IAP Cover Sheet

Incident Name:	Operational Period to be covered by IAP:
DRIFT RIVER TERMINAL COORDINATION	Standing IAP (4/8/2009 09:00 -)

Approved by:

Mark Hamilton* FOSC :

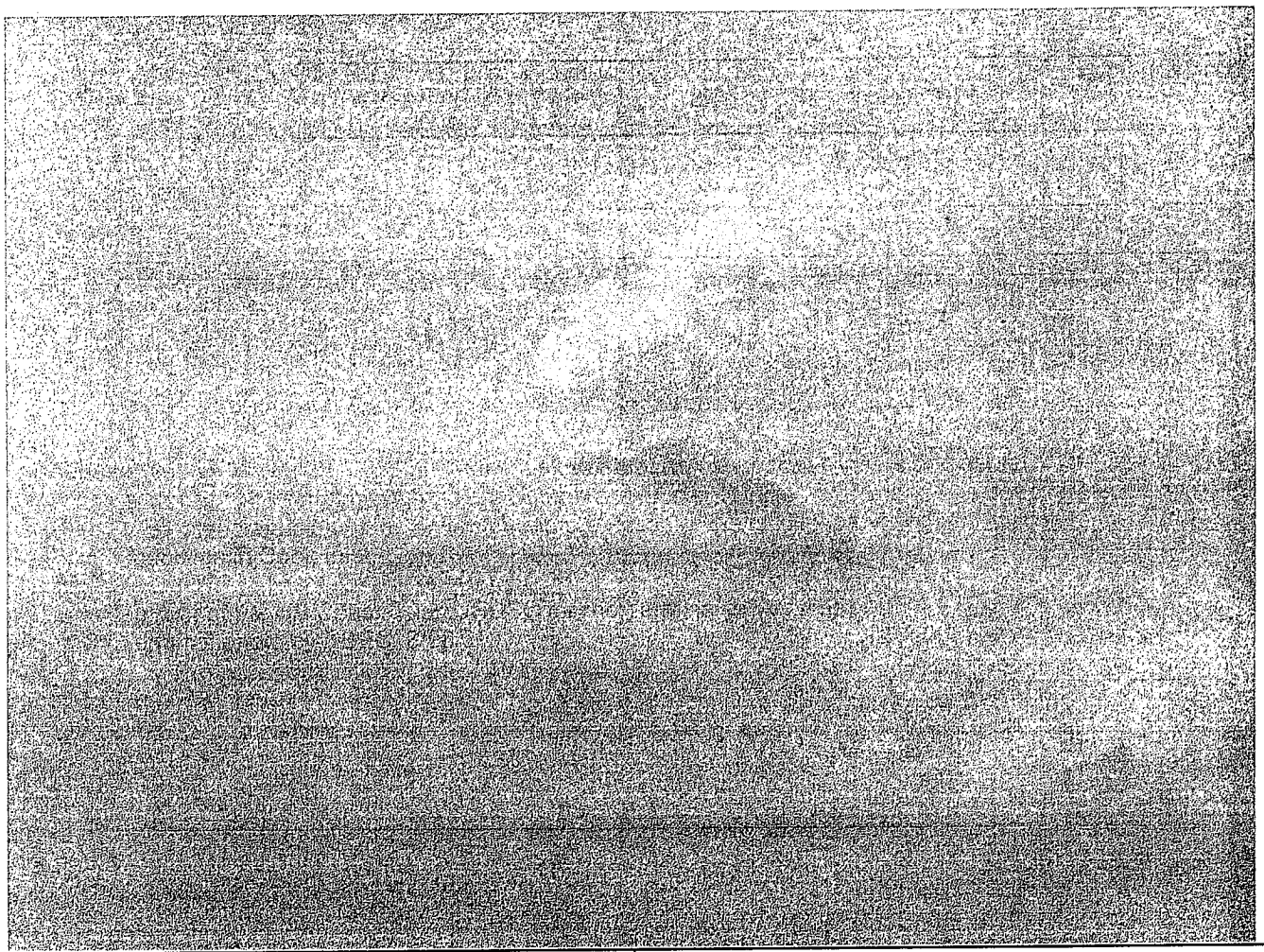
Gary Folley SOSC :

Rod Ficken RPIC :

Incident Action Plan

Mt. Redoubt erupted on March 22, 2009 and continues to erupt with associated lahars and ashfall. The Drift River Terminal is located near Mt. Redoubt. An Incident Command System Unified Command has been formed to coordinate efforts related to safety, protection of the environment, protection of the facility, providing information to the public, and continued oil production in Cook Inlet.

*Capt. Mark Hamilton of the US Coast Guard (FOSC for the Terminal & Maritime)
Drift River Oil Terminal photo by ADEC, 3/28/09



ICS 202 - General Response Objectives

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Section, Command **at** 4/7/2009 10:28
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	Standing IAP

Overall and Strategic Objectives

	Assigned To	Status
Ensure Safety of Citizens and Response Personnel		
Maintain the Protection of Environment		
• Maintain pre-response activities and develop a mobilization plan for other resources	Spill Response Group (CISPRI)	In Progress
Maximize the Protection of Drift River Facility		
• Monitor the Integrity of the Dike Stability after a significant volcanic seismic event	Restart Facility Group	Continue monitoring
• Evaluate Dike Corners for any Impacts after a lahar event	Restart Facility Group	In Progress
Maintan Unified Command		
Keep Stakeholders (Internal & External) and the Public Informed of Response Activities as needed		

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

PRIORITIES

•Safety of personnel.
•Safety of the environment.
•Safety and protection of assets.

LIMITATIONS AND CONSTRAINTS

•Personnel access and sustainability at Christy Lee, Drift River Terminal and Trading Bay
•Conservative protocols for lahar preparedness and evacuation (Best practice for personnel safety)
•Volcanic and meteorological phenomena (e.g. lahars, ash plumes, static electricity/lightning) affecting operational activities
•Lack of suitable alternate modes of transportation in no-fly conditions
•Spring breakup conditions limiting ground transportation options

DECISIONS

•Safety of personnel is the first priority
•ALL documentation generated during the DRTC incident must be given to the DOCL, including any working documents associated with ICS or notes
•Press briefings will be conducted at AVO
•Incident name is Drift River Terminal Coordination
•All press releases shall be routed through and approved by the UC prior to release
•All personnel and resources associated with the DRTC incident shall be tracked
•All resource requests shall be made on a 213RR form
•Section Chiefs or higher have delegation of authority for purchases up to $5000
•Procurements above $5000 require RP approval

Approved By

: _____

ICS 203 - Organization Assignment

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Pagliaro, Domenic **at** 4/7/2009 12:53
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	Standing IAP abbreviated

Incident Commander and Staff

Title	Name	Mobile	Pager	Other	Radio
Unified Command FOSC (USCG)	Mark Hamilton				
Deputy FOSC	USCG				
Unified Command SOSC (ADEC)	Gary Folley				
Deputy Command SOSC (ADEC)	ADEC				
Incident Commander	Rod Ficken				
Deputy Incident Commander	CIPL				
Public Information Officer	CIPL				
Liaison Officer	ADEC				
Safety Officer	CIPL				

Operations Section

Title	Name	Mobile	Pager	Other	Radio
Operations Section Chief	CIPL				

Planning Section

Title	Name	Mobile	Pager	Other	Radio
Planning Section Chief	CIPL				

Logistics Section

Title	Name	Mobile	Pager	Other	Radio
Logistics Section Chief	CIPL				

Finance Section

Title	Name	Mobile	Pager	Other	Radio
Finance Section Chief	CIPL				

ICS 205 - Communications Plan

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Pagliaro, Domenic	**at** 4/7/2009 12:55
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	Standing IAP abbreviated	

Phone Listing

Title	Name	Phone	Fax	Other Number - Desc.	Radio?
AirLog	Dave Scarbrough			- Mobile	☐
Alaska Maritime	Bob Fell			- Mobile	☐
Air Ops Branch Director	Gordy Nisler			- Mobile	☐
Aviation Contractor	Security Aviation			- Pager	☐
National Weather Service				- Pager	☐
Nikiski OSK Heliport	ERA Dispatch			- Mobile	☐
Nikiski OSK Heliport	Chevron Dispatch			- Mobile	☐
Trading Bay Logistics	Ernie Simpson			- Mobile	☐
DRIFT RIVER TERMINEL				- Pager	☐
Drift River Annex Hallway				- Pager	☐
Drift River Annex Office				- Pager	☐
Drift River Cathodic Protection				- Pager	☐
Drift River Comm Room				- Pager	☐
Drift River Computer Desk				- Pager	☐
Drift River Electricians Desk				- Pager	☐
Drift River Electricians Shop				- Pager	☐
Drift River Platform 1--Christy Lee				- Pager	☐
Drift River Pipe Liner				- Pager	☐
Drift River Operations				- Pager	☐
Drift River Mechanic's Desk 2	Mike Davies			- Pager	☐
Drift River Mechanic's Desk 1				- Pager	☐
Drift River Mechanic Shop				- Pager	☐
Drift River Kitchen				- Pager	☐
Drift River Kitchen Office				- Pager	☐
Drift River Lounge				- Pager	☐
Drift River Platform 2 TV Room				- Pager	☐

ICS 205 - Communications Plan

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:** Pagliaro, Domenic	**at** 4/7/2009 12:55
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	Standing IAP abbreviated

Phone Listing

Title	Name	Phone	Fax	Other Number - Desc.	Radio?
Drift River Platform Project Coordinator				- Pager	☐
Drift River Prover Building				- Pager	☐
Drift River Safe Haven				- Pager	☐
Drift River Team Leader				- Pager	☐
Drift River Welding Shop				- Pager	☐
Drift River White Building				- Pager	☐
M/V Resolution, D998975				- Pager	☐
M/V Augustine				- Mobile	☐
Seabulk Arctic				- Sat	☐
M/V VIGILANT				- Mobile	☐

Radio Utilization

System	Channel	Function	Frequency	Assignment	Notes
Marine 22	Ch.22	Coast Guard Liaison	157.100	Coast Guard	Coast Guard
Marine 10	Ch.10	Boat to shore	156.500	Boat to shore	VHF Marine Channel 10
Ground Task Force 1	Ch.1	Command & Control	153.140	CIPL Work Channel	Drift River
Air Ops	N/A	Ground to air	122.700	Aircraft for Drift River Airstrip	Aircraft frequency for Drift River Airstrip
Marine 16	Ch.16	Initial contact & monitoring marine radio	156.800	Marine Contact	VHF Marine Channel 16
Ground Task Force 2	Ch.6	Task Force Working Channel	153.380	CIPL Work Channel	Drift River

ICS 206 - Medical Plan

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	McAdara, Joe	**at** 4/7/2009 06:26
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	Period 6	

Medical Aid Stations

Name	Location	Paramedics (On-Site)	Phone	Radio
Central Peninsual Hospital	Soldotna, AK	Yes	262-2266	No
AK National Guard	Anchorage, AK	Yes	907-428-7230	No
Fairweather Inc.	Anchorage, AK	Yes	907-258-3446	No
Dr. Marcus Deede	Soldotna, AK	Yes	262-6622	No
Nikiski Fire Department	Nikiski, AK	Yes	283-2451	No

Transportation (Ground and/or Air Ambulances Services)

Name	Location	Paramedics	Phone	Radio
Nikiski Emergency Response	Nikiski, AK	Yes	911	No
Providence Life Flight	Anchorage, AK	Yes	907-243-5433	No
Security Aviation	Anchorage, AK	No	(907) 248-2677	No
ERA Aviation (speak to Shane)	Nikiski Heliport	No	776-6748	No

Hospitals

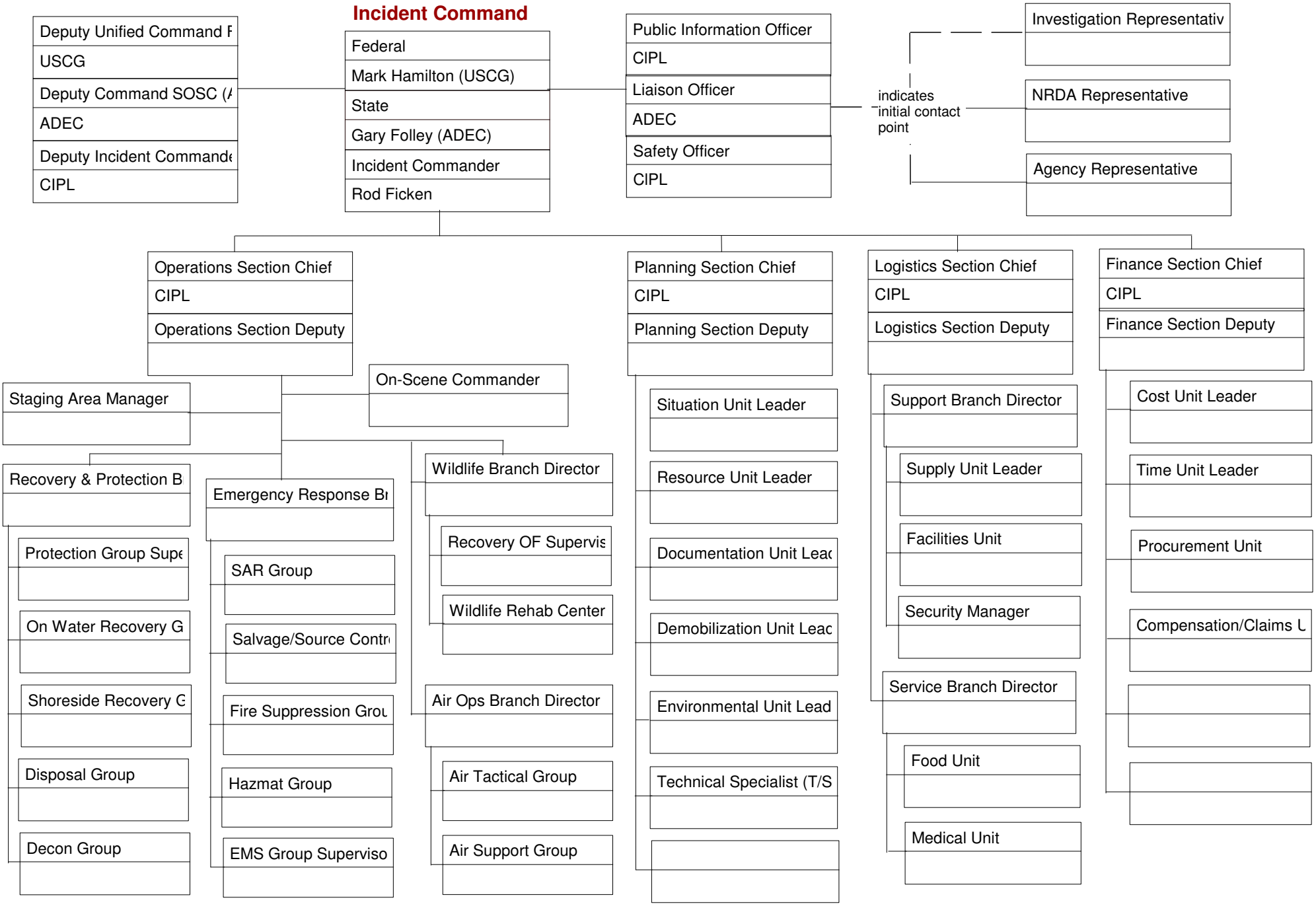
Name	Location	Helipad	Burn Center	Phone	Radio
Central Peninsula General Hospital	Soldotna, AK	Yes	No	(907) 262-4404 24 h	No
Alaska Regional Hospital	Anchorage, AK	Yes	No	(907) 276-1130/175	No
Providence Alaska Medical Center	Anchorage, AK	Yes	No	(907) 562-2211	No
South Peninsula Hospital	Homer, AK		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

