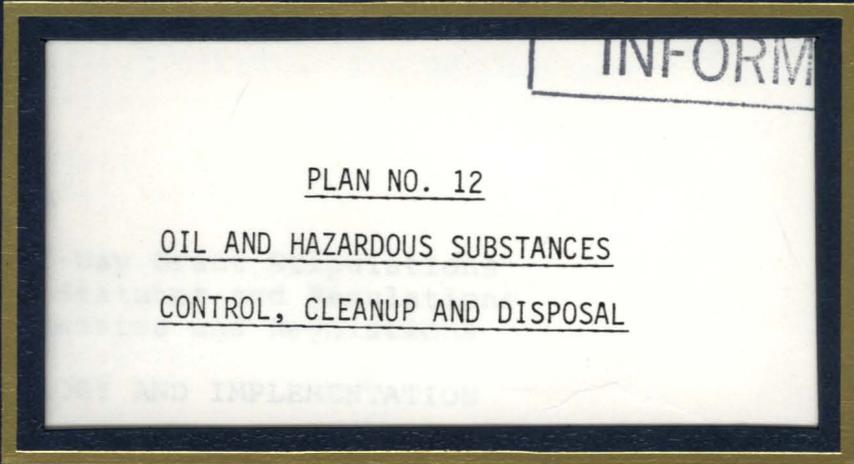


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ALASKA SEGMENT

ALASKA NATURAL GAS TRANSPORTATION SYSTEM

Alaskan Northwest Natural Gas
Transportation Company

In Response to
The Department of Interior Stipulations
for Alaska
Part 1.6.1

TN
880,5
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P56
1982

**BUSINESS
INFORMATION**

PLAN NO. 12

OIL AND HAZARDOUS SUBSTANCES

CONTROL, CLEANUP AND DISPOSAL

BUSINESS INFORMATION - Federal Government
purpose in accordance with 16 CFR 1504 (F.R.
Vol. 48, No. 240, December, 1981) pages 61232
through 61254.

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ALASKA NORTHWEST NATURAL GAS TRANSPORTATION COMPANY

NOVEMBER 1982

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1.0 SCOPE

This Oil and Hazardous Substances Plan presents a comprehensive management program for the control, cleanup and disposal of oil and hazardous substances used in conjunction with construction and operation of the Alaska Natural Gas Transportation System (ANGTS), Alaska segment, including the Alaska Gas Conditioning Facilities (AGCF) and pipeline facilities.* The plan has been developed in response to federal Right-of-Way Grant stipulations and anticipated state Right-of-Way Lease stipulations.

This plan is intended to demonstrate that Northwest Alaskan Pipeline Company (NWA), the operating agent for the ANGTS Alaska segment, is fully cognizant of its statutory and regulatory obligations with respect to oil and hazardous substances. Further, in recognition of these obligations, NWA has developed a management program for compliance using engineering design and procedural methods for the prevention, control, clean-up, and disposal of oil and hazardous substances. The specific documents addressing these concerns are to be developed in parallel with the overall project design, and will be submitted for agency review in stages as the project design proceeds.

The emphasis of this plan is on presentation of the planning documents and design detail documents that will be used to control oil and hazardous substances. Certain design and procedural measures are also presented, however only to the extent necessary to provide a basis of understanding and agreement on concepts, from which detailed design will proceed at a later date. Detail on specific materials, structural and mechanical systems, job procedures, and record-keeping is deferred to more advanced stages of project development, and will generally appear in the form of project design or construction specifications. To facilitate the review of this document, the later project submittals (e.g. specifications and design packages) that will contain this information are identified, together with an indication of their content.

The following is a highlighted list of the objectives of Plan 12:

- o Identify and summarize for project use applicable Federal and State regulations that pertain to the control, clean-up, and disposal of oil, and hazardous substances.

*Hereafter referred to as the Alaska Segment.

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- o Identify the scope and subject matter of the planning documents and design detail documents that NWA will use to address the control, clean-up, and disposal of oil and hazardous substances.
- o Identify and explain the relationships, in terms of scope and sequence, between the various project documents that address the control, clean-up, and disposal of oil and hazardous substances.
- o Identify hazardous substances and hazardous wastes known at this time to be used or generated during construction and operation, and describe the conceptual methods by which each will be handled, transported, and disposed.

2.0 SUMMARY

Toxic or hazardous substances, including petroleum products, will be used during construction and operation of the Alaska Segment. Such materials pose the potential for environmental damage through chronic spills or less frequent major discharges. This plan presents a comprehensive management program to minimize adverse environmental effects from oil and hazardous substances through prevention of spills or, in the event of an accidental discharge, through effective control and cleanup measures.

Spill prevention can be brought about by proper engineering design and by adhering to carefully structured procedures for handling, storing, and distributing petroleum products and other hazardous substances. Effective control and cleanup of spills requires pre-conceived response plans that are practical, flexible, cost effective, and readily deployable. To this end, NWA is pursuing several planning areas that form key elements of an overall oil and hazardous substances management program.

Section 3.0 of this Plan presents as criteria, the statutes and regulations that are pertinent to the design and procedural development of oil and hazardous substances controls. As such, they are the foundation of all detailed engineering design documents and procedural planning documents described in this Plan.

Plan 12 is the overall management/planning document for NWA's oil and hazardous substances management program, and is the basis for development of subsequent spill prevention and response documents. As such, it accounts for all aspects of oil and hazardous substances control.

That is, for each project activity where controls would be needed, Plan 12 identifies the nature of the control (whether design or procedural), the form the control would take, and the document in which it would be expected to be issued.

Described in Section 4.0 are the specific planning documents required by the oil and hazardous substances management program. Aside from Plan 12 itself, these are the Oil Discharge Contingency (ODC) Plan(s), the Spill Prevention, Control and Countermeasures (SPCC) Plan(s), the Oil and Hazardous Substances Spill Control Plan (OHSSCP), and the Petroleum Handling Procedures Manual (PHPM). The planning, procedural, and conceptual design information in these documents is supplemented by related design information found in Pipeline 1.6.1 Plan 3, Camps, the Compressor Station and Metering Station Design Criteria Manual (DCM), and the AGCF Design Review Packages.

Plans consistent with federal and state requirements will be prepared for individual construction and operational fuel storage facilities. The SPCC Plans written pursuant to 40 CFR 112 will describe in detail the actual storage equipment in use at each site and will present piping, structural containment, and other engineering details called for in the Federal regulations. The ODC Plans, which are required by 18AAC 75, will be written to jointly satisfy all requirements in 40 CFR 112 as well as the separate requirements in State regulations (e.g., a field manual).

The Project OHSSCP will be developed for construction and operation of the pipeline and AGCF. This plan, which will be written to also address the State requirements (under 18AAC 75) for transportation, storage, and reporting discharges of hazardous substances, will be a comprehensive document. It will principally be used as a field reference manual providing to project personnel specific guidance on spill response activities. The OHSSCP will outline project-wide reporting procedures and spill response organizations, and describe spill containment and clean-up techniques appropriate for the variety of weather and terrain conditions to be encountered. Sections of this plan establishing contractor requirements will also be incorporated into construction bid packages.

Inspections and other operational practices to control fuel inventories and avoid fuel spills are set forth in the PHPM. This manual will be used by all personnel associated with the storage, handling, distribution, collection, transportation, and disposal of petroleum products.

Included in Plan 12 are sources and expected quantities of waste oils and hazardous substances known to be required during construction and operation. This information will be provided to designers to assist in design of storage and disposal facilities for these materials. Certain conceptual design measures for control of oil and hazardous substances are also presented in Plan 12 to the level necessary for agency evaluation of their practicality and acceptability. NWA judges that agency concurrence of these is prudent before resources are expended for detailed design. Also included is an indication of future source documents that will contain detailed design information on oil and hazardous substance systems and equipment. These source documents will be prepared during the normal course of the design process and submitted for agency review as they are available.

3.0 CRITERIA

This section identifies the statutes and regulations deemed to be applicable to the development of an oil and hazardous substances management program for the project, in terms of implications to design, operational procedures, planning and record-keeping. These statutes and regulations have been adapted by NWA as the criteria to be implemented in the design and operation of project facilities and as the criteria that will control project activities with regard to oil and hazardous substances management.

