


# Cook Inlet Spill Prevention & Response, Inc.

## Technical Manual

*version: November 2024*

*this page left intentionally blank*

# CISPRI Emergency Contact Information

## 24 HR EMERGENCY CONTACT NUMBER

## 1-907-776-5129

**MAIN OFFICE..... 907-776-5129**

| | | |
|---|---|---|
| General Manager : | Todd Paxton ..... | 907-776-7401 Office; 907-398-1901 Cell |
| Operations Manager : | Derek Samora..... | 907-776-7406 Office; 907-398-6517 Cell |
| Vessel Manager : | Randy Borland ..... | 907-776-7457 Office; 907-513-9267 Cell |
| HEST Manager : | Dan Beaten ..... | 907-776-7405 Office; 907-513-8304 Cell |

**www.CISPRI.org**

*this page left intentionally blank*

# CISPRI TECHNICAL MANUAL

**© 2021 Cook Inlet Spill Prevention & Response Inc. (CISPRI)**

All rights reserved.
No part of this work covered by copyrights hereon may be reproduced in any form or by any means without the permission of Cook Inlet Spill Prevention & Response Inc. (**CISPRI**).

This **Technical Manual** is the property of the **CISPRI Services LLC**, **CISPRI** and it's Member Companies.
It shall not be duplicated, used, or disclosed, except as authorized by **CISPRI**, acting as the agent for and on behalf of the Member Companies.

**Cook Inlet Spill Prevention & Response Inc.**
51377 Kenai Spur Highway
Kenai, Alaska 99611

Phone: (907) 776-5129
Fax: (907) 776-2190

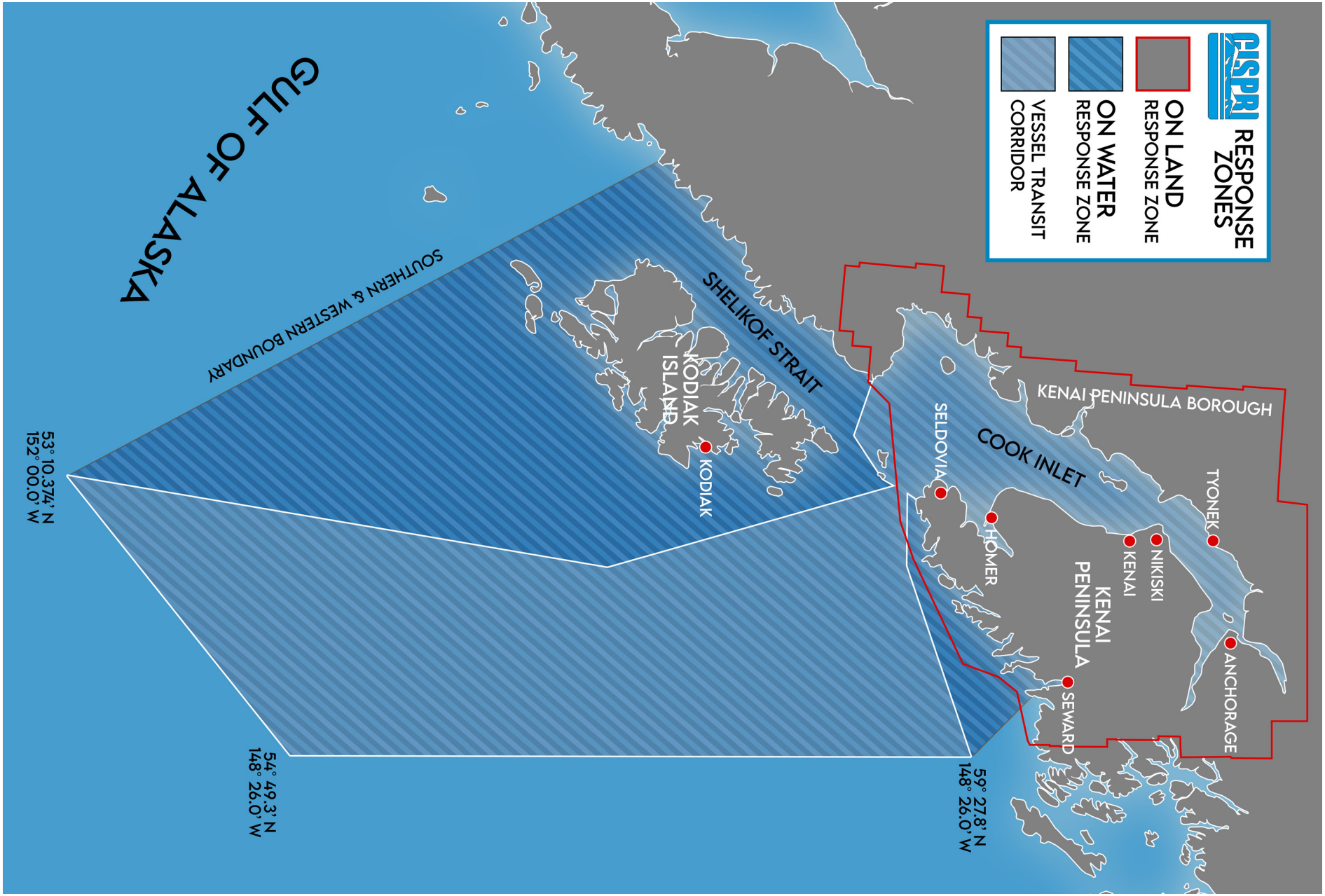
**www.CISPRI.org**

The ***CISPRI Technical Manual***, with the resources and equipment listed herein, is a planning document to demonstrate the potential response capability available to respond to an oil spill. It is not a guarantee of what will occur or the equipment/resource deployment or sequencing that will be used in an actual spill event. Nothing in this manual is intended to limit the discretion of persons in charge of an actual spill response to select any sequence, and to take whatever actions they deem necessary to maximize the effectiveness of the response, consistent with safety considerations. Response operations in any spill event will be tailored to meet the actual circumstances of such an event. This manual is not and should not be regarded as a performance guarantee and/or standard.

In producing this manual, **CISPRI** has endeavored to provide the best available information based on the latest technological and engineering advancements. **CISPRI** believes that the information and procedures contained herein are well founded, and use information obtained from actual experiences in the environments where these procedures are intended to apply. Nonetheless, **CISPRI** expressly disclaims that the procedures provided in this manual, even if followed correctly and competently, will necessarily produce any specific results. Implementation of the recommendations and procedures contained herein is at the sole risk of the user.

There are always variables beyond the control of any response organization that affect response performance. These variables include personnel safety considerations, weather, visibility, sea conditions, ice conditions, location of spill, type of oil spilled, rate of discharge, condition of the equipment or facility causing the spill, and for a vessel, position of discharging vessel and condition of remaining cargo. In addition, site-specific conditions such as fire, ice, the amount and type of wildlife and marine mammals in or around the site, or the amount and nature of debris present, could interfere with response performance. Accordingly, it is not possible to guarantee response performance in exact accordance with the estimates, strategies or scenarios presented in this technical manual for anything other than planning purposes. For example, the safety of employees, contractor personnel, government representatives, and the public is of paramount importance and will override all other considerations in response operations.

The ***CISPRI Technical Manual*** will be reviewed on an annual basis to ensure Member Companies and Responders have the most current information.






**To report an oil spill and activate CISPRI, call 907-776-5129**

# CISPRI TECHNICAL MANUAL
# REVISION REQUESTS

**CISPRI** requests that users of this manual provide notification of any errors or suggested revisions for use in future updates. Revision request can be made directly through our website at www.cispri.org. There is a tab on top of the page that will take you to the Technical Manaul and a form to request updates.

Please make sure you are using the most recent version of the manual when requesting revisions. The most recent version is avialable on the CISPRI website.

**NOTE:** Comments and/or requests on RFAIs for updates will no longer be accepted. All requests are to be submitted through the form on the CISPRI website.

**Thank you for helping CISPRI maintain it's**
**Technical Manual up-to-date!**

## HOW TO USE THE CISPRI TECHNICAL MANUAL

The purpose of the **CISPRI Technical Manual** is to provide response tactics in a user friendly format that is accessible both to contingency planners, and operations personnel. The tactics were designed to provide the building blocks for CISPRI Member Company response scenarios so that the resources and personnel needed to respond to site-specific spills could be simply and thoroughly identified.

**The tactics are arranged by subject as follows:**

- **Safety (S)**
- **Open Water (OW)**
- **Nearshore (NS)**
- **Shoreline (SL)**
- **Inland (IL)**
- **Tracking and Surveillance (TS)**
- **Non-Mechanical Response (NM)**
- **Sensitive Area Protection (SA)**
- **Wildlife (W)**
- **Waste Management (WM)**
- **Logistics and Planning (LP)**

Each tactic is numbered with a key letter to identify the subject: e.g., **S-1** (Site Entry Procedures/Site Characterization) is the first tactic in the safety section, while **NM-1** (Dispersant Treatment) is the first in the non-mechanical response section. These numbers are useful for referencing in each of the member company response plans.

The "**CI**" prefix for each tactic number is intended to distinguish CISPRI tactics from those of other organizations, such as SERVS or Alaska Clean Seas (ACS).

**Figure 1** shows a sample tactic and illustrates that each tactic consists of some or all of the following elements:

- **Simplified diagram,**
- **Brief narrative description,**
- **Equipment and personnel table,**
- **Support equipment table,**
- **Planning assumptions, and**
- **Operational considerations.**

Sufficient information is provided to allow the user to quickly see how the tactic is deployed and to identify the equipment and personnel needed to implement the tactic. Each individual tactic represents a single unit of deployment — i.e., the response scenario will identify how many units of a given tactic are required to meet the needs of the scenario. The resource tables also provide storage locations for the equipment and can be used to determine equipment needs for the response scenario.

It is important to note that the data provided for equipment quantity and for numbers and types of personnel are based on the minimum required to implement the tactic for a 12-18 hour shift (varies). Exceptions to this are noted as appropriate.

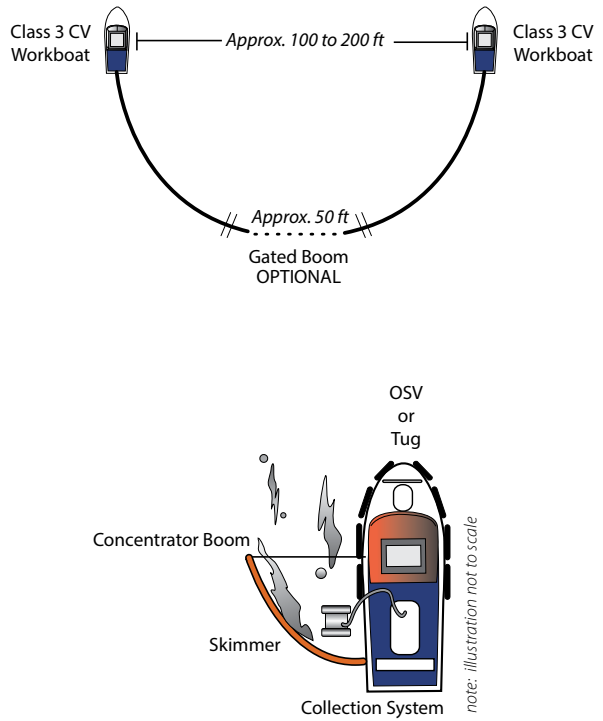
**To aid in understanding the tactics the following terms are used:**

| TERM | DEFINITION |
|---|---|
| **Mobilize** | **Time taken for a resource to be notified, readied and get underway.** |
| **Transit** | **Time it takes from getting underway to arriving onsite. (Equipment is readied for operation during transit if possible or deployed after transiting.)** |
| **On-Scene** | **When equipment operation begins or when contract vessels are at a staging area.** |



*To report an oil spill and activate CISPRI, call 907-776-5129*

*Figure 1: Sample Tactic*




## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to recover large quantities of oil in open water environments. The OSV *Perseverance / Endeavor* or other CISPRI contracted Vessels (OSV or CV) can store recovered oil/water onboard or pump these fluids directly to secondary storage.

Whether this recovery vessel is collecting oil/water for onboard storage or for transfer to secondary storage, this skimming vessel can be used in conjunction with two fishing vessels or work boats towing containment boom in a gated "U" configuration to enhance encounter rates.

This is a 24-hour-a-day operation with the initial crew being able to work for 18 hours. Additional crew should be mobilized to supplement the first crew.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | LEAD SPILL TECHNICIAN | LABORER / RESPONDERS | TANKERMAN | VESSEL OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|---|
| OSV or CV [A] | Skimming Platform | 1 | 1 | 4 | 1 [B] | - | 1 [C] |
| OB/OWS | Primary Storage | 1 | N/A | | | | |
| Crucial 13 Disc Skimmer | Skimming System | 1 | | | | | |
| **OPTIONAL EQUIPMENT** | | | | | | | |
| Class 3 or 4 Vessel [D] | Boom Tow | 2 | | 2 | | 2 | |
| Gated Boom / optional non-gated boom | Concentrator Boom | 1000ft | - | - | - | - | - |

A. OSV or CV: This could be a CISPRI owned or contracted Offshore Supply Vessel or a contracted Vessel-of-Opportunity.

B. Tankerman only needed when Barge is conducting transfer operations.

C. CISPRI initial responders may fill FSS role.

D. CISPRI Vessels could be used in place of Class 3 or 4 vessels (Vessel Classifications – See CI-LP-5).

*Note: The Lead Spill Technician is the Task Force Leader (TFL).*

## SUPPORT

| EQUIPMENT | FUNCTION | QUANTITY |
|---|---|---|
| Air Monitoring Meters | Site Characterization (Air Monitoring) | 1 set |
| PPE | Protection of Response Personnel | Various |
| Power Packs | Power Skimmer, Boom Reels, on CV | 1 |
| Boom Reels | Boom Stowage | 1 |
| Infrared Sensor | Located oil in darkness | 1 |



***To report an oil spill and activate CISPRI, call 907-776-5129***

*Figure 1: Sample Tactic*

**OPERATIONAL CONSIDERATIONS**

- During a response, the Operations Section will identify the need for additional trained responders for the Open Water Task Forces and work with the Resources Unit and Logistics Section to locate additional crew members and responders and arrange transportation to the response location.
- The OSV / CV will prepare all equipment for deployment while enroute (weather permitting).
- The OSV / CV will deploy containment boom to boom towing vessels when they arrive on scene (if needed).
- Spill responders will operate skimmer and decon. Spill responders (or trained CV members) will deploy boom aided by CV (if needed).
- The number of responders needed to initially deploy the skimmer system is more than what is needed to operate it. Laborers can be borrowed from on board crews or other C/V's in the area as necessary.
- Decanting will only be used with the 220 bbl Oily Water Separator (OWS) and large storage barges. *(Decanting Permit required - See CI-LP-6)*
- Vessel assignments will be initially assigned by the CISPRI Operations Department until Member Company Incident Management Team arrives.
- CISPRI OSV's/CV and CISPRI Barges have deck lighting for nighttime operations.
- All CISPRI responses are based on the tides and currents and other environmental conditions at the time of the response. *(See CI-LP-1)*
- Two CISPRI OSV's have Infrared Sensors on board that can help ensure the vessel stays in the oil during hours of darkness.
- This tactic will not be used in ice coverage greater than 30% - 50% *(See CI-OW-2)*
- This is a 24-hr operation, with the initial crew working 18 hours. Additional crew will be mobilized to supplement and relieve the first crew.
- The number of responders needed to initially deploy the skimming system and/or containment boom is more than what is needed to operate it. Laborers can be borrowed (re-tasked) from onboard vessel crews or other CV's in the area.
- CISPRI OSV's require a minimum under-the-keel clearance of 3 feet when at Hilcorp Rig Tenders Dock.
- Gated boom deployment may follow deployment of Current Buster and skimmer. Gated boom entrainment is expected due to less than 4 knot speeds. This is considered acceptable.



