INTERIOR ALASKA SUBAREA CONTINGENCY PLAN

BACKGROUND SECTION

BACKGROUND: PART ONE – SUPPORT INFORMATION

A. SUBAREA PLAN

This Subarea Contingency Plan (SCP) supplements the *Alaska Federal/State Preparedness Plan for Response to Oil and Hazardous Substance Discharges/Releases* (*Unified Plan*). The SCP in conjunction with the *Unified Plan* describes the strategy for a coordinated federal, state, and local response to a discharge or substantial threat of discharge of oil or a release of a hazardous substance from a vessel, vehicle, railcar, or facility operating within the boundaries of the Interior Subarea. For its planning process, the federal government has designated the entire state of Alaska as a planning "region" and the western half of the state as a planning "area." The State of Alaska has divided the state into ten planning regions of which one is the Interior Alaska Region. As part of the *Unified Plan*, this SCP addresses this Interior Alaska Region or, to avoid confusion with federal terms, Subarea.

This plan shall be used as a framework for response mechanisms and as a pre-incident guide to identify weaknesses and to evaluate shortfalls in the response structure before an incident. The plan also offers parameters for vessel and facility response plans under the Oil Pollution Act of 1990. Any review for consistency between government and industry plans should address the recognition of economically and environmentally sensitive areas and the related protection strategies, as well as a look at the response personnel and equipment (quantity and type) available within the area (including federal, state, and local government and industry) in comparison to probable need during a response.

B. SUBAREA DESCRIPTION

As defined by Alaska regulations, the Interior Subarea is the area of the State not included in the other nine subareas. Specifically, this is the area that is bordered by the North Slope Borough boundary to the north, the Northwest Arctic Borough boundary to the northwest, the Matanuska-Susitna Borough and Regional Educational Attendance Area (REAA) 11 to the south and southwest, including the area north of the 63°30' North Latitude line extending from the Canadian border to the northeastern boundary of the Matanuska-Susitna Borough. The Interior Subarea includes the Fairbanks North Star Borough, the Denali Borough, REAAs 12, 13, and 15, and part of REAA 16.

Larger than the State of Montana (the fourth largest state in the U.S.), the subarea is bordered on the south by the Alaska Range and on the north by the Brooks Range. Between these mountains, the Yukon River and its drainages arc across the State from the Canadian border to the Bering Sea. Additional mountain ranges within the subarea include the Ray, White, and Crazy Mountains, and the southern slopes of the Endicott and Philip Smith Mountains (eastern Brooks Range). The topography of the Interior Subarea is dominated by the Yukon and Kuskokwim Rivers, and the region is characterized by extensive upland areas in addition to broad alluvial lowlands such as Yukon and Minto Flats. Permafrost is discontinuous throughout the region.

The subarea is in the Arctic/continental climatic zone and temperatures are generally extreme during both summer and winter, while precipitation and wind are normally light. Temperatures can reach 95° F in summer, and occasionally plunge to -60° F and colder in winter.

Many human activities in the Interior Subarea revolve around the subsistence, recreational, and commercial uses of fish and wildlife. Commercial fishing, trapping, reindeer herding, guide hunting and

fishing trips, and fur tanning and sewing are important segments of the local economy. Service-related businesses and government provide the primary sources of wage employment in the region.

Fairbanks, the State's second largest city, is central to the region and serves as the principal employment center for the area. Fairbanks provides the northern terminus of the Alaska Railroad, where logistical support to the North Slope is moved overland via the Dalton Highway. The Parks, Richardson, and Steese Highways also traverse the subarea. Aside from these principal highways and the railroad, most travel within the region is by plane (scheduled and charter), private boat, or snow machine, depending upon the season. The city of Nenana also serves as a major transportation point for shipping due to its strategic location along the Tanana and Nenana Rivers, which is not far from the juncture with the Yukon River.

Delivery of non-crude oil is made to the remote villages in this area primarily by small barges (normally 300,000 gallon capacity). Deliveries are ice-dependent and do not occur when ice forms. The Trans Alaska Pipeline System transits the subarea enroute to the terminus at Valdez.

There are a total of 57 communities in the region (including the two boroughs), of which thirty-one are predominately Native Alaskan and twenty-six predominately non-Native.

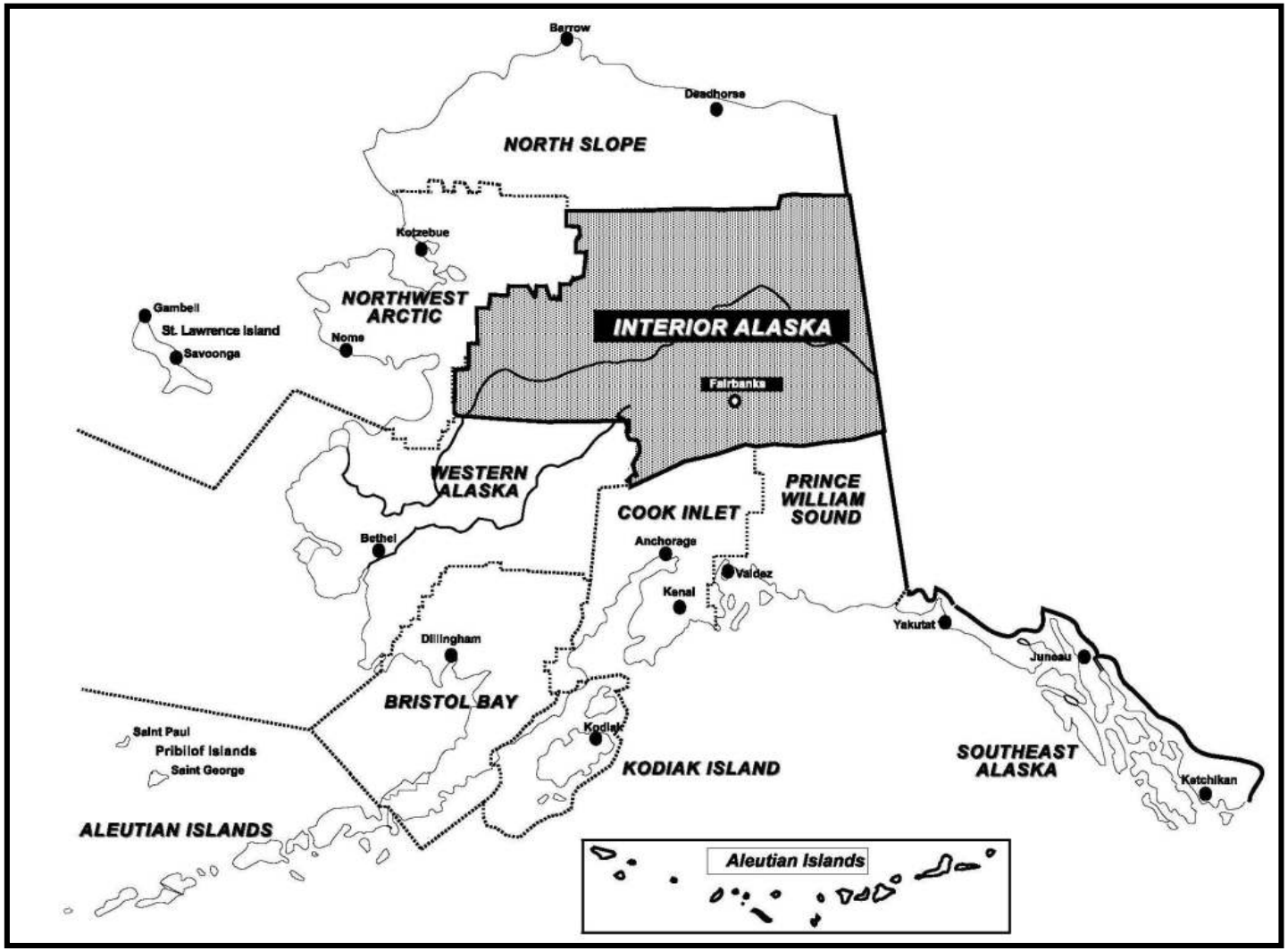
Spills in the Arctic environment require careful preplanning to overcome the effects imposed by the environment. Resources at risk during the summer months are much greater in species and number than those in the winter months. Summer daylight increases the available work hours to allow almost continuous operations. The extended daylight does not, however, increase the number of hours a particular individual can safely perform his task. The severe stresses imposed by operating in winter conditions in periods of darkness will seriously reduce individual efficiency over a given period. The severe weather does not always produce a negative effect, but can produce a positive effect at times. Ice and snow can act effectively as barriers to impede the spread of oil and can be used effectively to hold and contain oil. Techniques for organizing spill response in arctic environments have been developed and numerous reference documents detail these procedures.

C. AREA OF RESPONSIBILITY

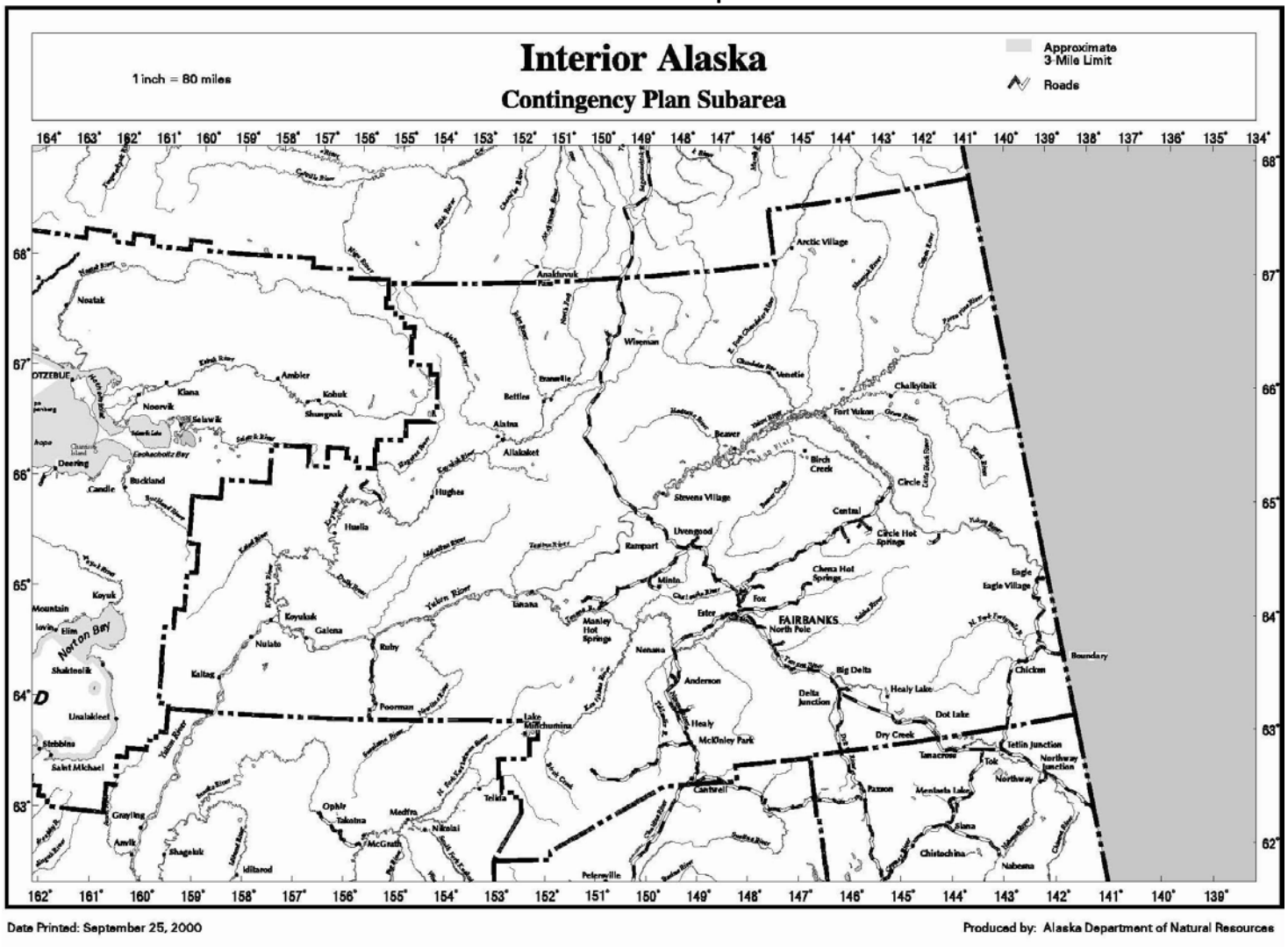
This subarea contingency plan covers the region outlined above in subpart A. The Environmental Protection Agency (EPA) is the pre-designated Federal On-Scene Coordinator (FOSC) for oil spills and chemical releases in the Inland Zone which encompasses all lands, rivers, streams, and drainages within the Interior Subarea. These zones are clearly defined in the *Unified Plan*. The State of Alaska places jurisdiction of spill response for the Interior Subarea under the Northern Alaska Response Team (NART) of the Alaska Department of Environmental Conservation (ADEC). The State On-Scene Coordinator (SOSC) for the NART is the pre-designated SOSC for the entire Interior Subarea.

