



Annual Summary of Oil and Hazardous Substance Spills

Fiscal Year 2010 (July 1, 2009-June 30, 2010)

Alaska Department of Environmental Conservation ■ Division of Spill Prevention and Response ■ June 2011

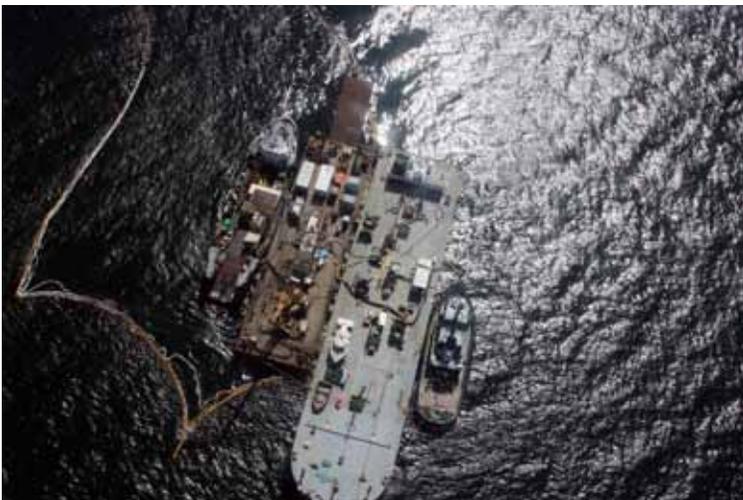
Significant Responses

Princess Kathleen

Location: Point Lena, Juneau, Alaska
Date: September 7, 1952
Product: bunker oil, other oils
Quantity: 130,000 gallons (amount recovered)
Cause: vessel grounded and sank

ADEC and Coast Guard partnered to conduct the first ever oil removal from a sunken, historic wreck in Alaskan waters. The SS Princess Kathleen grounded and sank near Juneau in 1952 with an undetermined amount of heavy bunker fuel on board. Over the last several years, the vessel has released small quantities of oil into the waters of Lynn Canal. Recently, as the vessel continued to deteriorate, more reports of sheen emanating from the vessel were being reported to both ADEC and Coast Guard.

Global Diving and Salvage, Inc. (Global) conducted a Coast Guard-sponsored survey and found bunker oil leaking from the vessel and more oil trapped in the interior spaces. The divers noted oil leaking from the badly deteriorated rivets that hold the hull plating onto the Princess Kathleen's internal framing. The Unified Command decided to remove the oil from the fuel tanks and accessible interior portions of the vessel to prevent or at least minimize any future releases. Global, using a technique called hot tapping, accessed all 14 fuel tanks on the vessel to remove product. In addition, they removed oil trapped in overhead spaces and in the after engine room. Global employed a unique method for collecting the oil, which reduced to a minimum the amount of water collected in the process that would require additional treatment. When completed, the operation removed an estimated 130,000 gallons of heavy oil and other petroleum products, and prevented a potential catastrophic release of oil in the future.



Dive platform and containment boom positioned above the wreck of the Princess Kathleen. (Photo Date: 5/17/2010)

Adak Petroleum Diesel Spill

Location: Adak, Alaska
Date: January 11, 2010
Product: #2 diesel
Quantity: 68,746 gallons
Cause: Human Error

On January 11, 2010, Adak Petroleum reported an estimated 3,400 barrels (142,800 gallons) of diesel released from a storage tank at their facility in Adak as it was being filled from the tank ship *Al Amerat*. The spill occurred as the fuel was being pumped to storage tank N-7 in the Helmet Creek Tank Farm. Fuel escaped from the tank into secondary containment surrounding the tank, from which valves were open to a drainage system leading to Helmet Creek. The fuel overwhelmed the system's oil/water separator, resulting in a fuel release to Helmet Creek and the small boat harbor at its terminus. An estimated 1,000 gallons of fuel entered the small boat harbor.

Spill response teams from ADEC, Coast Guard, and a response contractor traveled to Adak which is approximately 1,200 miles southwest of Anchorage. Response crews placed containment boom and absorbents in the creek and conducted skimming operations in the small boat harbor. Cleanup of contaminated areas was conducted throughout the next month and a monitoring plan was implemented to watch for any additional signs of fuel.

Monitoring and cleanup of the upper section of Helmet Creek was delayed for a short period of time due to the discovery and eventual removal of unexploded ordnance in the area. The responsible party, Aleut Enterprise, LLC, estimated approximately 6,174 gallons of fuel were recovered. According to the final report, the discharge volume was estimated to be 68,746 gallons.



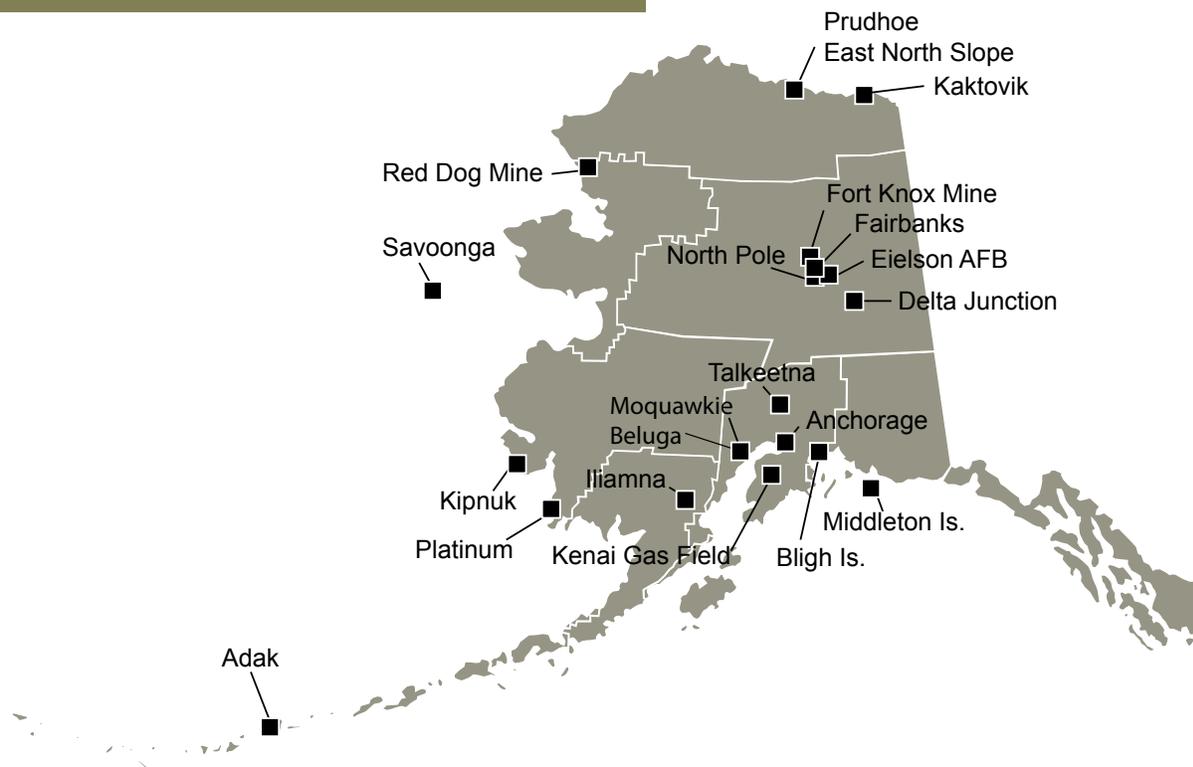
Lisburne Common Line Release

Location: Prudhoe Bay, Alaska
Date: November 29, 2009
Product: crude oil, produced water, natural gas
Quantity: 13,500 gal crude oil; 32,500 gal produced water
Cause: rupture due to ice plugs inside pipe

On November 29, 2009, a BP Exploration Alaska, Inc. (BPXA) operator making a routine check discovered a spill at the Lisburne Production Facility. The spill was from an 18-inch three-phase common line carrying a mixture of crude oil, produced water, and natural gas. A rupture to the pipe released approximately 1,100 barrels (46,000 gallons) of oily material to a snow-covered, gravel pipeline-access road and tundra. BPXA estimated the oily material spread over approximately 31,226 square feet. Approximately one-fourth of the area received liquid product and windblown spray impacted the remaining area.

Work crews used a variety of manual and mechanical recovery tactics to remove the oil-misted snow and the oil embedded in the tundra. Lightly-oiled snow was removed with snow scoops and transported by snow machine to containment bins. Response crews removed the liquid product using a flush and vacuum recovery process performed in a containment cell, along with mechanical equipment designed to

Large Spills



Large Spills, July 1, 2009-June 30, 2010

NOTE: For this list, a "large spill" is defined as 1,000 gallons/pounds or greater.

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Spill Date	Spill Name	Location	Product	Total Released
06/29/2010	Process Water Spill	Red Dog Mine	Process Water	80,640 gal
01/11/2010	Adak Petroleum Diesel Spill	Adak	Diesel	68,746 gal
12/12/2009	Coal Spill MP 225.7 ARRC	Talkeetna	Coal	40,000 lbs
05/04/2010	Process Solution Spill ¹	Fort Knox Gold Mine	Process Water	35,000 gal
11/29/2009	Lisburne 3-Phase Common Line Release	Prudhoe Bay	Produced Water	32,500 gal
			Crude	13,500 gal
05/25/2010	Alyeska PS 9, Tank 190 to containment ²	Near Delta Junction	Crude Oil	11,718 gal
06/21/2010	BPXA West Dock Pad	Prudhoe Bay	Produced Water	10,935 gal
12/02/2009	R-Pad Produced Water Release	Prudhoe Bay	Produced Water	7,140 gal
12/23/2009	Tug Pathfinder Grounding, Bligh Reef	Prince William Sound	Diesel	6,410 gal
12/21/2009	Pogo Mine Paste Release	Delta Junction	Drilling Muds	6,000 gal
05/24/2010	Coastal Villages Seafood Plant	Platinum	Freon	6,000 lbs
04/01/2010	KC-135 Fuel Jettison	Eielson AFB	Aviation Fuel	6,000 gal
05/04/2010	FAI South De-Ice	Fairbanks International Airport	Glycol (deicer)	5,000 gal
06/30/2010	Jettisoned Fuel	Eielson AFB	Diesel	3,280 gal
11/23/2009	Flint Hills Refinery 6 Oily Water Line Spill	North Pole	Process Water	3,020 gal
04/08/2010	Kagkaktlik Kipnuk Gasoline	Kipnuk	Gasoline	2,080 gal

¹ A total of 305,370 gallons of process water was released inside an ore-processing building. All but 35,000 gallons was contained within the building.

² A total of 108,360 gallons of crude oil was released to containment. 10,206 gallons was calculated to have been released to the atmosphere through evaporation and 512 gallons has been calculated to remain in the soil.

Spill Date	Spill Name	Location	Product	Total Released
10/30/2009	F/V Carley Renee Rollover and Sinking	Eastern Chain	Diesel	2,000 gal
12/13/2009	Mill 2021	Red Dog Mine	Process Water	2,000 gal
02/05/2010	Kaveolook School Diesel Release	Kaktovik	Diesel	2,000 gal
08/05/2009	Marathon Kenai Gas Field	Kenai Gas Field	Produced Water	1,840 gal
12/13/2009	FS2: Module 49-91	North Slope	Process Water	1,745 gal
10/21/2009	Aurora Moquawkie Produced Water	Kenai Peninsula	Produced Water	1,680 gal
12/15/2009	Crowley Spill at Iliamna Airport	Iliamna	Aviation Fuel	1,507 gal
11/16/2009	Skid 301	Prudhoe Bay	Produced Water	1,500 gal
01/01/2010	Mill 2010	Red Dog Mine	Mill Slurry	1,500 gal
07/04/2009	Aurora Gas Beluga	Kenai Peninsula	Drilling Muds	1,000 gal
04/20/2010	F/V Northern Belle sinking	Near Middleton Island	Diesel	1,000 gal

Significant Responses - continued from p. 1

remove embedded oil. Analytical samples collected after the cleanup validated that response actions were adequate.

The approved site restoration plans were executed before and after the breakup season. Site monitoring will continue over the next five years.



