



lic Lands” and shall record such survey in the appropriate records. Additional requirements for the protection of monuments, corners, and bearing trees may be prescribed by the Authorized Officer.

1.17. Fire Prevention and Suppression

1.17.1. Permittees shall promptly notify the Authorized Officer and take all measures necessary or appropriate for the prevention and suppression of fires in accordance with 43 CFR 2801.1-5(d). Permittees shall comply with the instructions and directions of the Authorized Officer concerning the use, prevention and suppression of fires. Use of open fires in connection with construction of the Pipeline System is prohibited unless authorized in writing by the Authorized Officer.

1.18. Surveillance and Maintenance

1.18.1. During the construction, operation, maintenance and termination of the Pipeline System, Permittees shall conduct a surveillance and maintenance program applicable to the subarctic and arctic environment. This program shall be designed to: (1) provide for public health and safety; (2) prevent damage to natural resources; (3) prevent erosion; and (4) maintain Pipeline System integrity.

1.18.2. Permittees shall have a communication system that ensures the transmission of information required for the safe operation of the Pipeline System.

1.18.3. Permittees shall maintain complete and up-to-date records on construction, operation, maintenance and termination activities performed in connection with the Pipeline System. Such records shall include surveillance data, leak and break records, necessary operational data, modification records and such other data as the Authorized Officer may require.

1.18.4. Permittees shall provide and maintain Access Roads and airstrips, the number and location of which shall be approved by the Authorized Officer, to ensure that Permittees’ maintenance crews and Federal and State representatives shall have continuing access to the Pipeline System.

1.19. Housing and Quarters

1.19.1. Permittees shall furnish, on a reimbursable basis, such representatives of the United States as may be designated by the Authorized Officer with adequate meals, living quarters and office space, reasonable use of Permittees’ communica-

tions systems, and reasonable surface and air transportation during the construction, operation, maintenance and termination of the Pipeline System. Whenever possible, Permittees shall be notified in writing by the Authorized Officer in advance regarding the number of persons for whom such services and facilities will be required.

1.20. Health and Safety

1.20.1. Permittees shall take all measures necessary to protect the health and safety of all persons affected by their activities performed in connection with the construction, operation, maintenance or termination of the Pipeline System, and shall immediately abate any health or safety hazards. Permittees shall immediately notify the Authorized Officer of all serious accidents which occur in connection with such activities.

1.21. Conduct of Operations

1.21.1. Permittees shall perform all Pipeline System operations in a safe and workmanlike manner so as to ensure the safety and integrity of the Pipeline System, and shall at all times employ and maintain personnel and equipment sufficient for that purpose. Permittees shall immediately notify the Authorized Officer of any condition, problem, malfunction, or other occurrence which in any way threatens the integrity of the Pipeline System.

1.22. Applicability of Stipulations

1.22.1. Nothing in these Stipulations shall be construed as applying to activities of Permittees that have no relation to the Pipeline System.

1.22.2. Nothing in these Stipulations shall be construed to affect any right or cause of action that otherwise would be available to Permittees against any person other than the United States.

2. ENVIRONMENTAL

2.1. Environmental Briefing

2.1.1. Prior to, and during, construction of the Pipeline System, Permittees shall provide for environmental and other pertinent briefings for construction and other personnel by such Federal employees as may be designated by the Authorized Officer. Permittees shall arrange the time, place and attendance for such briefings upon request by the Authorized Officer. Permittees shall bear all costs of such briefings other than salary, per diem, subsistence, and travel costs of Federal employees. In addition, Permittees shall separately arrange with the State of Alaska for such similar briefings as the State may desire.