3.1 RIGHT-OF-WAY GRANT STIPULATIONS

The Federal Grant of Right-of-Way stipulates that comprehensive plans or programs be developed for the control, cleanup and disposal of oil and hazardous substances. Pertinent stipulations are reproduced below:

- 1.6.1 "The COMPANY shall submit DESIGN CRITERIA to the FEDERAL INSPECTOR. It shall also submit comprehensive plans and/or programs (including schedules where appropriate) which shall include but not be limited to the following:.....
 - (12) OIL and HAZARDOUS SUBSTANCES control, cleanup and disposal"
- 2.2.4.1 "All HAZARDOUS SUBSTANCES and 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 FEDERAL INSPECTOR."
- 2.13.2 "The COMPANY shall submit an OIL and HAZARDOUS SUBSTANCE control, cleanup and disposal plan to the FEDERAL INSPECTOR in accordance with Stipulation 1.6.1., and where applicable, in accordance with 40 CFR, part 112. The plan shall conform to this Stipulation and shall outline all areas where OIL and/or HAZARDOUS SUBSTANCES are stored, utilized, transported or distributed. The plan shall include fuel distribution systems, storage and containment, containerized products, leak detection systems, handling procedures, training programs, provisions for collection, storage and ultimate disposal of waste OIL, cleanup methods and disposal sites. The plan shall be approved in

writing by the FEDERAL INSPECTOR and the COMPANY shall demonstrate its capability and readiness to execute the plan."

It is anticipated that stipulations similar to these will be appended to the forthcoming State Right-of-Way Lease. However, all of the stipulations may not be applicable.

3.2 FEDERAL STATUTES AND REGULATIONS

Federal requirements for the control of oil and hazardous substances appear in inter-related statutes and regulations administered by several Federal agencies. With some exceptions, which will be indicated in this summary, the statutes and regulations generally address oil and hazardous substances separately. The term hazardous substances is used variously in the regulations to mean chemicals specifically designated as hazardous substances or a broader category including these and hazardous wastes, toxic pollutants, hazardous air pollutants, toxic substances, and hazardous materials (when hazardous substances are transported). This broader definition is the usage adopted by NWA for Plan 12.

The following is a summary of Federal statutes and regulations that may be applicable to the management of oil and hazardous substances for ANGTS. The summary focuses on requirements considered relevant to design, operations, and management decisions. Other regulations (such as 40 CFR 113 - Liability Limits for Small Onshore Storage Facilities, or 40 CFR 114 - Civil Penalties for Violation of Oil Pollution Prevention Regulations) that pertain primarily to agency administrative actions have not been included.

3.2.1 Control of Oil

Federal statutes and regulations with respect to the control of oil address the issue from many perspectives, ranging from general planning, to detailed design considerations, to notification requirements. For each perspective, different agency jurisdictions are involved. Table 3-1 lists these statutes and regulations and briefly describes the topics they address. This list is to be used to refer project personnel to the appropriate statutes and regulations, not as an informational substitute for them.

TABLE 3-1

FEDERAL STATUTES AND REGULATIONS RELATING TO CONTROL OF OIL¹

Regulation	Title	Scope
PL 95-217, Section 311 Control Act	Federal Water Pollution	Section 311 states that the discharge of oil in harmful quantities into or upon the navigable waters of the United States or their tributaries is prohibited. The act requires immediate notification to the Coast Guard or EPA and mandates that the spiller contain, control, and clean up the affected area.
40 CFR 110	Discharge of Oil	This part states that for the purposes of Section 311, discharges are harmful which "(a) violate applicable water quality standards, or (b) cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge emulsion to be deposited beneath the surface..." Applicable water quality standards are defined as State water quality standards approved by EPA pursuant to the Federal Water Pollution Control Act. Part 110 reaffirms that harmful discharges to navigable waters or adjoining shorelines are prohibited.
40 CFR 112	Oil Pollution Prevention	Part 112 establishes guidelines for preventing the discharge of oil from non-transportation related facilities into or upon the navigable waters or adjoining shorelines of the United States. (Continued on next page).

¹Statutes and regulations that pertain primarily to the liability of persons causing a spill, penalties, or agency administrative procedures subsequent to a spill, rather than to design of facilities, operational procedures, planning, or record-keeping requirements have purposely not been included in this list.

Section 28 of the Mineral Leasing Act as amended, is one such statute.

TABLE 3-1 (Continued)

Regulation	Title	Scope
		<p data-bbox="832 516 1463 982">Part 112 provides for the preparation of Spill Prevention, Control, and Countermeasure (SPCC) Plans for all non- transportation facilities that due to their size and location could be expected to discharge oil in harmful quantities into or upon the navigable waters or adjoining shorelines of the United States. However, the regulation states that aboveground facilities with 1,320 gallons or less total capacity, or 660 gallons or less in a single tank, are exempted as are below-ground facilities with 42,000 gallons or less total capacity.</p> <p data-bbox="832 1024 1493 1493">Part 112 states that SPCC Plans must list all storage equipment and include a prediction of the direction, rate of flow and total quantity of product which could be discharged from the facility as a result of all anticipated types of spill incidents. The regulation also states that secondary containment structures and inventory control procedures must be described. It further states that SPCC Plans must contain a written commitment of manpower, equipment and materials to control and remove any harmful quantity of oil discharged.</p>

3.2.2 Control of Hazardous Substances

The Federal definition of hazardous substances was recently broadened by §101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (PL 96-510) into six categories. This Act states that the term hazardous substance means:

"(A) any substance designated pursuant to Section 311(b)(2)(A) of the Federal Water Pollution Control Act..."

Section 311(b)(2)(A) states that EPA must identify elements and compounds that when released to the environment in any quantity present an "imminent and substantial danger to the public health or welfare; including, but not limited to, fish, shellfish, wildlife, shorelines, and beaches." These compounds are identified in 40 CFR 116, which is discussed in Table 3-2.

"(B) any element, compound, mixture, solution, or substance designated pursuant to Section 102 of this Act..."

Section 102 of PL 96-510 states that EPA must identify any other "elements, compounds, mixtures, solutions, and substances which when released into the environment may present substantial danger to the public health or welfare or the environment..." The EPA is also directed to set individual levels above which spills of these substances must be reported. To date, no hazardous substances have been designated under Section 102.

"(C) any hazardous waste having the characteristics identified under or listed pursuant to Section 3001 of the Solid Waste Disposal Act..."

The Resource Conservation and Recovery Act (RCRA) of 1976 (PL 94-580) replaced the Solid Waste Disposal Act. Section 3001 of RCRA states that EPA must issue criteria for identifying the characteristics of hazardous wastes and must identify particular hazardous wastes subject to RCRA provisions. EPA criteria for hazardous waste designations and specific hazardous wastes are presented in 40 CFR 261. See Table 3-2.

"(D) any toxic pollutant listed under Section 307(a) of the Federal Water Pollution Control Act..."

Section 307, Table 1, of the Clean Water Act Amendments of 1977 (PL 95-217) lists 63 toxic pollutants for which effluent limitations must be established. The Act states that point source discharges of these pollutants in association with industrial activity must meet EPA designated limitations. The limits published subsequently only apply

to manufacturers or formulators of these substances, and are not considered to be applicable to ANGTS activities.

"(E) any hazardous air pollutant listed under Section 112 of the Clean Air Act..."

Section 112(a)(1) of the Clean Air Act defines a hazardous air pollutant as "an air pollutant to which no ambient air quality standard is applicable and which.....causes or contributes to air pollution which may.....result in an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness." Emission standards for four designated hazardous air pollutants (asbestos, beryllium, mercury, and vinyl chloride) are established by 40 CFR 61. To date, no other hazardous air pollutants have been designated or assigned emission standards by EPA.

"(F) any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to Section 7 of the Toxic Substances Control Act."

There are currently no chemical substances or mixtures designated or pending designation by EPA for action under Section 7.

The Federal definition of hazardous substances in PL 96-510 specifically excludes "natural gas, natural gas liquids, liquified natural gas, or synthetic gas usable for fuel". However, according to section 306(a) of PL 96-510, substances designated under categories (A) through (F) in the definition are construed to be hazardous materials when they are transported. As such, they are subject to the requirements of the Hazardous Materials Transportation Act and Federal Department of Transportation (DOT) regulations in 40 CFR 171 through 179.

The information presented to this point simply illustrates the broad usage and scope of the term "hazardous substance" in Federal statutes and regulations. Each part of the consolidated definition in PL 96-510 represents an extensive body of regulatory procedures and requirements whose purpose is to control the use, storage, and disposal of the given category of hazardous substances. Table 3-2 summarizes these Federal regulatory controls as they apply to the Alaska segment.

