

# IAP Cover Sheet

Incident Name:

Drift River Terminal Flooding

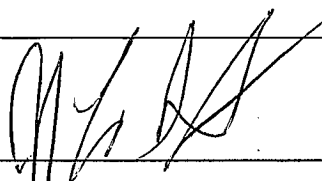
Operational Period to be covered by IAP:

Period 3 (3/28/2009 16:00 - 3/29/2009 16:00)

Approved by:

Joe LoSciuto\*

FOSC :



Gary Folley

SOSC :

John L. Brown, Deputy SOSC

RPIC :

## Incident Action Plan

Volcanic eruption/flooding. Mount Redoubt initially erupted at 10:38 PM on March 22, 2009, followed by several other eruptions. The resultant lahars (or volcanic mudflows) caused extensive flooding at the Drift River Terminal. However, no oil or hazardous substance releases have been reported at this time.

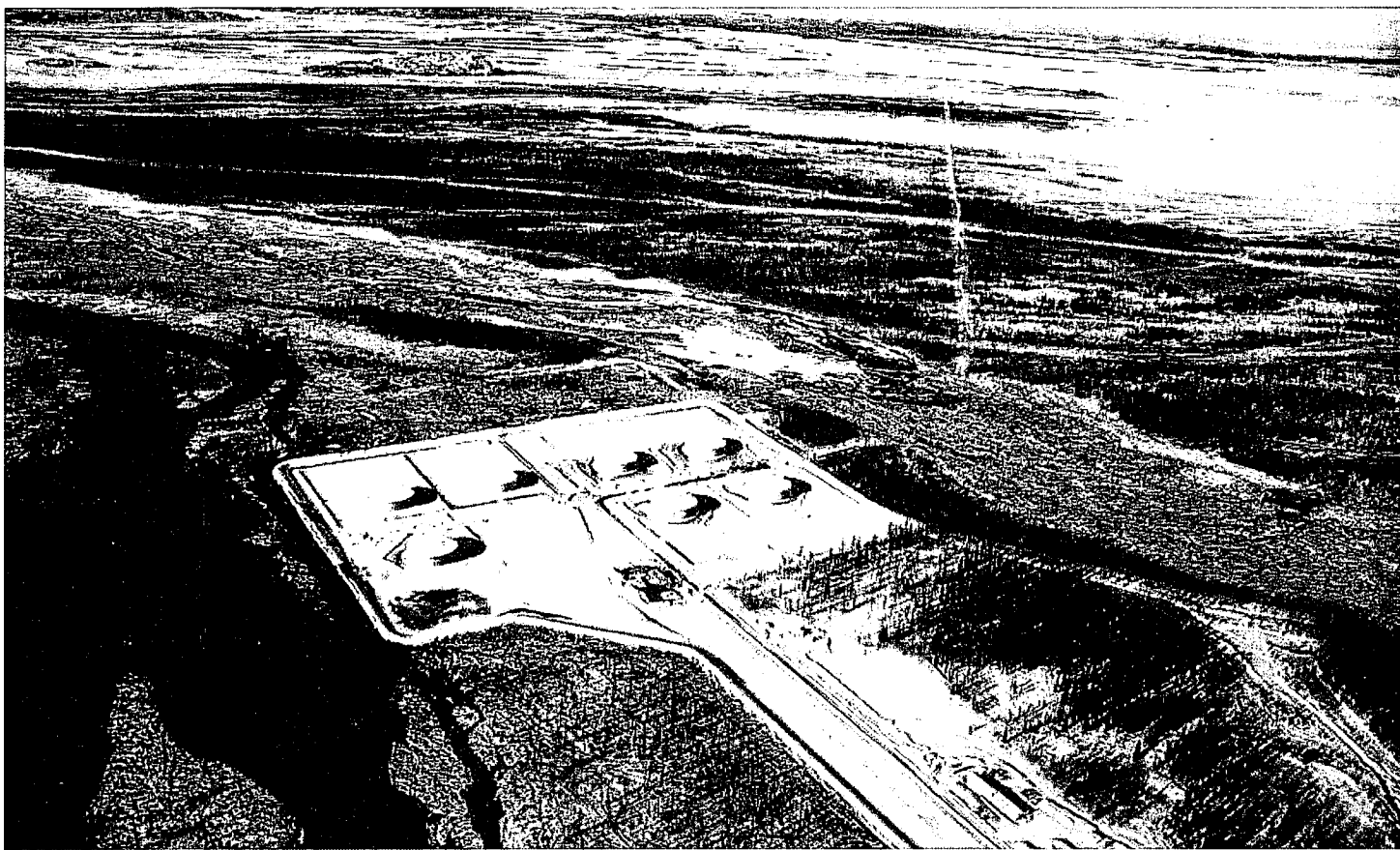
\* Cdr. Joe LoSciuto of the US Coast Guard (FOSC for the Terminal & Maritime)

Drift River Oil Terminal.

Picture Date: March 26, 2009

Image Creator: McGimsey, Game;

Image courtesy of AVO/USGS.



Prepared By:

Prepared Date/Time:

3/28/2009 14:54

IAP Cover Sheet

Printed: 3/28/2009 16:17

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## Incident Details

<b>Incident:</b> Drift River Terminal Flooding	<b>Prepared By:</b> Kalyan, Mala <b>at</b> 3/26/2009 12:55
<b>Period:</b> Period 1 (3/26/2009 16:00 - 3/27/2009 16:00)	<b>Version Name:</b> Default

**Incident Name:** Drift River Terminal Flooding

**Incident Number:** 09239908201

**Drill:**

**Incident Date/Time:** 3/22/2009 22:38

**Time Zone:** Alaska-Hawaii Daylight Time

**Organizational Structure Type:** Oil Spill

**Affected Asset Type:** Facility

**Affected Asset:**

**Location:** Drift River Terminal, West Side Cook Inlet

**Latitude:** 60.60000000

**Longitude:** -152.18333333

**Person Reporting Incident:** None

**Person Contact Number(s):**

**Incident Description:** Mt. Redoubt initially erupted on March 22, 2009 at 10:38 PM, and continues to erupt with associated lahars and ashfall. The tank farm at the Drift River Terminal is composed on seven tanks, of which two are operation with each containing 74,000 barrels of crude oil. For an up-to-date assessment of the situation, please review the latest DEC Situation Report (Sitrep) posted at the following website:

<http://www.dec.state.ak.us/spar/perp/drot>

## General Incident Report

<b>Incident:</b> Drift River Terminal Flooding	<b>Incident Date/Time:</b> 3/22/2009 22:38
<b>Person Reporting Incident:</b> None	<b>Prepared:</b> Kalyan, Mala at 3/29/2009 07:32
<b>Person Contact Number(s):</b>	<b>Version:</b> 3/28/2009 13:10