2.2. Pollution Control

2.2.1. General

2.2.1.1. Permittees shall conduct all activities associated with the Pipeline System in a manner that will avoid or minimize degradation of air, land and water quality. In the construction, operation, maintenance and termination of the Pipeline System, Permittees shall perform their activities in accordance with applicable air and water quality standards, related facility siting standards, and related plans of implementation, including but not limited to standards adopted pursuant to the Clean Air Act, as amended, 42 U.S.C. § 1857 *et seq.*, and the Federal Water Pollution Control Act, as amended, 33 U.S.C. § 1321 *et seq.*

2.2.2. Water and Land Pollution

2.2.2.1. Permittees shall comply with applicable "Water Quality Standards" of the State of Alaska as approved by the Environmental Protection Agency.

2.2.2.2. Mobile ground equipment shall not be operated in lakes, streams or rivers unless such operation is approved in writing by the Authorized Officer.

2.2.3. Thermal Pollution

2.2.3.1. Permittees shall comply with the standards set for thermal pollution in the State of Alaska "Water Quality Standards," as approved by the Environmental Protection Agency.

2.2.4. Air Pollution and Ice Fog

2.2.4.1. Permittees shall utilize and operate all facilities and devices used in connection with the Pipeline System so as to avoid or minimize air pollution and ice fog. Facilities and devices which cannot be prevented from producing ice fog shall be located so as not to interfere with airfields, communities or roads.

2.2.4.2. Emissions from equipment, installations and burning materials shall meet applicable Federal and State air quality standards.

2.2.5. Pesticides, Herbicides and other Chemicals

2.2.5.1. Permittees shall use only non-persistent and immobile types of pesticides, herbicides and other chemicals. Each chemical to be used and its application constraint shall be approved in writing by the Authorized Officer prior to use.

2.2.6. Sanitation and Waste Disposal

2.2.6.1. "Waste" means all discarded matter, including but not limited to human waste, trash, garbage, refuse, oil drums, petroleum products, ashes and equipment.

2.2.6.2. All waste generated in construction, operation, maintenance and termination of the Pipeline System shall be removed or otherwise disposed of in a manner acceptable to the Authorized Officer. All applicable standards and guidelines of the Alaska State Department of Environmental Conservation, the United States Public Health Service, the Environmental Protection Agency, and other Federal and State agencies shall be adhered to by Permittees. All incinerators shall meet the requirements of applicable Federal and State laws and regulations and shall be used with maximum precautions to prevent forest and tundra fires. After incineration, material not consumed in the incinerator shall be disposed of in a manner approved in writing by the Authorized Officer. Portable or permanent waste disposal systems to be used shall be approved in writing by the Authorized Officer.

2.3. Buffer Strips

2.3.1. Public Interest Areas

2.3.1.1. No construction activity in connection with the Pipeline System shall be conducted within one-half (1/2) mile of any officially designated Federal, State or municipal park, wildlife refuge, research natural area, recreation area, recreation site, or any registered National Historic Site or National Landmark, unless such activity is approved in writing by the Authorized Officer.

2.3.2. Vegetative Screen

2.3.2.1. Permittees shall not cut or remove any vegetative cover within a minimum five hundred (500) foot strip between State highways and material sites unless such cutting or removal is approved in writing by the Authorized Officer.

2.3.2.2. Where the Right-of-way crosses State highways, a screen of vegetation native to the specific setting shall be established over disturbed areas unless otherwise approved in writing by the Authorized Officer.

2.3.3. Streams

2.3.3.1. The Pipeline System shall be located so as to provide three hundred (300) foot minimum buffer strips of undisturbed land along streams unless otherwise approved in writing by the Authorized Officer.

2.4. Erosion Control

2.4.1. General

2.4.1.1. Permittees shall perform all Pipeline System construction, operation, maintenance and termination activities so as to avoid or minimize disturbance to vegetation.



2.4.1.2. The design of the Pipeline System shall provide for the construction of control facilities that will avoid or minimize erosion.

2.4.1.3. The erosion control facilities shall be constructed to avoid induced and accelerated erosion and to lessen the possibility of forming new drainage channels resulting from Pipeline System activities. The facilities shall be designed and operations conducted in such a way as to avoid or minimize disturbance to the thermal regime.