Special Medical Emergency Procedures

Emergency medical helicopter service through ERA (Initial); Lifeflight from Providence Hospital and U.S. Coast Guard. Nikiski Paramedics (Central Peninsula Emergency Services) will respond and escort to Central Peninsula Hospital. In the Kenai Borough (911) can be used for contacting and mobilization of local police, Alaska State Troopers, and Ambulance

ICS 207 - Organization Chart

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Englert, Rick	**at** 4/7/2009 11:11
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	Standing IAP	



ICS 208 - Site Safety Plan

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Rick Englert	**at** 4/7/2009 11:21
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	ANC ICP	

Applies To Site: Command Post

Products: None (Attach MSDS)

SITE CHARACTERIZATION

Water:

Wave Height: **Wave Direction:**

Current Speed: **Current Direction:**

Land: **Use:**

Weather: **Temp:**

Wind Speed: **Wind Direction:**

Pathways for Dispersion:

Site Hazards

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

Air Monitoring

%O2: **%LEL:** **ppm Benzene:**

ppm H2S: ☐ **Other (Specify):**

CONTROL MEASURES

Engineering Controls

- ☐ Source of release secured
- ☒ Site secured
- ☐ Valve(s) closed
- ☐ Facility shut down
- ☐ Energy sources locked/tagged out
- ☒ Other Tape cords to floor

Personal Protective Equipment

- ☐ Impervious suit
- ☐ Inner gloves
- ☐ Outer gloves
- ☐ Flame resistance clothing
- ☐ Hard hats
- ☐ Respirators
- ☐ Eye protection
- ☐ Personal floatation
- ☐ Boots
- ☐ Other

Additional Control Measures

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

ICS 208 - Site Safety Plan

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Rick Englert	**at** 4/7/2009 11:21
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	ANC ICP	

WORK PLAN

☐ Booming ☐ Skimming ☐ Vac trucks ☐ Pumping ☐ Excavation
☐ Heavy equipment ☐ Sorbent pads ☐ Patching ☐ Hot work ☐ Appropriate permits used
☐ Other

TRAINING

☐ Verified site workers trained per regulations

ORGANIZATION

Title	Name	Telephone/Radio
Incident Commander:	Rod Ficken	
Deputy Incident Commander:	CIPL	
Safety Officer:	CIPL	
Public Affairs Officer:	Santana Gonzales	
Other:		

EMERGENCY PLAN

☒ Alarm system
☒ Evacuation plan — Follow EXIT signs and muster in parking lot
☐ First aid location

Notified

☐ Hospital	Phone:
☐ Ambulance	Phone:
☐ Air ambulance	Phone:
☐ Fire	Phone:
☐ Law enforcement	Phone:
☐ Emergency response/rescue	Phone:

PRE-ENTRY BRIEFING

☒ Initial briefing prepared for each site

Attachments / Appendices

Site Safety Program Evaluation Checklist

ALASKA VISITORS BRIEFING
COMMON DANGERS AND HAZARDS

The climate in Alaska can be extreme almost anytime of the year in southcentral Alaska. Spring temperatures can vary from well below freezing to above freezing, even during the same day. Aside from driving on slick roads, exposure to the elements represents the primary hazard that visitors to Alaska routinely encounter. Even seemingly harmless outings can become life-threatening quickly due to the remoteness of the particular location, extreme terrain, and temperature variation. Other hazards of concern to visitors may include wildlife, even in the Anchorage city limits!

DRIVING

Driving is the most dangerous activity people engage in on a regular basis. In Alaska, even city drivers in springtime can encounter snow and ice. Dust from sanding roads all winter can reduce visibility. Patches of ice and black ice are common. Black ice is actually just thin, invisible ice, and results from the thaw freeze cycles each day.

- Take the time to scrape your windshield before you start driving.
- Reduce your speed.
- Maintain extra distance between and the vehicle in front of you.
- Avoid clusters of cars in traffic.
- Plan for increased stopping distances.
- When exiting your vehicle after parking, use 3 points of contact (both hands holding onto something when you step out).

CLOTHING

To prepare for any outdoor activity, it is important to dress warmly, but more important to dress in layers if you are going to be outside for any length of time. Parking lots, streets, and sidewalks can be slick. Slips, trips, and falls are common hazards.

- Inner layers (socks, long underwear, shirts), synthetic materials are best.
- Mid layers (lightweight coats, vests, etc.), synthetic materials are best.
- Outer layers (waterproof or weatherproof shell coats – similar material pants are recommended).
- Footwear with traction soles (hiking boots are preferable for any long walk and traction devices are available for purchase at local stores).
- Hats and protective headwear (knit or synthetic hats that cover ears).
- Gloves are recommended.
- UV protective eyewear (sunglasses help with driving).

WILDLIFE

Moose are common in nearly any area of Alaska (including Anchorage), and bears (brown or grizzly, and black) may be becoming active in the spring. Bears are a concern in some parks within the Anchorage city limits.

- Never approach any animal. Any wild animal is a potential safety hazard.
- If a wildlife encounter occurs, make them aware of your presence and remain calm. Injury incidents are extremely rare when people stay in groups.

- Stay in groups if you go for a hike.
- Make noise, and be aware of your surroundings.

If you travel outdoors (e.g., nearby parks), establish a trip plan and let someone staying behind know where you are going and when you plan to return. Cellphone reception is often available, but not a completely reliable form of communications.

Be SAFE and enjoy your stay!

APPENDIX: COLD STRESS AND HYPOTHERMIA CONSIDERATIONS

Frostbite and hypothermia are the two major hazards of working in cold temperatures. A cold environment can reduce the temperature of the body and cause shivering, reduced mental alertness, and sometimes loss of consciousness. However, a healthy worker who is properly protected and takes reasonable precautions can function efficiently and safely in cold environments.

A. Factors Affecting Cold Exposure Severity

1. Important factors contributing to cold injury
   - exposure to humidity and high winds
   - contact with moisture or metal
   - inadequate clothing

   General health conditions that affect cold stress severity:
   - age
   - overall health
   - fatigue
   - allergies
   - vascular disease
   - smoking
   - drinking
   - certain drugs or medications
2. If someone becomes fatigued during physical activity, they will be more susceptible to heat loss. As exhaustion approaches, the body's ability to contract the blood vessels diminishes; blood circulation occurs closer to the skin; and rapid loss of heat begins. Sedative drugs and alcohol increase the risk of hypothermia by dilating the blood vessels near the skin, which increases heat loss and lowers body temperature.
3. The actual effects of a cold environment on the body also depend upon how well the skin is protected. An insulating barrier affects the rate of heat loss from radiation, convection, conduction and evaporation.
4. Environmental factors include wind and humidity, as well as temperature. The faster the air movement, the greater the effects of cold exposure.

B. Hypothermia

Cold injury can be localized or generalized. Frostbite, frostnip, or chilblain are examples of localized injuries. Hypothermia is a generalized (threatening the whole body) cold injury that can be life threatening.

1. Hypothermia is an abnormally low body temperature caused by exposure to cold in air or in water. Hypothermia results as the body loses heat faster than it can produce it. Air temperature alone is not enough to judge the cold hazard of a particular environment. Hypothermia cases often develop in air temperatures between 30-50 degrees Fahrenheit. When you figure in such factors as windchill, the effective temperature can be significantly lower.
2. Pain in the extremities may be the first warning of dangerous exposure to cold. Severe shivering is a sign of danger requiring removal from the cold exposure.
3. Early warnings of hypothermia are uncontrollable shivering and the sensation of cold; the heartbeat slows and sometimes becomes irregular; the pulse weakens; and the blood pressure changes. Fits of shivering, vague or slurred speech, memory lapses, incoherence, or drowsiness may occur. Other symptoms, which may be seen before unconsciousness, are cool skin, slow, irregular breathing, low blood pressure, apparent exhaustion, and inability to get up after a rest.
4. Handling cold stress and hypothermia victims
   a. A worker should go immediately to a warm shelter if any of the following symptoms

occur:

- pain, numbness, white color in the extremities, ears, nose, cheeks (or frostnip)
- onset of heavy shivering
- excessive fatigue
- drowsiness
- euphoria

A litter should be used if possible for all but the mildest cases.

b. The main objective in handling hypothermia is to warm the body core evenly and without delay. However, doing it too rapidly can disrupt body functions such as circulation.
   - The outer layer of clothing should be removed when entering a warm shelter
   - The remaining clothing should be loosened to permit sweat to evaporate, and changed if wet
   - Alcohol and caffeinated drinks should not be consumed
   - Anyone on medications, such as blood pressure control or water pills, should consult a physician about possible side effects of cold stress

c. If medical help is not immediately available: keep the person quiet, but awake if possible; avoid unnecessary movement; and if it is necessary to move a hypothermia victim, use a litter - the exertion of walking or rough handling could aggravate circulation problems or cause irregular heartbeats.

d. The sudden return of the cool blood pooled in the extremities to the heart can cause shock. Do not rewarm the core and the extremities at the same time. In a case of mild hypothermia where the person is conscious, the body may be packed with heat packs or warm towels at the neck, groin, and armpits. As the extremities begin to recover warmth give conscious victims sweet, warm drinks. Avoid caffeine or alcoholic drinks.

5. Water immersion victims. Floatation is the most important factor in water immersion survival, but may not be available if not provided in advance (see protective clothing notes below).

   a. It is especially important to keep your head dry

   b. Avoid thrashing about and assume the HELP position (Heat Escape Lessening Posture) by crossing wrists over chest and draw in knees close to your chest to avoid losing body heat. By using the HELP position, the head, neck, armpit, and groin areas are protected which are all high heat loss areas.

   c. If others are in the water with you, huddle together to reduce heat loss, aid in rescue, and boost morale.

COLD STRESS INJURY AND TREATMENT

INJURY	SYMPTOMS	POSSIBLE CAUSES	TREATMENT
Hypothermia	Pain in the extremities; uncontrollable shivering; reduced body core temperature; cool skin; rigid muscles; slowed heart rate; weakened pulse; low blood pressure; slow irregular breathing; memory lapses; slow, slurred speech; drowsiness; incoherence; lack of coordination; diminished dexterity and judgment.	Exposure to low air temperatures; exposure to high winds; water immersion; inadequate clothing; allergies; recent alcohol consumption; smoking; prescription medications; exhaustion; dehydration.	Remove person from wind, snow, rain; minimize use of energy by person; keep person awake; remove wet clothing; get person into dry clothing; wrap blanket around person; pack neck, groin, armpits with warm towels; do not rewarm extremities and body at the same time; give sweet warm drinks to conscious person; remove person to medical facility.
Frostbite	Whitened areas on skin; burning sensation at first; blistering; affected part cold, numb, and	Exposure to cold; age (very young or old); underlying disease.	Cover the frozen part; provide extra clothing and blankets; bring person indoors; place the part in tepid water or

	tingling.		rewarm with *warm packs; if no water is available, wrap gently in a sheet and blanket or place fingers under armpits; discontinue warming when the affected part becomes flushed and swollen; give sweet warm fluids to conscious person; if feet are affected, put on dry socks; if cheeks are affected, cover cheeks with warm hands; do not rub the part with anything; do not use heat lamps, hot water bottles, or place near hot stove; do not break blisters; obtain medical assistance immediately.
Chillblain	Recurrent localized itching, swelling, and painful inflammation of the fingers, toes or ears; severe spasms.	Inadequate clothing; exposure to cold and moisture, underlying disease.	Remove to warmer area; consult physician.
Frostnip	Skin turns white.	Exposure to cold.	Remove to warmer area; refer to treatment for frostbite.
Acrocyanosis	Hands and feet are cold, blue, and sweaty.	Exposure to cold; inadequate clothing; underlying disease.	Remove to warmer area; loosen tight clothing; consult physician.
Trench Foot	Edema of the foot; tingling; itching; severe pain; blistering.	Repeated exposure to cold and moisture.	Remove to warmer area; refer to treatment for frostbite; consult physician.
Raynaud's Disease	Fingers turn white, numb and stiff; intermittent blanching and reddening of the fingers and toes; affected area tingles and becomes very red or reddish purple.	Exposure to low air temperature and high winds; inadequate clothing; underlying disease; stress.	Remove to warmer area; consult physician.

C. Evaluating Cold Exposure Hazards

1. Common sense will dictate how much clothing to wear and when to get into a warm area in most cases. However, some work environments require more complex evaluations.
2. Evaluating a work environment to determine the degree of cold stress involves measuring air temperature, wind speed, and the amount of energy expended by the worker.
3. Air temperature can be measured by an ordinary bulb thermometer. Wind speed can be measured in a variety of ways but can also be estimated as follow:
   5 mph - light flag moves
   10 mph - light flag fully extended
   15 mph - raises newspaper sheet
   20 mph - blowing and drifting snow
4. Table 2 in the Cold Stress section of the ACGIH TLV booklet estimates effective temperature using actual temperature and wind speed. This booklet also provides additional guidelines for controlling cold exposure hazards.

D. Preventing Cold Stress

1. Reduce manual work load. When cold stress is a concern, personnel exposures should be reduced by eliminating manual operations as much as possible. Power tools, hoists, cranes, or lifting aids should be used to reduce the metabolic work load and to reduce the duration of human exposure. Fatigue is also a compounding stress factor.

2. Dehydration. Working in cold areas causes high water losses through the skin and lungs, because of the dryness of the air. Increased fluid intake is essential to prevent dehydration. Warm, sweet, caffeine-free, non-alcoholic fluids, in addition to water, should be available at the work site for fluid replacement and caloric energy.
3. Warm locations for breaks. For outdoor work such as beach cleaning, where it will be difficult to warm the work area, it is particularly important to provide frequent breaks in a warm location. These locations should also be stocked with warm fluids to help warming and prevent dehydration. A work-rest schedule should be implemented using Table 3 in the Cold Stress section of the latest edition of the ACGIH TLV booklet for guidance. Providing movable spot heaters close to the work area can also be effective, and can also prevent secondary hazards from carbon monoxide when workers attempt to warm themselves near running engines. If fine work is to be performed with bare hands, special provisions should be made to keep the worker's hands warm using such things as warm air jets, radiant heaters, or contact warm plates.
4. Indoor/outdoor wind breaks and shelter. The work area should be shielded if the air speed at the job site is increased by winds, draft, or ventilating equipment. For example, bird/mammal rehabilitation may be conducted in large warehouse type buildings where heating may be difficult. Wet work stations (such as washing or drying stations) should be enclosed by barriers to reduce drafts.
5. Scheduling and task management. Schedule the coldest work for the warmest part of the day. Move work to warmer areas whenever possible. Assign extra workers to highly demanding tasks. Make relief workers available for workers who need a break. The buddy system is required for all waste site operations. This is particularly important when working in stressful environments. Minimize sitting still or standing around for long periods. Older workers need to be extra careful in the cold. Additional insulating clothing and reduced exposure time should be considered for these workers. Sufficient sleep and good nutrition are important for maintaining a high level of tolerance to cold.