TABLE 3-2

FEDERAL HAZARDOUS SUBSTANCE CONTROL REGULATIONS

Regulation	Title	Scope
40 CFR 116	Designation of Hazardous Substances	This part lists the common names, synonyms, isomers, and Chemical Abstract System (CAS) numbers for approximately 400 hazardous substances which EPA has designated pursuant to §311(b)(2)(A) of the Federal Water Pollution Control Act.
40 CFR 117	Determination of Reportable Quantities for Hazardous Substances	Part 117 establishes for each substance named in Part 116 the threshold amounts at or above which spills must be reported. Penalties for spillage, and liabilities for removal are also addressed.
40 CFR 122	EPA Administered Permit Programs: The National Pollutant Discharge Elimination System; The Hazardous Waste Permit Program; The Underground Injection Control Program.	Subpart A contains administrative information that applies to all 5 EPA permit programs addressed by these consolidated regulations. Among these are definition of terms, duration, transfer, termination or revocation of permits and confidentiality of information. Subpart B sets forth specific requirements for hazardous waste permit programs under the Resource Conservation and Recovery Act (RCRA). Basically, an RCRA permit is required for the treatment, storage, or disposal of any hazardous waste identified in 40 CFR Part 261 (see below). Subpart B identifies facilities subject to this requirement, establishes the minimum content of applications, and sets forth categories of RCRA permits.
40 CFR 261	Identification and Listing of Hazardous Waste	Establishes that a solid waste is a hazardous waste subject to RCRA regulation if it exhibits any one of four defined characteristics (ignitability, corrosivity, reactivity, or EP

TABLE 3-2 (Continued)

Regulation	Title	Scope
		toxicity) <u>or</u> appears on a list of designated hazardous wastes published in Part 261. The list includes approximately 600 such wastes.
40 CFR 262	Standards Applicable to Generators of Hazardous Waste	Requires generators to obtain an EPA hazardous waste ID number, and so mark all shipments to treatment, storage, or disposal facilities. Requires all shipments to be manifested and establishes the content and use of the manifest. Sets packaging, labeling, marking, and placarding requirements for hazardous waste shipments. Prohibits on-site accumulation beyond 90 days, unless generator is also designated operator of a hazardous waste storage facility. Establishes record keeping requirements - both on-site and annual reports to EPA (forms provided with instructions). Generators of less than 1000 Kg/Mo. are small quantity generators and are exempt.
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste	Describes the relationship between EPA regulations for transport of hazardous waste and DOT 49 CFR 171-179 regulations for transportation of hazardous materials. Requires use of EPA waste ID number. Establishes manifest requirements when waste is accepted for shipment and delivered to other transporters, storage, treatment, or disposal facilities. Sets record keeping requirements. Delineates notification and clean-up requirements in the event of transportation related spills.
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities	Identifies persons/operations subject to Part 264. Sets waste analysis requirements that must be met before operators can receive and treat a waste. Establishes minimum level of

TABLE 3-2 (Continued)

Regulation	Title	Scope
49 CFR Chapter 1, Subchapter C	Hazardous Materials Regulations	on-site security. Delineates inspection requirements. Establishes training requirements, controls for incompatible wastes, site location standards, and design preparedness. Requires a contingency plan and describes necessary content. Establishes manifesting system and record-keeping requirements, indicating procedures to be followed when manifest discrepancies occur. In subparts I thru O, establishes special requirements for use of containers, tanks, surface impoundments, waste piles, and incinerators. Contains appendices that present EPA Hazardous Waste Report Forms and instructions.
49 CFR 172 Subpart B	Table of Hazardous Materials, Their Description, Proper Shipping Name, Class, Label, Packaging, and Other Requirements.	Encompasses approximately 2,000 specific hazardous materials, establishing degree of hazard, labels required, abbreviated packaging requirements, and allowable mode of transport.
49 CFR 173	Shippers - General Requirements for Ship- ments and Packagings.	Contains a Subpart (B) that sets forth in detail standard requirements for preparation of hazardous material shipments and Subparts (C thru O) that delineates packaging and preparation requirements for related types of hazardous materials (examples being explosives, flammable liquids, corrosive materials, poisons, and gases). Specific chemicals and substances are

TABLE 3-2 (Continued)

Regulation	Title	Scope
		addressed under each category: for example, paints (173.128), oily rags (173.199), spent sulfuric acid (173.-249), lime (173.850), battery parts (173.915) and pesticides (173.1040).
49 CFR 174	Carriage by Rail	Establishes carrier's requirements for transportation of a hazardous material by rail.
49 CFR 175	Carriage by Aircraft	Establishes requirements for aircraft operators transporting hazardous materials aboard aircraft.
49 CFR 176	Carriage by Vessel	Establishes carrier's requirements for transportation of a hazardous material by vessel in navigable waters of the United States.
49 CFR 177 Highway	Carriage by Public	Establishes carrier's requirements for transportation of a hazardous material on public highways.

3.4 STATE STATUTES AND REGULATIONS

State of Alaska statutes and regulations pertaining to control of oil and hazardous substances are extensive. The following summary focuses on the principal statutes and regulations directly applicable to the Alaska segment. Requirements that relate to liability matters or agency administrative actions rather than design, or practical considerations, have not been included here.

3.4.1 Control of Oil

The authority of the Alaska Department of Environmental Conservation (ADEC) to regulate discharges of oil¹ is established by Alaska statutes: specifically Title 46 Chapter 03, where it is stated that;

"No person may discharge, cause to be discharged, or permit the discharge of petroleum, acid, coal or oil tar, lampblack, aniline, asphalt, bitumen, or a residuary product of petroleum, into, or upon the waters or land of the state except in quantities, and at times and locations or under circumstances and conditions as the department may by regulation permit....." (AS 46.03.740)

The reporting of oil discharges is addressed by Section 46.03.755, where it is stated that:

"(a) A person in charge of a facility, operation or vessel, as soon as he has knowledge of any discharge from the facility, operation or vessel in violation of AS 46.03.740 or 46.03.750, shall immediately notify the department of the discharge."

Chapter 04 of Title 46 addresses oil pollution control, from the perspective of avoiding oil spills and, where spills do occur, minimizing the ensuing damage to the environment. Section 46.04.020 states that persons causing an oil discharge must contain and cleanup the discharge, unless ADEC finds that the containment and cleanup is not feasible or would cause greater environmental damage than the actual discharge. The manner of containment and cleanup, including associated waste disposal, must be approved by ADEC.

¹From 18 AAC 75.900, oil means "a derivative of a liquid hydrocarbon and includes crude oil, lubricating oil, sludge, oil refuse or any other petroleum-related product or byproduct."

Section 46.04.030 states that an Oil Discharge Contingency Plan (approved by ADEC) must be prepared for all oil terminal facilities¹ beginning operation after January 1, 1981. The section further states that the plan must be renewed at least every three years and may contain whatever reasonable terms and conditions ADEC deems necessary to its approval. Section 46.04.050 exempts from this requirement oil terminals with an effective storage capacity of less than 10,000 barrels of oil.

Regulations determined by ADEC to be necessary to carry out the purposes of AS 46.03 and AS 46.04 are found in Title 18, Chapter 75 of the Alaska Administrative Code (AAC). Other regulations, which will be enumerated at the end of this subsection, address oil from the perspective of ADEC's air, water, and solid waste management authorities. The following is an article by article indication of Chapter 75 content.

Under Article 1 of Chapter 75, surface oiling permits from ADEC are required before roads can be oiled for dust control. In acting on an application to oil, the regulation states that ADEC must consider the potential for water pollution, the need for dust control, weather, and environmental effects.

Article 2 of Chapter 75 sets forth regulations for oil discharge reporting, cleanup, and disposal. Section .080 establishes the time frame for notification to ADEC for spills, according to the size and location of the occurrence. Sections .090 through .110 describe the timing and content of written spill reports. Section .145 states that ADEC may authorize supplemental clean-up efforts if the efforts of persons responsible are ineffective.

Article 3 addresses intentional oil discharges for scientific purposes, and is judged not applicable to the Alaska segment.

Article 4 of Chapter 75 states that owners and operators of oil terminals must prepare an Oil Discharge Contingency Plan and submit it for ADEC approval. The Article sets forth facilities subject to this requirement, the time frame for submittal, and the minimum content of an acceptable plan. The Article also states that plans must include a discussion of the following: the manner of containment and clean-up for the "greatest possible discharge that could occur," a communications plan; typical spills to be expected; agency notification procedures; clean-up equipment inventories; use of chemicals to clean-up spills; response times; interim and ultimate disposal of removed oil and oily wastes; and shut down procedures for spill sources. In

¹From 46.04.120, an oil terminal facility is a facility "which is used for the purpose of transferring, processing, refining, or storing oil"

addition, the regulation states that facility owners or operators must prepare and submit a simplified manual suitable for field use, containing the basic elements of the contingency plan.

Title 18, Chapter 50, Air Quality Control, states that the open burning of oils, oily wastes, and contaminated oil cleanup materials in a manner that produces black smoke is prohibited, unless prior written approval is obtained from ADEC. Chapter 50 also establishes emission limits for incinerators (including those to be used for disposal of waste oil), and requires facilities above certain capacities to obtain ADEC Permits to Operate. These requirements are addressed in Plan 1, Air Quality.

