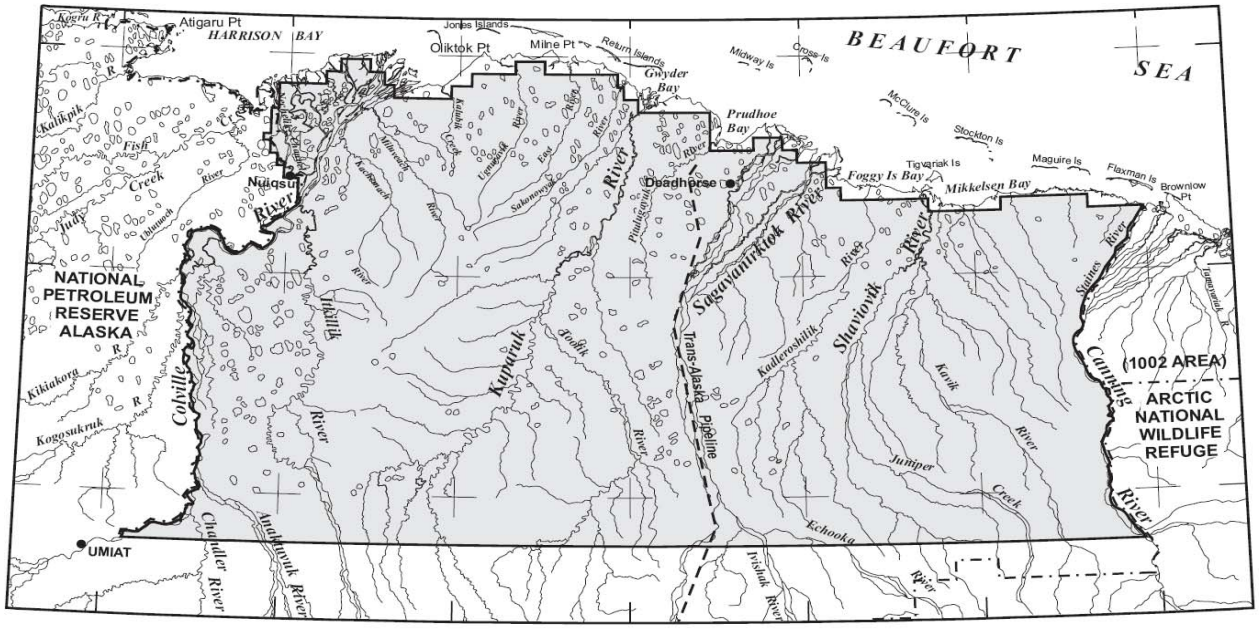
CORRECTED
Alaska Coastal Management Program
Consistency Analysis

Proposed North Slope Areawide
Oil and Gas Lease Sale

Wednesday, May 2, 2007



Alaska Department of
NATURAL RESOURCES
Division of Oil and Gas

CORRECTED Alaska Coastal Management Program Consistency Analysis

Table of Contents

Introduction **1**

Alaska Coastal Management Program Standards **4**

11 AAC 112.200 Coastal Development 4
11 AAC 112.210 Natural Hazard Areas 5
11 AAC 112.220 Coastal Access 5
11 AAC 112.230 Energy Facilities 6
11 AAC 112.240 Utility Routes and Facilities 7
11 AAC 112.250 Timber Harvesting and Processing 7
11 AAC 112.260 Sand and Gravel Extraction 8
11 AAC 112.270 Subsistence. 8
11 AAC 112.280 Transportation Routes and Facilities 8
11 AAC 112.300 Habitats. 9
11 AAC 112.310 Air, Land, and Water Quality 11
11 AAC 112.320 Historic, Prehistoric, and Archaeological Resources 12
11 AAC 112.900 Sequencing Process to Avoid, Minimize, or Mitigate 12
11 AAC 112.990 Definitions 13

North Slope Borough Coastal Management Program **18**

Standards for Development 18
Required Features for Applicable Development 19
Best Effort Policies 21
Minimization of Negative Impacts 24

Appendix A: Mitigation Measures and Lessee Advisories **A-1**

Appendix B: Sample Lease **B-1**

Introduction

The proposed North Slope Areawide Oil and Gas Lease Sale area lies predominantly within Alaska's coastal zone within the North Slope Borough (NSB). The Alaska Department of Natural Resources (ADNR) has performed a forward-looking analysis of the potential effects of oil and gas related activities so that future proposals to perform work in the proposed lease area can be framed with coastal zone protection in mind. Consequently, any North Slope Areawide Lease Sale must comply with the Alaska Coastal Management Program (ACMP), including the statewide standards and the enforceable policies of the affected coastal district, as identified in the North Slope Borough Coastal Management Plan (NSBCMP). Further, any future activities and field developments will undergo separate coastal zone consistency analyses when they are actually proposed.

This consistency determination is part of a phased review. AS 46.40.094 allows phasing of ACMP consistency reviews. Oil and gas activities may be separated into three distinct phases: license/lease issuance, exploration, and development/production. The beginning phase of oil and gas activities is license/lease issuance.

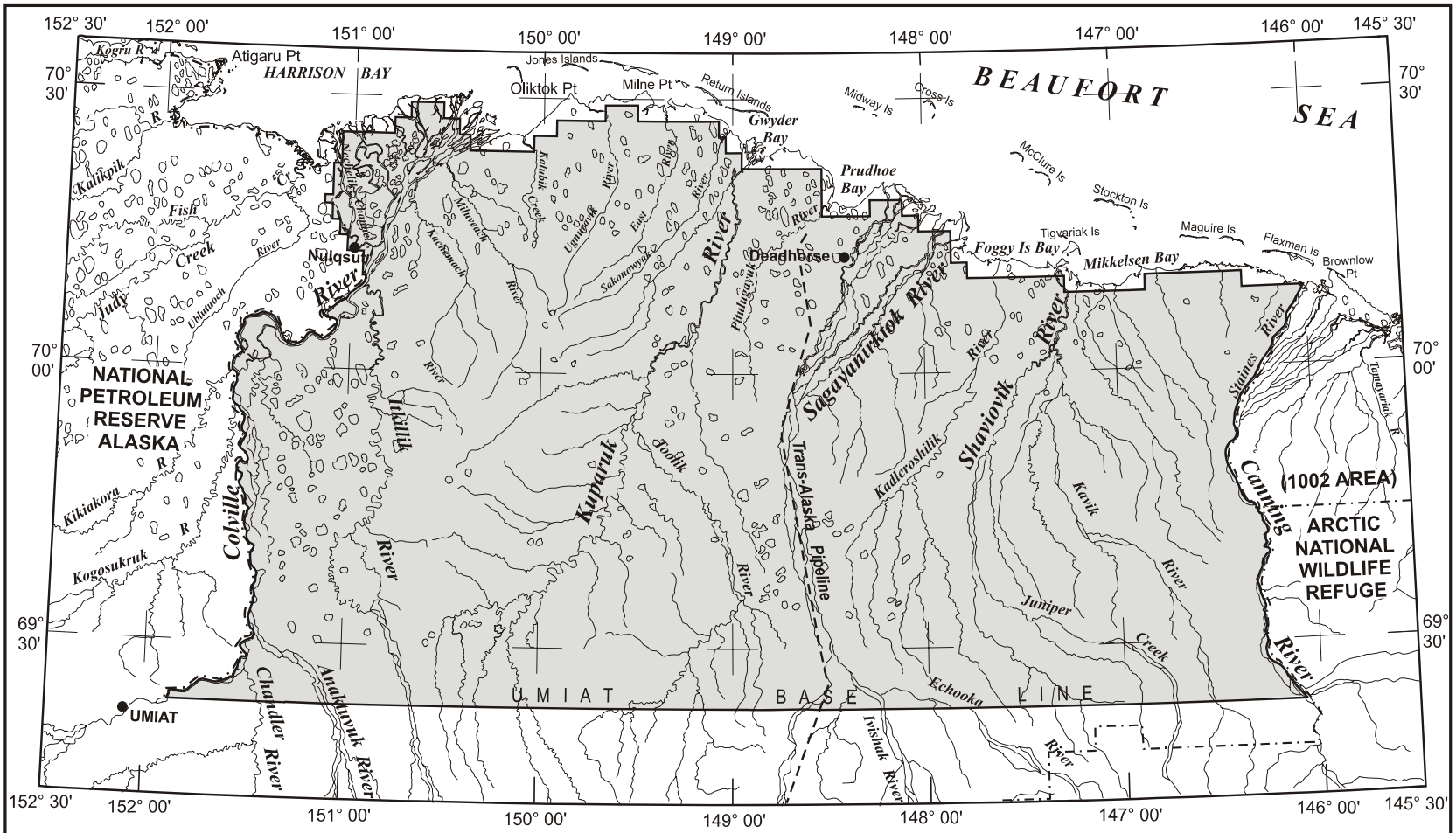
Under AS 46.40.094(b), when an activity is authorized or developed in phases (such as oil and gas lease issuance, exploration, and development/production), and each phase requires decisions relating to that particular phase, the agency responsible for the consistency determination for a particular phase may limit the consistency review to that phase if,

A) the agency or another state agency must carry out a subsequent consistency review and make a consistency determination before a later phase may proceed; and

B) the agency responsible conditions its consistency determination for that phase on a requirement that a use or activity authorized in a subsequent phase be consistent with the Alaska Coastal Management Program.

At the time of lease issuance, it is impossible to reasonably foresee specific exploration or development projects or the effects of those projects. Each phase of oil and gas activity builds on the previous phase. Depending on the information gathered at the exploration phase, development may or may not take place. Before development may occur, exploration must show and confirm, through drilling a well, not only the existence of oil and/or gas but that the oil/gas exists in economically producible quantities. Therefore, at the initial disposal stage, there is insufficient information to render a consistency determination for the future exploration and development/production phases. At each phase, proposed site specific and project specific activities will be analyzed for consistency based on developing information gathered at the previous phase. Further, each of these subsequent phases, exploration and development/production, is subject to alternative decisions on how, or when best to proceed with a project based upon this developing information.

During the exploration and development/production phases, lessees submit a proposed plan of operations for permit approval. During this time, agency staff reviews information developed from the previous phase along with new technological developments and other site-specific data, and implements any needed alternative mitigation measures when determining whether the permit request complies with the ACMP.



Map of the Proposed Sale Area

ADNR 3/27/07

FIGURE 1.1

Each lessee who proposes to conduct activities related to exploration will be required to submit a plan of operations to ADNR for review and approval. Each plan of operations must be site-specific and tailored to the exploration activity for which the permit is requested. The plan of operations permit application must contain sufficient information based on data reasonably available at the time to determine the surface use requirements and impacts directly associated with the proposed operations (11 AAC 83.158(d)). All plans of operations for activities within the coastal zone will be reviewed by ADNR for consistency with the ACMP, including the enforceable coastal management policies of the NSBCMP. As a condition of consistency approval of the lease operations, ADNR will require such modifications as may be necessary to ensure consistency with the ACMP, and NSBCMP. Alternative measures in addition to the mitigation measures imposed at lease issuance may be added to address site-specific resource values and activities directly associated with the proposed project. Any activities associated with development or production must also be submitted as a plan of operations permit application, and will go through an ACMP review.

This consistency review for the proposed North Slope Areawide Oil and Gas Lease Sale is based on: applicable statutes; regulations; facts that are known and material to this consistency review; and reasonably foreseeable significant effects of the lease sale. In analyzing the proposed North Slope Areawide Lease Sale against the standards of the ACMP, including the enforceable policies of the NSBCMP, ADNR has conditioned lease issuance with mitigation measures and lessee advisories to ensure that the lease issuance is consistent with the ACMP.

Following is a discussion, by topic, of the proposed North Slope Areawide Lease Sale's consistency with the ACMP, including the NSBCMP. The mitigation measures, lessee advisories, and applicable lease terms are identified under each district policy and ACMP standard to ensure that consistency is achieved. A complete list of permitting terms (mitigation measures and lessee advisories) proposed for this phase of activity is found in Appendix A to this document, and a sample lease form is found in Appendix B.

A number of ACMP and NSBCMP policies are not applicable at the lease issuance phase. These standards and policies will be applied when specific activities are proposed for specific locations in the lessee’s plan of operations. Lessees will be required to comply with all applicable ACMP standards and district and service area CMP policies before a plan of operations may be approved.

Alaska Coastal Management Program Standards

The following discussion addresses the consistency of the proposed North Slope Areawide Lease Sale with the ACMP, by reviewing the applicable ACMP standards and NSBCMP enforceable policies. Issuance of an oil and gas lease does not authorize the use of or approve activities on a lease. While lease issuance does not authorize any activity and does not in itself negatively impact the leased area, there is likelihood that the lease area will be explored and a possibility that development and production activities will occur. The mitigation measures discussed within this document were designed to minimize the impact of post-lease issuance exploration activities on the coastal zone. Mitigation measures, lessee advisories and applicable lease terms are listed under the applicable ACMP standards. The NSBCMP policies follow the statewide ACMP standards discussion.

11 AAC 112.200 Coastal Development

(a) In planning for and approving development in or adjacent to coastal waters, districts and state agencies shall manage coastal land and water uses in such a manner that those uses that are economically or physically dependent on a coastal location are given higher priority when compared to uses that do not economically or physically require a coastal location.

(b) Districts and state agencies shall give, in the following order, priority to

(1) water-dependent uses and activities;

(2) water-related uses and activities; and

(3) uses and activities that are neither water-dependent nor water-related for which there is no practicable inland alternative to meet the public need for the use or activity.

(c) The placement of structures and the discharge of dredged or fill material into coastal water must, at a minimum, comply with the standards contained in 33 C.F.R. Parts 320 - 323, revised as of July 1, 2003.

Mitigation Measure 1.c. ensures consistency with this standard. No facility can be placed within one-half mile of the coast, barrier islands, reefs and lagoons or major rivers[1] and within 500 feet of a fishbearing waterbody, unless it is not feasible and prudent to place it outside (inland) of this buffer, or a location within the buffer is environmentally preferred.

[1] *Major waterbodies included in Mitigation Measure 1.c. are the Colville, Canning, Sagavanirktok, Kavik, Shaviovik, Kadleroshilik, Echooka, Ivishak, Kuparuk, Toolik, Anaktuvuk and Chandler Rivers.*

Dredge and fill activities in wetlands require a permit from the U.S. Army Corps of Engineers. Such an activity will require a separate ACMP review, if proposed. See Lessee Advisory 5. Approved placement of fill or structures into wetlands must also be consistent with Mitigation Measure 1.e., which requires that impacts to important wetlands be minimized and that facilities be sited in the least sensitive areas.

11 AAC 112.210 Natural Hazard Areas

(a) In addition to those identified in 11 AAC 112.990, the department, or a district in a district plan, may designate other natural processes or adverse conditions that present a threat to life or property in the coastal area as natural hazards. Such designations must provide the scientific basis for designating the natural process or adverse condition as a natural hazard in the coastal area, along with supporting scientific evidence for the designation.

(b) Areas likely to be affected by the occurrence of a natural hazard may be designated as natural hazard areas by a state agency or, under 11 AAC 114.250(b) , by a district.

(c) Development in a natural hazard area may not be found consistent unless the applicant has taken appropriate measures in the siting, design, construction, and operation of the proposed activity to protect public safety, services, and the environment from potential damage caused by known natural hazards.

Natural hazards that may affect development of the proposed North Slope Areawide Lease Sale include: earthquakes, ice push, permafrost, waves, storm surge, coastal erosion, seasonal flooding, overpressured sediments, shallow gas deposits, and natural gas hydrates. However, risks can be minimized by designing facilities to meet or exceed Uniform Building Code specifications for seismic zone 1. Design parameters, including concrete armoring, berm construction, and coastal facility setbacks mitigate the effects of ice push and are similar to those employed to resist sea ice and coastal erosion forces. Additional precautions can be taken to identify and accommodate such site-specific conditions as unstable ground, flooding, and other localized hazards. Proper siting, design, construction, and engineering will minimize the detrimental effects of these natural processes.

Because a lease sale does not authorize any development, it is impossible to predict which areas being leased have high development potential; as a result, they cannot be identified, nor their specific natural hazards, if any, addressed, at this time.

11 AAC 112.220 Coastal Access

Districts and state agencies shall ensure that projects maintain and, where appropriate, increase public access to, from, and along coastal water.

Issuance of a lease does not authorize any activities that could restrict access to, from and along coastal water. This policy will be applied at the plan of operations approval phase, which undergoes a separate ACMP review.

Mitigation Measures 1.a., 3.a., 3.b., and 5.b are intended to maintain and, where appropriate, increase public access.