6. Protective clothing/equipment.
   a. General considerations. Provisions for additional total body protection are required if work is performed in an environment at or below 4^{O} C (39.2^{O}F) At air temperatures of 2^{O}C (35.6^{O}F) workers who become immersed in water or whose clothing gets wet should be given dry clothing immediately and treated for hypothermia. Continuous exposure of skin should not be permitted when the air speed and temperature results in an equivalent chill temperature of -32^{O}C (-25.6^{O}F).
   b. Insulation. It is essential to preserve the air space between the body and the outer layer of clothing to retain body heat. The more air pockets each layer of clothing has, the better the insulation.
      i. Outer layer should be windproof and waterproof. Outer layers should not prevent sweat evaporation.
      ii. Dirty or greasy clothing loses much of its insulative value. Air pockets are crushed or filled, and heat can escape more easily.
      iii. Any interference with the circulation of blood reduces the amount of heat delivered to the extremities. All clothing should be loosely worn and unrestrictive.
   c. Chemical protective clothing (CPC) considerations. While CPC is important for protecting personnel from hazardous exposures, it is important to remember that CPC ensembles have undesirable, as well as desirable impacts on the cold stress on personnel.
      i. Undesirable effects. The desired insulating effect of clothing is negated if skin or clothing is wet. Protective clothing (for cold or chemical protection) can also add to the work load/fatigue of workers. When cold stress is a concern, care should be exercised in selecting ensembles particularly for those parts of the ensemble protecting the trunk of the body.

ii. Desirable. Liquids conduct heat better than air and have a greater capacity for heat than air. For example, a spill of cold gasoline on skin can freeze the tissue very quickly. Chemical resistant gloves, such as neoprene with cotton inserts, should be worn to prevent this localized cold stress.

d. Priority clothing. The most important parts of the body to protect are the feet, hands, head and face. Keeping the head covered is important because as much as 40% of body heat can be lost when the head is exposed.

e. Ensemble options. The following items should be considered for addition to worker ensembles in cold environments:

i. A cotton t-shirt and shorts under two-piece cotton and wool thermal underwear. Two-piece long underwear is preferred because the top can be removed and put back on as needed.

ii. Socks with high wool content. Use thin inner socks and thick outer socks. If cold, wet feet are a concern, the socks should be changed during the mid-shift break.

iii. Wool or thermal trousers (lap trousers over boot tops to keep out snow or water).

iv. Felt-lined, rubber-bottomed, leather-topped boots, with a removable insole (for heavy work). For chemical protective boots, air insole cushions and felt liners (steel/shank boots should be avoided unless needed for specific safety reasons).

v. Wool shirt or sweater over a cotton shirt.

vi. Wool knit cap (watch cap) or (if hard hats are required) specially made hard hat liner.

vii. Face mask (vital when working in cold wind). Note: Face protectors must be periodically removed so the worker can be checked for signs of frostbite.

viii. Double-layered goggles with foam padding around the edges (extremely cold environments).

ix. Insulated gloves.

60 degrees F, or lower, for sedentary work
40 degrees F, or lower, for light work
20 degrees F, or lower, for moderate work
0 degrees F, or lower, wool mittens should be used instead of gloves

f. Ensembles for work when water immersion may occur.

i. Floatation (personal or throwable) devices are extremely important to avoid unnecessary swimming that will increase the rate of body heat loss.

ii. Air trapped between layers of clothing will provide buoyancy and heat insulation, but Personal Floatation Devices (PFDs) offer the best chance for survival in cold water. Type III PFDs include float coats and cold water immersion suits which provide floatation and thermal protection.

iii. Position throwable floatation devices in boats or work areas near water.

g. Selection of materials.

MATERIAL	ADVANTAGES	DISADVANTAGES	WEAR IN
Wool	Stretches without damage. Insulates well when wet.	Heavy weight. Absorbs moisture. Skin irritant.	Layer 1-3
Cotton	Comfortable. Lightweight	Absorbs moisture.	Layer 1-2
Silk	Lightweight. Durable. Good insulator. Washes well.	Expensive. Does not transfer moisture well.	Layer 1
Nylon	Lightweight. Durable. Water resistant.	Impervious to perspiration. Flammable.	Layer 3
Down	Lightweight. Durable. Good insulator when dry.	Expensive. Hard to dry. Poor insulator when wet.	Layer 2-3
Polyester	Does not absorb moisture (insulates even when wet).	Heavier than down. Does not compress as well as down.	Layer 2-3

Exposure Monitoring Data

This document must be filled out at intervals determined by the Site Safety and Health Officer. A new form will be used each time and faxed or otherwise submitted to the Safety Officer for attachment or amendment to the Site Safety and Health Plan. All updates to this information must be retained and attached to the Site Safety and Health Plan.

Date:3/31/09 **Time:**

Location:

Type Monitoring	**Results**	**Comments**
Oxygen	21%	Expected result
LEL	0%	Expected result
H_2S	0.0 ppm	Expected result
Carbon Monoxide	0.0 ppm	Expected result
Total Hydrocarbons	Awaiting laboratory results	
Benzene	None anticipated (no spills)	

Other: _____

Instrumentation used:

Last date of calibration:

Survey performed by:

Comments:

Signature of Cognizant Authority	Title	Date & Time

Guidelines for Respirator Use

Oxygen-Deficient Atmosphere

NIOSH defines an oxygen-deficient atmosphere as any atmosphere containing oxygen at a concentration below 19.5% at sea level. NIOSH certification of supplied-air or air-purifying respirators is limited to those respirators used in atmospheres containing at least 19.5% oxygen, except for those supplied-air respirators equipped with auxiliary self-contained breathing apparatus (SCBA).

The minimum requirement of 19.5% oxygen at sea level provides an adequate amount of oxygen for most work assignments and includes a safety factor. The safety factor is needed because oxygen-deficient atmospheres offer little warning of the danger, and the continuous measurement of an oxygen-deficient atmosphere is difficult.

At oxygen concentrations below 16% at sea level, decreased mental effectiveness, visual acuity, and muscular coordination occur. At oxygen concentrations below 10%, loss of consciousness may occur, and below 6% oxygen, death will result. Often only mild subjective changes are noted by individuals exposed to low concentrations of oxygen, and collapse can occur without warning.

Since oxygen-deficient atmospheres are life-threatening, only the most reliable respirators are recommended; the most reliable respirators are the self-contained breathing apparatus or the supplied-air respirators with auxiliary self-contained units. Because a high protection factor is not necessary to ensure an adequate supply of oxygen even in an atmosphere containing no oxygen, any certified self-contained unit is adequate. All aspects of a respiratory protection program must be instituted for these recommendations to be valid.

Exposure Limits

The legal, enforceable exposure limit is the permissible exposure limit (PEL) set by OSHA. NIOSH develops recommended exposure limits (RELs) for hazardous substances. To formulate these recommendations, NIOSH evaluates all known available medical, biological and engineering, chemical trade, and other information relevant to the hazard. Other exposure limits that can be considered in making respirator selections include State-OSHA exposure limits (e.g., California), ACGIH TLVs, AIHA WEELs, corporate exposure limits, etc. The effectiveness of this RSL is limited to the adequacy of the selected exposure limits in protecting the health of workers. Exposure limits based on a thorough evaluation of more recent or extensive data should be given priority.

For all chemicals that cause irritation or systemic effects but do not cause carcinogenic effects, it is currently believed that a threshold exposure concentration exists such that virtually all persons in the working population (with the possible exception of hypersensitive individuals) would experience no adverse health effects.

Other variables such as the specific situation, worker, or job may influence the selection of the appropriate exposure limit for a given contaminant. For example, the effects of some hazardous substances may be increased due to exposure to other contaminants present in the workplace or the general environment or to medications or personal habits of the worker. Such factors, which would affect the toxicity of a contaminant, would not have been considered in the determination of the specific exposure limit. Also, some substances are absorbed by direct contact with the skin and mucous membranes, thus potentially increasing the total exposure.

Immediately Dangerous to Life or Health (IDLH)

An IDLH exposure condition is one that poses a threat of exposure to airborne contaminants when that exposure is likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from such an environment. The purpose of establishing an IDLH exposure level is to ensure that the worker can escape from a given contaminated environment in the event of failure of the respiratory protection equipment. The IDLH is considered a maximum level above which only a highly reliable breathing apparatus providing maximum worker protection is permitted. Any appropriate approved respirator may be used to its maximum use concentration up to the IDLH concentration.
In establishing the IDLH concentration, the following conditions must be assured:

a. The ability to escape without loss of life or immediate or delayed irreversible health effects. (Thirty minutes is considered the maximum time for escape so as to provide some margin of safety in calculating the IDLH.)

b. The prevention of severe eye or respiratory irritation or other reactions that would hinder escape.

Sources of information for determining whether the exposure limit for a contaminant represents an IDLH condition are as follows:

a. Specific IDLH guidelines provided in the literature such as the NIOSH Pocket Guide for Hazardous Chemical Substances (http://www.cdc.gov/niosh/npg/npg.html) and the American Industrial Hygiene Association (AIHA) Hygienic Guides.

b. Human exposure and effects data, and/or

c. Animal exposure and effects data, and/or

d. Where such data specific to the contaminant are lacking, toxicologic data from analogous substances and chronic animal exposure data may be considered.

Eye Irritation

Eye protection in the form of respirators with full facepieces, helmets, or hoods is required for routine exposures to airborne contaminants that cause any irritation to the mucous membranes of the conjunctivae or the cornea or cause any reflex tearing. Eye protection is required for contaminants that cause minor subjective effects as well as for those that cause any damage, including disintegration and sloughing of conjunctival or corneal epithelium, edema, or ulceration. NIOSH is not aware of any standards for gas-tight goggles that would permit NIOSH to recommend such goggles as providing adequate eye protection.

For escape, some eye irritation is permissible if the severity of irritation does not inhibit the escape and if no irreversible scarring or ulceration of the eyes or conjunctivae is likely.

When data on threshold levels for eye irritation are insufficient, quarter or half-mask respirators can be used, provided that the worker experiences no eye discomfort and no pathologic eye effects develop. Workers should be told that if any eye discomfort is experienced, they will be provided with respirators that have full facepieces, helmets, or hoods and that provide protection equivalent to the quarter- or half-mask respirators.

ATTACHMENT: MONITORING PROGRAM

Monitoring will be performed on an ongoing basis for airborne hydrocarbons. Direct reading instruments are being used. Personal exposure monitoring may be conducted at the recommendation of the Site Safety Officer or Industrial Hygienist. Laboratory analysis is required for some monitoring samples. Results will be made available to comany and contractor employees. See **Site Characterization and Analysis Form Attachment** and **Exposure Monitoring Form Attachment** for current data. These forms must be filled out completely, and updates to the information faxed or otherwise submitted to the Safety Officer for attachment or amendment to the Site Safety and Health Plan. All updates must be retained and attached to the Site Safety and Health Plan.

SITE:
DATE:

A. MONITORING PLAN:

1. Air monitoring at the spill site and surrounding areas will be done to ensure site worker and community safety.
2. Air monitoring will be done during work shift site characterization, and on each work shift during cleanup activities until results indicate no further monitoring is required.
3. All monitoring done at the cleanup site will be documented and the data maintained by qualified personnel on site.
4. Monitoring will be done in accordance with OSHA 29 CFR 1910.120. Monitoring to be done:

- during initial site entry and characterization;
- if a new potential inhalation hazard is introduced into the work area;
- during cleanup activities, on each work shift;
- if a new task is begun which may involve potential inhalation exposure.

B. INITIAL SITE MONITORING

1. Monitoring will be done during initial site entry. The monitoring will include checking for:
   - oxygen (O2) deficiency using a direct reading oxygen meter;
   - flammable atmospheres (%LEL) using a combustible gas indicator;
   - benzene, hydrogen sulfide, hydrocarbons, and combustion by-products (SO_2, CO), as needed, using direct-reading instruments, colorimetric indicator tubes, and/or other valid methods.
2. Instruments will be calibrated prior to and following use.
3. All monitoring will be documented. (See attached form for example.)

C. POST-EMERGENCY MONITORING (ON-GOING)

1. Monitoring for benzene, hydrogen sulfide, hydrocarbons and combustion by-products will be done during each work shift on an on-going basis, as needed. Repeat initial site monitoring if any significant changes occur (i.e., temperature increases, more material released, wind direction changes, etc.)
2. Checks for oxygen deficiency and flammable atmospheres will be made if confined spaces are encountered, or as required.
3. Exposure monitoring shall be done as necessary. Personnel samples will be collected under the direction of the industrial hygiene personnel. Samples will be analyzed by a laboratory accredited by the American Industrial Hygiene Association.
4. Results of site monitoring will be made available to site workers' supervision for informing all affected employees. Results will be available to the Command Center for review by regulatory

agencies.

SITE MONITORING DATA (EXAMPLE)

DATE/TIME	LOCATION	%LEL	$\%O_2$	BENZENE (PPM)	H_2S (PPM)	OTHER SPECIFY (PPM)	COLLECTED BY

MATERIAL SAFETY DATA SHEET

PRODUCT

COREXIT® 9500

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : **COREXIT® 9500**

APPLICATION : OIL SPILL DISPERSANT

COMPANY IDENTIFICATION : Nalco Energy Services, L.P.
P.O. Box 87
Sugar Land, Texas
77487-0087

EMERGENCY TELEPHONE NUMBER(S) : (800) 424-9300 (24 Hours) CHEMTREC

NFPA 704M/HMIS RATING
HEALTH : 1 / 1 FLAMMABILITY : 1 / 1 INSTABILITY : 0 / 0 OTHER :
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical substance(s) as hazardous. Consult Section 15 for the nature of the hazard(s).

Hazardous Substance(s)	CAS NO	% (w/w)
Distillates, petroleum, hydrotreated light	64742-47-8	10.0 - 30.0
Propylene Glycol	57-55-6	1.0 - 5.0
Organic sulfonic acid salt	Proprietary	10.0 - 30.0

3. HAZARDS IDENTIFICATION

****EMERGENCY OVERVIEW****

WARNING
Combustible.
Keep away from heat. Keep away from sources of ignition - No smoking. Keep container tightly closed. Do not get in eyes, on skin, on clothing. Do not take internally. Avoid breathing vapor. Use with adequate ventilation. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of soap and water.
Wear suitable protective clothing.
Low Fire Hazard; liquids may burn upon heating to temperatures at or above the flash point. May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of sulfur (SOx) under fire conditions.

PRIMARY ROUTES OF EXPOSURE :
Eye, Skin

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :
May cause irritation with prolonged contact.

SKIN CONTACT :
May cause irritation with prolonged contact.

INGESTION :
Not a likely route of exposure. Can cause chemical pneumonia if aspirated into lungs following ingestion.

INHALATION :
Repeated or prolonged exposure may irritate the respiratory tract.

SYMPTOMS OF EXPOSURE :
Acute :
A review of available data does not identify any symptoms from exposure not previously mentioned.
Chronic :
Frequent or prolonged contact with product may defat and dry the skin, leading to discomfort and dermatitis.

AGGRAVATION OF EXISTING CONDITIONS :
Skin contact may aggravate an existing dermatitis condition.

4. FIRST AID MEASURES

EYE CONTACT :
Immediately flush with plenty of water for at least 15 minutes. If symptoms develop, seek medical advice.

SKIN CONTACT :
Immediately wash with plenty of soap and water. If symptoms develop, seek medical advice.

INGESTION :
Do not induce vomiting: contains petroleum distillates and/or aromatic solvents. If conscious, washout mouth and give water to drink. Get medical attention.

INHALATION :
Remove to fresh air, treat symptomatically. Get medical attention.

NOTE TO PHYSICIAN :
Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT :	181.4 °F / 83 °C (PMCC)
LOWER EXPLOSION LIMIT :	Not flammable
UPPER EXPLOSION LIMIT :	Not flammable

EXTINGUISHING MEDIA :
Alcohol foam, Carbon dioxide, Foam, Dry powder, Other extinguishing agent suitable for Class B fires, For large fires, use water spray or fog, thoroughly drenching the burning material.
Water mist may be used to cool closed containers.

UNSUITABLE EXTINGUISHING MEDIA :
Do not use water unless flooding amounts are available.

FIRE AND EXPLOSION HAZARD :
Low Fire Hazard; liquids may burn upon heating to temperatures at or above the flash point. May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of sulfur (SOx) under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :
In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :
Restrict access to area as appropriate until clean-up operations are complete. Stop or reduce any leaks if it is safe to do so. Ventilate spill area if possible. Do not touch spilled material. Remove sources of ignition. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Notify appropriate government, occupational health and safety and environmental authorities.