Memoranda of Understanding (MOU) or Memoranda of Agreement (MOA), both of which delineate agency and OSC responsibilities, exist between the EPA and the ADEC, as well as between both agencies and the U.S. Coast Guard. The *Unified Plan, Annex K* includes copies of these MOUs/MOAs.

Interior Alaska Subarea



Subarea Detailed Map Index



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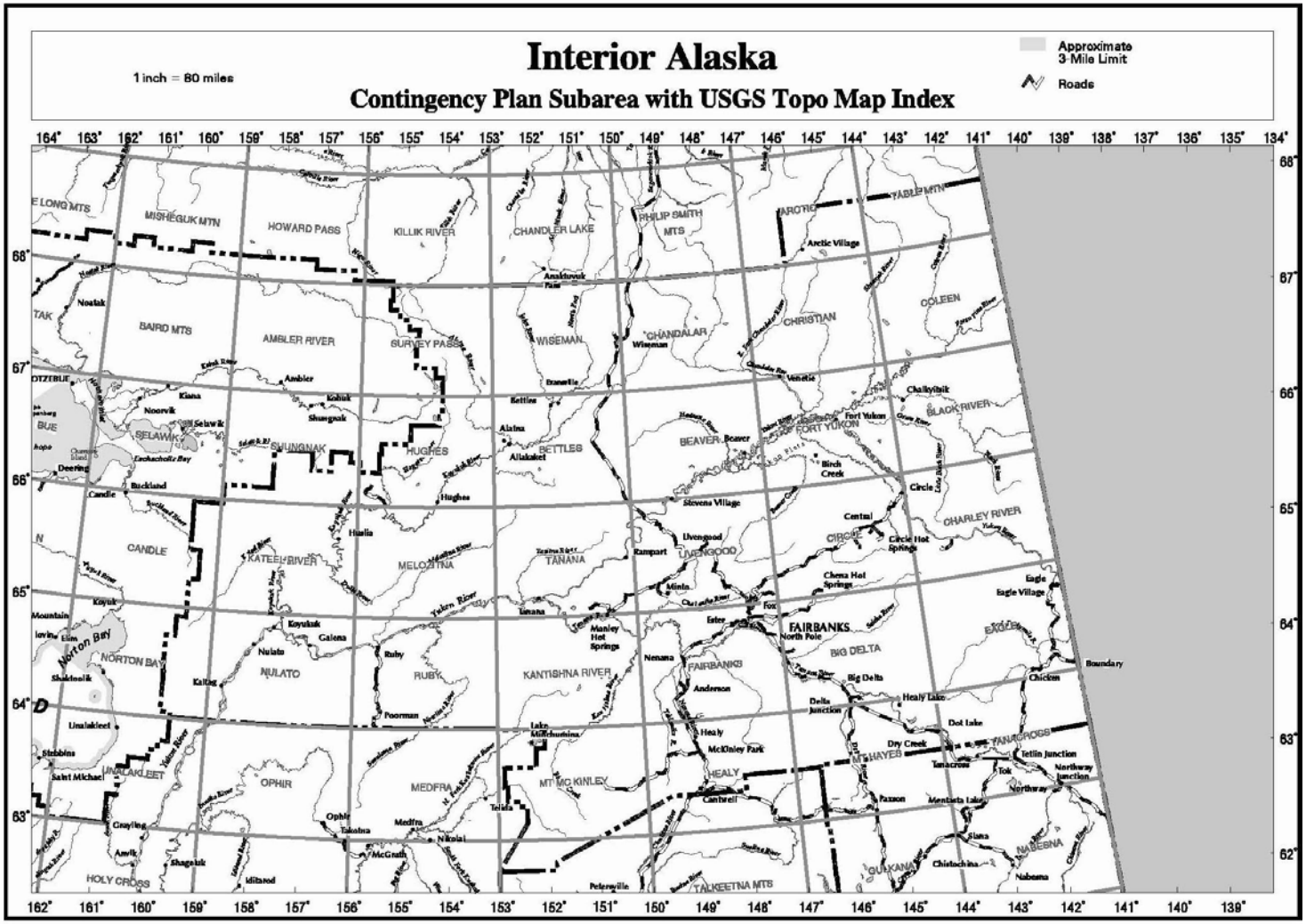
Subarea USGS Topo Map Index



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D. REGIONAL STAKEHOLDER COMMITTEE

A Regional Stakeholder Committee (RSC) will normally be activated for significant incidents. The RSC was previously referred to as the Multi-Agency Coordination Committee (MAC). Unlike the MAC defined in the Incident Command System (ICS) of the National Incident Management System (NIMS), the RSC for a spill response does not play a direct role in setting incident priorities or allocating resources. The RSC can advise the Unified Command (UC) (under the guidance of the Community Liaison Officer) and provide comments and recommendations on incident priorities, objectives, and action plans.

The figure below provides the general location of the RSC in relation to the UC organizational structure and suggested/potential membership of the RSC. Membership on the RSC is dependent upon the location of the incident and the interests or jurisdiction of the affected communities, landowners, and special interest groups. Government agencies will not normally use the RSC to provide input to the UC. Federal agency personnel will participate within the ICS structure under the leadership of the FOSC; state personnel will do so under the guidance of the SOSC. During an incident in which no FOSC is taking part, federal agencies with jurisdictional responsibilities for resources at risk could participate as a member of the RSC, thus retaining a channel for input on containment, oversight, and cleanup. The preferred approach is to include these agencies as part of the overall ICS structure.

* As long as there is an immediate threat to public safety, the Local On-Scene Coordinator (LOSC) will serve as the ultimate command authority if the FOSC or SOSC does not assume the lead role for response, or the LOSC requests a higher authority to assume that responsibility.

Suggested Membership:

- Representatives or Community Emergency Coordinators from affected communities. These may include:

Fairbanks North Star Borough		Denali Borough			
Allakaket	Anderson	Beaver	Bettles	Big Delta	Birch Creek
Cantwell	Central	Chalkyistsik	Circle	Circle Hot Springs	College
Delta Junction	Dot Lake	Dry Creek	Eagle	Eagle Village	Eielson AFB
Ester	Evansville	Fairbanks	Ferry	Fort Greely	Fort Yukon
Fox	Galena	Harding Lake	Healy	Healy Lake	Hughes
Huslia	Kaltag	Koyukuk	McKinley Park	Minto	Moose Creek
Nenana	North Pole	Nulato	Pleasant Valley	Rampart	Ruby
Salcha	Stevens Village	Tancross	Tanana	Tok	Two Rivers
Venetie	Wiseman	Manley Hot Springs			

  - Federal/state/local or private landowners and leaseholders (e.g., National Parks Service, Alaska Department of Natural Resources)
  - Native corporations, organizations and communities
  - Special interest groups affected by the incident

As indicated above, the RSC is not directly involved in tactical operations, though some of its members may be. The RSC's role is to convey to the UC information relating to the authority, concerns, and expertise of its members. RSC members recommends to the UC overall objectives and priorities and reviews the Incident Action Plans developed by the UC.

RSC activities will be coordinated by the Community Liaison Officer. RSC discussions will be documented, and recommendations and dissenting opinions expressed outside of the RSC meetings with the UC will be communicated to the UC through the Liaison Officer. The RSC will be chaired initially by the Community Liaison Officer. After convening, the RSC will then elect its own chair.

E. REGIONAL CITIZENS ADVISORY COUNCIL

There are no Regional Citizens Advisory Councils in the Interior region.

F. SUBAREA COMMITTEE

The primary role of the Subarea Committee is to act as a preparedness and planning body for the subarea. The primary membership of the Subarea Committee is composed of the pre-designated FOSCs from EPA for the subarea, and the pre-designated SOSC from ADEC. Depending upon the event or the issues to be addressed, representatives from one of the boroughs or local or tribal government may also serve as members of the Interior Subarea Committee. Each member is empowered by their own agency to make decisions on behalf of the agency and to commit the agency to carrying out roles and responsibilities as described in this plan and the *Unified Plan*. The pre-designated EPA FOSCs for the area and the SOSC will serve as chairpersons of the committee.

1. Subarea Committee Members

The Interior Subarea Committee is comprised of representatives from the following federal, state, and local agencies:

- Environmental Protection Agency
- Alaska Department of Environmental Conservation
- Local government/ community representatives when applicable

The Interior Subarea Committee also seeks advice and expertise concerning environmental and economic issues from international, federal, state, and local agencies and private industries, such as the following:

- Local borough, city, and tribal governments
- Federally-recognized tribes
- Regional/local businesses, especially petroleum-related, such as Flint Hills Petroleum & APSC
- Local Emergency Planning Committees
- Alaska Department of Fish and Game
- Alaska Department of Natural Resources
- Alaska Department of Military and Veteran Affairs
- National Marine Fisheries Service
- National Oceanic and Atmospheric Administration
- U.S. Department of the Interior-Office of Environmental Policy and Compliance
    - U.S. Fish and Wildlife Service

- National Park Service
- Bureau of Land Management

- Canada (Yukon Territory)

2. Subarea Work Groups

The Subarea Committee seeks to solicit advice, guidance, or expertise from all appropriate sources and establish work groups as necessary to accomplish the preparedness and planning tasks. The Subarea Committee will select the work group members and provide general direction and guidance for the work groups. In addition to federal, state and local agency representatives, work group participants may include facility owners/operators, shipping company representatives, cleanup contractors, emergency response officials, marine pilot associations, academia, environmental groups, consultants, and response organizations.