Chapter 60, Solid Waste Management, establishes basic requirements for the design, permitting, and operation of solid waste landfills. The chapter defines the term hazardous waste. Oil and hazardous waste are specifically named among a spectrum of materials that comprise solid waste and, hence, are subject to the chapter. Plan 19, Solid Waste Management, describes these requirements and project responses in greater detail.

Chapter 70, Water Quality Standards, establishes allowable levels of "Toxic and Other Deleterious Organic and Inorganic Substances" and "Petroleum, Hydrocarbons, Oils, and Grease" in marine and fresh waters of the State. The levels are expressed as criteria assigned with regard to the intended use of given water bodies. The Chapter defines the term, " Toxic Substances."

Chapter 72, Wastewater Disposal, contains requirements on the discharge of oil and hazardous substances as a wastewater. The discharge of oil, petroleum products, or industrial solvents to a sewage system designed to contain only sewage is prohibited by 18 AAC 72.010 (f). The design of wastewater treatment plants must be formally approved by ADEC under the Plan Review process described in 18 AAC 72.060. Wastewater is defined as including oil and grease. Plan 10, Liquid Waste Management, addresses these requirements.

3.4.2 Control of Hazardous Substances

The ADEC defines a hazardous substance as "an element or compound which, when it enters into or upon the water or surface or subsurface land of the state, presents an imminent and substantial danger to the public health or welfare or to fish, animals, vegetation, or any part of the natural habitat in which they are found, and includes, but is not limited to, poisons, pesticides, acids, caustics, infectious or pathological wastes, chemical toilet wastes, radioactive materials, solvent, toxic heavy metals and oil." (18 AAC 75.900)

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Chapter 75, Article 2 establishes ADEC reporting, cleanup, and disposal requirements for spills of hazardous substances. Spills of hazardous substances other than oil must be reported to ADEC immediately. The time frame for reporting oil spills varies with the size of the spill and the environment in which the spill occurs. Article 2 describes the information necessary for the initial and final reports of hazardous substance spills. The Article also sets placarding requirements for transportation and storage of hazardous substances. ADEC's hazardous substance placard or an approved substitute must be posted on tanker trucks carrying more than 500 gallons of a hazardous substance; on vessels transporting a hazardous substance over state waters; on vehicles carrying hazardous substances in any quantity off-road; and at aboveground storage facilities in excess of 1,000 gallons. The clean-up and disposal of hazardous substances and any other substances contaminated with hazardous substances must be approved by ADEC.

Other state requirements pertaining to the management of oil and hazardous substances at the work site appear in the Alaska Occupational Safety and Health Standards; specifically, Subchapter 01, the General Safety Code, Subchapter 04, the Occupational Health and Environmental Control Code; and Subchapter 08, Petroleum.

4.0 METHODOLOGY AND IMPLEMENTATION

4.1 Overview

This document establishes the basis for oil and hazardous substance management during all phases of ANGTS activity. The basis has two parts:

1. The organization of documents used to administer oil and hazardous substance management;
2. Engineering concepts developed for selected activities where the potential for spills or mishandling is known to exist.

The project's oil and hazardous substance documents and the engineering concepts described in this section are meant to satisfy the regulatory criteria in Section 3.0. Implementation of Plan 12 will begin with its agency acceptance, at which time NWA will start the process of disseminating these commitments to the affected parties within the project, including among others, engineering management, design and field personnel, contract administrators, execution contractors, and operations personnel. The timing of these instructions and the form they take will be appropriate to the nature of the individual activity and the contractual relationship between the party receiving direction and NWA. Considering implementation to be the putting into practice of plans and procedures, it is expected that the implementation period will continue into the construction and operational phases of the project.

4.2 Project Oil and Hazardous Substance Planning Documents

The oil and hazardous substance management program is to be an ongoing effort. As such, it is necessary to develop and present information in stages so that the appropriate documents are prepared as the design details that must be addressed become available and, conversely, as the design effort requires guidance or input. This is viewed as a highly iterative process, wherein the design (see Section 4.3) and planning documents (see Section 4.2) develop on parallel tracks. The staged approach is also necessary so agreement can be reached on concepts before final designs and procedures are developed.

Finally, staged development ensures that no single document attempts to cover in detail every aspect of project activity and, as a result, is so cumbersome that it cannot be easily and routinely used by field personnel operating a given facility.

The functional requirements to be fulfilled by project oil and hazardous spill planning include program management and coordination, guidance of engineering design, and control of field activities. To meet these diverse requirements within the aforementioned constraints and objectives, the project's oil and hazardous substances planning effort is organized into four areas and corresponding documents, as follows:

1. 1.6.1 Plan 12, Oil and Hazardous Substances - Overall program management.
2. Oil Discharge Contingency (ODC) Plans and Spill Prevention, Control, and Countermeasures (SPCC) Plans - Planning for prevention, control, and cleanup of oil spills from terminals or storage. Depending on the amount of storage, an SPCC or combined SPCC/ODC will be prepared for each fuel storage facility.
3. Oil and Hazardous Substances Spill Contingency Plan (OHSSCP) - Planning for prevention, control, cleanup, and reporting of spills of all hazardous substances; and for oil spills other than from bulk storage facilities.
4. Petroleum Handling and Procedures Manual (PHPM) - Procedures for fuel handling, fuel transfers, and surveillance/inspection of oil storage transfer facilities.

The project activities encompassed by each of these documents are summarized on Table 4-1. The table illustrates that coverage is complete, i.e., that there is an advance project control for each activity and facility that has a spill potential. The logic used to determine which documents are applicable to a given activity or project facility is graphically presented in Figure 4-1.

In addition, there will be frequent interchange between the technical groups preparing these four documents and the engineering teams responsible for facility design. Oil and hazardous substances spill prevention measures described in the various project criteria and design packages to date reflect this interchange.

The following is a description of each of the four documents, presented in sufficient detail to enable the reviewer to understand the level of content and ultimate practicality of each.

4.2.1 1.6.1 Plan 12, Oil and Hazardous Substances

This plan is the highest level project document for oil and hazardous substances planning. It is the management document

TABLE 4-1

DOCUMENT APPLICABILITY

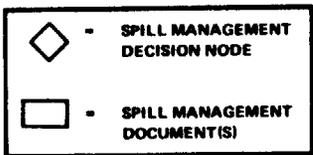
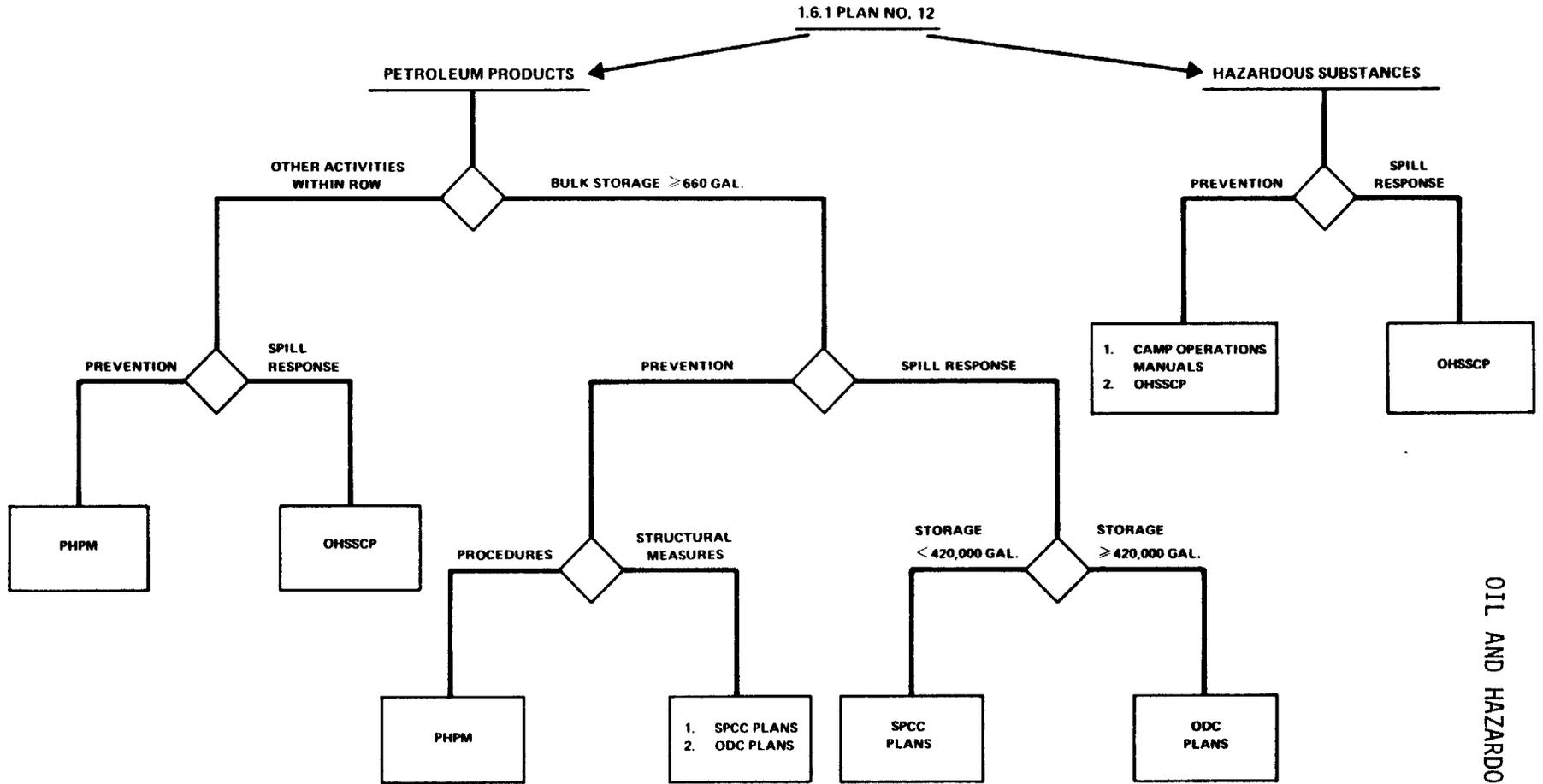
<u>ACTIVITIES</u>	<u>DOCUMENTS</u>			
	1.6.1 PLAN	SPCC OR ODC/SPCC	OHSSCP	PHPM
<u>OIL</u>				
1. <u>PLANNING</u>				
○ ALL FACILITIES ENGR	X			
○ CONSTRUCTION	X			X
2. <u>ENGINEERING DESIGN</u>				
○ > 660 GAL STORAGE ¹	X	X		
○ < 660 GAL STORAGE	X		X	
3. <u>CONSTRUCTION</u>				
○ FIELD PLANNING	X			X
○ FIELD EXECUTION		X	X	X
○ CAMP OPERATIONS		X		X
4. <u>OPERATIONS</u>				
○ PIPELINE			X	X
○ COMPRESSOR STNS/AGCF		X		X