METHODS FOR CLEANING UP :
SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. LARGE SPILLS: Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Clean contaminated surfaces with water or aqueous cleaning agents. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :
Do not contaminate surface water.

7. HANDLING AND STORAGE

HANDLING :
Use with adequate ventilation. Keep the containers closed when not in use. Do not take internally. Do not get in eyes, on skin, on clothing. Have emergency equipment (for fires, spills, leaks, etc.) readily available.

STORAGE CONDITIONS :
Store away from heat and sources of ignition. Store separately from oxidizers. Store the containers tightly closed.

SUITABLE CONSTRUCTION MATERIAL :
Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :
Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.

ACGIH/TLV :
Substance(s)

Oil Mist	TWA: 5 mg/m3 STEL: 10 mg/m3
Propylene Glycol	

OSHA/PEL :
Substance(s)

Oil Mist	TWA: 5 mg/m3 STEL: 10 mg/m3
Propylene Glycol	

AIHA/WEEL :
Substance(s)

ENGINEERING MEASURES :
General ventilation is recommended.

RESPIRATORY PROTECTION :
Where concentrations in air may exceed the limits given in this section, the use of a half face filter mask or air supplied breathing apparatus is recommended. A suitable filter material depends on the amount and type of chemicals being handled. Consider the use of filter type: Multi-contaminant cartridge. with a Particulate pre-filter. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION :
Nitrile gloves, PVC gloves

SKIN PROTECTION :
Wear standard protective clothing.

EYE PROTECTION :
Wear chemical splash goggles.

HYGIENE RECOMMENDATIONS :
Keep an eye wash fountain available. Keep a safety shower available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

HUMAN EXPOSURE CHARACTERIZATION :
Based on our recommended product application and personal protective equipment, the potential human exposure is: Low

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Clear Hazy Amber
ODOR	Hydrocarbon

SPECIFIC GRAVITY	0.95 @ 60 °F / 15.6 °C
DENSITY	7.91 lb/gal
SOLUBILITY IN WATER	Miscible
pH (100 %)	6.2
VISCOSITY	177 cps @ 32 °F / 0 °C 70 cps @ 60 °F / 15.6 °C @ 104 °F / 40 °C
VISCOSITY	@ 32 °F / 0 °C @ 60 °F / 15.6 °C 22.5 cst @ 104 °F / 40 °C
POUR POINT	< -71 °F / < -57 °C
BOILING POINT	296 °F / 147 °C
VAPOR PRESSURE	15.5 mm Hg @ 100 °F / 37.8 °C

Note: These physical properties are typical values for this product and are subject to change.

10. STABILITY AND REACTIVITY

STABILITY :
Stable under normal conditions.

HAZARDOUS POLYMERIZATION :
Hazardous polymerization will not occur.

CONDITIONS TO AVOID :
Heat

MATERIALS TO AVOID :
Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

HAZARDOUS DECOMPOSITION PRODUCTS :
Under fire conditions: Oxides of carbon, Oxides of sulfur

11. TOXICOLOGICAL INFORMATION

No toxicity studies have been conducted on this product.

SENSITIZATION :
This product is not expected to be a sensitizer.

CARCINOGENICITY :
None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

HUMAN HAZARD CHARACTERIZATION :
Based on our hazard characterization, the potential human hazard is: Moderate

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

The following results are for the product.

ACUTE INVERTEBRATE RESULTS :

Species	Exposure	LC50	EC50	Test Descriptor
Acartia tonsa	48 hrs	34 mg/l		Product
Artemia	48 hrs	20.7 mg/l		Product

MOBILITY :
The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM , provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models. If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	Water	Soil/Sediment
<5%	10 - 30%	50 - 70%

The portion in water is expected to float on the surface.

BIOACCUMULATION POTENTIAL
Component substances have a potential to bioconcentrate.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is: Low
Based on our recommended product application and the product's characteristics, the potential environmental exposure is: Low

If released into the environment, see CERCLA/SUPERFUND in Section 15.

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste: D018

Hazardous wastes must be transported by a licensed hazardous waste transporter and disposed of or treated in a properly licensed hazardous waste treatment, storage, disposal or recycling facility. Consult local, state, and federal regulations for specific requirements.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

LAND TRANSPORT :

For Packages Less Than Or Equal To 119 Gallons:

Proper Shipping Name :	PRODUCT IS NOT REGULATED DURING TRANSPORTATION

For Packages Greater Than 119 Gallons:

Proper Shipping Name :	COMBUSTIBLE LIQUID, N.O.S.
Technical Name(s) :	PETROLEUM DISTILLATES
UN/ID No :	NA 1993
Hazard Class - Primary :	COMBUSTIBLE
Packing Group :	III
Flash Point :	83 °C / 181.4 °F

AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name :	PRODUCT IS NOT REGULATED DURING TRANSPORTATION

MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name :	PRODUCT IS NOT REGULATED DURING TRANSPORTATION

15. REGULATORY INFORMATION

NATIONAL REGULATIONS, USA :

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :
Based on our hazard evaluation, the following substance(s) in this product is/are hazardous and the reason(s) is/are shown below.

Distillates, petroleum, hydrotreated light : Irritant
Propylene Glycol : Exposure Limit, Eye irritant
Organic sulfonic acid salt : Irritant

CERCLA/SUPERFUND, 40 CFR 117, 302 :
Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312, AND 313 :

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355) :
This product does not contain substances listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370) :
Our hazard evaluation has found this product to be hazardous. The product should be reported under the following indicated EPA hazard categories:

X	Immediate (Acute) Health Hazard
-	Delayed (Chronic) Health Hazard
-	Fire Hazard
-	Sudden Release of Pressure Hazard
-	Reactive Hazard

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) :
This product does not contain substances on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA) :
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 / formerly Sec. 307, 40 CFR 116.4 / formerly Sec. 311 :
None of the substances are specifically listed in the regulation.

CLEAN AIR ACT, Sec. 111 (40 CFR 60, Volatile Organic Compounds), Sec. 112 (40 CFR 61, Hazardous Air Pollutants), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :
None of the substances are specifically listed in the regulation.

Substance(s)	Citations
• Propylene Glycol	Sec. 111

CALIFORNIA PROPOSITION 65 :
This product does not contain substances which require warning under California Proposition 65.

MICHIGAN CRITICAL MATERIALS :
None of the substances are specifically listed in the regulation.

STATE RIGHT TO KNOW LAWS :
The following substances are disclosed for compliance with State Right to Know Laws:

Propylene Glycol	57-55-6

NATIONAL REGULATIONS, CANADA :

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) :
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS CLASSIFICATION :
Not considered a WHMIS controlled product.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :
The substances in this preparation are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

16. OTHER INFORMATION

Due to our commitment to Product Stewardship, we have evaluated the human and environmental hazards and exposures of this product. Based on our recommended use of this product, we have characterized the product's general risk. This information should provide assistance for your own risk management practices. We have evaluated our product's risk as follows:

* The human risk is: Low

* The environmental risk is: Low

Any use inconsistent with our recommendations may affect the risk characterization. Our sales representative will assist you to determine if your product application is consistent with our recommendations. Together we can implement an appropriate risk management process.

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH., (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH, (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

Ariel Insight# (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

Prepared By : Product Safety Department
Date issued : 06/14/2005
Version Number : 1.6

SAFETY DATA SHEET

PRODUCT

COREXIT(R) EC9527A

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : **COREXIT(R) EC9527A**

APPLICATION : OIL SPILL DISPERSANT

COMPANY IDENTIFICATION : Nalco Company
1601 W. Diehl Road
Naperville, Illinois
60563-1198

EMERGENCY TELEPHONE NUMBER(S) : (800) 424-9300 (24 Hours) CHEMTREC

NFPA 704M/HMIS RATING
HEALTH : 2 / 2 FLAMMABILITY : 1 / 1 INSTABILITY : 0 / 0 OTHER :
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical substance(s) as hazardous. Consult Section 15 for the nature of the hazard(s).

Hazardous Substance(s)	CAS NO	% (w/w)
2-Butoxyethanol	111-76-2	30.0 - 60.0
Organic sulfonic acid salt	Proprietary	10.0 - 30.0
Propylene Glycol	57-55-6	1.0 - 5.0

3. HAZARDS IDENTIFICATION

****EMERGENCY OVERVIEW****

WARNING
Eye and skin irritant. Repeated or excessive exposure to butoxyethanol may cause injury to red blood cells (hemolysis), kidney or the liver. Harmful by inhalation, in contact with skin and if swallowed.
Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Wear suitable protective clothing. Keep container tightly closed. Flush affected area with water. Keep away from heat. Keep away from sources of ignition - No smoking.
May evolve oxides of carbon (COx) under fire conditions.

PRIMARY ROUTES OF EXPOSURE :
Eye, Skin

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :
Can cause moderate irritation.

SKIN CONTACT :
Can cause moderate irritation. Harmful if absorbed through skin.

INGESTION :
May be harmful if swallowed. May cause liver and kidney effects and/or damage. There may be irritation to the gastro-intestinal tract.

INHALATION :
Harmful by inhalation. Repeated or prolonged exposure may irritate the respiratory tract.

SYMPTOMS OF EXPOSURE :
Acute :
Excessive exposure may cause central nervous system effects, nausea, vomiting, anesthetic or narcotic effects.
Chronic :
Repeated or excessive exposure to butoxyethanol may cause injury to red blood cells (hemolysis), kidney or the liver.

AGGRAVATION OF EXISTING CONDITIONS :
Skin contact may aggravate an existing dermatitis condition.

HUMAN HEALTH HAZARDS - CHRONIC :
Contains ethylene glycol monobutyl ether (butoxyethanol). Prolonged and/or repeated exposure through inhalation or extensive skin contact with EGBE may result in damage to the blood and kidneys.

4. FIRST AID MEASURES

EYE CONTACT :
Flush affected area with water. Get medical attention.

SKIN CONTACT :
Flush affected area with water. Get medical attention.

INGESTION :
Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink. Get medical attention.

INHALATION :
Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.

NOTE TO PHYSICIAN :
Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT : 163 °F / 72.7 °C (TCC)

This product does not sustain combustion per the method outlined in 49 CFR Appendix H.

EXTINGUISHING MEDIA :
This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use extinguishing media appropriate for surrounding fire.

FIRE AND EXPLOSION HAZARD :
May evolve oxides of carbon (COx) under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :
In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :
Restrict access to area as appropriate until clean-up operations are complete. Stop or reduce any leaks if it is safe to do so. Do not touch spilled material. Ventilate spill area if possible. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection).

METHODS FOR CLEANING UP :
SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. LARGE SPILLS: Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :
Do not contaminate surface water.

7. HANDLING AND STORAGE

HANDLING :
Avoid eye and skin contact. Do not take internally. Ensure all containers are labeled. Keep the containers closed when not in use.

STORAGE CONDITIONS :
Store the containers tightly closed.

SUITABLE CONSTRUCTION MATERIAL :
Stainless Steel 316L, Hastelloy C-276, MDPE (medium density polyethylene), Nitrile, Plexiglass, Kalrez, TFE, Alfax, Teflon, HDPE (high density polyethylene), Neoprene, Aluminum, Polypropylene, Polyethylene, Carbon Steel C1018, Stainless Steel 304, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use., FEP (encapsulated), Perfluoroelastomer, PVC

UNSUITABLE CONSTRUCTION MATERIAL :
Copper, Mild steel, Brass, Nylon, Buna-N, Natural rubber, Polyurethane, Hypalon, Viton, Ethylene propylene, EPDM

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :
Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.

ACGIH/TLV :
Substance(s)
2-Butoxyethanol TWA: 20 ppm , 97 mg/m3

Propylene Glycol
OSHA/PEL :
Substance(s)
2-Butoxyethanol TWA: 50 ppm , 240 mg/m3 (Skin)

Propylene Glycol
AIHA/WEEL :
Substance(s)
For propylene glycol, an 8 hour TWA of 10 mg/m3 (aerosol) and 50 ppm (total).

ENGINEERING MEASURES :
General ventilation is recommended.

RESPIRATORY PROTECTION :
Where concentrations in air may exceed the limits given in this section, the use of a half face filter mask or air supplied breathing apparatus is recommended. A suitable filter material depends on the amount and type of chemicals being handled. Consider the use of filter type: Multi-contaminant cartridge. with a Particulate pre-filter. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION :
Neoprene gloves, Nitrile gloves, Butyl gloves, PVC gloves

SKIN PROTECTION :
Wear standard protective clothing.

EYE PROTECTION :
Wear chemical splash goggles.

HYGIENE RECOMMENDATIONS :
Keep an eye wash fountain available. Keep a safety shower available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

HUMAN EXPOSURE CHARACTERIZATION :
Based on our recommended product application and personal protective equipment, the potential human exposure is: Low

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Clear Amber
ODOR	Mild

SPECIFIC GRAVITY	0.98 - 1.02
DENSITY	8.2 - 8.5 lb/gal
SOLUBILITY IN WATER	Complete
pH (100 %)	6.1
VISCOSITY	160 cst @ 32 °F / 0 °C
POUR POINT	ASTM D-97 -66.9 °F / -55 °C
POUR POINT	< -40 °F / < -40 °C
BOILING POINT	340 °F / 171 °C
VAPOR PRESSURE	< 5 mm Hg @ 100 °F / 38 °C Same as water
EVAPORATION RATE	0.1

Note: These physical properties are typical values for this product and are subject to change.

10. STABILITY AND REACTIVITY

STABILITY :
Stable under normal conditions.

HAZARDOUS POLYMERIZATION :
Hazardous polymerization will not occur.

CONDITIONS TO AVOID :
Extremes of temperature

MATERIALS TO AVOID :
Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

HAZARDOUS DECOMPOSITION PRODUCTS :
Under fire conditions: Oxides of carbon

11. TOXICOLOGICAL INFORMATION

No toxicity studies have been conducted on this product.

SENSITIZATION :
This product is not expected to be a sensitizer.

CARCINOGENICITY :
None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

HUMAN HAZARD CHARACTERIZATION :
Based on our hazard characterization, the potential human hazard is: High

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

No toxicity studies have been conducted on this product.

ACUTE FISH RESULTS :

Species	Exposure	LC50	Test Descriptor
Turbot	96 hrs	50 mg/l	

MOBILITY :
The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.
If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	Water	Soil/Sediment
<5%	10 - 30%	70 - 90%

The portion in water is expected to be soluble or dispersible.

BIOACCUMULATION POTENTIAL
Component substances have a low potential to bioconcentrate.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is: Moderate
Based on our recommended product application and the product's characteristics, the potential environmental exposure is: Low

If released into the environment, see CERCLA/SUPERFUND in Section 15.

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous waste, it is not subject to federal regulation. Consult state or local regulation for any additional handling, treatment or disposal requirements. For disposal, contact a properly licensed waste treatment, storage, disposal or recycling facility.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

LAND TRANSPORT :

Proper Shipping Name :	PRODUCT IS NOT REGULATED DURING TRANSPORTATION

AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name :	PRODUCT IS NOT REGULATED DURING TRANSPORTATION

MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name :	PRODUCT IS NOT REGULATED DURING TRANSPORTATION

15. REGULATORY INFORMATION

This section contains additional information that may have relevance to regulatory compliance. The information in this section is for reference only. It is not exhaustive, and should not be relied upon to take the place of an individualized compliance or hazard assessment. Nalco accepts no liability for the use of this information.

NATIONAL REGULATIONS, USA :

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :
Based on our hazard evaluation, none of the substances in this product are hazardous.

