice pad construction in WHB	11/1/2026	2/28/2027
4.	Exploratory drilling	12/15/2026	4/20/2027
5.	Demobilization of the remaining equipment (in a successful drilling case, some equipment may be stored at existing DEW line gravel pad or anchored barges)	4/30/2027	5/20/2027
6.	Summer Cleanup (Stickpicking)	8/2/2027	8/8/2027
7.	Enter Milestone.	Enter Date.	Enter Date.
8.	Enter Milestone.	Enter Date.	Enter Date.
9.	Enter Milestone.	Enter Date.	Enter Date.
10.	Enter Milestone.	Enter Date.	Enter Date.

SECTION VIII: PROJECTED USE REQUIREMENTS

1. Describe the proposed operations, including the location and design, of **Well Sites**:

Narwhal Exploration plans to drill up to 3 wells on near-shore leases in West Harrison Bay utilizing a single rig moved from site to site. Temporary ice pads will be constructed at each wellsite to support drilling operations. Each ice pad will be a structure of approximately 250-300' radius with sufficient freeboard above naturally forming sea ice. The rig will be mobilized to each sequential drill site as the pad is complete, and execute a specifically designed well program at that site. Rig operations will include drilling, data acquisition, and plug and abandonment of the wells in compliance with AOGCC requirements.

2. Describe the proposed operations, including the location and design, of **Buildings**:

All buildings used during exploration drilling will be temporary structures that will be transported via ice road to the drilling locations. Detailed ice pad layout information is provided with this application. All buildings and structures will be removed during demobilization at the end of the drilling season.

3. Describe the proposed operations, including the location and design, of **Fuel and Hazardous Substances**:

Narwhal's tanks will be either of double-wall construction or single-wall with secondary containment. During winter operations, five double-wall tanks with a maximum fill volume of 17,000 gallons will be staged at the Oliktok Point ice pad, including four for ULSD and one for gasoline. Each tank will have an inner tank that serves as the primary storage container while the outer tank provides secondary containment, fully enveloping the inner tank to contain 100% of the maximum possible release. A fuel spreader truck will be utilized to fill equipment as needed. During equipment storage and maintenance, the site will be protected from leaking or dripping fuel and hazardous substances by the placement of drip pans or other surface liners designed to catch and hold fluids under the equipment.

4. Describe the proposed operations, including the location and design, of Solid Waste Sites:				
Water based drilling fluids will be used through all phases of well construction. Drilling waste will be temporarily stored at each drilling location before being transported to a Prudhoe Bay disposal facility. The cuttings will be placed in cuttings bins on-site in preparation for transportation to Prudhoe Bay for disposal at a permitted grind and inject facility or landfill. Food and other waste will be stored in wildlife-resistant containers and managed in accordance with the required visual screening and protocols. Non-drilling wastes will be transported to an approved landfill in Prudhoe Bay or burned by an incinerator. Waste management will be based on waste minimization and disposal and will comply with Federal, State, and local regulations to prevent attracting wildlife.				
5. Describe the proposed operations, including the location and design, of Water Supplies:				
Fresh water is needed for the ice road and ice pad construction, maintenance, drilling operations, and camp use. Fresh water and ice chips will be extracted from permitted lakes in the NPR-A in accordance with established ADNR and Bureau of Land Management (BLM) water withdrawal requirements. Signs will be placed at the access points of permitted lakes. Potable water will be generated on site.				
6. Describe the proposed operations, including the location and design, of Utilities:				
Well sites will be powered using generators. Phone service and internet will be available at the camps. Handheld radios will be used for intra-well site communications. Small communication towers may be placed at the well sites if needed. Camp wastewater will be treated and discharged in accordance with appropriate permits.				
7. Describe the proposed operations, including the location and design, of Material Sites:				
Not applicable				
8. Describe the proposed operations, including the location and design, of Roads:				
All road infrastructure built to support exploration drilling will be temporary ice roads/trails. Ice roads/trails will be constructed and maintained using the generally accepted practices for the North Slope, subject to ADNR opening criteria for winter travel.				
9. Describe the proposed operations, including the location and design, of Airstrips:				
Narwhal plans to construct a temporary airstrip on grounded sea ice in WHB. Construction of the temporary airstrip will include building a smooth surface for aircraft operations and installation of perimeter lighting to support flight operations. Multiple aircraft may support Narwhal operations, including aircraft with skis as well as wheeled aircraft throughout the season. The ice runway will be approximately 150 ft in width and 5,600 ft in length to support up to a C130 Hercules aircraft.				
10. Describe the proposed operations, including the location and design, of All Other Facilities and Equipment:				
See Appendix C.				
11. If another permit(s) is required for the above described Projected Use Requirements, provide the following information:				
Agency	Permit Type	Permit Number	Application Status	Projected Use Requirement(s)
See Table 1 in Appendix C	Enter Permit Type.	Enter Permit Number.	Enter Application Status.	Enter Projected Use Requirement(s).
Enter Agency.	Enter Permit Type.	Enter Permit Number.	Enter Application Status.	Enter Projected Use Requirement(s).

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SECTION IX: REHABILITATION PLAN

1. Proposed Level of Infrastructure, Facilities and Equipment Removal:

After completing drilling, the wells will be plugged and abandoned in accordance with Alaska Oil and Gas Conservation Commission regulations. All equipment and structures will be removed from the well sites at the end of the season via ice route prior to spring thaw. All trash and debris will be removed and hauled to Deadhorse for proper disposal at a permitted disposal facility.

2. Description of Restoration and Rehabilitation Activities for Vegetation, Habitat, Impacted Wildlife, and Other Applicable Resources:

Cleanup activities will occur on the ice pads and any residual waste will be hauled to an approved disposal facility. No impacts to vegetation, wildlife, or habitat are anticipated. Narwhal will conduct stick picking the following summer, over the entire operating area, to ensure that North Slope Borough (NSB) and State cleanup requirements have been met. However, if impacts are discovered during stick picking the following summer Narwhal will consult with the Federal, State, and NSB agencies to determine the best method for restoration.

SECTION X: OPERATING PROCEDURES DESIGNED TO MINIMIZE ADVERSE EFFECTS

Describe operating procedures designed to prevent or minimize adverse effects on other natural resources and other uses of the Lease area and adjacent areas including:

Fish and Wildlife Habitats: Narwhal prepared a Wildlife and Bear Interaction Plan for the project. The procedures contained in this plan will apply if a polar bear is encountered. Narwhal policies are designed to prevent bear encounters. Feeding or attracting wildlife is prohibited by Narwhal policy. Hazardous materials will be kept in drums or other secure containers. Wildlife that may be in the project vicinity during winter exploration includes ravens, Arctic and red fox, musk ox, and a small number of over-wintering caribou. Grizzly/brown bears are unlikely to be active in the winter. Narwhal and its contractors will be cautious and watch for any signs

of bears and bear dens. Narwhal policies require sightings to be reported immediately to the site superintendent. If a polar bear den site is identified, U.S. Fish and Wildlife Service (USFWS) will be notified, and activities will be altered to avoid disturbing the bear. Grizzly/brown bear sightings will be reported to the ADF&G within 48 hours. Polar bear sightings will be documented and reported to the USFWS within 48 hours.

Historic and Archeological Sites: It is Narwhal's intention that historic, cultural or archeological resources that are discovered during any phase of the project, are not to be disturbed under any circumstance. Training will be provided to all personnel on what to do should cultural resources be discovered. If cultural resources are discovered during the project activities, personnel will immediately stop what they are doing, mark the location, and inform their supervisor. Narwhal will report all discoveries to the required agencies for identification and assessment.

Public Use Areas: Narwhal continues community outreach and consultation with North Slope hunters to ensure that project activities do not adversely impede access to subsistence resources. Narwhal is committed to engaging stakeholder groups to ensure transparency and awareness, to build relationships, gain local insights, and ensure community knowledge and values help guide project planning. Narwhal will strive to avoid conflicts with subsistence users.

Other Uses: An Oil Discharge Prevention and Contingency Plan (ODPCP) has been prepared for this exploration project. The approved plan will be kept on site at all times and will include guidelines on exploration well blowout response, spill cleanup mobilization response times, and well control. All emergency response situations will be managed by the Incident Management Team (IMT) which will follow the Incident Command System and the Alaska Unified Plan. Narwhal and all contractor and personnel will receive a Health, Safety, and Environment (HSE) orientation and the North Slope Training Cooperative training. The training components include site-specific safety information about permit requirements, cultural awareness, spill prevention and reporting, and wildlife interaction. All project personnel will be required to attend annual training. Training records (electronic or hard copy) will be maintained onsite.

SECTION XI: GLOSSARY OF TERMS

Term #	Term	Term Definition
1.	See Appendix C	Enter Term Definition.
2.	Enter Term.	Enter Term Definition.
3.	Enter Term.	Enter Term Definition.
4.	Enter Term.	Enter Term Definition.
5.	Enter Term.	Enter Term Definition.
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8.	Enter Term.	Enter Term Definition.
9.	Enter Term.	Enter Term Definition.
10.	Enter Term.	Enter Term Definition.

SECTION XII: CONFIDENTIALITY

The undersigned hereby requests that each page/section of this application marked confidential be held confidential under AS 38.05.035(a)(8).

APPLICANT CONTACT:

	Shawn Gelsinger	Chief Operating Officer	Sept 24, 2026
Signature	Name	Title	Date

MITIGATION MEASURE ANALYSIS: BEAUFORT SEA

The following instructions are provided for guidance to adequately complete the Mitigation Measure Analysis form.

1. The applicant shall respond to each Mitigation Measure, and all subsets of mitigation measures; i.e. A.2.d.i should be addressed and A.2.d.ii, and so forth.
2. The applicant's response shall begin by clearly indicating if the mitigation measure is satisfied, an exception is requested, or if the mitigation measure is not applicable.
3. The applicants' response shall then address how the proposed project clearly satisfies the mitigation measure, meets the intent of the mitigation measure, is not practicable, or is not applicable.
4. The applicant shall verify working 'in consultation with' parties other than Department of Natural Resources (DNR), Division of Oil and Gas (DO&G) by reporting meeting dates and parties present for Mitigation Measures which require consultation with parties other than DNR, DO&G; i.e. Mitigation Measure 1.b.

Please note that this form, along with the Plan of Operations Application form and the Plan of Operations, must be adequately completed before DNR DO&G will review an application for potential approval.