The Interior Subarea Committee has formed the following work groups:

- Sensitive Areas Work Group: This group is chaired by the Department of the Interior-Office of Environmental Policy and Compliance representative. This work group coordinates the preparation of the necessary information for each separate subarea and will ensure that the information is submitted in a common format. Participation by local community staff is vital to acquire local input and validate existing information. The Interior Subarea-specific sensitive areas information has been prepared and incorporated into the *Sensitive Areas Section* of this plan.

- Logistics Work Group: This group is co-chaired by representatives from EPA and ADEC. This work group is responsible for preparing the *Resources Section* of this plan.

- Operations Work Group: This group is co-chaired by representatives from EPA and ADEC. This work group is responsible for scenario development and the refinement/expansion of the Emergency Notification Lists located in the *Response Section* of this plan.

BACKGROUND: PART TWO – RESPONSE POLICY & STRATEGIES

The strategy for responding to a specific spill or hazmat incident depends upon numerous factors. The strategy can change as the situation changes. As a general rule, the strategies listed below should be used as a guide in developing an effective response. Consider all factors that may affect the particular situation and revise/modify/expand these priorities as the situation dictates. The *Response Section* of this plan contains some specific information on response procedures and ramp-up timelines. Additional information can be found in the *Unified Plan*.

A. FEDERAL RESPONSE ACTION PRIORITIES/STRATEGIES

The following priorities are general guidelines for response to a pollution incident within the EPA Inland Zone. They are based on the premise that the safety of life is of paramount importance in any pollution incident, with the protection of property and the environment, although important, being secondary. Nothing in this part is meant to indicate that higher priority items must be completed before performing a lower priority task. They may be carried out simultaneously or in the most logical sequence for each individual incident.

- Priority One: Safety of Life – For all incidents which may occur, the safety of personnel, including response personnel, must be given absolute priority. No personnel are to be sent into an affected area without first determining the hazards involved and that adequate precautions have been taken to protect personnel.
- Priority Two: Safety of Facility/Vessel and Cargo – The facility and/or vessel and its cargo shall become the second priority, behind the Safety of Life.
- Priority Three: Protection of the Environment by elimination of the pollution source – Containment and recovery of oil must be effected expeditiously to preclude sustained impacts to the inland waters of the U.S. Due to remote locations and restricted accessibility, it is extremely difficult to protect these locations through diversion or exclusion methods. Therefore, securing the source and rapid containment and recovery is especially critical and should normally be the first line of defense to protect the environment. Likewise, spills which occur on land or in upland water courses will be dammed, boomed, diked, etc., as feasible to prevent the spread of the pollutant downstream. NOTE: *In situ* burning (see below) of a vessel and its pollutant may be an alternative considered by the OSC which places environmental protection priorities above saving the vessel and its cargo.
- Priority Four: Protection of the Environment by diversion/exclusion, dispersion, or *in situ* burning – In the event that the location of a spill or the weather conditions do not permit rapid recovery, protection of the inland waters of the U.S. becomes paramount, especially areas of greatest sensitivity. It may not be possible to protect some areas entirely or even in part. The OSC may consider *in situ* burning as a response option; refer to the *Unified Plan, Annex F, Appendix II* for an *in situ* burning checklist. The use of dispersants must be considered early in the response phase while the oil is in the open water. Subpart J of the NCP and the *Unified Plan, Annex F* address in detail the responsibilities of the OSC in the use of chemicals.
- Priority Five: Protection of the Environment by beach cleanup - It may not be possible to protect the inland waters adjoining shoreline from oil. In fact, it may be allowed purposely to come ashore in some areas as an alternative to damaging others. Selection of the proper shoreline cleanup technique depends on many different factors including the following:

    - Type of substrate
    - Amount of oil on the shoreline

- Depth of oil in the sediment
- Type of oil (tar balls, pooled oil, viscous coating, etc.)
- Trafficability of equipment on the shoreline
- Environmental or cultural sensitivity of the oil shoreline
- Prevailing oceanographic and meteorological conditions

The best way to minimize debate over the most appropriate response is to involve all interested government and private agencies. The shoreline assessment groups shall attempt to agree on the amount and character of the oil that is on the shorelines, anticipate interactions between the stranded oil and the environment, and the geological and ecological environment of the involved shorelines. Once a consensus is met, a process is necessary to determine the proper treatment required.

Shoreline cleanup options may include the use of physical and/or chemical processes. Chemical shoreline cleanup products may increase the efficiency of water-washing during the cleanup of contaminated shorelines. However, the product must be listed on the EPA National Contingency Plan Product Schedule and authorization must be obtained from the ARRT and the government on-scene coordinator at the spill. Physical shoreline cleaning methods include techniques such as: natural recovery, manual sorbent application, manual removal of oiled materials, low pressure flushing (ambient temperature), vacuum trucks, warm water washing, high pressure flushing, manual scraping, mechanical removal using heavy equipment. Bioremediation is also considered as a shoreline cleaning method. Bioremediation is the application of nutrients to the shoreline to accelerate the natural biodegradation of oil.

Traffic Patterns: The majority of petroleum products are transported through the Interior Subarea either by the Trans Alaska Pipeline, railcar or fuel truck. Primary routes consist of the Trans Alaska Pipeline System, the Parks, Dalton and Richardson Highways, and the railcar corridor between Anchorage and Fairbanks. Chemicals are also transported by truck and railcar. Large amounts of Fuel or chemicals can be flown to cities and villages.

Occurrence Probability: Most pollution incidents in the Interior Subarea can be expected to be minor in nature involving spills of diesel oil, lube oil, or crude oil. The probability of a hazardous substance discharge is low. The occurrence of a medium or major oil spill will most likely occur from a truck laden with fuel or an incident along the Trans Alaska Pipeline System, with an incident involving the TAPS having the most potential to be catastrophic.

Determining response strategies in the Interior Subarea is difficult due to the presence of seasonal daylight and weather conditions, remote geography, and environmentally sensitive flora and fauna. Limited accessibility to the remote areas of the Interior Subarea may place an unwarranted time-delay on response equipment.

B. STATE OF ALASKA RESPONSE PRIORITIES

- Safety: Ensure the safety of persons involved, responding, or exposed to the immediate effects of the incident.
- Public Health: Ensure protection of public health and welfare from the direct or indirect effects of contamination of drinking water, air, and food.
- Environment: Ensure protection of the environment, natural and cultural resources, and biota from the direct or indirect effects of contamination.

- Cleanup: Ensure adequate containment, control, cleanup and disposal by the responsible party or supplement or take over when cleanup is inadequate.
- Restoration: Ensure assessment of contamination and damage and restoration of property, natural resources and the environment.
- Cost Recovery: Ensure recovery of costs and penalties to the Response Fund for response, containment, removal, remedial actions, or damage.

BACKGROUND: PART THREE – AREA SPILL HISTORY & OIL FATE

The following spill history was obtained from ADEC records. This partial listing draws only from those spills of 1,000 gallons or more. This abbreviated spill history dates to the start of a spills database maintained by ADEC and is provided to give an overall view of the vast array of transportation-related accidents that can occur. The Interior Subarea supports a wide variety of fixed and mobile hazardous material sources including everything from the smallest pleasure craft to fuel barges to the Trans Alaska Pipeline. Over 8,000 spill incidents of all sizes for the entire Interior Subarea region are listed in the database.

All cities and villages in the Interior Subarea are not immune to oil discharges or hazardous material releases. The number of fuel transfers that take place in these areas is staggering, thus the opportunity for a spill is greatly increased.

The most notable spill in the Interior Subarea was the TAPS 400 Bullet-Hole incident that occurred on October 4, 2001. An individual vandalized TAPS by shooting it causing a spill of approximately 285,600 gallons of crude

A. NAVIGABLE WATER SPILL HISTORY

The Interior Subarea experiences a limited amount of vessel traffic, primarily resupply barges and fuel barges. The probability of a major oil spill exists due to the volume of oil product transported in the region. Response to major spills in this subarea is further compounded by the relatively short ice-free periods on the open rivers.

Listed below is a brief synopsis of the significant releases to navigable waters in the subarea. This information was collected from the ADEC spill database; a complete listing of all spill events is available through ADEC.

Date	Location	Quantity (gal)	Substance
07/18/83	Tanana River (8-10 miles upriver)	2,000	Diesel
12/12/89	Nulato on Yukon River (200 mi west of Fairbanks)	34,000	Fuel Oil
06/22/95	Tanana River, 20 miles from Manley, 50 miles south of village of Tanana	1,000	Diesel

B. INLAND SPILL HISTORY

The Interior Alaska planning region has a limited railroad and highway system, with many communities accessible only by air or river. With limited access by air, water and road, a major spill in the region would present sever logistical problems for spill responders.

A fair number of releases occur in this region due to the highway and rail traffic and fuel resupply operations in the remote villages. Listed below is a brief synopsis of the significant releases of petroleum products in the subarea. This information was collected from the ADEC spill database; a complete listing of all spill events is available through ADEC.

Inland Spill History

Date	Location	Quantity (gal)	Substance
02/09/95	Sewage Treatment Plant	3,000	Other
02/10/95	N. shore of Healy Lake, next to generator Bldg.	1,000	Diesel
02/13/95	Blair Lakes Range	1,500	Diesel
03/12/95	Building 1338, Mech. Room	1,175	Unknown
05/08/95	Tailings Impoundment	25,000	Other
05/24/95	Bldg. 3480, Fort Wainwright	1,000	E L Oil
08/03/95	F-15 Crash, Interior Yukon, Charley River Park	2,600	Aviation Fuel
10/10/95	A-10 Crash, Oklahoma Range	8,000	Aviation Fuel
10/20/95	Taylor Highway, Mile 61	9,000	Diesel
11/02/95	UAF Hess Village	2,000	Other
01/18/96	DOT/PF Jim River, MILE 137.8 Dalton	2,000	Diesel
03/11/96	Eielson AFB, OSCAR ROW	2,000	Aviation Fuel
04/29/96	Eielson AFB, Tank 560, E-11 Tank Farm	1,400	Aviation Fuel
06/27/96	North Pole Refinery	1,200	Crude Oil
07/24/96	Near Munson Fork, Chena Hot Springs	1,000	Aviation Fuel
11/18/96	Fort Wainwright Bldg. 3694	2,500	Aviation Fuel
04/04/97	Denali National Park, C Camp	1,500	Diesel
08/21/97	Richardson Hwy, Big State Logistics, MP 231	13,750	Diesel
09/05/97	FNSB, Madcap Lane, Off Ballaine Road	1,200	Diesel
10/09/98	Eielson AFB, Bldg 1321	1,964	Diesel
11/30/98	FNSB, MAPCO Refinery, Tank Farm Sump 922	1,500	Kerosene
03/10/99	Eielson AFB, F-18 Acft Crash	1,493	Diesel
03/13/99	Eielson AFB, E-2 Tank Farm, Bldg 6231	1,383	Diesel
04/06/99	ERA Aviation, Fairbanks Intl Airport	1,500	Other
04/09/99	PetroStar Refinery	1,000	Diesel
10/12/99	Richardson Hwy, Salcha	1,000	Diesel
01/18/00	Williams Refinery	2,400	Other
07/06/00	Summit Lake Truck Rollover	2,660	Diesel
10/21/00	Polar Fuel Spill	4,000	Diesel
03/07/01	Eielson AFB Jet Fuel Spill	3,760	Diesel
03/28/01	Eielson AFB	2,985	Diesel
06/21/01	Rampart Truck Rollover	1,500	Diesel
06/23/01	Delta Junction	9,700	Aviation Fuel
07/25/01	Yukon Charlie Reserve	1,200	Diesel
08/27/01	Richardson Hwy, Tanker Rollover	13,000	Diesel
09/22/01	TAPS Pump Station 5	2,237	Crude Oil
10/04/01	TAPS 400 Bullethole Incident	285,600	Crude Oil
11/16/01	Air France Jettisoned Fuel	13,055	Diesel
01/03/02	Williams Refinery Kerosene Spill	2,000	Kerosene
04/30/02	Petro Star Refinery	3,570	Crude Oil
06/18/02	Fort Knox Mine	12,800	Process water
06/23/02	West of Eielson AFB	100,000	Diesel
07/26/02	Big State Logistics (Coldfoot Release)	1,340	Diesel
08/08/02	Beaver School Release	1,250	Diesel
09/08/02	AT&T Repeater Site Spill	6,000	Diesel
09/16/02	Huslia Abandoned Drums	11,000	Diesel
11/03/02	Stevens Village (Earthquake)	2,000	Diesel
11/03/02	Village Communities (Earthquake)	1,200	Diesel