CERCLA/SUPERFUND, 40 CFR 117, 302 :
Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312, AND 313 :

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355) :
This product does not contain substances listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370) :
Our hazard evaluation has found this product to be hazardous. The product should be reported under the following indicated EPA hazard categories:

X	Immediate (Acute) Health Hazard
X	Delayed (Chronic) Health Hazard
X	Fire Hazard
	Sudden Release of Pressure Hazard
	Reactive Hazard

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) :
This product contains the following substance(s), (with CAS # and % range) which appear(s) on the List of Toxic Chemicals

Hazardous Substance(s)	CAS NO	% (w/w)
Glycol Ethers		30 - 60

TOXIC SUBSTANCES CONTROL ACT (TSCA) :
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 / formerly Sec. 307, 40 CFR 116.4 / formerly Sec. 311 :
None of the substances are specifically listed in the regulation.

CLEAN AIR ACT, Sec. 112 (40 CFR 61, Hazardous Air Pollutants), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :
None of the substances are specifically listed in the regulation.

CALIFORNIA PROPOSITION 65 :
This product does not contain substances which require warning under California Proposition 65.

MICHIGAN CRITICAL MATERIALS :
None of the substances are specifically listed in the regulation.

STATE RIGHT TO KNOW LAWS :
The following substances are disclosed for compliance with State Right to Know Laws:

2-Butoxyethanol	111-76-2
Propylene Glycol	57-55-6

NATIONAL REGULATIONS, CANADA :

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) :
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS CLASSIFICATION :
D2B - Materials Causing Other Toxic Effects - Toxic Material

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :
The substances in this preparation are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

AUSTRALIA
All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA
All substances in this product comply with the Chemical Control Law and are listed on the Inventory of Existing Chemical Substances China (IECSC).

EUROPE
The substance(s) in this preparation are included in or exempted from the EINECS or ELINCS inventories

JAPAN
All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Ministry of International Trade & industry List (MITI).

KOREA
All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

PHILIPPINES
All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

16. OTHER INFORMATION

Due to our commitment to Product Stewardship, we have evaluated the human and environmental hazards and exposures of this product. Based on our recommended use of this product, we have characterized the product's general risk. This information should provide assistance for your own risk management practices. We have evaluated our product's risk as follows:

* The human risk is: Low

* The environmental risk is: Low

Any use inconsistent with our recommendations may affect the risk characterization. Our sales representative will assist you to determine if your product application is consistent with our recommendations. Together we can implement an appropriate risk management process.

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH., (Ariel Insight™™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS™™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS™™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight™™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH, (TOMES CPS™™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Ariel Insight™™ (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight™™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS™™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Prepared By : Product Safety Department
Date issued : 10/15/2008
Version Number : 1.7

APPENDIX: PERSONNEL TRACKING SYSTEM

Anyone entering or departing a work area, shall report to the site supervisor or designated representative.

Please complete upon entering or departing the site:

NAME	LOCATION	TIME - ENTRY/EXIT

Job Safety Analysis

Field Team:
Cook Inlet

JSA Type:
Operations

Work Type:
Commodity Transfer

Job Description:
Overwater transportation and platform entry from vessel.

Job Site:
Drift River Terminal

Date:
4/2/2009

Creator/Modifier:
Harding, Christopher (CHDZ)

Approver:
Ficken, Rodney(FICK)

Risk Level:
High Risk Non-routine Job

Control ID:
1000515

Status:
Initial

In case of an incident, the following people will be contacted:

CPL Rep:
Ops supervisor
Ph #
907-776-6800 ext.103

Contract Rep:
_____
Ph #
_____

Other:
Team leader
Ph #
907-263-7993

Seq. No
Sequence Of Job Steps
Potential Hazard(s)
Recommended Action

During the Safety Analysis, consider the following:

1
Mount the Billy Pugh. (Optional)
gravity - slips trips and falls
Mount the Billy Pugh on a solid surface. Ensure that grip is adequate.

Inhalation Skin Contact

Absorption Injection

2
Overwater travel. (Optional)
gravity - falls and or drowning motion - swinging Billy Pugh
Ensure proper PPE is obtained for over water operations. Ensure that grip is adequate. Travel over water only when conditions are favorable. Have capabilities in place for a water rescue.

Bloodborne Pathogens

Plant/Insect/Animal

3	Dismount the Billy Pugh. (Optional) gravity - slips trips and falls Dismount the Billy Pugh on a solid surface and watch for solid footing. Ensure that grip is adequate. Ensure proper PPE is obtained for over water operations.	Electrical Fire/Explosion Noise Radiation Heat/Cold Stress Pinch Point/Line of Fire Walking/Working Surfaces Strike against/Struck by Stored Energy
4	Ladder or walkway use for overwater travel gravity - falls and or drowning motion - unstable walkway Ensure proper PPE is obtained for over water operations. Ensure that walkway or ladder is stable for personnel transfer. Ensure that grip is adequate. Travel over water only when conditions are favorable. Use stop work in necessary.	
5	Platform entry gravity - slips, trips and falls motion - wind and lifting Ensure proper PPE is obtained for over water operations. Ensure that the ladder is stable for personnel use. Obtain and use fall protection equipment if necessary. Use two people to set the ladder. Stay away from fender edge whenever possible.	
6		Repetition Forceful exertion Body Positioning Work Area Design
7		
8		SSE/Mentor New to area New to job
9		Weather (rain, cold, etc) Wet, humid, slippery
10		

What conditions or job changes or distractions will trigger the use of Stop Work Authority on this job? High seas, heavy ice, high winds

JSA Reviewed by:

Last Name	First Name	Review Date
Burcham	John	04/02/2009
Harding	Christopher	04/02/2009

JOB SITE SAFETY PLANS
(JSSP)
JSSP is not a substitute for the Safe Work Permit or any other CPL required permit.

PURPOSE:
This Site Safety Plan must be completed to:

- Comply with Chevron Pipe Line Company's Incident Reduction Program requirements.

This plan, which must remain on site, shall address all safety and health hazards and include the requirements for employee protection.

SCOPE:
This plan applies to all **Emergency Response incidents** and the personnel, company and contractor, working in or on Chevron Pipe Line Company owned or operated facilities.

Note: The JSSP can be used as tool for planning work activities. The JSSP does not replace any CPL required permits for normal work activities.

INSTRUCTIONS:

Complete Section I, **Hazards Analysis** for all jobs listed above. A hazards analysis shall be performed by a qualified employee in order to aid in the selection of appropriate personal protective methods prior to commencing work activities.

Complete Section II, **Job Specific Activity Planning** for only those jobs listed above that involve confined space entry; excavation; lockout/tagout; or hot work. Complete only those sections that apply to the job.

Complete Section III, **Specific Requirements for Emergency Response and Clean-up Operations** for those jobs involving emergency response activities covered by HAZWOPER.

I. HAZARDS ANALYSIS

All suspected conditions that might pose safety and health hazards shall be identified and evaluated. Identify specific safety and health hazards and determine the appropriate safety and health control procedures needed to protect personnel from the identified hazards.

DATE(s):	**3/24/09 – end of clean up method**

LOCATION:	**Drift River Terminal**

SITE DESCRIPTION: Describe the work site and the surrounding terrain. Attach a map to this plan, if available.

Work will occur within the Drift River Terminal facility.

WORKPLAN: Brief description of the work (project/clean-up operation) and related work activities and tasks, approximate work force, tools to be used, expected duration of project/clean-up operation, and any special equipment to be used.

Description of Work:
Restoration of CIPL Operations and Resumption of Service

Related Work Activities:
1)Removal of mud deposits within the confines of Drift River Terminal and runway;
2)Habitability restoration of I-Building and Living Quarters;
3) Resumption of pipeline, terminal and platform operations;
4) Restoration and integrity verification of electrical generation and distribution systems
5) Restoration and integrity verification of rotating and mechanical equipment
6) Restoration and integrity verification of heating units (boilers)
7) Restoration and integrity verification of potable water system and components

Tasks:
1) Mechanized (heavy) equipment operation
2) Use of hand tools
3) General Cleaning and Housekeeping
4) Restoration and testing of pipeline and terminal monitoring software programs and SCADA
5) Aerial Patrol of 20" mainline and submarine line, pre and post test
6) Stand-up test of 20" mainline and submarine line

Consultant Support:
Aware Consulting-
1)Provide onsite Industrial Hygiene support at Drift River Terminal to assess IH conditions:
A) Atmospheric Monitoring to determine potential employee exposure hazards such as but not limited to:
- Particulates, H2S
- Volcanic Ash (general air quality)
- Benzene
- Heavy Metals (Mercury)
- NORM

2) Soil will be tested to determine appropriate PPE and assess soil characteristics
-Onsite Litmus test
-Obtain sample for laboratory analysis (NORM, Heavy Metals, Chemical Composition or others)
3) Well Water Sampling to test for standard Safe Drinking Water Act parameters
- employees will drink bottled water provided on site
4) Personnel Monitoring Capabilities will be utilized to monitor for typical regulated parameters such as but not limited to:
-Organic Vapor
-Particulates, Heavy Metals
5) Perform site assessment of I-Bldg and Living Quarters for potential mold issues and other health concerns
6) Perform site assessment of I-Bldg and White Bldg for potential Asbestos Containing Material concerns

Oil Risk Consultants:
1) Development of Floodwater Contaminant and Mitigation Plan

AECOM:
1) Drift River Mud Disposal Options
A) Coordination with Alaska Coastal Management Program

SAFETY AND HEALTH HAZARDS: Describe safety and health hazards which may be associated with the workplan described above. Potential hazards may include: (check all that apply)

X	inhalation of hazardous substance (list below)	X	hazards to eyes
X	skin contact with hazardous substance (list below)	X	cuts and abrasions
X	flammable or toxic substances (list below)	X	vehicular / pedestrian traffic
	heat stress and/or exhaustion		confined space entry
X	cold stress		excavation
	noise		lockout/tagout
X	water hazards		hot work
X	other hazards / concerns (list)		

Comments: These items can/will change based on IH monitoring.

Potential Inhalation Hazards: Volcanic Ash, Benzene, Airborne Heavy Metals, Asbestos Containing Materials, Compounds of Sulfur
Potential Skin Hazards: Caustic Ash, Heavy Metals
Potential Flammable or Toxic substances: Crude Oil, Gasoline, Jet Fuel, Diesel
Other Hazards (potential): Acidic mud, toxins within mud, Hot Volcanic rocks within the mud; Visually evaluate the structural integrity of buildings from exterior prior to entering.
Other Hazards (known): Ballast Boiler System has ACM on lines going to/from the boilers; The boiler system contains glycol
Vehicular/Pedestrian Traffic: Roadway surfaces minimized due to mud intrusion. As such Equipment and employees on foot will be working and operating within a smaller surface area thereby increasing the potential for two or more persons or objects to occupy the same space.

MATERIAL CHARACTERIZATION: Data will be provided when available from lab results.

MATERIAL	PEL / IDLH	HEALTH HAZARDS	ROUTE(S) OF EXPOSURE
Crude Oil	Refer to Section 2 of Attached MSDS	Refer to Section 3 of Attached MSDS	Eye contact; Skin Contact; Inhalation; Ingestion
Jet Fuel	Refer to Section 8 of Attached MSDS	Refer to Section 11 of Attached MSDS	Eye Contact; Skin Contact; Inhalation; Ingestion
Diesel Fuel	Refer to Section 8 of Attached MSDS	Refer to Section 11 of Attached MSDS	Eye Contact; Skin Contact; Ingestion; Inhalation
Gasoline	Refer to Section 8 of Attached MSDS	Refer to Section 3 of Attached MSDS	Eye Contact; Skin Contact; Ingestion; Inhalation
H2S	Refer to Section 2 of Attached MSDS	Refer to Section 3 of Attached MSDS	Eye Contact; Skin Contact; Ingestion; Inhalation
Crystalline Silica	Refer to Section 8 of Attached MSDS	Refer to Section 2 of Attached MSDS	Inhalation, Eye Contact, Skin Contact,
Sulphur dioxide	Refer to Section 2 of Attached MSDS	Refer to Section 3 of Attached MSDS	Skin contact; Eye Contact; Inhalation
Carbon dioxide	Refer to Section 2 of Attached MSDS	Refer to section 3 of Attached MSDS	Eye Contact; Skin Contact; Inhalation
Hydrogen Chloride	Refer to Section 2 of Attached MSDS	Refer to Section 3 of Attached MSDS	Skin Contact; Eye Contact; Inhalation
Hydrogen Flouride	Refer to Section 2 of Attached MSDS	Refer to Section 3 of Attached MSDS	Skin Contact; Eye Contact; Inhalation
Particulates not otherwise regulated	OSHA TWA: Total Dust 15 mg/m^3; Respirable Fraction 5 mg/m^3	Irritation, allergic reaction or other damage to the lungs, respiratory tract, and/or mucous membranes. Second, the foreign substance may be absorbed into the bloodstream in the lungs and then distributed through the body. May cause	Skin Contact; Eye Contact; Inhalation

		dry eye syndrome or other irritation to the eyes. May cause skin to be itchy and lead to infection through the openings in skin caused by repetetive scratching.	

ATTACHED MSDS(s): A MSDS's must be available on site for all chemicals used on the project or during the clean-up operations. Attach all MSDS's and list all MSDS's that are attached below.

Crude Oil, Jet Fuel, Diesel Fuel, Gasoline, H2S, Crystalline Silica, Sulphur Dioxide, Carbon Dioxide, Hydrogen Chloride, Hydrogen Flouride

INITIAL ASSESSMENT: **I**nitial air monitoring data will be provided when it is available. Air monitoring conducted after the initial assessment should be entered onto the monitoring log sheet on page or lab results will be attached.

MATERIAL	DATE & TIME	LOCATION	RESULTS	SAMPLED BY

PERSONAL PROTECTIVE EQUIPMENT REQUIRED: (Check all that apply)

X	Boots	X	Respirators (check appropriate type) **IF APPLICABLE PER MONITORING RESULTS**
	Slicker Suit		Half-mask cartridge
	Tyvek Suit (may include hoods/ booties)		Full mask cartridge
X	Nomex Clothing	X	Specific cartridge type for job activity based on LEL parameters **IF APPLICABLE PER MONITORING RESULTS**
X	Gloves	X	Nuisance or disposable dust masks in the event that Volcanic Ash is present **IF APPLICABLE PER MONITORING RESULTS**
	Goggles		
X	Safety Glasses		Self-Contained Breathing Apparatus
X	Hard Hat		Airline Unit
	Other (specify)		

SAFETY EQUIPMENT:

First aid supplies	location(s):	I-Building, Hangar
Bottled Water	On site	On site
Shelter in Place	Safe Haven	Safe Have
Eye wash/Shower	location(s)	I-Building, Hangar

EMERGENCY EVACUATION: If an emergency occurs at this site, how will workers be alerted and where should personnel evacuate to? Review with all personnel.

Via two way radio, Vehicle Horns, Verbal Shouting. Evacuate to helicopter landing zone for evacuation.

Notify AVO (907.786.7497) that workers will be onsite. Provide ETA and duration. Provide AVO with a point of contact (Rod, Margaret or others) who can alert workers onsite at Drift River in the event of an eruption.

EMERGENCY INFORMATION: List phone numbers of local emergency services.

NOTE: Best Practice- List direct numbers to local Law and ER response personnel. Avoid using 911.

Alaska Volcano Observatory	**907.786.7497**
AXIOM: Case Management	**877-502-9466**
FIRE: Kenai	**907.283.7666 (primary contact for DRT)**
FIRE: Nikiski	**907.283.4202**
DOCTOR:	**907.714.4444 (Central Peninsula Hospital/Soldotna)**
HOSPITAL:	**907.714.4444 (Central Peninsula Hospital/Soldotna)**
AK Air National Guard: Ambulatory	**907.428.6085 (Airlift Medical Team)**
HOSPITAL:	**907.714.4444 (Central Peninsula Hospital/Soldotna)**
Kenai Police:	**907.283.7989; 7980**
AK Troopers:	**907.262.4453**
Homer Police:	**907.235.3150**

PRE-START UP BRIEFING: The Project Coordinator or Incident Commander will ensure that pre-start up briefings are conducted before commencing any work to ensure employees and contractors are aware of this entire work plan. Briefly outline this process below.