Tug Pathfinder Grounding

Location: Bligh Reef, Prince William Sound, Alaska
 Date: December 23, 2009
 Product: diesel
 Quantity: 6,410 gallons
 Cause: vessel grounding

On December 23, 2009, the tug *Pathfinder* was returning to the Port of Valdez from ice-scouting duty in Prince William Sound. The tug struck Bligh Reef at approximately 6:15 PM, and the grounding caused significant damage to the underside of the vessel, including puncturing three fuel tanks containing an estimated 33,000 gallons of diesel fuel.

On December 25, the response vessel *Valdez Star* lightered approximately 49,000 gallons of diesel fuel and water from the tug in preparation for towing to the Port of Valdez. The tow was completed by 2:00 AM on December 27, and the remaining 90,000 gallons of diesel fuel on board the vessel were removed. Crowley reported an estimated 6,410 gallons of fuel were released to Prince William Sound during this incident.



APSC PS 9, Release to Containment

Location: Trans-Alaska Pipeline, Pump Station 9
 Date: May 25, 2010
 Product: crude oil
 Quantity Released: 108,360 gallons released to containment
 Quantity Recovered: 96,642 gallons
 Cause: equipment failure

During a scheduled testing of the fire command system at Alyeska's Pump Station 9 on May 25, 2010, the station experienced

a power failure which caused the tank relief valves to open. Subsequently, Tank 190 overflowed and crude oil was released to secondary containment. ADEC received the spill report from the Alyeska Operations Control Center and was notified that an Incident Management Team (IMT) was activated. ADEC responders were then deployed to Pump Station 9 and to the Alyeska Fairbanks Emergency Operation Center. The IMT was active for the first eight days until the cleanup transitioned into the project phase on June 1. During the initial response, the Trans-Alaska Pipeline remained shut down for a total of 79 hours and 40 minutes until it was determined that it could safely be restarted.

Spill responders processed the recovered oil through a filter metering skid to provide defensible volume reports to shareholders and regulatory agencies. After the oil was metered, it was either injected into the pipeline or trucked down to the Valdez Marine Terminal for sale.



Lisburne Common Line Release: Spill responders work within the area of heaviest contamination. (Photo Date: 12/07/2009)

Statewide Summary

All Spills

During the period July 1, 2009-June 30, 2010, 1,783¹ oil and hazardous substance releases totalling 365,368 gallons were reported to the Department of Environmental Conservation (ADEC).

Noncrude Oil comprised 72% of the spills reported and 34% of the total volume. Process Water (see Glossary) comprised half of the total volume, but just 3% of the number of spills reported during the period. Crude oil spills comprised 3% of the spills reported and 8% of the total volume released.



Spills 1,783
Gallons 365,368

Top 5 Causes (gallons)

Cause	Spills	Gallons
Seal Failure	92	82,459
Human Error	257	79,386
Equipment Failure	360	68,724
Line Failure	296	63,620
Overfill	86	16,880

Top 5 Products (gallons)

Product	Spills	Gallons
Process Water	26	124,191
Diesel	478	105,319
Produced Water	27	57,620
Crude	57	28,275
Drilling Muds	20	9,282

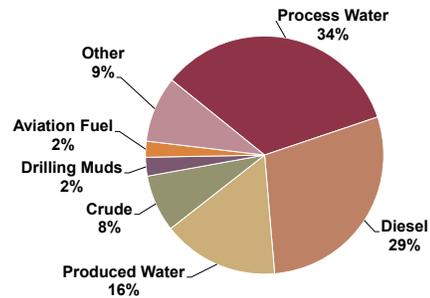
Top 5 Facility Types (gallons)

Facility Type	Spills	Gallons
Mining Operation	299	129,639
Oil Production	359	80,418
Non-Crude Terminal	9	69,268
Air Transportation	83	15,766
Vessel	192	12,917

¹ Some spill incidents involve releases of multiple substances. In FY 2010, there were 1,741 spill incidents, resulting in 1,799 oil and hazardous substance releases.

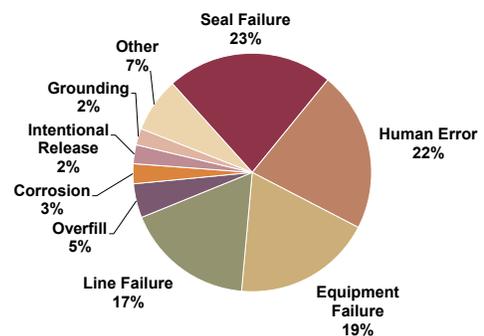
NOTE: Sixteen (16) releases totalling 46,651 pounds were reported during FY 2010. For graphing purposes, spill quantities recorded in pounds were converted to gallons using a conversion factor of 8 pounds per gallon.

Volume Released by Product



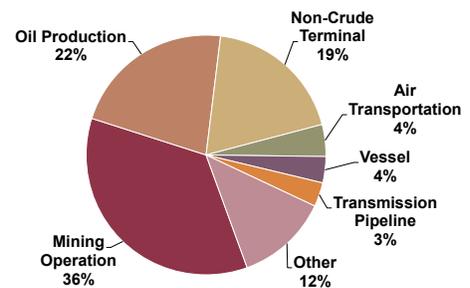
For graphing purposes, 'Other' includes products comprising 2% or less of the total volume released.

Volume Released by Cause



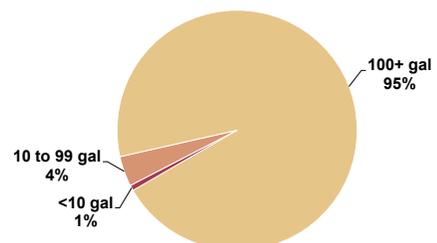
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Volume Released by Facility Type



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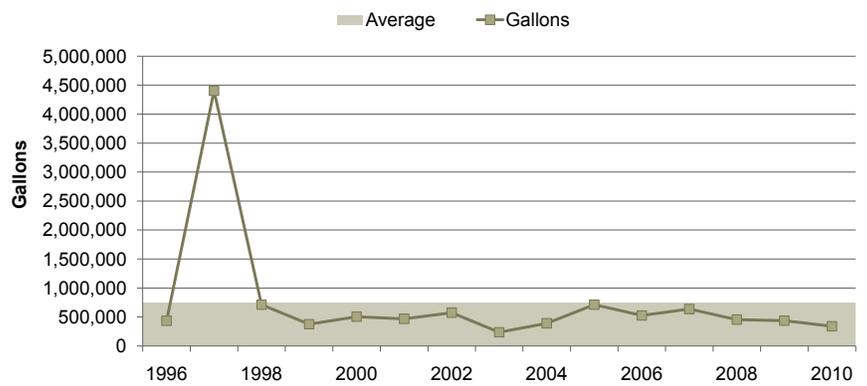
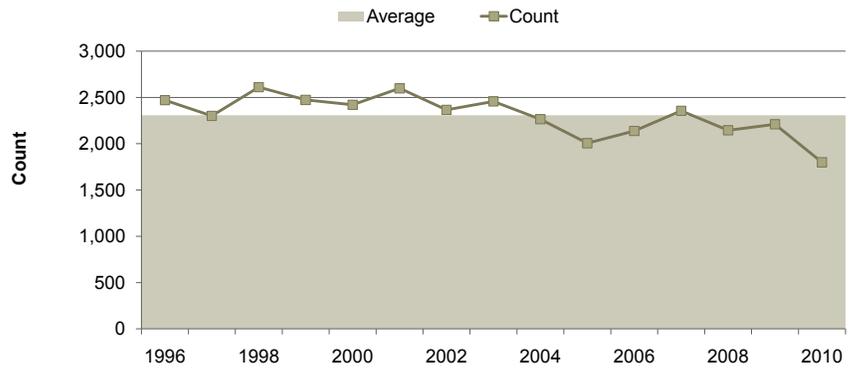
Volume Released by Size Class



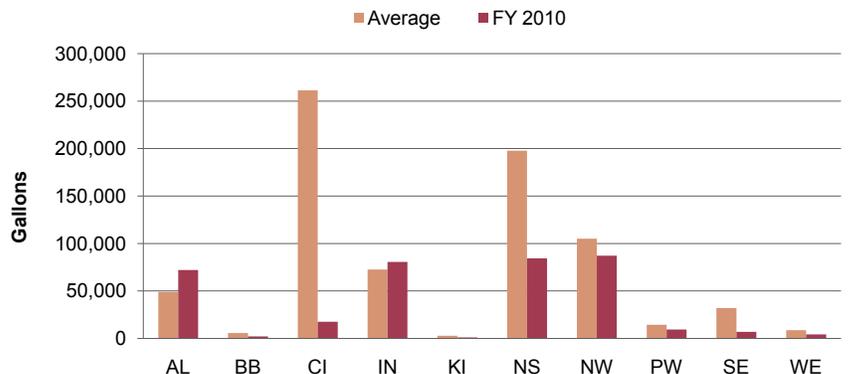
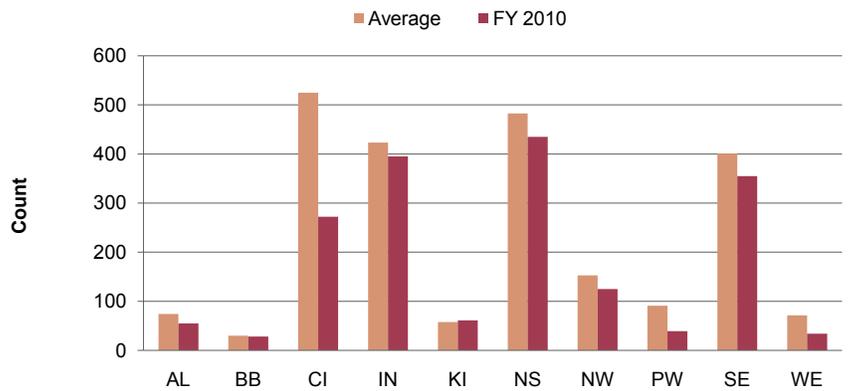
Statewide Summary *(continued)*

- The number of spills in FY 2010 (1,799) was significantly lower than in FY 2009 (2,210).
- Total volume released in FY 2010 was 365,368 gallons, 72,401 gallons less than in FY 2009.
- The North Slope subarea had the most spills (435). The Aleutian, Northwest Arctic, North Slope and Interior Alaska subareas combined comprised nearly 90% of the total statewide volume.
- Process water (all types) comprised half of the statewide volume released. Nearly half of the total volume of process water was released in the Northwest Arctic subarea. Process water comprised approximately 66% of the total volume released in the North Slope subarea, but only 6% of the spills.
- More than 75% of the total spill volume was attributed to four causes: Seal Failure (23%), Equipment Failure (19%), Line Failure (17%), and Human Error (22%).
- More than 75% of the total spill volume was from spills from Mining Operation (36%) and Oil Production (22%) facilities or Non-Crude Terminals (19%).
- During FY 2010, 95% of the spill volume resulted from spills greater than 100 gallons.

Spills by Fiscal Year



Spills by Subarea



Statewide Summary *(continued)*

Noncrude Oil

- Nearly two-thirds (62%) of the noncrude spills were under 10 gallons. Spills 100 gallons or greater comprised 90% of the total noncrude volume for the period.
- Diesel spills were the predominant noncrude oil releases during FY 2010, comprising approximately 37% of the total number of noncrude spills and about 84% of the total noncrude volume released.