### Facility Information and Points of Contact

**Facility Name:** Drift River Oil Terminal

**Type of Facility:** Terminal

**Number of People at Facility:** Varies

**Contact:**

**Owner:** Cook Inlet Pipeline Company

**Operator:**

### Facility Specific Information

**Type(s) of Products:** Crude Oil - no release has occurred.

**Equipment Involved:** N/A

### Incident Information

**Incident Location:** Drift River Terminal, West Side Cook Inlet **Latitude:** 60.60000000 **Longitude:** -152.18333333

**Type of Casualty:** N/A

**Capacity of Common Container:**

**Potential for Additional Spillage:** N/A

**Material(s) Spilled:** N/A

**API Gravity:**

**Estimated Quantity Spilled:** N/A

**Classification:**

**Source Secured?:** No

**If Not, Estimated Spill Rate:**

**Notes:** Mt. Redoubt initially erupted on March 22, 2009 at 10:38 PM, and continues to erupt with associated lahars and ashfall. The tank farm at the Drift River Terminal is composed of seven tanks, of which two are in operation with each containing 74,000 barrels of crude oil. For an up-to-date assessment of the situation, please review the latest DEC Situation Report (Sitrep) posted at the following website:

<http://www.dec.state.ak.us/spar/perp/drot>

### Incident Status

**Injuries/Casualties:**

**Fire:** No

**Fire Status:**

**Fire Assistance:** No

**Notes:** An oil or hazardous substance release has not occurred at the facility. The Coast Guard, DEC, and other federal and state agencies are addressing the risk posed by the continued volcanic eruptions and associated lahars. The facility is currently shutdown. The Joint State/Federal Incident Management Team is addressing the following major issues: restart of the facility; flood forecasting and planning; production and inventory management; and developing an enhanced spill response plan.

**ICS 202 - General Response Objectives**

**Incident:** Drift River Terminal Flooding      **Prepared By:** Section, Planning      **at** 3/29/2009 07:33

**Period:** Period 3 (3/28/2009 16:00 - 3/29/2009 16:00)      **Version Name:** March 28, 2009

**Overall and Strategic Objectives**

**Assigned To**

**Status**

Ensure the safety of citizens and response personnel. Address the risk posed by actual/potential ashfall to responders.

Prevent the release of oil, hazardous materials, and refuse/terminal debris to the environment.

Develop plans for increased monitoring of lahars thru placement of additional instrumentation by AVO.

Monitor the risk to the Drift River Terminal, Tanks, Pipelines, and Cargo Transfer Facility

Coordinate and participate in Overflights. Ash plume and flight safety conditions will be monitored at all times.

Coordinate with Alaska Volcano Observatory for Notification of Volcanic Eruptions, and Flood Warnings plus any potential implications to changes in hydrological conditions. .

Identify Regulatory Requirements, for Facility Restart of Operations

Identify Oil Storage Capacity and Inventory Management of Facilities

Continue to Determine and update information on Resources at Risk

Monitor Plans and Timeframe for Effecting Repairs Necessary for Resumption of Operations

Identify and Maintain Stakeholder Communications & Engagement

Conduct a risk-based decision process prior to movement of any crude oil product to and from the facility.

Identify spill response resources available (CISPRI, SUPSALV, CIPL, and Chevron) - status, deployment times, and location.

**Operational Period Command Emphasis (Safety Message, Priorities, Key Decisions/Directions)**

**Approved By**

: \_\_\_\_\_

## ICS 204 - Assignment List

**Incident:** Drift River Terminal Flooding

**Prepared By:** Iwamoto, Larry

**at** 3/28/2009 16:13

**Period:** Period 3 (3/28/2009 16:00 - 3/29/2009 16:00)

**Branch:** Flood Forecast and Planning

**Division/Group/Staging:** Flood Forecast and Planning

### Operations Personnel

Title	Name	Affiliation	Contact Number(s)
Operations Section Chief	Steve Russell		
Director - Flood Forecast and Planr	Bob Swenson	DNR, Director DGGS	451-5001
Division/Group Supervisor/STAM			
		Army Corps of Engineers	
		Cook Inlet Pipeline	
		AVO-DNR	
		USGS	
		NWS River Flood Foreca	

### Assignments

Assess the threat of lahars and flooding to the DROT and associated pipelines. Specific areas of focus are as follows:

1. Flood predictions
2. Flood warning system
3. Floodplain risk assessment
4. Geologic Hazards
5. Flood impacts on terminal facility
6. Tertiary Containment Integrity

### Special Instructions for Division / Group

Conduct overflights of the area specifically to determine the extent of lahars and flooding; compile the reports and forecasts from other groups, including operational overflight photos, DNR-AVO data, NWS weather and river flood forecasts, Army Corps of Engineers risk assessments, and USGS hydrological information.

### Tactical Objective

Conduct overflights of the area specifically to determine the extent of lahars and flooding; compile the reports and forecasts from other groups, including operational overflight photos, DNR-AVO data, NWS weather and river flood forecasts, Army Corps of Engineers risk assessments, and USGS hydrological information.

**Reviewed By Signatures - (PSC):**

**(OSC):**

## ICS 204 - Assignment List

**Incident:** Drift River Terminal Flooding

**Prepared By:** Brown, John

**at** 3/29/2009 07:55

**Period:** Period 3 (3/28/2009 16:00 - 3/29/2009 16:00)

**Branch:** Planning/ Environmental

**Division/Group/Staging:** Planning/ Environmental

### Operations Personnel

Title	Name	Affiliation	Contact Number(s)
Environmental Unit Leader	Mala Kalyan	ADEC	269-7435
	Young Ha	ADEC	
Environmental Unit	Gayle Martin	Department of Fish and C	
Environmental Unit	Clark Cox	ADNR	
	Dave McMahan	ADNR SHPO	
	Richard Vanderhoek	ADNR SHPO	
	Shannon Miller	ADNR	

### Assignments

Determine resources at risk, wildlife, historical properties, and property owners

### Location of Work

Anchorage

**Reviewed By Signatures - (PSC):**

**(OSC):**

## ICS 204 - Assignment List

**Incident:** Drift River Terminal Flooding

**Prepared By:** Section, Planning      **at** 3/29/2009 07:34

**Period:** Period 3 (3/28/2009 16:00 - 3/29/2009 16:00)

**Branch:** Production Inventory Management

**Division/Group/Staging:** Production Inventory Management

### Operations Personnel

Title	Name	Affiliation	Contact Number(s)
Planning Section Chief	Larry Iwamoto	ADEC	
Technical Specialist (T/S)	Shannon Dewandel	ADEC	

### Assignments

Work with Cook Inlet Pipeline, USCG, DNR, PHMSA, and AOGCC to determine oil inventory at the Drift River Terminal Facility, which include all tanks, and pipelines

- Determine operational alternatives and corresponding tank inventory levels until threat is eliminated (alterative storage, potential for reverse flow to up stream storage, water ballesting versus oil in tanks.
- Assess potential up stream impacts of production wells in the event the oil platforms are shut in.
  - What are the potencial impacts to reservoir and recovery
  - What risk are there for spills from the platforms
  - What are the rsk for permanent loss of perduction