II. JOB SPECIFIC ACTIVITY PLANNING:

Check and complete all sections that apply to this project or clean-up operations.

	CONFINED SPACE:

Briefly describe the work activity, if any, involving confined spaces and complete the Confined Space Entry Permit (CTPC-684) and the Emergency Action Plan (CPL-683), as required by HES Procedure (HES-201), Confined Space Operations.

	EXCAVATION:

Briefly describe the work activity, if any, involving excavations and complete the Excavation Work Permit (CTPC-687) and the Competent Safety Person - Daily Excavation Inspection form (CPL-688), as required by HES Procedure (HES-202), Excavations.

	LOCKOUT/TAGOUT:

Briefly describe the work activity, if any, involving lockout/tagout and complete the Equipment Specific Procedure Sheet (CTPC-679) as required by HES Procedure (HES-203), Isolation and Release of Equipment/Systems for Work.

	HOT WORK:

Briefly describe the work activity, if any, involving hot work and complete the Hot Work Permit (CTPC-682) as required by HES Procedure (HES-205), Hot Work.

III. SPECIFIC REQUIREMENTS FOR EMERGENCY RESPONSE AND CLEAN-UP OPERATIONS

Complete this section for those jobs involving emergency response activities covered by HAZWOPER.

NOTE: All personnel responding to the onsite release; that will be working in the Hot Zone or cleaning up the release must present their current Hazwoper Training card upon check-in to the site. NO ONE can enter the site prior to this verification.

ORGANIZATION STRUCTURE: List by name the following personnel in the ICS.

Incident Commander:

Safety Representative:

Public Affairs Representative:

Contractor's Project Manager:

TRAINING PROGRAM: All personnel working in response operations and clean-up activities must be trained per OSHA's HAZWOPER requirements. Describe the process to ensure all personnel are HAZWOPER trained to their job responsibilities. If any safety, fire and health training must be conducted, attach the written training program and a list of the program's attendees.

All CIPL personnel are current in their Hazwoper Training. Contract personnel will be required to provide proof of current certification prior to transport.

EFFECTIVENESS OF SITE SAFETY PLAN: Inspections shall be conducted by the Safety Representative to determine the effectiveness of this site safety plan. Any deficiencies in the effectiveness of the site safety plan shall be corrected. Describe this process below

Each individual working onsite has the authority to identify shortcomings of this plan and exercise Stop Work Authority at any time.

SITE CONTROL: Briefly describe the process and methods to control access to and egress from the various emergency response and clean-up operations. Describe the process to allow personnel into the various zones (i.e., hot zone). Explain how the various zones are going to be marked.

Facility access is limited to helicopter transport. Those working onsite will be transported via helicopter to the facility. Prior to setting the aircraft down at the facility, it is advised that the pilot first perform an over-flight to identify any potentially obvious hazards.

ENGINEERING CONTROLS: Engineering controls, work practices, and personal protective equipment, or a combination of these shall be used to protect employees from exposure to the hazardous substances listed above. Examples of engineering controls are: the use of pressurized cabs or control booths, and/or the use of remotely operated material handling equipment. Describe below the engineering controls in use during the emergency response and clean-up operations.

Provide notification to AVO of intent to perform assessment and request immediate notification from AVO in the event of volcanic activity while employees are onsite to minimize the potential of exposing employees to affects of eruption.

Employees will shelter in place in the Safe Haven if not able to be evacuated.

WORK PRACTICES: Describe below the work practices in use during the emergency response and clean-up operations. Some examples of work practices are: removing all non-essential personnel from potential exposure during opening of drums, wetting down dusty operations, and locating personnel upwind of possible hazards.

Industrial Hygiene monitoring will be performed to identify and minimize any potential employee exposures.

Employees will be notified of specific hazards and JSAs will be reviewed with the team.

MEDICAL SURVEILLANCE REQUIRED: Personnel who may have developed signs or symptoms which may have resulted from exposure to hazardous substances resulting for emergency response or clean-up operations, or exposed during emergency response or clean-up operations to hazardous substances above the permissible exposure limits without the necessary personal protective equipment shall receive a medical examination as soon as possible following the incident or development of signs or symptoms. Describe below how this will be handled.

AXIOM Case Management will be utilized to provide assistance with potential exposures having limited

or minimal affects.
Any person exposed, or potentially exposed with the potential for affects greater than minimal will be transported to the Hospital on the Kenai Peninsula in addition to involving AXIOM. Do not delay the transport of the employee to speak to AXIOM. Use AXIOM for the interim. If an exposure occurs, all work will cease and the primary task will become transporting that individual or individuals to medical care.

MONITORING PROGRAM: Air monitoring shall be used to identify and quantify airborne levels of hazardous substances in order to continually determine the appropriate level of personal protective equipment that is required. Describe below what monitoring will be done and how the monitoring will be conducted. A monitoring log sheet is attached to this plan.

Each employee will have their own triple gas monitor or be a member of a group or team utilizing a triple gas monitor.
Aware Consulting will be onsite to provide Industrial Hygiene support including air and personnel monitoring.

NOTE: *Attach Monitoring Log Sheet to plan.*

DECONTAMINATION: A decontamination procedure shall be developed, communicated to all employees and implemented before any employees or equipment may enter areas on site where potential for exposure to hazardous substances exist. Describe these decontamination procedures below.

In the event of contamination, the contaminated employee will be removed a safe location and have the contaminated clothing removed and bagged for further disposal.

DISPOSAL METHODS: Describe the various methods available to properly dispose of the listed material and/or equipment. If you have any questions contact your Waste Specialist.

Hazardous Material:	Crystalline Silica
Personal Protective Equipment:	NIOSH N-95 Respirators, Goggles, Tyvek Coveralls
Recovered Debris:	Volcanic Ash

Worst Case Discharge

THE MAXIMUM POSSIBLE SPILL WOULD BE FROM A TANK AND IS EQUIVALENT TO 270,000 BBL

PER ADEC'S RESPONSE PLANNING STANDARD. ALL CRUDE OIL ABOVEGROUND STORAGE TANKS HAVE A SECONDARY DIKE CONTAINMENT WITH A CAPACITY TO HOLD AT LEAST 110 PERCENT OF THE TANKS' CAPACITY. THE SECONDARY DIKE, IN CONJUNCTION WITH THE CONTAINMENT AFFORDED BY THE FLOOD CONTROL DIKE WOULD ASSURE THAT NO LEAKS OR RELEASES FROM THE TANKS WOULD REACH SURFACE WATER UNDER NORMAL CONDITIONS.

DUE TO THE CURRENT ACTIVITY OF MT. REDOUBT AND LAHARS THAT HAVE REACHED THE DRIFT RIVER TERMINAL, THE POTENTIAL EXISTS FOR THE 110% CAPACITY OF THE SECONDARY CONTAINMENT SYSTEM TO BE DIMINISHED BY A FLOOD EVENT.

ALTHOUGH FLOODING MAY OCCUR WITHIN THE TERMINAL, THE WATER DEPTHS ARE NOT EXPECTED TO EXCEED A FEW FEET. THIS IS BECAUSE OF THE DELTA'S INCREASING HYDRAULIC CONVEYANCE AS IT WIDENS AND FLATTENS TOWARD TIDEWATER. FLOODWATER VELOCITIES ARE EXPECTED TO BE LOW IN AREAS DOWNSTREAM OF THE LEVEE SYSTEM, PROVIDED THAT THE LEVEES ARE NOT BREACHED. THE HEIGHT OF THE LEVEES AND THE CONCRETE ARMORING SYSTEM SHOULD PROVIDE ADEQUATE PROTECTION AGAINST BREACHING.

IN THE EVENT OF A RELEASE, THE INCIDENT COMMAND SYSTEM WILL BE INITIATED TO CONDUCT AND COORDINATE RESPONSE ACTIVITIES IN ACCORDANCE WITH USCG/NIMS ICS AS PER CIPL'S CONTINGENCY PLAN.

What are the effects of ash on health?

Effects of ash on health may be divided into several categories: respiratory effects, eye symptoms, skin irritation and indirect effects:

2.1 Respiratory effects

In some eruptions, ash particles can be so fine that they are breathed deep into the lungs. With high exposure, even healthy individuals will experience chest discomfort with increased coughing and irritation. Common acute (short-term) symptoms include:

- Nasal irritation and discharge (runny nose).
- Throat irritation and sore throat, sometimes accompanied by dry coughing.
- People with pre-existing chest complaints may develop severe bronchitic symptoms which last some days beyond exposure to ash (for example, hacking cough, production of sputum, wheezing, or shortness of breath).
- Airway irritation for people with asthma or bronchitis; common complaints of people with asthma include shortness of breath, wheezing and coughing.
- Breathing becomes uncomfortable.

In rare circumstances, long-term exposure to fine volcanic ash may lead to serious lung diseases. For these diseases to occur, the ash must be very fine, contain crystalline silica (for the disease silicosis to occur) and people must be exposed to the ash in high concentrations over many years. Exposure to crystalline silica in volcanic ash is typically of short duration (days to weeks), and studies suggest that the recommended exposure limits (similar in most countries) can be exceeded for short periods of time for the general population.

People suffering from asthma or other lung problems such as bronchitis and emphysema, and severe heart problems are most at risk.

Eye symptoms

Eye irritation is a common health effect as pieces of grit can cause painful scratches in the front of the eye (corneal abrasions) and conjunctivitis. Contact lens wearers need to be especially aware of this problem and leave out their lenses to prevent corneal abrasion from occurring.

Common symptoms include:

- Eyes feel as though there are foreign particles in them.
- Eyes become painful, itchy or bloodshot.
- Sticky discharge or tearing.
- Corneal abrasions or scratches.
- Acute conjunctivitis or the inflammation of the conjunctival sac that surrounds the eyeball due to the presence of ash, which leads to redness, burning of the eyes, and photosensitivity.

Skin Irritation

While not common, volcanic ash can cause skin irritation for some people, especially if the ash is acidic. Symptoms include:

- Irritation and reddening of the skin.
- Secondary infections due to scratching.

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****

Shelter in Place Plan:

Essential items to stock before an ash fall

A sustained ash fall may keep people housebound for hours or even days. Keep these items in your home in case of an ashfall:

- Dust masks and eye protection.
- Enough drinking water for at least 72 hours (one gallon per person per day).
- Enough non-perishable food for at least 72 hours per person.
- Plastic wrap (to keep ash out of electronics).
- Battery-operated radio and extra batteries.
- Flashlights and extra batteries.
- If cold, extra blankets and warm clothing.
- First aid kit.

- Cleaning supplies (broom, vacuum cleaner & bags/filters, shovels etc.).

Actions to be taken in preparedness

- Close doors and windows.
- Place damp towels at door thresholds and other draft sources. Tape draughty windows.
- Protect sensitive electronics and do not uncover until the environment is totally ash-free.
- If you have chronic bronchitis, emphysema or asthma, stay inside and avoid unnecessary exposure to the ash.

What to do if volcanic ash is falling

- Don't panic - stay calm.
- Stay indoors.
- If outside, seek shelter (e.g. car or building).
- Use a mask, handkerchief or cloth over your nose and mouth.
- If at work when ashfall starts, stay indoors until the ash has settled.
- Do not tie up phone lines with non-emergency calls.

What precautions should be taken before cleaning up ash?

Those undertaking clean-up operations should always wear effective dust masks rated N-95. In fine-ash environments, wear goggles or corrective eyeglasses instead of contact lenses to protect eyes from irritation. Lightly water down the ash deposits before they are removed by shovelling, being careful not to excessively wet the deposits on roofs, causing excess loading and danger of collapse. Dry brushing can produce very high exposure levels and should be avoided. Use extra precaution on ladders and roofs. The ash makes surfaces much more slippery, consequently many people have died from falls while cleaning ash from their roofs. Be aware of the extra load caused by standing on an already overloaded roof - tread carefully. It is preferable to clean roofs before more than a few centimetres of ash has accumulated. Where possible use a harness.

Cleaning up: outside

Keep ash out of buildings, machinery, vehicles, downspouts, water supplies, and wastewater systems (for example, storm drains) as much as possible. The most effective method to prevent ash-induced damage to machinery is to shut down, close off or seal equipment until ash is removed from the immediate environment, though this may not be practical in all cases.

Do

- Put on a recommended mask before starting to clean.
- Put on protective goggles during clean-up.
- Moisten the ash with a sprinkler, before attempting to clean. This will help to stop the wind remobilizing it.

- Use shovels for removing the bulk of thick deposits of ash (over 1 cm or so), stiff brooms will be required to remove lesser amounts.
- Place the ash into heavy duty plastic bags, or onto trucks if available.
- Since most roofs cannot support more than four inches (10 cm) of wet ash, keep roofs free of thick accumulation.
- Volcanic ash is slippery. Use caution when climbing on ladders and roofs.
- Dampen ash along roads and runway.
- Remove outdoor clothing before entering a building.

Don't

- Do not soak the ash as it will cake into a hard mass, making cleanup more difficult. On roofs the added weight of the water will increase the risk of roof collapse.
- Do not drive unless absolutely necessary, driving stirs up the ash. Furthermore, ash is harmful to vehicles.

PREPARED BY: Rod Ficken, Curtis Pennington, Mike Cooper, Ken White, Barry Staskywicz Date: 03/25/09

REVIEWED/APPROVED BY: _Brad Rosewood_____ Date: ___03/25/09_____

**** Verify Hazwoper Training Certification to Level 3 of all personnel onsite prior to authorizing work!!!**

PERSONNEL LIST LOCATION: _____DATE:_____

NAME	Drivers License #	COMPANY	HAZWOPER LEVEL

MONITORING LOG SHEET ---- Monitoring results must be recorded and consistent with the JSSP plan.

Project/Task

Sheet of

Date	Time	Location	Initials	H_2S	O_2	LEL	Ac

NOTE: Verify monitoring equipment prior to use

CHEVRON PIPE LINE CO.
PERSONNEL MONITORING WORKSHEET

LOCATION: _____ DATE: _____

SAMPLED BY: _____

	Sample #	Contaminants	Collector	Pump	Flow rate (LPM)	Time On	Time Off	Duration (Min.)	Vol. (L)	Refere (Work a employee' social secu
#1										
#2										
#3										
#4										
#5										
#6										
#7										

Calibration Std: _____ **Comments:** _____

Temperature: _____ % Relative Humidity: _____

Pressure: _____ Analytical Methods: _____

ATTACHMENT: SAFE WORK PRACTICES FOR BOATS

ATTACHMENT: SAFE WORK PRACTICES FOR BOATS

Ensure that all boats and operators comply with the appropriate state and federal regulations. In addition to the items discussed below, certain types of vessels will require such items as USCG approved fire extinguishers, backfire flame control, powered ventilation, sound signaling devices (different from emergency signals), navigation lights/signals, pollution placards, and marine sanitation devices.