HAZARDOUS SUBSTANCES

1. <u>PLANNING</u>				
○ ALL FACILITIES ENGR	X			
○ CONSTRUCTION	X			
2. <u>ENGINEERING DESIGN</u>				
○ ALL FACILITIES			X	
3. <u>CONSTRUCTION</u>				
○ PLANNING	X			
○ EXECUTION			X	
4. <u>OPERATIONS</u>				
○ ALL FACILITIES			X	

1. 660 gal. in a single tank or 1320 gal. total storage for a facility

Figure 4-1 - Guide to Use of Spill Management Documents



that is used to define interfaces and flowdown (i.e., document hierarchy) in order to satisfy all program requirements. This document provides that all project activities that warrant oil and hazardous substance planning are taken into account. It ensures consistency between flowdown documents, prevents redundancies, and, in this respect, facilitates configuration control (i.e., coordination of interfaces between the various program documents and activities).

Plan 12 is the basis for developing later more detailed documents tailored to meet the specific needs of individual facilities and sites, and will actually be used to coordinate the preparation of these documents. The later documents address specific problems, facility designs, field conditions, and spill response scenarios. In contrast, Plan 12 has been prepared primarily to demonstrate that all necessary aspects of oil and hazardous substances management have been taken into account and will be dealt with in subsequent documents.

A secondary purpose of Plan 12 is to describe certain specific design concepts/measures for oil and hazardous substance control that NWA judges to warrant agency concurrence before detailed design resources are expended. (Section 4.3)

4.2.2 SPCC and ODC Plans

As indicated in Section 3.0, SPCC Plans are required by Federal regulations (40 CFR 112) for any aboveground facilities with storage capacity in excess of 660 gallons in a single tank or 1320 gallons total. State regulations (18AAC75) require an approved ODC Plan for facilities with storage capacity in excess of 420,000 gallons (AS 46.04.050). The ADEC requires submission and approval of ODC Plans prior to operating a storage facility.

In consonance with the overall objective of minimizing the number of documents, combined SPCC/ODC Plans will be prepared for each facility with more than 420,000 gallons storage capacity. These joint plans are intended to satisfy both Federal and State regulations. Facilities with more than 1320 but less than 420,000 gallons capacity (or 660 gallons in a single tank) will be provided individual SPCC Plans.

The SPCC Plans are site specific documents prepared to promote the proper design and operation of a given oil storage facility in a manner that minimizes spill opportunities and provides an effective response when spills do occur. SPCC Plans prepared for this project will be consistent with 40 CFR 112 and will contain the following information:

- o Name of the facility.

- o Name(s) of the owner or operator of the facility.
- o Location of the facility.
- o Maximum fuel storage or handling capacity of the facility and normal daily throughput.
- o Description of equipment or procedures that have a reasonable potential of causing an oil spill at the facility (tank overflow, rupture, or leakage), together with a prediction of the direction, rate of flow, and total quantity of oil that could be lost as a result of each major type of failure.
- o Description (and drawings where appropriate) of containment or diversionary structures or equipment to prevent discharged oil from reaching navigable water courses.
- o Discussion of conformance with 40 CFR 112.7(e) guidelines and, where more stringent, applicable State regulations and guidelines. The 40 CFR 112.7(e) guidelines contain numerous equipment performance and facility configuration requirements.
- o Description of inspection procedures and signed inspection records (to become part of the plan as they are issued).
- o Description of facility security (both structural and procedural measures).
- o Description of (a) procedures for properly instructing personnel in the operation and maintenance of oil spill prevention equipment; (b) person(s) (by name or title) accountable for oil spill prevention at the facility and their line reporting management; and (c) spill prevention briefings for personnel.

As required by 40 CFR 112, individual SPCC Plans will be prepared within six months of a new facility going into service, and will be fully implemented within the first year of service.

The ODC Plan required by Alaska regulations is analogous to the SPCC Plan. However, certain additional information must be included and the requirement applies only to larger storage facilities (in particular, terminals with a storage capacity in excess of 10,000 barrels). The ODC Plans are site specific documents and must contain the following information established by 18AAC75:

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- o Name, title, business address, telex number, and business and after-hour telephone number or contact for key personnel assigned to essential operations and who are responsible for specific duties in the event of a discharge.
- o Name of any third party clean-up subcontractor and copy of contract
- o Description of containment
- o Communications plan
- o Estimate of size, frequency and location of the type of oil discharge most likely to occur and a detailed basis for the estimate.
- o Description of the proposed means of detection, including surveillance and schedules, leak detection, observation wells, monitoring systems, and spill-detection instrumentation.
- o Procedure for notifying operating personnel, response personnel, ADEC, and federal agencies when spills occur.
- o The amounts, specifications, limitations, and storage locations for cleanup equipment (either under the direct control of the operator, or under indirect control by contractual or cooperative arrangement), and the age and condition of the equipment.
- o Description of procedures for use of chemicals for oil discharge control.
- o Estimates of response times from the discovery of the discharge to deployment of containment, exclusion, and recovery equipment in areas of operation.
- o Description of proposed methods and sites for interim and ultimate disposal of removed oil, oil-contaminated material, and other oily wastes; and the capacity of the sites and methods used.
- o Provisions for emergency shutdown of the oil-spill source.
- o A simplified manual suitable for field use containing the basic elements of the contingency plan.

- o Any other information required by the ADEC to ensure that oil-discharge response capability meets the requirements of 18AAC75.325.
- o Plans prepared to meet state ODC Plan requirements for a given facility will also contain information necessary to meet SPCC Plan requirements for that facility.

4.2.3 OHSSCP

The OHSSCP prepared for this project will be the operative field document for two functional areas: responses to all petroleum spills not covered by SPCC or ODC Plans; and the management of hazardous substances (including transport, storage, use and disposal).

By operative, it is meant that the OHSSCP will be the principal document that field personnel at the worksite(s) will use to control project activities in these two areas. Organization of this plan is considered to be the key to its effectiveness. Recognizing this, the plan will be organized to provide field personnel ready access to clear and adequate instructions on how to respond to given situations and the plan will be free of nonessential information. It is intended that the plan address specific practical oil and hazardous substance management tasks at a level of detail that, while clear and instructive, can be followed consistently project-wide. The plan will be updated when necessary to reflect project experience and thus improve its effectiveness. It is also expected that some sections will be detachable or issued separately. Examples are sections pertaining to spill clean-up techniques and sections delineating report procedures. The latter will establish the format and procedures for maintaining field office logs of inspection and spill response reports.

The following is a description of the general content of the OHSSCP and the depth of subject coverage.