### Location of Work

Anchorage

### Special Equipment / Supplies Needed for Assignment

None at this time

### Special Site-Specific Safety Considerations

All field work would require appropreate PPE

**Reviewed By Signatures - (PSC):**

**(OSC):**

## ICS 204 - Assignment List

**Incident:** Drift River Terminal Flooding

**Prepared By:** Brown, John

**at** 3/29/2009 07:37

**Period:** Period 3 (3/28/2009 16:00 - 3/29/2009 16:00)

**Branch:** Operations/ Situation Overflights

**Division/Group/Staging:** Operations/ Situation Overflights

### Operations Personnel

Title	Name	Affiliation	Contact Number(s)
Operations Section Chief	Steve Russell	ADEC	(907-262-5210 ext 222
Air Support Group	Neil Huddleston	ADEC	

### Assignments

Participate in facility overflights

### Special Instructions for Division / Group

Use Digital video and cameras to document overflight information.

### Tactical Objective

Monitor and coordinate overflight information

### Location of Work

Anchorage/ Soldotna

### Special Equipment / Supplies Needed for Assignment

Digital video camera and regular digital camera

### Special Site-Specific Safety Considerations

Monitor reports of volcanic eruptions, no flying if there is anychace of encountering ash while flying

**Reviewed By Signatures - (PSC):**

**(OSC):**



## ICS 204 - Assignment List

**Incident:** Drift River Terminal Flooding      **Prepared By:** Brown, John      **at** 3/29/2009 07:52  
**Period:** Period 3 (3/28/2009 16:00 - 3/29/2009 16:00)      **Branch:** Planning/ Spill Response Resources Availabili

**Division/Group/Staging:** Planning/ Spill Response Resources Availabili

### Operations Personnel

Title	Name	Affiliation	Contact Number(s)
Operations Section Chief	Steve Russell	ADEC	(907-262-5210 ext 222

### Assignments

- Identify spill response resources available at CISPRI, Cook Inlet Pipeline, Chevron, Navy SUPSALV.
- Determine status
  - Deployment times, and locations
  - Identify Geographic Response Strategies which may activated to protect sensitive areas that may be impacted by a crude oil release from the terminal area.
  - Identify response tactics, and resources which would be used to contain and recover oil in the event of a crude oil release.
  - Identify non mechanical response tactics and resources which may be used in the event of a crude oil release
  - Identify potential safety related issues to personnel and response equipment in the event of ash fallout
  - Identify predeployment tactics which would enhance response times and capabilities

### Special Instructions for Division / Group

None

### Tactical Objective

Verify response resources are available, vessels and large response equipment are in Cook Inlet

### Location of Work

Soldotna

### Special Equipment / Supplies Needed for Assignment

None

**Reviewed By Signatures - (PSC):**

**(OSC):**

## ICS 204 - Assignment List

**Incident:** Drift River Terminal Flooding      **Prepared By:** Brown, John      **at** 3/28/2009 12:23

**Period:** Period 3 (3/28/2009 16:00 - 3/29/2009 16:00)      **Branch:** Planning/ Facility Adequacy

**Division/Group/Staging:** Planning/ Facility Adequacy

### Operations Personnel

Title	Name	Affiliation	Contact Number(s)
Planning Section Chief	Larry Iwamoto	ADEC	
Facility/ Regulator Requirement As	Shannon DeWandel	ADEC	

### Assignments

Identify Regulatory Requirements for facility restart operations. Should include Cook Inlet Pipeline, PHMSA, USCG, EPA and State requirements prior to start up commencing.

Identify any damage and repairs needed to:

- Tertiary Dike and Secondary Containment
- Pipelines to Loading berth
- Crude Oil Transmission Pipeline
- Integrity of Pumping System
- Tanks
- Support Infrastructure, roads, airstrip, helicopter pad, buildings
- Agency permits and approvals
- Identify a repair schedule if needed
- Develop a comprehensive safety plan

### Tactical Objective

Identify regulatory requirements by ADEC, U.S. Coast Guard, Department of Transportation, EPA, in preparation of removing oil from tanks 1 and 2

### Location of Work

Anchorage

### Special Environmental Considerations

Coordination with all State Trustee Agencies, Coast Guard, EPA, and Federal DOT

### Special Site-Specific Safety Considerations

None at this time

**Reviewed By Signatures - (PSC):**

**(OSC):**

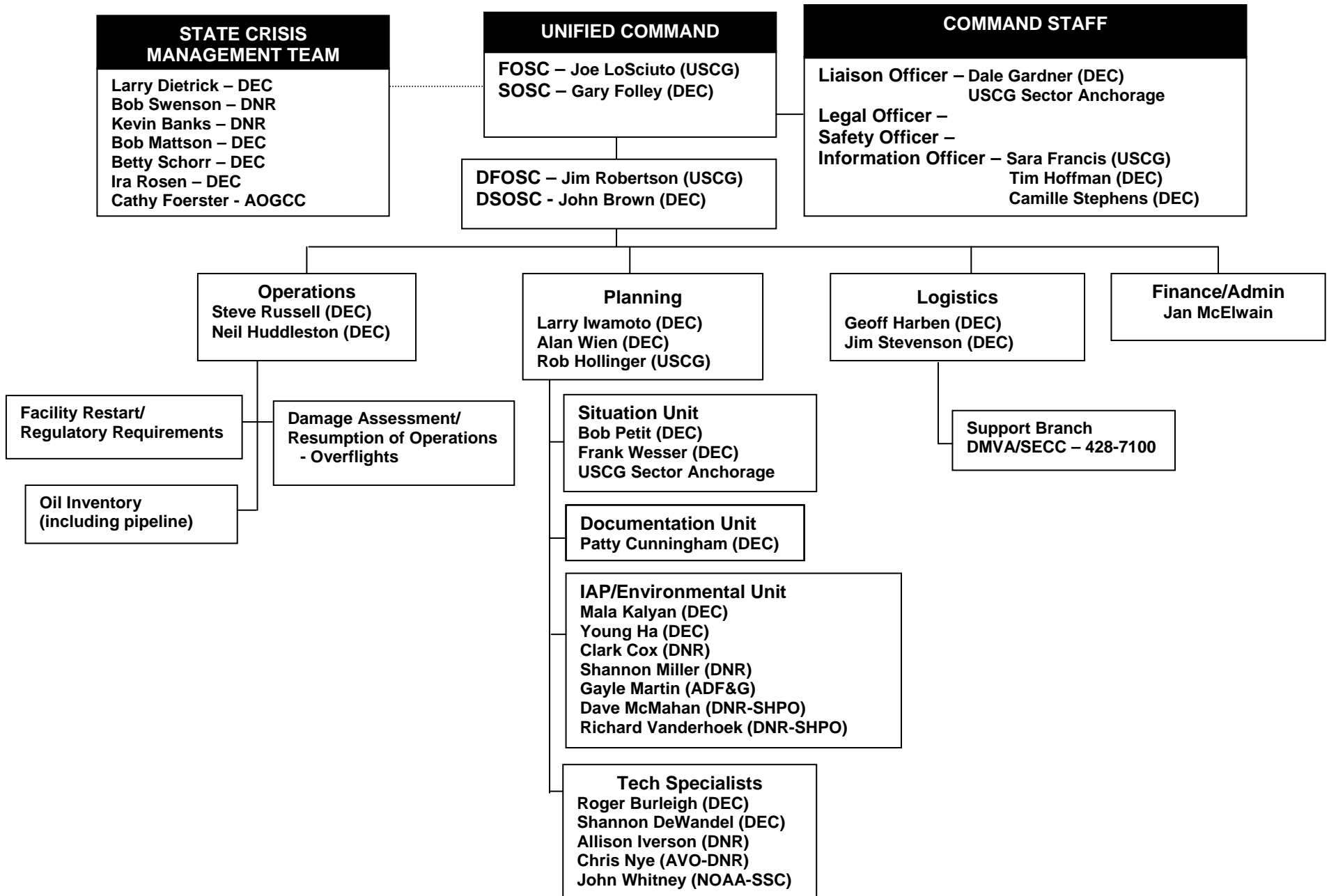
## ICS 205 Communications Plan – Contact Information