***To report an oil spill and activate CISPRI, call 907-776-5129***

# ACRONYMS & ABBREVIATIONS

| | |
|---|---|
| AAC | Alaska Administrative Code |
| ABS | American Bureau of Shipping |
| A/C | Aircraft |
| ACS | Alaska Clean Seas |
| ADDS | Airborne Dispersant Delivery System |
| ADEC | Alaska Department of Environmental Conservation |
| ADF&G | Alaska Department of Fish and Game |
| ADNR | Alaska Department of Natural Resources |
| ADOT | Alaska Department of Transportation and Public Facilities |
| AFFF | Aqueous Film Forming Foam |
| AMPD | Average Most Probable Discharge |
| APICOM | Association of Petroleum Industry Cooperative Managers |
| APR | Air-purifying respirator |
| ARRT | Alaska Regional Response Team |
| ARTS | Alyeska Radio Telephone System |
| AS | Alaska Statutes |
| ASIP | Alaska Sea Ice Program |
| ASLC | Alaska SeaLife Center |
| ASRC | Arctic Slope Regional Corporation |
| ATV | All-Terrain Vehicle |
| BAT | Best Available Technology |
| bbl | Barrel or Barrels |
| BLM | Bureau of Land Management |
| BMP | Best Management Practices |
| BTEX | Benzene, Toluene, Ethylbenzene, Xylenes |
| Cal | Caliber |
| CFR | Code of Federal Regulations |
| CISPRI | Cook Inlet Spill Prevention and Response, Inc. |
| cm | Centimeter |
| CMS | Chip InMonitoring System |
| CO | Carbon Monoxide |
| COE | U.S. Army Corps of Engineers |
| COI | Certificate of Inspection |
| CP | Command Post |
| Ct | Count |
| cu ft | Cubic foot or feet |
| CV | Contract vessel |
| decon | Decontamination |
| DNR | Department of Natural Resources |
| DOI | U.S. Department of Interior |
| DOSH | Department of Occupational Safety and Health (State of Alaska) |
| DOT | U.S. Department of Transportation |
| DRO | Diesel Range Organics |
| ea. | Each |
| E&E | Ecology & Environment |
| EnR | Encounter rate |
| EPA | U.S. Environmental Protection Agency |
| ESI | Environmental Sensitivity Index |
| ESA | Endangered Species Act |
| EUL | Environmental Unit Leader |
| FAA | Federal Aviation Administration |
| FCC | Federal Communications Commission |
| FOSC | Federal On-Scene Coordinator |
| fps | Feet per second |
| FSS | Field Site Safety |
| ft | Foot or feet |
| FV or F/V | Fishing Vessel |
| G/A | Ground to Air |
| gal | Gallon or gallons |
| GC | Gas Chromatograph |
| gpm | Gallons per minute |
| GPS | Global Positioning System |
| GRO | Gasoline Range Organics |
| GRS | Geographic Response Strategy |
| GT | Gross tons |
| HAZWOPER | Hazardous Waste Operations & Emergency Response |
| H2S | Hydrogen Sulfide |
| HF | High Frequency |
| hp | Horsepower |
| hr | Hour or hours |
| IAP | Incident Action Plan |
| IBR | International Bird Rescue |
| IC | Incident Commander |
| ICP | Incident Command Post |
| ICS | Incident Command System |
| IDLH | Immediately Dangerous to Life or Health |
| IL | Inland (Tactics) |
| IMO | International Maritime Organization |
| IMT | Incident Management Team |
| in. | Inch or inches |
| IRT | Immediate Response Team |
| ISB | In-Situ Burning |
| KPB | Kenai Peninsula Borough |
| kt | Knot or knots |
| kW | Kilowatt |
| LEL | Lower Explosive Limit |
| LOSC | Local On-Scene Coordinator |
| LP | Logistics and Planning (Tactics) |
| MESA | Most Environmentally Sensitive Area |
| mg | Milligram |
| mi | Mile or miles |
| min | Minute or minimum |
| mi2 | Square mile or miles |
| ml | Milliliter |



***To report an oil spill and activate CISPRI, call 907-776-5129***

| | |
|---|---|
| MHz | Megahertz |
| mm | Millimeter |
| MMPA | Marine Mammal Protection Act |
| MMTL | Marine Mammal Team Leader |
| MSDS | Material Safety Data Sheet |
| MSRC | Marine Spill Response Corporation |
| MWRT | Marine Wildlife Rescue Team |
| N/A | Not applicable |
| NFPA | National Fire Protection Association |
| nm | Nautical mile |
| NM | Non-Mechanical (Tactics) |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanic and Atmospheric Administration |
| NPDES | National Pollutant Discharge Elimination System |
| NRDAR | National Resource Damage Assessment and Restoration |
| NS | Nearshore (Tactics) |
| OHA | Office of History and Archaeology |
| OSC | On-Scene Coordinator |
| OSHA | U.S. Occupational Safety and Health Administration (federal) |
| OSV | Off-Shore Supply Vessel |
| OW | Open Water (Tactics) |
| OWS | Oily Water Separator |
| PEL | Permissible Exposure Limit |
| PFD | Personal Flotation Device |
| PID | Photo-ionization detector |
| PPE | Personal Protective Equipment |
| ppm | Parts per million |
| PRAC | Primary Response Action Contractor |
| PSA | Public Service Announcement |
| psi | Pounds per square inch |
| pt | Pint |
| PU | Polyurethane |
| PVC | Polyvinyl chloride |
| PWS | Prince William Sound |
| RCRA | Resource Conservation and Recovery Act |
| RFAI | Request for Additional Information |
| RHIB | Rigid hull inflatable boat |
| RMROL | Realistic Maximum Response Operating Limitations |
| RP | Responsible Party |
| RPIC | Responsible Party in Charge |
| RRO | Residual Range Organics |
| RPS | Response Planning Standard |
| S | Safety (Tactics) |
| SA | Sensitive Areas (Tactics) |
| SCAT | Shoreline Cleanup Assessment Technique |
| SCBA | Self-Contained Breathing Apparatus |
| SERVS | Ship Escort/Response Vessel System |
| SHPO | State Historic Preservation Office |
| SL | Shoreline (Tactics) |
| SMART | Special Monitoring of Applied Response Technology |
| SO | Safety Officer |
| SORC | Sea Otter Rehabilitation Center |
| SOSC | State On-Scene Coordinator |
| sq ft | Square foot or feet |
| SSB | Single Sideband |
| SSC | Scientific Support Coordinator |
| T | Ton or tons |
| TCLP | Toxicity characteristic leaching procedure |
| TFL | Task Force Leader |
| THC | Total hydrocarbons |
| TLV | Threshold Limit Value |
| TOC | Table of Contents |
| TOO | Tanker-of-Opportunity |
| TS | Tracking and Surveillance (Tactics) |
| TSD | Treatment, Storage, or Disposal |
| TSS | Total Suspended Solids |
| TWA | Time Weighted Average |
| UHF | Ultra High Frequency |
| US | United States |
| USC | United States Code |
| USCG | United States Coast Guard |
| USFWS | United States Fish and Wildlife Service |
| VHF | Very High Frequency |
| VOC | Volatile Organic Compound |
| VOSS | Vessel of Opportunity Skimming System |
| vsl | Vessel |
| W | Wildlife (Tactics) |
| WBD | Wildlife Branch Director |
| WM | Waste Management (Tactics) |
| WPG | Wildlife Protection Guidelines for Oil Spill Response in Alaska |
| WRP | Wildlife Response Plan |



**To report an oil spill and activate CISPRI, call 907-776-5129**

# Table of Contents


| TACTIC # | TITLE |
|---|---|
| **(INTRO)** | **INTRODUCTION** |
| Intro | Introduction |
| **(TOC)** | **TABLE OF CONTENTS** |
| TOC | Table of Contents |
| **(S)** | **SAFETY TACTICS** |
| S | Safety Tactics (Cover Page) |
| S-1 | Site Entry Procedures & Site Characterization |
| S-2 | Site Safety Plan Development |
| S-3 | Personal Protective Equipment |
| S-4 | Site Control |
| S-5 | Personnel Decontamination (Typical - Dry) |
| S-6 | Personnel Decontamination (Emergency) |
| S-7 | Job Safety Analysis |
| **(OW)** | **OPEN WATER TACTICS** |
| OW | Open Water Tactics (Cover Page) |
| OW-1 | Primary Response Vessel Task Force |
| OW-2 | Dynamic Ice Skimming |
| OW-3 | Response Barge Task Force |
| OW-4 | Lightering (Large Vessel) |
| OW-5 | Lightering (Small Vessel) |
| OW-6 | Enhanced Recovery Task Force |
| OW-7 | Fluid Transfer to a Platform (Hilcorp only) |
| **(NS)** | **NEARSHORE TACTICS** |
| NS | Nearshore Tactics (Cover Page) |
| NS-1 | U and J Module |
| NS-2 | Current Buster |
| NS-3 | Shoreline Protection by Exclusion Booming |
| NS-4 | Shoreline Protection by Diversion Booming |
| NS-5 | Shoreline Diversion/Entrapment |
| NS-6 | Use of Skiffs/Work Boats for NS Response |
| **(SL)** | **SHORELINE TACTICS** |
| SL | Shoreline Tactics (Cover Page) |
| SL-1 | Shoreline Cleanup Assessment Technique (SCAT) |




***To report an oil spill and activate CISPRI, call 907-776-5129***

| | |
|---|---|
| SL-2 | Protective Beach Flooding / Cold Water Deluge |
| SL-3 | Passive Collection / Manual / Vacuum Removal |
| SL-4 | Shoreline Cleanup - Mechanical Recovery |
| SL-5 | Shoreline Cleanup - Manual or Vacuum Removal |
| SL-6 | Sorbent / Vegetation Cutting |
| SL-7 | Debris Removal |
| SL-8 | Mud Flat Response Tactics |

| (IL) | INLAND TACTICS |
|---|---|
| IL | Inland Tactics (Cover Page) |
| IL-1 | Berms, Dikes and Dams |
| IL-2 | Trenches and Slots |
| IL-3 | Culvert Booming / Blocking |
| IL-4 | Underflow Dam |
| IL-5 | Deflection / Diversion Booming |
| IL-6 | Diversion Booming in a Stream |
| IL-7 | Deflection Booming in a Stream |
| IL-8 | Exclusion Booming in a River / Stream |
| IL-9 | Excavation |

| (TS) | TRACKING AND SURVEILLANCE |
|---|---|
| TS | Tracking And Surveillance (Cover Page) |
| TS-1 | Aerial Surveillance (On Water) |
| TS-2 | Tracking Buoys |
| TS-3 | Mapping & Delineation of Oiled on Land/Ice/Snow |
| TS-4 | Spill Volume Estimation on Water |

| (NM) | NON-MECHANICAL RESPONSE |
|---|---|
| NM | Non-Mechanical Response (Cover Page) |
| NM-1 | Dispersant Treatment |
| NM-2 | Dispersed Oil Monitoring |
| NM-3 | In-Situ Burning and Residue Collection |
| NM-4 | Burning Oiled Vegetation |
| NM-5 | Burning Pools of Oil on Solid Surfaces |

| (SA) | SENSITIVE AREA PROTECTION |
|---|---|
| SA | Sensitive Area Protection (Cover Page) |
| SA-1 | Sensitive Area Protection |
| SA-2 | Geographic Response Strategies (GRS) |
| SA-3 | Cultural Resources |

| (W) | WILDLIFE |
|---|---|




*To report an oil spill and activate CISPRI, call 907-776-5129*

| | |
|---|---|
| W | Wildlife (Cover Page) |
| W-1 | WRPs, Wildlife Response Contracts, Authorizations & Permits |
| W-2 | Response Forms, Wildlife Recon & Wildlife Observers |
| W-3 | Avian Response & Rehabilitation |
| W-4 | Otter Response & Rehabilitation |
| W-5 | Pinniped/Cetacean Response & Rehabilitation |
| W-6 | Bear Guard |

| (WM) | WASTE MANAGEMENT |
|---|---|
| WM | Waste Management (Cover Page) |
| WM-1 | Waste Management Plan and Permitting |
| WM-2 | Management of Liquid Waste |
| WM-3 | Decanting |
| WM-4 | Management of Solid Waste |
| WM-5 | Small Vessel Decontamination |
| WM-6 | Large Vessel Decontamination |
| WM-7 | Equipment Decontamination |
| WM-8 | Oiled Debris |

| (LP) | LOGISTICS AND PLANNING |
|---|---|
| LP | Logistics and Planning (Cover Page) |
| LP-1A | Spill Response Assumptions (Equipment) |
| LP-1B | Spill Response Assumptions (Personnel) |
| LP-2 | Communications for Spill Prevention & Response |
| LP-3 | Accessing Contract & Non-Obligated Resources |
| LP-4 | CISPRI Equipment Inventory |
| LP-5 | Contracted Vessel Program |
| LP-6 | Permits for Spill Response |

| APPENDICES | |
|---|---|
| Appendix A | CISPRI Equipment Specifications (Cover Page) |
| A-1 | Vessels |
| A-2 | Barges & Storage |
| A-3 | Boom |
| A-4 | Skimmers |
| A-5 | Non-Mechanical Response / TT-600 Portable Fire Pump |
| A-6 | Onshore Response |
| Appendix B | Realistic Maximum Operating Limitations (RMOL) |
| Appendix C | Site Safety Plan |
| Appendix D | Waste Management Plan |
| Appendix E | CISPRI Response Training |
| Appendix F | Bibliography |




***To report an oil spill and activate CISPRI, call 907-776-5129***

| RECENT REVISIONS | |
|---|---|
| **2021 Revisions** | |
| CI-OW-4 | Added storage capacity for Jovalan Barge |
| CI-TS-2 | Removed light strobe buoys |
| CI -NM | Regarding In Situ Burning – removed references to Annex F, replaced with reference to ADEC Area Plan References and Tools. Provided link. |
| CI-SA-1/2 | Updated Sensitive area protection resources. Updated information pertaining to Cook Inlet Geographic Response Zones. Updated GRS weblink and format information. |
| CI-W | Complete re-write of all wildlife sections to be in line with the WPG. Each tactic within the section, except for W-6 (Bear Guard), has a new title and new content. Avian / Otter response tactics have been separated from one another and each is their own tactic. Pinniped/Cetacean Response & Rehabilitation has been added. Layouts of the SORC and ASLC Rehab areas have been added. |
| CI- LP | - Updated gear/equipment/supplies throughout section. Updated contact information for resources thought section. Suppliers for fridge/freezer vans or trucks were identified and included.<br>- Added Communications Trailer<br>- Removed Tables 2, 3, and scan list (LP-2). Removed Tables: 10 – lodging, 11 – Meals/Catering, and 12 – Ground Transportation (LP-3) |
| Appendix A | Updated equipment inventory/information. Removed Moriah, added Cook Inlet Responder Vessels. Removed Resolution, replaced with Endeavor. Added Information on TT-600 Portable Fire Pump and CISPRI's role in firefighting. |
| Appendix B | Removed outdated weather information, provided resources/references for current and archived weather data. Updated broken weblinks. |
| Appendix F | Updated references / broken weblinks |
| | **2023 Revisions** |
| General | Removed references to OSK Dock and replaced with Hilcorp Rig Tenders Dock. |
| | Dispersant is now located in Nikiski |
| | Removed Thrush 600 |
| | Fluorometer is in Nikiski |
| | Corrected on-board storage capacity of the Endeavor from 1236 bbls to 1170 bbls |
| CI-LP-3 | Table 8. Cardno is now Stantec, added Polaris Applied Sciences |
| | **2024 Revisions** |
| CI-LP 4-2 | Table 2 (Barges and Storage Containers) – added Redoubt Barge as a mitigation response/lightering barge. Capacity 82,006 bbls. |
| Appendix A | Added mitigation/response lightering barge - Redoubt |
| CI-LP 4-3 | Table 6 (Skimming Oil vs. Water Rates) – updated table to include total fluids recovered and to reflect the allowable 70% ORE when using crucial skimmers with a NOFI 'Buster' series oil collection system. |
| CI-LP-4 | Table 1. Vessels – Updated locations for Cook Inlet Responder Vessels. The 22 ft. skiff is now located in Anchorage. The 20 ft. skiff was removed from Anchorage.<br>Table 12. POA Equipment Cache – Added Cook Inlet Responder. The 26 ft. skiff was removed and replaced with a 22 ft. skiff. |
| Throughout | US Ecology and National Response Corporation has changed to Republic Services. The remaining references to the Unified Plan were removed and replaced. |

# SAFETY TACTICS

## PURPOSE OF THE SAFETY TACTICS

Safety is the most important aspect of an oil spill response and is the primary focus of CISPRI. The tactics in this section outline the safety program in place to help ensure that a response is conducted in the safest possible manner.

The **tactics** associated with a safe response operation are:

- **CI-S-1, Site Entry Procedures and Site Characterization:** In advance of operations, the spill area must be assessed. The response area is surveyed, and strict site entry procedures are followed to ensure that responders are safe in their environment.
- **CI-S-2, Site Safety Plan Development:** A Site Safety Plan is developed for all areas of the response and is referenced continuously to confirm that the response is being conducted safely (Appendix C).
- **CI-S-3, Personal Protective Equipment:** On-scene assessments are made to ensure that the responders are provided with and are using the most appropriate personal protective equipment (PPE).
- **CI-S-4, Site Control:** Adherence to strict site-control procedures is the primary method to ensure a response is conducted safely and that contamination does not spread beyond an impacted area.
- **CI-S-5, Personnel Decontamination (Typical - Dry):** To prevent the spread of contamination beyond an impacted area, responders follow strict decontamination procedures.
- **CI-S-6, Personnel Decontamination (Emergency):** In the event of an emergency where a responder must vacate an impacted area for medical attention, the responder may receive emergency decontamination to avoid the spread of contamination.
- **CI-S-7, Job Safety Analysis:** In advance of a work project, use this form to facilitate a job hazard identification discussion.

**HOW SAFETY IS MANAGED:**

The Command Staff of the Incident Command System includes the Safety Officer, who is responsible for the overall safety of the response operation, and trained Field Site Safety (FSS) personnel, who are responsible for the safety of field operations. FSS personnel will conduct initial site characterization, set required PPE levels, and continuously monitor field operations. FSS personnel work closely with field responders and report to the Safety Officer, the Command Post (CP), and the on-scene Group Supervisor and/or Task Force Leaders.

All participants in a response have the obligation to stop any activity they believe is being conducted in an unsafe manner. The Safety Officer or FSS will immediately review the situation and recommend or determine a safe course of action.

**COMMUNICATIONS:**

The Safety Officer will be in contact with each FSS. Each will provide to the other all current relevant information. Each FSS communicates on safety issues to field responders and conducts regular briefings via radio and/or in-person (Tactic CI-LP-2).

**OPERATIONAL CONSIDERATION:** Equipment should be inspected prior to going out in the field to ensure it works properly and there are no defaults.

*This page left intentionally blank*

## TACTIC PURPOSE AND DESCRIPTION

This tactic involves using Site Characterization to help reduce the risk to the health and safety of responders from potentially harmful vapors which may emit from the spilled material.

Site Characterization is a three-step process, including:

(1) Pre-entry survey

(2) Initial site characterization

(3) Ongoing site characterization and monitoring

Field measurements and communication of data to responders are extremely important to minimize risk (Tactic CI-LP-2).

Site Characterization is performed from a safe distance. Operations are conducted in a manner that ensures safe conditions for the level of respiratory protection being used.