11 AAC 112.230 Energy Facilities

(a) The siting and approval of major energy facilities by districts and state agencies must be based, to the extent practicable, on the following standards:

(1) site facilities so as to minimize adverse environmental and social effects while satisfying industrial requirements;

(2) site facilities so as to be compatible with existing and subsequent adjacent uses and projected community needs;

(3) consolidate facilities;

(4) consider the concurrent use of facilities for public or economic reasons;

(5) cooperate with landowners, developers, and federal agencies in the development of facilities;

(6) select sites with sufficient acreage to allow for reasonable expansion of facilities;

(7) site facilities where existing infrastructure, including roads, docks, and airstrips, is capable of satisfying industrial requirements;

(8) select harbors and shipping routes with least exposure to reefs, shoals, drift ice, and other obstructions;

(9) encourage the use of vessel traffic control and collision avoidance systems;

(10) select sites where development will require minimal site clearing, dredging, and construction;

(11) site facilities so as to minimize the probability, along shipping routes, of spills or other forms of contamination that would affect fishing grounds, spawning grounds, and other biologically productive or vulnerable habitats, including marine mammal rookeries and hauling out grounds and waterfowl nesting areas;

(12) site facilities so that design and construction of those facilities and support infrastructures in coastal areas will allow for the free passage and movement of fish and wildlife with due consideration for historic migratory patterns;

(13) site facilities so that areas of particular scenic, recreational, environmental, or cultural value, identified in district plans, will be protected;

(14) site facilities in areas of least biological productivity, diversity, and vulnerability and where effluents and spills can be controlled or contained;

(15) site facilities where winds and air currents disperse airborne emissions that cannot be captured before escape into the atmosphere;

(16) site facilities so that associated vessel operations or activities will not result in overcrowded harbors or interfere with fishing operations and equipment.

(b) The uses authorized by the issuance of state and federal leases, easements, contracts, rights-of-way, or permits for mineral and petroleum resource extraction are uses of state concern.

A lease does not authorize energy facilities, and at lease issuance stage it cannot reasonably be foreseen if a developable deposit might be discovered that would warrant an energy facility. Until a specific energy facility is proposed, there is no opportunity for siting a facility under 11 AAC 112.230. However, if and when such a project is proposed, it will be measured against this standard, as well as all other policies of the ACMP. The energy facility standards include sixteen criteria, which, to the extent feasible and prudent, will regulate the location of energy-related facilities.

Mitigation Measures 1.a.-k., 2.a.-g., 4.a.-k. and 5.a.-b., and Lessee Advisories 1.a.-h. will help ensure that future energy facility development complies with the ACMP.

11 AAC 112.240 Utility Routes and Facilities

(a) Utility routes and facilities must be sited inland from beaches and shorelines unless

(1) the route or facility is water-dependent or water related; or

(2) no practicable inland alternative exists to meet the public need for the route or facility.

(b) Utility routes and facilities along the coast must avoid, minimize, or mitigate

(1) alterations in surface and ground water drainage patterns;

(2) disruption in known or reasonably foreseeable wildlife transit;

(3) blockage of existing or traditional access

A lease does not authorize utility routes and facilities, and at the lease issuance stage it cannot be reasonably foreseen whether a developable deposit will be discovered that would warrant the siting, design and construction of a transportation or utility route or facility. Until a specific route or facility is proposed, there is no opportunity for siting under 11 AAC 112.240. However, if and when such a project is proposed, it will be measured against this standard, as well as all other policies of the ACMP. Mitigation Measure 1.c. prohibits the siting of facilities within one-half mile of the coast, barrier islands, reefs, lagoons, major rivers, and within 500 feet of a fishbearing waterbody unless it is not feasible and prudent to place it outside (inland) of this buffer. Transportation and utility corridors are addressed in Mitigation Measures 1.g., 1.h., 1.k., and 5.a. and their dismantlement, removal and rehabilitation in Mitigation Measure 1.j.

11 AAC 112.250 Timber Harvesting and Processing

AS 41.17 (Forest Resources and Practices Act) and the regulations adopted under that chapter with respect to the harvest and processing of timber are incorporated into the program and constitute the components of the program with respect to those purposes.

This standard is not applicable; no forests are located within the proposed North Slope Areawide sale area.

11 AAC 112.260 Sand and Gravel Extraction

Sand and gravel may be extracted from coastal waters, intertidal areas, barrier islands, and spits if there is no practicable alternative to coastal extraction that will meet the public need for the sand or gravel.

A lease does not authorize activity and, at this time, no project is proposed. The issuance of these leases only conveys the exclusive right to extract oil and gas from state-owned lands, should that activity be authorized in later phases. This policy will be applied at the plan of operations approval phase during a future ACMP review. Mitigation Measure 1.k. and Lessee Advisories 1.a. and 5.a. support this standard.

11 AAC 112.270 Subsistence

(a) A project within a subsistence use area designated by the department or under 11 AAC 114.250(g) must avoid or minimize impacts to subsistence uses of coastal resources.

(b) For a project within a subsistence use area designated under 11 AAC 114.250(g) , the applicant shall submit an analysis or evaluation of reasonably foreseeable adverse impacts of the project on subsistence use as part of

(1) a consistency review packet submitted under 11 AAC 110.215; and

(2) a consistency evaluation under 15 C.F.R. 930.39, 15 C.F.R. 930.58, or 15 C.F.R. 930.76.

(c) Repealed 10/29/2004.

(d) Except in nonsubsistence areas identified under AS 16.05.258 , the department may, after consultation with the appropriate district, federally recognized Indian tribes, Native corporations, and other appropriate persons or groups, designate areas in which a subsistence use is an important use of coastal resources as demonstrated by local usage.

(e) For purposes of this section, "federally recognized Indian tribe" "local usage", and "Native corporation" have the meanings given in 11 AAC 114.990.

This standard requires districts and state agencies to recognize and assure opportunities for subsistence usage of coastal areas and resources. This standard will be applied at the plan of operations approval phase during a future ACMP review. All Mitigation Measures support this standard, and Mitigation Measures 1.b., 3.a. and 3.b. specifically support this standard.

11 AAC 112.280. Transportation Routes and Facilities

Transportation routes and facilities must avoid, minimize, or mitigate

(1) alterations in surface and ground water drainage patterns;

(2) disruption in known or reasonably foreseeable wildlife transit; and

(3) blockage of existing or traditional access.

A lease does not authorize transportation and utility routes and facilities, and at the lease issuance stage it cannot reasonably be foreseen if a developable deposit may be discovered that would warrant the siting, design and construction of a transportation or utility route or facility. Until a specific route or facility is proposed there is no opportunity for siting under11 AAC 112.280. However, if and when such a project is proposed, it will be measured against this standard, as well as all other policies of the ACMP. Mitigation Measure 1.c. prohibits the siting of facilities within one-half mile of the coast, barrier islands, reefs, lagoons, major rivers, and within 500 feet of a fishbearing waterbody unless it is not feasible and prudent to place it outside (inland) of this buffer. Transportation and utility corridors are specifically addressed in Mitigation Measures 1.g., 1.h., 1.k., and 5.a. and their dismantlement, removal and rehabilitation in Mitigation Measure 1.j.

11 AAC 112.300 Habitats

(a) Habitats in the coastal area that are subject to the program are

(1) offshore areas;

(2) estuaries;

(3) wetlands;

(4) tideflats;

(5) rocky islands and sea cliffs;

(6) barrier islands and lagoons;

(7) exposed high-energy coasts;

(8) rivers, streams, and lakes and the active floodplains and riparian management areas of those rivers, streams, and lakes; and

(9) important habitat.

(b) The following standards apply to the management of the habitats identified in (a) of this section:

(1) offshore areas must be managed to avoid, minimize, or mitigate significant adverse impacts to competing uses such as commercial, recreational, or subsistence fishing, to the extent that those uses are determined to be in competition with the proposed use;

(2) estuaries must be managed to avoid, minimize, or mitigate significant adverse impacts to

(A) adequate water flow and natural water circulation patterns; and

(B) competing uses such as commercial, recreational, or subsistence fishing, to the extent that those uses are determined to be in competition with the proposed use;

(3) wetlands must be managed to avoid, minimize, or mitigate significant adverse impacts to water flow and natural drainage patterns;

(4) tideflats must be managed to avoid, minimize, or mitigate significant adverse impacts to

(A) water flow and natural drainage patterns; and

(B) competing uses such as commercial, recreational, or subsistence uses, to the extent that those uses are determined to be in competition with the proposed use;

(5) rocky islands and sea cliffs must be managed to

(A) avoid, minimize, or mitigate significant adverse impacts to habitat used by coastal species; and

(B) avoid the introduction of competing or destructive species and predators;

(6) barrier islands and lagoons must be managed to avoid, minimize, or mitigate significant adverse impacts

(A) to flows of sediments and water;

(B) from the alteration or redirection of wave energy or marine currents that would lead to the filling in of lagoons or the erosion of barrier islands; and

(C) from activities that would decrease the use of barrier islands by coastal species, including polar bears and nesting birds;

(7) exposed high-energy coasts must be managed to avoid, minimize, or mitigate significant adverse impacts

(A) to the mix and transport of sediments; and

(B) from redirection of transport processes and wave energy;

(8) rivers, streams, and lakes must be managed to avoid, minimize, or mitigate significant adverse impacts to

(A) natural water flow;

(B) active floodplains; and

(C) natural vegetation within riparian management areas; and

(9) important habitat

(A) designated under 11 AAC 114.250(h) must be managed for the special productivity of the habitat in accordance with district enforceable policies adopted under 11 AAC 114.270(g) ; or

(B) identified under (c)(1)(B) or (C) of this section must be managed to avoid, minimize, or mitigate significant adverse impacts to the special productivity of the habitat.

(c) For purposes of this section,

(1) "important habitat" means habitats listed in (a)(1) - (8) of this section and other habitats in the coastal area that are

(A) designated under 11 AAC 114.250(h) ;

(B) identified by the department as a habitat

(i) the use of which has a direct and significant impact on coastal water; and

(ii) that is shown by written scientific evidence to be biologically and significantly productive; or

(C) identified as state game refuges, state game sanctuaries, state range areas, or fish and game critical habitat areas under AS 16.20;

(2) "riparian management area" means the area along or around a waterbody within the following distances, measured from the outermost extent of the ordinary high water mark of the waterbody:

(A) for the braided portions of a river or stream, 500 feet on either side of the waterbody;

(B) for split channel portions of a river or stream, 200 feet on either side of the waterbody;

(C) for single channel portions of a river or stream, 100 feet on either side of the waterbody;

(D) for a lake, 100 feet of the waterbody.

This standard contains requirements for the administration of the nine acknowledged habitats of coastal areas. These areas must be managed to avoid, minimize, or mitigate significant adverse impacts.

Issuance of a lease does not authorize any activities. While leasing does not in itself negatively impact the lease area, there is likelihood that some lease areas will be explored, that permits will be sought, and a possibility that one of those explored areas will actually go into production.

ADNR has taken all feasible and prudent steps at the lease issuance stage to maximize conformance with the standards contained in 11 AAC 112.300 and has attached a number of mitigation measures and lessee advisories to the lease in order to maximize conformance with these standards. Further, it has ensured that all feasible and prudent steps to maximize conformance will be taken in the future since in the later stages (exploration and development/production), the project will once again be measured against the standards of the ACMP, including the habitat standard.

The Mitigation Measures and Lessee Advisories for this proposed North Slope Areawide Lease Sale represent feasible and prudent steps to meet the requirements of 11 AAC 112.300 at the lease issuance stage. In addition, other measures may be imposed when time-certain, site-specific activities are reviewed for consistency with the ACMP throughout the plan of operations approval process. Therefore, if further steps are necessary to maintain habitat, the reapplication of the ACMP will ensure that more steps are taken.

Mitigation Measures 1.a.-k., 2.a.-g., 4.a.-j., 5.a.-b., and Lessee Advisories 1.a.-c., and 3.a. and 3.d. support the ACMP habitat standard.

11 AAC 112.310 Air, Land, and Water Quality

Notwithstanding any other provision of this chapter, the statutes and regulations of the Department of Environmental Conservation with respect to the protection of air, land, and water quality identified in AS 46.40.040 (b) are incorporated into the program and, as administered by that department, constitute the exclusive components of the program with respect to those purposes.

This standard provides for the statutes, regulations and procedures of ADEC (with respect to protection of air, land and water quality) to be incorporated into the ACMP.

Issuance of the proposed leases authorizes no activities that could impact air, land, and water quality. All activities authorized in later phases will be reviewed against these standards and appropriate restrictions will be imposed by ADEC at that time. Mitigation Measures 1.e., 1.i., 1.j.4.g., 4.h. ,4.i., and Lessee Advisories 3.a.-c. specifically address ADEC requirements.

11 AAC 112.320 Historic, Prehistoric, and Archaeological Resources

(a) The department will designate areas of the coastal zone that are important to the study, understanding, or illustration of national, state, or local history or prehistory, including natural processes.

(b) A project within an area designated under (a) of this section shall comply with the applicable requirements of AS 41.35.010 - 41.35.240 and 11 AAC 16.010 - 11 AAC 16.900.

ADNR researched available sources and found 339 known historic and archaeological sites in and near the proposed sale area; however a high potential for discovery of additional sites also exists. The issuance of leases authorizes no activity and, at this time, no project is proposed. This policy will be applied at the plan of operations approval phase during a future ACMP review. Mitigation Measures 6.a.-c. support this standard or will assist in its enforcement.

11 AAC 112.900. Sequencing Process to Avoid, Minimize, or Mitigate

(a) As used in this chapter and for purposes of district enforceable policies developed under 11 AAC 114, "avoid, minimize, or mitigate" means a sequencing process of

(1) avoiding adverse impacts to the maximum extent practicable;

(2) where avoidance is not practicable, minimizing adverse impacts to the maximum extent practicable; or

(3) if neither avoidance nor minimization is practicable, conducting mitigation to the extent appropriate and practicable; for purposes of this paragraph, "mitigation" means

(A) on-site rehabilitation of project impacts to affected coastal resources during or at the end of the life of the project; or

(B) to the extent on-site rehabilitation of project impacts is not practicable, substituting, if practicable, rehabilitation of or an improvement to affected coastal resources within the district, either on-site or off-site, for a coastal resource that is unavoidably impacted.

(b) For a project that requires a federal authorization identified under 11 AAC 110.400, the coordinating agency shall consult with the authorizing federal agency during that federal agency's authorization review process to determine whether the mitigation requirements proposed by the federal agency for that federal authorization would satisfy the mitigation requirements of (a)(3) of this section. If the coordinating agency determines that the mitigation requirements proposed by the federal agency would not satisfy the mitigation requirements of (a)(3) of this section, the coordinating agency shall require appropriate mitigation in accordance with (a)(3) of this section.

(c) For purposes of (a)(3) of this section, a determination of practicability includes consideration of the following factors, as applicable:

(1) the magnitude of the functional values lost by the impacted coastal resources;

(2) the likelihood that the mitigation measure or improvement will succeed in actually rehabilitating the impacted resource; and

(3) the correlation between the functional values lost by the coastal resources impacted and the proposed mitigation measure or improvement.

(d) To the extent feasible and not otherwise addressed by state or federal law, any requirements imposed under (a)(3) of this section for mitigation through on-site or off-site rehabilitation of project impacts shall be established by the coordinating agency at the time of the project's consistency review under 11 AAC 110.

(e) In applying the mitigation process described in (a)(3) of this section, unless required by a federal agency issuing an authorization identified under 11 AAC 110.400 for the project, the coordinating agency may not require

(1) that no net loss of impacted coastal resources occur; or

(2) monetary compensation.

Under 11 AAC 114, "avoid, minimize, or mitigate" means a sequencing process of avoiding adverse impacts to the maximum extent practicable. Where neither avoidance nor minimization is practicable, adverse impacts will be mitigated to the maximum extent practicable.

Because a lease sale does not authorize any development, it is impossible to identify a sequencing or rehabilitation process at this time. However, if and when such a project is proposed it will be measured against this standard, as well as other policies of the ACMP. Mitigation Measure 1.j. and Paragraphs 9 and 21 of the lease contract address sequencing and rehabilitation.