Beaufort Sea	Company Response
A. Mitigation Measures	
1. Facilities and Operations	
a. Oil and gas facilities, including pipelines, will be designed using industry-accepted engineering codes and standards. Technical submittals to the Division of Oil and Gas (DO&G) that reflect the “practice of engineering,” as defined by AS 08.48.341, must be sealed by a professional engineer registered in the State of Alaska.	A.1.a. Satisfied The Narwhal Exploration West Harrison Bay Campaign is designed using industry-accepted engineering standards and best practices. No technical submittals to the Division of Oil and Gas are expected.
b. A plan of operations will be submitted and approved before conducting exploration, development, or production activities in accordance with 11 AAC 83.	A.1.b. Satisfied A Plan of Operations has been prepared for Narwhal Exploration, LLC (Narwhal) and will be submitted for approval prior to commencement of operations. The Plan describes project activities, logistics, environmental protection measures, spill prevention and response procedures, and measures to avoid or minimize impacts to residential, commercial, recreational, Native Allotment, and subsistence use areas. Copies will be provided as required.
c. Facilities will be designed and operated to minimize sight and sound impacts in areas of high residential, recreational, and subsistence use and important wildlife habitat.	A.1.c. Satisfied Project facilities and operations will be designed and managed to minimize visual and noise impacts. Operations occur primarily in West Harrison Bay (WHB) and will utilize existing industry best management practices, directional lighting, and communication protocols to minimize disturbance to subsistence users and wildlife.
d. The siting of facilities, including roads, airstrips, and pipelines, is prohibited within ½ mile of the coast as measured from the mean high water mark and 500 feet of all fish bearing waterbodies.	A.1.d. Noted Offshore ice operations work (including temporary ice roads/trails, ice pads, and ice airstrips) conducted on state lands will be located within ½ mile of the coast as measured from the mean high-water mark and 500 feet of all fish bearing water bodies. Onshore temporary facilities will occur on the Bureau of Land Management (BLM) National Petroleum Reserve – Alaska (NPR-A) lands and Narwhal obtained authorization for this work in July 2026.

e. Notwithstanding (d) above, the siting of facilities is prohibited within ½ mile of the banks of the Colville, Canning, Sagavanirktok, Shaviovik, Kadleroshilik, and Kuparuk, rivers as measured from the ordinary high water mark. Facilities may be sited, on a case-by-case basis, within the ½ mile buffer if the lessee demonstrates that siting of such facilities outside this buffer zone is not feasible or prudent, or that a location within the buffer is environmentally preferable.	A.1.e. N/A No permanent onshore facilities are proposed within freshwater buffers identified in the mitigation measure. Any temporary support infrastructure will be located and operated to avoid impacts to fish-bearing waters and drinking water sources. Crossings, if required, will be minimized and designed in accordance with permit requirements.
f. Impacts to important wetlands will be minimized to the satisfaction of the director, in consultation with the Alaska Department of Fish and Game (ADF&G) and Alaska Department of Environmental Conservation (ADEC). The director will consider whether facilities are sited in the least sensitive areas.	A.1.f. Satisfied Activities will be planned to avoid and minimize impacts to wetlands. Any support facilities, access routes, or staging areas will utilize existing disturbed areas where practicable and comply with applicable federal and state authorizations.
g. Exploration roads, pads, and airstrips will be temporary and constructed of ice. Use of gravel roads, pads, and airstrips may be permitted on a case-by-case basis by the director, in consultation with Division of Mining, Land, and Water (DMLW) and ADF&G.	A.1.g. Satisfied The project area is temporary and constructed of ice. The project does not propose use of gravel structures. Temporary exploration infrastructure will be used where required and removed upon completion of operations.
h. Road and pipeline crossings will be aligned perpendicular or near perpendicular to watercourses.	A.1.h. Noted
i. Pipelines i. In areas with above ground placement, pipelines will be designed, sited, and constructed to allow for the free movement of wildlife and to avoid significant alteration of caribou and other large ungulate movement and migration patterns. ii. At a minimum, above ground pipelines will be elevated 7 feet, as measured from the ground to the bottom of the pipeline, except where the pipeline intersects a road, pad, or a ramp installed to facilitate wildlife passage. A lessee will consider snow depth in relation to pipe elevation to ensure adequate clearance for wildlife. iii. Pipelines and gravel pads will facilitate the containment and cleanup of spilled fluids.	A.1.i.i. N/A. No pipelines are proposed as part of the project. A.1.i.ii. N/A. No pipelines are proposed as part of the project. A.1.i.iii. N/A. No pipelines are proposed as part of the project.

iv. Pipelines must be located and constructed in consultation with ADF&G and the local borough.	A.1.i.iv. N/A. No pipelines are proposed as part of the project.
j. Causeways and docks will not be located in river mouths or deltas. Approved causeways will be designed, sited, and constructed to prevent significant changes to nearshore oceanographic circulation patterns and water quality characteristics (e.g., salinity, temperature, suspended sediments) that result in exceedances of water quality criteria, and must maintain free passage of marine and anadromous fish.	A.1.j. N/A The project does not include construction of causeways or docks.
k. Artificial gravel islands and bottom founded structures will not be located in river mouths or active stream channels on river deltas, except as provided for in (l) below.	A.1.k.N/A The project does not include construction of artificial gravel islands, or bottom-founded production structures.
l. Each proposed structure will be reviewed on a case-by-case basis. Causeways, docks, artificial gravel islands and bottom founded structures may be permitted if the director, in consultation with ADF&G, ADEC, and the North Slope Borough (NSB), determines that a causeway or other structures are necessary for field development and that no practicable alternatives exist. A monitoring program may be required to address the objectives of water quality and free passage of fish, and mitigation will be required where significant deviation from objectives occurs.	A.1.l. N/A The project does not include construction of causeways, docks, artificial gravel islands, or bottom-founded production structures.
m. Upon abandonment of material sites, drilling sites, roads, buildings or other facilities, such facilities must be removed and the site rehabilitated to the satisfaction of the state, unless the state, in consultation with any non-state surface owner, as applicable, determines that such removal and rehabilitation is not in the state's interest. Mine site development and rehabilitation within floodplains must follow the procedures outlined in McLean, R. F. 1993, North Slope Gravel Pit Performance Guidelines, ADF&G Habitat and Restoration Division Technical Report 93-9, available from ADF&G.	A.1.m.Satisfied Upon completion of exploration activities, temporary facilities and equipment will be removed and any affected areas restored in accordance with approved Dismantlement, Removal, and Rehabilitation regulatory agencies' requirements. There are no gravel extraction or gravel mine development activities proposed for this project.
n. The director may include plan stipulations if necessary to reduce or eliminate adverse impacts to fish and wildlife or to protect the environment.	A.1.n. Noted
2. Fish, Wildlife, and Habitat	

a. The lessee will consult with the NSB before proposing the use of explosives for seismic surveys. The director may approve the use of explosives for seismic surveys after consultation with the NSB.	A.2.a. N/A No explosives or seismic surveys are proposed to be used for this project.
b. Any water intake structures in fish bearing or non-fish bearing waters will be designed, operated, and maintained to prevent fish entrapment, entrainment, or injury. All water withdrawal equipment must be equipped and must use fish screening devices approved by ADF&G.	A.2.b. Satisfied Narwhal evaluated onshore lakes in the WHB vicinity for available freshwater to support construction of temporary ice roads/trails, ice pads, and the ice airstrip, drilling, and cement makeup fluid and for the camps potable water treatment systems. Lakes have been permitted by BLM. Narwhal will obtain secondary approvals from Alaska DNR Division of Mining, Land, and Water, and ADF&G for water withdrawal and/or ice chips. Approved intake screening and withdrawal rates will be utilized to prevent fish entrainment and impingement.
c. Removal of snow from fish-bearing rivers, streams, and natural lakes is subject to prior written approval by ADF&G. Compaction of snow cover overlying fish-bearing waterbodies is prohibited except for approved crossings. If ice thickness is not sufficient to facilitate a crossing, then ice or snow bridges may be required..	A.2.c. Satisfied Snow removal or compaction activities affecting fish-bearing waters are not anticipated. Any ice-road/trails, ice airstrip(s), or ice-pad activities will be conducted in accordance with agency approvals. Lakes identified to support ice construction activities are in NPR-A (BLM managed lands) and were authorized by BLM for water withdrawals in July 2026. Narwhal will obtain secondary approvals from ADNR and ADFG for these lakes.
d. Bears: i. For projects in proximity to areas frequented by bears, the lessee is required to prepare and implement a human-bear interaction plan designed to minimize conflicts between bears and humans. The plan will include measures to: A. minimize attraction of bears to facility sites; B. organize layout of buildings and work areas to minimize interactions between humans and bears; C. warn personnel of bears near or on facilities and the proper actions to take; D. if authorized, deter bears from the drill site; E. provide contingencies in the event bears do not leave the site;	The Wildlife and Bear Interaction Plan has been prepared to provide guidelines and procedures for assuring the safety of project personnel as well as monitoring and prompt reporting, investigation, and documentation of wildlife sightings or incidents as required the U.S. Fish & Wildlife Service (USFWS) and ADF&G. A.2.d.i.A. Satisfied A.2.d.i.B. Satisfied A.2.d.i.C. Satisfied A.2.d.i.D. Satisfied A.2.d.i.E. Satisfied A.2.d.i.F. Satisfied

F. discuss proper storage and disposal of materials that may be toxic to bears; and G. provide a systematic record of bears on the site and in the immediate area. ii. Brown Bears: A. A lessee must consult with ADF&G before commencing any activities to identify the locations of known brown bear den sites that are occupied in the season of proposed activities. B. Exploration and production activities will not be conducted within ½ mile of occupied brown bear dens unless alternative mitigation measures are approved by ADF&G. C. A lessee who encounters an occupied brown bear den not previously identified by ADF&G will report it to the Division of Wildlife Conservation, ADF&G, within 24 hours. The lessee will avoid conducting mobile activities ½ mile from discovered occupied dens unless alternative mitigation measures are approved by the director, with concurrence from ADF&G. Non-mobile facilities will not be required to relocate. iii. Polar Bears: A. Consultation with the US Fish and Wildlife Service (USFWS) is required prior to commencement of any activities, as required by the Endangered Species Act, and also to identify the locations of known polar bear den sites. B. Operations will avoid known polar bear dens by at least 1 mile unless alternative mitigation measures are approved by USFWS. C. A lessee who encounters an occupied polar bear den not previously identified by USFWS will report it to the USFWS within 24 hours and subsequently avoid the new den by at least 1 mile unless alternative mitigation measures are approved by USFWS. D. If a polar bear should den within an existing development, off-site activities will be restricted to minimize disturbance.	A.2.d.i.G. Satisfied Consultation with ADF&G will occur prior to seasonal operations. Known occupied brown bear dens will be avoided in accordance with required setback distances and reporting procedures. A.2.d.ii.A. Satisfied A.2.d.ii.B. Satisfied A.2.d.ii.C. Satisfied Polar bear den surveys would be conducted to identify polar bear dens and plans adjusted to maintain separation from any dens. Two aerial infrared (AIR) surveys via fixed wing aircraft will be completed to identify putative maternal polar bear dens in accordance with the USFWS Incidental Harassment Authorization (IHA) requirements. Narwhal will adjust the project activities to avoid potential impacts to any bear dens that are identified during AIR surveys or field operations in accordance with IHA issued by USFWS. A.2.d.iii.A. Satisfied A.2.d.iii.B. Satisfied A.2.d.iii.C. Satisfied A.2.d.iii.D. Satisfied
e. Permanent, staffed facilities will be sited to the extent practicable outside identified brant, white-fronted goose, snow goose, tundra swan, king eider, common eider,	A.2.e. N/A

spectacled eider, and yellow-billed loon nesting and brood rearing areas on lease tracts where the lease tract is entirely onshore or has onshore components.	No permanent staffed facilities are proposed for this project.
f. Due to high concentrations of staging and molting brant and other waterbirds within the coastal habitats along the Teshekpuk Lake Special Area (TLSA) and other areas, operations that create high levels of disturbance, including but not limited to dredging, and boat and barge traffic along the coast, will be prohibited from June 20 to September 15 within ½ mile of coastal salt marshes, specifically tracts 187, 209, 320, 483-485, 493, 494, 496, 497, 500-514, 517-519, 524, and 530. In addition, tracts 228 and 231, tracts 521-526, and tract 537 are subject to the same restrictions between May 15 and July 30 to protect large concentrations of breeding snow geese. The construction and siting of facilities within 1 mile of these areas may be allowed on a case-by-case basis if the director and ADF&G determine that no other feasible and prudent location exists.	A.2.f. Satisfied Operations will comply with applicable seasonal restrictions and wildlife protection measures. Activities will avoid unreasonable disturbance to migratory birds and coastal habitats.
g. The director, in consultation with ADF&G, may impose additional and seasonal restrictions on activities located in, or requiring travel through or overflight of, important caribou or other large ungulate calving and wintering areas during the plan of operations approval stage.	A.2.g. Noted Operations will comply with applicable restrictions and wildlife protection measures noted in the BLM authorization.
3. Subsistence, Commercial, and Sport Harvest Activities	
a. Lease-related use may be restricted, if necessary, to prevent unreasonable conflicts with subsistence, commercial, or sport fish and wildlife harvest activities. Reasonable access to subsistence areas, as defined in Section B, will be maintained unless reasonable alternative access is provided to subsistence users. The lessee will consult the NSB, nearby communities, and native organizations for assistance in identifying and contacting local subsistence users.	A.3.a.Satisfied Narwhal has had extensive stakeholder engagement over the last few years and will work directly to mitigate conflicts with subsistence users in the area where practical.
b. Before submitting a plan of operations that has the potential to disrupt subsistence activities, the lessee will consult with the potentially affected subsistence communities, the Alaska Eskimo Whaling Commission (AEWC), and the NSB (collectively “parties”) to discuss the siting, timing, and methods of proposed operations and safeguards or mitigating measures that could be implemented by the operator to prevent unreasonable conflicts. The parties will also discuss the reasonably foreseeable effect on subsistence activities of any other operations in the area that they know will occur during the lessee’s proposed operations. Through this consultation, the lessee will make reasonable efforts to ensure that exploration, development, and production activities are compatible with subsistence hunting and	A.3.b. Satisfied Consultations were conducted with potentially affected communities, the Alaska Eskimo Whaling Commission (AEWC), the NSB, and other subsistence stakeholders since project inception from late 2024 with most recent engagements continuing through 2026. The operator will work to ensure activities do not unreasonably interfere with subsistence uses. Should disagreements arise, the operator will participate in DNR-led conflict resolution processes. Concerns expressed by subsistence users during operations will be documented and communicated to DNR along with mitigation actions taken.