A CISPRI off-shore supply vessel (OSV) will likely be the first vessel on scene in the event of a spill to water. First capable vessel on scene with SCBA and air monitoring equipment will initiate site characterization with a pre-entry survey. The initial Incident Commander or an appropriately trained CISPRI responder (often a spill technician) initiates the site characterization process.

CISPRI will coordinate resources for site characterization. On water, the resources may include fishing vessels, OSVs, CVs, tugs, or other vessels. On land, the resources may include vehicles or ATVs.

### SAFETY CRITERIA FOR SPILL SITE ENTRY

### WARM ZONE CRITERIA

- Pre-Entry Survey identifies site hazards prior to establishing the Warm Zone
- Area must be accessible to Emergency Response Vehicles, Aircraft, or Vessels
- Access must be restricted to response resources, with check-in / check-out strictly observed
- Personnel are briefed on site hazards and mitigations, scope of work, and site entry procedures
- Decontamination procedures are strictly observed
- LEL = 0%
- H2S < 1 ppm
- Noise level < 85 dB (without hearing protection)
- Heat load < 1.6kW/m2 (equivalent to hot summer sun on bare skin)

Eventual access to contaminated site is based on air monitoring results

### HOT ZONE CRITERIA

Respiratory Requirements for Crude Oil / Petroleum Spill Cleanup

#### *Without* Respiratory Protection

| | |
|---|---|
| Oxygen is between 19.5% & 23.5% | LEL is 0% |
| VOC is < 50 ppm | Benzene is < .1 ppm |
| H2S is < 10 ppm | CO is < 35 ppm |
| Normal Natural or Mechanical Ventilation | No visible mist or fog of oil is present |

#### *Half-Face* APR - w/appropriate cartridges

| | |
|---|---|
| Oxygen is between 19.5% & 23.5% | LEL is < 10% |
| VOC is > 50 ppm and < 500 ppm | Benzene is > .1 ppm and < 5 ppm |
| H2S is < 10 ppm | CO is < 35 ppm |
| Normal Natural or Mechanical Ventilation | No visible mist or fog of oil is present |

#### *Full-Face* APR - w/appropriate cartridges

| | |
|---|---|
| Oxygen is between 19.5% & 23.5% | LEL is < 10% |
| VOC is > 50 ppm and < 500 ppm | Benzene is > 5 ppm and < 10 ppm |
| H2S is < 10 ppm | CO is < 35 ppm |
| Normal Natural or Mechanical Ventilation | No visible mist or fog of oil is present |

## 1. PRE-ENTRY SURVEY

The decision as to whether or not an entry shall be attempted is ultimately the responsibility of the Incident Commander with guidance from:

- Safety Officer (SO)
- Field Site Safety (FSS)

The survey team will approach the site from upwind. The survey will attempt to:

- Identify all site hazards
- Make a preliminary evaluation of site characteristics before site entry
- Determine if people are injured or trapped and contact help as soon as possible if necessary
- Delineate affected areas (Hot and Warm Zones)
- Restrict access to spill area to those involved in initial containment
- Note geographic hazards (cliffs, fast moving water, ditches, etc)
- Consider the need for the following: protective gear decontamination, site control, and safety equipment
- Gather data
- Identify conditions that could be immediately dangerous to life and health (IDLH) or pose other life-threatening hazards
- Identify potential ignition sources
- Ascertain whether combustion engines are normally allowed into the area
- Identify type of material discharged
- Determine approximate quantity or description of spilled material
- Identify location of spill
- Determine time and cause of the discharge
- Document current status of the vessel if applicable (i.e. vessel at anchor)
- Document weather conditions on-site (wind, tides, ice, wave heights, etc.)
- Document results of any air sampling* that has been completed

*Air monitoring equipment is available at CISPRI.

The results of the pre-entry survey are reported to the SO and/or the Operations Section through the CISPRI Dispatcher. ICS Form 201-5: Site Safety and Control Analysis, illustrates a pre-entry survey.

The pre-entry survey serves as a basis for initial site characterization and determination of appropriate personal protective equipment.

## 2. INITIAL SITE CHARACTERIZATION

***SCBA* (w/backup observer in same level PPE w/SCBA) for initial site characterization**

Oxygen is < 23.5% LEL is < 10%

**NOTE**: If excessive dust or suspended particulates are present, an OV/HEPA canister combination with full-face APR is required.

Trained personnel (FSS) conducting initial site characterization will take the following actions:

1. **Don Level B PPE with SCBA**
2. Assure the location is safe by measuring air-contaminant levels as close to the surface as possible. The FSS will slowly move closer to the spill while continuous monitoring takes place. If at any time the levels being monitored rise above the acceptable limits the FSS will vacate immediately.
3. Verify conditions are within acceptable limits using the Gas Detector to test for LEL, O2, CO, VOC/THC, H2S, and Benzene.
4. Establish safe breathing zones and appropriate PPE levels and communicate this information to on-scene responders.
5. Report results to the CISPRI Dispatcher for communication to the Operations Section Chief and SO.
6. Continuously monitor site with gas meters and alert personnel of changing conditions.

NOTE: Area must be vacated when current respiratory protection does not meet site entry criteria or when PPE fails.

## 3. ONGOING SITE CHARACTERIZATION AND MONITORING

Spill response is dynamic - to maintain a safe response, crews that have undergone site characterization training and have site characterization equipment will continuously monitor conditions and the work environment, reporting conditions to the Safety Officer and/or Operations Section (Tactic CI-LP-2). This information is incorporated in the ongoing Site Safety Plan. If readings exceed permissible limits, the immediate area must be vacated and notification given to other responders as appropriate. The Field Site Safety (FSS) is responsible for ongoing safety monitoring (Tactic CI-S-4).

## MAIN ROLES AND RESPONSIBILITIES

- **First Responders On-Scene:** Responsible for activating air monitoring and determining respiratory protection requirments.
- **Incident Commander (IC):** Responsible for the overall managment of the incident and determines which Command or General Staff positions to staff in order to maintain a manageable span of control and ensure appropriate attention to the necessary incident management functions.
- **Dispatcher:** Reports information from on-site personnel to incident command.
- **Operations Section Chief:** Responsible for managing all field operations and ensures that response efforts do not begin before the pre-entry survey and initial site characterization. The Operations Section Chief ensures timely communication of the results of the site characterization to the Situation Unit and the Safety Officer.
- **Safety Officer:** Reviews the pre-entry survey and the results of the initial site characterization and develops the Site Safety Plan.
- **Field Site Safety:** Recommends PPE to be used on site and is responsible for ongoing safety monitoring in coordination with the Safety Officer.

## COMMUNICATIONS

- **Chain of Command:** The pre-entry survey is communicated to the dispatcher. Site characterization information gathered by on-site personnel is communicated to the Operations Section. The Safety Officer prepares the Site Safety Plan and the safety portion of the Incident Action Plan (IAP) that is sent to field personnel.
- **Communications with Dispatcher:** Communications between on-site personnel and Incident Command should eb channeled through the dispatcher (Tactic CI-LP-2).
- **Communications with Other Vessels:** When notified of a spill on water, the U.S. Coast Guard will ensure other vessels remain clear of the area. The initial emphasis is ensuring all vessels near the spill are safe for the air contaminant levels present.

## GAS TESTING EQUIPMENT

Normally, the initial site characterization responder (FSS/Initial Incident Commander) assesses the site hazards using air monitors that provide an immediate warning of unsafe conditions. The results of these measurements are used to determine the level of respiratory protection and PPE required for work in the spill area.

- **Multimeter Gas Detector:** CISPRI's gas detectors are equipped with sensors for Oxygen, Carbon Monoxide, LEL, hydrogen sulfide, THC/VOC (total hydrocarbons), and benzene. The gas detectors are designed to measure in parts per million for toxic gases and % by volume for oxygen and % LEL for combustible gasses. This device measures in real time. The data can be downloaded onto a PC.
- **Site Characterization Kits:** A kit could include the following:

  ☐ Gas Detector ☐ Calibration Gasses
  ☐ Battery Chargers ☐ SCBAs
  ☐ Product Sampling Kit
  (The FSSs are responsible for putting the kits together).

- **CISPRI** maintains 4 Site Characterization Kits, of those 4, one each live on the OSVs.

*This page left intentionally blank*

*This is an (optional) initial Site Safety Plan for field use by the CISPRI FSS or Member Companies to use as part of the ICS-201 Forms.*

**Site Safety Plan** ICS 201-5

| | | |
|---|---|---|
| **Incident Name:** | | **RP Commander:** |
| **RP:** | **Date/Time:** | **Site Safety:** |

| **Type of Incident:** | **Objectives:** | **Map / GPS Coordinates** |
|---|---|---|
| ☐ Spill<br>☐ Drill or Planned Event<br>☐ Personnel Injury / Medical<br>☐ Other: | ☐ Spill Cleanup<br>☐ Rescue<br>☐ Source Control<br>☐ Other: | GPS: |
| **Chemical** | **Energy Sources** | |
| ☐ Name<br>☐ Amount<br>☐ SDS on hand | ☐ Electric<br>☐ High Temperature<br>☐ Pressure<br>☐ Vibration<br>☐ Noise<br>☐ Biological/Wildlife<br>☐ Motion<br>☐ Gravity<br>☐ Chemical | |
| **Permits** | | |
| ☐ Confined Space<br>☐ Hot Work<br>☐ Other: | | |
| **Weather/Environment** | | |
| ☐ Air Temp -<br>☐ Sea State -<br>☐ Wind Speed -<br>☐ Wind Direction -<br>☐ Precipitation -<br>☐ Forecast Concerns: | | |

**PPE Level:**

☐ D - Rain Suit or Chemical Suit, Hard Hat, Safety Glasses, Chemical Resistant Gloves, Chemical Resistant Boots

☐ C - Level D + Air Purifying Respirator

☐ B - Level D + SCBA

Other:

| **Communications** | **Decontamination:** |
|---|---|
| ☐ Command CH -<br>☐ TAC Channels -<br>☐ Safety Channel -<br>☐ Other Comms: | ☐ Plan Established<br>☐ Clear Delineation (HOT,WARM,COLD)<br>☐ Decon worker at same level of protection or one level below<br>☐ Emergency Decon Plan Established<br>☐ Other: |

| **Atmospheric Monitoring:** | **Frequency:** | |
|---|---|---|
| *Reading Time* ~ | | |
| ☐ Oxygen -------» | | 19.5%-22% |
| ☐ LEL ----------» | | <10% |
| ☐ $H_2S$ ----------» | | <10ppm |
| ☐ CO ----------» | | <35ppm |
| ☐ VOC ----------» | | >50 - 500ppm 1/2 Face |
| ☐ Benzene ------» | | 1/2 Face < 5 ppm > Full Face |

**(Notes)**

Signed By: _____ Site Safety _____ Date / Time

Approved By: _____ RP Commander _____ Date / Time

04/10/2019

## TACTIC PURPOSE AND DESCRIPTION

Initial responders follow the site entry/characterization procedures outlined in Tactic CI-S-1.

After the initial response is deployed, an ICS 201 Form is generated to be used as a briefing and reporting document to both field responders and the Incident Management Team (IMT). Part of this document, the ICS Form 201(5), is dedicated to site safety and hazard identification.

Safety information and directions are continuously released from the IMT throughout the ICS planning, keeping all responders informed and updated with known hazards, personal protective equipment (PPE) levels, decontamination procedures, and available medical resources and facilities. Safety information is released at periodic intervals each shift during situation updates and various meetings and briefings. It is included on the ICS-204 form for each task force in the field and in the Incident Action Plan. Usually, a full Site Safety and Health Plan (ICS-208) is part of the Incident Action Plan.

### ONSITE SAFETY BRIEFING

The Field Site Safety (FSS) provides regular safety briefings to all responders. These briefings take place before response activities begin, when conditions change that may affect responders, after a stoppage of work, and at regular intervals throughout a response. The safety briefings can be delivered over the designated task force VHF radio frequency and may be supplemented by visits by the FSS.

Any new personnel joining an ongoing response are provided a safety briefing outlining local conditions that may affect any safety aspect of the response. Briefings cover all safety aspects of the response and can include the following:

- Local weather/tidal/ice/sea state conditions
- Any local site environmental issues
- Hazard zones
- Rest periods
- Geographical features
- Any deployment safety issues such as skimming or towing conditions
- Any other safety issues that arise

### SITE SAFETY PLAN

CISPRI Member Companies and Agencies use a variety of Site Safety Plan applications. The Site Safety Plan is often completed by the Member Company IMT.

*This is a copy of the ICS 201-5 Site Safety and Control Analysis form*

## SITE SAFETY PLAN

**Incident Name:** _____ **Date Prepared:** _____

**Incident Location:** _____ **Time Prepared:** _____

**Site Safety Officer:** **On-Scene Commander:**

**(1) Type of Incident**

☐ Personal Injury/ Medical ☐ Spill
☐ Explosion ☐ Collision
☐ Well Control ☐ Fire
☐ Planned Event ☐ Terrorism
☐ Gas Release ☐ Other: _____

**(2) Entry Objectives (Refer to ICS-201, 202)**

☐ Isolate / Control Entry ☐ Reconnaissance
☐ Fire Suppression ☐ Spill Cleanup
☐ Special Procedures ☐ Account for Personnel
☐ Source Control ☐ Other: _____
☐ Rescue Victims/Evacuation or Shelter in Place

**(3) Hazard Identification / Evaluation (Refer to ICS-204)**

Chemical Properties

Name: _____ Est. Amount.: _____ State (solid, liquid, gas): _____ SDS on Hand:
Density: _____ Water Soluble: _____ Specific Gravity/Vapor: _____ ☐Yes ☐ No

Hazards

☐ Flammable FP: _____ LEL Range %: _____ ☐ Explosive _____
☐ Corrosive DOT/UN#: _____ ☐ Reactive _____ DOT Hazard Guide #: _____
☐ Toxic IDLH: _____ ☐ Environmental Sensitive Areas at Risk: _____
☐ Carcinogen Threat to: _____ ☐ Human Health at Risk? _____

Physical (Energy Sources Involved): ☐ Electrical ☐ Residual/Stored Energy ☐ Special; ☐ High Temperature ☐ Heat or Cold Stress; ☐ Pressure ☐ Energy Isolation and Control Verified?

Biological: ☐ Blood Borne Pathogen ☐ Special Health/Medical Issues; ☐ Prevention Plan Implemented? ☐ Wildlife Control Implemented?

Special: ☐ Confined Space Entry ☐ Elevated Area ☐ Limited Access; ☐ Below Grade (pit, trench) ☐ Offshore Structure ☐ Land Structure

**(4) Site Information** Safe Access Route to the Site: _____

☐ Site Control Zones Established on ICS-201 Site Map

Command Post Location: _____ Exclusion Zone Line: _____
Medical Located: _____ Contamination Reduction Zone Line: _____
Site Control: _____ Support Zone Line: _____
Site Organization Level (ICS-204): ☐ Yes ☐ No Traffic Pattern Established? ☐Yes ☐No

**(5) Weather/Environmental**

Current
Air Temperature: _____ Precipitation: _____ Humidity: _____
Wind Speed: _____ Wind Direction: _____

Forecast Time: _____ Date: _____
Air Temperature: _____ Precipitation: _____ Humidity: _____
Wind Speed: _____ Wind Direction: _____

Sea/Water Conditions

☐ Sea State _____ feet Maximum: _____ Average Wave Height: _____ feet
☐ Currents ☐ Yes ☐ No Current Speed: _____ Knots: _____ Current Direction: _____

**(6) Safety Procedures**

Pre-Entry Vitals Taken by Medical: _____ Post-Entry Vitals Taken by Medical: _____
Comments: _____

**(7) Route of Exposure**

☐ Inhalation _____ ☐ Eye Contact _____
☐ Ingestion _____ ☐ Dermal _____

**(8) Atmospheric Monitoring** Area: _____ Frequency: _____

| | Reading Time ---------> | | | | | | |
|---|---|---|---|---|---|---|---|
| ☐ Oxygen ----------> | | | | | | | 19.5%-22% |
| ☐ LEL ----------> | | | | | | | <10% |
| ☐ $H_2S$ ----------> | | | | | | | <10ppm |
| ☐ CO----------> | | | | | | | <35ppm |
| ☐ VOC ----------> | | | | | | | >50-500 ppm ½ Face |
| ☐ Benzene ---------> | | | | | | | ½ Face < 5 ppm > Full Face |

Safety or Industrial Hygienist: Name: _____ Signature: _____

**(9) Training** ☐ Response Training Requirements Have Been Identified.

Comments: _____

**(10) Personal Protective Equipment (PPE)**

Exclusion Zone (HOT)

| | Head/Eye | Respiratory | Body | Gloves | Foot | PFD |
|---|---|---|---|---|---|---|
| ☐ A | | | | | | |
| ☐ B | | | | | | |
| ☐ C | | | | | | |
| ☐ D | | | | | | |

☐ Contamination Reduction Zone (WARM). See Section 17, Decontamination.