- o Summary of Statutes and Regulations - An identification of Federal and State regulations pertaining to oil and hazardous substance spill prevention, control, clean-up, and reporting together with excerpts that relate to development of sections of the OHSSCP, and the requirements of individuals to avoid as well as properly report spills.
- o Description of Applicable Activities - Project activities that create an opportunity for spills of oil and hazardous substances will be described to the extent necessary to identify the general categories of spills and spill

circumstances to be expected, and the typical causes of spills. This section will be the basis for subsequent sections devoted to containment, clean-up, and disposal.

- o Reporting - This section will describe the project's spill reporting organization and delineate the reporting procedures that field personnel are to follow when an oil or hazardous substance spill of varying degree occurs. Lines of verbal and follow-up written reporting will be established in a manner consistent with regulatory requirements. The project personnel to be contacted will be identified by position, location, and phone number such that contacts are correctly and consistently made regardless of the construction section or activity site experiencing a spill. Standard reporting forms will be provided together with instructions on the depth of information required to complete each itemized question on the form. Procedures for distributing and maintaining field records of the spill reports will also be established.

- o Spill Response Organization - This section will describe the organization of the project's field response capability. The section will indicate how the response organization is to be structured administratively (at the pipeline construction section level) and at the working level in the field. Emphasis will be placed on where decision-making authority rests and the source of manpower to be called upon for the types of spill events for which a potential has been identified in previous sections of the plan. The section will indicate the extent to which specialized spill response services are to be used, the circumstances under which they would be called in, and the arrangements made to ensure their readiness. This section will also introduce and explain how the spill containment, clean-up and disposal guidelines found in the next two sections are to be put into practice.

- o Spill Containment and Protection of Unaffected Areas - This section of the plan will contain a compendium of techniques for the initial field response to a spill, emphasizing safe means of limiting the spread of contaminants to adjacent unaffected areas. The techniques will be presented in a quick access format (e.g., cross-indexed or tabbed subsections) that will identify for users a reasonable range of alternate ways to stop a spill at its source and intercept its path, considering the nature of the material spilled, terrain, hydrology, adjacent environmental sensitivities, seasonal factors, equipment and manpower requirements, and safety. Instructions for

employing each technique will be provided along with a statement of its advantages and limitations. The intent is to give field supervisory personnel a pre-established basis for making judgments and taking the proper course of action considering the spill circumstances and resources at hand. Logic charts and drawings of appropriate deployment methods will be a key part of this presentation.

- o Spill Clean-Up and Disposal - This section will address the follow-up to initial containment and will be formatted similar to the Spill Containment Section (i.e., tabbed or key indexed). Alternate methods of spill clean-up considering the product lost, the condition and accessibility of the affected area, equipment and manpower required, and the consequences of further disturbance will be presented. The alternatives identified will be consistent with prevailing practices, project permits and approvals, and field disposal procedures established in other project documents, including the Camp Operations Manuals (several disposal methods require the use of camp facilities and, therefore, must be accommodated in camp operational procedures). Again, logic charts and drawings will be a substantial part of the presentation in this section.
- o Spill Response Equipment - Spill control and clean-up equipment and materials will be stockpiled in predetermined amounts at each construction camp. This section will establish the composition and requisite quantities of equipment and material inventories, and will establish inventory inspection, maintenance, and verification procedures.
- o Hazardous Substance Control - This will be a separate section describing the manner in which all non-petroleum hazardous substances taken to the field (or hazardous wastes generated in the field) are to be properly and safely transported, stored, used, treated, disposed, and manifested. The section will also establish procedures that contractors must follow to notify NWA when hazardous substances are intended for use in the field.

In developing the OHSSCP, NWA will coordinate closely with Alyeska Pipeline Service Company so that (1) project personnel respond to ANGTS spills in a manner that doesn't hinder operation of the TAPS pipeline, and (2) project activities in the vicinity of TAPS facilities do not impede the capability of Alyeska to mount their own response should a spill from the oil pipeline occur. Procedures will be developed to provide notification to Alyeska in the event of a spill involving their facilities.

4.2.4 Petroleum Handling Procedures Manual (PHPM)

The PHPM is to be a project-wide standard for procedures relating to the storage, transfer, and dispensing of petroleum fuels, including automotive or aviation gasoline, arctic diesel, motor oil, jet fuel (JP-4), and liquified petroleum gas (LPG). The PHPM will define minimum project procedural requirements for fuel handling and is to serve as an operational guide for all project personnel engaging in fueling practices. Fuel handlers are to be familiar with the content of the PHPM, and it is to be readily available in any area where petroleum products are stored, handled, transported, or dispensed. The following is a description of the principal sections to be included in the manual.

- o Safety and Emergency Response - This section will explain to fuelers the hazards of refined petroleum products in terms of health, safety, and environmental effects. The dangers of breathing vapor, skin contact, and accidental ignition will be described together with instructions on clothing and apparatus to be used to avoid injury. Instructions will also be provided on proper responses to refined product spills. The flammability characteristics of various products will also be addressed, as well as wind, temperature, and terrain influences on potential hazards.
- o Operating Procedures - This section is to contain instructions for the day-to-day operation of fuel storage and dispensing facilities, including project storage terminals, petroleum, oil, and lubricants facilities (POL's), remote fuelers (i.e., trucks hauling fuel to equipment on the right-of-way), aircraft fuelers, and vehicle maintenance facilities. Included will be inspection checklists for bulk storage, drum storage, aircraft refueling, and propane storage areas, and procedures for operating and maintaining fuel dispensing equipment in a manner that minimizes the chances for spills to occur. Also included will be procedures for receiving fuel shipments from carriers, dispensing fuel into vehicles, draining and collecting waste oil and lubricants from vehicles and equipment in shop areas, fueling and equipment maintenance in floodplain areas, handling and inventory control of drums, and aircraft refueling.
- o Liquid Petroleum Gas (LPG) - A separate section will be presented on the characteristics and behavior of LPG and the precautions to be followed in storing, filling, and dispensing from LPG tanks and cylinders.

- o Product Accountability - This section is to contain procedures for inventory control at project POL's and will include inventory control forms to be used to record the receipt and dispensing of all petroleum products. Inventory reports will be required for JP-4, diesel and gasoline transfers at the POL's and at project day tanks. The procedures presented with the forms will explain how to use inventory forms to identify anomalous use.

4.3 Engineering Concepts for Control of Oil and Hazardous Substances

NWA with agency assistance has identified the principal oil and hazardous substances that will require engineering and procedural controls during the course of the project. This section of Plan 12 indicates the source and expected amounts of these known substances, and the general measures that will be employed as controls. The purpose of this presentation is to confirm that this part of the planning effort has been sufficiently comprehensive (i.e., that all significant material and waste categories have been taken into account) and that the measures proposed are viable, in the sense of ultimately gaining agency acceptance when final design have been developed.

The measures described in this section are necessarily conceptual for this is the present state of design. It is intended that this presentation be the basis for the agencies to concur with project design concepts in selected areas of oil and hazardous substance management, and thus become a firm point of departure for later detailed design in these areas.

The presentation in this section is not intended to cover all aspects of oil and hazardous substance management in equivalent intensity or in final detail. In previous correspondence and discussions, agency reviewers of Plan 12 have indicated a number of areas where specific detail would be needed in order to evaluate the acceptability of NWA's design and procedural methods for controlling oil and hazardous substances. Certain of these areas cannot be conclusively dealt with at this stage of project design but are slated for detailed attention in later project design products, including such documents as design review packages, specifications, drawings, permit applications, and the OHSSCP. Those areas where more detail is to be forthcoming, the information considered pertinent to reviewers, and the project documents that will contain the information sought are presented in Table 4-2.