11 AAC 112.990. Definitions

Unless the context indicates otherwise, in this chapter,

(1) "active floodplain" means the low land and relatively flat areas adjoining rivers, lakes, and streams that are subject to regular inundation by floods;

(2) "adjacent" means near but not necessarily touching;

(3) "barrier islands and lagoons" means

(A) depositional coastal environments formed by deposits of sediment offshore; or

(B) coastal remnants that form a barrier of low-lying islands and bars protecting a salt-water lagoon with free exchange of water to the sea;

(4) "beach" has the meaning given in 11 AAC 114.990;

(5) "coastal area" has the meaning given "coastal zone" in AS 46.40.210 , except that "coastal area" includes federally owned land and water within the coastal zone;

(6) "coastal water" means those waters, adjacent to the shorelines, that contain a measurable quantity or percentage of sea water, including sounds, bays, lagoons, ponds, estuaries, and tidally influenced waters;

(7) "department" has the meaning given in AS 46.40.210 ;

(8) "designate" means

(A) for a district, to identify in a district plan approved by the department; and

(B) for a state agency, to identify in a planning document or as part of a review under 11 AAC 110;

(9) "district" means a coastal resource district as defined in AS 46.40.210 ;

(10) "district plan" has the meaning given in 11 AAC 114.990;

(11) "estuary" means a semiclosed coastal body of water that has a free connection with the sea and within which seawater is measurably diluted with freshwater derived from land drainage;

(12) "exposed high-energy coasts" means open and unprotected sections of coastline with exposure to ocean generated wave impacts and usually characterized by coarse sand, gravel, boulder beaches, and well-mixed coastal water;

(13) "freshwater wetlands" means those environments characterized by rooted vegetation that is partially submerged either continuously or periodically by surface freshwater with less than 0.5 parts per thousand salt content and not exceeding three meters in depth;

(14) "major energy facility"

(A) means a development of more than local concern carried out in, or in close proximity to, the coastal area, that is:

(i) required to support energy operations for exploration or production purposes;

(ii) used to produce, convert, process, or store energy resources or marketable products;

(iii) used to transfer, transport, import, or export energy resources or marketable products;

(iv) used for in-state energy use; or

(v) used primarily for the manufacture, production, or assembly of equipment, machinery, products, or devices that are involved in an activity described in (i) - (iv) of this subparagraph;

(B) includes marine service bases and storage depots, pipelines and rights-of-way, drilling rigs and platforms, petroleum or coal separation, treatment, or storage facilities, liquid natural gas plants and terminals, oil terminals and other port development for the transfer of energy products, petrochemical plants, refineries and associated facilities, hydroelectric projects, other electric generating plants, transmission lines, uranium enrichment or nuclear fuel processing facilities, geothermal facilities, natural gas pipelines and rights-of-way, natural gas treatment and processing facilities, and infrastructure related to natural gas treatment and processing facilities;

(15) "natural hazards"

(A) means the following natural processes or adverse conditions that present a threat to life or property in the coastal area: flooding, earthquakes, active faults, tsunamis, landslides, volcanoes, storm surges, ice formations, snow avalanches, erosion, and beach processes;

(B) includes other natural processes or adverse conditions designated by the department or by a district in a district plan;

(16) "natural hazard area" means an area designated by a district under 11 AAC 114.250(b) or a state agency under 11 AAC 112.210(b) ;

(17) "offshore areas" means submerged lands and waters seaward of the coastline as measured from mean low tide;

(18) "practicable" means feasible in light of overall project purposes after considering cost, existing technology, and logistics of compliance with the standard;

(19) "program" has the meaning given in 11 AAC 110.990;

(20) "public need" has the meaning given in 11 AAC 114.990;

(21) "reasonably foreseeable" has the meaning given in 11 AAC 110.990;

(22) "resource agency" has the meaning given in AS 46.39.010 ;

(23) "rivers, streams, and lakes" means those portions of water bodies that

(A) are catalogued under AS 41.14.870 as important for anadromous fish;

(B) are not cataloged under AS 41.14.870 as important for anadromous fish, but have been determined by the deputy commissioner of the department to contain or exhibit evidence of anadromous fish, in which event the anadromous portion of the stream or waterway extends up to the first point of physical blockage; or

(C) are delineated based on written scientific findings demonstrating to the satisfaction of the coordinating agency, in consultation with the state resource agency with expertise, that the project or activity would cause significant and adverse impact to

(i) water bodies identified in (A) or (B) of this paragraph; and

(ii) coastal waters;

(24) "rocky islands and sea cliffs" means islands of volcanic or tectonic origin with rocky shores and steep faces, offshore rocks, capes, and steep rocky seafronts;

(25) "saltwater wetlands" means those coastal areas along sheltered shorelines characterized by halophilic hydrophytes and macro algae extending from extreme low tide to an area above extreme high tide that is influenced by sea spray or tidally induced water table changes;

(26) "scientific evidence" has the meaning given in 11 AAC 114.990;

(27) "tideflats" means mostly unvegetated areas that are alternately exposed and inundated by the falling and rising of the tide;

(28) "transportation routes and facilities" include natural transportation routes dictated by geography or oceanography, roads, highways, railways, air terminals, and facilities required to operate and maintain the route or facility;

(29) "uses of state concern" has the meaning given in AS 46.40.210 ;

(30) "utility routes and facilities" include power transmission lines, mineral slurry lines, oil and gas pipelines, natural transportation routes dictated by geography or oceanography, water and sewage transfer, and facilities required to operate and maintain the route or facility;

(31) "water-dependent" means a use or activity that can be carried out only on, in, or adjacent to a water body because the use requires access to the water body;

(32) "water-related" means a use or activity that is not directly dependent upon access to a water body, but which provides goods or services that are directly associated with water-dependence and which, if not located adjacent to a water body, would result in a public loss of quality in the goods or services offered;

(33) "wetlands" means saltwater wetlands and those freshwater wetlands that have a direct drainage to coastal waters.

(34) "avoid or minimize" means a process of avoiding adverse impacts to the maximum extent practicable and, if avoidance is not practicable, minimizing impacts where practicable;

(35) "coordinating agency" has the meaning given in 11 AAC 110.990.

(36) "direct and significant impact" has the meaning given in 11 AAC 114.990;

(37) "subsistence fishing" has the meaning given in AS 16.05.940 ;

(38) "subsistence uses" has the meaning given in AS 16.05.940 .

North Slope Borough Coastal Management Program

The North Slope Borough developed a coastal management program to enhance its ability to manage coastal resources and to plan for balanced uses. The NSBCMP attempts to resolve coastal resource use conflicts while providing for both future growth and conservation. The program consists of goals, objectives and policies. The goals and objectives do not constitute enforceable policies and are not intended to be applied during consistency reviews. Policies identify general courses of action to achieve implementation of objectives and goals by agencies and organizations. The policies are enforceable rules and are the basis upon which all consistency recommendations or determinations must be made.

Standards for Development

Policy 2.4.3(a) states that when extensive adverse impacts to a subsistence resource are likely and cannot be avoided or mitigated, development shall not deplete subsistence resources below the subsistence needs of local residents.

This standard requires districts and state agencies to recognize and assure opportunities for subsistence usage of coastal areas and resources. This standard will be applied at the plan of operations approval phase during a future ACMP review. All mitigation measures support this standard, and Mitigation Measures 1.b., 3.a. and 3.b. specifically support this standard.

Policy 2.4.3(b) states that offshore drilling and other development within the area of bowhead whale migration during the migration seasons shall not significantly interfere with subsistence activities nor jeopardize the continued availability of whales for subsistence purposes.

The Proposed North Slope areawide sale is predominately onshore and is not within the area inhabited by bowhead whales. Mitigation Measure 1.i. relates to causeway development.

Policy 2.4.3(c) Relates to the Kasegaluk Lagoon, which is located on the Chukchi Sea coast.

The proposed North Slope areawide sale is not expected to affect this area.

Policy 2.4.3(d) requires that development not preclude reasonable subsistence user access to a subsistence resource. The intent of this policy is to ensure that development will not preclude reasonable subsistence user access to a subsistence resource on which they depend. "Reasonable access" is access using means generally available to subsistence users. Reasonable opportunities for access to customary subsistence resources must not be precluded. "Precluding access" addresses not only means of access, but access to areas where resources are present and can be used by subsistence users.

Issuance of a lease does not authorize any activities that could restrict subsistence areas within the coastal zone. This policy will be applied at the plan of operations approval phase, which undergoes a separate ACMP review. Mitigation Measures 1.a.-k., 3.a.-c., 5.a., 6.a.-c. and 7.a.-c., and Lessee Advisories 1.a., 2, 7.a., and 8.a.-b. support this standard.

Policies 2.4.3(e), (f), and (g) relate to protecting cultural or historic sites and ensuring their continued use for traditional activities.

The issuance of leases does not authorize any activity and, at this time, no project is proposed. This policy will be applied at the plan of operations approval phase during a future ACMP review. ADNR researched available sources and found 339 known historic and archaeological sites in and near the proposed sale area; however a high potential for discovery of additional sites also exists. Mitigation Measures 6.a.-c., Lessee Advisories 2. and 8.a.-b., and paragraph 9 of the lease contract comply with the Historic, Prehistoric and Archaeological Resources standard or will assist in its enforcement.

Policy 2.4.3(h) requires that development comply with state or federal land, air, and water quality standards or regulations.

The Preliminary Best Interest Finding includes a discussion of federal, state and local laws and regulations that affect the exploration and development of any leases that may be awarded as a result of conducting the proposed North Slope Areawide Lease Sale (see Chapter One and Appendix B). Lessee advisories 1-9 alert lessees to additional restrictions that may be imposed.

Required Features for Applicable Development

Policy 2.4.4(a) requires that vehicles, vessels, and aircraft likely to cause significant disturbance must avoid areas where species that are sensitive to noise or movement are concentrated, with consideration of human safety.

The issuance of leases does not authorize any activity and at this time, no project is proposed. This policy will be applied at the plan of operations approval phase during a future ACMP review. All proposed projects must conform to the mitigation measures and Lessee Advisories attached to the lease and be consistent with the policies of the NSBCMP. Mitigation Measure 5.a. and Lessee Advisories 1.d. and 1.h. support this policy.

Policy 2.4.4(b) requires that offshore structures be able to withstand geophysical hazards and forces that may occur. It also requires monitoring programs and safety systems to secure wells in case unexpected geophysical hazards or forces are encountered.

While the NSBCMP specifically refers to offshore operations in these policies, the requirements also apply to onshore structures.

Natural hazards that may effect development of the proposed North Slope Areawide Lease Sale include: earthquakes, ice push, permafrost, waves, storm surge, coastal erosion, seasonal flooding, overpressured sediments, shallow gas deposits, and natural gas hydrates. However, risks can be minimized by designing facilities to meet or exceed Uniform Building Code specifications for seismic zone 1. Design parameters, including concrete armoring, berm construction, and coastal facility setbacks mitigate the effects of ice push and are similar to those employed to resist sea ice and coastal erosion forces. Additional precautions can be taken to identify and accommodate such site-specific conditions as unstable ground, flooding, and other localized hazards. Proper siting, design, construction, and engineering will minimize the detrimental effects of these natural processes. Mitigation Measures 1.g. and 1.h. specifically addresses geophysical hazards. Lessee Advisories 1.a. and 3.a. support policies to reduce the potential for loss of life, habitat, and property. Mitigation Measure 1.i. addresses causeways.

Because a lease sale does not authorize any development, it is impossible to predict which areas being leased have high development potential; as a result, they cannot be identified, nor their specific natural hazards, if any, addressed, at this time.

Policy 2.4.4(c) requires that development resulting in water or airborne emissions must comply with all state and federal regulations.

Policy 2.4.4(d) requires that development must be served by solid waste disposal facilities that meet state and federal regulations.

Policy 2.4.4(e) requires that development not on a central sewage system must impound and process effluent to state and federal quality standards.

These policies will be applied at the plan of operations approval phase during a future ACMP review and may be attached as a stipulation to the permit. Specifically, Mitigation Measures 4.h.-j. and Lessee Advisories 3.b.-d. support these policies.

Policy 2.4.4(f) requires an offshore relief well drilling plan and an emergency countermeasures plan.

Policy 2.4.4(g) requires that offshore drilling operations and storage and transportation facilities have an oil spill control and clean up plan.

While the NSBCMP specifically refers to offshore operations in these policies, the requirements for drilling a relief well and an emergency countermeasure plan exist for onshore operations as well. Lessee Advisory 3.a. supports these policies.

Policy 2.4.4(h) requires that pipelines and other offshore oil transport systems be designed to withstand geophysical hazards, specifically sea ice.

While the NSBCMP specifically refers to offshore operations in these policies, these requirements exist for onshore operations as well. This policy will be applied at the plan of operations approval phase during a future ACMP review and may be attached as a stipulation to the permit. Specifically, Mitigation Measures 1.g.-h., Lessee Advisory 3.a., and Paragraph 9 of the lease contact support this policy.

Policy 2.4.4(i) requires that causeways be sited and designed to allow free passage of fish, marine mammals, and molting birds with due consideration for migration patterns; to prevent changes in water circulation patterns; and to ensure adequate sediment transport.

This policy will be applied at the plan of operations approval phase during a future ACMP review and may be attached as a stipulation to the permit. Specifically, Mitigation Measures 1.g.-h., Lessee Advisory 3.a., and Paragraph 9 of the lease contact support this policy.

Policy 2.4.4(j) requires that residential development associated with resource development be removed and the area rehabilitated to standards consistent with the coastal management program when the use is completed, unless removal is more environmentally harmful than non-removal.

This policy will be applied at the plan of operations approval phase during a future ACMP review and may be attached as a stipulation to the permit. Specifically, Mitigation Measure 1.a. and Paragraphs 9 and 21 of the lease contact support this policy.

Policy 2.4.4(k) requires impermeable lining and diking for fuel storage facilities with a capacity greater than 660 gallons.

No activity is proposed at this time. This policy will be applied at the plan of operations approval phase during a future ACMP review and will be attached as a stipulation to the permit. Specifically, Mitigation Measure 4.j. supports this policy.

Best Effort Policies

Policy 2.4.5 requires that development comply with each of the policies in this section, as applicable, unless

(1) there is a significant public need for the proposed use and activity; and

(2) The development has rigorously explored and objectively evaluated all feasible and prudent alternatives to the proposed use or activity and cannot comply with the policy. When alternatives are eliminated from consideration, the reasons for their elimination shall be briefly documented by the developer.

The issuance of leases does not authorize any activity and no activity is proposed for review at this time. An activity can only be analyzed for its consistency with this policy when it is proposed at the plan of operations approval or geophysical exploration permit phase. At that time, it will be reviewed for consistency with the ACMP and NSBCMP policies. Best effort policies are supported by Mitigation Measures 1.a.-k. and Lessee Advisories 2.a. and 8.a.-b.

There is a significant public need to explore for new oil and gas reserves to meet growing statewide and local demand for energy, revenue, and employment. The majority of the state's revenue and much of the state's economic base are generated from oil and gas exploration and development/production. Over the long-term, based on current known reserves and income projections, production and related employment and state revenues are expected to decline. If these anticipated declines are to be offset, new areas for exploration and development/production must be made available now. Holding the proposed North Slope Areawide Oil and Gas Lease Sale is a first step toward meeting future statewide needs.

On a local level holding the proposed lease sale will help meet public needs for revenue to fund schools and local government operations, and continue economic stability. There is no feasible or prudent alternative to offering lands in the coastal zone that would meet the public need for the proposed North Slope areawide lease sale.

The mitigation measures and lessee advisories for this proposed North Slope areawide lease sale represent feasible and prudent steps to meet the requirements of Policy 2.4.5 at lease issuance stage. In addition, other measures may be imposed when time-certain, site-specific activities are reviewed for consistency with the ACMP throughout the plan of operations approval process. Therefore, if further steps are necessary to maintain habitat, the reapplication of the ACMP will ensure that more steps are taken.

Policy 2.4.5.1 permits certain development types (listed (a) through (k)) only if the developer has met the criteria under **Policy 2.4.5** and has taken all feasible and prudent steps to avoid the adverse impacts the policy was intended to prevent. Each paragraph is discussed below.

Policy 2.4.5.1(a) relates to development that will likely result in significantly decreased productivity of subsistence resources or their ecosystems.

No activity is proposed at this time. These policies will be applied at the plan of operations approval phase during a future ACMP review and will be attached as a stipulation to the permit. Mitigation Measures 1.a.-k., 2.a.-g., 3.a. and Lessee Advisories 1.a.-h. and 6.a.-c. support this policy.

Policy 2.4.5.1(b) addresses development that restricts subsistence user access to a subsistence resource. This policy provides that access to subsistence resources may be restricted only when there are no feasible or prudent alternatives. This is intended to discourage restrictions on subsistence, but it does not absolutely prohibit such restrictions.

No activity is proposed at this time. This policy will be applied at the plan of operations approval phase during a future ACMP review and will be attached as a stipulation to the permit. Mitigation Measures 1.a., 3.b., 7.b.-c., and Lessee Advisories 8.a.-b. support this policy.