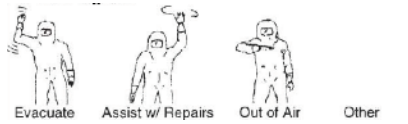
**(11) Communication Radio**

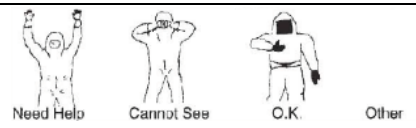
☐ Radio Communication Plan Implemented? Command Channel: _____ Tactical Channel(s): _____ /_____
☐ Emergency Call: (Band Aid-Band Aid-Band Aid) ☐ Bull Horns
☐ SCBA Communication ☐ In-Suit Communication

**(12) Visual/Signs**

☐ Entry Team Briefing Conducted
☐ Buddy System
☐ Leader/Team Site Rules Established
☐ Emergency Signals Verified w/All Team Members
☐ Other: _____
☐ Other: _____

**(13) Hand Signals**




**(14) Site Emergency Equipment**

(List Special Equipment Required)

| | Equipment | Location |
|---|---|---|
| ☐ | | |
| ☐ | | |
| ☐ | | |
| ☐ | | |
| ☐ | | |

**(15) Rescue/Medical**

| | Equipment/Unit | Location |
|---|---|---|
| ☐ | | |
| ☐ | | |
| ☐ | | |
| ☐ | | |
| ☐ | | |

**(16) Escape/Evaluation**

☐ Safe Refuge Areas Established for Exclusion Zone & for Location: _____
☐ Escape/Evacuation Alarm/Signal: _____
☐ Entry Team Escape Route: _____
☐ Criteria for Required Evacuation Established? (wind changed, IDLH conditions, etc.): _____

**(17) Decontamination (Corridor)**

☐ Decontamination Plan Established ☐ Decon Solution: _____
☐ Decontamination Control Marked on ICS-201 Site Map? ☐ Yes ☐ No
☐ Emergency Decon Procedures (Gross Flushing) ☐ Standard Decontamination Layout? ☐ Yes ☐ No

**(18) Decon Worker PPE Level**

| | Head/Eye | Respiratory | Body | Gloves | Foot | PFD |
|---|---|---|---|---|---|---|
| ☐ A | | | | | | |
| ☐ B | | | | | | |
| ☐ C | | | | | | |
| ☐ D | | | | | | |

NOTE: Decon personnel to be protected at the same level or one level below Exclusion Zone entry personnel.

**(19) Organization Plan & Initial Briefing**

☐ Organizational Plan/Position Designations Complete? (Refer to ICS-201, 203, and 204)
☐ Incident Action Plan Established? (Refer to ICS Forms, I.A.P.)
☐ All Positions Track and Record Actions (Refer to ICS-214 Unit Log)

**(20) Attachments (ICS Forms, Maps, Photos, etc.)**

☐ _____ ☐ _____ ☐ _____
☐ _____ ☐ _____ ☐ _____

**(21) Demobilization**

☐ Demobilization Safety Procedures Established?

**(22) Additional Comments:** _____

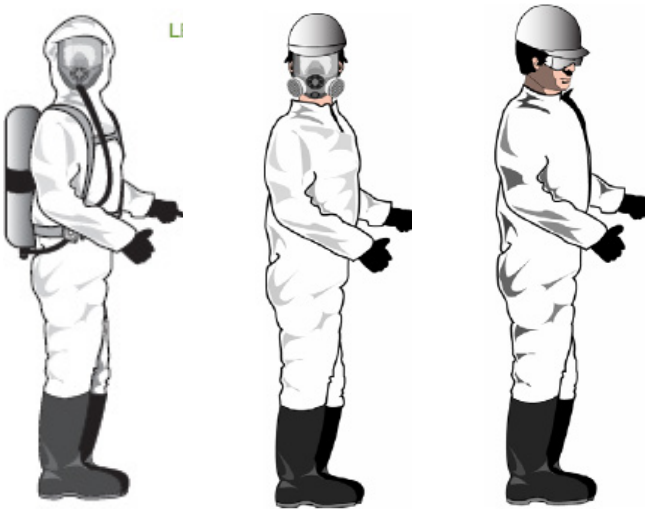
Prepared By: Approved By:

_____ _____
Site Safety Officer Date/Time On-Scene Commander Date/Time



**To report an oil spill and activate CISPRI, call 907-776-5129**

# Personal Protective Equipment



**Level B** **Level C** **Level D**

## TACTIC PURPOSE AND DESCRIPTION

Personal Protective Equipment (PPE) is used for specific job activities or during transit between sites (berthing points, activity sites, etc.). These are identified in the Site Safety Plan and enforced by the Safety Officer and Field Site Safety to all workers and to visitors to the site. All responders are responsible and obligated to ensure each others' safety.

For purposes of spill response, PPE used by CISPRI is divided into three categories based on the level of personal protection afforded. Level B is always used by CISPRI for initial site Characterization and includes an SCBA.

**Level B** consists of:

- SCBA or positive-pressure, supplied-air respirator with escape SCBA
- Chemical-resistant clothing (overalls; two-piece chemical-splash suit; disposable chemical resistant overalls) or rain suit
- Gloves, chemical resistant
- Boots, chemical resistant
- Safety glasses or chemical splash goggles and
- Hard hat

**Level C** consists of:

- Full-face or half-mask air-purifying respirator with appropriate cartridges
- Chemical-resistant clothing (overalls; two-piece chemical-splash suit; disposable chemical resistant overalls) or rain suit
- Gloves, chemical resistant
- Boots, chemical resistant
- Safety glasses or chemical splash goggles
- Hard hat

**Level D** consists of:

- Rain suit or disposal chemical resistant clothing
- Gloves, chemical resistant
- Boots, chemical resistant
- Safety glasses or chemical splash goggles
- Hard hat

**Level C and D** are general guidelines for PPE. Additional, hazard-specific PPE is used as described on the following page.

## PROTECTION FROM OIL & PETROLEUM PRODUCTS

Personnel involved directly with oil are required to wear at a minimum the following PPE:

- Safety glasses (consideration is given to wearing face shields or goggles for those involved in spraying operations)
- Hard hats are required.
- Oil-resistant hard-toed boots, slicker suits, and gloves

The Safety Officer / Field Site Safety will determine if respirators are necessary and if so, what type. If respirators are worn, persons using them are instructed in the training program in their proper selection and use.

## PERSONAL FLOTATION DEVICE (PFD) REQUIREMENTS

Personal flotation devices (e.g., life vests, work vests, etc.) must be worn while engaged in any activity where there is a risk of falling into the water and while on the deck of vessels.

Specifically:

- Type I, Type III (work vests) or Type V personal flotation devices (e.g., float coats, float suits, etc.) are required when riding in boats and/or working where there is a potential to fall in the water.
- Type V Hybrid personal flotation devices (Mustang/float suits) are required for travel by helicopter and single-engine fixed-wing aircraft.
- Personal flotation devices are not required to be worn in multi-engine, fixed-wing aircraft; however, all aircraft must carry sufficient personal flotation devices for all personnel onboard.

## FACE AND EYE PROTECTION

Suitable face and eye protection must be worn in all areas to prevent injuries that can result from flying objects and chemical splashes. Safety glasses are the minimum. Boat and barge decks, laydown yards, etc. are considered work areas. The Safety Officer determines which of the following types to use:

- Face shields provide the greatest protection against splashes and flying objects. Face shields attach to a hard hat or are equipped with their own headgear.
- Goggles may also be used to protect against splashes, dust particles, and flying objects.
- Safety glasses only protect eyes from impact. They are worn just like regular glasses and may be equipped with side shields to provide a higher level of protection.
- Full-face respirators also provide suitable eye protection.

## EAR PROTECTION

Hearing protection may be required in high-noise areas such as around heavy equipment, pumps, winches, aircraft, and internal combustion engines. These areas are identified following a noise survey or on the advice of the Field Safety Specialist.

## HAND PROTECTION

To prevent oil contamination and to reduce skin exposure and the risk of abrasions, shoreline personnel and personnel handling oily waste will wear gloves resistant to penetration by oil and solvents. After a day's use, gloves will be placed in trash bags and decontaminated if possible. Disposable gloves that are suitable for this kind of protection may be used to further reduce the possibility of skin exposure.

## BODY PROTECTION

Chemical resistant clothing/protection must be worn to prevent contact with oil. This may consist of any or all of the following, depending on exposure and job being done: oil-resistant steel-toed boots, gloves, slicker suits, goggles, or face shields. Protective outer wear, rain suits, or Tyvek suits are to be worn for work where direct contact with oil is possible.

At the end of each work shift, suits are to be placed in trash bags, transported to a decontamination station, and recycled if possible. Disposable suits are to be placed in trash bags for disposal.

## FOOT PROTECTION

Oil-resitant hard-toed boots will be selected based on traction, oil/solvent penetration, and suitability for the work being done. Boots will be decontaminated before leaving contaminated areas.

Absorbent pads will be placed in the foot path area to absorb oil and to reduce contamination. Boots will be cleaned daily, if possible at decontamination stations.

## RESPIRATORY PROTECTION

Air monitoring will be used in all areas prior to and during deployment of responders for oil spill cleanup activities on land or water.

In those instances where protection from dust particles, mists, odors, and vapors is desired by workers, disposable half-mask devices will be provided. Training on the proper selection, fitting, and use will be provided by appropriately trained responders.

Respiratory protection may be used for odor control. It should be noted that if respirators are used for odor control (organic vapors), other potentially toxic gases such as carbon monoxide or hydrogen sulfide may not be removed by these devices. The Safety Officer's staff will instruct users on proper fit and use if respirators are used for odor control.

## CONTRACT VESSEL PPE

PPE will be provided on an as-needed basis for contract vessel crews according to the conditions that exist at the work site. The Field Safety Specialist determines the need for PPE based on the work assignment of the contract vessel. Life jackets, safety glasses, and hard hats are required when working on deck.

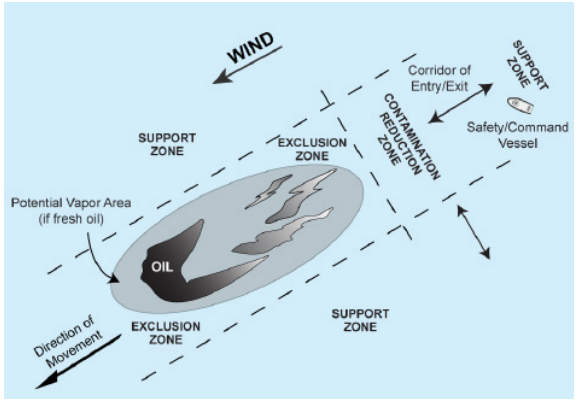
During a response, PPE will be provided to all responders. CISPRI maintains a supply a PPE at multiple locations.

*This page left intentionally blank*

# SITE CONTROL

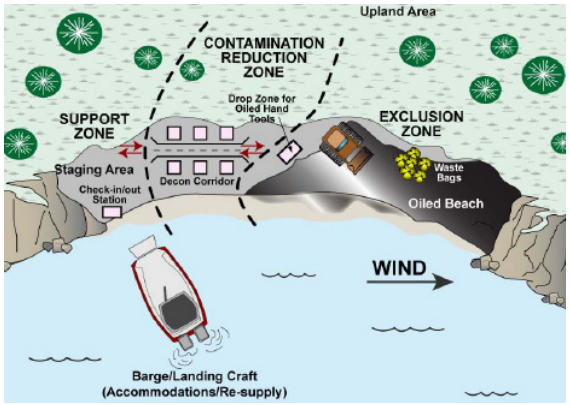
These site control diagrams show ideal layouts. The support zone and contamination reduction zone will have to be relocated if the wind direction changes. The Field Site Safety FSS will monitor conditions and direct changes to site control when necessary. (The following figures are not to scale).

### FIGURE 1: Offshore



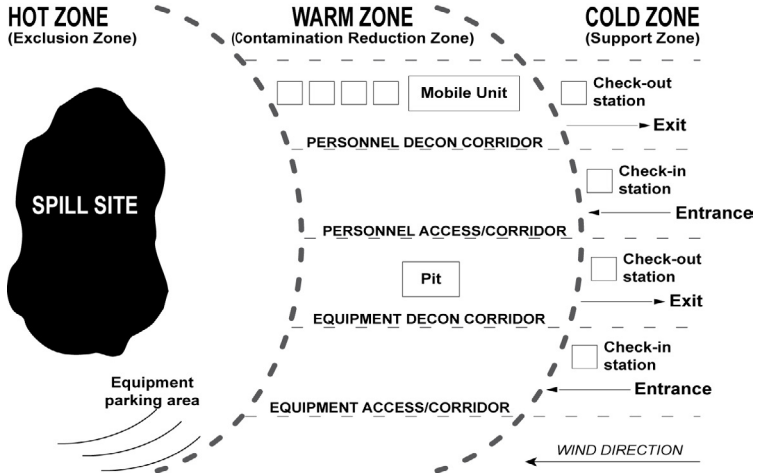

Exclusion Zone = Hot Zone
Contamination Reduction Zone = Warm Zone | Support Zone = Cold Zone

### FIGURE 2: Nearshore/Onshore




Exclusion Zone = Hot Zone
Contamination Reduction Zone = Warm Zone | Support Zone = Cold Zone

### FIGURE 3: Inland




Exclusion Zone = Hot Zone
Contamination Reduction Zone = Warm Zone
Support Zone = Cold Zone

## TACTIC PURPOSE AND DESCRIPTION

Due to the dynamic nature of oil spills, site control is an ongoing concern for maintaining the safety of response personnel. The FSS sets up the response access based on local field conditions at the time. Site characterization is continued throughout the ongoing response to assess the potential vapor and explosive hazards associated with the spill. The FSS controls entry and exit through the Support Zone. Strict site entry/exit protocol is enforced to minimize spreading the oil beyond the spill Exclusion Zone by response resources.

- **Exclusion Zone (Hot Zone):** The immediate vicinity of the spill where entry control procedures are in effect. The FSS establishes the perimeter of the Exclusion Zone. This is the primary spill containment and recovery area with the highest potential of hazardous exposure.

- **Contamination Reduction Zone (Warm Zone):** The area where response resources are checked in and out of the Exclusion Zone. If necessary, response resources must go through decontamination on exit from the spill area. This is the primary decontamination zone with strict decontamination procedures and specific waste containers for used PPE.
- **Support Zone (Cold Zone):** The area away from the spill and potential vapors and where people can approach or leave the spill response area.

## ONGOING FIELD SAFETY ACTIVITIES

**The Field Site Safety (FSS) is responsible to ensure a safe oil spill response.**

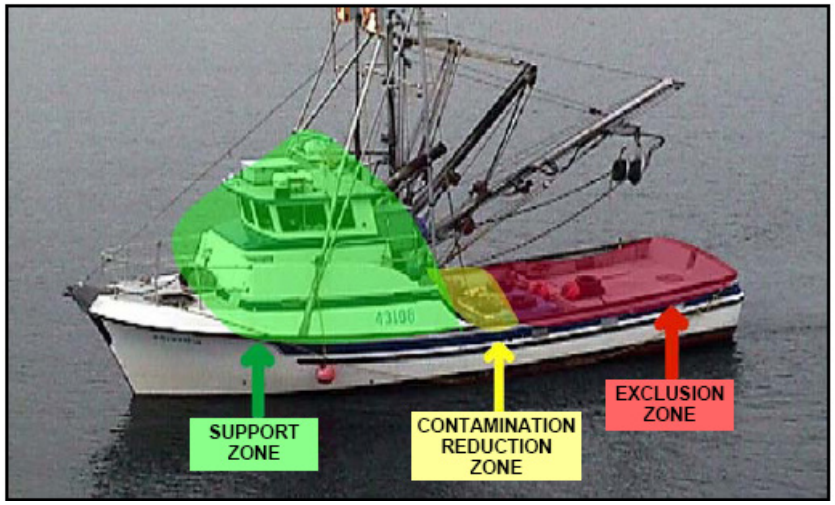
These duties include:

- **Conducting and Ensuring Ongoing Site Characterization and Monitoring:** Working with the response resources equipped with the air monitoring kits, the FSS conducts ongoing site characterization throughout the response. Local conditions are communicated to the IMT via the dispatcher.
- **Selection and Provision of Appropriate PPE:** The FSS will observe the local conditions and recommend the appropriate PPE to be worn by the responders. Working with the Safety Officer the FSS will ensure the appropriate amounts of PPE are available to the field responders.
- **Safety Briefings:** The FSS will provide regular safety briefings to the field responders. These may be conducted in person by visiting the responders on location or may be provided over the radio to all responders in the locally operating task forces.