<b>MT REDOUBT ERUPTION (DRIFT RIVER TERMINAL) – FEDERAL/STATE IMT/CMT CONTACT LIST (March 27, 2009)</b>				
Name	Agency	Position/Area of Expertise/Function	Email Address	Phone
Anne Besser	USCG Sector Anchorage	USCG Situation Unit	<a href="mailto:Anne.E.Besser@uscg.mil">Anne.E.Besser@uscg.mil</a>	271-6700
John Brown	DEC-PERP	Deputy SOSC	<a href="mailto:John.Brown@alaska.gov">John.Brown@alaska.gov</a>	269-7688
Matt Carr	EPA	FOSC (Inland)	<a href="mailto:Carr.matthew@epa.gov">Carr.matthew@epa.gov</a>	271-3616
Clark Cox	DNR	Environmental Unit	<a href="mailto:Clark.cox@alaska.gov">Clark.cox@alaska.gov</a>	269-8565
Cathy Foerster	DOA-AOGCC	Agency Representative	<a href="mailto:Cathy.foerster@alaska.gov">Cathy.foerster@alaska.gov</a>	793-1221
Gary Folley	DEC-PERP	SOSC	<a href="mailto:Gary.Folley@alaska.gov">Gary.Folley@alaska.gov</a>	262-5210, X234
Sara Francis	USCG Sector Anchorage	PIO-JIC	<a href="mailto:Sara.G.Francis@uscg.mil">Sara.G.Francis@uscg.mil</a>	271-6700
Dale Gardner	DEC-PERP	Liaison	<a href="mailto:Dale.gardner@alaska.gov">Dale.gardner@alaska.gov</a>	269-7682
Young Ha	DEC-PERP	IAP/Environmental Unit	<a href="mailto:Young.ha@alaska.gov">Young.ha@alaska.gov</a>	269-3064
Mark Hamilton	USCG Sector Anchorage	FOSC Sector Anchorage	<a href="mailto:Mark.H.Hamilton@uscg.mil">Mark.H.Hamilton@uscg.mil</a>	271-6700
Geoff Harben	DEC-PERP	Logistics Section Chief	<a href="mailto:Geoff.harben@alaska.gov">Geoff.harben@alaska.gov</a>	465-5234
Tim Hoffman	DEC-Water	PIO-JIC	<a href="mailto:Timothy.hoffman@alaska.gov">Timothy.hoffman@alaska.gov</a>	269-0598
Rob Hollinger	USCG Sector Anchorage		<a href="mailto:Rob.E.Hollinger@uscg.mil">Rob.E.Hollinger@uscg.mil</a>	271-6700
Neil Huddleston	DEC-PERP	Operations	<a href="mailto:Neil.huddleston@alaska.gov">Neil.huddleston@alaska.gov</a>	269-7542
Larry Iwamoto	DEC-PERP	State Planning Section Chief	<a href="mailto:Larry.iwamoto@alaska.gov">Larry.iwamoto@alaska.gov</a>	269-7683
Mala Kalyan	DEC-PERP	IAP/Environmental Unit Leader	<a href="mailto:Mala.kalyan@alaska.gov">Mala.kalyan@alaska.gov</a>	269-7435
Joe LoSciuto	USCG Sector Anchorage	Deputy FOSC	<a href="mailto:Joseph.J.LoSciuto@uscg.mil">Joseph.J.LoSciuto@uscg.mil</a>	271-6700
Gayle Martin	ADF&G	Environmental Unit	<a href="mailto:Gayle.martin@alaska.gov">Gayle.martin@alaska.gov</a>	267-2541
Dave McMahan	DNR SHPO	Environmental Unit	<a href="mailto:Dave.mcmahan@alaska.gov">Dave.mcmahan@alaska.gov</a>	269-8723
Shannon Miller	DNR	Environmental Unit	<a href="mailto:Shannon.miller@alaska.gov">Shannon.miller@alaska.gov</a>	269-8555
Mike Franklin	USCG MSD Kenai			
Stephen Pearson	USCG Sector Anchorage		<a href="mailto:Steven.T.Pearson@uscg.mil">Steven.T.Pearson@uscg.mil</a>	271-6700
Bob Petit	DEC-PERP	Situation Unit Leader	<a href="mailto:Robert.petit@alaska.gov">Robert.petit@alaska.gov</a>	262-5210, X236
Jim Robertson	USCG	Deputy FOSC	<a href="mailto:James.B.Robertson@uscg.mil">James.B.Robertson@uscg.mil</a>	271-6700
Weld Royal	DEC-CO	Public Information Officer	<a href="mailto:Weld.royal@alaska.gov">Weld.royal@alaska.gov</a>	465-5009