Number of Spills Reported 1,290
Total Gallons 125,355

Top 5 Causes (gallons)

Cause	Spills	Gallons
Human Error	198	75,762
Intentional Release	8	9,305
Grounding	16	8,183
Equipment Failure	251	5,503
Overfill	68	4,512

Top 5 Products (gallons)

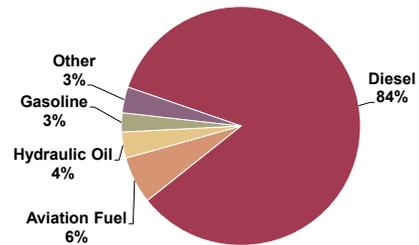
Product	Spills	Gallons
Diesel	478	105,319
Aviation Fuel	29	7,963
Hydraulic Oil	416	4,434
Gasoline	62	3,244
Engine Lube Oil	124	1,443

Top 5 Facilities (gallons)

Facility Type	Spills	Gallons
Non-Crude Terminal	9	69,268
Vessel	180	12,898
Air Transportation	78	10,545
Residence	73	5,366
Other	151	4,565

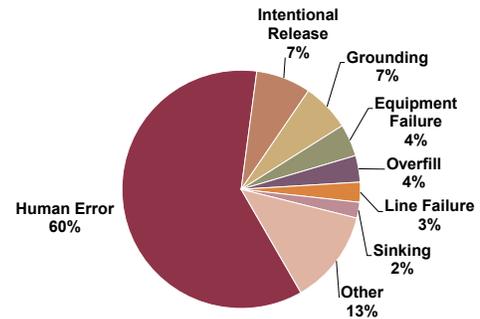
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Volume Released by Product



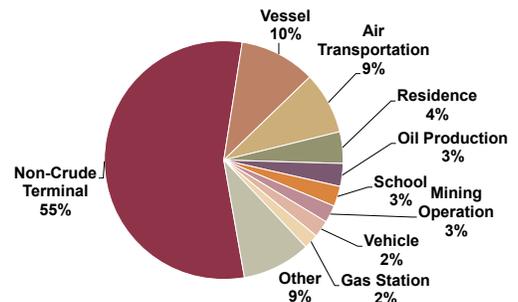
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Volume Released by Cause



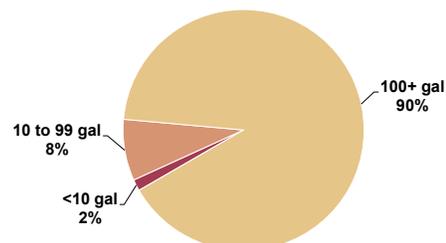
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Volume Released by Facility Type



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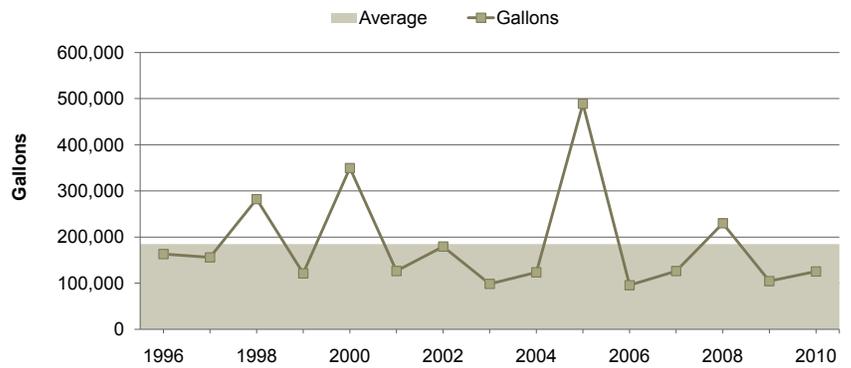
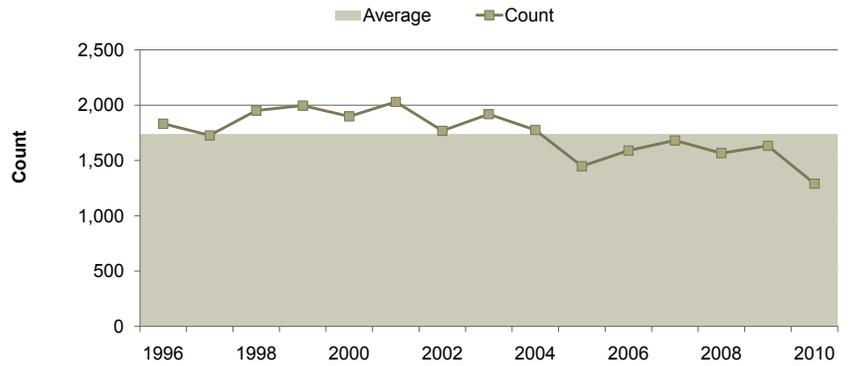
Volume Released by Size Class



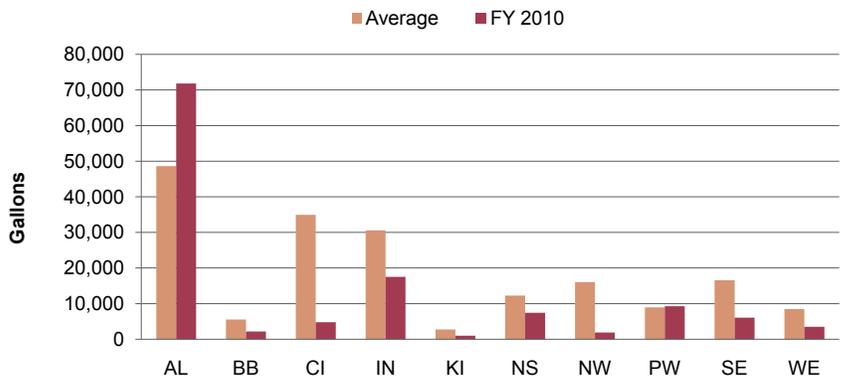
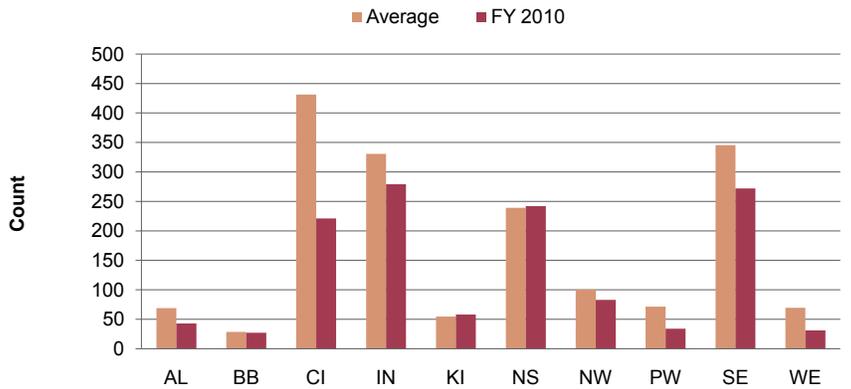
Statewide Summary *(continued)*

Spills by Fiscal Year

- Noncrude oil releases comprised 72% of the spills reported during FY 2010 and 34% of the total volume.
- The Interior Alaska subarea had the greatest number of noncrude oil spills (279), representing 22% of the total number of noncrude spills statewide and 14% of the statewide noncrude volume. The Aleutian subarea had the greatest noncrude volume (71,821 gallons), 57% of the statewide noncrude total.
- About 60% of the noncrude spill volume was attributed to Human Error.
- More than half of the noncrude spill volume during FY 2010 was due to releases at Noncrude Terminals (55%).



Spills by Subarea



Statewide Summary *(continued)*

Crude Oil

- Crude Oil spills comprised approximately 8% of the total volume statewide.
- About 99% of the Crude Oil spills occurred at Oil Production (57%) or Transmission Pipeline (42%) facilities.
- Line Failure and Equipment Failure were the primary causes, based on total volume released.
- Spills greater than 100 gallons comprised approximately 98% of the total crude spill volume.



Spills Reported 57
Total Gallons 28,275

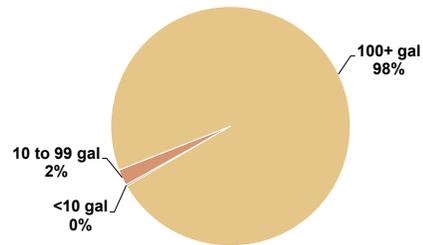
Top 5 Causes

Cause	Spills	Gallons
Line Failure	6	13,775
Overfill	6	11,980
Equipment Failure	9	1,026
Valve Failure	4	789
Corrosion	6	195

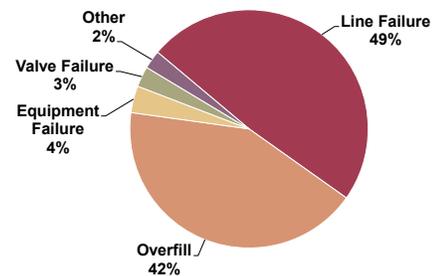
Top 5 Facilities

Facility Type	Spills	Gallons
Oil Production	44	16,137
Transmission Pipeline	3	11,758
Refinery Operation	3	211
Crude Oil Terminal	3	109
Oil Exploration	2	60

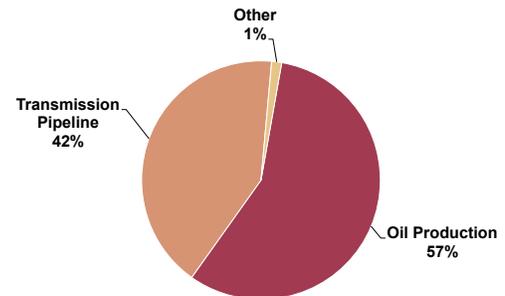
Volume Released by Size Class



Volume Released by Cause



Volume Released by Facility Type



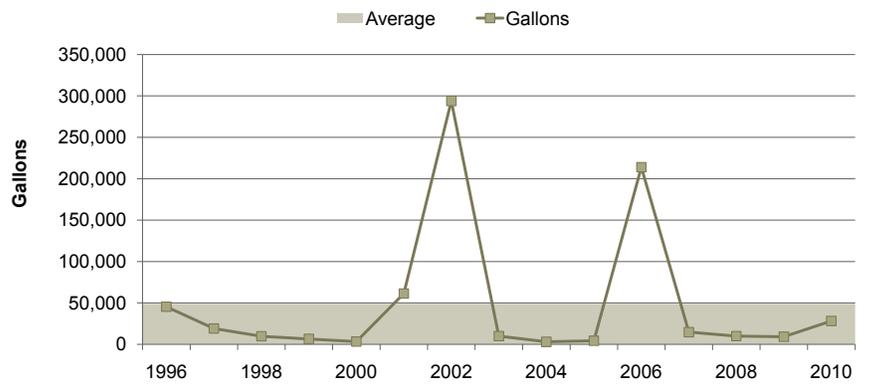
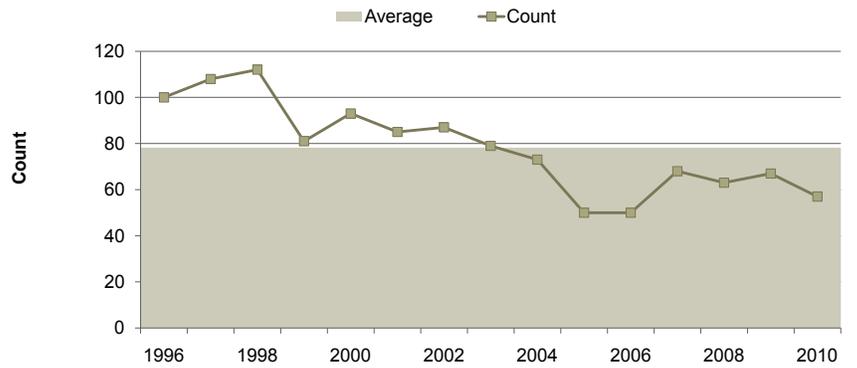
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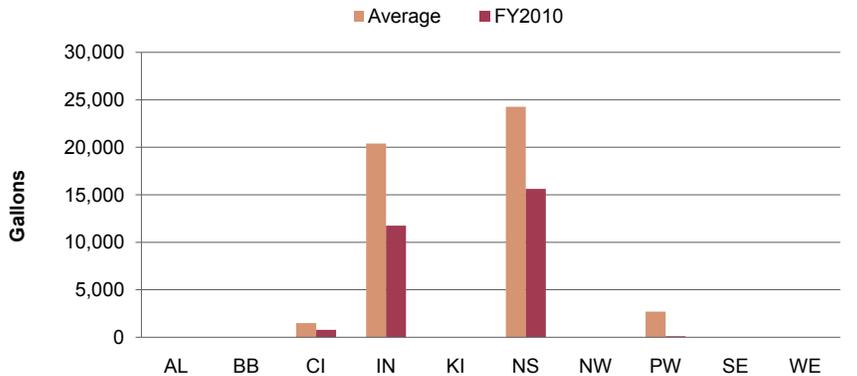
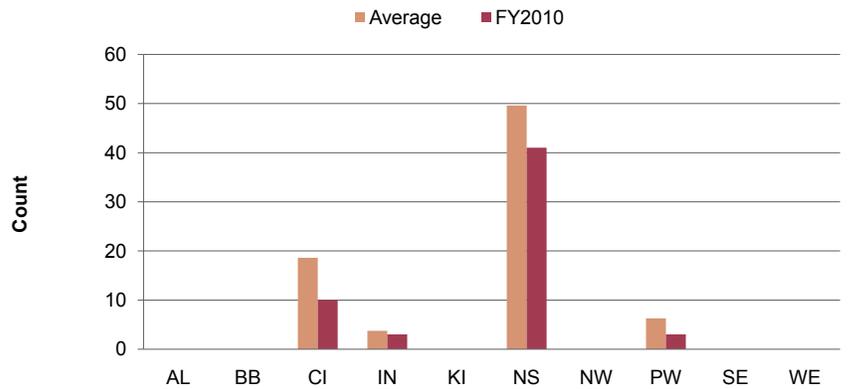
Statewide Summary *(continued)*

- The number of crude oil spills decreased slightly in FY 2010 (57) compared to FY 2009 (67); however, the total volume was substantially higher, 28,275 gallons in FY 2010 compared to 9,150 gallons in FY 2009.
- More than 70% of the crude oil spills, representing more than half of the crude oil volume for FY 2010, occurred in the North Slope subarea.