The briefings will cover, at a minimum:

- Local weather conditions
- Local site characterization issues
- Any special local safety concerns such as high tide ranges
- Any changes to site entry procedures

**FIGURE 4: Site control onboard a typical contract vessel used for response.**

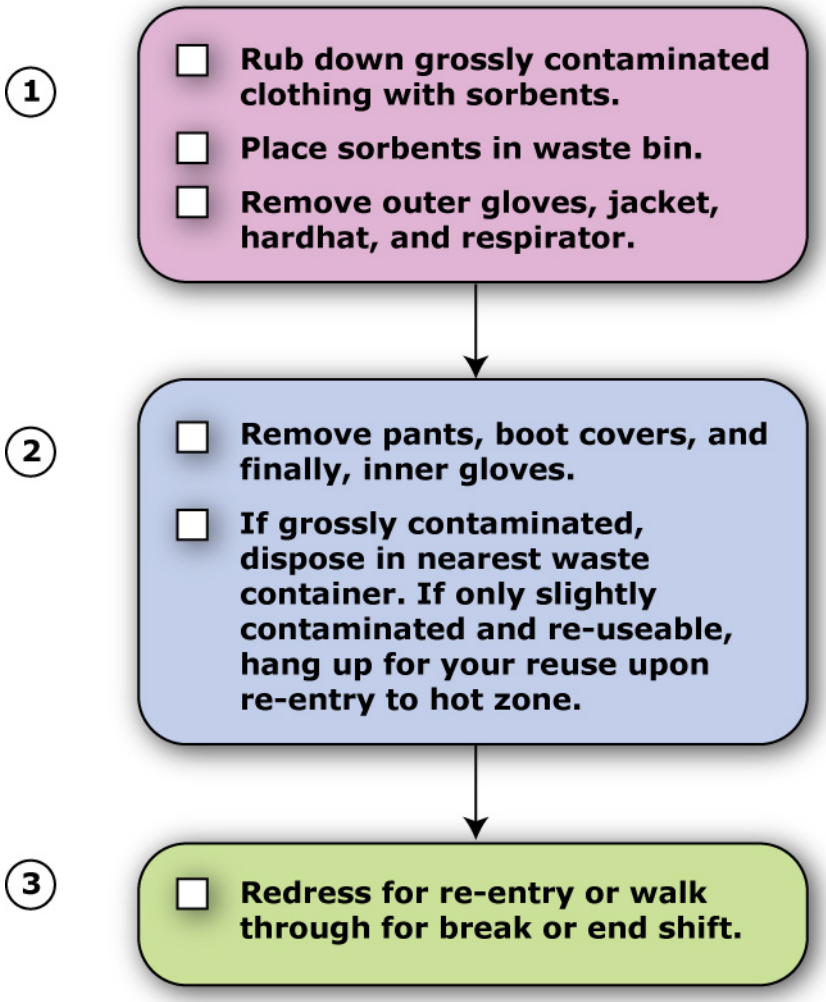



Exclusion Zone = Hot Zone
Contamination Reduction Zone = Warm Zone
Support Zone = Cold Zone


To report an oil spill and activate CISPRI, call 907-776-5129

# Personnel Decontamination

**Note: This process requires great care when dressing. Make sure you tape yourself correctly, leaving large tabs, to ease later removal.**




## TACTIC PURPOSE AND DESCRIPTION

Decontamination is the process of removing or neutralizing oil contaminants that have accumulated on protective clothing, tools, or equipment used on the job (refer to Tactic CI-S-3 for levels of protection). It is important for oil spill response workers to:

- Keep hazardous materials out of the clean area where personnel are not protected from chemical exposures,
- Prevent personnel from being exposed to oil on the outside of PPE when equipment is removed, and
- Ensure that other workers are not exposed to contaminants when the PPE is reused.

Dry decontamination (decon) is accomplished by removing rather than washing contaminated PPE. This helps prevent spreading contamination beyond the Exclusion (Hot) Zone.

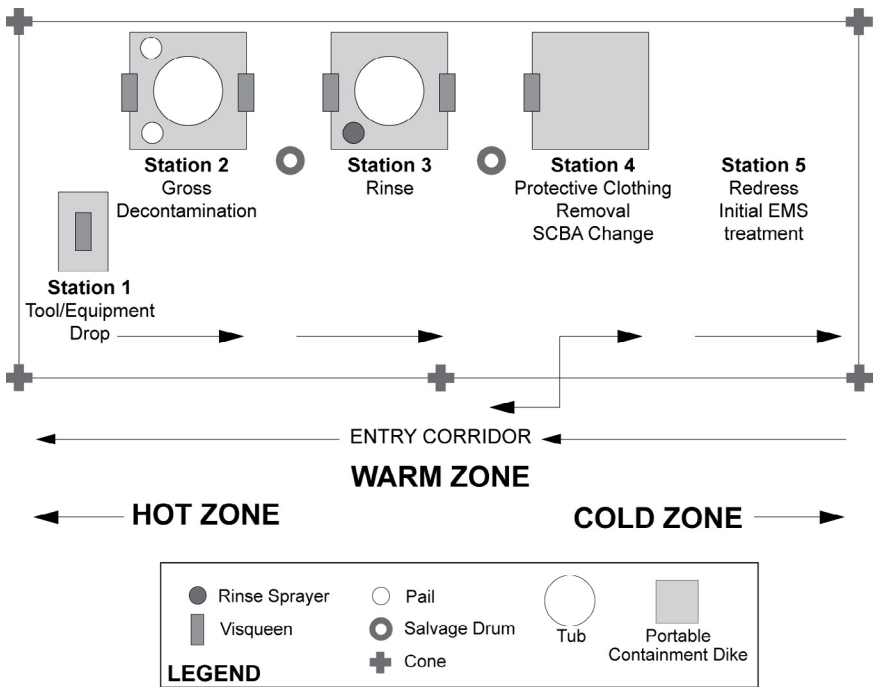
Personnel will enter the designated decon area (Warm Zone or Contamination Reduction Zone). A decon worker in the same level of PPE, or one level below, will assist the spill response worker with the decon process. At each station, more contaminated PPE is removed and properly disposed of. At the end of the Contamination Reduction zone, the spill response worker may enter the Cold Zone (Support Zone).

All spill sites have established site work zones (See Tactic CI-S-4). These work zones are:

- Exclusion (Hot) Zone (contaminated area),
- Contamination Reduction (Warm) Zone (decontamination area), and
- Support (Cold) Zone (clean area).

To cross from the Exclusion Zone to the Support Zone, response workers must move through a step-by-step decontamination procedure, such as the dry decontamination described in this tactic.

## EXAMPLE DECONTAMINATION AREA



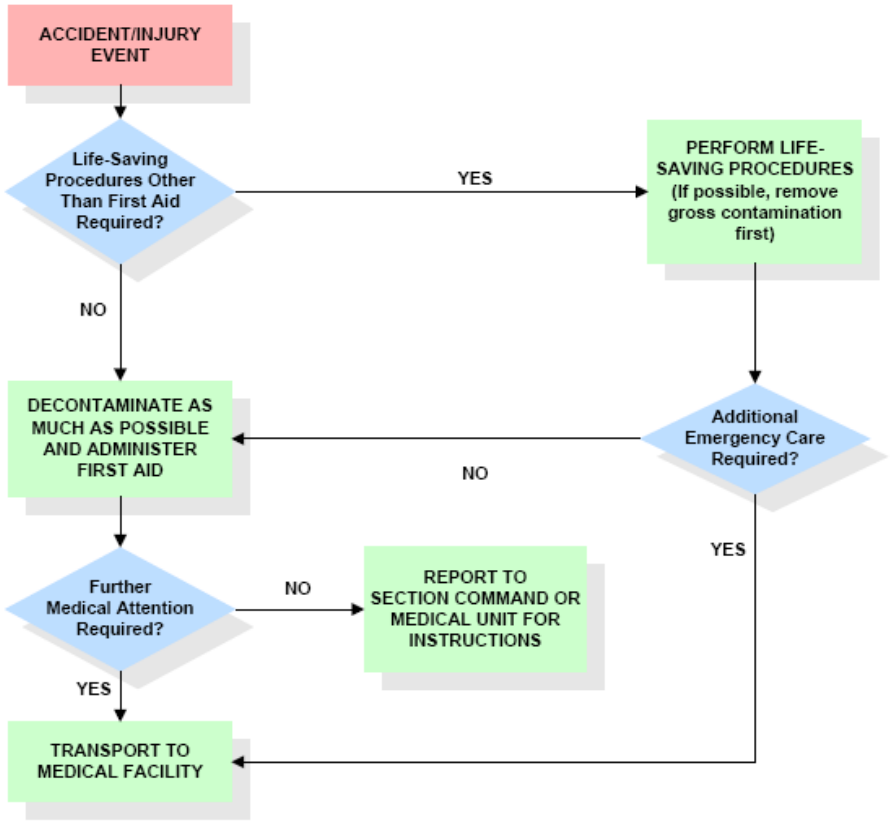

## OPERATIONAL CONSIDERATIONS

- PPE is provided on an as-needed basis, according to the conditions that exist at the work site. The Field Site Safety determines the need for PPE based on the work assignment of the responders or contract vessel crew. Life jackets, safety glasses and hard hats are required when working on any work deck on the vessel.
- During a response, PPE will be provided to all responders. CISPRI maintains a supply of PPE. Designated logistical vessels will distribute PPE as needed. Responders are required to take appropriate PPE from the warehouse when responding to an inland response.
- Personnel PPE training is provided to contract vessel crews on an annual basis.



To report an oil spill and activate CISPRI, call 907-776-5129

# MEDICAL EMERGENCY
# Personnel Decontamination




## TACTIC PURPOSE AND DESCRIPTION

### MEDICAL EMERGENCY

Emergency decontamination is necessary for personnel who experience a medical emergency while still contaminated. The purpose is to:

- **Decontaminate the personnel presenting the medical condition**
- **Protect medical personnel**
- **Properly dispose of contaminated PPE and wash solution**

The decision on the level of decon prior to medical treatment depends on the type and severity of the medical condition and the nature of the contaminant/exposure. For crude oil spills, life-saving procedures can be administered in life-threatening situations without decontamination. Decon should proceed once the victim is stabilized.

If decon cannot be done, wrap the victim in sorbent pads or blankets to minimize the spread of contaminants.

Medical personnel responding should be informed of the following:

- **What happened to the victim**
- **Contaminants the victim was exposed to**
- **Level of decontamination performed**
- **Specific decontamination procedures**

Where possible, site personnel familiar with the incident should accompany the victim.

**Note**: Non medical emergency would be treated in a similar fashion.

*This page left intentionally blank*

## JOB SAFETY ANALYSIS

| Work Area: | Job Description: | Date of Work: | Energy Sources: |
|---|---|---|---|
| | | Analysis Performed By: | ☐ Mechanical ☐ Biological<br>☐ Electrical ☐ Radiation<br>☐ Pressure ☐ Sound<br>☐ Temperature ☐ Gravity<br>☐ Chemical ☐ Motion |
| **Personal Protective Equipment:** Hard hats, Safety-toed boots, eye protection | **Supervisor:** *Print & Signature* | Hot Work Y ☐ N ☐<br>Confined Space Y ☐ N ☐<br>SDS Y ☐ N ☐<br>LO/TO Y ☐ N ☐<br>Air Monitoring Y ☐ N ☐ | |

| Job Steps: *(Not a procedure, just basic job steps)* | Associated Hazards: | Mitigating Steps: *(WHO'S doing WHAT to mitigate?)* |
|---|---|---|
| | | 1.1 _____ ALL STOP OBLIGATION<br>1.2 _____<br>1.3 _____<br>1.4 _____<br>1.5 _____ |
| | | 2.1 _____<br>2.2 _____<br>2.3 _____<br>2.4 _____<br>2.5 _____ |
| | | 3.1 _____<br>3.2 _____<br>3.3 _____<br>3.4 _____<br>3.5 _____ |
| | | 4.1 _____<br>4.2 _____<br>4.3 _____<br>4.4 _____<br>4.5 _____ |
| | | 5.1 _____<br>5.2 _____<br>5.3 _____<br>5.4 _____<br>5.5 _____ |

### PROMPT WORDS

**TASK PROMPTS**

**HEALTH & SAFETY**
- Confined Space Entry
- Electrical Work
- Ergonomics
- Forklift Operations
- Fuel Transfer
- Function Testing Equip.
- Hand Tools
- Hot Work
- Hydraulic Equipment
- Lifting Loads
- Loading/Unloading
- Manual Handling
- Mechanical Equipment
- Mix/Hndlg, Paint/ Chem.
- New Personnel/Third Party
- Overhead Cranes
- Painting
- Power Tools
- Pressure/Stored Energy
- Removing Assemblies
- Rigging/Lifting/Slinging
- Scaffolding/Ladders
- Stacking/Storing Equip.
- Welding
- Working at Heights

**SERVICE QUALITY**
- Backload Equipment
- Checkout Equipment
- Clean Up Equipment
- Equipment Load Out
- Equipment Maint.
- Equipment Transp.
- Function Test Equip.
- On-Site Maintenance
- Prepare for Backload
- Prepare for Job
- Review Operations Prgm.
- Rig Down Equipment
- Rig-Up Equipment

**ENVIRONMENTAL**
- Battery Handling
- Maint. of Equipment
- Mixing Chem./Substances
- Radioactive Material
- Strong Chem/ Substances
- Transport Chem/Sub.
- Using Chem/Substances

**VESSEL**
- Anchor Handling
- Break Away from Barge
- Breaking Tow
- Crossing Docks/Barges
- Making Tow
- Skiff Operations
- Spill Gear Deployment
- Tie up to Barge
- Tow Winch
- Towing
- Tugger Winch

**TASK - OTHER**

**HAZARD PROMPTS**
- Asphyxiation
- Back Strain/Injury
- Burns
- Caught Between
- Changes to Program
- Chem./Substance Burns
- Chemical/Substance Spill
- Crushing/Trapping
- Cuts/Abrasions
- Dropped Objects
- Electric Shock
- Entanglement
- Equipment Failure
- Eye Injury
- Failure of Equipment
- Failure of Personnel
- Falling from Height
- Fire/Explosion/Ignition
- Flying/Falling Mtrls
- Fumes/Vapors/Particles
- Hazardous Substances
- Inexperienced Personnel
- Insufficient/Incorrect Mtrl
- Muscle Strain
- Noise Vibration
- Over Stress/Over Exertion
- Pinch Points (hands, feet)
- Pollution to Air
- Pollution to Land
- Pollution to Water
- Poor Light
- Simultaneous Operations
- Skin Irritation
- Slips, Trips, Falls
- Struck By
- Temperature Extremes
- Toxic Gas/Vapors
- Tripping
- Weather
- Wrong Equipment

**VESSEL**
- Breaking Line/Wire
- Drowning
- Icy Decks
- In the Bight of Line/Wire
- Line Snapback
- Man Overboard

**HAZARD - OTHER**

**CONTROL PROMPTS**

**ALL STOP OBLIGATION**
- Absorbent Material
- Airline Whip Checks
- Air Mon./Gas Detect
- All Lines Pressure Tstd
- Approved Contractor
- Assistance (extra men)
- Back Up Equip. Tested
- Barriers Around/Below
- Check All Equipment
- Chem. Hazard Assessmt.
- Cold Weather Gear
- Comms/Radio/ Signs
- Contingency Pln in Place
- Correct Hand Placement
- Correct Tools
- Correct Trans Containers
- Ear Protection
- Equipment Confirmed
- Equipment Guarding
- Exp./Sup Guidance
- Fall Arrestor
- Fire Exting./Fire Watch
- Flame Retard. Clothing
- Function Test Equipment
- Gloves/Gauntlets
- Goggles/Face Shield
- Hand Rail
- Harness
- High Vis Vest or Coat
- Housekeeping
- Hydration
- Inventory Checked
- JSA
- Lighting
- LO/TO
- Maint. Prg. Complete
- Operating Manuals
- Permit to Work
- Prsnl. Assgn/Comp.
- Prsnl Trained-Radiation
- Respirator
- Safe Access/Escape Rte
- Safe Storage of Tools
- Scaffolding (certified)
- Site Characterization
- Spill Kits Available
- Suitable/Cert. Slings
- Tag Lines
- Traction Device (ice)
- Training
- Ventilation
- Warm-Up/Stretching
- Work Instr./Job Flow

**VESSEL**
- Approved PFD
- Buddy System
- Immersion Suit
- Life Raft
- Throw Ring
- Vessel ER Drills

**CONTROL - OTHER**

## TACTIC PURPOSE AND DESCRIPTION

### CISPRI JSA INSTRUCTIONS

Use this form to facilitate a pre-job hazard identification discussion. All associated personnel should be involved and encouraged to offer input. Everyone has an "All Stop" Obligation during any operation if a hazard is observed and/or if work directions are not fully understood. Work operations will not be resumed until the hazard(s) have been fully addressed and corrected.

- **Work Area:** Location where the activities described in the JSA will actually take place.
- **Job Description:** General summary of the activities.
- **Date of Work**
- **Analysis Performed by:** The name(s) of the person(s) filling out the form.
- **Personal Protective Equipment needed**
- **Name of Person Supervising Job**
- **Job Steps:** Describe basic work activities, in the order that the work needs to be completed. Reference the task prompt words on page 2 of the JSA form. This isn't a step by step job procedure, but rather just identifying the major steps required to accomplish the task.
- **Associated Hazards:** List potential hazards specific to the corresponding job steps. Reference the hazard prompt words on page 2 of the JSA form.. If the job steps contain the same hazards, do not repeat the mitigating steps throughout.
- **Mitigating Steps:** Describe who is doing what to mitigate the corresponding potential hazard. Reference the control prompt words on page 2 of the JSA form.

Use the JSA to facilitate detailed and proactive pre-job discussions about the hazards identified and the mitigating measures that will be used. Upon completion of the pre-job meeting, turn the JSA form into the Safety Supervisor or Point of Contact for review and record keeping.

*This page left intentionally blank*

# OPEN WATER TACTICS

## PURPOSE OF THE OPEN WATER TACTICS

The tactics developed for open water response to a spill in Cook Inlet are designed to collect and store large amounts of oil and/or assist a stricken tanker by lightering some of the cargo. Open water response generally involves large amounts of equipment operated by skilled responders.

The **tactics** for with open water response are:

- **CI-OW-1, Primary Response Vessel Task Force:** This tactic describes the use of a collection skirt in conjunction with either the Crucial 13-30 skimming systems onboard an OSV. This tactic is how OSV's are equipped for AMPD-type support operations.
- **CI-OW-2, Dynamic Ice:** This tactic describes the use of the Crucial 13-30 / 56-30 skimming systems or the 8-rope Foxtail skimming system for collecting oil in ice conditions.
- **CI-OW-3, Response Barge Task Force:** This tactic consists of OSV or tugboat towing a CISPRI barge that is equipped with a Crucial 56-30 disc skimmer and Current Buster oil collection system. This tactic uses the barge as a skimming and collection platform with the OSV or tugboat only providing motive force for the barge.
- **CI-OW-4, Lightering (Large Vessel):** This tactic consists of a CISPRI barge, equipment, and personnel that can transfer pumps and hoses to a stricken tanker in order to remove oil from the tanker. This tactic is designed to provide the portable pumps and ancillary equipment to lighter the volume in the largest individual tank on any tanker in the Member Company fleet in 24 hours of continuous operation.
- **CI-OW-5, Lightering (Small Vessel):** This tactic consists of a CISPRI barge, equipment, and personnel that can remove oil from a micro or mini barge.
- **CI-OW-6, Enhanced Recovery Task Force:** This tactic consists of an OSV or a tugboat, Current Buster oil collection system, Crucial 56-30 disc skimmer, and a suitable barge. This tactic uses the OSV or tugboat as the skimming platform and utilizes the barge as the recovered product temporary storage receptacle.
- **CI-OW-7, Lightering to a Platform (Hilcorp-only Tactic):** The purpose of this tactic is to lighter recovered oil and water from a CISPRI offshore supply vessel to the Dolly Varden platform. This tactic is specific to the Dolly Varden platform as a Hilcorp lightering option.