**MT REDOUBT ERUPTION (DRIFT RIVER TERMINAL) – FEDERAL/STATE IMT/CMT CONTACT LIST (March 27, 2009)**

Steve Russell	DEC-PERP	Operations Section Chief	<a href="mailto:Steve.russell@alaska.gov">Steve.russell@alaska.gov</a>	262-5210, X222
Dave Simonds	USCG Sector Anchorage	USCG Liaison	<a href="mailto:david.d.simonds@uscg.mil">david.d.simonds@uscg.mil</a>	271-6700
Camille Stephens	DEC-PERP	JIC Website	<a href="mailto:Camille.stephens@alaska.gov">Camille.stephens@alaska.gov</a>	465-5242
Jim Stevenson	DEC-PERP	Logistics	<a href="mailto:Jim.stevenson@alaska.gov">Jim.stevenson@alaska.gov</a>	344-7380
Richard Vanderhoek	DNR SHPO	Environmental Unit	<a href="mailto:Richard.vanderhoek@alaska.gov">Richard.vanderhoek@alaska.gov</a>	269-8728
Frank Wesser	DEC-PERP	Situation Unit	<a href="mailto:Frank.wesser@alaska.gov">Frank.wesser@alaska.gov</a>	269-3062
John Whitney	NOAA	Scientific Support Coordinator	<a href="mailto:John.whitney@noaa.gov">John.whitney@noaa.gov</a>	271-3139
Alan Wien	DEC-PERP	Dpty Planning Section Chief/Liaison	<a href="mailto:Alan.wien@alaska.gov">Alan.wien@alaska.gov</a>	376-1865
<b>Technical Specialists</b>				
Roger Burleigh	DEC-IPP	Tech Specialist-Engineering	<a href="mailto:Roger.burleigh@alaska.gov">Roger.burleigh@alaska.gov</a>	269-7538
Shannon DeWandel	DEC-IPP	Tech Specialist – C-Plans	<a href="mailto:Shannon.dewandel@alaska.gov">Shannon.dewandel@alaska.gov</a>	269-7541
Allison Iversen	DNR-PSIO	Tech Specialist	<a href="mailto:allison.iversen@alaska.gov">allison.iversen@alaska.gov</a>	269-8806
Tom Johnson	PHSMA	Primary contact	<a href="mailto:Donald.t.johnson@dot.gov">Donald.t.johnson@dot.gov</a>	271-4934
Chris Nye	DNR	Div of Geological and Geophysical Surveys	<a href="mailto:cnye@giseis.alaska.edu">cnye@giseis.alaska.edu</a>	474-7430
<b>STATE CMT</b>				
Larry Dietrick	DEC-SPAR	CMT Lead	<a href="mailto:Larry.dietrick@alaska.gov">Larry.dietrick@alaska.gov</a>	465-5255
Bob Mattson	DEC PERP	DEC CMT – Response Advisor	<a href="mailto:Bob.mattson@alaska.gov">Bob.mattson@alaska.gov</a>	465-5349
Kevin Banks	DNR	Director, Div of Oil and Gas	<a href="mailto:Kevin.banks@alaska.gov">Kevin.banks@alaska.gov</a>	269-8781
Ira Rosen	DEC-IPP	Alaska Risk Assessment	<a href="mailto:Ira.rosen@alaska.gov">Ira.rosen@alaska.gov</a>	465-6219
Betty Schorr	DEC-IPP	DEC CMT – C-Plan Advisor	<a href="mailto:betty.schorr@alaska.gov">betty.schorr@alaska.gov</a>	269-7566
Bob Swenson	DNR	Director, Div of Geological and Geophysical Surveys (CMT)	<a href="mailto:Bob.swenson@alaska.gov">Bob.swenson@alaska.gov</a>	451-5001

# Drift River Terminal – Potential Spill Incident Federal/State Incident Management Team/Crisis Management Team



## ICS 206 - Medical Plan

**Incident:** Drift River Terminal Flooding      **Prepared By:** Section, Planning      **at** 3/29/2009 07:33

**Period:** Period 3 (3/28/2009 16:00 - 3/29/2009 16:00)      **Version Name:** March 28, 2009

### Medical Aid Stations

Name	Location	Paramedics (On-Site)	Phone	Radio
AK Air National Guard	Anchorage, AK	Yes	907-428-7230	
Fairweather Inc.	Anchorage, AK	Yes	907-258-3446	

### Transportation (Ground and/or Air Ambulances Services)

Name	Location	Paramedics	Phone	Radio
Providence Life Flight	Anchorage, AK		907-243-5433	
Security Aviation	Anchorage, AK	No	(907) 248-2677	N

### Hospitals

Name	Location	Helipad	Burn Center	Phone	Radio
Alaska Native Medical Center	Anchorage, AK			(907) 563-2662	
Alaska Regional Hospital	Anchorage, AK	Yes	No	(907) 276-1130/175	
Providence Alaska Medical Center	Anchorage, AK	Yes	Yes	(907) 562-2211	
South Peninsula Hospital	Homer, AK			(907) 235-8101	
Central Peninsula General Hospital	Soldotna, AK			(907) 262-4404 (24	
Peninsula Medical Center	Kenai, AK			907-262-9341	

### Special Medical Emergency Procedures

In the Kenai Borough ( 911) can be used for contacting and mobilization of local police, Alaska State Troopers, Fire, or Ambulance.

# ICS 208 - Site Safety Plan

**Incident:** Drift River Terminal Flooding

**Prepared By:** Kalyan, Mala

**at** 3/28/2009 14:36

**Period:** Period 3 (3/28/2009 16:00 - 3/29/2009 16:00)

**Version Name:** 3/28/09

**Applies To Site:** Drift River Terminal

**Products:** Volcanic Ash, Crude Oil

(Attach MSDS)

## SITE CHARACTERIZATION

**Water:** Cook Inlet

**Wave Height:** 5 ft

**Current Speed:**

**Land:** Brushland

**Weather:** Snowy

**Wind Speed:** knots

**Wave Direction:** Southwest

**Current Direction:**

**Use:** Industrial

**Temp:** Mid 30s Fahrenheit

**Wind Direction:** Southwest

**Pathways for Dispersion:** Air

### Site Hazards

- |   |   |   |
|---|---|---|
| <input checked="" type="checkbox"/> Boat safety           | <input type="checkbox"/> Fire, explosion, in-situ burning | <input type="checkbox"/> Pump hose                          |
| <input type="checkbox"/> Chemical hazards                 | <input type="checkbox"/> Heat stress                      | <input checked="" type="checkbox"/> Slips, trips, and falls |
| <input type="checkbox"/> Cold Stress                      | <input checked="" type="checkbox"/> Helicopter operations | <input type="checkbox"/> Steam and hot water                |
| <input type="checkbox"/> Confined Spaces                  | <input type="checkbox"/> Lifting                          | <input type="checkbox"/> Trenching/Excavation               |
| <input type="checkbox"/> Drum handling                    | <input type="checkbox"/> Motor vehicles                   | <input type="checkbox"/> UV Radiation                       |
| <input type="checkbox"/> Equipment operations             | <input checked="" type="checkbox"/> Noise                 | <input type="checkbox"/> Visibility                         |
| <input checked="" type="checkbox"/> Electrical operations | <input type="checkbox"/> Overhead/buried utilities        | <input checked="" type="checkbox"/> Weather                 |
| <input type="checkbox"/> Fatigue                          | <input type="checkbox"/> Plants/wildlife                  | <input type="checkbox"/> Work near water                    |
| <input type="checkbox"/> Other                            | <input type="checkbox"/> Other                            | <input checked="" type="checkbox"/> Other                   |