Spills by Fiscal Year



Spills by Subarea



Statewide Summary *(continued)*

Hazardous Substances

- More than two-thirds of the Hazardous Substance spills in FY 2010 were less than 10 gallons. Spills greater than 100 gallons comprised 92% of the total hazardous substance spill volume.
- Oil Production facilities had more Hazardous Substance releases; however, Mining facilities had the highest total volume released.



Number of Spills 376
Total Gallons 29,212

Top 5 Causes (gallons)

Cause	Spills	Gallons
Equipment Failure	82	13,742
Line Failure	63	10,357
Human Error	42	2,504
Containment Overflow	4	853
Seal Failure	22	547

Top 5 Products (gallons)

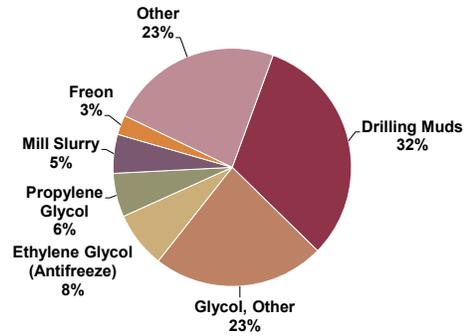
Product	Spills	Gallons
Drilling Muds	20	9,282
Glycol, Other	42	6,804
Other	25	5,364
Ethylene Glycol (Antifreeze)	102	2,230
Propylene Glycol	16	1,733

Top 5 Facilities (gallons)

Facility Type	Spills	Gallons
Mining Operation	57	8,455
Air Transportation	5	5,221
Railroad Operation	1	5,000
Oil Production	98	4,427
Other	48	1,998

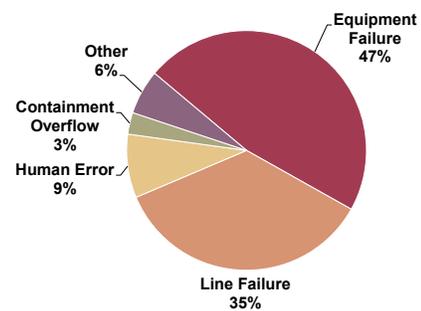
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Volume Released by Product



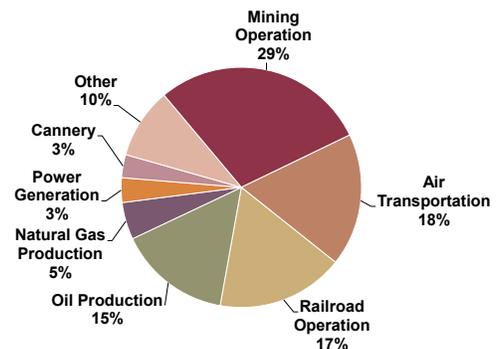
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Volume Released by Cause



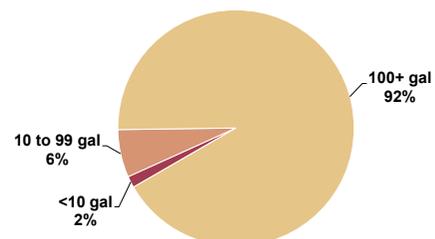
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Volume Released by Facility Type



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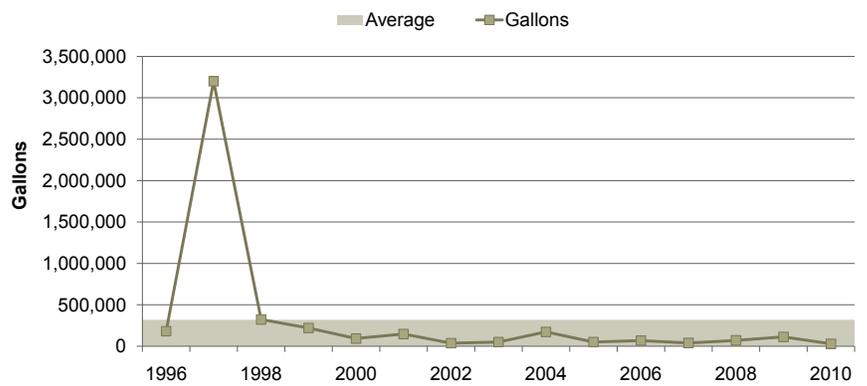
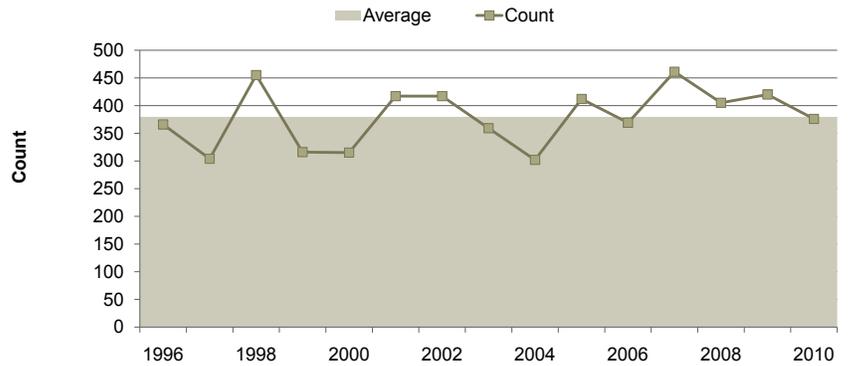
Volume Released by Size Class



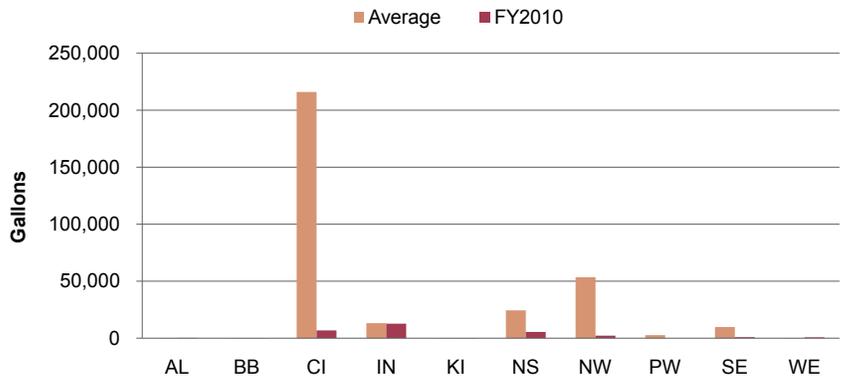
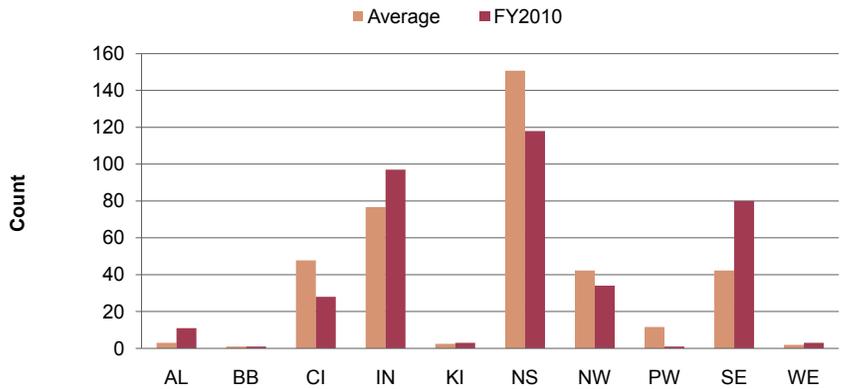
Statewide Summary *(continued)*

- Nearly half of the Hazardous Substance spill volume during FY 2010 was due to Equipment Failure (47%).
- Nearly 30% of the total volume of hazardous substances released during the period occurred at Mining facilities.
- Ethylene Glycol (102 spills) was the product most frequently released.
- Most hazardous substance releases occurred within the North Slope subarea (118 spills). The greatest total volume released occurred in the Interior Alaska subarea (12,743 gallons).

Spills by Fiscal Year



Spills by Subarea



Statewide Summary *(continued)*

Extremely Hazardous Substances

- Sulfuric Acid was the most commonly released EHS during FY 2010 and comprised nearly all of the total EHS volume for the period.
- Refineries were responsible for 90% of the total EHS volume released during FY 2010.
- Seal Failure was the cause for 90% of the EHS volume released during the period.



Spills	18
Gallons	335

Causes

Cause	Spills	Gallons
Seal Failure	3	302
Cargo Not Secured	4	23
Human Error	3	4
External Factors	3	2
Unknown	2	1.5

Products

Product	Spills	Gallons
Sulfuric Acid	11	325
Ammonia (Anhydrous)	5	8
Hydrochloric Acid	2	1

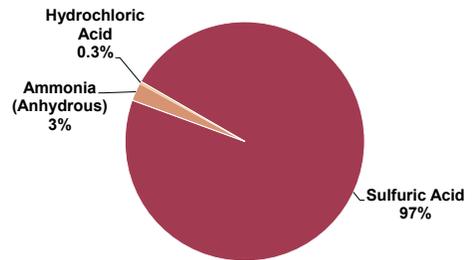
Facility Types

Facility Type	Spills	Gallons
Refinery Operation	1	300
Mining Operation	2	21
Vessel	1	4
Cannery	3	3
Maintenance Yard/Shop	1	3

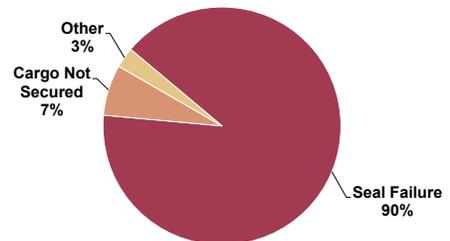
NOTE: Extremely Hazardous Substances (EHS) are chemicals which are extremely toxic, and when released are immediately dangerous to the life and health of humans and animals and cause serious damage to the environment. More than 300 chemicals are listed as EHSs by the US Environmental Protection Agency.

NOTE: Sixteen (16) releases totalling 46,651 pounds were reported during FY 2010. For graphing purposes, spill quantities recorded in pounds were converted to gallons using a conversion factor of 8 pounds per gallon.

Volume Released by Product

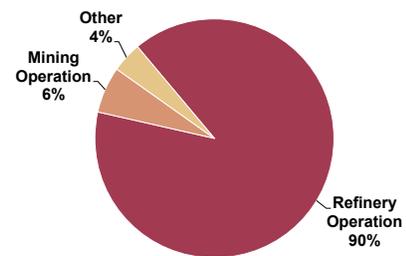


Volume Released by Cause



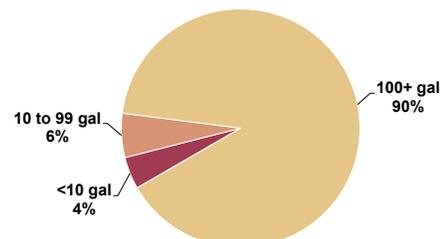
For graphing purposes, 'Other' includes products comprising 2% or less of the total volume released.