Policy 2.4.5.1(e) refers to public highway development and does not apply to the proposed sale area.

Policy 2.4.5.1(f) relates to transportation development, including pipelines, which significantly obstruct wildlife migration.

No activity is proposed at this time. This policy will be applied at the plan of operations approval phase during a future ACMP review and will be attached as a stipulation to the permit. Mitigation Measure 1.h. and Lessee Advisories 1.h. and 2.g. support this policy.

Policy 2.4.5.1(g) prohibits development to accommodate large scale movement of crude oil or natural gas via marine tankers unless no feasible and prudent alternative exists.

The proposed North Slope areawide sale is not expected to involve offshore production sites or require the large scale movement of crude oil or natural gas via marine tankers within the North Slope Borough coastal zone.

Policy 2.4.5.1(h) relates to duplicate transportation corridors from resource extraction sites.

No activity is proposed at this time. This policy will be applied at the plan of operations approval phase during a future ACMP review and will be attached as a stipulation to the permit. Paragraph 9 of the lease contract requires that a plan of operations permit be obtained from the Division of Oil and Gas (DO&G) prior to building any facilities. In order for DO&G to approve the permit, facilities must comply with the ACMP, including 11 AAC 112.240, addresses the siting of utility routes and facilities and. 11 AAC 112.280 addressing transportation routes and facilities.

Policy 2.4.5.1(i) refers to mining of beaches, barrier islands, or offshore shoals, and if mining in these areas is allowed, substantial alteration of shoreline dynamics is prohibited.

No activity is proposed at this time. This policy will be applied at the plan of operations approval phase during a future ACMP review and will be attached as a stipulation to the permit. Mitigation Measure 1.k. and Lessee Advisory 8.a. support this policy.

Policy 2.4.5.1(j) affects the placement of structures in floodplains subject to a 50 year recurrence level and geologic hazard areas as identified on coastal management maps 6, 7, and 22 in the NSBCMP Resource Atlas.

The issuance of a lease does not authorize any activity and no activity is proposed for review at this time. An activity can only be analyzed for its consistency with this policy when it is proposed at the plan of operations approval or geophysical exploration permit phase. At that time, the activity will be reviewed for consistency with the ACMP and NSBCMP policies. Mitigation Measures 1.c. and 1.g. and Paragraph 9 of the lease contract support this policy.

Policy 2.4.5.2 establishes conditions (listed (a) through (h)) which must be met by development unless the development has met the criteria under **Policy 2.4.5** and the developer has taken all feasible and prudent steps to maximize conformance with the policy.

Policy 2.4.5.2(a) requires that mining, including gravel extraction, be evaluated so as to lessen, to the maximum extent practicable, environmental degradation of coastal lands and waters.

The issuance of leases does not authorize any activity and no activity is proposed for review at this time. An activity can only be analyzed for its consistency with these policies when it is proposed at the plan of operations approval phase. Mitigation Measure 1.k. supports these policies.

Policy 2.4.5.2(b) requires that development be located, designed, and maintained in a manner that prevents significant adverse impacts on fish and wildlife and their habitat, including water circulation and drainage patterns and coastal processes.

The issuance of leases does not authorize any activity and no activity is proposed for review at this time. An activity can only be analyzed for its consistency with this policy when it is proposed at the plan of operations approval phase. Mitigation Measures 1.a.-k., Lessee Advisories 1.a.-d. and Paragraphs 9 and 21 of the lease sale contract support this policy.

Policy 2.4.5.2(c) requires that resource extraction support facilities be located in a designated service base which is sited, designed, constructed, and maintained to be as compact as possible and to share facilities to the maximum extent possible.

To date, industry has used the enclave approach to siting facilities on the North Slope, in part due to the economic limitation of operating in the Arctic. It is likely that industry will voluntarily continue to use designated service bases and to share facilities whenever possible. Enforcing this policy through the plan of operations permitting process will ensure compliance. Paragraph 9 of the lease contract supports this policy.

Policy 2.4.5.2(d) addresses gravel extraction within active river floodplains, the maintenance of buffers between active channels and the work area and the avoidance of instream work, permanent

channel shifts and ponding of water, clearing of riparian vegetation, and disturbance to natural banks.

The issuance of leases does not authorize any activity and no activity is proposed for review at this time. An activity can only be analyzed for its consistency with this policy when it is proposed at the plan of operations approval phase. Mitigation Measures 1.c. and 1.k., and Lessee Advisory 1.a. support this policy.

Policy 2.4.5.2(e) refers to new residential development and does not apply to the proposed sale area.

Policy 2.4.5.2(f) requires that transportation facilities and utilities be consolidated to the maximum extent possible.

The issuance of leases does not authorize any activity and no activity is proposed for review at this time. An activity can only be analyzed for its consistency with these policies when it is proposed at the plan of operations approval phase. Mitigation Measure 1.f. and Paragraph 9 of the lease contract support these policies.

Policy 2.4.5.2(g) requires that development comply with the ACMP habitats standard (11 AAC 112.300 [formerly 6 AAC 80.130]) and with applicable NSBCMP policies.

The issuance of leases does not authorize any activity and no activity is proposed for review at this time. An activity can only be analyzed for its consistency with this policy when it is proposed at the plan of operations approval phase. Mitigation Measures 1.a.-k., 2.a.-g., 3.a., 3.b., 4.a.-k., 7.a., and 7.b., Lessee Advisories 1.a.-d., 8.a., and 8.b., and Paragraphs 9 and 21 of the lease contract support this policy.

Policy 2.4.5.2(h) requires that development not interfere with the use of a site that is important for significant cultural uses or essential for transportation to subsistence use areas.

No activity is proposed at this time. This policy will be applied at the plan of operations approval phase during a future ACMP review and will be attached as a stipulation to the permit. Mitigation Measures 3.a.-b., 5.a., 6.a.-c., and 7.a.-c. support this policy.

Minimization of Negative Impacts

Policy 2.4.6 contains various subsections requiring that applicable development meet certain criteria to minimize impact. These subsections are discussed below.

Policy 2.4.6(a) refers to purely recreational uses of land and wildlife habitat (i.e. commercial hunting and fishing camps and recreational second home subdivisions and does not apply to the proposed lease sale.

Policy 2.4.6(b) requires that siting, design, construction, and maintenance of transportation and utility facilities minimize alteration of shorelines, water courses, wetlands, tidal marshes, and significant disturbance to important habitat and avoid critical fish migration periods.

A lease does not authorize development and, at this time, no project is proposed. These policies will be applied at the plan of operations approval phase during a future ACMP review. The issuance of these leases only conveys the exclusive right to extract oil and gas from state-owned lands, should that activity be authorized in later phases. Mitigation Measures 1.c.-k., and 5.a., Lessee Advisories 1.a.-d., and 8.a.-b., and Paragraphs 9 and 1 of the lease contract support these policies.

Policy 2.4.6(c) requires that development maintain the natural permafrost insulation quality of soils and vegetation.

No activity is proposed at this time. This policy will be applied at the plan of operations approval phase during a future ACMP review and will be attached as a stipulation to the permit. Mitigation Measures 1.f. and 5.a. support this policy.

Policy 2.4.6(d) requires that airports and helicopter pads be sited, designed, constructed, and operated in a manner that minimizes their impact upon wildlife.

No activity is proposed at this time. This policy will be applied at the plan of operations approval phase during a future ACMP review and will be attached as a stipulation to the permit. Mitigation Measures 1.a. and 3.a., and Lessee Advisory 1.d. support this policy.

Policy 2.4.6(e) requires that the design and construction of structures such as roads and pipelines provide for unimpeded wildlife crossing. This policy establishes a five foot minimum pipeline elevation where elevation is the preferred means for providing unimpeded wildlife crossings. Best available information will be evaluated during project review to determine if pipeline burial, ramping, elevation or a combination thereof will be employed.

No activity is proposed at this time. This policy will be applied at the plan of operations approval phase during a future ACMP review and will be attached as a stipulation to the permit. Mitigation Measure 1.h. and Lessee Advisories 1.d. and 1.h. support this policy.

Policy 2.4.6(f) requires that development in active river floodplains, shoreline areas, and offshore areas be sited, designed, and constructed to minimize loss of life or property due to riverine flooding, icings, stream bank erosion, oceanic storms, sea waves, ice gouging and override, and shore erosion.

No activity is proposed at this time. This policy will be applied at the plan of operations approval phase during a future ACMP review and will be attached as a stipulation to the permit. Mitigation Measures 1.c. and 1.h., Lessee Advisory 1.a., and Paragraph 9 of the lease contract support this policy.

Policy 2.4.6(g) requires that seismic exploration be conducted in a manner that minimizes its impact on fish and wildlife.

The issuance of leases does not authorize any activity and no activity is proposed for review at this time. An activity can only be analyzed for its consistency with this policy when it is proposed at the plan of operations approval phase. Mitigation Measures 2.a. and 5.a. support this policy.

Appendix A: Mitigation Measures and Lessee Advisories

AS 38.05.035(e) and the departmental delegation of authority provide the Director, Division of Oil and Gas (DO&G) ["Director"], with the authority to impose conditions or limitations, in addition to those imposed by statute, to ensure that a resource disposal is in the state's best interests. Consequently, to mitigate the potential adverse social and environmental effects of specific lease related activities, DO&G has developed mitigation measures and will condition plans of operation, exploration, or development and other permits based on these mitigation measures.

Lessees must obtain approval of a detailed plan of operations from the Director before conducting exploration, development, or production activities. A plan of operations must identify the sites for planned activities and the specific measures, design criteria, construction methods and operational standards to be employed to comply with the restrictions listed below. It must also address any potential geophysical hazards that may exist at the site.

These measures were developed after considering terms imposed in earlier competitive lease sales and comments and information submitted by the public, local governments, environmental organizations, and other federal, state, and local agencies. Additional measures will likely be imposed when lessees submit a proposed plan of operations.

Lessees must comply with all applicable local, state and federal codes, statutes and regulations, as amended, as well as all current or future ADNR area plans and recreation rivers plans; and ADF&G game refuge plans, critical habitat area plans, and sanctuary area plans within which a lease area is located. Lease activities must be consistent with the enforceable policies of the Alaska Coastal Management Program (ACMP), including statewide standards and the enforceable policies of an affected coastal district, as amended.

The Director may grant exceptions to these mitigation measures. Exceptions will only be granted upon a showing by the lessee that compliance with the mitigation measure is not feasible and prudent or that the lessee will undertake an equal or better alternative to satisfy the intent of the mitigation measure. Requests and justifications for exceptions must be included in the plan of operations. The decision whether to grant an exception will be made during the public review of the plan of operations.

Except as indicated, the mitigation measures do not apply to geophysical exploration on state lands; geophysical exploration activities are governed by 11 AAC 96.

Abbreviations mean: Alaska Department of Environmental Conservation (ADEC), Alaska Department of Fish and Game (ADF&G), Alaska Department of Labor and Workforce Development (ADLWD), Alaska Department of Natural Resources (ADNR), Alaska Oil and Gas Conservation Commission (AOGCC), ADNR Commissioner (Commissioner), Division of Mining, Land and Water (DMLW), Division of Oil and Gas (DO&G), Federal Aviation Administration (FAA), National Marine Fisheries Service (NMFS); North Slope Borough (NSB), North Slope Borough Municipal Code (NSBMC), Office of Habitat Management and Permitting (OHMP), Office of Project Management and Permitting (OPMP); State Historic Preservation Officer (SHPO), U.S. Army Corps of Engineers (USCOE), U.S. Coast Guard (USCG), and U.S. Fish and Wildlife Service (USFWS), U.S. Bureau of Land Management (BLM), and National Park Service (NPS).

A. Mitigation Measures

1. Facilities and Operations

a. A plan of operations must be submitted and approved before conducting exploration, development or production activities, and must describe the lessee's efforts to minimize impacts on residential, commercial, and recreational areas, Native allotments and subsistence use areas. At the time of application, lessee must submit a copy of the proposed plan of operations to all surface owners whose property will be entered.

b. Facilities must be designed and operated to minimize sight and sound impacts in areas of high residential, commercial, recreational, and subsistence use and important wildlife habitat. Methods may include providing natural buffers and screening to conceal facilities, sound insulation of facilities, or by using alternative means approved by the Director, in consultation with OHMP.

c. To the extent feasible, the siting of facilities will be prohibited within 500 feet of all fish bearing streams and waterbodies and 1,500 feet from all current surface drinking water sources. Additionally, to the extent feasible, the siting of facilities will be prohibited within one-half mile of the banks of the main channel of the Colville, Canning, Sagavanirktok, Kavik, Shaviovik, Kadleroshilik, Echooka, Ivishak, Kuparuk, Toolik, Anaktuvuk and Chandler Rivers. Facilities may be sited within these buffers if the lessee demonstrates to the satisfaction of the Director, in consultation with OHMP, that site locations outside these buffers are not feasible and prudent or that a location inside the buffer is environmentally preferred. Road, utility, and pipeline crossings must be consolidated and aligned perpendicular or near perpendicular to watercourses.

d. No facilities will be sited within one-half mile of identified Dolly Varden overwintering and/or spawning areas on the Canning, Shaviovik, and Kavik rivers. Notwithstanding the previous sentence, road and pipeline crossings may only be sited within these buffers if the lessee demonstrates to the satisfaction of the Director and the Director of OHMP in the course of obtaining their respective permits, that either (1) the scientific data indicate the proposed crossing is not within an overwintering and/or spawning area; or (2) the proposed road or pipeline crossing will have no significant adverse impact to Dolly Varden overwintering and/or spawning habitat.

e. Impacts to important wetlands must be minimized to the satisfaction of the Director, in consultation with OHMP and ADEC. The Director will consider whether facilities are sited in the least sensitive areas. Further, all activities within wetlands require permission from the US Army Corps of Engineers (see Lessee Advisories).

f. Exploration facilities, including exploration roads and pads, must be temporary and must be constructed of ice unless the Director determines that no feasible and prudent alternative exists. Re-use of abandoned gravel structures may be permitted on a case-by-case basis by the Director, after consultation with the director, DMLW, and OHMP. Approval for use of abandoned structures will depend on the extent and method of restoration needed to return these structures to a usable condition.

g. Pipelines must utilize existing transportation corridors where conditions permit. Pipelines must be designed to facilitate the containment and cleanup of spilled fluids. Where feasible and prudent, onshore pipelines must be located on the upslope side of roadways and construction pads, unless the Director, DMLW, determines that an alternative site is environmentally acceptable. Wherever possible, onshore pipelines must utilize existing transportation corridors and be buried where soil and geophysical conditions permit. All pipelines, including flow and gathering lines, must be designed,

constructed and maintained to assure integrity against climatic conditions, geophysical hazards, corrosion and other hazards as determined on a case-by-case basis.

h. Pipelines shall be designed and constructed to avoid significant alteration of caribou and other large ungulate movement and migration patterns. At a minimum, above ground pipelines shall be elevated seven feet, as measured from the ground to the bottom of the pipe, except where the pipeline intersects a road, pad, or a ramp installed to facilitate wildlife passage. Lessees shall consider increased snow depth in the sale area in relation to pipe elevation to ensure adequate clearance for wildlife. ADNR may, after consultation with OHMP, require additional measures to mitigate impacts to wildlife movement and migration.

i. i. The state of Alaska discourages the use of continuous-fill causeways. Environmentally preferred alternatives for field development include use of buried pipelines, onshore directional drilling, or elevated structures. Approved causeways must 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.

   ii. Causeways and docks shall not be located in river mouths or deltas. Artificial gravel islands and bottom founded structures shall not be located in river mouths or active stream channels on river deltas, except as provided for in (iii).

   iii. 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 OHMP, ADEC, and the NSB determines that a causeway or other structures are necessary for field development and that no feasible and prudent alternatives exist. A monitoring program may be required to address the objectives of water quality and free passage of fish, and mitigation shall be required where significant deviation from objectives occurs. (See also Lessee Advisories regarding U.S. Army Corps of Engineers requirements.)

j. Dismantlement, Removal and Rehabilitation (DR&R): 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 Director, unless the Director, in consultation with DMLW, OHMP, ADEC, NSB, and any non-state surface owner, determines that such removal and rehabilitation is not in the state's interest.

k. Gravel mining sites required for exploration and development activities will be restricted to the minimum necessary to develop the field efficiently and with minimal environmental damage. Where feasible and prudent, gravel sites must be designed and constructed to function as water reservoirs for future use. Gravel mine sites required for exploration activities must not be located within an active floodplain of a watercourse unless the director, DMLW, after consultation with OHMP, determines that there is no feasible and prudent alternative, or that a floodplain site would enhance fish and wildlife habitat after mining operations are completed and the site is closed.