TABLE 4-2

FUTURE SOURCE DOCUMENTS FOR OIL AND HAZARDOUS SUBSTANCE DESIGN DETAILS

DIS12/001

12-4-13

Design Item	Pertinent Considerations	Principal Review Document(s)		
		AGCF	Camps	Compressor Stations
Bulk and Containerized Liquid Fuel Storage	Siting, containments (e.g., berms or double-wall enclosures), tank spacing, piping interconnections, liners, sumps and drainage, tank design, metering foundations.	o SPC-LFS-0001- Liquid Fuel Storage Facilities	o SP (Unnumbered)- Liquid Fuel Storage Facilities	o SP-4680-41-01 - Field Erected Storage Tanks o SP-4680-41-02 - Shop Assembled Welded Steel Storage Tanks o SP-4680-00-18 - Sealing Tankage Containment Areas (in Design Review Package CS-7) o SP-4680-50-01 - General Piping, Process and Utility Design, Layout and Drawing Specifications o Foundation drawings in CS-7 o CS-4 Power Generation and Utilities

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TABLE 4-2 (Continued)

DIS12/001

12-4-14

Design Item	Pertinent Considerations	Principal Review Document(s)		
		AGCF	Camps	Compressor Stations
Liquid Fuel Distribution Systems	Piping materials and components, flexibility considerations, protection from traffic (casings and barriers), inspectability, leak detection, pressure testing, weather protection.	o SPC-FDS-0001-Liquid Fuel Distribution Systems	o SP (Unnumbered)-Liquid Fuel Distribution Systems	o SP-4680-50-3 - Stations Piping Material Specification o SP-4680-50-1 - General Piping, Process Utility Design, Layout and Drawing Specifications
Waste Oil Collection and Distribution Systems	Sumps, transfer equipment, holding tanks (sizing, location, connections), waste oil burners.	o SPC-WOS-0001-Waste Oil Systems	o SP (Unnumbered)-Waste Oil Collection and Distribution Systems	o OM-1 - Design Criteria Operations and Maintenance
Oily Waste Disposal Sites	Standards of design of up-land sites (primarily previously disturbed areas) to which oil contaminated gravels and vegetation would be taken during and after spill response and clean-up activities. To include designation of specific sites for given segments of pipeline alignment and/or individual project facilities.	o N/A	o Application for ADEC solid waste disposal site permits and BLM or ADNR land use permits	o See "Camps" - same sites will be used

TABLE 4-2 (Continued)

DIS12/001

Design Item	Pertinent Considerations	Principal Review Document(s)		
		ACCF	Camps	Compressor Stations
Hazardous Substance Use Areas and Disposal Systems	Identification of hazardous substance storage and use areas, storage requirements (shelving, access controls, ventilation, flooring, inventory controls, compatibility considerations), and disposal equipment (including incinerators).	<ul style="list-style-type: none"> o SPC-HSS-0001-Hazardous Substance Use Facilities 	<ul style="list-style-type: none"> o Camp Operations Manual o SP (Unnumbered)-Hazardous Substance Use Areas and Disposal Systems 	<ul style="list-style-type: none"> o OM-1 - Design Criteria Operations and Maintenance

12-4-15

4.3.1 Identification and Estimates of Oil and Hazardous Substances

Oil and hazardous substances known to be required during construction and operation of the Alaska segment of the ANGTS are shown in Tables 4-3 and 4-4. Construction equipment waste oil has been segregated to emphasize on a segment-by-segment basis the relatively large quantities of waste oil generated.

It is reasonable to expect that Execution Contractors (EC's) may employ in the performance of their work other hazardous substances not currently identified in the tables. Contractors will be required to disclose all hazardous substances intended for use. Use of these materials will be permitted when the contractor has supplied evidence that proper handling, storage, disposal and recordkeeping methods will be observed. Since this information from the contractors will generally not be provided until after camp design is complete, NWA will determine on a case by case basis what design changes (e.g., modification of store rooms, additional ventilation, climate control) must be made to accommodate the previously unaccounted for materials. The changes necessary will have a bearing on whether these materials are approved for use.

- o Construction Equipment Waste Oil - Waste oil generated in equipment maintenance shops and in the field for the AGCF, each pipeline section, and for compressor station construction will be determined by the kind and estimated number of equipment to be serviced and service intervals. Generation rates during project construction were estimated for peak construction periods to insure adequate planning for handling, storage, and disposal. This information will be used to design storage and disposal facilities for waste oil. Construction equipment waste oil generation estimates are summarized in Table 4-3.
- o Hazardous Substances and Other Waste Oils - Hazardous substances expected to be used during AGCF, pipeline and compressor station construction are listed in Table 4-4 with estimated generation rates at peak construction periods for a typical 1,000-man pipeline camp. Also, shown on the Table are estimates of waste generation rates during operation of permanent facilities. Pipeline wastes are estimated for a typical district operations and maintenance station. Other waste oils will be generated from planned equipment start-up and preventive maintenance activities and from vehicle maintenance.

TABLE 4-3
ESTIMATED CONSTRUCTION EQUIPMENT WASTE OIL GENERATION

	<u>Waste Oil Gallons</u>	<u>Months of Equipment Operation¹</u>
AGCF	54,000	54
Sag River	200,000	24
Compressor Station 2	35,000	24
Happy Valley	200,000	32
Toolik	42,000	16
Subtotal Section 1	<u>477,000</u>	
Compressor Station 4	35,000	24
Galbraith	74,000	23
Atigun	74,000	19
Chandalar	91,000	17
Dietrich	171,000	28
Subtotal Section 2	<u>445,000</u>	
Coldfoot	123,000	24
Compressor Station 7	35,000	24
Prospect	123,000	22
Old Man	130,000	25
Five Mile	154,000	22
Subtotal Section 3	<u>565,000</u>	
Compressor Station 9	35,000	24
Manley	195,000	31
Fort Wainwright	254,000	27
Compressor Station 11	35,000	24
Subtotal Section 4	<u>519,000</u>	
Rivers End	264,000	31
Compressor Station 13	35,000	24
Johnson River	188,000	29
Subtotal 5	<u>487,000</u>	
Tok	220,000	27
Compressor Station 15	35,000	24
Northway	254,000	34
Subtotal Section 6	<u>509,000</u>	
Project Total	3,056,000	

¹Months of Equipment Operation is defined as months in which there will be direct field labor involved in AGCF, pipeline, and civil construction.

TABLE 4-4

ESTIMATED GENERATION OF HAZARDOUS WASTES AND OTHER WASTE OIL

SUBSTANCE	CONSTRUCTION		OPERATIONS	
	PIPELINE	AGCF	PIPELINE	AGCF
Sulfuric Acid	80 gal/mo.	20 gal/mo.	1 gal/mo./distr. maint. stn.	2 gal/mo.
Cleaning Solvents	100 gal/mo.	100 gal/mo.	20 gal/mo.	20 gal/mo.
Paint Solvents	15 gal/mo.	15 gal/mo.	5 gal/mo.	5 gal/mo.
Malathion ¹ and Pyrethrin ² (See Plan 14)	5 gal/mo. (seasonal)	N/A	N/A	N/A
Methanol (dry gas) ²	1 gal/mo. (seasonal)	1 gal/mo. (seasonal)	1 gal/mo. (seasonal)	1 gal/mo. (seasonal)
Isopropanol ²	1 gal./mo. (seasonal)	N/A	N/A	N/A
Hygroscopic Fluid (not yet selected) ³	300-1,000 gallons (upon completion of hydrotesting)	N/A	N/A	N/A
Oily Water and Spill Cleanup Material	50-100 lbs/mo.	50-100 lbs/mo.	20-40 lbs/mo.	20-40 lbs/mo.
Radiographic Film Processing Waste	34 gal/day (peak) ⁴	60-75 gal/wk.	N/A	N/A

¹Not a hazardous waste, hazardous substance, or a hazardous material. Estimated for informational value only.

²A hazardous material but not a hazardous waste or substance and, hence, not within the scope of this plan. See Plan 14, Pesticides.

³Properties and categorization indeterminate.

⁴Maximum estimate per pipeline camp, assuming all welding activity for a given pipeline section were to occur in the vicinity of a single camp.

N/A = Not Applicable

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12-4-18

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TABLE 4-4 (Continued)

SUBSTANCE	CONSTRUCTION		OPERATIONS	
	PIPELINE	AGCF	PIPELINE	AGCF
Heat Transfer Medium Oil	N/A	N/A	N/A	10 gal/mo. make-up
Rotating Equipment Flushing Oil	18,000 gal/stn. (1 time)	37,000 gal (1 time)	N/A	N/A
Rotating Equipment Lube and Seal Oil, Hydraulic Oil and Greases	N/A	N/A	6,000 gal/yr./ stn. (average)	12,500 gal/yr. (average)
Waste Oil (vehicles)	(See Table 4-3)	(See Table 4-3)	5 gal/mo.	5 gal/mo.

N/A = Not Applicable

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12-4-19

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Estimated waste generation rates are given when the use of a substance can be expected to result in the generation of a waste product. Where a substance is not expected to be used, the estimated waste generation in the Table is shown as not applicable (N/A).

4.3.2 Waste Disposal Methods

This section presents a general description of the manner in which wastes from each of the previously identified oils and hazardous substances will be handled and ultimately disposed. This information is provided to indicate the planning that has been done to date in the design of project facilities and to gain agency concurrence regarding acceptability of these general waste disposal methods. It must be emphasized that these disposal decisions are subject to the design process and NWA scrutiny of the actual substances that the EC's will use and case-by-case confirmation that the storage, handling and disposal methods proposed for each are safe and proper. Alternate methods may be implemented and used with prior NWA approval and agency concurrence.

- o Waste Oil - Waste oil from pipeline camp vehicle maintenance will be taken to a sump located in or just outside the shop building. The sump will be accessible from both the inside and outside of the building. A vacuum truck will empty the waste oil sump on an as needed basis and discharge the maintenance shop waste oil into a steel bulk waste oil tank located near the incinerator building.