2.4.2. Stabilization

2.4.2.1. Surface materials taken from disturbed areas shall be stockpiled and utilized during restoration unless otherwise approved in writing by the Authorized Officer. Stabilization practices, as determined by the needs for specific sites, shall include but shall not be limited to seeding, planting, mulching, and the placement of mat binders, soil binders, rock or gravel blankets, or structures.

2.4.2.2. All disturbed areas shall be left in a stabilized condition satisfactory to the Authorized Officer. Such satisfaction shall be stated in writing by the Authorized Officer.

2.4.3. Crossing of Streams, Rivers or Flood Plains

2.4.3.1. Permittees shall prevent or minimize erosion at stream and river crossings and those parts of the Pipeline System within flood plains, as defined in Stipulation 3.6.

2.4.3.2. Temporary access over stream banks shall be made through use of fill ramps rather than by cutting through stream banks, unless otherwise approved in writing by the Authorized Officer. Permittees shall remove such ramps upon termination of seasonal or final use. Ramp materials shall be disposed of in a manner approved in writing by the Authorized Officer.

2.4.4. Seeding and Planting.

2.4.4.1. Seeding and planting of disturbed areas shall be conducted as soon as practicable and, if necessary, shall be repeated until vegetation is successful, unless otherwise approved in writing by the Authorized Officer. All other restoration shall be completed as soon as possible.

2.4.5. Excavated Material

2.4.5.1. Excavated material in excess of that required to backfill around any structure, including the pipe, shall be disposed of in a manner approved in writing by the Authorized Officer.

2.5. Fish and Wildlife Protection

2.5.1. Passage of Fish

2.5.1.1. Permittees shall provide for uninterrupted movement and safe passage of fish. Any artificial structure or any stream channel change that would cause a blockage to fish shall be provided with a fish passage structure or facility that meets all Federal and State requirements. The proposed design shall be submitted to the Authorized Officer in accordance with Stipulation 1.7.

2.5.1.2. Pump intakes shall be screened to prevent harm to fish.

2.5.1.3. Abandoned water diversion structures shall be plugged and stabilized to prevent trapping or stranding of fish.

2.5.1.4. If material sites are approved adjacent to or in certain lakes, rivers, or streams, the Authorized Officer may require Permittees to construct levees, berms or other suitable means to protect fish and fish passage and to prevent siltation of streams or lakes.

2.5.2. Fish Spawning Beds

2.5.2.1. "Fish Spawning Beds" means the areas where anadromous and resident fish deposit their eggs.

2.5.2.2. Permittees shall avoid channel changes in Fish Spawning Beds designated by the Authorized Officer; however, where channel changes cannot be avoided in such beds, new channels shall be constructed according to written standards supplied by the Authorized Officer.

2.5.2.3. Fish Spawning Beds shall be protected from sediment where soil material is expected to be suspended in water as a result of construction activities. Settling basins shall be constructed to intercept silt before it reaches streams or lakes.

2.5.2.4. Permittees shall comply with any special requirements made by the Authorized Officer for a stream system in order to protect Fish Spawning Beds. Permittees shall repair all damage to Fish Spawning Beds caused by construction, operation, maintenance or termination of the Pipeline System.

2.5.3. Zones of Restricted Activities

2.5.3.1. Permittees' activities in connection with the Pipeline System in key fish and wildlife areas may be restricted by the Authorized Officer during periods of fish and wildlife breeding, nesting, spawning, lambing or calving activity and during major migrations of fish and wildlife. The Authorized Officer shall give Permittees written notice of such restrictive action. From time to time, the Authorized Officer shall furnish Permittees



a list of areas where such actions may be required, together with anticipated dates of restriction.

2.5.4. Big Game Movements

2.5.4.1. Permittees shall construct and maintain the Pipeline, both buried and above ground sections, so as to assure free passage and movement of big game animals.