fishing activities and will not result in unreasonable interference with subsistence harvests.	
c. Whale Harvest Protection: i. Permanent facility siting on Cross Island will be prohibited unless the lessee demonstrates to the satisfaction of the NSB, in consultation with the AEWC, that the development will not preclude reasonable access to whales as defined in Section B and as may be determined in a conflict avoidance agreement, if required by the NSB. With the approval of the NSB, the director may authorize permanent facilities. ii. Permanent facility siting in state waters within 3 miles of Cross Island will be prohibited unless the lessee demonstrates to the satisfaction of the director, in consultation with the NSB and the AEWC, that the development will not preclude reasonable access to whales as defined in Section B and as may be determined in a conflict avoidance agreement if required by the NSB. iii. Permanent facility siting in state waters between the west end of Arey Island and the east end of Barter Island (tracts 40 through 45) will be prohibited unless the lessee demonstrates to the satisfaction of the director, in consultation with the NSB and the AEWC, that the development will not preclude reasonable access to whales as defined in Section B and as may be determined in a conflict avoidance agreement if required by the NSB.	A.3.c.i. N/A. There are no permanent facilities included in this Plan of Operations. A.3.c.ii. N/A. There are no permanent facilities included in this Plan of Operations. A.3.c.iii. N/A. There are no permanent facilities included in this Plan of Operations.
d. Any tract or portion thereof in the Beaufort Sea Areawide lease sale area may be subject to seasonal drilling restrictions in conjunction with the submission of a plan of operations permit application by the lessee. i. Exploratory Drilling from Bottom-founded Drilling Structures and Natural and Gravel Islands: Subject to measure iii below, exploratory drilling operations and other downhole operations from bottom-founded drilling structures and natural and gravel islands are allowed year-round in the Central Subsistence Whaling Zone (SWZ)⁷. In the Eastern SWZ, drilling is prohibited upon commencement of the fall bowhead whale migration until whaling quotas have been met. ii. Exploratory Drilling Operations from Floating Drilling Structures: Subject to measure iii below, exploratory drilling below a predetermined threshold depth and other downhole operations from floating drilling structures is prohibited throughout the Beaufort Sea upon commencement of the fall bowhead whale migration until the whale migration mid-point.⁸ In addition to the above restriction, exploratory drilling above and below a predetermined threshold	A.3.d.i. Satisfied. Any exploratory drilling from fixed structures will comply with applicable subsistence whaling restrictions and permit conditions. Narwhal proposes to conduct on-ice winter drilling operations with the plan to drill up to three wells in a single season. Wells will each be drilled from a bottom-founded temporary ice pad located in notionally two to five feet of water depth. A.3.d.ii. N/A Drilling operations will not be from floating drilling structures.

depth in the Eastern SWA from floating drilling structures is prohibited upon commencement of the fall bowhead whale migration until the whaling quotas have been met. In the Central and Western SWZ, exploratory drilling above and below a predetermined threshold depth may be prohibited on a case-by-case basis until the whaling quotas have been met.⁹ The following criteria will be used to evaluate these operations: 1) proximity of drilling operations to active or proposed whaling areas, 2) drilling operation type and feasible drilling alternatives, 3) number of drilling operations in the same area, 4) number of whaling crews in the area, and 5) the operator's plans to coordinate activities with the whaling crews in accordance with Mitigation Measure A3a. All non-essential activities associated with drilling are prohibited in the Central SWZ during the whale migration until whaling quotas have been met. Essential support activity associated with drilling structures occurring within active whaling areas shall be coordinated with local whaling crews in accordance with Mitigation Measure A3b. "Essential activities" include those necessary to maintain well control, maintain physical integrity of the drilling structure, and scheduled crew changes. Support craft include aircraft, boats, and barges. "Non-essential activity," by exclusion, are those activities that do not fit the definition of essential activities. Both types of activities must be described by the operators in their plans submitted for state review. To the extent feasible, mobilization or demobilization of the drilling structures should not occur during the whale migration. If operators propose to mobilize or demobilize during the whale migration, they must describe the activity in their exploration plan and must demonstrate why the activity must occur during the migration period. iii. Exploratory Drilling in Broken Ice: Lessees conducting drilling operations during periods of broken ice must: A. be trained and qualified in accordance with Bureau of Safety and Environmental Enforcement standards pertaining to well-control equipment and techniques; B. have an oil spill contingency plan approved by the state that includes requirements for in situ igniters, fire resistant boom, relief well plans, and a decision process for igniting an uncontrolled release of oil; and C. participate in an oil spill research program.	A.3.d.iii: Drilling operations will not be conducted during broken-ice periods.
e. Exploration, development and production activities located on lease tracts 1 through 26 shall be conducted in a manner that prevents unreasonable conflicts between oil and gas activities and subsistence whale hunting.	

i. Before submitting a plan of operations for activities on lease tracts 1 through 26, the lessee shall consult with the NSB, the AEWC, and the community of Kaktovik to discuss how the siting, timing, and methods of proposed operations can be planned and carried out to avoid potential conflicts with subsistence whale hunting. Through this consultation, which may include the negotiation of a conflict avoidance agreement, the lessee shall make every reasonable effort to ensure that their activities will not result in unreasonable interference with subsistence whale hunting. ii. A plan of operations for activities on lease tracts 1 through 26 shall include a discussion of the consultation process and any resulting conflict avoidance agreements. In the event that no agreement is reached, the lessee, the NSB, the AEWC, or the community of Kaktovik may request that Alaska Department of Natural Resources (DNR) call a meeting of representatives of the NSB, the AEWC, the community of Kaktovik, and the lessee to discuss the potential conflict caused by the proposed activities, and attempt to resolve the issues. If the parties are still unable to reach an agreement, then DNR will make a final determination of the measures proposed to be taken to prevent unreasonable interference with subsistence whale hunting.	A.3.e.i. N/A A.3.e.ii. N/A
4. Fuel, Hazardous Substances, and Waste	
a. The lessee will ensure that secondary containment is provided for the storage of fuel or hazardous substances and sized as appropriate to container type and according to governing regulatory requirements in 18 AAC 75 and 40 CFR 112. Containers with an aggregate storage capacity of greater than 55 gallons that contain fuel or hazardous substances will not be stored within 100 feet of a waterbody or within 1,500 feet of a current surface drinking water source.	A.4.a. Narwhal's tanks will either be of double-wall construction or single-wall with secondary containment. The double-wall tanks will have an inner tank that serves as the primary storage container while the outer tank provides secondary containment, fully enveloping the inner tank to contain 100% of the maximum possible release. Waiver Request Narwhal is requesting a waiver from ADNRR to allow fuel storage within 100 feet of water bodies for the duration of the Narwhal Exploration WHB Campaign. Narwhal has obtained waivers from NSB and BLM to allow fuel storage within 100 feet of water bodies for the duration of the Narwhal WHB Campaign. Narwhal plans to transfer fuel at Oliktok Point and along the sea ice trail. There is a site-specific Spill Prevention, Control, and Countermeasure (SPCC) plan for fueling and fuel storage operations associated with the project. In addition to the SPCC plan, Narwhal has an approved Oil Discharge Prevention and Contingency Plan from Alaska Department of Environmental Conservation Spill notification protocol and response tactics are described and documented in these documents.

b. During equipment storage or maintenance, the lessee will ensure that the site is protected from leaking or dripping fuel and hazardous substances by the placement of drip pans or other surface liners designed to catch and hold fluids under the equipment, or by creating an area for storage or maintenance using an impermeable liner or other suitable containment mechanism.	A.4.b. Satisfied Drip pans, deck containment systems, and other appropriate controls will be used during equipment storage and maintenance activities. Drip pans or bermed liners on ice pads are provided under day tanks, light plants, air heaters, portable generators, fuel line valves, couplings, fuel transfer pumps, and engines unless construction of each unit includes secondary containment. Valves, pump nozzles, and other equipment subject to drips and slow leaks are protected by drip pans or duck ponds.
c. During fuel or hazardous substance transfer, the lessee will ensure that a secondary containment or a surface liner is placed under all container or vehicle fuel tank inlet and outlet points, hose connections, and hose ends. Appropriate spill response equipment, sufficient to respond to a spill of up to 5 gallons, must be on hand during any transfer or handling of fuel or hazardous substances.	A.4.c. Satisfied Fuel transfers will be attended by trained personnel and conducted using containment and spill response equipment. Drips or drops from hose or piping are collected in portable liners or otherwise attended to after a fuel transfer. Spill prevention measures include procedures for transfer of petroleum product training of personnel in spill awareness and prevention, appropriate design and inspection of oil filled containers and equipment including secondary containment, and discharge controls. Fuel is transferred to and from aboveground storage tanks through flexible arctic-grade fuel handling hoses. Fuel lines and couplings are inspected during each fuel transfer operation. Expansion, contraction, and vibration are not transferred through these flexible connections. All lines have "no drip" quick connect couplings or unions where practicable.
d. The lessee will ensure that vehicle refueling will not occur within the annual floodplain, except as addressed and approved in the plan of operations. This measure does not apply to water-borne vessels.	A.4.d. Waiver Request Narwhal is requesting a waiver to allow vehicle refueling within the annual floodplain. Narwhal will be transferring fuel to areas in the winter program to including ice roads/trails, ice pads, drill sites, and ice airstrips. Vehicle refueling activities will comply with approved operating procedures and permit conditions.
e. The lessee will ensure that all independent fuel and hazardous substance containers are permanently marked with the contents and the lessee's or contractor's name.	A.4.e. Satisfied