Date	Location	Quantity (gal)	Substance
11/03/02	Chistochina Village (Earthqauke)	1,200	Diesel
03/17/03	West Pit Rollover	3,500	Other
04/25/03	Fort Knox Mine	4,200	Process water
06/02/03	Fort Knox Mine	10,500	Process water
06/11/03	Fort Knox Mine	24,092	Process water
07/06/03	Fort Knox Mine	2,000	Process water
07/15/03	Fort Knox Mine	2,500	Process water
11/12/03	H&H Contractors Spill	2,500	Gasoline
02/25/04	Eielson A-10 Crash	15,001	Aviation Fuel
03/03/04	Sourdough Fuel Bulk Plant	3,700	Gasoline
03/29/04	Fort Knox Mine	2,500	Process water
05/11/04	Fairbanks Intl Airport	16,000	Diesel
06/05/04	Galena City	1,000	Diesel
06/20/04	Interior Fuels Truck Rollover	1,600	Diesel
06/25/04	Fort Knox Mine	1,500	Process water
07/31/04	Flint Hills North Pole Refinery	1,071	Kerosene
10/07/04	Fort Knox Mine	1,300	Process water
11/04/04	Fort Knox Mine	1,500	Process water
12/06/04	Eielson AFB	35,000	Diesel
01/30/05	Flint Hills North Pole Refinery	1,500	Other
04/24/05	Sourdough Fuel Bulk Plant	12,248	Diesel
11/02/05	Fort Knox Mine	3,000	Process water
12/15/05	Eielson AFB	17,200	Diesel
12/16/05	Carille Fueltruck Accident-Tanana Bridge	3,110	Diesel
04/14/06	Flint Hills North Pole Refinery	1,100	Diesel
06/06/06	Service Oil & Gas Truck Rollover-Rich.Hwy	1,960	Diesel & Gasoline
10/29/06	Alaska West Tanker Rollover, Dalton Hwy	6,000	Diesel
02/06/07	Coldfoot Camp Generator Release	4,000	Diesel
03/22/07	Crowley Tok Bulk Plant Tank Overfill	1,600	Diesel
03/26/07	Eielson AFB Tank 5 Release	2,080	Diesel
06/11/07	F-15C Plane Crash – Yukon Range	2,500	Diesel
07/28/07	McCully Contract MP 32 Taylor Hwy Rollover	8,500	Diesel
12/30/08	Big State Logistics Pup Rollover	4,000	Diesel
07/10/10	Alaska Pacific Powder Company Fuel Transfer	2,340	Diesel
08/11/10	Flint Hills North Pole Refinery Blend Building Release	4,818	Kerosene
10/22/10	Petro Star Refinery ULSD Spill	2,000	Diesel
09/23/11	Contaminated Soil at Galena AFB	1,200	Diesel
10/19/11	Aerofuel Truck Rollover	2,551	Diesel
07/30/12	Nenana Heating &Oil	1,100	Diesel
03/15/13	Big State Logistic Rollover Richardson Hwy MP 235.8	2,000	Diesel
04/11/13	Rampart Tanker Spill	2,750	Diesel
5/27/13	Alaska Petroleum Dalton Hwy MP 82	3,000	Diesel
03/11/14	Flint Hills Sump 04-3 Failure	1,200	Kerosene

C. HAZMAT RELEASE HISTORY

Listed below is a brief synopsis of significant releases (over 5 gallons) of extremely hazardous substances (EHS) in the region. This information was collected from the ADEC Spills database; a complete list is available through ADEC.

Hazmat Release History

Date	Incident	Quantity (gal)	Substance
05/28/83	Minnie St., Railroad Industrial Area (Fairbanks)	1,100	Acid
10/04/89	Healy Power Plant	10,000	Acid
05/16/95	Rampart Village CDP (Hoosier Creek)	30	Sulfuric Acid
09/26/97	Galena City (Illinois Creek Mine)	490	Sodium Cyanide
06/05/98	Eielson AFB, Bldg 3228	300	Chlorine
04/20/00	Clear AFS	32	Sulfuric Acid
07/30/00	Fairbanks Gold Mining	300	Sodium Cyanide
12/22/01	Fairbanks Gold Mining Co.	250	Sodium Cyanide
05/23/02	Clear AFS	20	Sulfuric Acid
07/22/02	Fairbanks Gold Mining Co.	10	Sodium Cyanide
08/18/04	Alaska Fire Service (Galena)	5	Sulfuric Acid
11/29/05	Intersection of Peger & Mitchell	5	Hydrochloric Acid
05/09/06	Flint Hills North Pole Refinery	10	Sulfuric Acid
06/06/06	Pogo Mine	5	Hydrogen Cyanide
09/18/06	Brenntag Chemical – North Star Borough	5	Hydrochloric Acid
09/19/06	Flint Hills H2O2	25	Hydrogen Peroxide
10/15/06	AT&T Buck Gravel Pit	10	Sulfuric Acid
01/21/07	Flint Hills Refinery	55	Hydrogen Peroxide
03/08/07	Pogo Mine Site	20	Sodium Cyanide
12/05/07	Brenntag Pacific Sulfuric Acid Spill	50	Sulfuric Acid
05/01/09	Fort Knox Gold Mine	7.5	Sodium Cyanide
10/24/09	Lynden Transport 5-gal HCl	5	Hydrochloric Acid
05/06/11	Brenntag	10	Hydrochloric Acid

Interior Alaska Subarea

Total Spills:	4,179
Total Volume:	782,403
Average Spill Size:	187
Average Spills/Year:	418
Average Volume/Year:	78,240

Top 5 Causes

Cause	Spills	Gallons
Sabotage/Vandalism	10	285,862
Equipment Failure	401	115,725
Rollover/Capsize	82	50,438
Overfill	406	38,290
Human Error	302	37,957

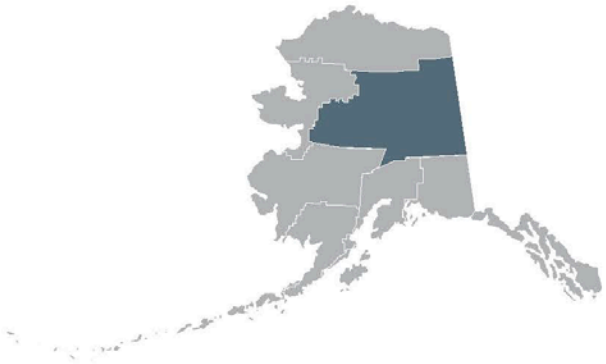
Top 5 Products

Product	Spills	Gallons
Crude	44	293,901
Diesel	1,296	236,161
Process Water	40	72,217
Aviation Fuel	232	39,350
Ethylene Glycol	292	29,890

Top 5 Facility Types

Facility Type	Spills	Gallons
Pipeline	235	302,947
Air Transportation	230	113,257
Mining Operation	444	87,588
Vehicle	1,100	81,922
Noncrude Terminal	577	54,670

NOTE: The data summary above excludes spills reported in pounds and potential spills.



Shoreline: n/a
Land Area: 96,600,000 acres or 150,900 square miles

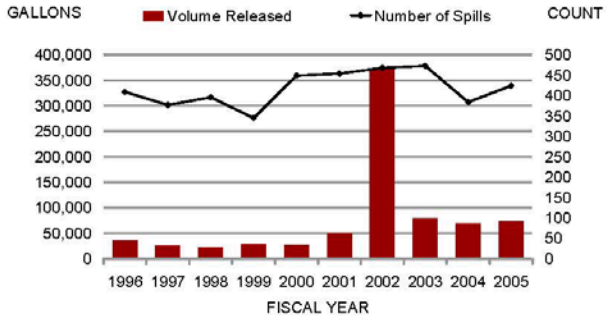
Delivery of noncrude oil is made to the remote villages in this area primarily by small barges (normally 300,000 gallon capacity). Deliveries are ice-dependent and do not occur as ice forms. The Trans Alaska Pipeline System also transits through the area enroute to the terminus at Valdez. The Flint Hills oil refinery is located in North Pole, and the majority of petroleum products are shipped via the railroad.

There are a total of 57 communities in the region (including the two boroughs), 31 Native and 26 non-Native.

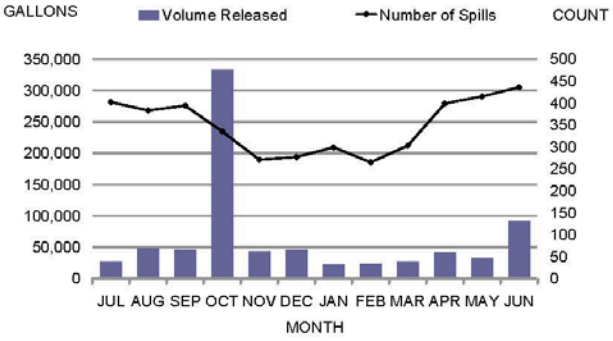
Discernible Trends

- There was no apparent trend in the average number of spills and average volume per year. The one anomaly was the TAPS 400 Bullet Hole incident in FY 2002 which resulted in a spill of 285,600 gallons of crude oil.
- There appears to be a seasonal trend in the average number of spills for the Interior Alaska subarea. There is a noticeable decrease in the number of spills from October thru April. This may be attributed to the onset of the winter season and the inability to detect spills due to ice and snow cover, plus the extreme cold temperatures. During Spring breakup, it can be speculated that a large number of spills appear and are subsequently reported to DEC.
- The number of spills greater than 1,000 gallons also appear to be on a decline since 2001.
- In terms of facility types relative to the number of spills, Storage (43%) and Transportation facilities (38%) were the main contributors, although Transportation facilities (including the Trans Alaska Pipeline System) accounted for 64% of the total volume spilled.
- Structural/Mechanical causes resulted in 62% of the reported spills. However, Human Factors (in this case, the TAPS 400 Bullet Hole incident) accounted for 51% of the total volume.
- Noncrude oil was the primary product spilled in 81% of the reported spills, and accounted for 43% of the total volume. Crude oil was next with 38% of the total volume, much of which can be attributed to the TAPS 400 Bullet Hole incident.