2.6. Materials Sites

2.6.1. Purchase of Materials

2.6.1.1. If Permittees require materials from the public lands, Permittees shall make application to purchase such materials in accordance with 43 CFR, Part 3610. Permittees shall submit a mining plan in accordance with 43 CFR, Part 23. No materials may be removed by Permittees without the written approval of the Authorized Officer.

2.6.1.2. Insofar as possible, use of existing materials sites will be authorized in preference to new sites.

2.6.1.3. Gravel and other construction materials shall not be taken from stream beds, river beds, lake shores or other outlets of lakes, unless the taking is approved in writing by the Authorized Officer.

2.6.2. Layout of Materials Sites

2.6.2.1. Materials site boundaries shall be shaped in such a manner as to blend with surrounding natural land patterns. Regardless of the layout of materials sites, primary emphasis shall be placed on prevention of soil erosion and damage to vegetation.

2.7. Clearing

2.7.1. Boundaries

2.7.1.1. Permittees shall identify approved clearing boundaries on the ground for each Construction Segment prior to beginning clearing operations. All timber and other vegetative material outside clearing boundaries and all blazed, painted or posted trees which are on or mark clearing boundaries are reserved from cutting and removal with the exception of danger trees or snags designated as such by the Authorized Officer.

2.7.2. Timber

2.7.2.1. Prior to initiating clearing operations, Permittees shall notify the Authorized Officer of the amount of merchantable timber, if any, which will be cut, removed or destroyed in the construction and maintenance of the Pipeline System, and shall pay the United States in advance of such construction or maintenance activity, such sum of money as the Authorized Officer determines to be

the full stumpage value of the timber to be cut, removed or destroyed.

2.7.2.2. All trees, snags, and other woody material cut in connection with clearing operations shall be cut so that the resulting stumps shall not be higher than six (6) inches measured from the ground on the uphill side.

2.7.2.3. All trees, snags and other woody material cut in connection with clearing operations shall be felled into the area within the clearing boundaries and away from water courses.

2.7.2.4. Hand clearing shall be used in areas where the Authorized Officer determines that use of heavy equipment would be detrimental to existing conditions.

2.7.2.5. All debris resulting from clearing operations and construction that may block stream flow, delay fish passage, contribute to flood damage, or result in stream bed scour or erosion shall be removed.

2.7.2.6. Logs shall not be skidded or yarded across any stream without the written approval of the Authorized Officer.

2.7.2.7. No log landing shall be located within three-hundred (300) feet of any water course.

2.7.2.8. All slash shall be disposed of in construction pads or Access Roads unless otherwise directed in writing by the Authorized Officer.

2.8. Disturbance of Natural Water

2.8.1. All activities of Permittees in connection with the Pipeline System that may create new lakes, drain existing lakes, significantly divert natural drainages, permanently alter stream hydraulics, or disturb significant areas of stream beds are prohibited unless such activities along with necessary mitigation measures are approved in writing by the Authorized Officer.

2.9. Off Right-of-Way Traffic

2.9.1. Permittees shall not operate mobile ground equipment off the Right-of-Way, Access Roads, State highways, or authorized areas, unless approved in writing by the Authorized Officer or when necessary to prevent harm to any Person.

2.10. Aesthetics

2.10.1. Permittees shall consider aesthetic values in planning, construction and operation of the Pipeline System. Where the Right-of-Way crosses a State highway in forested terrain, the straight length of the Pipeline Right-of-Way visible from the highway shall not exceed six hundred (600) feet in length, unless otherwise approved in writing by the Authorized Officer. The Authorized Of-



licer may impose such other requirements as he deems necessary to protect aesthetic values.

2.11. Use of Explosives

2.11.1. Permittees shall submit a plan for use of explosives, including but not limited to blasting techniques, to the Authorized Officer in accordance with Stipulation 1.7.