	Fuel, oil, petroleum products, and hazardous material containers (including methanol) will be clearly labeled with Narwhal's or contractor's name and product type.
f. The lessee will ensure that waste from operations is reduced, reused, or recycled to the maximum extent practicable. Garbage and domestic combustibles must be incinerated whenever possible or disposed of at an approved site in accordance with 18 AAC 60.	A.4.f. Satisfied Waste from operations will be reduced, reused, recycled, incinerated, or disposed of at approved facilities as appropriate.
g. Proper disposal of garbage and putrescible waste is essential to minimize attraction of wildlife. The lessee must use the most appropriate and efficient method to achieve this goal. The primary method of garbage and putrescible waste is prompt, on-site incineration in compliance with State of Alaska air quality regulations. The secondary method of disposal is on-site frozen storage in animal-proof containers with backhaul to an approved waste disposal facility. The tertiary method of disposal is on-site non-frozen storage in animal proof containers with backhaul to an approved waste disposal facility. Daily backhauling of non-frozen waste is required unless safety considerations prevent it.	A.4.g. Satisfied Waste would be managed in accordance with Narwhal's Waste Management Plan (WMP) and Wildlife and Bear Interaction Plan. The WMP describes the approach and procedures for handling, treating, and disposing of various potential wastes generated during Narwhal's activities. The Plan is a supporting document for the proper waste management that is necessary for worker health and safety, environmental and wildlife protection, and regulatory compliance. Wastes would be kept inside buildings, vehicles, animal resistant outdoor containers, or sealed in connexes as appropriate. Burnable waste may be incinerated in an incinerator at camps. Non-burnable waste would be transported in large animal resistant containers or sealed connexes to approved disposal facilities, i.e., Service Area 10 facilities in Deadhorse.
h. New solid waste disposal sites, other than for drilling waste, will not be approved or located on state property for exploration.	A.4.h. N/A No new solid waste disposal facility is proposed. Waste will be managed through approved disposal methods.
i. The preferred method for disposal of muds and cuttings from oil and gas activities is by underground injection. The lessee will ensure that drilling mud and cuttings will not be discharged into lakes, streams, rivers, or wetlands. On-pad temporary cuttings storage may be allowed as necessary to facilitate annular injection and backhaul operations.	A.4.i. Satisfied Drilling waste will be managed in accordance with approved disposal procedures and permit requirements. Drilling waste will be temporarily stored at each drilling location before being transported to a Prudhoe Bay disposal facility. The cuttings will be placed in cuttings bins on-site in preparation for transportation to Prudhoe Bay for disposal at a permitted grind and inject facility or landfill.
5. Access	

a. Exploration activities must be supported only by ice roads, winter trails, existing road systems, or air service. Wintertime off-road travel across tundra and wetlands may be approved in areas where snow and frost depths are sufficient to protect the ground surface.	A.5.a.Satisfied Transportation and access activities will be conducted in compliance with tundra travel and access requirements. Access to the area will primarily be achieved via a coastal sea ice trail from Oliktok Point to the project area. Temporary infield infrastructure will also be constructed in the project area, including temporary camps, temporary ice airstrips, temporary ice trails/roads, temporary equipment storage areas, and temporary ice pads. Access to different project areas in winter would occur via a combination of temporary ice roads and ice trails over tundra and grounded sea ice.
b. Summertime off-road travel across tundra and wetlands may be authorized subject to time periods and vehicle types approved by DMLW.	A.5.b. N/A Summertime off-road travel across tundra would be authorized subject to time periods and vehicle types approved by ADNR.
c. Emergency exceptions may be granted by the director of DMLW, or the director of DO&G, if it is determined that travel can be accomplished without damaging vegetation or the ground surface on a site-specific basis.	A.5.c. Noted
d. Public access to, or use of, the lease area may not be restricted except within the immediate vicinity of drill sites, buildings, and other related structures. Areas of restricted access must be identified in the plan of operations.	A.5.d. Satisfied Public and subsistence access will not be unreasonably restricted. Any safety exclusion zones will be limited to the immediate vicinity of active operations.
6. Historic, Prehistoric, and Archaeological Sites	
a. Before the construction or placement of any structure, road, or facility supporting exploration, development, or production activities, the lessee must conduct an inventory of prehistoric, historic, and archeological sites within the area, including a detailed analysis of the effects that might result from that construction or placement.	A.6.a. Satisfied Federal, state, and local laws require protection of cultural and historical resources and consultation with Native communities prior to and during exploration activities. Cultural resources include both historic and prehistoric archaeological sites, historic structures, and traditional land use sites. Both onshore and offshore areas in the vicinity of WHB were surveyed for cultural and historical resources in the summer of 2025. The results analyzed during this time have been shared with the Alaska State Historic Preservation Office (SHPO), NSB Traditional Land Use Inventory (TLUI), and BLM Archaeology departments. Additional surveys have been conducted in 2026 to supplement the surveys from 2025. Within the expected

	operating area of Narwhal's winter program, sites of cultural resources and cultural significance have been identified and will be avoided for winter operations. Additionally, Native Allotments and Native Corporation owned lands have been identified and will be avoided during execution of winter exploration operations. Narwhal on-site supervisors will have a copy of maps depicting cultural and historical resources and traditional land use sites; however, these data are confidential and therefore, if personnel encounter cultural or historical materials, they must leave the find in place and notify the Narwhal Site Lead.
b. The inventory of prehistoric, historic, and archeological sites must be submitted to the director and the Office of History and Archeology (OHA) who will coordinate with the NSB for review and comment. If a prehistoric, historic, or archeological site or area could be adversely affected by a lease activity, the director, after consultation with OHA and the NSB, will direct the lessee as to the course of action to take to avoid or minimize adverse effects.	A.6.b. Satisfied Cultural resource inventories and agency coordination have been completed and submitted as required. Both onshore and offshore areas in the vicinity of WHB were surveyed for cultural and historical resources in the summer of 2025. The results analyzed during this time have been shared with the Alaska SHPO, NSB TLUI, and BLM Archaeology departments. Additional surveys have been conducted in 2026 to supplement the surveys from 2025.
c. If a site, structure, or object of prehistoric, historic, or archaeological significance is discovered during lease operations, the lessee will report the discovery to the director as soon as possible. The lessee will make all reasonable efforts to preserve and protect the discovered site, structure, or object from damage until the director, after consultation with the OHA and the NSB, has directed the lessee on the course of action to take for its preservation.	A.6.c.Satisfied Reasonable efforts will be taken to preserve and protect any discovered site, structure, or object from damage until after consultation with the proper authorities on the appropriate actions to be taken.
7. Hiring Practices	
a. The lessee is encouraged to employ local and Alaska residents and contractors, to the extent they are available and qualified, for work performed in the lease area. The lessee will submit, as part of the plan of operations, a hiring plan that will include a description of the operator's plans for partnering with local communities to recruit, hire, and train local and Alaska residents and contractors. As a part of this plan, the lessee is encouraged to coordinate with employment and training services offered by the State of Alaska and local communities to train and recruit employees from local communities.	A.7.a. Satisfied Narwhal believes that this project can best be delivered by utilizing local knowledge and expertise wherever possible. Narwhal is committed to hiring locally within Alaska. This has already been demonstrated through Narwhal's program, where local Alaskan contractors were used for permitting, lake surveying, cultural resource identification, field execution, and helicopter support. Narwhal has already engaged with the NSB and is actively including Alaska Native Regional Corporations and their subsidiaries in any vendor discussions where they can provide support. Additionally, Narwhal will attempt to recruit local North Slope residents for the project.

b. A plan of operations application must describe the lessee's past and prospective efforts to communicate with local communities and interested local community groups.	A.7.b. Satisfied The Plan of Operations describes past and ongoing communication efforts with local communities and stakeholder organizations.
c. A plan of operations application must include a training program i. for all personnel including contractors and subcontractors; ii. designed to inform each person working on the project of environmental, social, and cultural concerns that relate to that person's job; iii. using methods to ensure personnel understand and use techniques necessary to preserve geological, archeological, and biological resources; and iv. designed to help personnel increase their sensitivity and understanding of community values, customs, and lifestyles in areas where they will be operating.	Narwhal and all contractor and subcontractor personnel will receive a Health, Safety, and Environment (HSE) orientation. Additionally, the training program will be designed to inform each individual of the environmental, social, and cultural concerns that relate to their job functions. Training components will include stipulations and requirements, cultural awareness, spill prevention and reporting, wildlife interaction, and site-specific safety. A.7.c.i. Satisfied A.7.c.ii. Satisfied A.7.c.iii. Satisfied A.7.c.iv. Satisfied
B. Definitions	
Facilities – Any structure, equipment, or improvement to the surface, whether temporary or permanent, including, but not limited to, roads, pads, pits, pipelines, power lines, generators, utilities, airstrips, wells, compressors, drill rigs, camps, and buildings. Hazardous substance – As defined under 42 USC 9601 – 9675 (Comprehensive Environmental Response, Compensation, and Liability Act of 1980). Important wetlands – Those wetlands that are of high value to fish, waterfowl, and shorebirds because of their unique characteristics or scarcity in the region or that have been determined to function at a high level using the hydrogeomorphic approach. Minimize – To reduce adverse impacts to the smallest amount, extent, duration, size, or degree reasonable in light of the environmental, social, or economic costs of further reduction. Plan of operation – A lease plan of operations under 11 AAC 83.158 and a unit plan of operations under 11 AAC 83.346.	Noted

Practicable – Feasible in light of overall project purposes after considering cost, existing technology, and logistics of compliance with the mitigation measure.

Reasonable access - Access using means generally available to subsistence users.

Secondary containment – An impermeable diked area, portable impermeable containment structure, or integral containment space capable of containing the volume of the largest independent container. The containment will, in the case of external containment, have enough additional capacity to allow for local precipitation.

Temporary – No more than 12 months.



Appendix C: Plan of Operations

Narwhal Exploration West Harrison Bay Campaign

Prepared for:
Narwhal Exploration, LLC

September 2026



CONFIDENTIAL per AS 38.05.035(a)(8)

Appendix C: Plan of Operations

Narwhal Exploration West Harrison Bay Campaign

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CONFIDENTIAL per AS 38.05.035(a)(8)



TABLE OF CONTENTS

Abbreviations	iii
1. Project Overview	4
2. Project Schedule	4
3. Fuel Supply, handling, and storage.....	5
4. Winter Operations.....	6
4.1 Aerial Infrared Surveys for Polar Bear Dens	6
4.2 Access (Ice Construction).....	6
4.3 Temporary Ice Road/Trail Construction	6
4.4 Temporary Ice Pads	6
4.5 Temporary Ice Airstrip(s).....	7
4.6 Exploration Drilling	7
4.7 Support Facilities	7
4.8 Water Requirements	8
5. Security	8
6. Waste Management and Disposal.....	9
6.1 Non-drilling Waste.....	9
6.2 Disposal of Drilling Waste.....	9
6.3 Air Emissions.....	9
6.4 Summer Cleanup	9
7. Training.....	10
7.1 Wildlife and Bear Interaction Plan.....	10
7.2 Spill Prevention, Control, and Countermeasure (SPCC) Plan	10
7.3 Oil Discharge Prevention and Contingency Plan (ODPCP or C-Plan)	10
7.4 Cultural Resources	10
8. Community Relations and Stakeholder Engagement.....	11
9. Responsible Parties Contact Information	11



FIGURES

Figure 1. Project Area Overview	12
Figure 2. Ice Pad, Ice Airstrip, and Drill Site (Tuugaalik) Locations	13
Figure 3. Oliktok Point Ice Pad	14
Figure 4. Proposed Winter Operations Schedule	15
Figure 5. Drill Site Layout	16

TABLES

Table 1. Expected Permits and Authorizations	17
Table 2. Temporary Ice Road/Trail Locations	19
Table 3. Ice Pad and Ice Airstrip Locations	20
Table 4. Drill Site Locations	20
Table 5. Typical Equipment Lists	21
Table 6. Estimated Water Use for Ice Construction.....	24
Table 7. Responsible Parties – Contact Information.....	24



ABBREVIATIONS

ACS	Alaska Clean Seas
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish & Game
ADNR	Alaska Department of Natural Resources
AIR	Aerial Infrared
AOGCC	Alaska Oil and Gas Conservation Commission
ATV	All-Terrain Vehicle
BLM	Bureau of Land Management
DEW	Distant Early Warning
ft	feet
IHA	Incidental Harassment Authorization
IHLC	Inupiat History, Language, and Culture
MG	million gallons
MG1	Minor General Permit 1
MMPA	Marine Mammal Protection Act
MTRS	Meridian, Township, Range, and Section
Narwhal	Narwhal Exploration, LLC
NPR-A	National Petroleum Reserve-Alaska
NSB	North Slope Borough
ODPCP	Oil Discharge Prevention Contingency Plan
SPCC	Spill Prevention, Control, and Countermeasure
ULSD	Ultra Low Sulfur Diesel
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish & Wildlife Service
WHB	West Harrison Bay
WMP	Waste Management Plan



1. PROJECT OVERVIEW

The Narwhal Exploration, LLC (Narwhal) West Harrison Bay (WHB) Campaign is an exploration drilling project located in the nearshore waters of WHB in the Beaufort Sea, Alaska. Narwhal proposes to conduct on-ice winter drilling operations on three of the four wells identified in Figure 1, in a single season. Wells will each be drilled from bottom-founded temporary ice pads (Figure 2) located in notionally two to five feet (ft) of water depth. Temporary infrastructure will include camps, equipment storage areas, ice airstrips, ice trails/roads, and ice pads. A portion of the temporary infrastructure is located within the National Petroleum Reserve-Alaska (NPR-A).