Volume Released by Facility Type



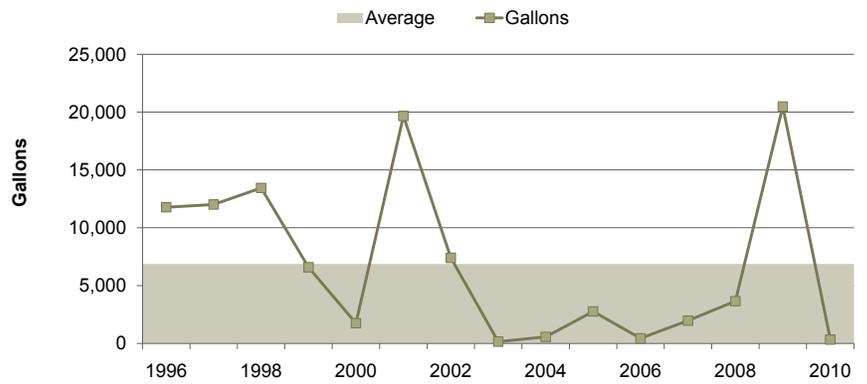
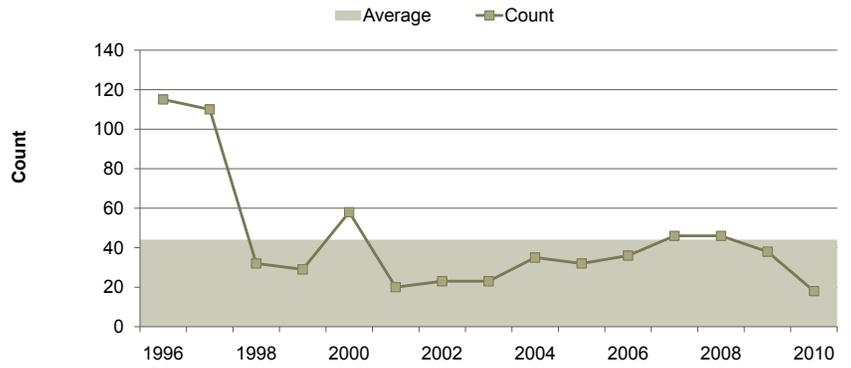
For graphing purposes, 'Other' includes products comprising 2% or less of the total volume released.

Volume Released by Size Class

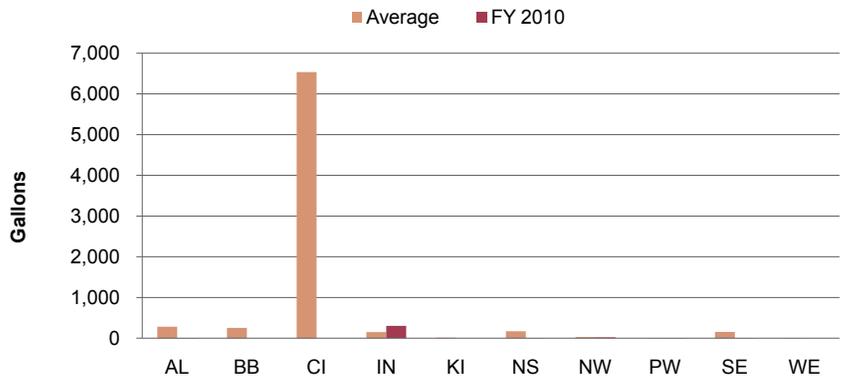
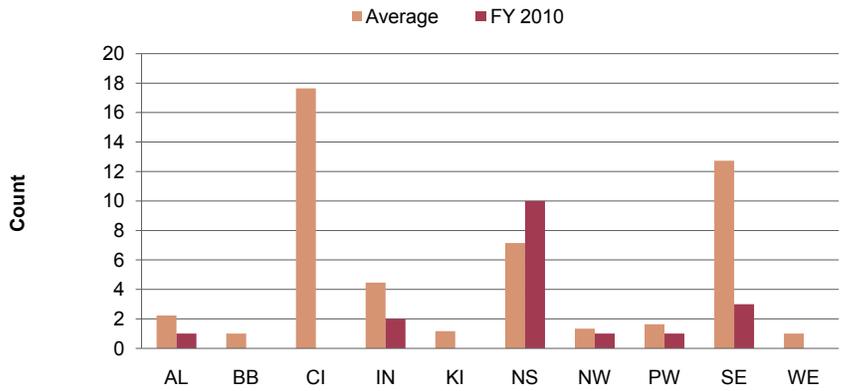


Statewide Summary *(continued)*

Spills by Fiscal Year



Spills by Subarea



Statewide Summary *(continued)*

Process Water

- Process Water (all types) releases comprised 50% of the total volume released during FY 2010, but only 3% of the spills.
- 45% of Process Water releases were 100 gallons or more in volume. Spills greater than 100 gallons accounted for nearly all of the Process Water volume during FY 2010.
- Most of the Process Water volume released during FY 2010 was due to Seal Failure (44%), Equipment Failure (27%) or Line Failure (20%).
- Mining facilities were responsible for more than half the total Process Water spill volume during FY 2010.



Spills 58
Total Gallons 182,191

Top 5 Causes (gallons)

Cause	Spills	Gallons
Seal Failure	3	80,801
Equipment Failure	17	48,452
Line Failure	7	36,098
Corrosion	6	8,826
Valve Failure	4	2,556

Top Products (gallons)

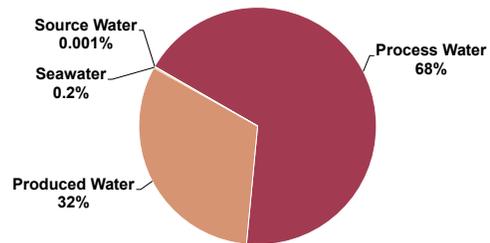
Product	Spills	Gallons
Process Water	26	124,191
Produced Water	27	57,620
Seawater	4	379
Source Water	1	1

Top 5 Facility Types (gallons)

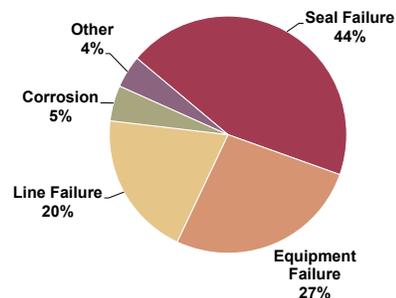
Facility Type	Spills	Gallons
Mining Operation	15	118,216
Oil Production	25	55,961
Natural Gas Production	8	3,983
Refinery Operation	7	3,204
Crude Oil Terminal	1	588

NOTE: Sixteen (16) releases totalling 46,651 pounds were reported during FY 2010. For graphing purposes, spill quantities recorded in pounds were converted to gallons using a conversion factor of 8 pounds per gallon.

Volume Released by Product

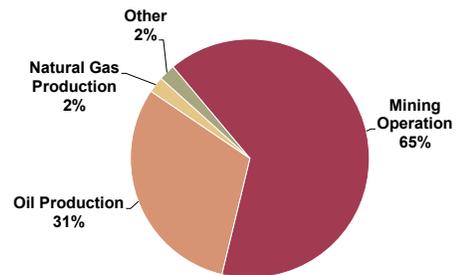


Volume Released by Cause



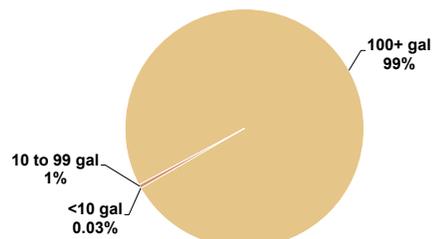
For graphing purposes, 'Other' includes products comprising 2% or less of the total volume released.

Volume Released by Facility Type



For graphing purposes, 'Other' includes products comprising 2% or less of the total volume released.

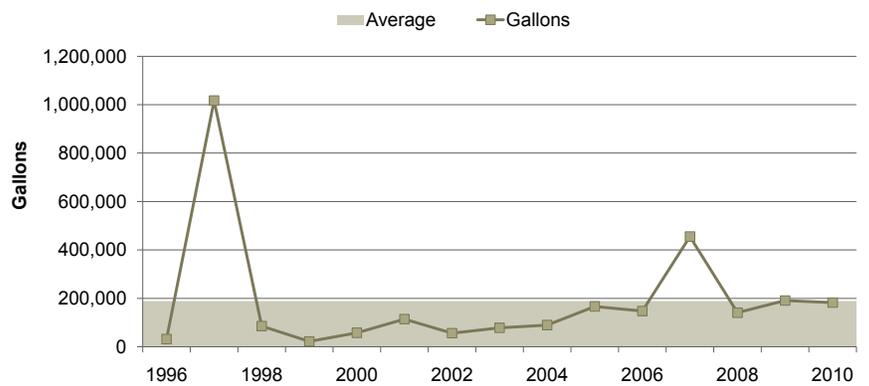
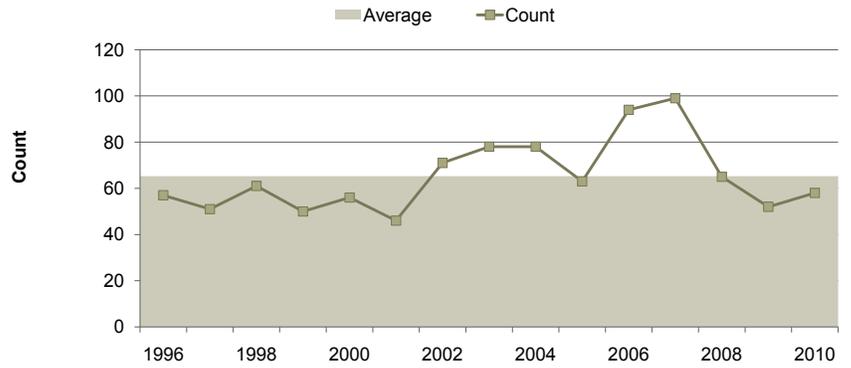
Volume Released by Size Class



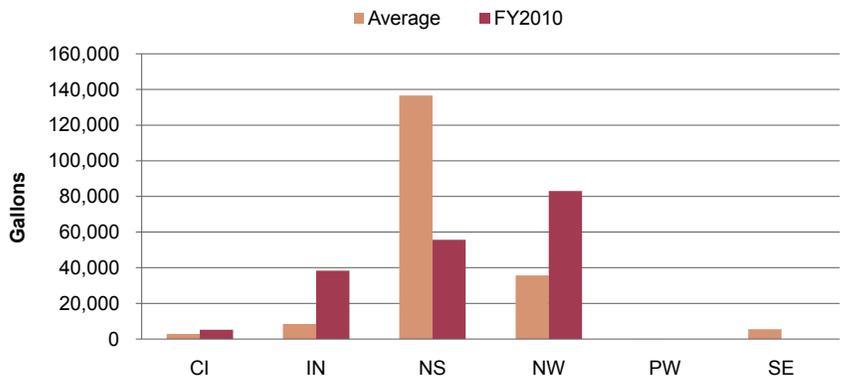
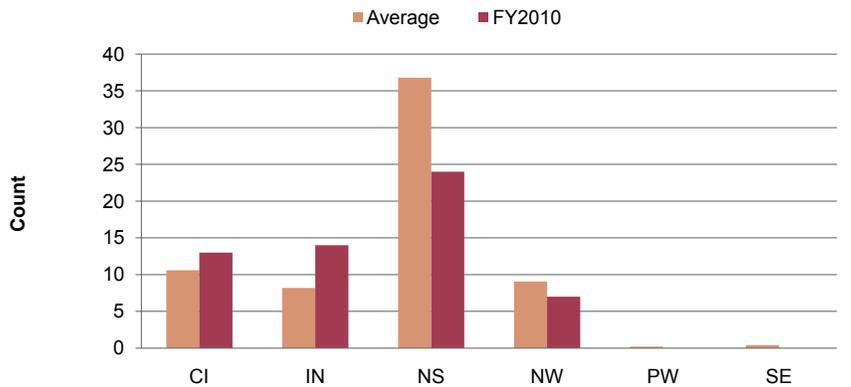
Statewide Summary *(continued)*

- Process Water spills made up 3% of the total number of spills, but half of the total spill volume released during the period.
- The greatest number of Process Water spills occurred in the North Slope subarea; however, the Northwest Arctic subarea had the greatest total volume.