### Air Monitoring

%O2: NA

%LEL: NA

ppm Benzene: NA

ppm H2S:

**Other (Specify):** Volcanic As Particles

## CONTROL MEASURES

### Engineering Controls

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Source of release secured | <input checked="" type="checkbox"/> Valve(s) closed    | <input type="checkbox"/> Energy sources locked/tagged out |
| <input checked="" type="checkbox"/> Site secured   | <input checked="" type="checkbox"/> Facility shut down | <input type="checkbox"/> Other                            |

### Personal Protective Equipment

- |   |   |
|---|---|
| <input type="checkbox"/> Impervious suit                      | <input checked="" type="checkbox"/> Respirators         |
| <input type="checkbox"/> Inner gloves                         | <input checked="" type="checkbox"/> Eye protection      |
| <input checked="" type="checkbox"/> Outer gloves              | <input checked="" type="checkbox"/> Personal floatation |
| <input checked="" type="checkbox"/> Flame resistance clothing | <input checked="" type="checkbox"/> Boots               |
| <input checked="" type="checkbox"/> Hard hats                 | <input type="checkbox"/> Other                          |

### Additional Control Measures

- Decontamination stations established
- Sanitation facilities provided
- Illumination provided
- Medical surveillance provided

# ICS 208 - Site Safety Plan

**Incident:** Drift River Terminal Flooding **Prepared By:** Kalyan, Mala **at** 3/28/2009 14:36

**Period:** Period 3 (3/28/2009 16:00 - 3/29/2009 16:00) **Version Name:** 3/28/09

## WORK PLAN

- |  |                                       |                                     |                                   |   |
|--|---------------------------------------|-------------------------------------|-----------------------------------|---|
| <input type="checkbox"/> Booming   | <input type="checkbox"/> Skimming     | <input type="checkbox"/> Vac trucks | <input type="checkbox"/> Pumping  | <input type="checkbox"/> Excavation               |
| <input type="checkbox"/> Heavy equipment                                     | <input type="checkbox"/> Sorbent pads | <input type="checkbox"/> Patching   | <input type="checkbox"/> Hot work | <input type="checkbox"/> Appropriate permits user |
| <input checked="" type="checkbox"/> Other Assessment of Drift River Facility |                                       |                                     |                                   |   |

## TRAINING

- Verified site workers trained per regulations

## ORGANIZATION

<u>Title</u>	<u>Name</u>	<u>Telephone/Radio</u>
Incident Commander:		
Deputy Incident Commander:		
Safety Officer:		
Public Affairs Officer:		
Other:		

## EMERGENCY PLAN

- Alarm system  
 Evacuation plan  
 First aid location

### Notified

- |  |                            |                 |
|--|----------------------------|-----------------|
| <input checked="" type="checkbox"/> Hospital       | Central Peninsula Hospital | Phone: 714-4404 |
| <input type="checkbox"/> Ambulance                 |                            | Phone:          |
| <input type="checkbox"/> Air ambulance             |                            | Phone:          |
| <input type="checkbox"/> Fire                      |                            | Phone:          |
| <input type="checkbox"/> Law enforcement           |                            | Phone:          |
| <input type="checkbox"/> Emergency response/rescue |                            | Phone:          |

## PRE-ENTRY BRIEFING

- Initial briefing prepared for each site

## Attachments / Appendices

Safe Work Practices for Land Based and Vessel Activities

Aircraft Travel

PPE Description

Safe Work Practices for Boats

Personnel Tracking System



**ICS 208 - Site Safety Plan**

<b>Incident:</b> Drift River Terminal Flooding	<b>Prepared By:</b> Kalyan, Mala <span style="float:right">at 3/28/2009 14:36</span>
<b>Period:</b> Period 3 (3/28/2009 16:00 - 3/29/2009 16:00)	<b>Version Name:</b> 3/28/09

**WORK PLAN**

- |  |                                       |                                     |                                   |  |
|--|---------------------------------------|-------------------------------------|-----------------------------------|--|
| <input type="checkbox"/> Booming   | <input type="checkbox"/> Skimming     | <input type="checkbox"/> Vac trucks | <input type="checkbox"/> Pumping  | <input type="checkbox"/> Excavation              |
| <input type="checkbox"/> Heavy equipment                                     | <input type="checkbox"/> Sorbent pads | <input type="checkbox"/> Patching   | <input type="checkbox"/> Hot work | <input type="checkbox"/> Appropriate permits use |
| <input checked="" type="checkbox"/> Other Assessment of Drift River Facility |                                       |                                     |                                   |  |

**TRAINING**

- Verified site workers trained per regulations

**ORGANIZATION**

<u>Title</u>	<u>Name</u>	<u>Telephone/Radio</u>
Incident Commander:		
Deputy Incident Commander:		
Safety Officer:		
Public Affairs Officer:		
Other:		

**EMERGENCY PLAN**

- Alarm system
- Evacuation plan
- First aid location

**Notified**

- |  |                            |                 |
|--|----------------------------|-----------------|
| <input checked="" type="checkbox"/> Hospital       | Central Peninsula Hospital | Phone: 714-4404 |
| <input type="checkbox"/> Ambulance                 |                            | Phone:          |
| <input type="checkbox"/> Air ambulance             |                            | Phone:          |
| <input type="checkbox"/> Fire                      |                            | Phone:          |
| <input type="checkbox"/> Law enforcement           |                            | Phone:          |
| <input type="checkbox"/> Emergency response/rescue |                            | Phone:          |

**PRE-ENTRY BRIEFING**

- Initial briefing prepared for each site

**Attachments / Appendices**

Safe Work Practices for Land Based and Vessel Activities

Aircraft Travel

PPE Description

Safe Work Practices for Boats

Personnel Tracking System

## ICS 224 - Environmental Unit Summary

<b>Incident:</b> Drift River Terminal Flooding	<b>Prepared By:</b> Ha, Young	<b>at</b> 3/28/2009 12:31
<b>Period:</b> Period 3 (3/28/2009 16:00 - 3/29/2009 16:00)	<b>Version Name:</b> 3/27/2009 14:15	

### Area Environmental Data

Land status map is now available from ADNR. The map status map is attached and is titled Drift River. Following is more detailed description of the map's content (Provided by ADNR):

Orange spotted areas - Redoubt Bay Critical Habitat Area  
Blue areas just across the river - Cook Inlet Pipeline Company (CIPC) land  
Purple adjacent areas - Leased to CIPC by the state  
Vertical blue striped area - Leased to CIPC by the Kenai Peninsula Borough  
Red area - federal public land order issued in 1960 revoking the bombing and gunnery range of the area

ADFG provided the summary of Resources at Risk on March 26, 2009. This information is included as ICS 232.

### Priorities for Mitigating Environment and Cultural Impacts

Following is a list of Geographical Response Strategies within 10 miles of the Drift River Terminal. The link to the GRS is also included.