Narwhal pre-staged critical drilling, fuel and operational equipment in the project area during the open-water season (typically July through September) to reduce the number of loads mobilized via all-terrain vehicles (ATVs) during the winter months. Pre-staged equipment will enable ice construction activities to commence in WHB while the coastal sea ice trail is being constructed.

In the winter, Narwhal plans to commence construction of temporary ice roads/trails, ice airstrips, and ice pads to support drilling operations (Figure 2) and logistics movements (Figure 3). Due to the shallow water depths in the project area, all ice construction is expected to occur on grounded ice. Once the temporary ice pad at the first drill site and access roads are constructed, pre-staged equipment can be mobilized to the first well site, and drilling operations may begin. ATV access can commence when the sea ice trail is connected, and additional materials and equipment will be mobilized to WHB by ATV transport.

The entire project area, from Oliktok Point through WHB, is characterized by stable, land-fast sea ice from freeze-up until break-up. In 2025, stable sea ice formed within the project area in the 3rd week of November and remained stable until full grounding of the project area in January. Historical ice trends have been reviewed over the last 20 years, confirming freeze-up and break-up dates which confirm sufficient operating windows to safely execute the WHB Campaign.

The exploration program will utilize one drilling rig to drill up to three wells during the 2026/2027 winter season. Geological targets for the campaign will be the normally pressured Nanushuk and Torok formations with vertical wells drilled to depths ranging from expected 4,000 to 7,500 ft below sea level.

Federal, State, and local permits and approvals must be obtained to access the drill sites and commence drilling. Primary regulatory authorization requirements for the proposed project are listed in Table 1.

2. PROJECT SCHEDULE

The proposed schedule for the winter activities is shown in Figure 4. The winter operations season would kick off as soon as tundra opens, or thermistors indicate that tundra travel is safe in areas directly adjacent to WHB. Polar bear den surveys would be conducted to identify polar bear dens and plans will be adjusted to maintain separation from any dens. Access to different project areas would occur via a combination of temporary ice roads and ice trails over tundra and grounded sea ice.

The first stage will involve mobilizing an early season crew to prepare camps and equipment for construction and drilling crews. Once the camp is ready, crews will be flown to camp, and construction



will begin around early November (weather dependent) to connect the camps and drill sites back to Prudhoe Bay. Ice construction would consist of building temporary ice roads/trails, ice airstrip(s), and ice pads for drilling operations. The crew would complete ice construction by the end of January 2027 and shift duties to temporary ice infrastructure maintenance.

Exploratory drilling could commence once the ice road/trail from the prestaging location at the Kogru Distant Early Warning (DEW) Line gravel pad area to the first well site is completed. The first well site (ice pad) is anticipated to be ready by mid-December, which would enable the drilling crew to start mobilizing the rig to site. Drill site layout is shown in Figure 5.

The first well will be drilled from early to late January 2027, followed by the second well from early February to early March 2027, and the final well from mid-March to mid-April 2027. Upon completion, the drilling rig will be demobilized to Prudhoe Bay. Demobilization of the camp and auxiliary project equipment will occur throughout the season as equipment is no longer needed, with the majority of equipment being demobilized around mid-May 2027. A final stick picking effort would occur in summer 2027 and last approximately one week.

3. FUEL SUPPLY, HANDLING, AND STORAGE

As part of the overall project permitting process, Narwhal has a site-specific Spill Prevention, Control, and Countermeasure (SPCC) Plan for fueling and fuel storage operations associated with the project. In addition to the SPCC Plan, Narwhal has an approved Oil Discharge Prevention and Contingency Plan (ODPCP) from the Alaska Department of Environmental Conservation (ADEC). Spill notification protocol and response tactics are described and documented in the SPCC Plan and the ADEC-approved ODPCP.

The majority of fuel used in the project will be ultra-low sulfur diesel (ULSD) for vehicles and equipment. Small quantities of gasoline and jet fuel are expected to be maintained for specific support equipment. Narwhal will primarily store fuel in double-wall tanks or single-wall tanks with secondary containment. During winter operations, five double-wall tanks with a maximum fill volume of 17,000 gallons will be staged at the Oliktok Point ice pad, including four for ULSD and one for gasoline. In each tank, the inner tank serves as the primary storage container while the outer tank provides secondary containment, fully enveloping the inner tank to contain 100% of the maximum possible release. The tanks will be employed during various phases of the project and will be removed from service when they are no longer needed.

During winter operations, long haul sleigh tanks and fuel tanks mounted on ATV decks would be used for transporting fuel to WHB. In the event the supply is disrupted by weather or other unforeseen events, fuel may also be delivered by aircraft to an ice airstrip. Off-loading fuel from aircraft will also be done in accordance with established fuel transfer procedures that will be specifically developed for the project as part of the ADEC and U.S. Environmental Protection Agency (USEPA) requirements.

Narwhal is planning sufficient fuel to be self-sufficient in construction of temporary ice roads, ice pads, and initial drilling operations until the coastal sea ice trail is constructed, and resupply can be brought via ATV. Spill prevention procedures will include standard practices such as placing drip pans under parked vehicles and all hose or pipe connections to diesel fuel tanks, in addition to specific fuel transfer procedures. All spills, no matter what the size, will be recorded and cleaned up as required by ADEC



regulations.

Narwhal is also requesting a waiver to allow refueling and fuel storage within 100 feet of water bodies for the duration of the Narwhal Exploration WHB Campaign, from November 1, 2026 through May 31, 2027. This includes refueling of multiple generators and equipment units on sea ice at drill sites, temporary ice pads, ice airstrips, and various barge locations.

4. WINTER OPERATIONS

4.1 AERIAL INFRARED SURVEYS FOR POLAR BEAR DENS

Two aerial infrared (AIR) surveys via fixed wing aircraft will be completed to identify maternal polar bear dens in accordance with the U.S. Fish & Wildlife Service (USFWS) Incidental Harassment Authorization (IHA) requirements. The first AIR is expected to be flown around the first week of December 2026 over the proposed coastal sea ice route, onshore access routes. The second AIR survey is expected to occur between December 15 and 31, 2026. Exact dates will be determined based on weather conditions such that the surveys are conducted during the best practicable atmospheric and surface snow conditions. Narwhal will adjust the project activities to avoid potential impacts to any bear dens that are identified during AIR surveys or field operations in accordance with IHA issued by USFWS.

4.2 ACCESS (ICE CONSTRUCTION)

Temporary ice roads/trails, and ice pads will be built in accordance with engineered specifications. Freshwater and seawater will be used for construction of ice infrastructure. It is generally expected environmental conditions will allow commencement of ice construction activities near November or early December.

4.3 TEMPORARY ICE ROAD/TRAIL CONSTRUCTION

Table 2 provides the location of the ice roads/trails within state lands. Ice construction will focus on building temporary ice roads from the Kogru DEW line gravel pad area to the ice pads as well as the ice pads themselves. This effort will largely consist of flooding sea ice to ground out the temporary ice pads. Occurring simultaneously, construction crews will build a coastal ice road/trail that connects Oliktok Point to the project area and water sources in WHB. The ice roads and trails within State lands in total cover approximately 82.5 miles.

Temporary ice roads/trails enable the efficient movement of personnel and equipment. A portion of the ice roads/trails will be engineered and built to accommodate loads up to 200,000 lbs. These ice roads/trails are designed for daily transit by wheeled vehicles. The freshwater cap allows these ice roads to sustain repeated transit by wheeled traffic. Wheeled traffic will be critical to support daily operations including personnel and cargo movement infield, as well as to support efficient rig moves from ice pad to another.

4.4 TEMPORARY ICE PADS

Temporary ice pads (Table 3) will be built at each exploration well location as well as at key areas for cargo transfer and movement. All ice pads built for well operations will be built in accordance with an



engineered design of sufficient size to resist any ice movement.

Each temporary ice pad is engineered incorporating seabed conditions, water depth, and ice loading resistance. The ice pads are expected to be constructed with a combination of saltwater flooding, saltwater chips, freshwater chips, and a freshwater cap. In general, the ice pads are expected to maintain a freeboard of ~3-4 ft above the natural sea ice surface. The ice pads at the drill sites will have a diameter of approximately 500 to 600 ft (Figure 5).

In addition to the ice pads at the well sites, Narwhal proposes to construct a temporary sea ice transfer pad called the Oliktok Point Ice Pad (Figure 3) to provide a transfer and storage area for wheeled equipment coming from the Prudhoe Bay road network (gravel roads) to ATVs. The Oliktok Point Ice Pad is anticipated to be approximately 400 ft by 400 ft, with a combination of saltwater flooding, saltwater chips, and a freshwater cap, as necessary.

4.5 TEMPORARY ICE AIRSTRIP(S)

Narwhal plans to construct a contingency airstrip on grounded sea ice in the Beaufort Sea (Figure 2). A primary ice airstrip will be constructed in the Kogru River, within the NPR-A. Construction of the temporary ice airstrip will include building a smooth surface for aircraft operations and installation of perimeter lighting to support flight operations. Multiple aircraft may support Narwhal operations, including aircraft with skis as well as wheeled aircraft throughout the season. The ice runway will be approximately 150 ft in width and 5,600 ft in length to support up to a C130 Hercules aircraft. Table 3 shows the Meridian, Township, Range, and Section (MTRS) of the ice pads and ice airstrips.

4.6 EXPLORATION DRILLING

All proposed wells are located within leases issued by the State of Alaska and will be accessed by the temporary ice roads/trails. Narwhal plans to drill up to three of the four wells identified in Table 4. Narwhal will utilize Nordic Rig #37, a highly nimble rig well suited for exploration operations on the North Slope. Drilling operations will commence as soon as the first temporary ice pad is built, and the rig is mobilized and moved to site. Each well will be executed in line with a specific drilling program and casing design suited for that location. Drilling operations are expected to take approximately 12 to 15 days per well. Total time spent working on each well will be approximately 30 days. Narwhal is not proposing any well testing operations in the winter 2026/2027 exploration season. Upon completion of drilling activities, the wells will be plugged and abandoned according to Alaska Oil and Gas Conservation Commission (AOGCC) regulations, prior to demobilization of the drilling rig from the ice pad.

4.7 SUPPORT FACILITIES

A list of typical equipment staged or installed for the project is listed in Table 5. Narwhal may adjust the quantities of the equipment, as needed for operations. Additionally, temporary camps required to house personnel in support of the construction, logistics, and drilling operations, will be installed within the project area. These camps are expected to have standard North Slope camp facilities which include full catering, power generation, and water treatment capabilities and will house up to 140 workers. First responders and advanced medical capability will be available in the camp facilities.



Narwhal plans to set up the base camp on the Kogru DEW Line gravel pad. The space will host the base camp, equipment, and a fuel tank farm. Additionally, a mobile rig-site camp (12-18 people) will be installed to support drill site workers. Crew change of personnel is expected by commercial air to Deadhorse, with land or air transport (or a combination of both) to the operations area. Air transport from Deadhorse would take the form of fixed wing capability to locally constructed runways within the operations area. If sufficient commercial capacity cannot be guaranteed to Deadhorse, charter capability will be contracted. Regular resupply of consumables such as equipment, fuel, food, spare parts, and backhaul of waste materials and unneeded equipment will be continuous during the exploratory drilling operations. An estimate of 45-50 ATV trips per week are anticipated to transit to and from WHB operations for resupply activities.