## HOW OPEN WATER RESPONSE IS MANAGED

Open water response is under the control of the Operations Sections Chief based in the CISPRI Command Post (CP). In the field, open water response for each task force is managed by a Task Force Leader (TFL). All commands from the Operations Section Chief go through the TFL. Conditions in the field, safety concerns, and operational information are passed back through the lines of communication to the Operations Section Chief, who will pass along to the appropriate Incident Management Team (IMT) group.

In an open water response, task forces would be dispatched to the scene of the spill and provided with a safety and operational briefing. Following the briefing, if work boats are available, the task forces would deploy necessary equipment and begin recovery operations. Recovery tactics may be enhanced through the use of aerial surveillance to direct on-water operations to the highest concentration of oil (Tactic CI-TS-1).

## SAFETY ASPECTS OF OPEN WATER RESPONSE

Safety is the most important consideration in open water response. The safety tactics outline the safety program that is used to ensure that a response is conducted as safely as possible. The Safety Officer based in the CP has overall responsibility for response safety. A Field Site Safety (FSS) will be assigned to the primary response vessel and provide oversight and direction. The FSS will conduct safety briefings for responders, make PPE recommendations and conduct initial site characterization. An FSS may not necessarily be assigned to every vessel or task force. Safety considerations specific to OW conditions include the following:

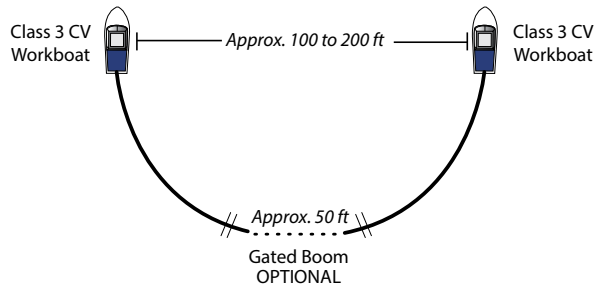
- **Vapor levels:** Because the open water response will be on-scene at the earliest stages of the response, there is a potential for high vapor levels at the spill location. Site characterization as outlined in Tactic CI-S-1 will be conducted to ensure the safety of the responders before the response begins, and ongoing monitoring will be conducted throughout the response.
- **Open water conditions:** There is potential for open water response to be conducted in exposed conditions such as high winds, rough seas, decks awash, icing, etc., and the Task Force Leaders, with the assistance of the vessel operators and FSS, will assess operating conditions throughout the response.
- **Towing and lifting heavy equipment:** Much of the equipment used for open water response is large and bulky and involves crane and winch operations. Responders must take care when deploying this equipment.

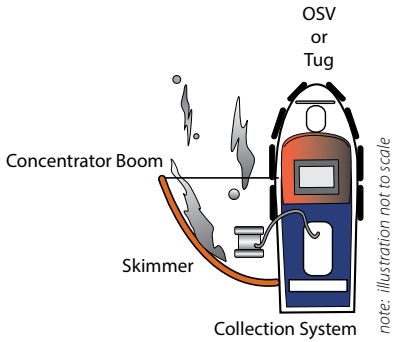
## COMMUNICATIONS

Communications are very important for safe and effective open water response. All responders will be briefed on task force communications before beginning an open water response (Tactic CI-LP-2).

## HANDLING WASTE

Primary storage tanks used in open water response will be decanted during skimming and when full will be off-loaded to a tanker or barge of opportunity. The waste management tactics are described in detail in the Waste Management Plan, which includes permit applications for decanting (Tactics CI-WM-1, CI-WM-2, and CI-WM-3).




## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to recover large quantities of oil in open water environments. The CISPRI's OSRV's or other CISPRI contracted Vessels (OSV or CV) can store recovered oil/water onboard or pump these fluids directly to secondary storage.

Whether this recovery vessel is collecting oil/water for onboard storage or for transfer to secondary storage, this skimming vessel can be used in conjunction with two fishing vessels or work boats towing containment boom in a gated "U" configuration to enhance encounter rates.

This is a 24-hour-a-day operation with the initial crew being able to work for 18 hours. Additional crew should be mobilized to supplement the first crew.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | LEAD SPILL TECHNICIAN | LABORER / RESPONDERS | TANKERMAN | VESSEL OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|---|
| OSV or CV [A] | Skimming Platform | 1 | 1 | 4 | 1 [B] | - | 1 [C] |
| OB/OWS | Primary Storage | 1 | N/A | | | | |
| Crucial 13 Disc Skimmer | Skimming System | 1 | | | | | |
| **OPTIONAL EQUIPMENT** | | | | | | | |
| Class 3 or 4 Vessel [D] | Boom Tow | 2 | | 2 | | 2 | |
| Gated Boom | Concentrator Boom | 1000ft | - | - | - | - | - |

A. OSV or CV: This could be a CISPRI owned or contracted Offshore Supply Vessel or a contracted Vessel-of-Opportunity.

B. Tankerman only needed when Barge is conducting transfer operations.

C. CISPRI initial responders may fill FSS role.

D. CISPRI Vessels could be used in place of Class 3 or 4 vessels (Vessel Classifications – See CI-LP-5).

*Note: The Lead Spill Technician is the Task Force Leader (TFL).*

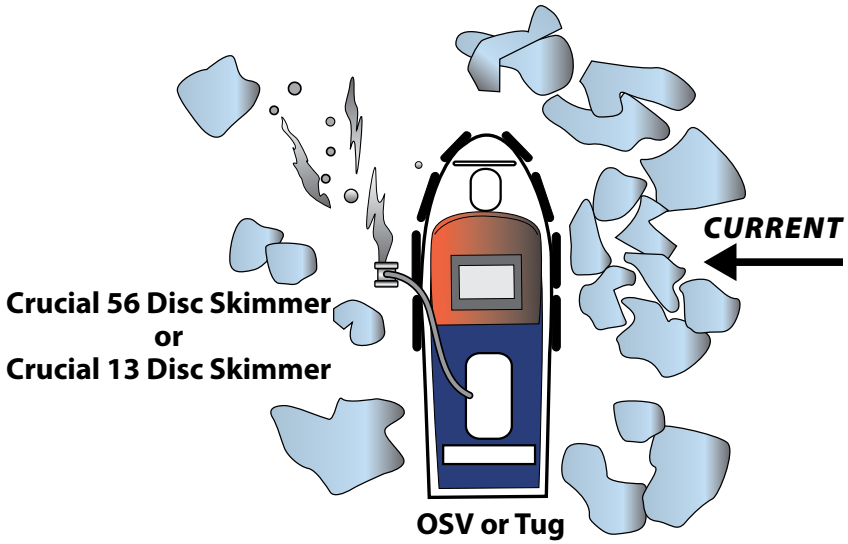
## SUPPORT

| EQUIPMENT | FUNCTION | QUANTITY |
|---|---|---|
| Air Monitoring Meters | Site Characterization (Air Monitoring) | 1 set |
| PPE | Protection of Response Personnel | Various |
| Power Packs | Power Skimmer, Boom Reels, on CV | 1 |
| Boom Reels | Boom Stowage | 1 |
| Infrared Sensor [1] | Located oil in darkness | 1 |

1. Infrared Sensors are currently carried on the OSRV Perseverance.

## OPERATIONAL CONSIDERATIONS

- During a response, the Operations Section will identify the need for additional trained responders for the Open Water Task Forces and work with the Resources Unit and Logistics Section to locate additional crew members and responders and arrange transportation to the response location.
- The OSV / CV will prepare all equipment for deployment while en route (weather permitting).
- The OSV / CV will deploy containment boom to boom towing vessels when they arrive on scene (if needed).
- Spill responders will operate skimmer and decon. Spill responders (or trained CV members) will deploy boom aided by CV (if needed).
- The number of responders needed to initially deploy the skimmer system is more than what is needed to operate it. Laborers can be borrowed from on board crews or other C/V's in the area as necessary.
- Decanting will only be used with the 220 bbl Oily Water Separator (OWS) and large storage barges. *(Decanting Permit required - See CI-LP-6)*
- Vessel assignments will be initially assigned by the CISPRI Operations Department until Member Company Incident Management Team arrives.
- CISPRI OSV's/CV and CISPRI Barges have deck lighting for nighttime operations.
- All CISPRI responses are based on the tides and currents and other environmental conditions at the time of the response. *(See CI-LP-1)*
- Two CISPRI OSV's have Infrared Sensors on board that can help ensure the vessel stays in the oil during hours of darkness.
- This tactic will not be used in ice coverage greater than 30% - 50% *(See CI-OW-2)*
- This is a 24-hr operation, with the initial crew working 18 hours. Additional crew will be mobilized to supplement and relieve the first crew.
- The number of responders needed to initially deploy the skimming system and/or containment boom is more than what is needed to operate it. Laborers can be borrowed (re-tasked) from onboard vessel crews or other CV's in the area.
- CISPRI OSV's require a minimum under-the-keel clearance of 3 feet when at the Hilcorp Rig Tenders Dock.




## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to recover oil from ice infested water, possibly using fire monitor to flush ice after CISPRI OSRV or CV makes an opening. The CISPRI OSRV or other CISPRI contracted vessels (OSV or CV) can store recovered oil/water in onboard below /deck storage. This tactic uses ice to contain oil. Open leads are used in the oil recovery effort. This tactic will also be used for the cleaning /washing of oil from ice for collection.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | SUPERVISOR | LABORER / RESPONDERS | TANKERMAN | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| OSV or CV [A/B] | Skimming Platform | 1 | 1 | 2 | N/A | 1 [C] |
| Storage [D] | Storage [D] | 1 | | | | |
| Crucial 13-30 Skimmer | Skimming System | 1 | | | | |
| **OPTIONAL EQUIPMENT** | | | | | | |
| 8-Rope Foxtail[E] | Skimming System | 1 | - | - | - | - |
| Crucial 56-30 Skimmer | Skimming System | 1 | - | - | - | - |

A. USCG Winter Ice Guidelines Phase 1-2 will be adhered to.

B. OSV or CV: This could be a CISPRI owned or contracted offshore supply vessel or a contracted Vessel-of-Opportunity.

C. CISPRI initial responders may fill FSS role.

D. Storage could include 2 - 220 bbl Oily-Water Separators (OWS). A mini barge could also be placed on deck.

E. 8-Rope Foxtail System (Equipment specifications for the Foxtail system can be found in Appendix A).

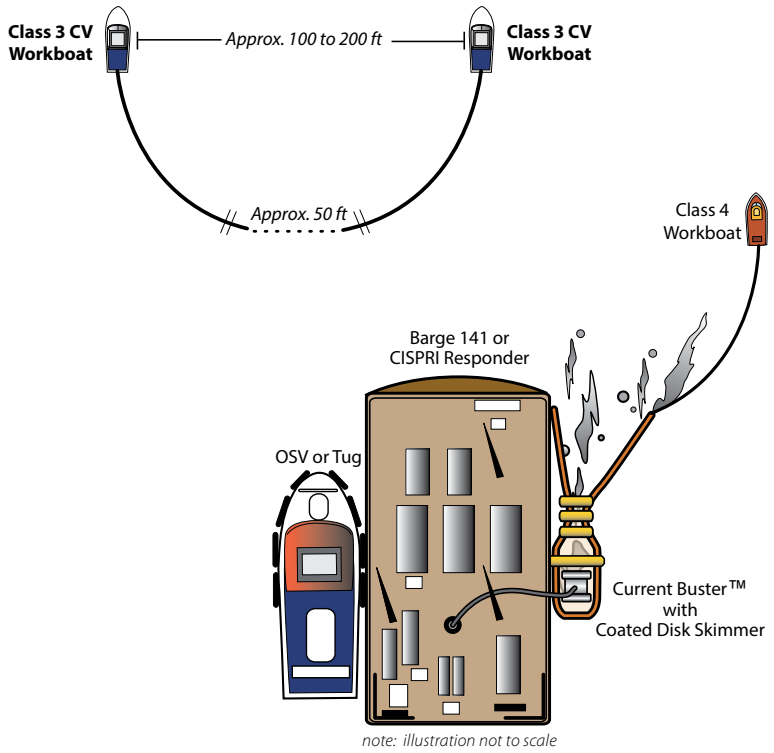
## SUPPORT

| EQUIPMENT | FUNCTION | QUANTITY |
|---|---|---|
| Air Monitoring Meters | Site Characterization (Air Monitoring) | 1 set |
| PPE | Protection of Response Personnel | Various |
| Power Packs | Power Skimmer, Boom Reels | 1 |
| Fire Monitor | Ice clearing | 1 |
| Infrared Sensor [1] | Continuous operations in darkness | 1 |

1. Infrared Sensors are currently carried on two Primary Response Vessel(s).

## OPERATIONAL CONSIDERATIONS

- During a response, the Operations Section will identify the need for additional trained responders for the Open Water Task Forces and work with the Resources Unit and Logistics Section to locate additional crew members and responders and arrange transportation to the response location.
- The OSV / CV will prepare all equipment for deployment while en route (weather permitting).
- Spill responders and/or trained crew members will operate skimmer and decon.
- The force of the current pushes both ice chunks and oil around the bow and stern of the vessel. Due to its size, weight, and underwater mass, the ice tends to be pushed farther out than the oil (i.e. the oil tends to stay closer to the vessel than the ice chunks.) If the ice chunks are starting to fill the open area, the fire monitor can be used to push the ice farther out. Care must be taken to not use too much water pressure as it dissipates the oil or drives it into the water column.
- Another response option in large pan ice is to have a large response vessel nose up to the downward corner side of the ice pan and hold it in place. This allows a large pool, to form behind the vessel, from which oil can be recovered using normal means. The current will also flush oil out from under the ice into the pool.
- Infrared sensors can be used to locate oil in the ice and to help keep the vessel in the oil to improve skimming efficiencies.
- The number of responders needed to initially deploy the skimmer system is more than what is needed to operate it. Laborers can be borrowed from onboard crews or C/V's in the area as necessary.
- Decanting will only be used with the 220 bbl Oily Water Separator (OWS) and large storage barges.
  (Decanting Permit required - See CI-LP-6)
- Vessel assignments will be initially assigned by the CISPRI Operations Department until Member Company Incident Management Team arrives.
- OSV / CV and CISPRI Barges have deck lighting for nighttime operations.
- All CISPRI responses are based on the tides, currents and other environmental conditions at the time of the response. (See CI-LP-1)
- Two CISPRI OSV's have Infrared Sensors on board that can help ensure the vessel stays in the oil during hours of darkness.
- A CISPRI OSV or other large CV must load-out the skimming system at Hilcorp Rig Tenders Dock. This operation depends on the proper tidal cycle to come alongside Hilcorp Rig Tenders Dock (See CI-LP-1). A Crucial 13-30 skimmer is permanently maintained on the CISPRI OSRV's.
- In heavy ice conditions, primary storage barges can be located in ice free areas (nearly ice free) so the ice won't interfere with the transfer of recovered oil or damage the barges. When the CISPRI OSV or CV's on deck storage reaches capacity the vessel transits to the barge to offload. One OSV or CV would remain in the heaviest concentration of oil, while the other (s) is/are off-loaded to maintain the recovery effort.
- CISPRI OSV's require a minimum under-the-keel clearance of 3 feet when at Hilcorp Rig Tenders Dock.
- PPE, Appropriate Personal Protection Equipment will be determined thru the JSA paperwork process and Site Safety Supervisor / Site Safety Plan. On-scene assessments are made to ensure that the responders are provided with and are using the most appropriate personnel protective equipment.
- USCG Winter Ice Guidelines will be adhered to




*note: illustration not to scale*

## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to recover large quantities of oil in open water environments.

This barge skimming platform could be used in conjunction with two contract vessels or work boats towing containment boom in a gated "U" configuration to enhance encounter rates.

Skimming operations involve the oil to be concentrated and passed along to the barge skimming platform for recovery by the Crucial 56 Disc skimming system onboard the CISPRI barge.

## EQUIPMENT AND PERSONNEL

**(Minimum for 18-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | SUPERVISOR | LABORER / RESPONDERS | TANKERMAN | VESSEL OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|---|
| CISPRI Barge [A] | Skimming Platform | 1 | 1 | 4 | 1 [B] | N/A | 1 [C] |
| Storage [D] | On-board | 1 [D] | | | N/A | | |
| Crucial 56 Disc Skimmer | Skimming System | 1 | | | | | |
| Current Buster | Containment Concentrator | 1 | | | | | |
| Tug or OSV | Barge Towing | 1 | N/A | 1 | | 1 | |
| Class 3 Workboat | Boom Tow | 1 | - | 1 | | 1 | |
| Gated Boom | Concentrator Boom | 1000 ft | - | - | | - | |
| Class 3 or 4 Vessel [E] | Boom Tow | 2 | - | 2 | | 2 | |

A. CISPRI Barge: This could be the CISPRI Responder or Barge 141.
B. Tankerman only needed when Barge is conducting transfer operations.
C. CISPRI initial responders may fill FSS role.
D. Storage capacity will vary between 12,500 and 59,400 bbls.
E. CISPRI Vessels could be used in place of Class 3 or 4 vessels. (Vessel Classifications – See CI-LP-5).