1. Boat operators must familiarize themselves and passengers with safety features and equipment on their boats.
2. Boats must be operated by qualified individuals.
3. Life jackets, work vests, cold water immersion suits, or other appropriate USCG approved Personal Floatation Devices (PFDs) must be worn by personnel in boats.
   a. Use of cold water immersion suits is particularly critical under conditions of cold stress.
   b. Types of PFDs:
      - Type I Off-shore life jacket provides the most buoyancy. It is effective for all waters and intended specifically for open, rough, or remote waters where rescue may be delayed.
      - Type II Near-shore buoyancy vests are intended for calm, inland water, or where there is a good chance of quick rescue.
      - Type III Floatation aids are good for calm, inland water, or where there is a good chance of quick rescue. Examples: float coats, fishing vests, and ski vests.
      - Type IV These are throwable devices, not intended to be worn or to replace those that are worn.
      - Type V Special Use. These are intended for specific activities (according to the conditions on the labels). Some examples: deck suits, cold water immersion suits, work vests, and hybrid PFDs below.
      - Type VI Hybrid Inflatables. These PFDs contain a small amount of inherent buoyancy and an inflatable chamber. Performance equals that of a Type I, II, or III PFD (as noted on the label) when inflated.
4. Boats should generally not be operated for oil recovery after sunset. If this is required or poses minimal risk, areas of operation should be carefully prescribed, and individual boat operators should maintain a communication schedule with a shore base. Each boat should be fully equipped with appropriate running lights and emergency signaling devices, and personnel onboard should be wearing emergency night signaling devices.
5. Distress signals (three or more for day and three or more for night) should be carried on board all vessels. These devices may be required by regulation. They may be stored on board or issued to individuals. If stored on board, they should be in a sealed, watertight, orange container marked "DISTRESS SIGNALS".
   a. USCG-approved pyrotechnic visual distress signals include red flares (hand-held or aerial), range smoke (hand-held or floating), and launchers (for aerial red meteors or parachute flares). Pyrotechnic devices should not be used near flammable product spills.
   b. Non-pyrotechnic distress signals are not approved individually, but must meet certain requirements. They should be in serviceable condition, readily accessible, and certified by the manufacturer as complying with USCG requirements. These devices include orange distress flags, and electric distress lights.
   c. Distress flags are day signals only. They must be at least 3x3 feet with a black square and ball on an orange background.
      i. Electric distress lights are for night use only. These devices automatically flash the international SOS code (...- - -...) so a flashlight IS NOT considered a distress signal. Under inland navigation rules, a high intensity strobe light is considered a distress signal.
      ii. It is illegal to display visual distress signals on the water, except when assistance is required.
6. Boat operators must keep their supervisors informed of their area of operations, especially when they change their work area (if plans call for a boat to move to another location during a shift, the operator should advise the supervisor of his actual time of departure).
7. Boat operators should never anchor their boats by the stern. This is typically the lowest point on the boat due to design and/or loading, and is often squared off, making it vulnerable to swamping.
8. Portable fuel tanks should be filled outside of the boat. All sources of ignition in the area of fueling (e.g., engines,

stoves, or heat-producing equipment, and electrical equipment) must be removed while fueling.

9. Strict adherence to the buddy system must be observed in boats; and all boats should be in direct visual or radio contact with the shore base at all times.
10. To avoid slipping on wet decks or falling in boats, personnel should remain seated while boat is underway. Horseplay and speeding are strictly prohibited. Personnel should keep their center of gravity as low as possible while working in boats.
11. Boat operators must also ensure that boats are not overloaded. The capacity should be marked on a label on the boat; if not, a general rule of thumb is: Length x Width / 15 = People (150 lbs). Since equipment adds to the weight, it should be considered as well. Weight should be distributed evenly.
12. Personnel working in or operating boats should wear appropriate shoes/boots designed to help maintain traction on wet surfaces.
13. Safety sunglasses or hearing protection should be worn by personnel working in, or operating,boats where appropriate.
14. Fixed ladders or other substantial access/egress should be provided at boat transfer locations from low water line to platform.
15. Depending on the specific nature of the operations (e.g., work in remote areas), other emergency equipment that should be considered includes: anchors, radios, bailers, first aid kits, and additional means of propulsion (e.g., paddles).
16. Workers should be cautioned about using their legs or arms to fend off during docking, or getting their hands, arms, or legs between vessels and docks or fixed structures.

Safe Work Practices for Working in Volcanic Ash

Task	Hazard	Mitigation
Routine Facility Activities	Slips, Trips, Falls	Use 3 points of contact when exiting vehicles. Wear traction devices. Follow CIPL Safety Plan.
Working in Ashfall	Inhalation of silica particulate	Remain indoors during heavy ashfall. Wear air-purifying particulate respirator outdoors

ATTACHMENT: SITE HAZARDS

BOAT SAFETY.

See Attachment - Safe Work Practices for Boats.

CHEMICAL HAZARDS

See Attachment - Hazardous Substance Information Sheets

COLD STRESS.

See COLD STRESS

CONFINED SPACES.

See Attachment - Confined Space Entry Procedure

See Appendix - Confined Space Entry Checklist

DRUM HANDLING AND SPILL CONTAINMENT.

Drum handling at a spill site will primarily involve drums of waste and contaminated clothing. Several types of drums may be used, ranging from 5 to 55 gallons in size. All drums and containers must be properly labeled in accordance with OSHA and DOT regulations. Manual lifting and moving of drums should be kept to a minimum. Mechanical devices and dollies should be used for moving heavy drums.

EQUIPMENT OPERATIONS FOR CLEANUP/CONTAINMENT

Heavy Equipment:

Operation of heavy equipment, such as a front end loaders, bulldozers and cranes must be done in accordance with applicable OSHA regulations. The operators must be trained and qualified to operate powered industrial vehicles. The operator and helper must be familiar with proper signaling techniques. Buckets must not be used as a lift; hard-hats must be worn; and a fire extinguisher must be present on board equipment.

Cranes must be operated in accordance with the manufacturers' instructions and established construction practices. Outriggers must be fully extended to assure maximum stabilization of the equipment. Cranes must be operated only where the ground provides adequate support. Rigging components must be inspected daily. Only certified wire rope slings with manufactured sledges or manufactured web slings will be used. Certification documents must be received and filed for all slings. Each sling must be marked or tagged with its rated capacity and slings must not be used with loads in excess of their rated
capacity. (29 CFR 1910.184) Personnel shall not be allowed under the boom or load except for the minimum time necessary to hook up or unhook the load. (29 CFR 1910.180)

Forklifts:

Only trained and authorized operators shall be allowed to operate forklifts. Horseplay is not permitted. Only stable or safely arranged loads that do not exceed the capacity of the truck shall be handled. Fuel tanks must not be filled while the engine is running. Operators shall perform daily or pre-use inspections of the forklift to be operated. A separate inspection will be made each shift during multi-shift operations. Records of inspections must be maintained. All inspection discrepancies must be corrected prior to operation of the forklift. If the discrepancy cannot be corrected immediately, the forklift must be tagged out of service. 29 CFR 1910.178

Hand/Power Tools:

Hand tools are non-powered. The greatest hazards posed by hand tools result from misuse and improper maintenance. Saw blades, knives or other tools should be directed away from other employees. Dull tools can be more hazardous than sharp tools. Personal protective equipment, such as wire mesh gloves, wrist guards, arm guards, aprons and belly guards may be appropriated. Spark resistant tools (brass, plastic, aluminum and wood) should be used around flammable substances.

Power tools are based on the power source used: electric, pneumatic, liquid fuel, hydraulic, and powder-actuated. The following general precautions should be observed: never carry power tools by the cord; never yank the cord to unplug the tool; keep cords and hoses away form heat, oil and sharp edges; disconnect tools when not in use and before servicing; keep observers a safe distance away; secure work with clamps or a vise freeing both hands to operate the tool; avoid accidental starting; maintain tools with care; keep them sharp and clean; safeguard hazardous moving parts of the tool; and, protect the operator from: point of operation, in-running nip points, rotating parts, and flying chips and sparks. Many tools including drills, tappers, fastener drivers, disc sanders, belt sanders and others must be equipped with momentary contact "on-off" control switch.

Employees using hand and power tools and exposed to the hazards of falling, flying, abrasive and splashing objects, or exposed to harmful dusts, fumes, mists, vapors or gases must be provided with the particular personal equipment necessary to protect them from the hazard. All hazards involved in the use of [hand] and power tools can be prevented by following five basic safety rules: Keep all tools in good condition with regular maintenance; use the right tool for the job; examine each tool for damage before use; operate according to the manufacturer's instructions; and provide and use the right protective equipment.

ELECTRICAL HAZARDS.

Electrical hazards shall be identified and marked with suitable placards, barricades, or warning tape as necessary.

FATIGUE.

Working long hours without rest may be required, especially during the early phase of response. This, coupled with the stress of the situation and wearing required PPE, can contribute to fatigue. Symptoms include loss of concentration, errors in judgment, irritability, sleepiness, soreness and stiffness in joints and muscles. Rest and sleep are the primary treatments for fatigue. Stress can be addressed by relaxation techniques, such as deep breathing, stretching, taking breaks, and other methods.

FIRE, EXPLOSION AND IN-SITU BURNING

Flammable and combustible materials may be encountered at the spill site. These may be fuels for vehicles and equipment or the spilled material itself. However, some cleanup chemicals such as solvents may also be used. Refer to the container label or proper MSDS for more information on these materials.

Precautions should be taken when working with either flammables or combustibles:

- No smoking
- Store in approved, labeled containers
- Ensure containers used to transfer materials are properly grounded
- Provide fire extinguishers in areas where these materials are used

In-situ burning presents health and safety hazards not only to the workers engaged in the burning activities, but also to individuals downwind of the burn site. Health and safety hazards include:

- Physical hazards: explosions, heat, loss of control of burning oil (e.g., flashback to the spill source, loss of containment).
- Inhalation of airborne burn products: These may include toxic and irritating substances such as: smoke particles, carbon monoxide, carbon dioxide, sulfur oxides, nitrogen dioxide, polycyclic aromatic hydrocarbons, acid aerosols, aldehydes, acrolein, polynuclear aromatic hydrocarbons, volatile organic hydrocarbons.

Safety factors to be considered include status of the spill (e.g., burning, being lightened, personnel being evacuated, etc.); weather and sea conditions; distance of intended burn location to the spill source; type and condition of the oil; proximity of ignitable vegetation, docks, and other facilities; and control measures.

A detailed Burn Plan should be prepared. This should include a summary of safety and control measures. Care must be taken to protect all personnel from any harmful exposure to heat and or combustion products.

HEAT STRESS

See Heat Stress

HELICOPTER OPERATIONS

Helicopters may be in use at the spill site for overflight surveillance; site characterization; personnel/equipment transport; and rescue/medical transport. Safe work practices for passengers and other personnel include:

1. Passengers must receive a safety briefing from the pilot before liftoff. The briefing should include: safety features and equipment and their location on the individual aircraft; helicopter underwater escape procedures when appropriate; and, emergency information.
2. Passengers and ground crew members approaching helicopters shall stay in a crouched position, and must be in clear view of the pilot while approaching or departing a helicopter.
3. Passengers and ground crew should approach/depart from the FRONT of the helicopter only when signaled by the pilot; and shall never walk under or around the tail, rotor or exhaust.
4. Loose fitting clothing, hats, hard hats, or other gear, which might be caught in rotor downwash, must be secured or

removed within 100 feet of operating helicopters.

5. Passengers shall maintain a distance of 50 feet from helicopters while rotors are turning. Ground crew should also maintain this distance, unless specific work practices are developed for closer work.
6. Passengers shall wear seat belts at all times and personal floatation devices when flying over bodies of water.
7. Passengers and ground crew shall wear hearing protection (which may include communication headsets or helmets) at all times around operating helicopters.
8. Passengers shall assist the pilot in watching for other traffic or ground obstacles, as directed by the pilot.
9. During emergency landing in water:
    a. Do not exit until instructed to do so by the pilot after rotor blades stop turning or pilot signals all clear.
    b. Do not inflate personal floatation devices until outside of the helicopter.

LIFTING

Use available machinery and lift-aiding equipment before lifting heavy loads. Use team work for heavy and numerous small loads. Do not rush work. Use of chemical protective clothing will restrict movement and visibility. Use extra care while lifting in protective gear.

Safe lifting techniques:

1. Position feet properly. Feet should not be close together, but should be close to the load to help keep the body close to the center of gravity. One foot should be positioned in the direction the load will be moved to avoid twisting or turning of the back during the lift. Turn using your feet and not by twisting the back.
2. Before and during the lift keep the load close to you to keep the center of gravity over your feet.
3. Check your grip and test the weight of the load before lifting.
4. The back should be straight when starting the lift and the knees should be bent. This will help to ensure that much of the lifting is done with the legs. To help keep the back straight, the chin should be tucked in and head kept up.
5. Keep the stomach muscles tight while lifting. Keep your back straight during the lift and avoid twisting motions in particular.
6. Move slowly and deliberately.

MOTOR VEHICLES

All motor vehicles must be operated in accordance with all state and local motor vehicle regulations. Posted speed limits must be observed and seat belts worn by all occupants. Check the outside of the vehicle and familiarize yourself with the interior and make all adjustments before driving. Drive defensively. Employees involved in any accident must inform their supervisor as soon as possible. The driver is responsible for getting as much accident information as possible. 29 CFR 1910.178

Safe use of motor vehicles is essential at the spill site and in traveling to and from the site. Vehicles should be checked:

Tires inflated	Fuel	Spare tire	Lights	Windshield wipers
Brakes	Turn signals	Seat belts	Horn	

NOISE

Noise may be a significant hazard at a spill cleanup site. Noise may be generated by: pumps, generators, compressors, trucks, and, heavy equipment. At a spill site, high noise areas and equipment will be identified.

Areas requiring the use of hearing protection will be so posted. Hearing protection will be made available as required. As a general rule, hearing protection should be worn in areas where noise prevents hearing ordinary conversation. Since hearing loss caused by high noise exposure may not be noticed at first, it is important to wear the hearing protection in high noise areas.

OVERHEAD AND BURIED UTILITIES

If work has to be performed near overhead lines, the lines must be de-energized and grounded, or other protective measures must be provided before work is started. Arrangements must be made with the person or organization that operates or controls the electric circuits to de-energize and ground them. If protective measures such as guarding, isolating, or insulating are provided, these precautions shall prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment. Clearance from overhead power lines to persons or equipment must be at least 10 feet unless the voltage exceeds 50 kV. If a vehicle is in transit with its structure lowered, the clearance may be reduced to 4 feet. If voltage exceeds 50 kV, the clearance must be increased by 4 inches for each 10 kV. There are specific approach distances and insulation requirements given in the referenced OSHA standard. (29 CFR 1910.333)

The estimated location of buried utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground services should be determined before work begins. Utility companies or owners must be contacted, advised of the proposed work and informed of the urgency of the situation. OSHA states the aforementioned companies or owners have 24 hours to respond unless state or local laws allow more time. Excavation may proceed if the exact location of the installation cannot be determined or the utility company or owner does not respond in the time period required by law. When the excavation approaches the estimated location of the underground installations, the exact location must be determined by safe and acceptable means. While the excavation is open the installation must be protected, supported or removed as necessary to safeguard employees. (29 CFR 1926.651)

POOR VISIBILITY

Fixed or portable lighting shall be maintained for dark areas or work areas after sunset to ensure that sufficient illumination is provided. (See Table H-120.1 of 29 CFR 1910.120(m) for Minimum Illumination Intensities.)

PUMPS AND HOSES

Pumps and hoses may be used at the spill site to apply water, steam or chemicals for cleanup and/or decontamination. They may also be used for liquid waste collection. Caution should be used when working in areas where hoses are in use as they present a tripping hazard. Additionally, when using pumps and hoses, determine their last contents to avoid contamination or chemical reaction. Use the proper pump and hose for the job.

STEAM AND HOT WATER

Steam and hot water may be used during the spill cleanup. Use caution when working with these materials since they can cause severe burns. Wear gloves and eye/face protection when handling and be careful not to spray in the direction of other personnel.

UV RADIATION

Ultraviolet radiation from sunlight can be a significant hazard at a spill site. Cleanup will primarily be done outdoors; therefore, sunscreens with the appropriate protection factor and UV-tinted safety glasses may be needed. Other types of radiation, such as from welding and cutting, may also be a hazard. Avoid direct visual contact and use proper eye protection as needed.