24-hour phone service and internet will be available at the camps using Starlink Satellite Internet, satellite telephones, radios, and cell phones pending signal quality. In the event of a serious emergency, initial response would be provided by on-site personnel, including the on-site Alaska Clean Seas (ACS) spill technician, if safe to do so. Personnel must notify the Site Lead who will assess the emergency and coordinate mobilization of additional resources from Deadhorse. If necessary, evacuation procedures will be implemented, and medical evacuation may be coordinated with the clinic in Deadhorse for patient stabilization and/or transfer to Fairbanks or Anchorage hospital facilities.

4.8 WATER REQUIREMENTS

Water requirements for winter exploration activities are expected to be approximately 60.2 million gallons (MG) for ice trail/road, ice pad, and airstrip construction, drilling, and camp operations. Details of quantities and volumes associated with all temporary ice construction are shown in Table 6.

Potable water will largely be generated on site using fresh water from local lakes which have been permitted for water withdrawal. Narwhal will apply for Temporary Water Use Authorizations for the intended water sources, and may acquire permits for additional sources, if necessary.

5. SECURITY

The site location is considered remote, and access is primarily by ATVs (Steigers, PistenBully, etc.) fixed-wing aircraft, or helicopter during drilling operations. Vehicle traffic is controlled by a security and safety checkpoint at Oliktok Point, where contractors and employees are required to check in with the Narwhal Logistics Coordinator.

Access to the facilities must be pre-approved. Authorized and regulatory personnel carrying photo identification may access the sites at any time. However, all visitors, including regulatory personnel, must check in with the drill site office when they arrive onsite. The Logistics Coordinator will connect them with the appropriate staff for site orientation and further directions.

The drilling locations are staffed 24 hours per day during drilling activities, and security monitoring is accomplished by field personnel during their normal daily activities. Lighting is provided at strategic areas around the drill sites.



6. WASTE MANAGEMENT AND DISPOSAL

Narwhal has prepared a Waste Management Plan (WMP) to address handling, treatment, and disposal of various potential wastes from Narwhal's activities. The WMP is a supporting document for proper waste management that is necessary for worker health and safety, environmental and wildlife protection, and regulatory compliance. Wastes would be kept inside buildings, vehicles, animal resistant outdoor containers, or sealed in connexes as appropriate. Burnable waste may be incinerated in an incinerator at camps. Non-burnable waste would be transported in large animal resistant containers or sealed connexes to an approved landfill in Deadhorse.

6.1 NON-DRILLING WASTE

Waste management will be based on waste minimization and disposal and will comply with Federal, State, and local regulations to prevent attracting wildlife. Food and other waste will be stored in wildlife-resistant containers and managed in accordance with the required visual screening and protocols. Non-drilling wastes will be transported to an approved landfill in Prudhoe Bay or burned by an incinerator. Camp wastewater will be treated and discharged in accordance with appropriate permits.

6.2 DISPOSAL OF DRILLING WASTE

Water-based drilling fluids will be used through all phases of well construction. Drilling waste will be temporarily stored at each drilling location before being transported to a Prudhoe Bay disposal facility. The cuttings will be placed in cuttings bins on-site in preparation for transportation to Prudhoe Bay for disposal at a permitted grind and inject facility or landfill.

6.3 AIR EMISSIONS

Sources of air emissions from the project would include rig engines, camp generator engines, mobile non-road engines, light plants, incinerators, construction equipment, hot-air heaters, and other various sources. These emissions would be temporary, short-term, and localized, with the majority only occurring over the winter season. Narwhal will obtain ADEC air quality authorization for the drilling locations under the Minor General Permit 1 (MG1) for oil and gas drilling rigs.

6.4 SUMMER CLEANUP

At the completion of drilling operations, the well(s) will be plugged and abandoned in accordance with AOGCC regulations. All project equipment, materials, and personnel will be demobilized from the WHB operations area. ATV trips are anticipated to demobilize equipment and materials from WHB to Oliktok Point via the coastal sea ice trail. In some cases, equipment may be stored at the Kogru DEW Line gravel pad or to the moored deck barges over the summer period, rather than transported back to Oliktok Point. All demobilization activities will be complete by mid-May 2027.

A helicopter is expected to be used for stick picking operations, with overflights of the entire operating area and landings as necessary to recover trash remaining. Ultimate disposal of any recovered waste will be at appropriate facilities in Deadhorse.



7. TRAINING

Narwhal and all contractor and subcontractor personnel will receive Health, Safety and Environment orientation. The training program will be designed to inform each individual of the environmental, social, and cultural concerns that relate to their job functions. Training components will include permit stipulations and requirements, cultural awareness, spill prevention and reporting, wildlife interaction, site specific safety, etc. All personnel will participate in a specific training program for bear safety and a briefing of the Wildlife and Bear Interaction Plan.

7.1 WILDLIFE AND BEAR INTERACTION PLAN

The Wildlife and Bear Interaction Plan has been prepared to provide guidelines and procedures for assuring the safety of project personnel as well as monitoring and prompt reporting, investigation, and documentation of wildlife sightings or incidents as required by the Marine Mammal Protection Act (MMPA). Narwhal has received IHAs from USFWS on March 11, 2026. Narwhal has received a Public Safety Permit from Alaska Department of Fish & Game (ADF&G) for the hazing of foxes, brown bears, caribou, wolves, and wolverines.

7.2 SPILL PREVENTION, CONTROL, AND COUNTERMEASURE (SPCC) PLAN

The drilling contractor holds an SPCC plan for their fuel storage facilities associated with drilling operations. Narwhal will require all North Slope employees and contractors to complete an 8-hour unescorted training program provided by the North Slope Training Cooperative. All trainees receive a North Slope Environmental Field Handbook and the Alaska Safety Handbook. This course provides the North Slope standard introduction to personal protective equipment, camps and safety orientation, hazard communication, basic awareness Hazardous Waste Operations and Emergency Response Level 1 training, and Environmental Excellence.

7.3 OIL DISCHARGE PREVENTION AND CONTINGENCY PLAN (ODPCP OR C-PLAN)

Narwhal has an approved C-Plan, submitted to ADEC on June 3, 2025. A copy of the plan will be maintained onsite. Information related to immediate response actions, receiving environments, spill cleanup mobilization response times and well control can be found in the C-Plan. ACS will be Narwhal's Primary Response Action Contractor.

7.4 CULTURAL RESOURCES

Federal, state, and local laws require protection of cultural and historical resources and consultation with Native communities prior to and during exploration and development activities. Cultural resources include both historic and prehistoric archaeological sites, historic structures, archaeological or historic districts, and traditional land use sites. Both onshore and offshore areas in the vicinity of WHB were surveyed for cultural and historical resources in the summer of 2025. Additional surveys have been conducted in 2026 to supplement the surveys from 2025. Within the expected operating area of Narwhal's winter program, sites of cultural resources and cultural significance have been identified, and personnel will be trained to identify and avoid cultural sites.



8. COMMUNITY RELATIONS AND STAKEHOLDER ENGAGEMENT

Narwhal believes that this project can best be delivered by utilizing local knowledge and expertise wherever possible. Narwhal is committed to hiring locally within Alaska. This has already been demonstrated through Narwhal’s program, where Alaskan contractors were used for permitting, lake surveying, cultural resource identification, field execution, and helicopter support. Narwhal has already engaged with the NSB and is actively including Alaska Native Regional Corporations and their subsidiaries in any vendor discussions where they can provide support. Additionally, Narwhal will attempt to recruit local North Slope residents for the project.

Narwhal is committed to engaging stakeholder groups to ensure transparency and awareness of the proposed program, to build relationships, gain local insights, and ensure community knowledge and values help guide project planning. Subsistence communities and stakeholders that Narwhal has engaged with through 2026 for the Narwhal Exploration WHB Campaign include the following entities:

- Alaska Eskimo Whaling Commission;
- City of Nuiqsut;
- Ice Seal Committee;
- Inupiat Community of the Arctic Slope;
- Native Village of Nuiqsut;
- NSB Assembly;
- NSB Planning and Community Services;
- NSB Wildlife Department;
- NSB Inupiat History, Language, and Culture (IHLC);
- Nuiqsut Community;
- Nuiqsut Trilateral;
- Nuiqsut Trilateral, Inc.;
- Nuiqsut Whaling Captains Associations; and
- Kuukpik Corporation.

9. RESPONSIBLE PARTIES CONTACT INFORMATION

Table 7 includes contact information for the points of contact on the details of the project.