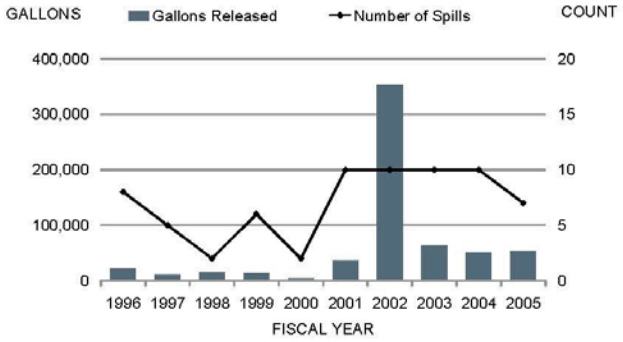
All Spills by Fiscal Year



All Spills by Month



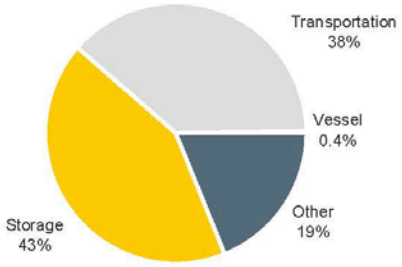
Spills >1,000 gallons



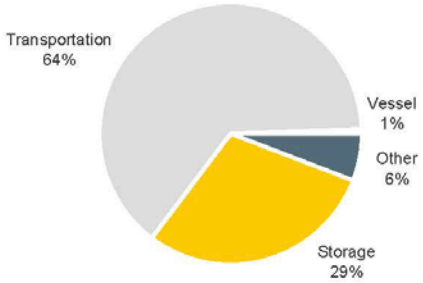
NOTE: Graphs do not include spills reported in pounds or potential spills.

Interior Alaska Subarea Spills by Facility Type

Number of Spills

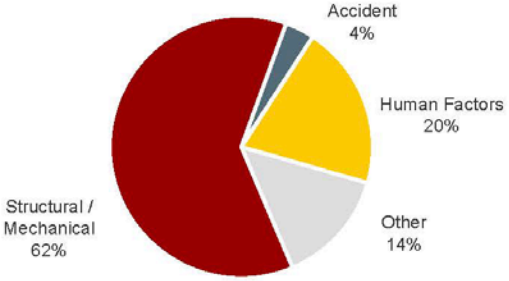


Gallons Released

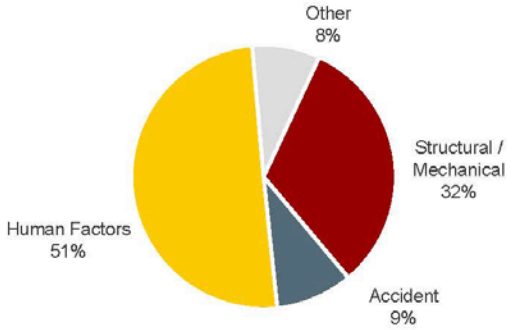


Interior Alaska Subarea Spills by Cause

Number of Spills

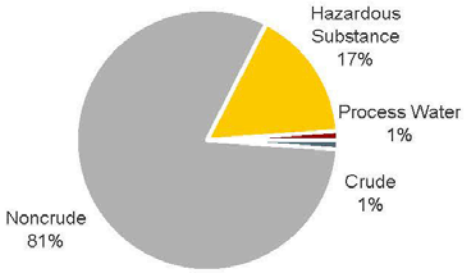


Gallons Released

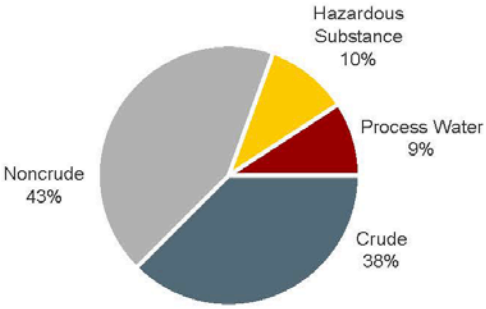


Interior Alaska Subarea Spills by Product

Number of Spills



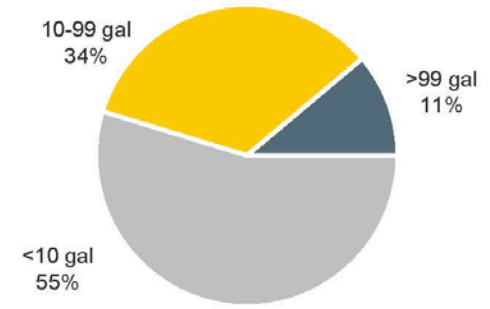
Gallons Released



NOTE: Graphs do not include spills reported in pounds or potential spills.

Interior Alaska Subarea Spills by Size Class

Number of Spills



Gallons Released

NOTE: Graphs do not include spills reported in pounds or potential spills.

Interior Alaska Subarea Spills at Regulated vs. Unregulated Facilities

Numerous oil facilities and vessels operating in Alaska are subject to Alaska's spill response planning and financial responsibility statutes. This section summarizes spills from:

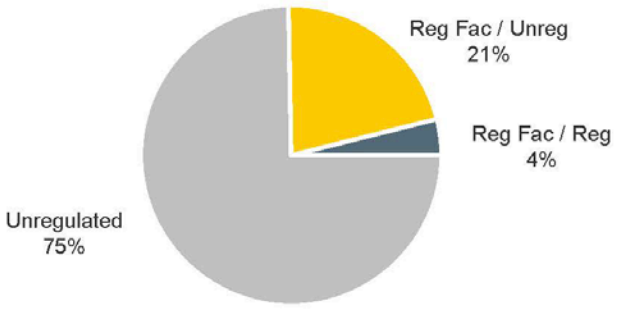
- facilities and vessels required by statute to have an approved oil discharge prevention and contingency plan; and,
- non-tank vessels which are required to have an approved certificate of financial responsibility are also included.
- Spills from underground storage tanks are not included in this analysis.

Alaska's contingency planning requirements apply to specific aspects (components) of a facility's or vessel's operations. The analysis in this report distinguishes between spills from regulated versus unregulated components. Examples of spills from unregulated components include:

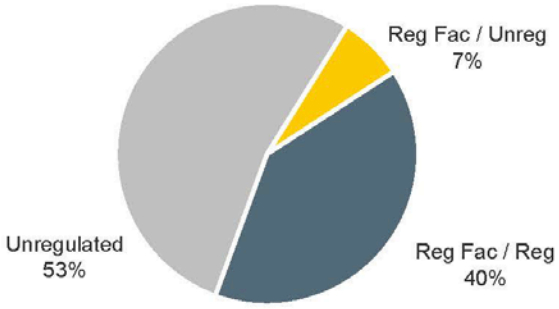
- a spill from a vehicle at a regulated facility;
- a spill from a fuel tank (below the regulatory threshold of 10,000 barrels) at a regulated facility
- certain piping at oil production facilities

- Approximately three-quarters of the spills and more than half of the total volume released during the 10-year period were from unregulated facilities.
- Vehicles led unregulated facilities in total number of spills during the period whereas Air Transportation led in total volume released.

Number of Spills

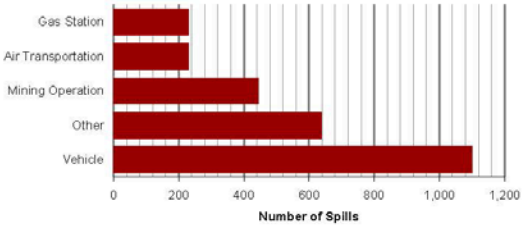


Gallons Released

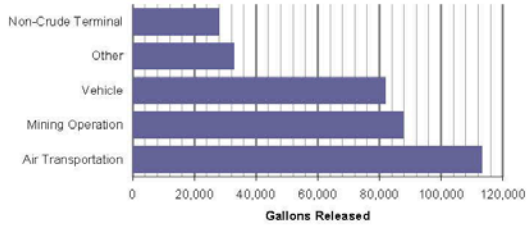


Top Unregulated Facilities

Number of Spills



Gallons Released

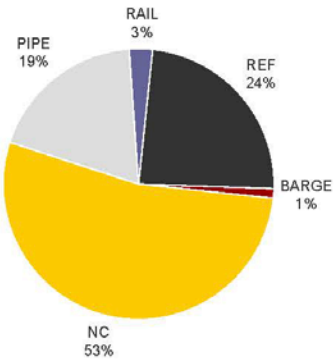


NOTE: Graphs do not include spills reported in pounds or potential spills.

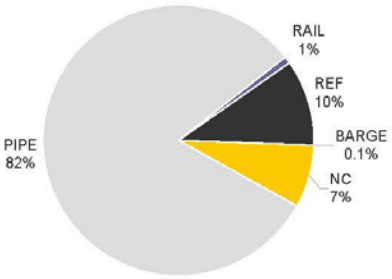
Interior Alaska Subarea Spills by Regulated Facility Type

- A little more than half of the spills during the 10-year period were from regulated Non-Crude Terminal facilities.
- More than 80% of the total volume was from Transmission Pipelines.

Number of Spills



Gallons Released



NOTE: Graphs do not include process water spills, spills reported in pounds, or potential spills.