2.11.2. No blasting shall be done under water or within one quarter ($\frac{1}{4}$) mile of streams or lakes without a permit from the Alaska Department of Fish and Game, when such a permit is required by State law or regulation.

2.12. Restoration

2.12.1. Areas disturbed by Permittees shall be restored by Permittees to the satisfaction of the Authorized Officer as stated in writing.

2.12.2. All cut and fill slopes shall be left in a stable condition.

2.12.3. Materials from Access Roads, haul ramps, berms, dikes, and other earthen structures shall be disposed of as directed in writing by the Authorized Officer.

2.12.4. Vegetation, overburden and other materials removed during clearing operations shall be disposed of by Permittees in a manner approved in writing by the Authorized Officer.

2.12.5. Upon completion of restoration, Permittees shall immediately remove all equipment and supplies from the site.

2.13. Reporting of Oil Discharges

2.13.1. A discharge of Oil by Permittees into or upon the navigable waters of the United States, adjoining shorelines, or into or upon the waters of the contiguous zone in violation of the Federal Water Pollution Control Act, as amended, 33 U.S.C. § 1321 *et seq.* and the regulations issued thereunder, or in violation of applicable laws of the State of Alaska and regulations issued thereunder, is prohibited. Permittees shall give immediate notice of any such discharge to: (1) the Authorized Officer; and (2) such other Federal and State officials as are required by law to be given such notice.

2.13.2. Permittees shall give immediate notice of any spill or leakage of Oil or other pollutant from the Pipeline, the Valdez terminal facility, or any storage facility to: (1) the Authorized Officer; and (2) such other Federal and State officials as are required by law to be given such notice. Any oral notice shall be confirmed in writing as soon as possible.

2.14. Contingency Plans

2.14.1. It is the policy of the Department of the Interior that there should be no discharge of Oil or other pollutant into or upon lands or waters. Permittees must therefore recognize their prime responsibility for the protection of the public and environment from the effects of spillage.

2.14.2. Permittees shall submit their contingency plans to the Authorized Officer at least one hundred and eighty (180) days prior to scheduled start-up. The plans shall conform to this Stipulation and the National Oil Hazardous Substances Pollution Contingency Plan, 36 F.R. 16215, August 20, 1971, and shall: (1) include provisions for Oil Spill Control¹; (2) specify that the action agencies responsible for contingency plans in Alaska shall be among the first to be notified in the event of any Pipeline System failure resulting in an Oil spill; (3) provide for immediate corrective action including Oil Spill Control and restoration of the affected resource; (4) provide that the Authorized Officer shall approve any materials or devices used for Oil Spill Control and shall approve any disposal sites or techniques selected to handle oily matter; and (5) include separate and specific techniques and schedules for cleanup of Oil spills on land, lakes, rivers and streams, sea, and estuaries.

2.14.3. Prior to Pipeline start-up, such plans shall be approved in writing by the Authorized Officer, and Permittees shall demonstrate their capability and readiness to execute the plans. Permittees shall update as appropriate the plans and methods of implementation thereof, which shall be submitted annually to the Authorized Officer for his written approval.

2.14.4. If during any phase of the construction, operation, maintenance or termination of the Pipeline, any Oil or other pollutant should be discharged from the Pipeline System, the control and total removal, disposal and cleaning up of such Oil or other pollutant, wherever found, shall be the responsibility of Permittees, regardless of fault. Upon failure of Permittees to control, dispose of, or clean up such discharge, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge

¹ As used in this Stipulation 2.14.2, Oil Spill Control is defined as: (1) detection of the spill; (2) location of the spill; (3) confinement of the spill; and (4) cleanup of the spill.



at the full expense of Permittees. Such action by the Authorized Officer shall not relieve Permittees of any responsibility as provided herein.

3. TECHNICAL

3.1. General

3.1.1. The following standards shall be complied with in design, construction, operation and termination of the Pipeline System.