Figure 1. Project Area Overview

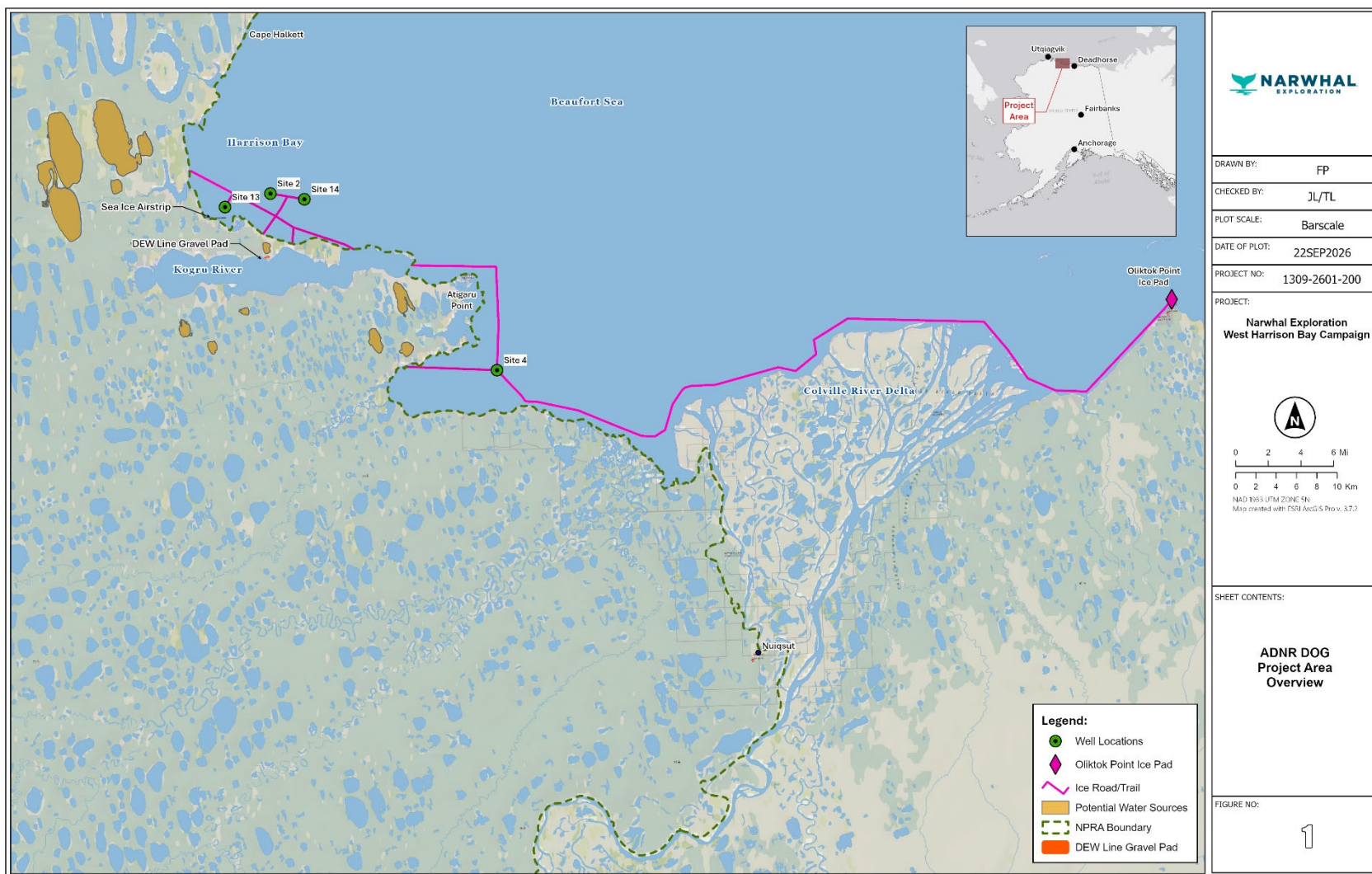




Figure 2. Ice Pad, Ice Airstrip, and Drill Site (Tuugaalik) Locations

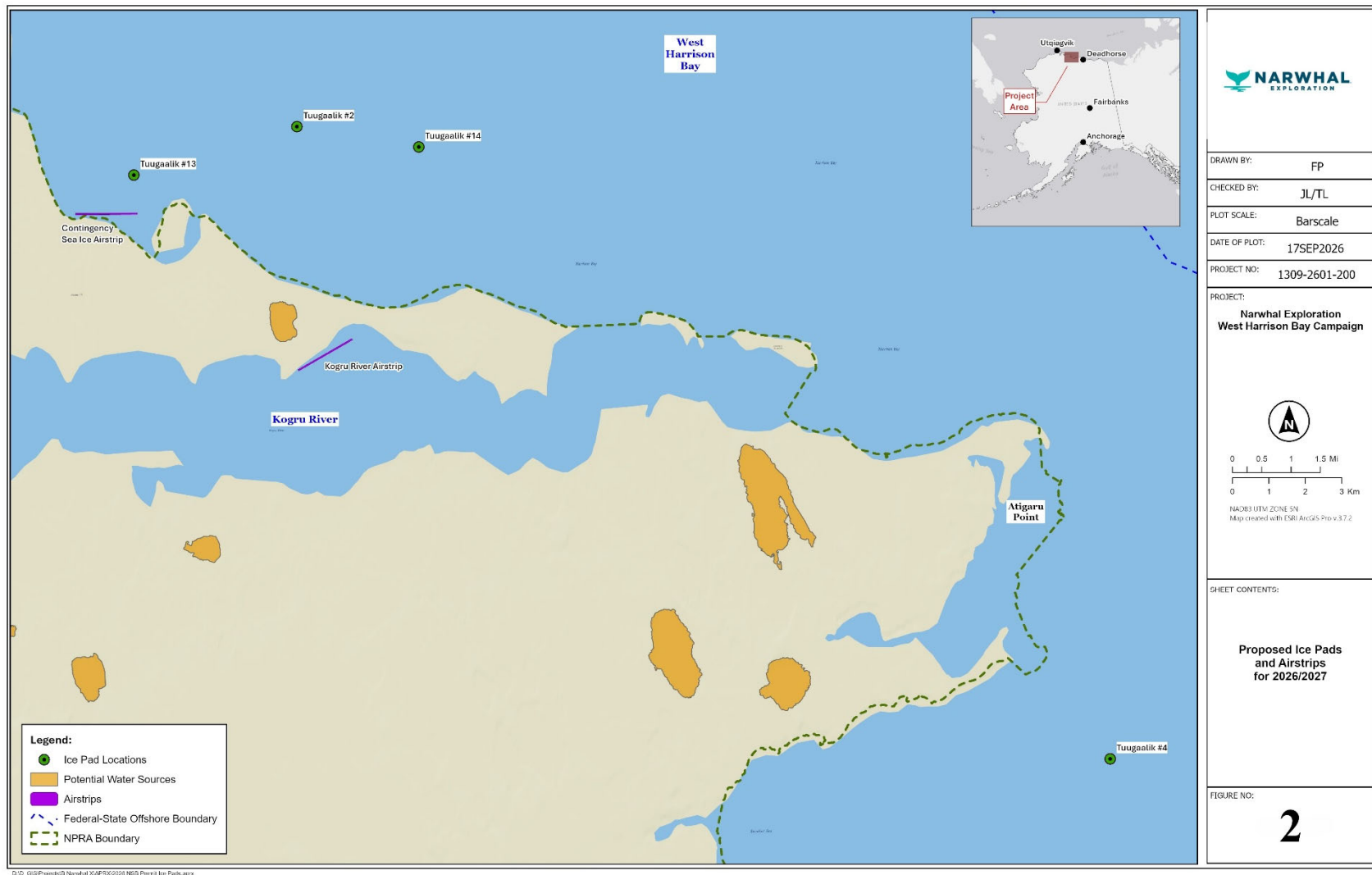




Figure 3. Oliktok Point Ice Pad

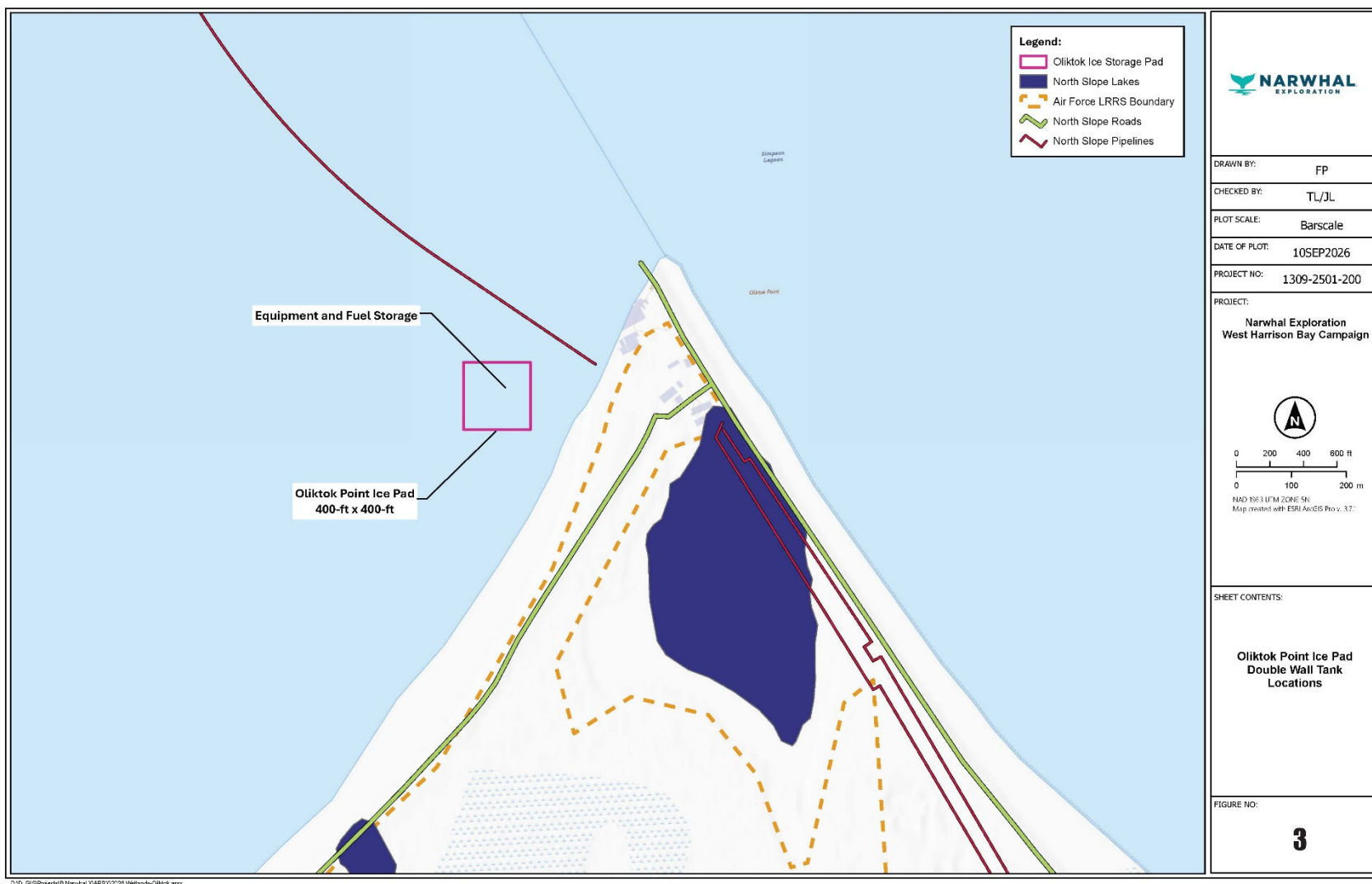




Figure 4. Proposed Winter Operations Schedule

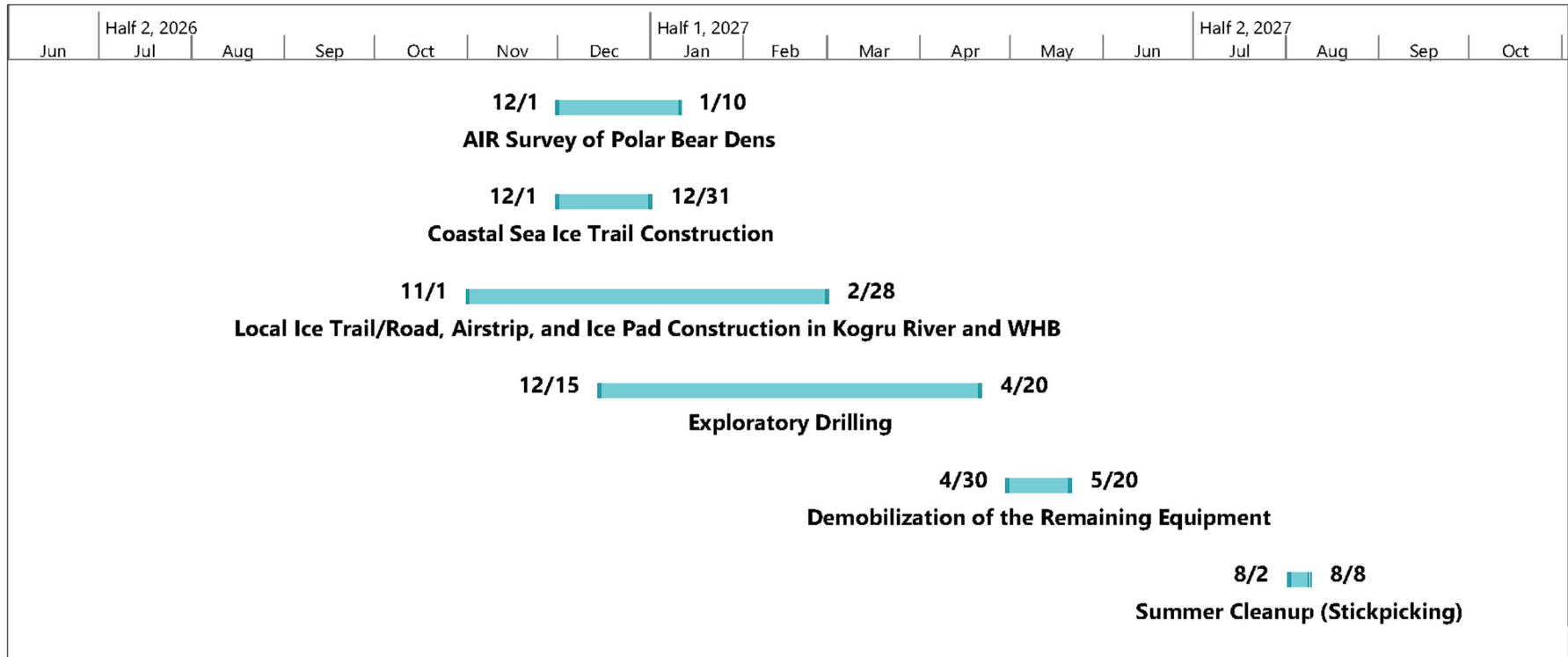




Figure 5. Drill Site Layout

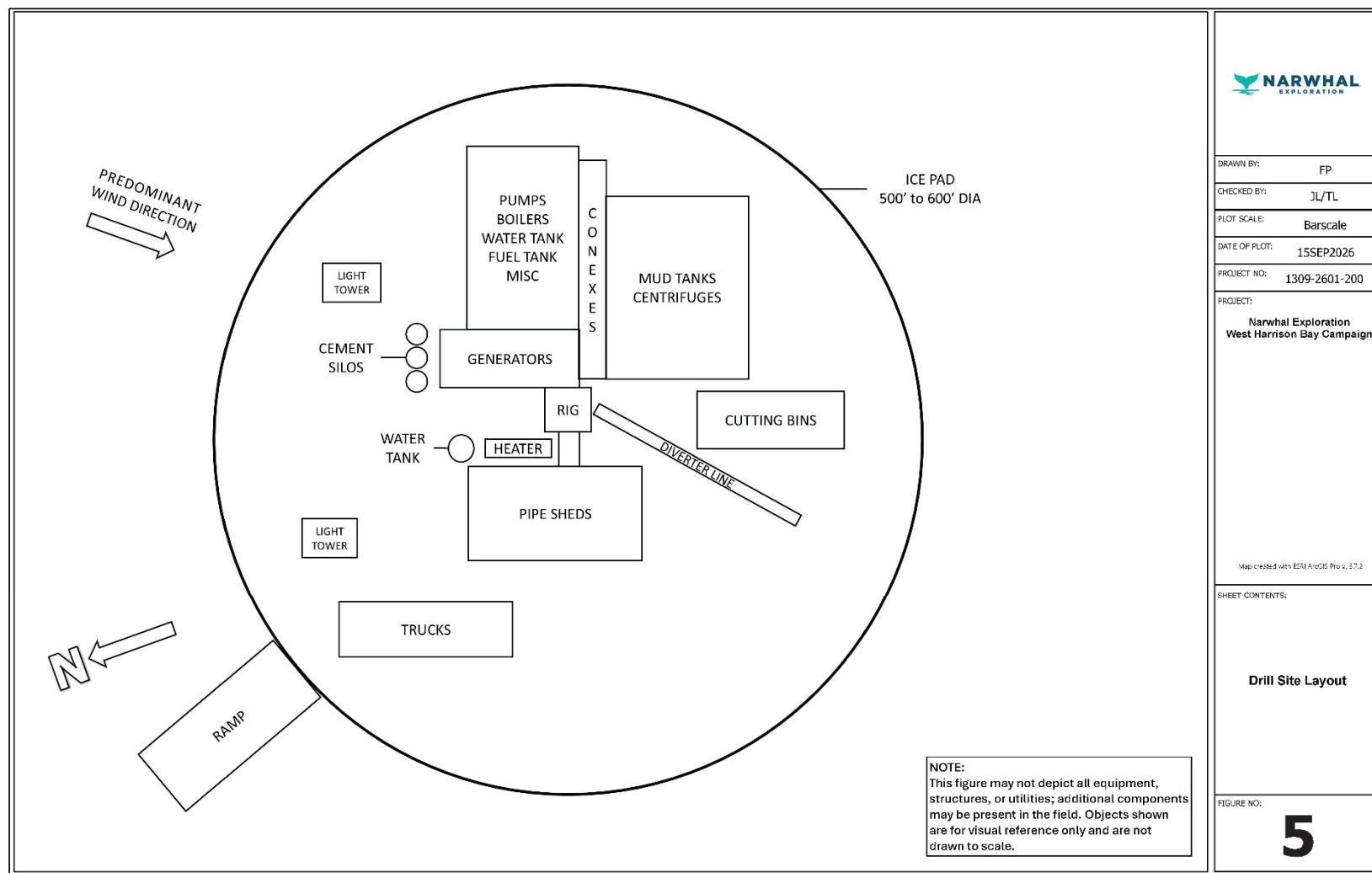




Table 1. Expected Permits and Authorizations

Agency	Authorizations and Approvals
Federal Authorities	
Bureau of Land Management (BLM)	Right of Way
	Threatened and Endangered Species Determination
	Concurrence on Archaeological and Cultural Resources Clearance Determination
	Essential Fish Habitat Assessment Review
	Required Operating Procedures Plan
USFWS	IHA (polar bears and walrus)
	Concurrence on BLM Threatened and Endangered Species Determination Amendment
National Marine Fisheries Service	IHA (Seals and Whales)
	Concurrence on BLM Threatened and Endangered Species Determination Amendment
US Coast Guard	Facility Response Plan
USEPA	Facility Response Plan
	SPCC Plan (submittal not required)
Bureau of Safety and Environmental Enforcement	Oil Spill Response Plan
US Army Corps of Engineers	Nationwide Permits
State Authorities	
ADNR Division of Mining, Land, and Water	Temporary Water Use Authorization
	Land Use Permit for Winter Tundra Travel
ADNR Division of Oil and Gas	Plan of Operations Approval



Table 1. Expected Permits and Authorizations (Continued)

Agency	Authorizations and Approvals
State Authorities	
ADEC	Air Quality MG1
	Temporary Storage of Drilling Wastes
	Alaska Pollutant Discharge Elimination System
	ODPCP and Certificate of Financial Responsibility
	Clean Water Act, Section 401 Certificate
ADF&G	Fish Habitat Permit
	Public Safety Permit
AOGCC	Permit to Drill
	Shallow Hazards Analysis
Local Government Authorities	
NSB	Administrative Approvals
	Development Permits
	IHLC Clearance

Narwhal may utilize other permits and approvals that have been issued and are associated with other oilfield activities and operations.



Table 2. Temporary Ice Road/Trail Locations

Project Component	Meridian	Township	Range	Sections
Ice Roads/Trails (82.5 miles)	Umiat	15N	2W	16, 17, 20-23, 25-27, 36
	Umiat	15N	1W	28-32
	Umiat	14N	2W	1
	Umiat	14N	1W	2-6, 8, 10-12
	Umiat	14N	1E	13, 14, 15
	Umiat	14N	2E	16-18, 21, 28, 33
	Umiat	13N	1E	13-16, 21-24
	Umiat	13N	2E	4, 9, 16-22, 25-28, 34-36
	Umiat	13N	3E	31-32
	Umiat	13N	4E	23-29, 31, 32
	Umiat	13N	5E	1, 2, 10-12, 15, 19-22
	Umiat	13N	6E	1-6, 11, 12
	Umiat	13N	7E	5-9, 15, 16, 22, 23, 25, 26, 35, 36
	Umiat	13N	8E	12-14, 22-24, 26-28, 31-34
	Umiat	13N	9E	5-8, 18
	Umiat	12N	3E	2-5, 10-12
	Umiat	12N	4E	5-7

*All ice roads and trails constructed will have a design width of 35 ft.

**Table 3. Ice Pad and Ice Airstrip Locations**

Ice Pad/Airstrip Name	MTRS (Umiat Meridian)	Latitude	Longitude	Dimensions (ft)	Area (acres)
Sea Ice Airstrip	T-15N R-2W S-33, 34	70.609187	-152.393424	5600 x 150	19.3
Pad 14	T-15N R-1W S-28	70.624768	-152.157962	300 radius	6.5
Pad 2	T-15N R-1W S-30	70.630166	-152.248092	300 radius	6.5
Pad 13	T-15N R-2W S-27	70.618709	-152.369325	300 radius	6.5
Pad 4	T-13N R-2E S-21	70.471159	-151.655740	300 radius	6.5