Little Jack Slough GRS - <http://www.dec.state.ak.us/spar/perp/grs/ci/cic/cic14littlejackslough.pdf>  
Drift River GRS - <http://www.dec.state.ak.us/spar/perp/grs/ci/cic/cic15drifriver.pdf>  
Big River GRS - <http://www.dec.state.ak.us/spar/perp/grs/ci/cic/cic16bigriver.pdf>  
Kustatan River GRS - <http://www.dec.state.ak.us/spar/perp/grs/ci/cic/cic17kustatanriver.pdf>  
Swamp Creek GRS - <http://www.dec.state.ak.us/spar/perp/grs/ci/cic/cic20swampcreek.pdf>

### Wildlife Assessments and Rehabilitation

No impacts to wildlife has been observed to date.

### Permits (Dispersants, Burning, and/or Other

No permits are required at this time.

### Waste Management

No Waste Management Plan is required at this time.

### Other Environmental Concerns

### Logistical Support Needs

## RESOURCES AT RISK SUMMARY

Substitute ICS 232-OS form

1. Incident Name: Drift River Facility Flooding
2. Operational Period: from March 27, 2009, 1:00 pm, until revised
3. Environmentally-Sensitive Areas and Wildlife Issues

Site No.	Priority	Site Name / Physical Location	Site Issues
1	HIGH	Redoubt Bay Critical Habitat Area, located north of the Drift River Facility (see attached map)	<ul style="list-style-type: none"> <li>• Waterfowl concentrations in spring and fall, throughout the critical habitat area, and south to Harriet Point, inclusive of the Drift River Facility.</li> <li>• Waterfowl molting concentrations, throughout the critical habitat area, and south to Katchin Creek, inclusive of the Drift River Facility.</li> <li>• Anadromous fish in streams and lakes, including in Drift River</li> <li>• Shorebird concentrations in spring and fall, throughout the critical habitat area, and south, inclusive of the Drift River Facility.</li> <li>• Harbor seal haulout concentrations, at least 1 site within the critical habitat area.</li> <li>• Brown bear concentrations in summer and fall, throughout the critical habitat area, and south, inclusive of the Drift River Facility.</li> <li>• Black bear concentrations in spring, throughout the critical habitat area, and south, inclusive of the Drift River Facility.</li> <li>• Beluga whale feeding in nearshore waters.</li> </ul>
2	HIGH	Kalgin Island and Kalgin Island Critical Habitat Area, located southeast of the Drift River Facility in Cook Inlet	<ul style="list-style-type: none"> <li>• Harbor seal haulout concentrations, at least two sites</li> <li>• Streams and lakes with anadromous fish</li> <li>• Waterfowl concentrations in spring and fall</li> </ul>

3	HIGH	Trading Bay State Game Refuge, located north of Redoubt Bay Critical Habitat Area	<ul style="list-style-type: none"> <li>• Waterfowl concentrations in spring, along the coast and up to three miles inland</li> <li>• Waterfowl concentrations in fall, throughout the refuge.</li> <li>• Waterfowl concentrations during molting, throughout the refuge.</li> <li>• Bear concentrations in spring, throughout the refuge</li> <li>• Streams and lakes with anadromous fish</li> <li>• Shorebird concentrations in spring and fall, throughout the refuge.</li> <li>• Beluga whales feeding in nearshore waters.</li> <li>• Seabird concentrations, McArthur Flats.</li> </ul>
4	HIGH	Clam Gulch Critical Habitat Area, located across Cook Inlet from the Drift River Facility to the east	<ul style="list-style-type: none"> <li>• Waterfowl concentrations in spring, in area between Clam Gulch and Kasilof.</li> <li>• Waterfowl concentrations in fall, in area north and west of Kasilof.</li> <li>• Waterfowl concentrations in winter, near Cape Starichkof</li> <li>• Streams and lakes with anadromous fish</li> <li>• Razor clam concentrations, along coast from Cape Kasilof south to Cape Starichkof.</li> <li>• Seabird concentrations near mouth of Kasilof River.</li> </ul>
5	HIGH	Mouth of the Kenai River, located across Cook Inlet from the Drift River Facility to the east	<ul style="list-style-type: none"> <li>• Waterfowl concentrations in spring and summer</li> <li>• Beluga whale concentrations in spring, summer and fall, at the mouth of the Kenai River and in the marine environment outside of the mouth.</li> <li>• Anadromous fish streams.</li> <li>• Shorebird concentrations in spring at the mouth of the Kenai River.</li> <li>• Seabird colonies are found at the mouth of the Kenai River.</li> </ul>

Narrative

Other most environmentally sensitive areas in Cook Inlet, further from the Drift River Facility, but still situated in the path of a potential oil spill include:

- Barren Islands
- Chinik Head to Silver Beach (Kamishak Bay)
- Susitna Flats and Susitna Flats State Game Refuge
- Anchorage Flats and Anchorage Coastal Wildlife Refuge
- Goose Bay State Game Refuge
- Palmer Hay Flats State Game Refuge
- Kachemak Bay Critical Habitat Area and Fox River Critical Habitat Area

A map showing environmentally sensitive areas for spring (April – May) can be found at: <http://www.asgdc.state.ak.us/maps/cplans/cook/PDFS/SPRING.PDF>

Individual maps of most environmentally sensitive areas for Cook Inlet can be accessed at:

<http://www.asgdc.state.ak.us/maps/cplans/subareas.html#cook>

4. Archaeo-cultural and Socio-economic issues: Archaeo-cultural issues are being reported upon by ADNR. The following subsistence and personal use harvest information has been supplied by ADF&G – Subsistence Division.

Site No.	Priority	Site Name / Physical Location	Site Issues
1	HIGH	Cook Inlet	<ul style="list-style-type: none"><li>• Non-commercial, personal use net fisheries for salmon.</li><li>• Subsistence set gill net salmon fisheries in Tyonek Subdistrict, around Seldovia, and in the Port Graham and Koyuktoluk subdistricts.</li><li>• Significant marine subsistence fisheries (halibut, rockfish, cod) around Seldovia, and in the Port Graham and Koyuktoluk subdistricts.</li><li>• Marine mammal hunting for harbor seals, sea lions, and sea otters takes place in lower Cook Inlet.</li><li>• Subsistence bird hunting, lower Cook Inlet.</li><li>• Very significant subsistence harvests of marine invertebrates in areas outside the nonsubsistence areas of lower Cook Inlet.</li><li>• Significant personal use fisheries for clams.</li></ul>

Prepared by: Gayle Martin, ADF&G – Habitat, on March 27, 2009 at 1:00 pm.