3.2. Pipeline System Standards

3.2.1. General Standards

3.2.1.1. All design, material and construction, operation, maintenance and termination practices employed in the Pipeline System shall be in accordance with safe and proven engineering practice and shall meet or exceed the following standards:

- (1) U.S.A. Standard Code for Pressure Piping, ANSI B 31.4, "Liquid Petroleum Transportation Piping System."
- (2) Department of Transportation Regulations, 49 CFR, Part 195, "Transportation of Liquids by Pipeline."
- (3) ASME Gas Piping Standard Committee, 15 Dec. 1970: "Guide for Gas Transmission and Distribution Piping System."
- (4) Department of Transportation Regulations, 49 CFR, Part 192, "Transportation of Natural and Other Gas by Pipelines: Minimum Federal Safety Standards."

3.2.1.2. Requirements in addition to those set forth in the above minimum standards may be imposed by the Authorized Officer as necessary to reflect the impact of subarctic and arctic environments. If any standard contains a provision which is inconsistent with a provision in another standard, the more stringent shall apply.

3.2.2. Special Standards

3.2.2.1. The design shall also provide for remotely controlled shutoff valves at each pump station; remotely controlled mainline block valves (intended to control spills); and additional valves located with the best judgment regarding wildlife habitat, fish habitat, and potentially hazardous areas.

3.2.2.2. All practicable means shall be utilized to minimize injury to the ground organic layer.

3.2.2.3. Radiographic inspection of all main line girth welds and pressure testing of the Pipeline shall be conducted by Permittees prior to placing the system in operation.

3.2.2.4. Permittees shall provide for continuous inspection of Pipeline System construction to en-

sure compliance with the approved design specifications and these Stipulations.

3.2.2.5. Welder qualification tests shall be by destructive means, except that operators of automatic welding equipment for girth welding of tank seams shall be tested by radiography in accordance with ASME Boiler and Pressure Vessel Code, Section 9, Subsection Q-21 (b).

3.2.2.6. Lightning protection shall conform to the requirements of ANSI C5.1—1969, "Lightning Protection Code—1968."

3.2.3. Standards for Access Roads

3.2.3.1. Design, materials and construction practices employed for Access Roads shall be in accordance with safe and proven engineering practice and in accordance with the principles of construction for secondary roads for the subarctic and arctic environments.

3.2.3.2. Permittees shall submit a layout of each proposed Access Road for approval by the Authorized Officer in accordance with Stipulation 1.7.

3.2.3.3. Access Roads shall be constructed to widths suitable for safe operation of equipment at the travel speeds proposed by Permittees.

3.2.3.4. The maximum allowable grade shall be 12 percent unless otherwise approved in writing by the Authorized Officer.

3.3. Construction Mode Requirements

3.3.1. The selection of the Construction Mode (elevated or buried) shall be governed by the following criteria: (1) There shall be an unobstructed air space of at least two feet between the pipe and ground surface; or (2) There shall be no greater heat transfer from the pipe to the ground than results from the use of an unobstructed air space of at least two (2) feet between the pipe and ground surface; or (3) Below the level of the pipe axis the ground shall consist of competent bedrock, soil naturally devoid of permafrost, or if frozen, of Thaw-Stable Sand and Gravel.² Above the level of the pipe axis other materials may be present but it must be shown that they will remain stable under all credible conditions; or (4) Results of a detailed field exploration program and analysis indicate that pipe rupture and major terrain

²Thaw-Stable Sand and Gravel is defined as material meeting the following requirements: (a) Material lies within the classes GW, GP, SW, and SP, (Unified Soil Classification) but with up to 6% by weight passing the #200 U.S. standard sieve; if an inorganic granular soil contains more than 6% fines than the #200 sieve, its thaw-stability must be justified. (b) There is no excess (segregated or massive) ice. (c) Thawing of the material *in situ* will not result in excess pore-pressure.