Spills by Fiscal Year



Spills by Subarea



Regulated Spills

Numerous 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. 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) at a regulated facility; and, certain piping at oil production facilities.

In this report, "regulated spill" means a spill from a regulated component of a regulated facility.

Summary

- During FY 2010, regulated facilities were responsible for 28% of the spills and 42% of the total volume.
- Regulated facilities were responsible for nearly all of the crude oil volume and nearly 60% of the non-crude volume.
- Approximately 85% of the spills at regulated facilities are from unregulated components. However, regulated components were responsible for 85% of the spilled volume at regulated facilities.



Number of Spills at Regulated Facilities	505
Total Gallons	173,830
Number of Regulated Component Spills	78
Total Gallons	147,761



Crude Oil released to secondary containment at Trans-Alaska Pipeline Pump Station 9.

Top 10 Largest Regulated Spills (FY 2010)

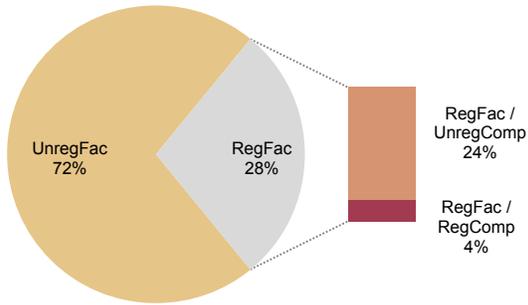
Spill Date	Location	Facility Type	Product	Quantity (gal)
01/11/2010	Adak Petroleum Tank N7	Non-Crude Terminal	Diesel	68,746
11/29/2009	Lisburne 3-Phase Common Line Release	Oil Production	Produced Water	32,500
			Crude	13,500
05/25/2010	Alyeska PS 9, Tank 190 ¹	Transmission Pipeline	Crude	11,718
06/21/2010	BPXA West Dock Pad	Oil Production	Produced Water	10,935
08/05/2009	Marathon Kenai Gas Field	Natural Gas Production	Produced Water	1,840
12/13/2009	FS2: Module 49-91	Oil Production	Process Water	1,745
11/16/2009	Skid 301 (GC-2, Prudhoe Bay)	Oil Production	Produced Water	1,500
07/14/2009	Tesoro/KPL 4 inch diesel line	Crude Oil Terminal	Process Water	588
10/31/2009	Chevron Trading Bay	Oil Production	Crude	504

¹ A total of 108,360 gallons of crude oil were released to containment. 10,206 gallons was calculated to have been released to the atmosphere through evaporation and 512 gallons has been calculated to remain in the soil.

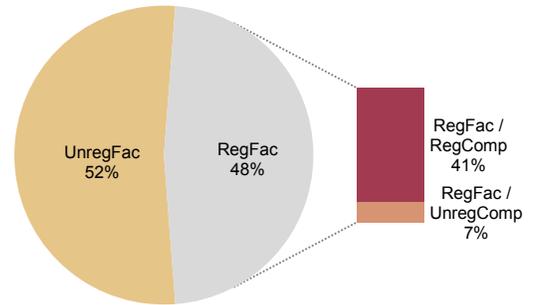
Spills at Regulated Facilities Compared to Spills at Unregulated Facilities

With a breakout of Regulated Component (RegFac/RegComp) vs. Unregulated Component spills at Regulated Facilities (RegFac/UnregComp)

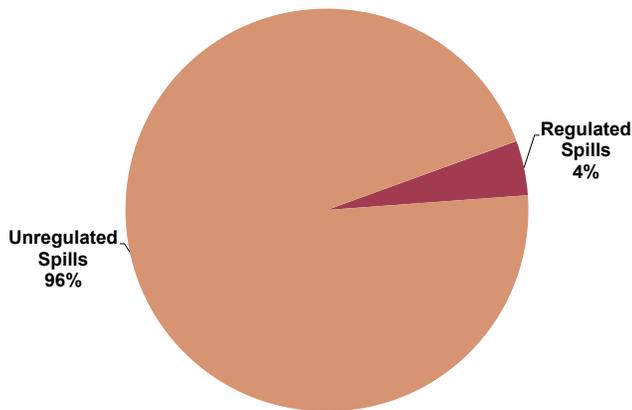
Number of Spills



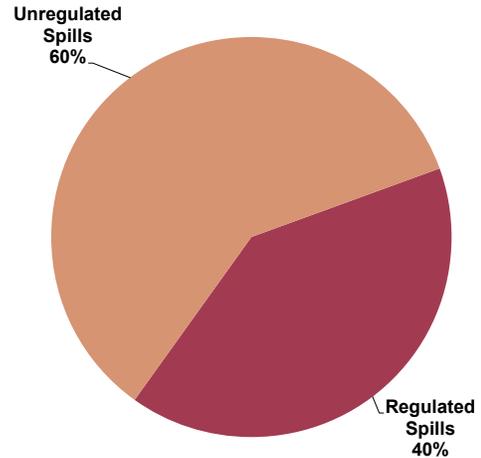
Spill Volume (gallons)



Number of Spills



Spill Volume (gallons)



Regulated Spills Compared to Unregulated Spills

Note: Unregulated spills include spills from unregulated components of regulated facilities plus spills from unregulated facilities.

Regulatory Status	count	gallons
Unregulated Facility Spills	1,294	191,538
Regulated Facility, Unregulated Component (RegFac/UnregComp)	427	26,069
Regulated Facility, Regulated Component (RegFac / RegComp)	78	147,761
Total	1,799	365,368

NOTE: For graphing purposes, spill quantities recorded in pounds were converted to gallons using a conversion factor of 8 pounds per gallon.

Regulated Spills by Product

- Approximately 4% of the spills reported in FY 2010 were regulated.
- Non-crude oil comprised 15% of the number of spills and 47% of the total volume of regulated spills reported during FY 2010.
- Process water made up 34% of the regulated spill volume during the period.
- Less than 1% of the Crude Oil spills were unregulated.
- Although Crude Oil spills represented 59% of the releases at regulated facilities, they comprised less than 20% of the total regulated spill volume.



Top Photo: An ADEC contractor samples the Lisburne Common Line Release spill area.

Bottom Photo: Alyeska PS 9, Tank 190 spill cleanup operations.



Regulated and Unregulated Spills by Product

Note: Unregulated spills include spills from unregulated components of regulated facilities plus spills from unregulated facilities.

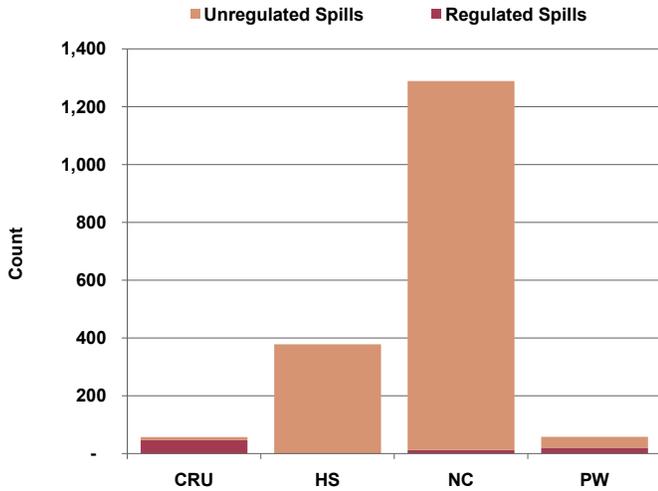
Product	Regulated Spills		Unregulated Spills	
	count	gallons	count	gallons
Crude Oil (CRU)	46	28,006	11	269
Hazardous Substance (HS)	-	-	394	29,547
Noncrude Oil (NC)	12	69,008	1,278	56,347
Process Water (PW)	20	50,747	38	131,444
Total	78	147,761	1,721	217,607

NOTE: For graphing purposes, spill quantities recorded in pounds were converted to gallons using a conversion factor of 8 pounds per gallon.

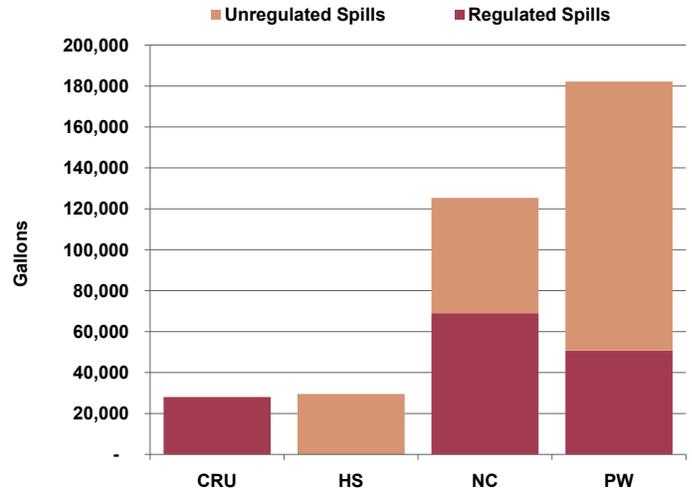
Regulated Spills Compared to Unregulated Spills by Product

Note: Unregulated spills include spills from unregulated components of regulated facilities plus spills from unregulated facilities.

Number of Spills



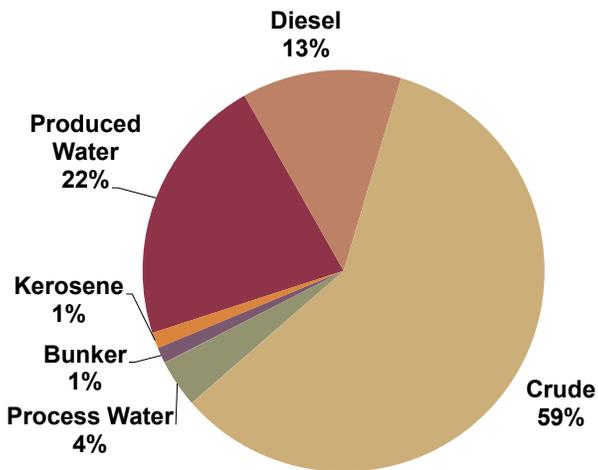
Spill Volume (gallons)



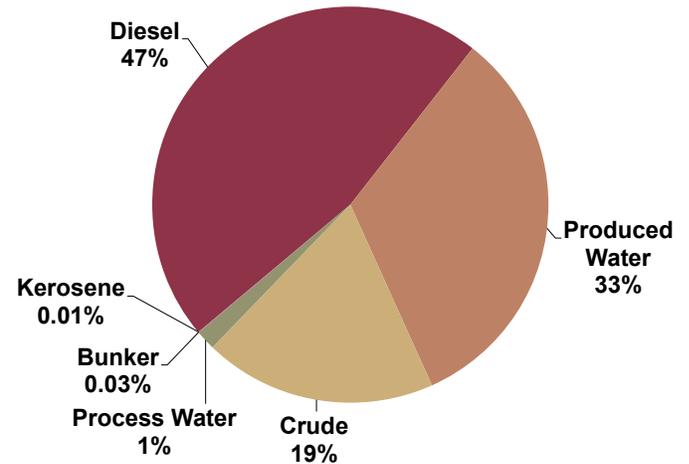
Regulated Spills by Product

Note: Regulated spills are spills from regulated components of regulated facilities.

Number of Spills



Spill Volume (gallons)

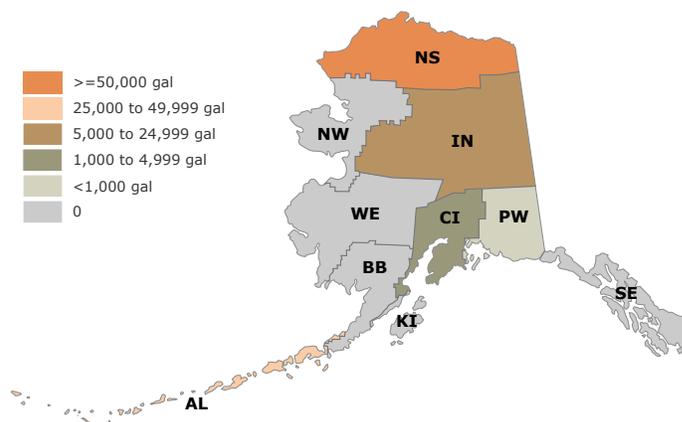


NOTE: For graphing purposes, spill quantities recorded in pounds were converted to gallons using a conversion factor of 8 pounds per gallon.