Major Spills in the Interior Alaska Subarea

Date	Spill Name	Product	Gallons
02/15/1978	TAPS MP 474, near Steele Creek	Crude Oil	672,000
02/09/1995	Clear AFS; State hatchery	Sodium Dichromate	462,000
10/04/2001	TAPS MP 400, TAPS Bullet Hole Release	Crude	285,600
05/28/1990	Mile 433 AK RR, 20-30 miles N. of Nenana	Diesel	100,000
01/01/1981	Check Valve 23	Crude Oil	84,000
10/16/1981	Fairbanks Petroleum Terminal Tank Farm	Diesel	84,000
09/23/1980	North Pole Refinery	JP 4	60,000
06/12/1982	Parker's Patch, Alaska Railroad	Jet-A	50,000
01/11/1982	Near POL facility-Fort Greely	Diesel	44,000
07/29/1993	Port Site Sacrificial Pit #2	Diesel	36,000
12/06/2004	Eielson AFB, Jettisoned fuel	Diesel	35,000
12/12/1989	Nulato on Yukon River (200 mi west of Fairbanks)	Fuel Oil	34,000
12/24/1981	Runway Aircraft Fueling point	AV Fuel	31,000
05/08/1995	Tailings Impoundment	Other	25,000
06/11/2003	Fort Knox Gold Mine, Spill to containment	Process Water	24,092
01/01/1987	North Pole Refinery	HAGO	20,000
12/15/2005	Eielson AFB, Jettisoned fuel	Diesel	17,200
03/23/1985	North Pole Refinery	JP 4	17,004
05/11/2004	Fairbanks, Jettisoned fuel	Diesel	16,000
02/25/2004	Eielson AFB, A-10 Jet Crash	Aviation Fuel	15,001
02/20/1985	Nulato	Gasoline	15,000
10/04/1988	Galena High School area	Diesel	15,000
01/25/1982	Bldg. T-2016, Fort Greely	Diesel	14,000
08/21/1997	Richardson Hwy, Big State Logistics, MP 231	Diesel	13,750
11/16/2001	Fairbanks, Jettisoned fuel	Diesel	13,055
08/27/2001	Richardson Hwy MP 215, Tanker Rollover	Diesel	13,000
06/18/2002	Fort Knox Gold Mine, NE of Mill Yard	Process Water	12,800
06/23/2002	Eielson AFB, Jettisoned fuel	Diesel	12,500
08/28/1994	Allakaket School	Diesel	12,400
04/24/2005	Fairbanks, Sourdough Fuel Bulk Plant	Diesel	12,248
02/02/1978	Tank 504, North Pole Refinery	JP 4	12,000
05/25/1991	Tank Farm, North Pole	Diesel	11,500
12/04/1989	ARCO Storage Yard, off Van Horn Road, Fbks	Methanol	11,125
09/16/2002	Huslia Abandoned Drums	Diesel	11,000
06/02/2003	Fort Knox Gold Mine, Process water release	Process Water	10,500
05/12/1980	Pump Station 10	Crude Oil	10,000
05/07/1981	5 Mi. TAPS Lost Creek	Diesel	10,000
12/04/1981	Tank # 509, North Pole Refinery	JP 4	10,000
07/22/1982	NP Power Plant - H&H Lane	Kerosene	10,000
09/20/1985	1 mi S. of Ft Greely main gate	Diesel	10,000
06/23/2001	Delta Junction, Jettisoned fuel	Aviation Fuel	9,700
10/10/1986	Murphy Dome AFS	Diesel	9,400
12/28/1980	Galena Gasoline Storage	Gasoline	9,200
06/26/1974	Mile 230, Richardson Highway	Diesel	9,000
10/20/1995	Taylor Highway, Mile 61	Diesel	9,000
12/03/1981	MP 273 Dalton/Haul Road, 0.2 mile N of creek	Diesel	8,900
03/04/1989	2 mi N. PS 3, 314 mi Dalton	Methanol	8,700

Major Spills in the Interior Alaska Subarea *(continued from previous page)*

Date	Spill Name	Product	Gallons
2/23/1989	South End of Eielson AFB	JP 4	8,500
1/2/1986	North Pole Refinery	Gasoline	8,400
8/29/1983	Mile Post 125, Dalton Hwy	Diesel	8,350
6/9/1981	Fairbanks International Airport	Diesel	8,000
6/9/1981	Murphy Dome/ACWS	Diesel	8,000
9/12/1985	Refinery Asphalt loading rack	Asphalt	8,000
4/5/1991	North Pole Refinery	Kerosene	8,000
10/12/2001	Fairbanks, Fairbanks International Airport	Ethylene Glycol	7,575
9/2/1981	2 miles north Black Rapids	Diesel	7,500
2/8/2006	Pogo Mine, Accidental release	Other	7,500
12/4/1985	Airport Facility, Fairbanks	Jet-A	7,386
10/8/2000	Fairbanks, Fairbanks International Airport	Ethylene Glycol	7,234
6/26/1974	Mile 88 Glenn Highway	Fuel Oil	7,200
6/26/1989	20,000 ft over Eielson North Dump Area	JP 4	7,150
5/19/1981	Rampart Eureka Trail area	Diesel	7,000
9/10/1981	Mile Post 239, Richardson Highway	Asphalt	7,000
8/14/1983	11.5 Mile Dalton Hwy	Diesel	7,000
11/18/1990	Mile 100.6 Dalton Hwy East side of road	Methanol	7,000
4/15/1991	Galena Power House, Galena, AK	Antifreeze	7,000
6/6/1983	Chevron USA/B. Collins	Diesel	6,787
12/23/1990	Eielson South Dump Area	AV Fuel	6,500
9/8/2002	McCallom Creek, McCallom Creek Repeater	Diesel	6,000
8/2/1990	24 miles Elliott Highway	Diesel	5,721
11/28/1986	20 miles north of Yukon River	Methanol	5,700
1/12/1986	46 Elliot Highway	Reformate	5,613
2/12/1980	Tank 501, North Pole Refinery	JP 4	5,600
9/30/1985	Arctic Lighterace Bulk Storage	Jet-A	5,546
10/10/1991	92.9 mile Taylor Highway	Diesel	5,400
6/7/1990	Arpt Fire Training Pit Area, Fairbanks Int'l Arpt	Diesel	5,020
7/8/1981	Kateel River, Sec 22 Meridian 132N, R20W, NF1/4	AV Fuel	5,000
12/29/1981	Tanana	Fuel Oil	5,000
1/17/1983	Clear Creek Area, 30 miles south Fairbanks	Other	5,000
2/2/1986	Mile 156 1/2 Dalton Highway	Diesel	5,000
7/15/1987	5.5 Mile Elliot	JP 4	5,000
4/13/1990	Milepost 44.5 Elliott Highway	Diesel	5,000
4/5/1994	Bldg. 2111, concrete casements around 50,000 UST	AV Fuel	5,000
8/30/1998	FNSB, MAPCO Refinery	Propylene glycol	5,000
11/11/1993	Truck loading rack	Fuel Oil	4,900
12/3/1981	Inside Building 2351, Eielson AFB	AV Fuel	4,800
4/7/1984	Rail loading station, North Pole Refinery	Fuel Oil #4	4,782
10/27/1981	Trooper Facility 7 mile camp	Fuel Oil	4,500
1/11/1983	Arctic Village	Fuel Oil	4,500
1/29/1983	7 Mile Camp.	Diesel	4,500
9/4/1992	Hoosier Creek, Claim #17	Diesel	4,500
4/25/2003	Fort Knox Gold Mine, Equipment failure	Process Water	4,200
4/1/1981	29 Mile Elliott Highway	Diesel	4,000
12/24/1981	Runway Aircraft Fueling Point, Ft Wainwright	AV Fuel	4,000

Major Spills in the Interior Alaska Subarea *(continued from previous page)*

Date	Spill Name	Product	Gallons
6/20/1988	Eielson AFB	JP 4	4,000
10/21/2000	Richardson Hwy, Polar Fuel truck rollover	Diesel	4,000
9/24/1986	4 miles from Eagle	Gasoline	3,800
3/7/2001	Eielson AFB, Ice damage to fuel storage tank	Diesel	3,760
3/3/2004	Fairbanks, Sourdough Fuel Bulk Plant	Gasoline	3,700
11/6/2003	Fairbanks, Fairbanks International Airport	Ethylene Glycol	3,692
4/30/2002	North Pole, Petro Star Refinery	Crude	3,570
9/15/1986	Manley Hot Springs	Fuel Oil #1	3,400
12/8/1979	Pump Station 8	AV Fuel	3,380
12/8/1985	Tank 317, Fort Wainwright	Gasoline	3,300
6/11/2001	Huslia Fuel Storage Facility	Diesel	3,300
12/16/2005	Richardson Hwy, Carlile Fuel Truck Accident	Diesel	3,110
5/27/1981	Khotol Mtn. area, 100 mi. south of Galena	AV Fuel	3,000
1/19/1983	PS 10	Diesel	3,000
10/14/1985	Richardson Highway MP 169.9	Turbine Fuel	3,000
3/3/1987	241.5 Dalton Highway	Gasoline	3,000
10/6/1987	Eielson AFB	JP 4	3,000
3/24/1994	221.4 Richardson Highway	Fuel Oil	3,000
2/9/1995	Sewage Treatment Plant	Other	3,000
11/2/2005	Fort Knox Gold Mine, Equipment failure	Process Water	3,000
3/28/2001	Eielson AFB, Jettisoned fuel	Diesel	2,985
8/28/1994	Hughes School	Diesel	2,833
7/6/1987	45 Mile Dalton Highway	Fuel Oil #2	2,828
1/20/1989	Galena Air Force Power Plant	Diesel	2,709
3/24/1992	MI 307.9 Dalton HWY	Gasoline	2,700
7/6/2000	Summit Lake, Rollover	Diesel	2,660
5/13/1986	Storage area	U (BA)	2,618
3/24/1992	Mile 306.5 Dalton Hwy	Gasoline	2,600
8/3/1995	Interior Yukon, Charley River Park	AV Fuel	2,600
1/29/1982	Hansen Road, Fairbanks	DRA	2,500
4/29/1986	North Pole Refinery	HA 60	2,500
6/19/1986	Tanana Valley Fairgrounds	CRS 2	2,500
8/12/1994	Fuel pit on Cargain Road, near Bldg.. 1341	AV Fuel	2,500
11/18/1996	Fort Wainwright Bldg. 3694	AV Fuel	2,500
7/15/2003	Fort Knox Gold Mine, Process water release	Process Water	2,500
11/12/2003	Fairbanks, H&H Contractors Spill	Gasoline	2,500
3/29/2004	Fort Knox Gold Mine, Equipment failure	Process Water	2,500
7/5/1990	North Pole Refinery	AV Fuel	2,400
1/18/2000	North Pole, Williams Refinery	Other	2,400
10/7/1983	Mile 301 Haul Rd.	Antifreeze	2,300
9/4/1996	Pump Station 9	DRA	2,300
8/17/1987	212.7 Richardson Highway	Turbine Fuel	2,250
2/21/1991	Between Fairbanks Terminal and Pit C	AV Fuel	2,250
9/22/2001	Pump Station 5, Manifold building relief bay	Crude	2,237
4/24/2000	Pump Station 1, Booster pump	Halon	2,200
12/14/1979	North Pole Refinery	Fuel Oil #1	2,000
1/5/1981	Bldg. 1902, motor pool Bldg., Fort Greely	Fuel Oil	2,000