Oliktok Point Ice Pad	T-13N R-9E S-5	70.512144	-149.869101	400 x 400	3.7

Table 4. Drill Site Locations

Well Sites (Tuugaalik)	MTRS	Lease #	NAD83 (2011)	
			Latitude	Longitude
Tuugaalik 14	T-15N R-1W S-28	394371	70.624768	-152.157962
Tuugaalik 2	T-15N R-1W S-30	394371	70.630167	-152.248092
Tuugaalik 4	T-13N R-2E S-21	394289	70.471159	-151.655740
Tuugaalik 13	T-15N R-2W S-27	394376	70.618709	-152.369325

Three of four wells identified will be drilled, based on results from the first well (14).

**Table 5. Typical Equipment Lists**

Sea Ice Trail Construction Equipment	Quantity
Light Plant	4
Heater	2
PistenBully PB100	1
PistenBully PB600	1
SnowMachine	2
Drill/Flood Pumps	4
Mechanics Truck	1
Loader	1
Snow Blower for Loader	1
Steiger	1

Ice Road / Ice Pad Construction Equipment	Quantity
PistenBully PB400	1
Grader	2
Loader	3
Snow Blower for Loader	1
Steiger	1
Heater	2
Light Plant	4
Water Shack	3
Pickup Truck	4
Articulated Truck	3
Mechanics Truck	1
Water Buffalo	4
Thermistors	4

Ice Road / Trail Maintenance	Quantity
Pickup Truck	1
Light Plant	4
Grader	1
Heater	1
Loader	1
Water Truck	1
Water Shack	3

Sea Ice Trail ATV Transport	Quantity
Steiger/PistenBully PB600	6
ATV Trailer	6



Sea Ice Trail ATV Transport	Quantity
Fuel Sleighs, 2,500 gallons	10
Snow Trail Groomer	2
Loader	1

Camp Units	Quantity
70-80 Person Camp	1
35-45 Person Camp	1
Drill site Sleepers (4-6 person capacity)	3

Camp Support Equipment	Quantity
Wastewater Processing Module (1,000-2,500 gallons)	2
Potable Water Processing Module (5,200 gallons)	2
Potable Water Holding Tanks	2
Wastewater Holding Tanks	2
Generators (40-300 kilowatts)	6
Heaters	10
Light Plants	8
Auxilliary Shacks (Warm up shacks, envirovacs)	3
Bull Rail	3
Spill / Emergency Connex	2
Runway Light Connex	2
Crane (100 tons or less)	1
Mechanic Shop	1
Pickup Trucks	8
Fuel Tanks (5,000 to 15,900 gallons)	40

Infield Transport Equipment	Quantity
Winch Truck	5
Kenworth T880 Conventional Water Truck	2
Kenworth T300 Mechanics Truck	3
Bed Truck	2
Crew Transport Vans	3
Vac Truck	1
Cranes	1
Fuel Truck (2,500 gallons)	1

Drilling Rig Equipment	Quantity
Rig Mats	50



Drilling Rig Equipment	Quantity
Drill Pipe	4
Cement Water Tanks	2
Cuttings Boxes	7
Cement Bins	8
Drilling Tangibles (Casing, conductor pipe, cement, mud products)	18
Cement Unit	1
Cement Silos	7
Drilling Rig - Nordic 37	1



Table 6. Estimated Water Use for Ice Construction

Activity	Estimated Quantity	Water Use	Estimated Total Water Required (MG)
Ice Roads	33.2 miles	1,000,000 gallons per mile	33.2
Ice Pads	3	6,428,000 gallons per pad	19.3
Oliktok Point Sea Ice Transfer Pad*	1	600,000 gallons per 400 ft x 400 ft pad	0.6
Ice Airstrip	2 airstrips	2,900,000 gallons per airstrip	5.8
Camp Use**	160 days	7,000 gallons / day	1.12
Drilling Use	Per well (3 wells)	70,000 gallons / well	0.21
Total Water Use Request			60.2

* May source water from Prudhoe Bay.

**Camp water is estimated at 50 gallons per person per day, with a maximum camp population of 140 people.

Table 7. Responsible Parties – Contact Information

Name	Title	Telephone	Email
Shawn Gelsinger	Chief Operating Officer	907-229-3539	shawn@narwhalexploration.com
Stephane Labonte	Chief Executive Officer	510-693-2400	stephane@narwhalexploration.com