Waste oil from vehicle maintenance along the pipeline Right-of-Way will be collected by vacuum in a separate tank located on the oiler rigs. The oiler rigs will discharge the waste oil into the steel, bulk waste oil tank at the camps. The waste oil storage tank will be equipped with a high level alarm.

Waste oil will be transferred from the bulk waste oil tank to the waste oil burner which will be a part of the solid waste incinerator. The waste oil burner will be gravity fed from the waste oil tank.

Waste oil from the AGCF equipment maintenance shop will be collected in the sump located at one end of the shop. The oil will be removed from the sump by a vacuum truck as necessary. During construction, the oil will be discharged from the truck at the Prudhoe Bay Unit's Oily Waste Disposal Facility for injection or, if quantities are small, at the North Slope Borough facilities for incineration. During operations, waste oil including hydraulic fluids, waste lubrication oils and greases will

be collected and stored in the Gas Conditioning Plant's steel slop oil tank. Waste oil will be ultimately disposed of as indicated above or, pending economic considerations, may be trucked to a recycle/reclaiming facility.

- o Sulfuric Acid - The acid from draining used vehicle batteries will be stored until it can be discharged at a predetermined rate without pretreatment into the surge tank at the head of project Wastewater Treatment Plants (WWTP's). The design concept is to use the buffer capacity of the camp sewage to neutralize the acid. The WWTP designer will be provided with the estimated quantities of acid requiring disposal, so that procedures and equipment for treatment of the acid can be included in the WWTP design and operations manual. The WWTP operators and laborers will wear protective equipment while handling acids. Sulfuric acid will be drained from used batteries into carboys at the maintenance shops. The empty batteries will be placed into 55-gallon drums or heavy metal boxes labeled "Empty Batteries." The drums will be placed in storage pending disposal.

The carboys will be marked "Spent Sulfuric Acid" and labeled "Corrosive." They will be transported by truck to the WWTP. The volume and pH of each shipment will be logged in by the WWTP operator.

- o Cleaning Solvents, Paint Solvents, Methanol, and Isopropanol - Cleaning and paint solvents, methanol, and isopropanol from Pipeline shop activities will be collected and combined with waste oil and burned. The solvent addition to the waste oil will be controlled such that the ignition properties of the latter are not appreciably changed by the comingling. Similar materials generated at the AGCF may be injected at the Prudhoe Bay Unit's Oily Waste Disposal Facility or incinerated with waste oil at North Slope Borough facilities if quantities are small.
- o Radiographic Film Processing Waste¹ - As a bi-product of developing weld radiographs, construction of the pipeline, compressor station piping, and AGCF piping will generate moderate quantities of radiographic film processing wastes. Estimated generation rates for these three source areas are presented in Table 4-4, and have been developed from conversations with process chemical vendors and radiographic contractors.

¹See footnote at bottom of Table 4-4.

The constituents of concern in radiographic film processing waste, in terms of effects on the environmental or effects on wastewater plant operations, are ferrocyanide, hexavalent chromium, and silver. The actual type of process used to develop radiographic film will determine the relative concentrations of these and any other trace chemicals to be found in the processing waste. It is intended that radiographic film processing wastes be pretreated to remove filterable silver, then discharged into the wastewater treatment plants at pipeline camps, compressor stations, and the AGCF. Extensive investigations conducted by Kodak and others have demonstrated that these wastes can be subjected to biological treatment without upset to the treatment process.

At least in the case of one of its constituents, silver, radiographic film processing waste may be a hazardous waste under 40 CFR 261. Kodak studies acknowledge that pretreatment involving filtration or metal replacement of processing wastes using steel wool cartridges still yields an effluent with a free silver ion concentration at or above 5 mg/l, the EPA threshold for a hazardous waste (40 CFR 261.24). The anticipated silver content of effluents from project wastewater treatment plants will be indicated in applications for wastewater discharge permits. Once discharge of these materials is approved under the discharge permits, NWA will apply for hazardous waste permits using EPA HW (hazardous waste) form reporting. It is expected that EPA will then issue a "permit by rule" and a HW activities number.

Discharge of radiographic film processing waste to project wastewater treatment plants is the preferred alternative of a hierarchy of choices for disposal, and will only be pursued if upcoming treatment plan design confirms that this waste is treatable, will not upset biological treatment at work in the plant, and will not produce a plant sludge that itself would be classified a hazardous waste - i.e., simply changing the disposal problem from one form to another. Should this prove to be the case or should future permit discussions with EPA and ADEC discourage the use of this method of disposal, two other alternatives will be considered. These include incineration in project facilities, or shipment in closed containers to approved hazardous waste treatment and disposal facilities.

The following is a description of the procedure that would be used to handle radiographic film processing waste under the preferred disposal scenario - i.e., discharge to project wastewater treatment plants (WWTP's).

As the radiographic contractor generates the waste, he will filter the fluid through a chemical recovery cartridge and into plastic lined containers meeting USDOT Hazardous Materials Transportation Regulations. The containers will be taken to the WWTP on a regular basis. When the fluid is received at the WWTP, it will be logged in by the operator and filtered through another chemical recovery cartridge, which will be sent to a silver reprocessor. In NWA's view this constitutes a legitimate reclamation and, as such, in accordance with 40 CFR 261.6, this activity will not require EPA hazardous waste manifesting and record-keeping.

The radiographic film processing wastes will be metered into the WWTP at a controlled rate. The design of these facilities and procedures for handling and introducing controlled amounts of this waste into the WWTP will be included in the Camp Operations Manual.

- o Oil Contaminated Sorbents - Clean-up operations resulting from handling, transfer, and other accidental spill occurrences will generate oil contaminated sorbents. Sorbent materials generated from pipeline construction activities, at camps, storage yards, and fuel distribution and transfer systems will be collected and transported to camp incinerators for burning. Ash residue from incinerators will be landfilled at approved solid waste disposal sites.

Oil contaminated sorbents similarly generated at the AGCF will be collected in bins and transported to North Slope Borough landfill facilities designated for this purpose.

4.3.3 Used Containers

Prior to disposal, drums or other containers that had formerly held acids will be cleaned by a triple rinse of lime solution and then will be either reused or handled as an ordinary metal solid waste and, depending on economics, either landfilled or sold as scrap. See Plan 19, Solid Waste Management. The rinsate from drum washing will be funneled into glass carboys and poured on a predetermined basis into the surge tank at the head of the wastewater treatment plants at camps, compressor stations, and the AGCF.

Drums formerly containing caustics will be rinsed with water and then handled in the same manner as described for used acid containers. Again, the rinsate will be disposed of in the surge tank at the facility's wastewater treatment plant.

Drums or other containers used to transport, store or transfer solvent, hydraulic fluid, oil, and related petroleum products will be emptied by gravity flow into a sump(s) at the camp, compressor station, or maintenance shop(s). From the sump, the waste will drain to the facility's slop oil tank and be comingled with waste oil. If the amount of residue remaining in the container exceeds one inch (40 CFR 261.10), it will be rinsed with a solvent. The chosen solvent will be capable of removing the chemical product in the container.

The used solvent will then be disposed of in the facility's slop oil tank. Once "empty," the cleaned drum or container will be reused, or if not reused, handled by one of the methods described in Plan 19. Disposition of substances in the slop oil tank is addressed in Section 4.3.2.

Containers used to transport, store, or transfer non-petroleum hazardous substances (other than acids or caustics) will be emptied prior to reuse or disposal. Those substances which are compatible with waste petroleum, will be emptied in the same manner described in Section 4.3.2.

As indicated in Table 4-4, NWA is not presently intending to use any hazardous substance that cannot be disposed of in one of the two manners discussed above, i.e., 1) neutralized and discharged to wastewater treatment plants, or 2) combined with waste oil and incinerated or well injected.

4.4 Training

Oil and hazardous substance training will be administered at several levels of the project organization. As part of their employment orientation, project personnel will receive a general presentation on the sources and consequences of spills or improper uses of oil and hazardous substances. The presentation will also provide instructions on reporting and response actions to be taken when a spill is discovered. More detail on these presentations, handout materials, and reorientation measures is to be found in Plan 7, Environmental Training.

In addition to this general presentation, all personnel directly engaging in fuel handling, transport, or dispensing activities will be required to be familiar with content of the PHPM.

4.5 Quality Assurance/Quality Inspection

The oil and hazardous substance requirements contained in Plan 12, in the ensuing project documents cited in Section 4.1, and subsequent procedures and specifications will be subject to inspection, surveillance, and audit by Quality Assurance/Quality Inspection (QA/QI). Basic QA/QI methodology along with authorities, responsibilities, and interfaces are identified in the project Quality Assurance Program Manual.