   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 OHMP offices.

2. Fish and Wildlife Habitat

a. Detonation of explosives within or in proximity to fish bearing waters must not produce instantaneous pressure changes that exceed 2.7 pounds per square inch in the swim bladder of a fish. Detonation of explosives within or in close proximity to a fish spawning bed during the early stages of egg incubation must not produce a peak particle velocity greater than 0.5 inches per second. Blasting criteria have been developed by ADF&G and are available upon request from ADF&G or OHMP. The location of known fish bearing waters within the project area can be obtained from the OHMP.

   The lessee will consult with the NSB prior to proposing the use of explosives for seismic surveys. The Director may approve the use of explosives for seismic surveys after consultation with the NSB.

b. Removal of water from fish bearing rivers, streams and natural lakes shall be subject to prior written approval by DMLW and OHMP.

c. Water intake pipes used to remove water from fish bearing waterbodies must be surrounded by a screened enclosure to prevent fish entrainment and impingement. Screen mesh size shall be no greater than 1 mm (0.04 inches), unless another size has been approved by OHMP. The maximum water velocity at the surface of the screen enclosure may be no greater than 0.1 foot per second, unless an alternative velocity has been approved by OHMP.

d. Removal of snow from fish bearing rivers, streams and natural lakes shall be subject to prior written approval by OHMP. Compaction of snow cover overlying fish bearing waterbodies is prohibited except for approved crossings. If ice thickness is not sufficient to facilitate a crossing, ice or snow bridges may be required.

e. Bears:

   i. Before commencement of any activities, lessees shall consult with ADF&G (907-459-7213) to identify the locations of known brown bear den sites that are occupied in the season of proposed activities. Exploration and production activities must not be conducted within one-half mile of occupied brown bear dens, unless alternative mitigation measures are approved by ADF&G. A lessee who encounters an occupied brown bear den not previously identified by ADF&G must report it to the Division of Wildlife Conservation, ADF&G, within 24 hours. Mobile activities shall avoid such discovered occupied dens by one-half mile unless alternative mitigation measures are approved by the Director, with concurrence from ADF&G. Non-mobile facilities will not be required to relocate.

   ii. Before commencement of any activities, lessees shall consult with the USFWS (907-786-3800) to identify the locations of known polar bear den sites. Operations must avoid known polar bear dens by one mile. A lessee who encounters an occupied polar bear den not previously identified by USFWS must report it to the USFWS within 24 hours and subsequently avoid the new den by one mile. If a polar bear should den within an existing development, off-site activities shall be restricted to minimize disturbance.

   iii. For projects in proximity to areas frequented by bears, lessees are required to prepare and implement a human-bear interaction plan designed to minimize conflicts between bears and humans. The plan should 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;
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.

f. Permanent, staffed facilities must be sited to the extent feasible and prudent outside identified brant, white-fronted goose, snow goose, tundra swan, king eider, common eider, Steller's eider, spectacled eider, and yellow-billed loon nesting and brood rearing areas.

g. Lessees must comply with USFWS and NMFS requirements regarding the Endangered Species Act, Migratory Bird Treaty Act and the Marine Mammals Protection Act (See Lessees Advisories).

3. Subsistence, Commercial and Sport Harvest Activities

a. i. Exploration, development and production operations shall be conducted in a manner that prevents unreasonable conflicts between lease-related activities and subsistence activities. Lease-related use will be restricted when the Director determines it is necessary to prevent conflicts with local subsistence, commercial and sport harvest activities. In enforcing this term DO&G will consult with other agencies, the affected local borough(s) and the public to identify and avoid potential conflicts that are brought to the division's attention both in the planning and operational phases of lease-related activities. In order to avoid conflicts with subsistence, commercial and sport harvest activities, restrictions may include alternative site selection, requiring directional drilling, seasonal drilling restrictions, and other technologies deemed appropriate by the Director.

ii. Prior to submitting a plan of operations for either onshore or offshore activities which have the potential to disrupt subsistence activities, the lessee shall consult with the potentially affected subsistence communities and the NSB (collectively "parties") to discuss the siting, timing, and methods of proposed operations and safeguards or mitigating measures which could be implemented by the operator to prevent unreasonable conflicts. The parties shall 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 shall make reasonable efforts to assure that exploration, development, and production activities are compatible with subsistence hunting and fishing activities and will not result in unreasonable interference with subsistence harvests.

iii. A discussion of agreements reached or not reached during the consultation process and any plans for continued consultation shall be included in the plan of operations. The lessee shall identify who participated in the consultation and send copies of the plan to participating communities and the NSB when it is submitted to the division.

iv. If the parties cannot agree, then any of them may request the Commissioner of DNR or his/her designee to intercede. The commissioner may assemble the parties or take other measures to resolve conflicts among the parties.

v. The lessee shall notify the Director of all concerns expressed by subsistence hunters during operations and of steps taken to address such concerns.

b. Traditional and customary access to subsistence areas shall be maintained unless reasonable alternative access is provided to subsistence users. “Reasonable access” is access using means generally available to subsistence users.

4. Fuel, Hazardous Substances and Waste

a. Secondary containment shall be provided for the storage of fuel or hazardous substances.

b. Containers with an aggregate storage capacity of greater than 55 gallons which contain fuel or hazardous substances shall not be stored within 100 feet of a waterbody, or within 1,500 feet of a current surface drinking water source.

c. During equipment storage or maintenance, the site shall 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, or by creating an area for storage or maintenance using an impermeable liner or other suitable containment mechanism.

d. During fuel or hazardous substance transfer, secondary containment or a surface liner must be 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 five gallons, must be on hand during any transfer or handling of fuel or hazardous substances. Trained personnel shall attend transfer operations at all times.

e. Vehicle refueling shall 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.

f. All independent fuel and hazardous substance containers shall be marked with the contents and the lessee’s or contractor’s name using paint or a permanent label.

g. A fresh water aquifer monitoring well, and quarterly water quality monitoring, is required down gradient of a permanent storage facility, unless alternative acceptable technology is approved by ADEC.

h. Waste from operations must be 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. (See Lessee Advisories, ADEC.)

i. New solid waste disposal sites, other than for drilling waste, will not be approved or located on state property during the exploration phase of lease activities. Disposal sites may be provided for drilling waste if the facility complies with 18 AAC 60. (See Lessee Advisories, ADEC.)

j. The preferred method for disposal of muds and cuttings from oil and gas activities is by underground injection. Drilling mud and cuttings cannot be discharged into lakes, streams, rivers, or important wetlands. On pad temporary cuttings storage will be allowed as necessary to facilitate annular injection and/or backhaul operations. Impermeable lining and diking, or equivalent measures, will be required for reserve pits. Surface discharge of drilling muds and cuttings into reserve pits shall be allowed only when the Director, in consultation with OHMP, determines that alternative disposal methods are not feasible and prudent. Injection of non-hazardous oilfield wastes is regulated by AOGCC through its Underground Injection Control (UIC) Program for oil and gas wells. See also Mitigation Measure 8.a.vi.

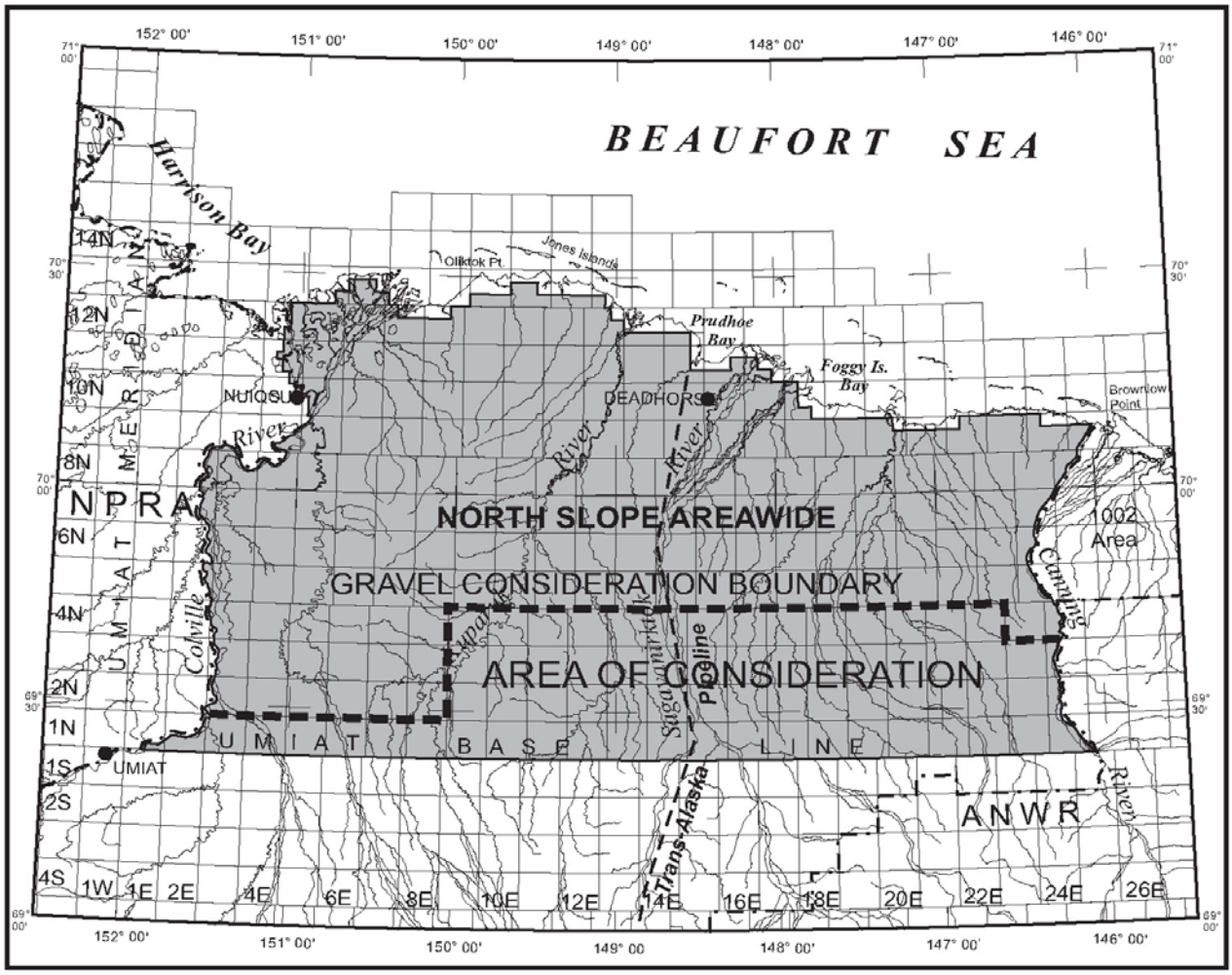
k. Proper disposal of garbage and putrescible waste is essential to minimize attraction of wildlife. The lessee must use the most appropriate and efficient method to achieve this goal. The primary method of garbage and putrescible waste is prompt, on-site incineration in compliance with state of Alaska 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 must be achieved unless safety considerations prevent it.

5. Access

a. Except for approved off-road travel, 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. Summertime off-road travel across tundra and wetlands may be authorized subject to time periods and vehicle types approved by DMLW. Exceptions may be granted by the director of the DMLW, and the Director, if an emergency condition exists; or, if it is determined, after consulting with OHMP that travel can be accomplished without damaging vegetation or the ground surface. Exceptions, including the use of gravel, may also be granted on a site specific basis, if it is determined, after consulting with OHMP and DMLW, that no feasible and prudent alternatives exist for constructing an exploration road or pad in the area south of the boundary described below and depicted in the map below:

Beginning at the NPR-A boundary, from the northeast corner of T 1N, R 2E,

- east to the northwest corner of T 1N, R 9E, then
- north to the northwest corner of T 4N, R 9E, then
- east to the northwest corner of T 4N, R 23E, then
- south to the southwest corner of T 4N, R 23E, and then
- east along the top of T 3N to the ANWR boundary.



b. 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 facilities. Areas of restricted access must be identified in the plan of operations. Lease facilities and operations shall not be located so as to block access to or along navigable or public waters as defined in AS 38.05.

6. Prehistoric, Historic, and Archeological Sites

a. Prior to the construction or placement of any structure, road, or facility resulting from exploration, development, or production activities, the lessee must conduct an inventory of prehistoric, historic, and archeological sites within the area affected by an activity. The inventory must include consideration of literature provided by the NSB, nearby communities, Native organizations, and local residents; documentation of oral history regarding prehistoric and historic uses of such sites; evidence of consultation with the Alaska Heritage Resources Survey and the National Register of Historic Places; and site surveys. The inventory must also include a detailed analysis of the effects that might result from the activity.

b. The inventory of prehistoric, historic, and archeological sites must be submitted to the Director, and to SHPO 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 SHPO and the NSB, will direct the lessee as to the course of action to take to avoid or minimize adverse effects.

c. If a site, structure, or object of prehistoric, historic, or archaeological significance is discovered during lease operations, the lessee must report the discovery to the Director as soon as possible. The lessee must make reasonable efforts to preserve and protect the discovered site, structure, or object from damage until the Director, after consultation with the SHPO and the NSB, has directed the lessee as to the course of action to take for its preservation.

7. Local Hire, Communication, and Training

a. Lessees are encouraged to employ local and Alaska residents and contractors, to the extent they are available and qualified, for work performed in the lease area. Lessees shall submit, as part of the plan of operations, a proposal detailing the means by which the lessee will comply with the measure. The proposal must include a description of the operator's plans for partnering with local communities to recruit, hire and train local and Alaska residents and contractors. The lessee is encouraged, in formulating this proposal, to coordinate with employment and training services offered by the State of Alaska and local communities to train and recruit employees from local communities.

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.

c. A plan of operations application must include a training program for all personnel including contractors and subcontractors. The program must be designed to inform each person working on the project of environmental, social, and cultural concerns that relate to that person's job. The program must use methods to ensure that personnel understand and use techniques necessary to preserve geological, archeological, and biological resources. In addition, the program must be designed to help personnel increase their sensitivity and understanding of community values, customs, and lifestyles in areas where they will be operating.

8. Definitions

a. In this document:

   i. "Facilities" means 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;
   ii. "Feasible and prudent" means consistent with sound engineering practice and not causing environmental, social, or economic costs that outweigh the public benefit to be derived from compliance with the standard;
   iii. "Important wetlands" means 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;
   iv. "Minimize" means 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;
   v. "Plan of operations" means a lease Plan of operations under 11 AAC 83.158 and a unit Plan of operations under 11 AAC 83.346;

vi. "Secondary containment" means an impermeable diked area or portable impermeable containment structure capable of containing 110 percent of the volume of the largest independent container plus 12 inches of freeboard. Double walled tanks do not qualify as Secondary Containment unless an exception is granted for a particular tank.
vii. "Temporary" means no more than 12 months.

B. Lessee Advisories

Lessee Advisories are intended to alert lessees to possible additional restrictions that may be imposed at the permitting stage of a proposed project or activity in certain leasehold areas, especially where entities other than DO&G have permitting authority.

1. DNR/OHMP

a. Under the provisions of Title 41 of the Alaska Statutes, the measures listed below may be imposed by OHMP below the ordinary high water mark to protect designated anadromous fish-bearing lakes and streams and to ensure the free and efficient passage of fish in all fish-bearing water bodies. Exceptions to these requirements, including exceptions for the use of spill containment and recovery equipment, may be allowed on a case-by-case basis. Specific information on the location of anadromous water bodies in and near the area may be obtained from OHMP.

   i. Alteration of riverbanks may be prohibited.
   ii. The operation of equipment, excluding boats, in open water areas of rivers and streams may be prohibited.
   iii. Bridges or non-bottom founded structures may be required for crossing fish spawning and important rearing habitats.
   iv. Culverts or other stream crossing structures must be designed, installed, and maintained to provide free and efficient passage of fish.

b. Removal of water from fish-bearing water bodies requires prior written approval by DMLW and OHMP.

c. The Director, in consultation with OHMP, may impose 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.

d. The Director, in consultation with OHMP, may impose seasonal restrictions on activities located in and adjacent to important waterfowl and shorebird habitat during the plan of operations approval stage.

e. To minimize impacts on Dolly Varden (arctic char) overwintering areas, permanent, staffed facilities must be sited to the extent feasible and prudent outside identified Dolly Varden overwintering areas.

f. Lessees are advised that certain areas are especially valuable for their concentrations of marine birds, marine mammals, fishes, or other biological resources; cultural resources; and for their importance to subsistence harvest activities. The following areas of special biological and cultural sensitivity must be considered when developing plans of operation: the Canning River Delta; the Colville River Delta; and the Sagavanirktok River Delta.

g. Lessees are encouraged in planning and design activities to consider the recommendations for oil field design and operations contained in the final report to the Alaska Caribou Steering Committee: Cronin, M. et al, 1994. "Mitigation of the Effects of Oil Field Development and Transportation Corridors on Caribou." LGL Alaska Research Associates, Inc., July.

h. Lessees must comply with the provisions of Appendix B of the "Yellow-billed Loon Conservation Agreement", dated July 31, 2006 between the ADF&G, ADNR, USFWS, BLM and NPS.