Major Spills in the Interior Alaska Subarea *(continued from previous page)*

Date	Spill Name	Product	Gallons
5/4/1981	Chandalar Area	Crude Oil	2,000
11/1/1981	Areas around tank 508 & 509, North Pole Refinery	JP 4	2,000
11/14/1981	Off Old Richardson Hwy 2 mile	Diesel	2,000
7/18/1983	Tanana River (8-10 miles upriver)	Diesel	2,000
9/3/1983	Corner Rich and 5th Ave., North Pole	Gasoline	2,000
5/16/1985	Ft Wainwright Commissary	Gasoline	2,000
5/6/1988	ADOTPF 7-Mile Camp	Diesel	2,000
10/14/1988	Mile 188.3 Dalton Hwy/Coldfoot	Fuel Oil #1	2,000
3/14/1989	Old Rich Hwy near K & K Recycling, North Pole	Fuel Oil #1	2,000
5/10/1990	34 mile Dalton Highway, 35 mi. north Livengood on Haul Road	Diesel	2,000
7/17/1990	By community washeteria, Rampart	Diesel	2,000
4/14/1992	Mill Park yard in Deadhorse	Antifreeze	2,000
4/1/1994	Bettles Light & Power	Diesel	2,000
11/2/1995	UAF Hess Village	Other	2,000
1/18/1996	DOT/PF Jim River, MILE 137.8 Dalton	Diesel	2,000
3/11/1996	Eielson AFB, OSCAR ROW	AV Fuel	2,000
1/3/2002	North Pole, Williams Refinery	Kerosene	2,000
11/3/2002	Stevens Village, Generator building	Diesel	2,000
7/6/2003	Fort Knox Gold Mine, SE Corner of Mill	Process Water	2,000
10/9/1998	Eielson AFB, Bldg 1321	Diesel	1,964
11/12/1981	Mile 218 two miles north of Cantwell	Other	1,800
4/8/1983	Mile 383 AK RR	Diesel	1,800
10/8/1994	Water treatment plant	Diesel	1,800
9/8/1999	Eielson AFB	P GLYCOL/Water	1,800
5/8/1986	Fuel facility near washeteria, City of Allakaket	Fuel Oil #1	1,755
12/13/1989	ARR yard, under overpass on Peger Road, Fbks	CI	1,716
3/27/1987	Milepost 203	DRA	1,700
6/24/1994	Mile 64- Tok Cutoff - Wolverine Gas & Fuel	Diesel	1,700
10/28/1996	FMUS Power Plant	E GLYCOL	1,600
6/20/2004	Fairbanks, Interior Fuels Truck Rollover	Diesel	1,600
4/24/1996	Birch Park Pub. Housing, 505 Stewart St.	P GLYCOL	1,540
12/4/1978	Fairbanks International Airport	JP 4	1,500
12/12/1981	Mile 206, Richardson Hwy	Gasoline	1,500
3/3/1983	Dalton Highway 24 miles N. of Yukon	Diesel	1,500
5/15/1986	Tank Farm at Huslia	Fuel Oil #2	1,500
9/13/1986	Pipeline Milepost 203	DRA	1,500
1/12/1988	Chandalar Shelf Camp	Fuel Oil #1	1,500
1/24/1989	8th Ave. & Cushman Street, Fairbanks	Gasoline	1,500
8/26/1989	Laurance Rd at Robin Rd in North Pole	AV Fuel	1,500
1/19/1990	Milepost 11.7 Dalton Highway	Methanol	1,500
2/13/1995	Blair Lakes Range	Diesel	1,500
4/4/1997	Denali National Park, C Camp	Diesel	1,500
11/30/1998	FNSB, MAPCO Refinery, Tank Farm Sump 922	Kerosene	1,500
4/6/1999	ERA Aviation, Fairbanks Intl Airport	Other	1,500
6/16/2001	North Pole, North Pole Refinery	Other	1,500
6/21/2001	Elliot Hwy, Truck Rollover	Diesel	1,500
6/25/2004	Fort Knox Gold Mine, Mill Yard	Process Water	1,500

Major Spills in the Interior Alaska Subarea *(continued from previous page)*

Date	Spill Name	Product	Gallons
11/4/2004	Fort Knox Gold Mine, Line Failure	Process Water	1,500
1/30/2005	North Pole, Flint Hills Refinery valve failure	Other	1,500
3/10/1999	Eielson AFB, F-18 Acft Crash	Diesel	1,493
3/19/1980	Fairbanks International Airport	AV Fuel	1,400
12/25/1980	Next to Bldg. 4365, Eielson AFB	AV Fuel	1,400
12/18/1981	Cold Region testing center, Fort Greely	Diesel	1,400
10/1/1991	MUS Power Plant 1204 1st Ave., Fairbanks	Diesel	1,400
1/21/1994	Alaska Railroad Corp. Yard - Fairbanks	Diesel	1,400
4/29/1996	Eielson AFB, Tank 560, E-11 Tank Farm	AV Fuel	1,400
5/19/2001	Fairbanks, Hose malfunction, deicing truck	Ethylene Glycol	1,400
10/6/2004	Eielson AFB, Heating system leak	Ethylene Glycol	1,400
3/13/1999	Eielson AFB, E-2 Tank Farm, Bldg 6231	Diesel	1,383
7/26/2002	Coldfoot, Big State Logistics	Diesel	1,340
6/7/1985	Bld 3562 PX gas station, Fort Wainwright	Unleaded gas	1,300
10/7/2004	Fort Knox Gold Mine, Sag mill overload	Process Water	1,300
9/25/1995	Pump Station 6	HALON	1,250
8/8/2002	Beaver, Beaver School	Diesel	1,250
7/21/1987	Refueling Pit #4, Eielson AFB	JP 4	1,200
8/30/1994	Asphalt rail loading rack; Mapco Refinery	Gasoline	1,200
6/27/1996	North Pole Refinery	Crude Oil	1,200
9/5/1997	FNSB, Madcap Lane, Off Ballaine Road	Diesel	1,200
7/25/2001	Yukon-Charley Rivers National Preserve, Military Jet crash	Diesel	1,200
11/3/2002	Mentasta, Earthquake Spills	Diesel	1,200
11/3/2002	Chistochina, Earthquake Spills	Diesel	1,200
3/12/1995	Building 1338, Mech. Room	Unknown	1,175
10/29/1978	Pipe rack area - skid #4, North Pole Refinery	Glycol	1,150
1/29/1989	Just past W bank-Chena River, Fairbanks	JP 4	1,150
1/10/1981	Tank 501, North Pole Refinery	JP 4	1,100
9/28/1987	Fox Fuels	Diesel	1,100
12/7/1990	Bldg. 300, Fort Greely	Diesel	1,100
4/14/2006	North Pole, Flint Hills Refinery	Diesel	1,100
7/31/2004	North Pole, Flint Hills Refinery	Kerosene	1,071
11/4/2000	Fairbanks, Railcar transfer spill	Bases	1,020
1/22/1985	MP 207.4 Dalton Hwy	Crude Oil	1,008
1/10/1978	At loading dock, North Pole Refinery	Diesel	1,000
6/13/1981	5 miles south of Dietrich Camp on Haul Road.	Diesel	1,000
1/8/1982	Loading Ramp area, Interior Energy yard	Fuel Oil	1,000
1/14/1982	East Fork DOT camp, 7 miles south Brood Pass on Parks	Diesel	1,000
11/11/1982	Rail loading station, North Pole Refinery	JP 4	1,000
5/5/1985	North Pole Refinery	Kerosene	1,000
9/16/1985	PS 6	Thermal #44	1,000
9/17/1985	24 Mile Elliot Highway	Glycol	1,000
5/23/1986	Fairbanks International Airport	AC 5	1,000
7/26/1990	Texas Range old generator Bldg. Ft. Greely	Diesel	1,000
7/31/1990	Generator Bldg. Texas Range, Fort Greely	Diesel	1,000
7/8/1991	Stevens Village tank farm	Fuel Oil	1,000
4/5/1994	Bldg.. 2111, 1,000 slop Tank, UST	AV Fuel	1,000

Major Spills in the Interior Alaska Subarea *(continued from previous page)*

Date	Spill Name	Product	Gallons
4/11/1994	Village of Venetie tank farm	Diesel	1,000
2/10/1995	N. shore of Healy Lake, next to generator Bldg.	Diesel	1,000
5/24/1995	Inside Bldg. 3480, majority down floor drain	WC	1,000
5/24/1995	Bldg. 3480, Fort Wainwright	E L Oil	1,000
6/22/1995	Tanana River, 20 miles from Manley,50 miles south of village of Tanana	Diesel	1,000
2/22/1996	Fairbanks City, 900 Aurora Drive	DRA	1,000
7/24/1996	Near Munson Fork, Chena Hot Springs	AV Fuel	1,000
4/9/1999	PetroStar Refinery	Diesel	1,000

Data Sources:
Department of Environmental Conservation
Interior Subarea Contingency Plan for Oil and Hazardous Substance Discharges/Releases, June 2000

Contingency Plan Facilities in the Interior Alaska Subarea

Facility Name	Facility Type
Island Tug and Barge, Ltd. Barges (1)	Barge
Crowley Barges (1)	Barge
Sea Coast Transportation Barges (1)	Barge
Sirius Maritime Barges	Barge
Ruby Marine -- Melozi	Barge
Ruby Marine -- Novi	Barge
Alaska Railroad	Railroad
Flint Hills Res. - North Pole Refinery	Crude Terminal
Petro Star North Pole Refinery	Crude Terminal
City of Galena Power Plant Tank Farm	Noncrude Terminal
USAF - Eielson AFB	Noncrude Terminal
Flint Hills, Fbx Airport Fuel Facility	Noncrude Terminal
Fort Greely	Noncrude Terminal
Crowley Marine Services Ft. Yukon Tank Farm	Noncrude Terminal
Crowley Marine Services Galena Tank Farm	Noncrude Terminal
Crowley Marine Services Nenana Tank Farm	Noncrude Terminal
USAF Galena Airport	Noncrude Terminal

NOTES:
(1) Authorized to operate statewide

Active Contaminated Sites in the Interior Alaska Subarea

This table summarizes the number of active contaminated site cleanup projects in the Interior Alaska subarea as of August 20, 2007.

Primary Contaminant	Sites	%
Petroleum	429	71%
Hazardous Substances	173	29%
Total	602	

Interior Alaska Subarea Spill Preparedness and Response Initiatives

Response Corps and Equipment Depots

Community	CRSA	Conex	Nearshore	Other Equipment
Fairbanks	■	●		
Galena		●		
PS 5		●		

Interior Alaska Contingency Plan for Oil and Hazardous Substance Spills and Releases

The current plan is dated April 2007, and includes major revisions and updates to the plan. The plan can be accessed at the following website: http://www.dec.state.ak.us/spar/perp/plans/scp_int.htm

D. OIL FATE AND GENERAL RISK ASSESSMENT

1. Fate of Spilled Oil

Weathering is a combination of chemical and physical processes that change the physical properties and composition of spilled oil. These processes include evaporation, oxidation, biodegradation, emulsification, dispersion, dissolution, and sedimentation. Below are definitions of these processes and how they relate to oil spills.