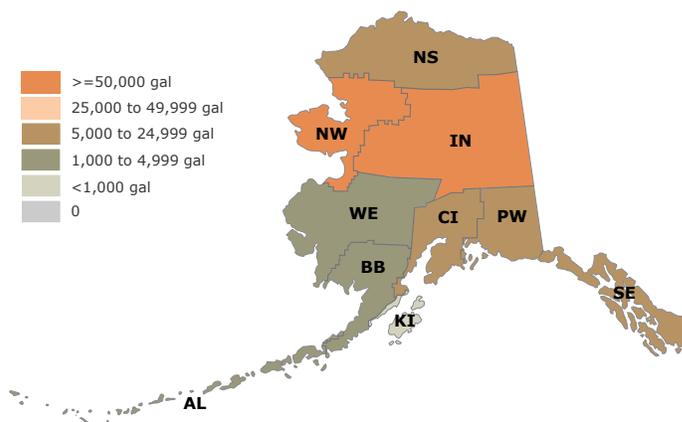
Regulated Spills by Subarea

- Approximately 75% of the total regulated spill volume for the North Slope subarea was from regulated operations.
- The 68,746 gallon Adak Petroleum Tank N7 Diesel Spill comprised 95% of the entire spill volume for the Aleutians subarea.
- Approximately 75% of the regulated spill volume for the North Slope subarea was Process Water (all types).
- The North Slope subarea had about two-thirds of the regulated spills and more than 40% of the regulated spill volume.
- Spills at regulated facilities in the North Slope subarea and the Aleutians subarea combined comprised about 90% of the total regulated spill volume.

Regulated Spill Volume by Subarea



Unregulated Spill Volume by Subarea



Regulated and Unregulated Spills by Subarea

Note: Unregulated spills include spills from unregulated components of regulated facilities plus spills from unregulated facilities.

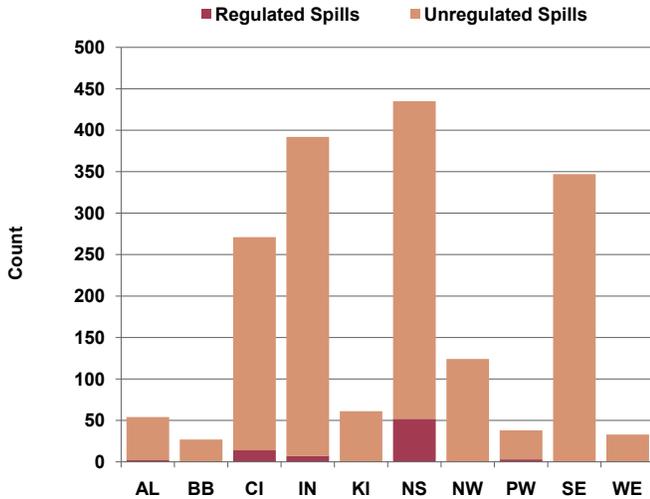
Subarea	Regulated Spills		Unregulated Spills	
	count	gallons	count	gallons
Aleutian (AL)	2	68,749	53	3,296
Bristol Bay (BB)	0		28	2,168
Cook Inlet (CI)	14	3,605	258	13,959
Interior Alaska (IN)	7	11,898	388	68,710
Kodiak Island (KI)	0		61	981
North Slope (NS)	52	63,491	383	20,743
Northwest Arctic (NW)	0		125	87,136
Prince William Sound (PW)	3	19	36	9,350
Southeast Alaska (SE)	0		355	7,000
Western Alaska (WE)	0		34	4,264
Total	78	147,761	1,721	217,607

NOTE: For graphing purposes, spill quantities recorded in pounds were converted to gallons using a conversion factor of 8 pounds per gallon.

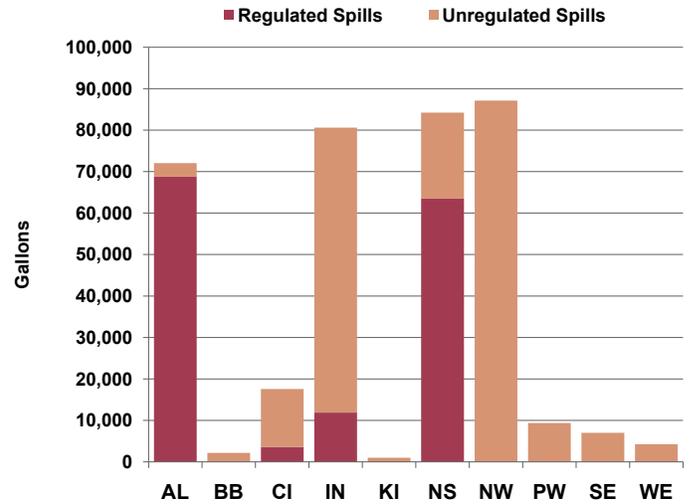
Regulated Spills Compared to Unregulated Spills by Subarea

Note: Unregulated spills include spills from unregulated components of regulated facilities plus spills from unregulated facilities.

Number of Spills



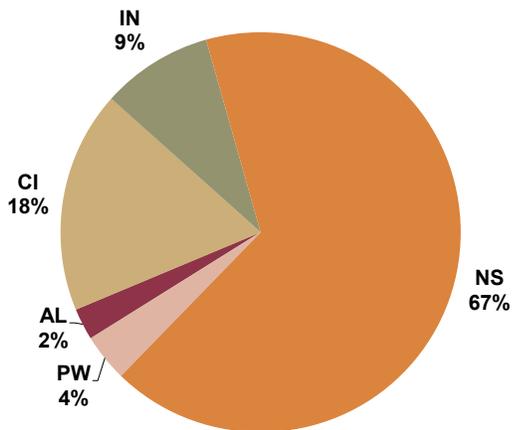
Spill Volume (gallons)



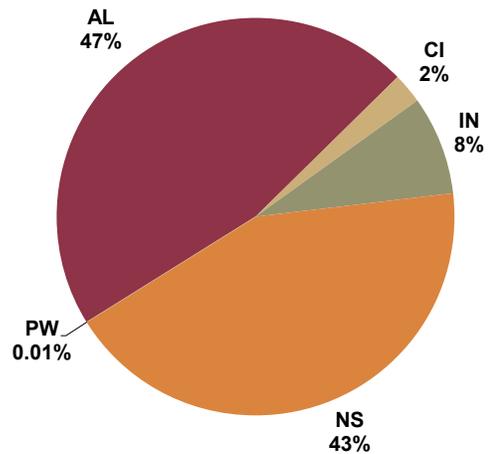
Regulated Spills by Subarea

Note: Regulated spills are spills from regulated components of regulated facilities.

Number of Spills



Spill Volume (gallons)



NOTE: For graphing purposes, spill quantities recorded in pounds were converted to gallons using a conversion factor of 8 pounds per gallon.

Regulated Spills *(continued)*

Regulated Spills by Spill Size

- More than two-thirds of regulated spills were under 100 gallons.
- More than 95% of the total volume released from regulated components resulted from spills with a volume of 1,000 gallons or more.



Top Photo: Alyeska PS 9, Tank 190 spill cleanup. The recovered crude oil is metered as it is transferred from vacuum trucks to tank trucks for shipping.

Bottom Photo: Responders handling oiled sorbent material during cleanup operations for the Adak Petroleum Tank N7 spill.



Regulated Spills Compared to Unregulated Spills by Size

Note: Unregulated spills include spills from unregulated components of regulated facilities plus spills from unregulated facilities.

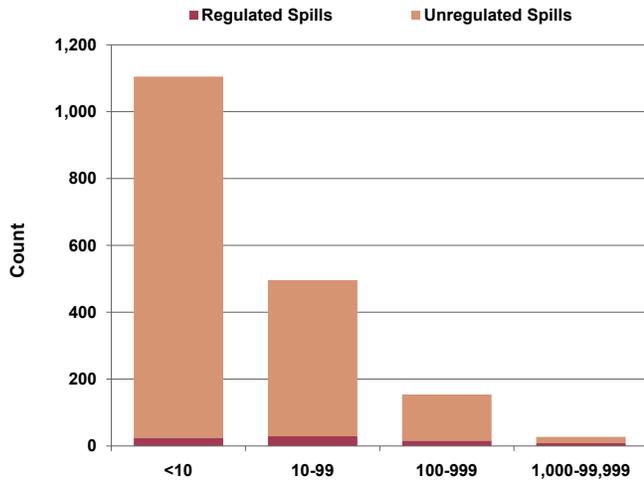
Size (gallons)	Regulated Spills		Unregulated Spills	
	count	gallons	count	gallons
<10	25	76	1,093	2,427
10-99	29	1,135	469	12,637
100-999	16	4,066	140	30,286
1,000-99,999	8	115,864	19	172,257
Total	78	121,141	1,721	217,607

NOTE: For graphing purposes, spill quantities recorded in pounds were converted to gallons using a conversion factor of 8 pounds per gallon.

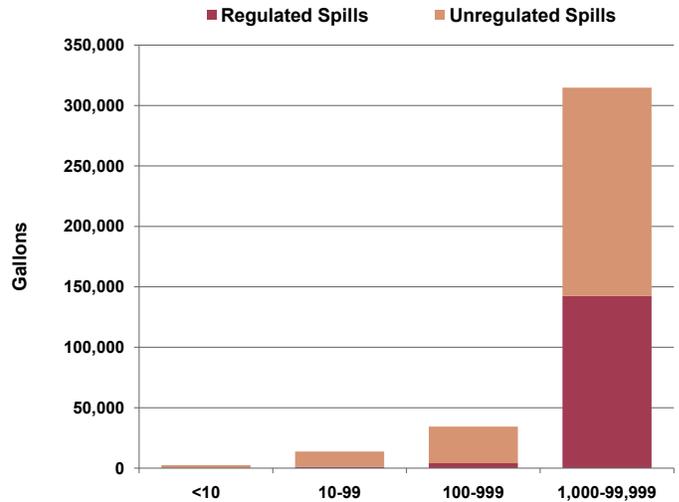
Regulated Spills Compared to Unregulated Spills by Size

Note: Unregulated spills include spills from unregulated components of regulated facilities plus spills from unregulated facilities.

Number of Spills



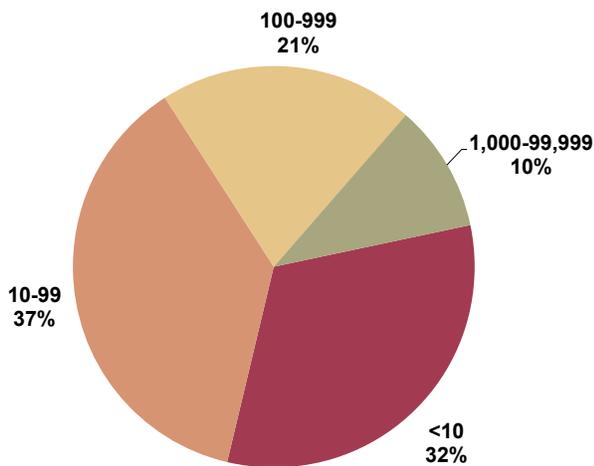
Spill Volume (gallons)



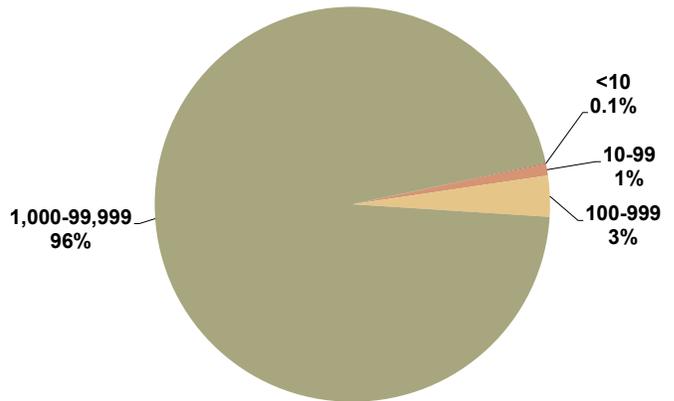
Regulated Spills by Size

Note: Regulated spills are spills from regulated components of regulated facilities.