2. DNR/OPMP

a. Pursuant to Alaska Statutes, applicants for lease are required to comply with all policies and enforceable standards of the Alaska Coastal Management Program, including the District Coastal Management Plans.

3. ADEC

a. Pursuant to AS 46.04.030, lessees are required to have an approved oil discharge prevention and contingency plan (C-Plan) prior to commencing operations. The plan must include a response action plan to describe how a spill response would occur, a prevention plan to describe the spill prevention measures taken at the facility, and supplemental information to provide background and verification information.

b. Air Pollution Emissions:

   i. Because of the state's interest in clean air, lessees are encouraged to adopt conservation measures to reduce hydrocarbon vapor emissions, especially methane because it is a greenhouse gas. Wasting natural gas is contrary to state law implemented by the Alaska Oil and Gas Conservation Commission.
   ii. Lessees are advised that new processing facilities containing gas turbine engines may require an air permit under 18 AAC 50.302, including submitting a Best Available Control Technology (BACT) analysis for review under Part C of the Clean Air Act. Any BACT analysis submitted for gas turbine engines must include a full analysis of: 1) the installation of combined cycle turbines and / or use of co-generation applications; and 2) the potential treatment and use of produced water for water or steam injection into turbines to reduce formation of nitrogen oxides. Historical assumptions about the feasibility, economics, and energy impacts of these technologies are no longer generally valid.
   iii. The state has a growing interest in quantifying the emissions of greenhouse gases from any proposed oil and gas production facility. DEC may require that emission calculations of greenhouse gases be provided at the same time as the calculations of traditionally regulated air pollutants when a lessee is applying for an Air Quality construction permit. Lessees are encouraged to adopt facility designs that minimize or eliminate greenhouse gas emissions.
   iv. The state recognizes that in the long run sources of energy other than oil and gas will be needed. Lessee participation in conducting research on alternative energy sources is appreciated.

c. Wastewater disposal (per Clean Water Act, 33 U.S.C. 1251 *et seq*):

   i. Unless authorized by NPDES or state permit, disposal of wastewater into freshwater bodies, including Class III, IV, VI and VIII wetlands, is prohibited.
   ii. Unless authorized by an ADEC permit, surface discharge of reserve pit fluids and produced waters is prohibited.
   iii. If authorized by ADEC and EPA, disposal of produced waters in upland areas, including wetlands, will be by subsurface disposal techniques. ADEC may permit alternate disposal methods if the lessee demonstrates that subsurface disposal is not feasible or prudent.
   iv. Discharge of produced waters into open or ice-covered marine waters of less than ten meters in depth is prohibited. The commissioner, ADEC, may approve discharges into waters greater than ten meters in depth based on a case-by-case review of environmental factors and consistency with the conditions of a state certified development and production phase NPDES permit issued for the sale area.

4. ADLWD

a. The Lessee shall facilitate Alaska resident hire monitoring by reporting project wages on a quarterly basis for each individual employed by the Lessee in the lease area, through electronic unemployment insurance reporting, and by requiring the same of the lessee's contractors and subcontractors.

5. USCOE

a. Any activity involving wetland-related dredge or fill activities, or construction in navigable waters of the United States, requires a permit from the USCOE.

6. USFWS

a. The Lessee is advised that the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.) protects endangered and threatened species and candidate species for listing that may occur in the lease sale area. Lessees shall comply with the Recommended Protection Measures developed by the USFWS to ensure adequate protection for all endangered, threatened and candidate species.

b. Lessees are advised of the need to comply with the Migratory Bird Treaty Act (MBTA)(16 U.S.C. 703) which is administered by the U.S. Fish and Wildlife Service. Under the Migratory Bird Treaty Act, it is illegal to "take" migratory birds, their eggs, feathers or nests. "Take" is defined (50 CFR 10.12) to include "pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting." The MBTA does not distinguish between "intentional" and "unintentional" take. Migratory birds include songbirds, waterfowl, shorebirds, and raptors, In Alaska, all native birds except grouse and ptarmigan (which are protected by the State of Alaska) are protected under the MBTA.

   In order to ensure compliance with the MBTA, it is recommended that Lessees survey the project area prior to construction, vegetation clearing, excavation, discharging fill or other activities which create disturbance, and confirm there are no active migratory bird nests. It is recommended Lessees contact the U.S. Fish and Wildlife Service for assistance and guidance on survey needs, and other compliance issues under the Migratory Bird Treaty Act. While the Service can recommend methods (such as surveys and timing windows) to avoid unintentional take, responsibility for compliance with the MBTA rests with Lessees.

c. Lessees are advised that they must comply with the provisions of the Marine Mammal Protection Act of 1972, as amended (16 USC 1361-1407). USFWS shares authority for marine mammals with the NMFS.

d. Peregrine falcon nesting sites are known to occur in the sale area. Lessees are advised that disturbing a peregrine falcon nest violates federal law. Lessees are required to comply with the federal resource recovery plan for the arctic peregrine falcon.

7. NMFS

a. Lessees are advised that they must comply with the provisions of the Marine Mammal Protection Act of 1972, as amended (16 USC 1361-1407). NMFS shares authority for marine mammals with the USFWS.

8. NSB

a. Lessees are advised that the NSB Assembly has adopted a comprehensive plan and land management regulations under Title 29 of the Alaska Statutes (AS 29.40.020-040). The NSB regulations require borough approval for all proposed uses, development and master plans. The (North Slope Borough Coastal Management Plan) NSBCMP policies are included as part of the NSB zoning regulations (Title 19) and all NSB permit approvals will require the proposal to be substantially consistent with these policies.

   Restricting access to and use of fish camps and other subsistence use areas defined in the NSB Traditional Land Use Inventory, may violate NSBCMP and NSBMC subsistence harvest protection and land use regulations. Lessees are advised to consult with the NSB Planning Department and local communities during planning of operations.

b. Community Participation in Operations Planning:

   Lessees are encouraged to bring one or more residents of communities in the area of operations into their planning process. Local communities have a unique understanding of their environment and community activities. Involving local community residents in the earliest stages of the planning process for oil and gas activities can be beneficial to the industry and to the community. Community representation on management teams developing plans of operation, oil spill contingency plans, and other permit applications can help communities understand permitting obligations and help industry to understand community values and expectations for oil and gas operations being conducted in and around their area.

9. Aircraft Restrictions

In order to protect species that are sensitive to noise or movement, horizontal and vertical buffers will be required, consistent with aircraft, vehicle and vessel operations regulated by NSB Code ß19.70.050(I)(1) which codifies NSBCMP policy 2.4.4.(a). Lessees are encouraged to apply the following provisions governing aircraft operations in and near the sale area:

a. From June 1 to August 31, aircraft overflights must avoid identified brant, white fronted goose, tundra swan, king eider, common eider, and yellow-billed loon nesting and brood rearing habitat, and from August 15 to September 15, the fall staging areas for geese, tundra swans, and shorebirds, by an altitude of 1,500 feet, or a lateral distance of one mile.

b. To the extent feasible and prudent, all aircraft should maintain an altitude greater than 1,500 feet or a lateral distance of one mile, excluding takeoffs and landings, from caribou and muskoxen concentrations. A concentration means numbers of animals in excess of the general density of those animals found in the area.

c. Human safety will take precedence over flight restrictions.

Appendix B: Sample Competitive Oil and Gas Lease

Competitive Oil and Gas Lease
Form #DOG 200204 (rev. 10/2003)

STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES

Competitive Oil and Gas Lease **ADL No.**

THIS LEASE is entered into , between the State of Alaska, "the state," and

"the lessee," whether one or more, whose sole address for purposes of notification is under Paragraph 25.

In consideration of the cash payment made by the lessee to the state, which payment includes the first year's rental and any required cash bonus, and subject to the provisions of this lease, including applicable stipulation(s) and mitigating measures attached to this lease and by this reference incorporated in this lease, the state and the lessee agree as follows:

1. GRANT. (a) Subject to the provisions in this lease, the state grants and leases to the lessee, without warranty, the exclusive right to drill for, extract, remove, clean, process, and dispose of oil, gas, and associated substances in or under the following described tract of land:

containing approximately acres, more or less (referred to in this lease as the "leased area"); the nonexclusive right to conduct within the leased area geological and geophysical exploration for oil, gas, and associated substances; and the nonexclusive right to install pipelines and build structures on the leased area to find, produce, save, store, treat, process, transport, take care of, and market all oil, gas, and associated substances and to house and board employees in its operations on the leased area. The rights granted by this lease are to be exercised in a manner which will not unreasonably interfere with the rights of any permittee, lessee or grantee of the state consistent with the principle of reasonable concurrent uses as set out in Article VIII, Section 8 of the Alaska Constitution.

(b) For the purposes of this lease, the leased area contains the legal subdivisions as shown on the attached plat marked Exhibit A.

(c) If the leased area is described by protracted legal subdivisions and, after the effective date of this lease, the leased area is surveyed under the public land rectangular system, the boundaries of the leased area are those established by that survey, when approved, subject, however, to the provisions of applicable regulations relating to those surveys. If for any reason the leased area includes more acreage than the maximum permitted under applicable law (including the "rule of approximation" authorized in AS 38.05.145 and defined in AS 38.05.965 (18)), this lease is not void and the acreage included in the leased area must be reduced to the permitted maximum. If the state determines that the leased area exceeds the permitted acreage and notifies the lessee in writing of the amount of acreage that must be eliminated, the lessee has 60 days after that notice to surrender one or more legal subdivisions included in the leased area comprising at least the amount of acreage that must be eliminated. Any subdivision surrendered must be located on the perimeter of the leased area as originally described. If a surrender is not filed within 60 days, the state may terminate this lease as to the acreage that must be eliminated by mailing notice of the termination to the lessee describing the subdivision eliminated.

(d) If the State of Alaska's ownership interest in the oil, gas, and associated substances in the leased area is less than an entire and undivided interest, the grant under this lease is effective only as to the state's interest in that oil, gas, and associated substances, and the royalties and rentals provided in this lease must be paid to the state in the proportion that the state's interest bears to the entire undivided fee.

(e) The state makes no representations or warranties, express or implied, as to title, or access to, or quiet enjoyment of, the leased area. The state is not liable to the lessee for any deficiency in title to the leased area, nor is the lessee or any successor in interest to the lessee entitled to any refund due to deficiency in title for any rentals, bonuses, or royalties paid under this lease.

2. RESERVED RIGHTS. (a) The state, for itself and others, reserves all rights not expressly granted to the lessee by this lease. These reserved rights include, but are not limited to:

(1) the right to explore for oil, gas, and associated substances by geological and geophysical means;

(2) the right to explore for, develop, and remove natural resources other than oil, gas, and associated substances on or from the leased area;

(3) the right to establish or grant easements and rights-of-way for any lawful purpose, including without limitation for shafts and tunnels necessary or appropriate for the working of the leased area or other lands for natural resources other than oil, gas, and associated substances;

(4) the right to dispose of land within the leased area for well sites and well bores of wells drilled from or through the leased area to explore for or produce oil, gas, and associated substances in and from lands not within the leased area; and

(5) the right otherwise to manage and dispose of the surface of the leased area or interests in that land by grant, lease, permit, or otherwise to third parties.

(b) The rights reserved may be exercised by the state, or by any other person or entity acting under authority of the state, in any manner that does not unreasonably interfere with or endanger the lessee's operations under this lease.

3. TERM. This lease is issued for an initial primary term of 7 years from the effective date of this lease. The term may be extended as provided in Paragraph 4 below.

4. EXTENSION. (a) This lease will be extended automatically if and for so long as oil or gas is produced in paying quantities from the leased area.

(b) This lease will be extended automatically if it is committed to a unit agreement approved or prescribed by the state, and will remain in effect for so long as it remains committed to that unit agreement.

(c) (1) If the drilling of a well whose bottom hole location is in the leased area has commenced as of the date on which the lease otherwise would expire and is continued with reasonable diligence, this lease will continue in effect until 90 days after cessation of that drilling and for so long as oil or gas is produced in paying quantities from the leased area.

(2) If oil or gas in paying quantities is produced from the leased area, and if that production ceases at any time, this lease will not terminate if drilling or reworking operations are commenced on the leased area within six months after cessation of production and are prosecuted with reasonable diligence; if those drilling or reworking operations result in the production of oil or gas, this lease will remain in effect for so long as oil or gas is produced in paying quantities from the leased area.

(d) If there is a well capable of producing oil or gas in paying quantities on the leased area, this lease will not expire because the lessee fails to produce that oil or gas unless the state gives notice to the lessee, allowing a reasonable time, which will not be less than six months after notice, to place the well into production, and the lessee fails

to do so. If production is established within the time allowed, this lease is extended only for so long as oil or gas is produced in paying quantities from the leased area.

(e) If the state directs or approves in writing a suspension of all operations on or production from the leased area (except for a suspension necessitated by the lessee's negligence), or if a suspension of all operations on or production from the leased area has been ordered under federal, state, or local law, the lessee's obligation to comply with any express or implied provision of this lease requiring operations or production will be suspended, but not voided, and the lessee shall not be liable for damages for failure to comply with that provision. If the suspension occurs before the expiration of the primary term, the primary term will be extended at the end of the period of the suspension by adding the period of time lost under the primary term because of the suspension. If the suspension occurs during an extension of the primary term under this paragraph, upon removal of that suspension, the lessee will have a reasonable time, which will not be less than six months after notice that the suspension has been removed, to resume operations or production. For the purposes of this subparagraph, any suspension of operations or production specifically required or imposed as a term of sale or by any stipulation made a part of this lease will not be considered a suspension ordered by law.

(f) If the state determines that the lessee has been prevented by force majeure, after efforts made in good faith, from performing any act that would extend the lease beyond the primary term, this lease will not expire during the period of force majeure. If the force majeure occurs before the expiration of the primary term, the primary term will be extended at the end of the period of force majeure by adding the period of time lost under the primary term because of the force majeure. If the force majeure occurs during an extension of the primary term under this paragraph, this lease will not expire during the period of force majeure plus a reasonable time after that period, which will not be less than 60 days, for the lessee to resume operations or production.

(g) Nothing in subparagraphs (e) or (f) suspends the obligation to pay royalties or other production or profit-based payments to the state from operations on the leased area that are not affected by any suspension or force majeure, or suspends the obligation to pay rentals.

5. RENTALS. (a) The lessee shall pay annual rental to the state in accordance with the following rental schedule:

(1) For the first year, $1.00 per acre or fraction of an acre;
(2) For the second year, $1.50 per acre or fraction of an acre;
(3) For the third year, $2.00 per acre or fraction of an acre;
(4) For the fourth year, $2.50 per acre or fraction of an acre;
(5) For the fifth year and following years, $3.00 per acre or fraction of an acre; provided that the state may increase the annual rental rate as provided by law upon extension of this lease beyond the primary term.

(b) Annual rental paid in advance is a credit on the royalty or net profit share due under this lease for that year.

(c) The lessee shall pay the annual rental to the State of Alaska (or any depository designated by the state with at least 60 days notice to the lessee) in advance, on or before the annual anniversary date of this lease. The state is not required to give notice that rentals are due by billing the lessee. If the state's (or depository's) office is not open for business on the annual anniversary date of this lease, the time for payment is extended to include the next day on which that office is open for business. If the annual rental is not paid timely, this lease automatically terminates as to both parties at 11:59 p.m., Alaska Standard Time, on the date by which the rental payment was to have been made.

6. RECORDS. The lessee shall keep and have in its possession books and records showing the development and production (including records of development and production expenses) and disposition (including records of sale prices, volumes, and purchasers) of all oil, gas, and associated substances produced from the leased area. The lessee shall permit the State of Alaska or its agents to examine these books and records at all reasonable times. Upon request by the state, the lessee's books and records shall be made available to the state at the state office designated by the state. These books and records of development, production, and disposition must employ methods and techniques that will ensure the most accurate figures reasonably available without requiring the lessee to provide separate tankage or meters for each well. The lessee shall use generally accepted accounting procedures consistently applied.