SLIPS, TRIPS AND FALLS

Slips, trips and falls on oily surfaces are the major cause of injuries at an oil spill site. Many of these injuries occur in the first few minutes of work before workers realize the conditions and begin to take precautionary measures. When entering a spill site, walk slowly and carefully in oil-coated areas. Be especially careful when walking on oil-covered rocks. Oil-resistant safety-toe boots with non-slip soles should be worn at all times in areas containing oil-covered rocks. This type of footwear can help to minimize the falling hazard, but will not prevent it. Open manholes, mud, pits, trenches, or similar hazards shall be identified and marked with suitable placards, barricades, or warning tape as necessary.

TRENCHING AND EXCAVATION

All surface encumbrances that may create a hazard to employees shall be removed or supported to safeguard employees. Consideration must be given to underground installations. Appropriate precautions must be taken with regard to soil type and conditions to avoid cave-in. Employees must be provided with an approved means of access and egress. Adequate precautions shall be taken to prevent employee exposure to hazardous atmospheres. Where hazardous atmospheres exist, emergency rescue equipment shall be readily available. Employees must be protected from cave-ins, falling loads, mobile equipment, water accumulation, loose rock and soil. A competent person must inspect the excavation, adjacent area, and protective systems prior to the start of work, as needed throughout the shift and after every rainstorm or hazard increasing occurrence. (29 CFR 1926.65 Subpart P)

WEATHER

ICS 208 - Site Safety Plan

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Englert, Rick	**at** 4/7/2009 11:19
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	Dispersant Application	

Applies To Site:

Products: Corexit 9500 and Corexit 9527 dispersant; Cook Inlet Crude Oil (Attach MSDS)

SITE CHARACTERIZATION

Water:

Wave Height: **Wave Direction:**

Current Speed: **Current Direction:**

Land: **Use:**

Weather: **Temp:**

Wind Speed: **Wind Direction:**

Pathways for Dispersion:

Site Hazards

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

Air Monitoring

%O2: **%LEL:** **ppm Benzene:**

ppm H2S: ☐ **Other (Specify):**

CONTROL MEASURES

Engineering Controls

- ☐ Source of release secured
- ☐ Site secured
- ☐ Valve(s) closed
- ☐ Facility shut down
- ☐ Energy sources locked/tagged out
- ☐ Other

Personal Protective Equipment

- ☐ Impervious suit
- ☐ Inner gloves
- ☒ Outer gloves
- ☐ Flame resistance clothing
- ☒ Hard hats
- ☐ Respirators
- ☒ Eye protection
- ☒ Personal floatation
- ☒ Boots
- ☐ Other

Additional Control Measures

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

ICS 208 - Site Safety Plan

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Englert, Rick	**at** 4/7/2009 11:19
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	Dispersant Application	

WORK PLAN

☐ Booming ☐ Skimming ☐ Vac trucks ☐ Pumping ☐ Excavation
☐ Heavy equipment ☐ Sorbent pads ☐ Patching ☐ Hot work ☐ Appropriate permits used
☒ Other dispersant application utilizing response vessels

TRAINING

☐ Verified site workers trained per regulations

ORGANIZATION

Title	Name	Telephone/Radio
Incident Commander:	Rod Ficken	
Deputy Incident Commander:	CIPL	
Safety Officer:	CIPL	
Public Affairs Officer:		
Other:		

EMERGENCY PLAN

☐ Alarm system
☐ Evacuation plan
☐ First aid location

Notified

☐ Hospital	See ICS 206 Medical Plan	Phone:
☐ Ambulance	See ICS 206 Medical Plan	Phone:
☐ Air ambulance	See ICS 206 Medical Plan	Phone:
☐ Fire		Phone:
☐ Law enforcement		Phone:
☐ Emergency response/rescue		Phone:

PRE-ENTRY BRIEFING

☐ Initial briefing prepared for each site

ICS 208 - Site Safety Plan

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Englert, Rick	**at** 4/7/2009 11:26
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	In-Situ Burn	

Applies To Site: In-Situ Burn Operations

Products: Cook Inlet Crude Oil (Attach MSDS)

SITE CHARACTERIZATION

Water:

Wave Height: **Wave Direction:**

Current Speed: **Current Direction:**

Land: **Use:**

Weather: **Temp:**

Wind Speed: **Wind Direction:**

Pathways for Dispersion:

Site Hazards

- ☒ Boat safety
- ☒ Chemical hazards
- ☒ Cold Stress
- ☐ Confined Spaces
- ☐ Drum handling
- ☒ Equipment operations
- ☐ Electrical operations
- ☒ Fatigue
- ☒ Other
  - volcanic ash
- ☒ Fire, explosion, in-situ burning
- ☐ Heat stress
- ☒ Helicopter operations
- ☒ Lifting
- ☐ Motor vehicles
- ☒ Noise
- ☐ Overhead/buried utilities
- ☐ Plants/wildlife
- ☒ Other
  - Handling marine flares / helo torch
- ☐ Pump hose
- ☒ Slips, trips, and falls
- ☐ Steam and hot water
- ☐ Trenching/Excavation
- ☐ UV Radiation
- ☐ Visibility
- ☒ Weather
- ☒ Work near water
- ☐ Other

Air Monitoring

%O2: **%LEL:** **ppm Benzene:**

ppm H2S: ☐ **Other (Specify):**

CONTROL MEASURES

Engineering Controls

- ☐ Source of release secured
- ☐ Site secured
- ☐ Valve(s) closed
- ☐ Facility shut down
- ☐ Energy sources locked/tagged out
- ☐ Other

Personal Protective Equipment

- ☐ Impervious suit
- ☐ Inner gloves
- ☒ Outer gloves — Leather / Flame Resistent
- ☒ Flame resistance clothing
- ☒ Hard hats
- ☒ Respirators — particulate matter (ash)
- ☒ Eye protection
- ☒ Personal floatation
- ☒ Boots — Leather
- ☐ Other

Additional Control Measures

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

ICS 208 - Site Safety Plan

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Englert, Rick	**at** 4/7/2009 11:26
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	In-Situ Burn	

WORK PLAN

- ☒ Booming
- ☐ Skimming
- ☐ Vac trucks
- ☐ Pumping
- ☐ Excavation
- ☐ Heavy equipment
- ☐ Sorbent pads
- ☐ Patching
- ☒ Hot work
- ☐ Appropriate permits used
- ☐ Other

TRAINING

- ☐ Verified site workers trained per regulations

ORGANIZATION

Title	Name	Telephone/Radio
Incident Commander:	Rod Ficken	
Deputy Incident Commander:	CIPL	
Safety Officer:	CIPL	
Public Affairs Officer:		
Other:		

EMERGENCY PLAN

- ☐ Alarm system
- ☐ Evacuation plan
- ☐ First aid location

Notified

☐ Hospital	See ICS 206 Medical Plan	Phone:
☐ Ambulance	See ICS 206 Medical Plan	Phone:
☐ Air ambulance	See ICS 206 Medical Plan	Phone:
☒ Fire		Phone:
☐ Law enforcement		Phone:
☐ Emergency response/rescue		Phone:

PRE-ENTRY BRIEFING

- ☐ Initial briefing prepared for each site

ICS 208 - Site Safety Plan

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Miles, Rick **at** 4/7/2009 11:23
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	DRT Mud and Debris Removal

Applies To Site: Drift River Terminal

Products: Volcanic Ash, Crude Oil (Attach MSDS)

SITE CHARACTERIZATION

Water:

Wave Height: **Wave Direction:**

Current Speed: **Current Direction:**

Land: **Use:**

Weather: **Temp:**

Wind Speed: **Wind Direction:**

Pathways for Dispersion: Air

Site Hazards

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

Air Monitoring

%O2: 20.9 **%LEL:** 0 **ppm Benzene:** NA

ppm H2S: 0.0 ☒ **Other (Specify):** Volcanic ash particles (lab)

CONTROL MEASURES

Engineering Controls

- ☐ Source of release secured
- ☒ Site secured
- ☒ Valve(s) closed
- ☒ Facility shut down
- ☒ Energy sources locked/tagged out
- ☐ Other

Personal Protective Equipment

- ☐ Impervious suit
- ☐ Inner gloves
- ☒ Outer gloves
- ☒ Flame resistance clothing
- ☒ Hard hats
- ☒ Respirators particulate (ash)
- ☒ Eye protection
- ☒ Personal floatation
- ☒ Boots
- ☐ Other

Additional Control Measures

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

ICS 208 - Site Safety Plan

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Miles, Rick	**at** 4/7/2009 11:23
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	DRT Mud and Debris Removal	

WORK PLAN

- ☐ Booming
- ☐ Skimming
- ☐ Vac trucks
- ☐ Pumping
- ☐ Excavation
- ☒ Heavy equipment
- ☐ Sorbent pads
- ☐ Patching
- ☐ Hot work
- ☐ Appropriate permits used
- ☐ Other

TRAINING

- ☒ Verified site workers trained per regulations

ORGANIZATION

Title	Name	Telephone/Radio
Incident Commander:	Rod Ficken	
Deputy Incident Commander:	CIPL	
Safety Officer:	CIPL	
Public Affairs Officer:	Sara Francis	
Other:		

EMERGENCY PLAN

☒ Alarm system	AVO, USCG Warning System	
☒ Evacuation plan	Safe Haven	
☐ First aid location		

Notified

☐ Hospital	See ICS 206 Medical Plan	Phone:
☐ Ambulance	See ICS 206 Medical Plan	Phone:
☐ Air ambulance	See ICS 206 Medical Plan	Phone:
☐ Fire		Phone:
☐ Law enforcement		Phone:
☐ Emergency response/rescue		Phone:

PRE-ENTRY BRIEFING

- ☒ Initial briefing prepared for each site

Attachments / Appendices

- Cold Stress and Hypothermia Consideration
- Site Hazards
- Restoration_JSSP_CIPL_27MAR2009_Additions
- Safe Work Practice for working in Volcanic Ash
- Respirator Use Guidelines

ICS 209 (Oil Spill) - Incident Status Summary

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Englert, Rick **at** 4/7/2009 12:05
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	Standing IAP

Spill Status (Estimated)

Source Status:
- ⦿ Secured
- ○ Unsecured

Remaining potential:

Rate of spillage:

Amounts below measured in:

	Last 24 Hours	Total
Total Volume Spilled		0

Mass Balance/Oil Budget

Total spilled product accounted for: 0

Waste Management (Estimated)

Type	Recovered	Stored	Disposed

Shoreline Impacts

Degree of Oiling	Affected	Cleaned	Remaining to be Cleaned
Total	0	0	0

Wildlife Impacts

Type	Captured	Cleaned	Released	DOA	Died in Facility	
					Euth.	Other
Bird						
Mammal						
Reptile						
Fish						
Other						
Total	0	0	0	0	0	0

Safety Status

Type	Last 24 Hours	Total
Responder Injury		
Public Injury		
Other		

Equipment Resources

Type	Ordered	Available /Staged	Assigned	Out-Of-Service

Personnel Resources

Organization	People in the Field	People in Cmd. Post	Total People On Scene
Federal			0
State			0
Local			0
RP			0
Contract Personnel			0
Volunteers			0
			0
			0
			0

Total Response Personnel: 0

Special Notes

ICS 223 - Health and Safety Message

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Reider, Megan	**at** 4/7/2009 06:28
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	Alaska Visitors Guide	

Major Hazards and Risks

ALASKA VISITORS BRIEFING
COMMON DANGERS AND HAZARDS

The climate in Alaska can be extreme almost anytime of the year in southcentral Alaska. Spring temperatures can vary from well below freezing to above freezing, even during the same day. Aside from driving on slick roads, exposure to the elements represents the primary hazard that visitors to Alaska routinely encounter. Even seemingly harmless outings can become life-threatening quickly due to the remoteness of the particular location, extreme terrain, and temperature variation. Other hazards of concern to visitors may include wildlife, even in the Anchorage city limits!

DRIVING

Driving is the most dangerous activity people engage in on a regular basis. In Alaska, even city drivers in springtime can encounter snow and ice. Dust from sanding roads all winter can reduce visibility. Patches of ice and black ice are common. Black ice is actually just thin, invisible ice, and results from the thaw freeze cycles each day.

- Take the time to scrape your windshield before you start driving.
- Reduce your speed.
- Maintain extra distance between and the vehicle in front of you.
- Avoid clusters of cars in traffic.
- Plan for increased stopping distances.
- When exiting your vehicle after parking, use 3 points of contact (both hands holding onto something when you step out).

CLOTHING

To prepare for any outdoor activity, it is important to dress warmly, but more important to dress in layers if you are going to be outside for any length of time. Parking lots, streets, and sidewalks can be slick. Slips, trips, and falls are common hazards.

- Inner layers (socks, long underwear, shirts), synthetic materials are best.
- Mid layers (lightweight coats, vests, etc.), synthetic materials are best.
- Outer layers (waterproof or weatherproof shell coats – similar material pants are recommended).
- Footwear with traction soles (hiking boots are preferable for any long walk and traction devices are available for purchase at local stores).
- Hats and protective headwear (knit or synthetic hats that cover ears).
- Gloves are recommended.
- UV protective eyewear (sunglasses help with driving).

WILDLIFE

Moose are common in nearly any area of Alaska (including Anchorage), and bears (brown or grizzly, and black) may be becoming active in the spring. Bears are a concern in some parks within the Anchorage city limits.

- Never approach any animal. Any wild animal is a potential safety hazard.
- If a wildlife encounter occurs, make them aware of your presence and remain calm. Injury incidents are extremely rare when people stay in groups.
- Stay in groups if you go for a hike.
- Make noise, and be aware of your surroundings.

If you travel outdoors (e.g., nearby parks), establish a trip plan and let someone staying behind know where you are going and when you plan to return. Cellphone reception is often available, but not a completely reliable form of communications.

Be SAFE and enjoy your stay!

ICS 230 - Daily Meeting Schedule

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Pagliaro, Domenic	**at** 4/7/2009 11:08
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	Standing IAP	

Meeting Name & Date/Time	Purpose	Attendees	Location
Weekly Unified Command Update Meeting 4/14/2009 09:00	Discuss tactics, planning, and operational issues.	FOSC, SOSC, and RPIC	Via telephone or otherwise arranged.

ICS 232 - Resources at Risk

Incident:	DRIFT RIVER TERMINAL COORDINATION	**Prepared By:**	Pagliaro, Domenic **at** 4/7/2009 11:10
Period:	Standing IAP (4/8/2009 09:00 -)	**Version Name:**	Standing IAP

Environmentally Sensitive Areas and Wildlife Issues

Site #	Priority	Site Name and/or Physical Location	Site Issue
1	HIGH	Redoubt Bay Critical Habitat Area, located north of the Drift River Facility	(see attached narrative)
2	High	Kalgin Island and Kalgin Island Critical Habitat Area, located south east of the Drift River Facilit	
3	High	Migratory Birds: Redoubt Bay	
4	High	Fish: Drift River, Rust Slough, Cannery Creek	
5	High	Marine Mammals: Redoubt Bay and Kalgin Island	
6	High	Invertebrates: Redoubt Bay	
7	High	Salt-Water Marsh Shoreline Habitat: Redoubt Bay	
8	High	Tidal Flats: Redoubt Bay and Kalgin Island	
9	High	Mixed sand and gravel beaches: Redoubt Bay	

Archaeo-cultural and Socio-economic Issues

Site #	Priority	Site Name and/or Physical Location	Site Issue
1	High	Native Allotments: Kalgin Island and West Foreland	(see attached narrative)
2	High	Razor clam harvest: Rust Slough and Cannery Creek	
3	High	Set-net fisheries: Redoubt Bay, Kalgin Island	