Redoubt Bay  
Critical Habitat Area

16.13 mi

Image © 2009 GeoEye  
Image © 2009 TerraMetrics  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
Image © 2009 DigitalGlobe  
60° 42.510' N 152° 4.503' W

©2009 Google  
Eye alt 55.45 mi

## **NOAA Resources at Risk Summary (March 26, 2009)**

### **Resources at Risk for the Drift River Tank Farm, Cook Inlet, AK**

#### **I. Incident Information**

This report was prepared at 1000 EST on 26 March 2009. Mt. Redoubt, located approximately 100 nm SW of Anchorage on the West Side of Cook Inlet erupted 5 times on 23 March 2009. These eruptions caused lahars, extensive flooding, and mud flows around the Drift River Tank Farm, where oil from the Cook Inlet fields is temporarily stored prior to shipping out aboard tankers. Currently, two of the four active tanks have 74,000 bbls of crude oil apiece. This report covers resources potentially at risk from the present time to 30 days from now.

#### **II. Geographic Region Covered**

The area covered by this report includes the Drift River, Rust Slough, and environs in Redoubt Bay, Cook Inlet. This area does not necessarily correspond to actual or potential oil locations. Consult other Hotline reports for oil location information.

#### **III. Expected Behavior of the Spilled Material**

Cook Inlet, Drift River Terminal Crude (API 34.1) is a light to medium weight crude oil. This product may coat the intertidal environment, as well as wildlife on the water surface. The product may also result in water column and benthic impacts if mixed into the water column, or if it strands in large amounts in shallow, sheltered areas. While the focus of this report is on resource impacts resulting from a crude oil release, the likelihood is that impacts would be unpredictable due the dynamic nature of a volcanic eruption and subsequent natural disasters, such as floods, mudslides, etc. If oil is released, chances are that it would be mixed with mud, water, debris (e.g., mud, gravel, trees, etc.), and potentially in very large volumes.

#### **IV. Shoreline Resources at Risk**

The shoreline along the Drift River, Rust Slough, and Redoubt Bay is predominantly extensive marsh. There are large exposed tidal flats extending 2 or more nm offshore of the Drift River in Redoubt Bay. There are pockets of sand/gravel beaches at the Drift River mouth and elsewhere along the coast. The tidal range is approximately 23 feet.

The most sensitive habitats in the area are coastal and riparian marshes, which are often highly productive, serving as important wildlife habitat for migratory and nesting birds, and nursery areas for fish and shellfish. The marsh vegetation is likely under a period of winter senescence (vegetation growth is dormant); therefore, the key concern at this time of year is if the lighter fractions of the oil penetrate into the marsh sediments and any wrack/litter. Lighter fractions of the oil may be acutely toxic to wetland vegetation, especially if oil penetrates into the sediments. Where wetland sediments are muddy and soft, it is important to prevent excessive disturbance and further mixing of oil into the substrate by foot traffic during cleanup activities, as this could

result in more severe and long-term impacts to the marshes. If large volumes of mud, water, and debris are introduced into the marshes, along with oil, damages to the habitat and associated species would be extensive.

Tidal flats are also sensitive habitats. Biological utilization of tidal flats is often high, and organisms that are buried in the sediments will likely be severely impacted. Oil usually does not penetrate into the sediments of tidal flats, because they are tightly packed and heavily water-saturated, but rather, oil will cover portions of the flats at low tide, and then be re-floated at high tide. Organisms living in the flats may be smothered during low tide.

Oil may penetrate into mixed sand and gravel beaches. This oil is difficult to remove and may become a source of chronic sheening. On mixed sand and gravel beaches oil may form a band of oil or a greasy stain on the substrate, especially along the high-tide line. Heavier accumulations could penetrate into the sediments. Lighter oils tend to penetrate deeper than heavy oils, and penetration is greatest in coarse, well-sorted sediments. Along exposed, high-energy areas, surface contamination may be quickly removed, while in low-energy areas, sheens may be released during high tide.

## **V. Biological Resources at Risk**

### **Birds**

While bird use of the area is likely limited in late winter, many migratory species arrive in spring (April-May). The Redoubt Bay Critical Habitat Area (268 square miles of wetlands and riparian habitat) provides spring resting and feeding habitat for hundreds of thousands of waterfowl on their way to northern nesting grounds. It is well known as the largest nesting area for the Tule white-fronted goose in the world. It is also heavily used for nesting by other geese and swan species (e.g., cackling Canada goose, Taverner's Canada goose, lesser Canada goose, snow goose, and tundra and trumpeter swans). Diving and dabbling ducks arriving in the spring for summer breeding (tens of thousands) may include: pintail, mallard, green-winged teal, northern shoveler, canvasback, lesser scaup, bufflehead, redhead, gadwall, American wigeon, and common eider. Shorebirds utilizing the area during spring migration include: yellowlegs, snipe, godwits, whimbrels, sandpipers, plovers, dunlin, and phalaropes. Sandhill cranes (a few nesting pairs), ravens, and gulls may be present in spring. There is a bald eagle nest along the Drift River.

Waterfowl are usually at high risk during oil spills because they spend a lot of time on the water surface and in wetlands. Gulls and shorebirds can also be severely impacted by oil. Direct oiling of birds reduces the buoyancy, water repellency, and insulation provided by feathers, and may result in death by drowning or hypothermia. Preening of oiled feathers may also result in ingestion of oil resulting in irritation, sickness, or death. Oil brought back to the nests by adult birds may kill or injure eggs and young birds.

### **Fish**

Coho salmon run up the Drift River in the summer and fall. Eggs hatch in early spring and embryos may be present in gravel until they emerge in May and June where they occupy shallow stream margins. Coho, pink, and sockeye salmon and Dolly Varden may be present in Rust Slough and Cannery Creek. Pink fry swim out of the gravel and migrate downstream in late



winter or spring. Sockeye fry also emerge in early spring and move to rearing areas. Dolly Varden eggs hatch in March with emergence in April or May followed by rearing in streams.

Larval and juvenile fish are especially sensitive because they inhabit shallow waters, are less mobile, and are more sensitive to oil toxicity. Eggs and fry would be impacted by large additions of sediment, debris, etc. into the sloughs and rivers.

### **Invertebrates**

Extensive razor clam beds occur off of Rust Slough and Cannery Creek. The largest razor clam fishery in Alaska occurs on the eastern beaches of Cook Inlet, which is on the opposite bank of the area of present concern. Most razor clam digging occurs from April through September (peak in early summer), and there is no limit on west side Cook Inlet beaches. Razor clams may be smothered by the crude oil and tainting from lighter fractions of the oil may be a concern. A large influx of sediment (mud) onto shellfish beds would cause smothering of the organisms.

### **Marine Mammals**

Harbor seals, killer whales, harbor porpoises, beluga whales, and Dall's porpoise are present in Redoubt Bay. Haul-outs, rookeries, and concentration areas for seals and whales occur in Cook Inlet, but fall outside the immediate area of concern at the present time.

## **VI. Human-Use Resources at Risk**

The Redoubt Bay Critical Habitat Area (managed by ADF&G) occurs along the west side of Cook Inlet including Rust and Cannery Creeks and Drift River. Facilities in the area include: Drift River Terminal and Christy Lee Loading Facility.