7. APPORTIONMENT OF ROYALTY FROM APPROVED UNIT. The landowners' royalty share of the unit production allocated to each separately owned tract shall be regarded as royalty to be distributed to and among, or the proceeds of it paid to, the landowners, free and clear of all unit expense and free of any lien for it. Under this provision, the state's royalty share of any unit production allocated to the leased area will be regarded as royalty to be distributed to, or the proceeds of it paid to, the state, free and clear of all unit expenses (and any portion of those expenses incurred away from the unit area), including, but not limited to, expenses for separating, cleaning, dehydration, gathering,

saltwater disposal, and preparing oil, gas, or associated substances for transportation off the unit area, and free of any lien for them.

8. PAYMENTS. All payments to the State of Alaska under this lease must be made payable to the state in the manner directed by the state, and unless otherwise specified, must be tendered to the state at:

DEPARTMENT OF NATURAL RESOURCES
550 WEST 7TH AVENUE, SUITE 1410
ANCHORAGE, ALASKA 99501-3561
ATTENTION: FINANCIAL SERVICES SECTION

or in person at either of the Department's Public Information Centers located at

550 W. 7th Ave., Suite 1260 Anchorage, Alaska	3700 Airport Way Fairbanks, Alaska

or to any depository designated by the state with at least 60 days notice to the lessee.

9. PLAN OF OPERATIONS. (a) Except as provided in (b) of this section, a plan of operations for all or part of the leased area must be approved by the commissioner before any operations may be undertaken on or in the leased area.

(b) A plan of operations is not required for:

(1) activities that would not require a land use permit; or

(2) operations undertaken under an approved unit plan of operations.

(c) Before undertaking operations on or in the leased area, the lessee shall provide for full payment of all damages sustained by the owner of the surface estate as well as by the surface owner's lessees and permittees, by reason of entering the land.

(d) An application for approval of a plan of operations must contain sufficient information, based on data reasonably available at the time the plan is submitted for approval, for the commissioner to determine the surface use requirements and impacts directly associated with the proposed operations. An application must include statements and maps or drawings setting out the following:

(1) the sequence and schedule of the operations to be conducted on or in the leased area, including the date operations are proposed to begin and their proposed duration;

(2) projected use requirements directly associated with the proposed operations, including the location and design of well sites, material sites, water supplies, solid waste sites, buildings, roads, utilities, airstrips, and all other facilities and equipment necessary to conduct the proposed operations;

(3) plans for rehabilitation of the affected leased area after completion of operations or phases of those operations; and

(4) a description of operating procedures designed to prevent or minimize adverse effects on other natural resources and other uses of the leased area and adjacent areas, including fish and wildlife habitats, historic and archeological sites, and public use areas.

(e) In approving a lease plan of operations or an amendment of a plan, the commissioner will require amendments that the commissioner determines necessary to protect the state's interest. The commissioner will not require an amendment that would be inconsistent with the terms of sale under which the lease was obtained, or with the terms of the lease itself, or which would deprive the lessee of reasonable use of the leasehold interest.

(f) The lessee may, with the approval of the commissioner, amend an approved plan of operations.

(g) Upon completion of operations, the lessee shall inspect the area of operations and submit a report indicating the completion date of operations and stating any noncompliance of which the lessee knows, or should reasonably know, with requirements imposed as a condition of approval of the plan.

(h) In submitting a proposed plan of operations for approval, the lessee shall provide ten copies of the plan if activities proposed are within the coastal zone, and five copies if activities proposed are not within the coastal zone.

10. PLAN OF DEVELOPMENT. (a) Except as provided in subparagraph (d) below, within 12 months after certification of a well capable of producing oil, gas, or associated substances in paying quantities, the lessee shall file two copies of an application for approval by the state of an initial plan of development that must describe the lessee's plans for developing the leased area. No development of the leased area may occur until a plan of development has been approved by the state.

(b) The plan of development must be revised, updated, and submitted to the state for approval annually before or on the anniversary date of the previously approved plan. If no changes from an approved plan are contemplated for the following year, a statement to that effect must be filed for approval in lieu of the required revision and update.

(c) The lessee may, with the approval of the state, subsequently modify an approved plan of development.

(d) If the leased area is included in an approved unit, the lessee will not be required to submit a separate lease plan of development for unit activities.

11. INFORMATION ACQUIRED FROM OPERATIONS. (a) The lessee shall submit to the state all geological, geophysical and engineering data and analyses obtained from the lease within 30 days following the completion of a well. The lessee shall submit to the state data and analyses acquired subsequent to well completion within 30 days following acquisition of that data. The state may waive receipt of operational data from some development, service or injection wells. The state will inform the operator of the waiver prior to well completion. The lessee shall submit the data and analyses to the Division of Oil and Gas, Department of Natural Resources, at the location specified in paragraph 25 of this lease. The data and analyses shall include the following:

(1) a copy of the completion report (AOGCC form 10-407) with an attached well summary, including daily drilling reports, formation tops encountered, a full synopsis of drillstem and formation testing data, an identification of zones of abnormal pressure, oil and gas shows and cored intervals;

(2) latitudinal and longitudinal coordinates for the completed surface and bottom hole locations;

(3) a copy of the permit to drill (AOGCC form 10-401 only, additional documentation not required) and the survey plat of the well location;

(4) a paper copy (no sepia copies) of all final 2-inch open hole and cased hole logs, including measured depth and true-vertical depth versions, specialty logs (such as Schlumberger's cyberlook, formation microscanners and dipmeter logs), composite mud or lithology log and report, measured-while-drilling (MWD) and logged-while-drilling (LWD) logs, velocity and directional surveys;

(5) a digital version of well logs in LAS, LIS or ASCII format on IBM format floppy disks, a digital version of velocity surveys in SEG Y format, a digital version of directional surveys in ASCII format (other formats may be acceptable upon agreement with the Division of Oil and Gas); and

(6) a paper copy of all available well analyses, including geochemical analyses, core analyses (porosity, permeability, capillary pressure, photos, and descriptions), paleontologic and palynologic analyses, thermal maturation analyses, pressure build up analyses, and fluid PVT analyses (an ASCII format digital version of the above information shall also be submitted, if available). The state may require the lessee to submit additional information in accordance with the applicable statutes and regulations in effect at the time of the completion date of the well.

(b) Any information submitted to the state by the lessee in connection with this lease will be available at all times for use by the state and its agents. The state will keep information confidential as provided in AS 38.05.035(a)(9) and its applicable regulations. In accordance with AS 38.05.035(a)(9)(C), in order for geological, geophysical and engineering information submitted under paragraph 11(a) of this lease to be held confidential, the lessee must request confidentiality at the time the information is submitted. The information must be marked **CONFIDENTIAL.**

12. DIRECTIONAL DRILLING. This lease may be maintained in effect by directional wells whose bottom hole location is on the leased area but that are drilled from locations on other lands not covered by this lease. In those circumstances, drilling will be considered to have commenced on the leased area when actual drilling is commenced on those other lands for the purpose of directionally drilling into the leased area. Production of oil or gas from the leased area through any directional well surfaced on those other lands, or drilling or reworking of that directional well, will be considered production or drilling or reworking operations on the leased area for all purposes of this lease. Nothing contained in this paragraph is intended or will be construed as granting to the lessee any interest, license, easement, or other right in or with respect to those lands in addition to any interest, license, easement, or other right that the lessee may have lawfully acquired from the state or from others.

13. DILIGENCE AND PREVENTION OF WASTE. (a) The lessee shall exercise reasonable diligence in drilling, producing, and operating wells on the leased area unless consent to suspend operations temporarily is granted by the state.

(b) Upon discovery of oil or gas on the leased area in quantities that would appear to a reasonable and prudent operator to be sufficient to recover ordinary costs of drilling, completing, and producing an additional well in the same geologic structure at another location with a reasonable profit to the operator, the lessee must drill those wells as a reasonable and prudent operator would drill, having due regard for the interest of the state as well as the interest of the lessee.

(c) The lessee shall perform all operations under this lease in a good and workmanlike manner in accordance with the methods and practices set out in the approved plan of operations and plan of development, with due regard for the prevention of waste of oil, gas, and associated substances and the entrance of water to the oil and gas-bearing sands or strata to the destruction or injury of those sands or strata, and to the preservation and conservation of the property for future productive operations. The lessee shall carry out at the lessee's expense all orders and requirements of the State of Alaska relative to the prevention of waste and to the preservation of the leased area. If the lessee fails to carry out these orders, the state will have the right, together with any other available legal recourse, to enter the leased area to repair damage or prevent waste at the lessee's expense.

(d) The lessee shall securely plug in an approved manner any well before abandoning it.

14. OFFSET WELLS. The lessee shall drill such wells as a reasonable and prudent operator would drill to protect the state from loss by reason of drainage resulting from production on other land. Without limiting the generality of the foregoing sentence, if oil or gas is produced in a well on other land not owned by the State of Alaska or on which the State of Alaska receives a lower rate of royalty than under this lease, and that well is within 500 feet in the case of an oil well or 1,500 feet in the case of a gas well of lands then subject to this lease, and that well produces oil or gas for a period of 30 consecutive days in quantities that would appear to a reasonable and prudent operator to be sufficient to recover ordinary costs of drilling, completing, and producing an additional well in the same geological structure at an offset location with a reasonable profit to the operator, and if, after notice to the lessee and an opportunity to be heard, the state finds that production from that well is draining lands then subject to this lease, the lessee shall within 30 days after written demand by the state begin in good faith and diligently prosecute drilling operations for an offset well on the leased area. In lieu of drilling any well required by this paragraph, the lessee may, with the state's consent, compensate the state in full each month for the estimated loss of royalty through drainage in the amount determined by the state.

15. UNITIZATION. (a) The lessee may unite with others, jointly or separately, in collectively adopting and operating under a cooperative or unit agreement for the exploration, development, or operation of the pool, field, or like area or part of the pool, field, or like area that includes or underlies the leased area or any part of the leased area whenever the state determines and certifies that the cooperative or unit agreement is in the public interest.

(b) The lessee agrees, within six months after demand by the state, to subscribe to a reasonable cooperative or unit agreement that will adequately protect all parties in interest, including the state. The state reserves the right to prescribe such an agreement.

(c) With the consent of the lessee, and if the leased area is committed to a unit agreement approved by the state, the state may establish, alter, change, or revoke drilling, producing, and royalty requirements of this lease as the state determines necessary or proper to secure the proper protection of the public interest.

(d) Except as otherwise provided in this subparagraph, where only a portion of the leased area is committed to a unit agreement approved or prescribed by the state, that commitment constitutes a severance of this lease as to the unitized and nonunitized portions of the leased area. The portion of the leased area not committed to the unit will be treated as a separate and distinct lease having the same effective date and term as this lease and may be maintained only in accordance with the terms and conditions of this lease, statutes, and regulations. Any portion of the leased area not committed to the unit agreement will not be affected by the unitization or pooling of any other portion of the leased area, by operations in the unit, or by suspension approved or ordered for the unit. If the leased area has a well certified as capable of production in paying quantities on it before commitment to a unit agreement, this lease will not be severed. If any portion of this lease is included in a participating area formed under a unit agreement, the entire leased area will remain committed to the unit and this lease will not be severed.

16. INSPECTION. The lessee shall keep open at all reasonable times, for inspection by any duly authorized representative of the State of Alaska, the leased area, all wells, improvements, machinery, and fixtures on the leased area, and all reports and records relative to operations and surveys or investigations on or with regard to the leased area or under this lease. Upon request, the lessee shall furnish the State of Alaska with copies of and extracts from any such reports and records.

17. SUSPENSION. The state may from time to time direct or approve in writing suspension of production or other operations under this lease.

18. ASSIGNMENT, PARTITION, AND CONVERSION. This lease, or an interest in this lease, may, with the approval of the state, be assigned, subleased, or otherwise transferred to any person or persons qualified to hold a lease. No assignment, sublease, or other transfer of an interest in this lease, including assignments of working or royalty interests and operating agreements and subleases, will be binding upon the state unless approved by the state. The

lessee shall remain liable for all obligations under this lease accruing prior to the approval by the state of any assignment, sublease, or other transfer of an interest in this lease. All provisions of this lease will extend to and be binding upon the heirs, administrators, successors, and assigns of the state and the lessee. Applications for approval of an assignment, sublease, or other transfer must comply with all applicable regulations and must be filed within 90 days after the date of final execution of the instrument of transfer. The state will approve a transfer of an undivided interest in this lease unless the transfer would adversely affect the interests of Alaska or the application does not comply with applicable regulations. The state will disapprove a transfer of a divided interest in this lease if the transfer covers only a portion of the lease or a separate and distinct zone or geological horizon unless the lessee demonstrates that the proposed transfer of a divided interest is reasonably necessary to accomplish exploration or development of the lease, the lease is committed to an approved unit agreement, the lease is allocated production within an approved participating area, or the lease has a well certified as capable of production in paying quantities. The state will make a written finding stating the reasons for disapproval of a transfer of a divided interest. Where an assignment, sublease, or other transfer is made of all or a part of the lessee's interest in a portion of the leased area, this lease may, at the option of the state or upon request of the transferee and with the approval of the state, be severed, and a separate and distinct lease will be issued to the transferee having the same effective date and terms as this lease.

19. SURRENDER. The lessee at any time may file with the state a written surrender of all rights under this lease or any portion of the leased area comprising one or more legal subdivisions or, with the consent of the state, any separate and distinct zone or geological horizon underlying the leased area or one or more legal subdivisions of the leased area. That surrender will be effective as of the date of filing, subject to the continued obligations of the lessee and its surety to make payment of all accrued royalties and to place all wells and surface facilities on the surrendered land or in the surrendered zones or horizons in condition satisfactory to the state for suspension or abandonment. After that, the lessee will be released from all obligations under this lease with respect to the surrendered lands, zones, or horizons.

20. DEFAULT AND TERMINATION; CANCELLATION. (a) The failure of the lessee to perform timely its obligations under this lease, or the failure of the lessee otherwise to abide by all express and implied provisions of this lease, is a default of the lessee's obligations under this lease. Whenever the lessee fails to comply with any of the provisions of this lease (other than a provision which, by its terms, provides for automatic termination), and fails within 60 days after written notice of that default to begin and diligently prosecute operations to remedy that default, the state may terminate this lease if at the time of termination there is no well on the leased area capable of producing oil or gas in paying quantities. If there is a well on the leased area capable of producing oil or gas in paying quantities, this lease may be terminated by an appropriate judicial proceeding. In the event of any termination under this subparagraph, the lessee shall have the right to retain under this lease any and all drilling or producing wells for which no default exists, together with a parcel of land surrounding each well or wells and rights-of-way through the leased area that are reasonably necessary to enable the lessee to drill, operate, and transport oil or gas from the retained well or wells.

(b) The state may cancel this lease at any time if the state determines, after the lessee has been given notice and a reasonable opportunity to be heard, that:

(1) continued operations pursuant to this lease probably will cause serious harm or damage to biological resources, to property, to mineral resources, or to the environment (including the human environment);

(2) the threat of harm or damage will not disappear or decrease to an acceptable extent within a reasonable period of time; and

(3) the advantages of cancellation outweigh the advantages of continuing this lease in effect.

Any cancellation under this subparagraph will not occur unless and until operations under this lease have been under suspension or temporary prohibition by the state, with due extension of the term of this lease, continuously for a period of five years or for a lesser period upon request of the lessee.

(c) Any cancellation under subparagraph (b) will entitle the lessee to receive compensation as the lessee demonstrates to the state is equal to the lesser of:

(1) the value of the cancelled rights as of the date of cancellation, with due consideration being given to both anticipated revenues from this lease and anticipated costs, including costs of compliance with all applicable regulations and stipulations, liability for clean-up costs or damages, or both, in the case of an oil spill, and all other costs reasonably anticipated under this lease; or

(2) the excess, if any, over the lessee's revenues from this lease (plus interest on the excess from the date of receipt to date of reimbursement) of all consideration paid for this lease and all direct expenditures made by the lessee after the effective date of this lease and in connection with exploration or development, or both, under this lease, plus interest on that consideration and those expenditures from the date of payment to the date of reimbursement.

21. RIGHTS UPON TERMINATION. Upon the expiration or earlier termination of this lease as to all or any portion of the leased area, the lessee will be directed in writing by the state and will have the right at any time within a period of one year after the termination, or any extension of that period as may be granted by the state, to remove from the leased area or portion of the leased area all machinery, equipment, tools, and materials. Upon the expiration of that period or extension of that period and at the option of the state, any machinery, equipment, tools, and materials that the lessee has not removed from the leased area or portion of the leased area become the property of the state or may be removed by the state at the lessee's expense. At the option of the state, all improvements such as roads, pads, and wells must either be abandoned and the sites rehabilitated by the lessee to the satisfaction of the state, or be left intact and the lessee absolved of all further responsibility as to their maintenance, repair, and eventual abandonment and rehabilitation. Subject to the above conditions, the lessee shall deliver up the leased area or those portions of the leased area in good condition.