Number of Spills



Spill Volume (gallons)



NOTE: For graphing purposes, spill quantities recorded in pounds were converted to gallons using a conversion factor of 8 pounds per gallon.

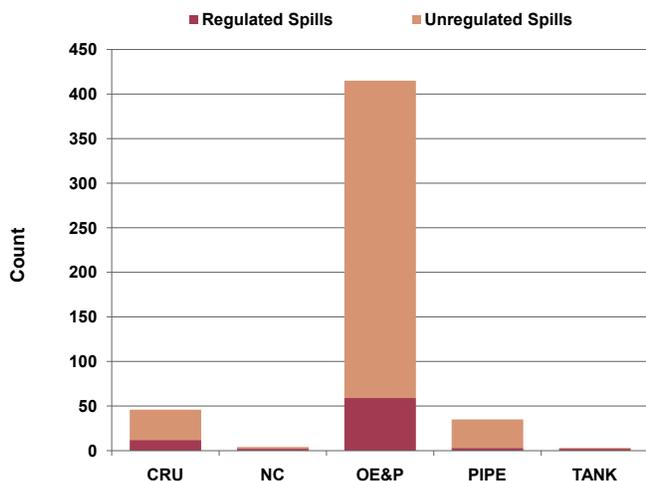
Regulated Spills by Facility Type

- During FY 2010, Oil Exploration and Production (OE&P) facilities were responsible for 76% of the regulated spills and 45% of the regulated spill volume.
- Noncrude Terminal (NC) facilities were responsible for 46% of the regulated spill volume with only 2% of the regulated spills.

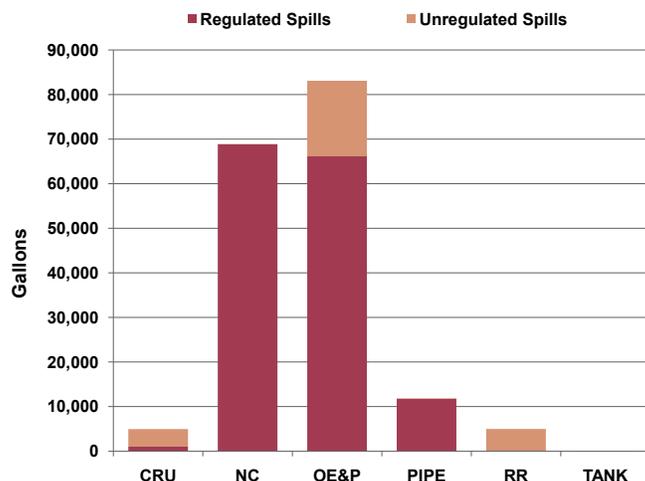
Regulated Spills Compared to Unregulated Spills by Facility Type

Note: Unregulated spills include spills from unregulated components of regulated facilities.

Number of Spills



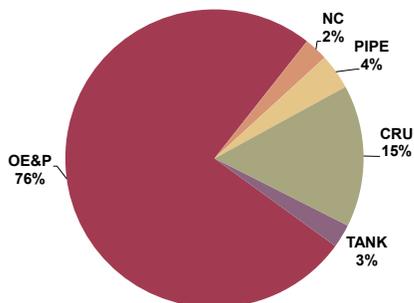
Spill Volume (gallons)



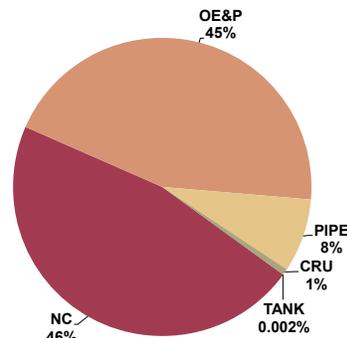
Regulated Spills by Facility Type

Note: Regulated spills are spills from regulated components of regulated facilities.

Number of Spills



Spill Volume (gallons)



NOTE: For graphing purposes, spill quantities recorded in pounds were converted to gallons using a conversion factor of 8 pounds per gallon.

Glossary

Process Water (Oil Exploration and Production Operations): Process water includes seawater (and occasionally freshwater), produced water and commingled or mixed water.

Seawater is typically from the Beaufort Sea that has undergone primary treatment at the Seawater Treatment Plant.

Produced Water is produced with the primary reservoir three-phase production after passing through the separation and treatment.

Commingled or mixed water is typically a mix of seawater and produced water, although other combinations exist in the operations on the North Slope.

The percentage of crude oil occurring in process water can vary somewhat based on the source of the spill.

Process Water (Mining Operations): Process water for mining operations includes water taken from tailing ponds for the milling process (reclaim water), water that has been through the water treatment plant but not the sand filter (process water), water that has been through both the water treatment and sand filter (discharge water), water mixed with ground ore materials (slurry) or water used in the milling and product recovery process (process solution water).

Spill: a discharge or release of oil or a hazardous substance to the lands, waters or air of the State of Alaska as defined in Alaska Statutes 46.03.826(9).

Regulated Spill: A spill of "oil" as defined in AS 46.04.900(13) at or from a regulated component described in Article 1 of 18 AAC 75 or an operation that requires a response planning standard under 18 AAC 75.430 – 18 AAC 75.442.

DISCLAIMER

The data presented and summarized in this report is provisional only due to ongoing quality assurance/quality control (QA/QC) on the part of data entry staff and primary users. Additional on-going reviews will further refine the accuracy of the data. As an example, a spill from an unregulated vehicle at a regulated facility may have previously been entered as a spill at a regulated facility. This and other types of data entry issues are being addressed to ensure further data entry problems are precluded.

Abbreviations

Cause Categories

HUM	Human Factors
ACC	Accident
UNK	Unknown
OTH	Other
STR/MECH	Structural/Mechanical

Facility Categories

STO	Storage
TRA	Transportation
VES	Vessel
OTH/UNK	Other/Unknown

Regulated and Unregulated Facilities

Reg/Reg	Regulated Facility/Regulated Component
Reg/Unreg	Regulated Facility/Unregulated Component
Unreg	Unregulated Facility

Regulated Facility Types

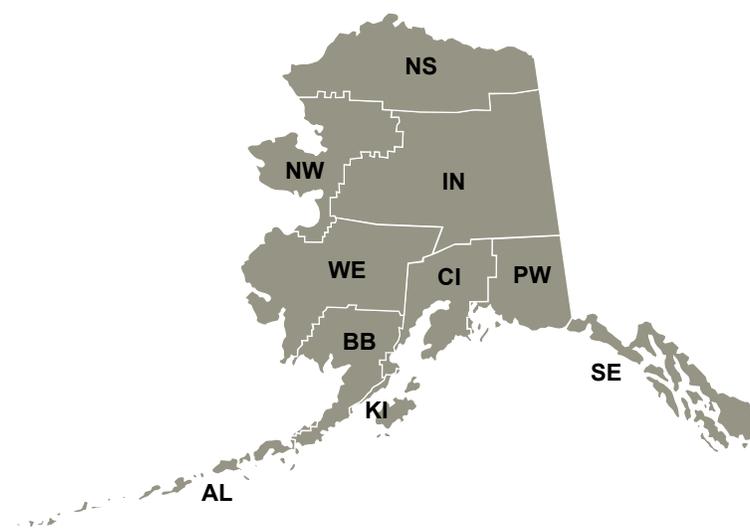
PIPE	Pipeline
NC	Terminal - Non-Crude
OE&P	Oil Exploration and Production
CRU	Terminal - Crude Oil
TANK	Tanker Vessel
RR	Railroad

Substance Types

PW	Process Water
NC	Noncrude Oil
CRU	Crude Oil
HS	Hazardous Substance

Subareas (defined in 18 AAC 75.496)

AL	Aleutian
BB	Bristol Bay
CI	Cook Inlet
IN	Interior
KI	Kodiak Island
NS	North Slope
NW	Northwest Arctic
PW	Prince William Sound
SE	Southeast Alaska
WE	Western Alaska



■ Deepwater Horizon

On April 20, 2010, the Deepwater Horizon drilling rig (owned by BP and operated by Transocean Limited) located in the Gulf of Mexico exploded and then sank. The oil spill that resulted affected the shorelines of Texas, Louisiana, Mississippi, Alabama and Florida.

Prevention and Emergency Response Program (PERP) staff coordinated the support efforts in response to several requests related to the Deepwater Horizon oil spill in the Gulf. Several requests were received through the Emergency Management Assistance Compact, primarily to identify spill response resources (both personnel and equipment) available in the State of Alaska. Other informal requests were received from the NOAA, the Department of Defense's Alaskan Command, and EPA. PERP staff served as the central point of contact for identifying spill response resources both internal and external to the Department.

■ Hazmat Workgroup Activities

Staff facilitated four Statewide Hazmat Response Workgroup meetings. Topics covered included Hazmat team updates/initiatives, training and exercises, budget, decontamination, sampling protocols, the Alaska Shield Hazmat Exercise, and other items of interest.

The Department also sponsored the "Preparedness, Safe Handling, and Emergency Response to Anhydrous Ammonia" training course held in Kenai on May 13-15, 2010. The event was hosted by the Kenai Peninsula Borough and featured classroom instruction, a live ammonia release demonstration, a walk-thru tour and tabletop exercise involving response to a simulated ammonia release, and a positive air ventilation demonstration at the Pacific Star seafood processing facility.

■ Ice Operation Exercise

On February 2010, DEC staff participated in an ice operation exercise at Six-Mile Lake with 60 members of the Air Force 611th Civil Engineer Squadron, six members from Coast Guard Sector Anchorage, and staff from the Navy Supervisor of Salvage. The exercise covered how to take and read ice core samples, how to conduct trenching for fuel recovery on frozen lakes and rivers, and basic skimmer and fuel storage operation. DEC staff used the opportunity to exercise our own skimming and storage equipment by deploying a rope mop skimmer, fuel transfer pump, and portable storage tank. The exercise was a great success.

■ Port Heiden Response Training

On April 13-14, 2010, CART and EPA staff instructed an oil spill response training class at Port Heiden. Twenty-eight attendees from five communities, including Pilot Point, Egegik, Ugashik, Chignik Lake and Port Heiden, participated in the training. The Institute for Tribal Environmental Professionals based out of Flagstaff, Arizona, sponsored the event. Training covered the proper use of the Emergency Response Guide Book, the Alaska Incident Management System Guide, Spill Tactics for Alaska Responders Manual, and other spill response tool kit resources.

■ Oil Spill Awareness Seminar

The Coast Guard Marine Safety Unit Valdez sponsored the inaugural Alaska Oil Spill Awareness seminar on September 29, 2009 at the Civic Center in Valdez. Assisting in this first seminar and what is intended to become a yearly event, were staff from PERP's Valdez and Anchorage offices, NOAA, Alyeska Pipeline Service Company, EPA, Alaska Chadux Corporation, Spiltec, Tesoro, SeaRiver Maritime, Law Office of Kevin Beauchamp Smith, and Global Offshore Divers. PERP and Coast Guard staff made a presentation on oil spill reporting requirements, regulations, and enforcement. PERP staff conducted a joint presentation with the EPA covering the Unified Plan and subarea plans for Alaska. The seminar also included presentations on oil spill response organizations; sensitive area protection; vessel insurance; salvage issues; oil chemistry; oil fate and effects tailored to Prince William Sound; oil spill response options, including non-mechanical options; and the development and planned deployment to Alaska of a new skimming system. The field portion of the seminar on September 30 included the deployment in Port Valdez of one of the transrec barges and tours of the Valdez Emergency Operation Center.

■ Cook Inlet Vessel Traffic Risk Assessment Meeting

On July 16, 2009, a meeting was held with the Cook Inlet Regional Citizens Advisory Council (CIRCAC) to outline the process for development of the Cook Inlet Vessel Traffic Risk Assessment. A total of \$250,000 in State Capital Improvement Project funding was transferred in support of this project from ADEC to the Kenai Peninsula Borough through a Memorandum of Agreement. ADEC, Coast Guard, and CIRCAC will serve on a steering committee to direct the project.

CIRCAC will retain a project manager to prepare the design methodology using the Aleutian Islands Risk Assessment as a model.

For more information go to: dec.alaska.gov/spar/perp



Kenai Ammonia Training, May 13-15, 2010