- Evaporation occurs when substances are converted from liquid state to vapor. During an oil spill, lighter components can evaporate into the atmosphere, leaving behind heavier components. Evaporation rates depend on the composition of the oil and environmental factors like wind, waves, temperature, currents, etc. For example, lighter refined products, such as gasoline, tend to evaporate very quickly because they have a higher proportion of lighter compounds. Heavier oils, like bunker oil, contain relatively few light compounds and leave viscous residues, composed of heavier compounds.
- Oxidation is a chemical reaction between two substances, which results in loss of electrons from one of the substances. This chemical reaction can take place between spilled oil and oxygen in the air or water. This reaction can produce water soluble compounds that can dissolve or form persistent compounds call tars. Oxidation of oil is a very slow process but can be enhanced by sunlight.
- Biodegradation occurs when microorganisms, such as bacteria, fungi, and yeast, break down a substance by feeding on it. Seawater contains a range of microorganisms that can either partially or completely degrade oil. Nutrient levels, water temperature and oxygen availability can all affect biodegradation, which tends to be quicker in warmer environments.
- Emulsification is a process where small droplets of one liquid become suspended in another liquid. During a spill, emulsification takes place when strong currents or waves suspend water droplets in oil. Water-in-oil emulsions are frequently called "mousse" and are more persistent than the original oil.
- Dispersion is the break up and diffusion of substances from their original source. In an oil spill, turbulent seas can break oil into various sized droplets and mix them into the water column. Smaller droplets can stay suspended while larger droplets tend to resurface, creating a secondary slick. The amount of oil dispersed depends on the oil's chemical and physical properties and the sea state. For example, lower viscosity oils such as diesel, have higher dispersion rates in rough seas. Chemical dispersants may be used to enhance dispersion.
- Dissolution is the process of dissolving one substance in another. Many oils contain light aromatic hydrocarbons, like benzene and toluene, which are water soluble. During a spill, these compounds readily dissolve in water or evaporation into air, which is faster than dissolution.
- Sedimentation is a process where spilled oil chemically binds with, or adheres to, particulates in the water column, creating a density greater than the original oil. If the density of oil/particulate compounds becomes greater than water, particles will settle out of the water column. Sedimentation is much more common in shallow, nearshore areas because of the greater amount of suspended particulates.

2. General Risk Assessment

In the remote villages, where refined products are stored in tank farms, the highest probability of spills occurs during fuel transfer of refined products to the tank farm from another source, such as the fuel

barge, or from feeder lines from the tank farm onto users. This is not to say that these spills are common.

Another threat for spills, especially chemical releases, comes from trucking accidents on anyone of the long and relatively remote highways in the regions, including the Dalton, the Parks, the Steese, and the Richardson Highways. Several large diesel fuel spills have resulted from vehicle accidents.

The various types of petroleum products respond quite differently when released into the environment. Spills of refined product that enter the water generally will disperse and experience significant evaporation, making recovery difficult. Crude oil will be affected by the same natural degradation factors but to a much lesser degree. Crude oil spills are “persistent” in nature and will require aggressive actions and innovative techniques to be successful in the harsh Arctic environment.

Spills in the Arctic/continental climatic zone require careful preplanning to overcome the effects imposed by the cold-weather environment. Machinery and people face significant challenges when operating in acute cold. The severe stresses imposed by operating in winter conditions with extreme temperatures and the extended darkness can seriously reduce individual efficiency over a given period. Cold weather conditions can prove beneficial, at times: ice and snow can act effectively as natural barriers, impeding the spread of oil, and can be used effectively to create berms for spill containment. Techniques for organizing and responding to spills in arctic environments have been developed and these documents should be consulted during an event.

The summer months expose many more species, both in diversity and numbers, to the negative effects of an oil spills. Whereas in winter, most species have left the regions and the snow and ice conditions may buffer the soil from the impact of release oil, during the warmer months the land, flora and fauna are all quite vulnerable to an oil spill. Though, summer daylight increases the available work hours to allow almost continuous operations, the extended light does not increase the number of hours response personnel can safely perform tasks.

BACKGROUND: PART FOUR – ABBREVIATIONS AND ACRONYMS

AAC	Alaska Administrative Code
ACA	Area Command Authority
ACFT	Aircraft
ACP	Area Contingency Plan
ACS	Alaska Clean Seas (North Slope industry cooperative)
ADCCED	Alaska Department of Commerce, Community and Economic Development
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADMVA	Alaska Department of Military and Veterans Affairs
ADNR	Alaska Department of Natural Resources
ADOT&PF	Alaska Department of Transportation & Public Facilities, also as ADOTPF
AFB	Air Force Base
AIMS	Alaska Incident Management System Guide
AIR	Air Operations
AKNG	Alaska National Guard
ALCOM	Alaska Command
ALMR	Alaska Land Mobile Radio
AMHS	Alaska Marine Highway System (ADOT&PF)
ANCSA	Alaska Native Claims Settlement Act
ANS or ANSC	Alaska North Slope Crude oil
AOO	Alaska Operation Office (EPA)
AP	Associated Press
APSC	Alyeska Pipeline Service Company
ARRT	Alaska Regional Response Team
ATON	Aids to Navigation
AS	Alaska Statue, also Air Station (USAF)
ASAP	As soon as possible
AST	Alaska State Troopers
BBLS	Barrels
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BOA	Basic Ordering Agreement
BOEM	Bureau of Ocean Energy Management
BOPD	Barrels of Oil per Day
BSEE	Bureau of Safety and Environmental Enforcement
CAMEO	Computer-Aided Management of Emergency Operations
CART	Central Alaska Response Team (ADEC)
CCGD 17	Commander, Coast Guard District 17
CEC	Community Emergency Coordinator
CEMP	Comprehensive Emergency Management Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CHEMTREC	Chemical Transportation Emergency Center
CISPRI	Cook Inlet Spill Prevention and Response Inc. (industry cooperative)
CMT	Crisis Management Team
COM	Communications equipment/capabilities

COMDTINST	Commandant Instruction (USCG)
COTP	Captain of the Port (USCG)
CP	Command Post
C-Plan	Contingency Plan
CTAG	Cultural Technical Advisory Group
CUL	Cultural Resources
CWA	Clean Water Act
DAA	Documentation/Administrative Assistance
DHS	United States Department of Homeland Security
DHSEM	Division of Homeland Security and Emergency Management (division under ADMVA)
DOC	United States Department of Commerce
DOD	United States Department of Defense
DOE	United States Department of Energy
DOI	United States Department of the Interior
DRAT	District Response Advisory Team (USCG)
DRG	District Response Group (USCG)
DWT	Dead weight tonnage
ECRT	Emergency Communications Response Team (ADMVA)
EEZ	Exclusive Economic Zone
EMS	Emergency Medical Services
ENV	Environmental Unit
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986
ESA	Environmentally Sensitive Area
ESI	Environmental Sensitivity Index
ETS	Emergency Towing System
F/V	Fishing Vessel
FAA	Federal Aviation Administration
FDA	Food and Drug Administration
FIN	Finance
FIR	Fire Protection/fire fighting
FLIP	Flight Information Publication
FOG	Field Operations Guide
FOSC	Federal On-Scene Coordinator
FPN	Federal Pollution Number
FRP	Facility Response Plan
FWPCA	Federal Water Pollution Control Act
GIS	Geographic Information System
GRS	Geographic Response Strategies
GSA	General Services Administration
HAZMAT	Hazardous Materials
HAZWOPER	Hazardous Waste Operations and Emergency Response
HQ	Headquarters
IAP	Incident Action Plan
IC	Incident Commander
ICP	Incident Command Post

ICS	Incident Command System
IDLH	Immediate Danger to Life and Health
IMH	Incident Management Handbook (USCG)
IMT	Incident Management Team
INMARSAT	International Maritime Satellite Organization
JPO	Joint Pipeline Office
LAT	Latitude
LEG	Legal
LEPC	Local Emergency Planning Committee
LEPD	Local Emergency Planning District
LERP	Local Emergency Response Plan
LNG	Liquefied Natural Gas
LO	Liaison Officer
LONG	Longitude
LOSC	Local On-Scene Coordinator
LRRS	Long Range Radar Station
M/V	Motor Vessel
MAC	Multiagency Coordination Committee
MAP	Mapping
MAR CH	Marine Channel
MED	Medical Support/Health Care
MESA	Most Environmentally Sensitive Area
MLC	Maintenance and Logistics Command (USCG Pacific Area)
MLT	Municipal Lands Trustee Program
MOA	Memoranda of Agreement
MOU	Memoranda of Understanding
MSD	Marine Safety Detachment (USCG)
MSO	Marine Safety Office (USCG)
MSRC	Marine Spill Response Corp. (national industry cooperative)
NART	Northern Alaska Response Team (ADEC)
NAVSUPSALV	U.S. Navy Superintendent of Salvage
NCP	National Oil and Hazardous Substance Pollution Contingency Plan
NIMS	National Incident Management System
NIIMS	National Interagency Incident Management System
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOTAMS	Notice to All Mariners; also, Notice to Airmen
NPDES	National Pollution Discharge Elimination System
NPFC	National Pollution Fund Center
NPS	National Park Service
NRC	National Response Center
NRT	National Response Team
NRDA	(Federal/State) Natural Resource Damage Assessment
NSF	National Strike Force
NSFCC	National Strike Force Coordinating Center
NWR	NOAA Weather Radio; also National Wildlife Refuge (USFWS)

NWS	National Weather Service
OHMSETT	Oil and Hazardous Material Simulated Environment Test Tank
OOD	Duty Officer or Officer On Duty
OPA 90	Oil Pollution Act of 1990
OPCEN	Operations Center
OPS	General Response Operations
OSC	On-Scene Coordinator
OSHA	Occupational Health and Safety Administration
OSLTF	Oil Spill Liability Trust Fund
OSRO	Oil Spill Response Office
O/S	On-Scene
PERP	Prevention and Emergency Response Program (ADEC)
PIAT	Public Information Assist Team
PIO	Public Information Officer
PLN	General Planning Operations
POLREP	Pollution Report (USCG)
PPE	Personal Protective Equipment
PPOR	Potential Places of Refuge
PPP	Seafood Processor Protection Plans
RAC	Response Action Contractor
RCC	Rescue Coordination Center
RCAC	Regional Citizens Advisory Council
RCRA	Resource Conservation and Recovery Act of 1978
RMAC	Regional Multi-Agency Coordination Committee
RP	Responsible Party
RPOSC	Responsible Party On-Scene Coordinator
RPD	Recovery, Protection and Decontamination
RQ	Reportable Quantity
RRT	Regional Response Team
RSC	Regional Stakeholder Committee
RV	Recreation Vehicle
SAR	Search and Rescue
SART	Southeast Alaska Response Team (ADEC)
SCAT	Shoreline Cleanup Assessment Teams
SCBA	Self-Contained Breathing Apparatus
SCP	Subarea Contingency Plan
SDS	Safety Data Sheet
SEAPRO	Southeast Alaska Petroleum Resource Organization Inc.
SEC	Security
SHPO	State Historic Preservation Officer (ADNR)
SERVS	Ship Escort Response Vessel Service (Alyeska)
SITREP	Situation Report (ADEC)
SONS	Spill of National Significance
SOSC	State-On Scene Coordinator
SPAR	Spill Prevention and Response Division
SSC	Scientific Support Coordinator (NOAA)
STORMS	Standard Oil Spill Response Management System
T/V	Tank Vessel

TA	Trajectory Analysis
TAPS	Trans Alaska Pipeline System
TPO	Tribal Police Officer
UC	Unified Command
USAF	United States Air Force
USCG	United States Coast Guard
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
VIRS	Visual Information Response System
VOSS	Vessel of Opportunity Skimming System
VPO	Village Police Officer
VSPO	Village Public Safety Officer
VTS	Vessel Traffic Separation System/Scheme
WRR	Wildlife Protection/Care/Rehabilitation/Recovery
WX	Weather