22. DAMAGES AND INDEMNIFICATION. (a) No rights under the AS 38.05.125 reservation may be exercised by the lessee until the lessee has provided to pay the owner of the land, his lessees and permittees, upon which the AS 38.05.125 reserved rights are sought to be exercised, full payment for all damage sustained by the owner by reason of entering the land. If the owner for any reason does not settle the damages, the lessee may enter the land after posting a surety bond determined by the state, after notice and an opportunity to be heard, to be sufficient as to form, amount, and security to secure to the owner, his lessees and permittees, payment for damages, and may institute legal proceedings in a court of competent jurisdiction where the land is located to determine the damages which the owner of the land may suffer. The lessee agrees to pay for any damages that may become payable under AS 38.05.130 and to indemnify the state and hold it harmless from and against any claims, demands, liabilities, and expenses arising from or in connection with such damages. The furnishing of a bond in compliance with this paragraph will be regarded by the state as sufficient provision for the payment of all damages that may become payable under AS 38.05.130 by virtue of this lease.

(b) The lessee shall indemnify the state for, and hold it harmless from, any claim, including claims for loss or damage to property or injury to any person caused by or resulting from any act or omission committed under this lease by or on behalf of the lessee. The lessee is not responsible to the state under this subparagraph for any loss, damage, or injury caused by or resulting from the sole negligence of the state.

(c) The lessee expressly waives any defense to an action for breach of a provision of this lease or for damages resulting from an oil spill or other harm to the environment that is based on an act or omission committed by an independent contractor in the lessee's employ. The lessee expressly agrees to assume responsibility for all actions of its independent contractors.

23. BONDS. (a) If required by the state, the lessee shall furnish a bond prior to the issuance of this lease in an amount equal to at least $5 per acre or fraction of an acre contained in the leased area, but no less than $10,000, and must maintain that bond as long as required by the state.

(b) The lessee may, in lieu of the bond required under (a) above, furnish and maintain a statewide bond in accordance with applicable regulations.

(c) The state may, after notice to the lessee and a reasonable opportunity to be heard, require a bond in a reasonable amount greater than the amount specified in (a) above where a greater amount is justified by the nature of the surface and its uses and the degree of risk involved in the types of operations being or to be carried out under this lease. A statewide bond will not satisfy any requirement of a bond imposed under this subparagraph, but will be considered by the state in determining the need for and the amount of any additional bond under this subparagraph.

(d) If the leased area is committed in whole or in part to a cooperative or unit agreement approved or prescribed by the state, and the unit operator furnishes a statewide bond, the lessee need not maintain any bond with respect to the portion of the leased area committed to the cooperative or unit agreement.

24. AUTHORIZED REPRESENTATIVES. The Director of the Division of Oil and Gas, Department of Natural Resources, State of Alaska, and the person executing this lease on behalf of the lessee shall be authorized representatives for their respective principals for the purposes of administering this lease. The state or the lessee may change the designation of its authorized representative or the address to which notices to that representative are to be sent by a notice given in accordance with Paragraph 25 below. Where activities pursuant to a plan of operations are underway, the lessee shall also designate, pursuant to a notice under Paragraph 25 below, by name, job title, and address, an agent who will be present in the state during all lease activities.

25. NOTICES; PROTEST. (a) Any notices required or permitted under this lease must be by electronic media producing a permanent record or in writing and must be given personally or by registered or certified mail, return receipt requested, addressed as follows:

TO THE STATE:

DIRECTOR, DIVISION OF OIL AND GAS
DEPARTMENT OF NATURAL RESOURCES
550 WEST 7TH AVENUE, SUITE 800
ANCHORAGE, ALASKA 99501-3560

TO THE LESSEE:

(b) Any notice given under this paragraph will be effective when delivered to the above authorized representative.

(c) A lessee who wishes to protest the amount of money due the state under the lease or any action of the state regarding a provision of this lease must file a written protest with the Division of Oil and Gas within 30 days after the mailing date of the state's notice or bill. A lessee who fails to file a protest within the required time waives any further right to protest. The state will establish the administrative appeal procedure to be followed and will inform the lessee of the procedure no later than 30 days after the filing of the written protest.

26. STATUTES AND REGULATIONS. This lease is subject to all applicable state and federal statutes and regulations in effect on the effective date of this lease, and insofar as is constitutionally permissible, to all statutes and regulations placed in effect after the effective date of this lease. A reference to a statute or regulation in this lease includes any change in that statute or regulation whether by amendment, repeal and replacement, or other means. This lease does not limit the power of the State of Alaska or the United States of America to enact and enforce legislation or to promulgate and enforce regulations affecting, directly or indirectly, the activities of the lessee or its agents in connection with this lease or the value of the interest held under this lease. In case of conflicting provisions, statutes and regulations take precedence over this lease.

27. INTERPRETATION. This lease is to be interpreted in accordance with the rules applicable to the interpretation of contracts made in the State of Alaska. The paragraph headings are not part of this lease and are inserted only for convenience. The state and the lessee expressly agree that the law of the State of Alaska will apply in any judicial proceeding affecting this lease.

28. INTEREST IN REAL PROPERTY. It is the intention of the parties that the rights granted to the lessee by this lease constitute an interest in real property in the leased area.

29. WAIVER OF CONDITIONS. The state reserves the right to waive any breach of a provision of this lease, but any such waiver extends only to the particular breach so waived and does not limit the rights of the state with respect to any future breach; nor will the waiver of a particular breach prevent cancellation of this lease for any other cause or for the same cause occurring at another time. Notwithstanding the foregoing, the state will not be deemed to have waived a provision of this lease unless it does so in writing.

30. SEVERABILITY. If it is finally determined in any judicial proceeding that any provision of this lease is invalid, the state and the lessee may jointly agree by a written amendment to this lease that, in consideration of the provisions in that written amendment, the invalid portion will be treated as severed from this lease and that the remainder of this lease, as amended, will remain in effect.

31. LOCAL HIRE. The lessee is encouraged to hire and employ local and Alaska residents and companies, to the extent they are available and qualified, for work performed on the leased area. Lessees shall submit, with the plans of operations, a proposal detailing the means by which the lessee will comply with this measure. The lessee is encouraged, in formulating this proposal, to coordinate with employment services offered by the State of Alaska and local communities and to recruit employees from local communities.

32. CONDITIONAL LEASE. If all or a part of the leased area is land that has been selected by the state under laws of the United States granting lands to the state, but the land has not been patented to the state by the United

States, then this lease is a conditional lease as provided by law until the patent becomes effective. If for any reason the selection is not finally approved, or the patent does not become effective, any rental, royalty, or other production or profit-based payments made to the state under this lease will not be refunded.

33. NONDISCRIMINATION. The lessee and the lessee's contractors and subcontractors may not discriminate against any employee or applicant because of race, religion, marital status, change in marital status, pregnancy, parenthood, physical handicap, color, sex, age, or national origin as set out in AS 18.80.220. The lessee and its contractors and subcontractors must, on beginning any operations under this lease, post in a conspicuous place notices setting out this nondiscrimination provision.

34. DEFINITIONS. All words and phrases used in this lease are to be interpreted where possible in the manner required in respect to the interpretation of statutes by AS 01.10.040. However, the following words have the following meanings unless the context unavoidably requires otherwise:

(1) "oil" means crude petroleum oil and other hydrocarbons, regardless of gravity, that are produced in liquid form by ordinary production methods, including liquid hydrocarbons known as distillate or condensate recovered by separation from gas other than at a gas processing plant;

(2) "gas" means all natural gas (except helium gas) and all other hydrocarbons produced that are not defined in this lease as oil;

(3) "associated substances" means all substances except helium produced as an incident of production of oil or gas by ordinary production methods and not defined in this lease as oil or gas;

(4) "drilling" means the act of boring a hole to reach a proposed bottom hole location through which oil or gas may be produced if encountered in paying quantities, and includes redrilling, sidetracking, deepening, or other means necessary to reach the proposed bottom hole location, testing, logging, plugging, and other operations necessary and incidental to the actual boring of the hole;

(5) "reworking operations" means all operations designed to secure, restore, or improve production through some use of a hole previously drilled, including, but not limited to, mechanical or chemical treatment of any horizon, plugging back to test higher strata, etc.;

(6) "paying quantities" means quantities sufficient to yield a return in excess of operating costs, even if drilling and equipment costs may never be repaid and the undertaking considered as a whole may ultimately result in a loss; quantities are insufficient to yield a return in excess of operating costs unless those quantities, not considering the costs of transportation and marketing, will produce sufficient revenue to induce a prudent operator to produce those quantities; and

(7) "force majeure" means war, riots, acts of God, unusually severe weather, or any other cause beyond the lessee's reasonable ability to foresee or control and includes operational failure of existing transportation facilities and delays caused by judicial decisions or lack of them.

35. ROYALTY ON PRODUCTION. Except for oil, gas, and associated substances used on the leased area for development and production or unavoidably lost, the lessee shall pay to the state as a royalty 12.50 percent in amount or value of the oil, gas, and associated substances saved, removed, or sold from the leased area and of the gas from the leased area used on the leased area for extraction of natural gasoline or other products.

36. VALUE. (a) For the purposes of computing royalties due under this lease, the value of royalty oil, gas, or associated substances shall not be less than the highest of:

(1) the field price received by the lessee for the oil, gas, or associated substances;

(2) the volume-weighted average of the three highest field prices received by other producers in the same field or area for oil of like grade and gravity, gas of like kind and quality, or associated substances of like kind and quality at the time the oil, gas, or associated substances are sold or removed from the leased or unit area or the gas is delivered to an extraction plant if that plant is located on the leased or unit area; if there are less than three prices reported by other producers, the volume-weighted average will be calculated using the lesser number of prices received by other producers in the field or area;

(3) the lessee's posted price in the field or area for the oil, gas, or associated substances; or

(4) the volume-weighted average of the three highest posted prices in the same field or area of the other producers in the same field or area for oil of like grade and gravity, gas of like kind and quality, or associated substances of like kind and quality at the time the oil, gas, or associated substances are sold or removed from the leased or unit area or the gas is delivered to an extraction plant if that plant is located on the leased or unit area; if there are less than three prices posted by other producers, the volume-weighted average will be calculated using the lesser number of prices posted by other producers in the field or area.

(b) If oil, gas, or associated substances are sold away from the leased or unit area, the term "field price" in subparagraph (a) above will be the cash value of all consideration received by the lessee or other producer from the purchaser of the oil, gas, or associated substances, less the lessee's actual and reasonable costs of transportation away from the leased or unit area to the point of sale. The "actual and reasonable costs of transportation" for marine transportation are as defined in 11 AAC 83.229(a), (b)(2), and (c) - l.

(c) In the event the lessee does not sell in an arm's-length transaction the oil, gas, or associated substances, the term "field price" in subparagraphs (a) and (b) above will mean the price the lessee would expect to receive for the oil, gas, or associated substances if the lessee did sell the oil, gas, or associated substances in an arm's-length transaction, minus reasonable costs of transportation away from the leased or unit area to the point of sale or other disposition. The lessee must determine this price in a consistent and logical manner using information available to the lessee and report that price to the state.

(d) The state may establish minimum values for the purposes of computing royalties on oil, gas, or associated substances obtained from this lease, with consideration being given to the price actually received by the lessee, to the price or prices paid in the same field or area for production of like quality, to posted prices, to prices received by the lessee and/or other producers from sales occurring away from the leased area, and/or to other relevant matters. In establishing minimum values, the state may use, but is not limited to, the methodology for determining "prevailing value" as defined in 11 AAC 83.227. Each minimum value determination will be made only after the lessee has been given notice and a reasonable opportunity to be heard. Under this provision, it is expressly agreed that the minimum value of royalty oil, gas, or associated substances under this lease may not necessarily equal, and may exceed, the price of the oil, gas, or associated substances.

37. ROYALTY IN VALUE. Except to the extent that the state elects to receive all or a portion of its royalty in kind as provided in Paragraph 38 below, the lessee shall pay to the state that value of all royalty oil, gas, and associated substances as determined under Paragraph 36 above. Royalty paid in value will be free and clear of all lease expenses (and any portion of those expenses that is incurred away from the leased area), including, but not limited to, expenses for separating, cleaning, dehydration, gathering, saltwater disposal, and preparing the oil, gas, or associated substances for transportation off the leased area. All royalty that may become payable in money to the State of Alaska must be paid on or before the last federal banking day of the calendar month following the month in which the oil, gas, or associated substances are produced. The amount of all royalty in value payments which are not paid when due under this lease or the amount which is subsequently determined to be due to the state or the lessee as the result of a redetermination will bear interest from the last federal banking day of the calendar month following the month in which the oil, gas, or associated substances were produced, until the obligation is paid in full. Interest shall accrue at the rate provided in AS 38.05.135(d) or as may later be amended. Royalty payments must be accompanied by such information relating to valuation of royalty as the state may require which may include, but is not limited to, run tickets, evidence of sales, shipments, and amounts of gross oil, gas, and associated substances produced.

38. ROYALTY IN KIND. (a) At the state's option, which may be exercised from time to time upon not less than 90 days' notice to the lessee, the lessee shall deliver all or a portion of the state's royalty oil, gas, or associated substances produced from the leased area in kind. Delivery will be on the leased area, unit area, or at a place mutually agreed to by the state and the lessee, and must be delivered to the State of Alaska or to any individual, firm, or corporation designated by the state.

(b) Royalty oil, gas, or associated substances delivered in kind must be delivered in good and merchantable condition, of pipeline quality, and free and clear of all lease expenses (and any portion of those expenses incurred away from the leased area), including, but not limited to, expenses for separating, cleaning, dehydration, gathering, saltwater disposal, and preparing the oil, gas, or associated substances for transportation off the leased area.

(c) After having given notice of its intention to take, or after having taken its royalty oil, gas, or associated substances in kind, the state, at its option and upon 90 days' notice to the lessee, may elect to receive a different portion or none of its royalty in kind. If, under federal regulations, the taking of royalty oil, gas, or associated substances in value by the state creates a supplier-purchaser relationship, the lessee hereby waives its right to continue to receive royalty oil, gas, or associated substances under that relationship, and further agrees that it will require any purchasers of the royalty oil, gas, or associated substances likewise to waive any supplier-purchaser rights.

(d) The lessee shall furnish storage for royalty oil, gas, and associated substances produced from the leased or unit area to the same extent that the lessee provides storage for the lessee's share of oil, gas, and associated substances. The lessee shall not be liable for the loss or destruction of stored royalty oil, gas and associated substances from causes beyond the lessee's ability to control.

(e) If a state royalty purchaser refuses or for any reason fails to take delivery of oil, gas, or associated substances, or in an emergency, and with as much notice to the lessee as is practical or reasonable under the

circumstances, the state may elect without penalty to underlift for up to six months all or a portion of the state's royalty on oil, gas, or associated substances produced from the leased or unit area and taken in kind. The state's right to underlift is limited to the portion of royalty oil, gas, or associated substances that the royalty purchaser refused or failed to take delivery of, or the portion necessary to meet the emergency condition. Underlifted oil, gas, or associated substances may be recovered by the state at a daily rate not to exceed 10 percent of its royalty interest share of daily production at the time of the underlift recovery.

39. REDUCTION OF ROYALTY. Lessee may request a reduction of royalty in accordance with the applicable statutes and regulations in effect on the date of application for the reduction.

40. EFFECTIVE DATE. This lease takes effect on .

BY SIGNING THIS LEASE, the state as lessor and the lessee agree to be bound by its provisions.

STATE OF ALASKA

By: _____
Director, Division of Oil and Gas

STATE OF ALASKA)
) ss.
Third Judicial District)

On , before me appeared _____ of the Division of Oil and Gas of the State of Alaska, Department of Natural Resources, and who executed this lease and acknowledged voluntarily signing it on behalf of the State of Alaska as lessor.

_____
Notary public in and for the State of Alaska
My commission expires _____

LESSEE: _____

Signature: _____

Printed Name/Title: _____

INSERT NOTARY ACKNOWLEDGMENT OF LESSEE'S SIGNATURE HERE.

LESSEE: _____

Signature: _____

Printed Name/Title: _____

INSERT NOTARY ACKNOWLEDGMENT OF LESSEE'S SIGNATURE HERE.

LESSEE: _____

Signature: _____

Printed Name/Title: _____

INSERT NOTARY ACKNOWLEDGMENT OF LESSEE'S SIGNATURE HERE.