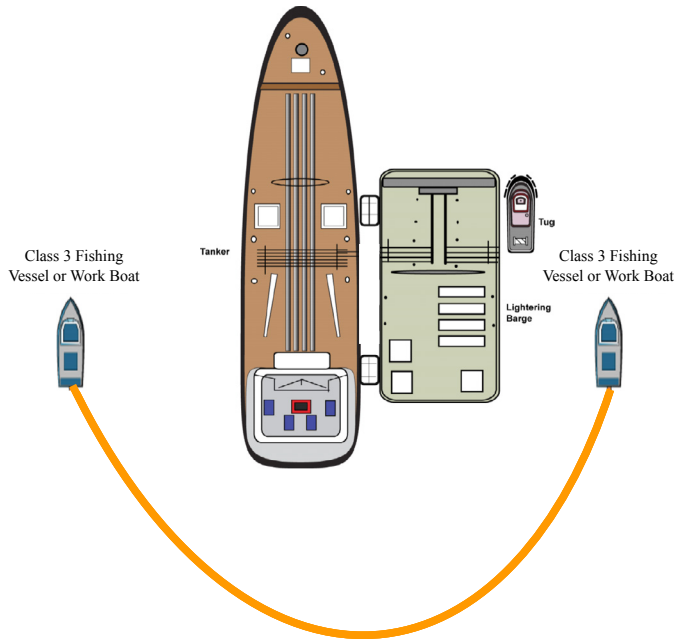
*Note: The Lead Spill Technician is the Task Force Leader (TFL).*

## SUPPORT

| EQUIPMENT | FUNCTION | QUANTITY |
|---|---|---|
| Air Monitoring Meters | Site Characterization (Air Monitoring) | 1 set |
| PPE (includes SCBA) | Protection of Response Personnel | Various |
| Power Packs | Power Skimmer, Boom Reels | 1 |
| Boom Reels | Boom Stowage | 1 |
| NOFI Current Buster | Containment and Concentration | 1 |

## OPERATIONAL CONSIDERATIONS

- During a response, the Operations Section will identify the need for additional trained responder for the Open Water Task Force and work with the Resources Unit and Logistics Section to locate additional crew members and responders and arrange transportation to the response location.
- The barge will deploy boom to a CV when they arrive on scene (if needed).
- The barge has no personnel support capabilities; personnel will be accommodated on the OSV or tug.
- When weather conditions raise safety concerns about preparing for or conducting response operations, activities may be suspended until conditions improve.
- Boom can be deployed while skimmers are being deployed but may require additional personnel.
- Spill responders (or trained CV crew members) will operate skimming system(s), decant storage, and decon. Spill responders (or trained CV crew members) will deploy boom aided by CV.
- Decanting will only be conducted once decanting application is approved by Unified Command (See Tactic CI-LP-6).
- Vessel assignments will be initially assigned by the CISPRI Operations Manager or General Manager until Member Company Incident Management Team arrives.
- CISPRI barges and OSV's have deck lighting for nighttime operations.
- All CISPRI responses are based on the tides, currents, and other environmental conditions at the time of the response (see CI-LP-1).
- Class 3 vessels could be replaced by Class 4 vessels or CISPRI vessels.
- This is a 24-hr operation, with the initial crew working 18 hours. Additional crew will be mobilized to supplement and relieve the first crew.
- The number of responders needed to initially deploy the skimming system and/or containment boom is more than what is needed to operate it. Laborers can be borrowed (re-tasked) from onboard vessel crews or other CV's in the area.
- CISPRI OSV's require a minimum under-the-keel clearance of 3 feet when at Hilcorp Rig Tenders dock.
- Gated boom deployment may follow deployment of Current Buster and skimmer. Gated boom entrainment is expected due to > than 2 knot tow speeds. This is considered acceptable.




## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to lighter oil from a stricken tanker. The tug and Lightering Barge are secured alongside the tanker, with ship-to-ship lightering fenders deployed between the vessels. If the ship's pumps and lines are not available, salvage/lightering pumps and hoses onboard the barge are used to remove the oil cargo from the tanker.

Other vessels such as barges or tankers of opportunity can be used for lightering after the Lightering Barge has delivered the fenders and lightering equipment.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | SUPERVISOR | LABORER / RESPONDERS | TANKERMAN | VESSEL OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|---|
| Barge | Primary Storage | 1 | 1 | 3 | 1 [A] | - | 1 [B] |
| Lightering Fenders | Lightering Ops | 2 | | | | | |
| Hoses | Lightering Ops | 2 | | | | | |
| Lightering Pumps | Lightering Ops | 1 [C] | | | | | |
| Tug | Maneuvering Vessel | 1 | | 1 | - | - | |
| Class 3 CV | Boom Tow | 2 | | 2 | - | 1 | |
| Open-Water Boom | Boom | 1000 ft | | N/A | N/A | N/A | |
| Crucial 56-30 Skimmer | Recovery Skimmer | 1 [D] | | N/A | N/A | N/A | |

A. Tankerman needed for Barge operations.

B. CISPRI initial responders may fill FSS role.

C. CISPRI has access to a MPC lightering pump located in Anchorage. CISPRI also has DOP 250 pumps that could be used, if needed.

D. Crucial 56-30 skimmer could be deployed for simultaneous recovery operations if tanker is holed and leaking.

E. The Jovalan Barge is CISPRI's designated lightering barge with a storage capacity of 75,000 bbls. However, any of CISPRI's barges can technically be used as a lightering barge.

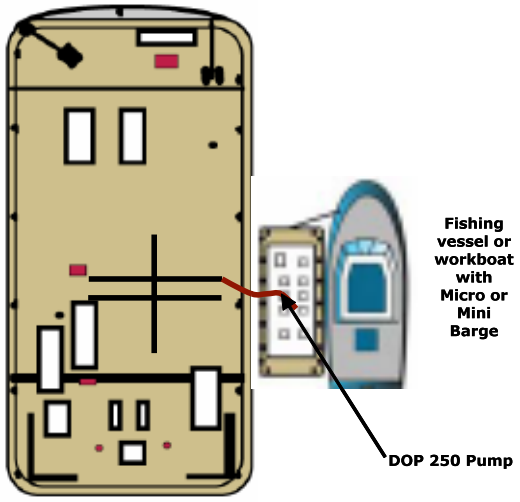
*Note: The Lead Spill Technician is the Task Force Leader (TFL). Spill responders will deploy boom aided by F/V. Tankerman will be onboard barge. Tank vessel crew could assist in hook-up operations.*

## SUPPORT

| EQUIPMENT | FUNCTION | QUANTITY |
|---|---|---|
| Air Monitoring Meters | Site Characterization (Air Monitoring) | 1 set |
| PPE | Protection of Response Personnel | Various |

## OPERATIONAL CONSIDERATIONS

- During a response the Operations Section will identify the need for additional trained responders and work with the Resources Unit and Logistics Section to locate additional crew members and responders and arrange transportation to the response location.
- When weather conditions raise safety concerns about preparing for or conducting lightering operations, activities may be suspended until conditions improve.
- The barge has no personnel support capabilities; personnel will be accommodated on the tug or tank vessel.
- Barges will deploy boom to contract vessels when they arrive on scene (if needed).
- Skimming operations may need to be suspended during winter ice conditions.
- Operations may need to be relocated to ice-free waters if ice drifts between the tank barge and tanker.
- Vessel assignments will be initially assigned by the CISPRI Operations Department until Member Company Incident Management Team arrives.
- Both CISPRI Barges have deck lighting for nighttime operations.
- All CISPRI responses are based on the tides, currents, and environmental conditions at the time of the response.
- Class 3 CV's could be replaced by Class 4 vessels (see tactic: CI-LP-5).
- This is a 24-hr operation, with the initial crew working up to 18 hours if necessary. Additional crew will be mobilized to supplement and relieve the first crew as needed.
- The number of responders needed to initially deploy the skimming system and/or containment boom is more than what is needed to operate it. Laborers can be borrowed (re-tasked) from onboard vessel crews or other CV's in the area.




## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to lighter oil from smaller mini- and micro-barges to the larger Barge 141 or CISPRI Responder. This tactic could also be used to lighter 220 bbl oily water separators on deck of large response vessels.

The mini/micro barges may also be offloaded directly by a vacuum truck onshore.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | SUPERVISOR | LABORER / RESPONDERS | TANKERMAN | VESSEL OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|---|
| Micro/Mini Barges | Storage | Varies | 1 [A] | - | - | N/A | 1 [B] |
| Barge 141/Responder | Primary Storage | 1 | | 3 | 1 [A] | | |
| Fenders | Lightering Ops | 2 | | - | N/A | | |
| Hoses | Lightering Ops | 2 | | - | | | |
| DOP 250 Pumps | Lightering Ops | 1 [C] | | - | | | |
| CV or Workboat | Maneuvering Vessel | 1 | | 1 | | 1 | |
| Tug or OSV | Maneuvering Vessel | 1 | | 1 | | 1 | |
| **OPTIONAL EQUIPMENT** | | | | | | | |
| Vac Truck [D] | Transportation | 1 | - | - | - | 1 | - |

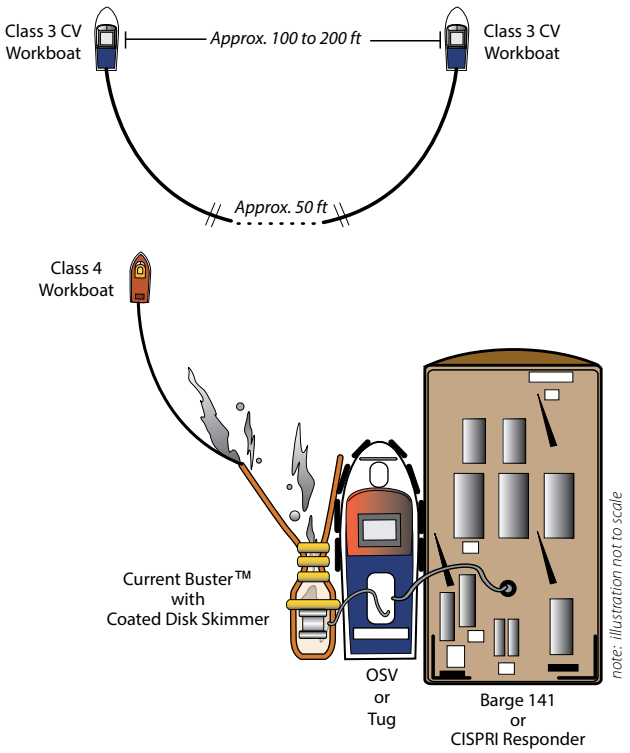
A. Tankerman needed for Barge operations and can also fill Supervisor role.
B. CISPRI initial responders may fill FSS role.
C. CISPRI has DOP 250 pumps available in CISPRI Inventory.
D. If mini/micro barge is off-loaded at a shoreside facility.

## SUPPORT

| EQUIPMENT | FUNCTION | QUANTITY |
|---|---|---|
| Air Monitoring Meters | Site Characterization (Air Monitoring) | 1 set |
| PPE | Protection of Response Personnel | Various |

## OPERATIONAL CONSIDERATIONS

- Weather/Sea/Ice conditions will be continuously evaluated for safe transit and transfer operations.
- When weather conditions raise safety concerns about preparing for or conducting lightering operations, activities may be suspended until conditions improve.
- The barge has no personnel support capabilities; personnel will be accommodated on the tug, other vessel, or traded out at shift change.
- Avoid free falling liquids as static electricity may be produced.
- When explosive potential is present, ground and bond barges and equipment to dissipate static electricity.
- Vessel assignments will be initially assigned by the CISPRI Operations Manager or General Manager until Member Company Incident Management Team arrives.
- Barge 141 and CISPRI Responder have deck lighting for nighttime operations.
- All CISPRI responses are based on the tides, currents, and environmental conditions at the time of the response.
- Mooring operations should be planned and discussed with the vessel and barge crews prior to execution. These should include emergency procedures and spill contingencies.
- Barge could be anchored or drifting.




## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to recover large quantities of oil in open water environments. The CISPRI OSRV or other CISPRI contracted Vessels (OSV or CV) can store recovered oil/water onboard or pump these fluids directly to secondary storage.

Whether this recovery vessel is collecting oil/water for onboard storage or for transfer to secondary storage, this skimming vessel can be used in conjunction with two fishing vessels or work boats towing concentrator boom in a gated "U" configuration to enhance encounter rates.

This is a 24-hour-a-day operation with the initial crew being able to work for 18 hours. Additional crew should be mobilized to supplement the first crew.

## EQUIPMENT AND PERSONNEL
**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | SUPERVISOR | LABORER / RESPONDERS | TANKERMAN | VESSEL OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|---|
| OSRV or Tug | Maneuvering Vessel | 1 | | 3 | | 1 | 1 |
| Barge 141/Responder | Primary Storage | 1 | | 2 | 1 [A] | | |
| 56/13 Disc Skimmer | Skimming System | 1 | | 3 | | | |
| Current Buster | Oil Collection | 1 | | 1 | | | |
| Class 3-4 Vessels | Boom Towing | 2 | | 2 | | 2 | |
| Gated Boom (1,000 ft.) | Concentrator Boom | 1 | | | | | |
| Class 4 Vessel | Current Buster | 1 | | 1 | | 1 | |

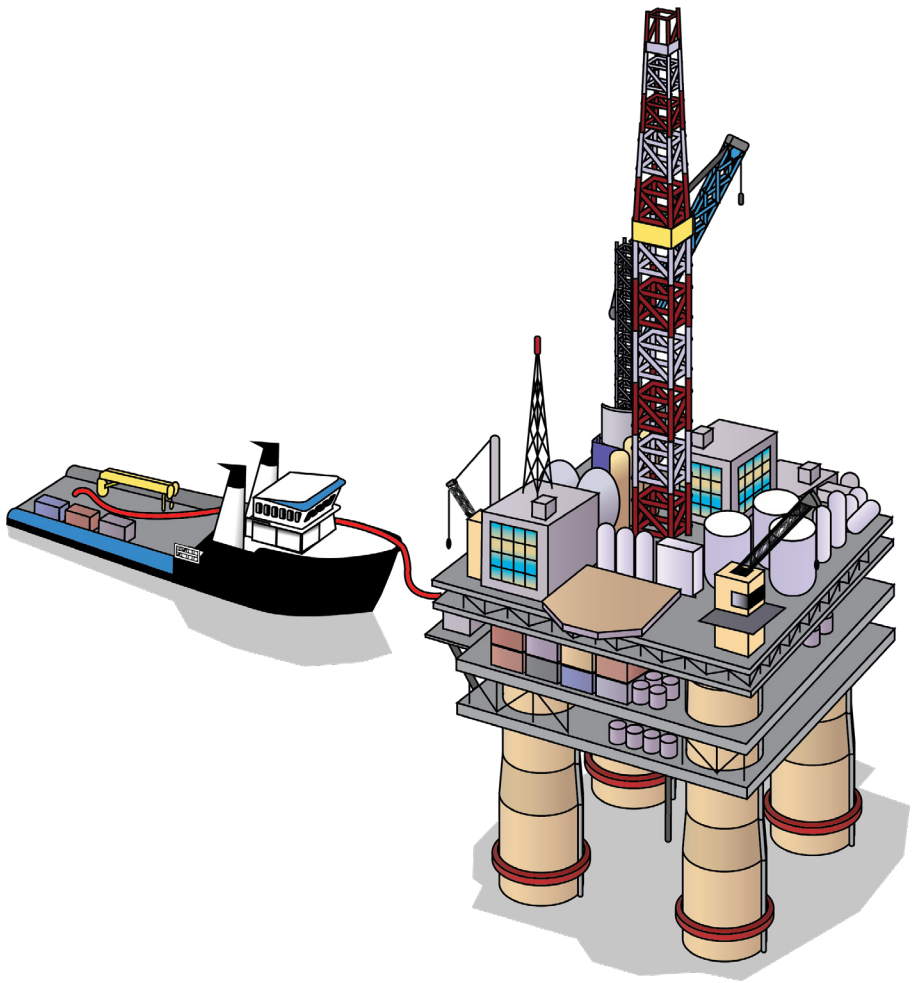
A. Tankerman needed for Barge operations and can also fill Supervisor role.

## SUPPORT

| EQUIPMENT | FUNCTION | QUANTITY |
|---|---|---|
| Air Monitoring Meters | Site Characterization (Air Monitoring) | 1 set |
| PPE | Protection of Response Personnel | Various |

## OPERATIONAL CONSIDERATIONS

- Weather/Sea/Ice conditions will be continuously evaluated for safe transit and transfer operations.
- When weather conditions raise safety concerns about preparing for or conducting lightering operations, activities may be suspended until conditions improve.
- The barge has no personnel support capabilities; personnel will be accommodated on the tug, other vessel, or traded out at shift change.
- Avoid free falling liquids as static electricity may be produced.
- When explosive potential is present, ground and bond barges and equipment to dissipate static electricity.
- Vessel assignments will be initially assigned by the CISPRI Operations Manager or General Manager until Member Company Incident Management Team arrives.
- Barge 141 and CISPRI Responder have deck lighting for nighttime operations.
- All CISPRI responses are based on the tides, currents, and environmental conditions at the time of the response.
- Mooring operations should be planned and discussed with the vessel and barge crews prior to execution. These should include emergency procedures and spill contingencies.
- Barge could be anchored or drifting.
- Gated boom deployment may follow deployment of Current Buster and skimmer. Gated boom entrainment is expected due to > than 1 knot tow speeds. This is considered acceptable.



## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to transfer recovered fluids from a CISPRI designated OSRV to the Dolly Varden platform. This tactic is specific to the Dolly Varden platform.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | SUPERVISOR | LABORER / RESPONDERS | TANKERMAN | VESSEL OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|---|
| OSRV | Primary Storage | 1 | 1 | | | 1 | 1 [B] |
| DOP 250 Pump | Fluid Transfer Ops | 1 | 1 | 3 | 1 [A] | | 1 [B] |
| Hoses | Fluid Transfer Ops | 300'/3" | 1 | 1 | | | 1 [B] |

A. Tankerman needed for Fluid Transfer operations.

B. CISPRI initial responders may fill SS role.

C. Storage capacity 1170 bbl. - 2500 bbl. based on vessel in use.

Note: The Lead Spill Technician is the Task Force Leader (TFL). Vessel/Platform crew could assist in hookup operations.

## SUPPORT

| EQUIPMENT | FUNCTION | QUANTITY |
|---|---|---|
| Air Monitor | Site Characterization (Air Monitoring) | 1 kit |
| PPE | Protection of Response Personnel | Various |

## OPERATIONAL CONSIDERATIONS

- Safety is the primary concern of this tactic, and all personnel involved must be fully trained in this tactic.
- Weather/sea/ice conditions will be continuously evaluated for safe transit and transfer operations.
- When weather conditions raise safety concerns about preparing for or conducting Fluid Transfer operations, activities may be suspended until conditions improve.
- Avoid free falling liquids as static electricity may be produced.
- When explosive potential is present, ground and bond barges and equipment to dissipate static electricity.
- Vessel assignments will be initially assigned by the CISPRI Operations Superintendent or General Manager until Member Company Incident Management Team arrives.
- All CISPRI responses are based on the tides, currents, and environmental conditions at the time of the response.
- Mooring operations should be planned and discussed with the vessel crews prior to execution. These should include emergency procedures and spill contingencies.
- CISPRI and the Dolly Varden platform will review the written procedure specific to this tactic prior to beginning the evolution.

# NEARSHORE TACTICS

## PURPOSE OF THE NEARSHORE TACTICS

Nearshore response is designed to collect and recover oil from the nearshore environment and to protect sensitive areas. The nearshore tactics are flexible and structured to be easily expandable based on the size of the response.

Nearshore responses typically use smaller, more flexible response equipment than the open water response. This equipment allows for operations in shallow water, which is often in areas close to shore with limited maneuvering space. Oil is collected in smaller, shallow-draft storage devices and then offloaded to the larger storage barges. Note: CISPRI contract vessels or work boats can be used for the following tactics.

The tactics for nearshore response are:

- **CI-NS-1, U & J Skimming Module Configuration:** This tactic describes the use of "U" and "J" boom configurations to collect and/or concentrate oil.
- **CI-NS-2, Current Buster:** This tactic describes towing a NOFI Buster-series oil collection system to concentrate oil into the collection bag of the system.
- **CI-NS-3, Shoreline Protection by Exclusion Booming:** This tactic describes the application and use of exclusion boom.
- **CI-NS-4, Shoreline Protection by Diversion Booming:** This tactic describes the application and use of diversion boom.
- **CI-NS-5, Shoreline Diversion/Recovery:** This tactic describes the application and methods used for shoreline diversion and recovery.
- **CI-NS-6, Use of Power Skiffs/Work Boats:** This tactic describes the application and use of skiffs and work boats for various functions in a nearshore response. This tactic describes those functions, along with safety and operational considerations.

HOW NEARSHORE RESPONSE IS MANAGED

The nearshore response is under the control of the Operations Section Chief based in the CISPRI Command Post (CP). In the field, nearshore response is managed by a Task Force Leader (TFL). All commands from the Operations Section Chief go to the TFL. Conditions in the field, safety concerns, and operational information are passed through the lines of communication to the Operations Section Chief, who will pass along to the appropriate Incident Management Team (IMT) group.

In a nearshore response, task forces would be dispatched to the scene of a spill and provided with a safety and operational briefing. Following the briefing, the task forces would deploy necessary equipment and begin recovery operations. Recovery tactics may be enhanced through the use of aerial surveillance to direct on-water operations to area with the highest concentration of oil (Tactic CI-TS-1).

SAFETY ASPECTS OF NEARSHORE RESPONSE

Safety is the most important consideration in nearshore response. The safety tactics outline the safety program that is used to ensure that a response is conducted as safely as possible. The Safety Officer based in the CISPRI CP has overall responsibility for response safety. A Field Site Safety (FSS) will be assigned to the primary response vessel and provide oversight and direction. The FSS will conduct safety briefings for responders, make PPE recommendations

and conduct initial site characterization. An FSS may not necessarily be assigned to every vessel or task force. Safety considerations specific to NS conditions include the following:

- **Hazardous vapor levels from the oil:** It is possible for hydrocarbon vapor levels to build up, especially in small coves or protected areas. The FSS (or other designated personnel) will conduct site characterization to determine if the area is safe for responders.
- **Nearshore response:** Responders must use care when entering shallow water if response actions are on or close to the shoreline. Furthermore, other response hazards may exist from power packs with hydraulic lines on deck, tow lines for containment boom, overhead lifting, and/or moving of power packs and skimmers, etc.
- **Onshore work:** If responders need to go onshore for securing boom or other tasks, they need to take care when walking along the shoreline (slips, trips, and falls) and avoid wildlife.

COMMUNICATIONS

Communications are very important for safe and effective nearshore response. Before beginning nearshore response, all responders will be briefed on task force communications (Tactic CI-LP-2).

HANDLING WASTE

Any mini/micro barges or other storage units used in nearshore response may be decanted during skimming and when full will be offloaded to a primary response barge or barge of opportunity. The waste management tactics are described in detail in the Waste Management Plan, which includes permit applications for decanting (Tactics CI-WM-1, CI-WM-2, CI-WM-3, and CI-LP-6).

*NOTE: Additional permits may be needed for nearshore response, e.g., beach access permit for anchors to shore (Tactic CI-LP-6).*

**Figure 1: U-Module**

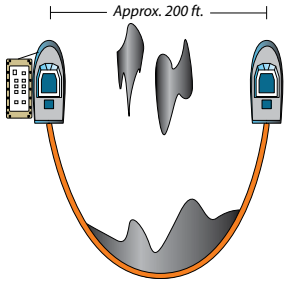



**Figure 2: Gated U-Boom**

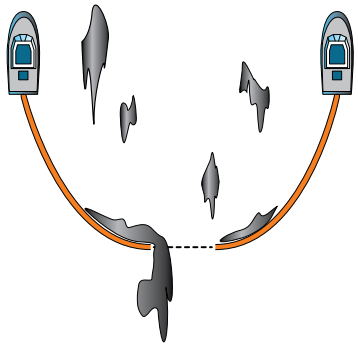


**Figure 3: J-Module**

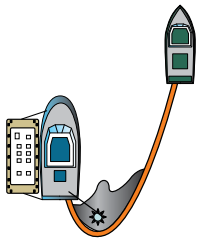
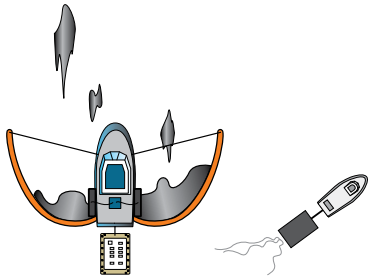


**Figure 4: Skimming System**



## TACTIC PURPOSE AND DESCRIPTION

The "U" boom system consists of vessels towing containment boom in a "U" configuration concentrating spilled oil into the pocket formed at the apex of the boom (Figure 1). This technique can also be used solely for oil concentration by leaving an opening secured by chain in the apex of the boom — referred to as a "gated U boom" (Figure 2). Typically, a gated "U" boom is used in concert with a standard "U" configuration to enhance concentration and containment effectiveness. The spilled oil is then collected with a recovery device (skimmer) and placed in a storage device.

A third option is for two towing vessels to position into a "J" for oil recovery operations (Figure 3). The purpose of the "J" boom tactic is to reconfigure the "U" boom configuration into a "J" shape to allow a skimmer to be deployed into the apex of the boom where the oil is thickest.

The "J" boom configuration consists of vessels towing boom in a "J" configuration, concentrating the spilled oil for recovery into the pocket formed by the boom. The rear towing vessel is outfitted with a recovery device (skimmer) for deployment along the vessel side where the apex of the boom is formed. The oil is then collected with the skimmer and placed in a primary storage device such as a mini/micro barge or bladder.

An additional technique consists of a vessel with two skimmers inside the two collection skirts on the port and starboard side of the vessel (Figure 4). The oil is collected with the skimmers and placed in a primary storage device on a macro/mini barge being pulled by the vessel.

## EQUIPMENT AND PERSONNEL

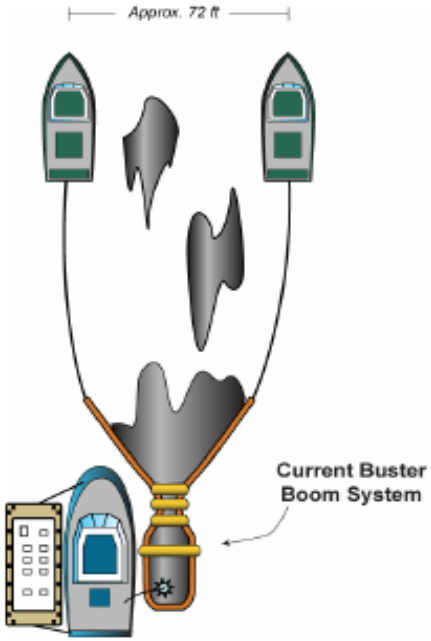
**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | TASK FORCE LEADER | LABORER / RESPONDERS | VESSEL OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| Class 3, 4, 5, or 6 CVs or Workboats [A] | Tow Boom/ Skimming Platform | 2 | 1 | 3 | 2 | 1 [E] |
| Containment Boom | Concentrate & Contain Oil | Varies [B] | | N/A | N/A | |
| Mini / Micro Barges [C] | Storage | 1 | | | | |
| Skimmer [D] | Recover Oil | 1 | | | | |
| Power Pack | Prime Mover | 1 | | | | |

A. CISPRI contract vessels (CVs) or CISPRI work boats or power skiffs could be used for these tactics.
B. Boom length/size could vary based on tasking.
C. Bladders could also be used instead of barges.
D. Skimming systems and barges would only be needed in a "J" Configuration in a recovery mode. (Skimming systems designed for use in protected or calm water could be used in the nearshore environment).
E. CISPRI initial responders may fill FSS role.

## OPERATIONAL CONSIDERATIONS

- Because oil can be entrained beneath the boom at speeds exceeding 1 knot, limiting the towing speed of containment boom to less than 1 knot is vital to making this an effective tactic.
- Communication between the towing vessels is important to maintain boom configuration.
- The number of responders needed to initially deploy the skimming system is more than what is needed to operate it.
- The "J" configuration requires good coordination between the two towing vessels to allow the skimming vessel to drop back in the formation and deploy the skimmer into the oil. This maneuver needs to be coordinated to avoid collapsing the containment boom configuration and losing the collected oil.
- Contract vessels, workboats, and/or skiffs can be used to support nearshore deployment or as part of GRS deployments.
- Typically this tactic requires 2 contract vessels or workboats and approximately 660 feet of boom (for a swath width of approximately 200 feet in the "U" configuration).
- Vessel assignments will be made by the Task Force Leader based on vessel configuration, horsepower, and crew size.




## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to tow the Current or Harbor Buster to concentrate oil into the collection bag at the rear of the boom system. This allows a skimmer to be deployed into the bag and collect oil into a storage device such as a mini or micro-barge.

The Current or Harbor Buster system can be used successfully to work both large pools and/or windrows/streamers of oil. The benefit of this system over regular containment boom is that it can be towed over four (4) times faster and cover a much larger area. It is more maneuverable when operating without the recovery system/barge attached. Once the collection bag is full then the recovery vessel would come alongside to pump out the collection bag.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | TASK FORCE LEADER | LABORER / RESPONDERS | VESSEL OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| Class 4, 5, or 6 CVs or Workboats [A] | Tow Boom | 2 | 1 | 2 | 1 | 1 [E] |
| Harbor or Current Buster | Oil Collection | 1 | | N/A | N/A | |
| Class 2 or 3 CVs or Workboats [B] | Recovery Vessel | 1 | | 2 | 1 | |
| Mini / Micro Barges [C] | Storage | 1 | | N/A | N/A | |
| Skimmer [D] | Recover Oil | 1 | | | | |
| Power Pack | Prime Mover | 1 | | | | |

A. Contract vessels or work boats could be used for these tactics.
B. The recovery vessel with storage barge/bladder in tow.
C. Bladders could also be used instead of barges.
D. Skimming systems such as Crucial 13-30, Terminator or Desmi systems could be used in the nearshore environment.
E. CISPRI initial responders may fill FSS role.

## OPERATIONAL CONSIDERATIONS

- This system can be towed at speeds up to 4 knots.
- Good communications and coordination are needed between the towing vessels and with the skimming vessel.
- The typical swath width for the Current Buster is approximately 72 feet; additional boom can be added to increase the swath width.
- Vessel assignments will be made by Task Force Leader based on vessel configuration, horsepower, and crew size.
- The contract vessels, workboats, or skiffs can commence operating the Current Buster independently without any recovery system in place. This provides optimum encounter rates for oil recovery until the recovery vessel, skimmer and storage unit arrives.

*This page left intentionally blank*

**Figure 1:**
**Single Exclusion Boom**

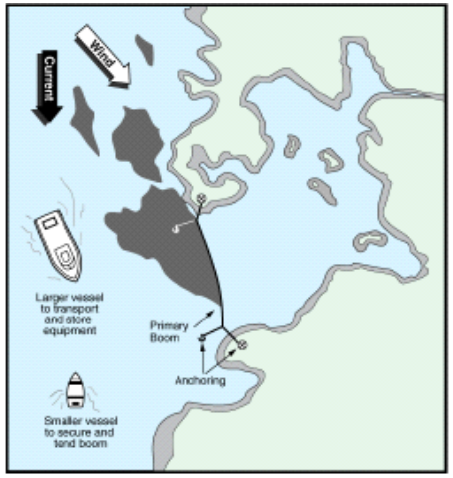
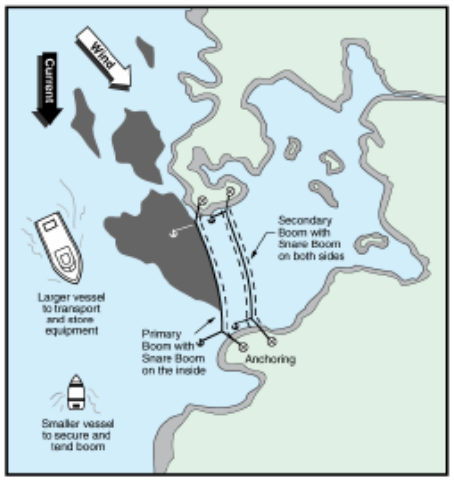



**Figure 2:**
**Double Exclusion Boom**




## TACTIC PURPOSE AND DESCRIPTION

The exclusion booming team normally consists of two vessels, depending on location. One large vessel transports and stores equipment, while one smaller vessel secures and tends boom.

One vessel sets the anchor systems and deploys boom with assistance from another vessel. One vessel tows the containment boom, secures the boom in place, secures boom overlaps, secures anchoring systems to boom, and places sorbent or snare boom. Once the boom is fully deployed, a vessel remains in the area to maintain and monitor boom integrity.

Where the areas protected are classified as highly sensitive and where high currents are expected a primary and a secondary boom should be used (Figure 2). The primary boom can act as a first line of defense, with the secondary acting as backup protection. The booms should be positioned far enough apart to prevent possible anchor and line entanglement and to allow vessel access between the booms. As the booms are deployed, they may require anchoring to maintain position. The anchor location should be identified and set firmly with buoys secured to lines before boom deployment.

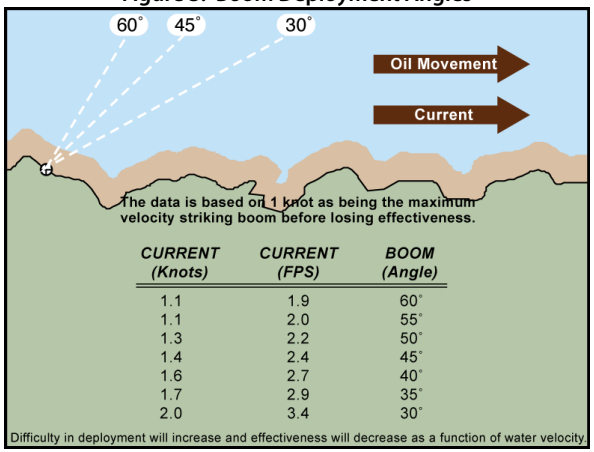
Once the boom is in place and anchored, sorbent or snare boom (oleophilic material) can be placed along the length of both sides of the secondary boom and the inside of the primary boom. Sorbent or snare boom could collect sheens or free oil that might enter the exclusion area. To further reduce leakage, multiple lengths of sorbent or snare boom can be placed at the overlap joints of the containment boom and beach interfaces. Monitoring, adjustment, and replacement of sorbent or snare boom material should be continuous.

## EQUIPMENT AND PERSONNEL
**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | TASK FORCE LEADER | LABORER / RESPONDERS | VESSEL OPERATOR |
|---|---|---|---|---|---|
| Class 3, 4, 5, or 6 CVs or Workboats [A] | Boom Placement | 2 | 1 | 2 | 2 |
| Boom [B] | Protection | Various | | N/A | N/A |
| Anchoring Systems [C] | Secure Boom | Various | | 1 | 1 |
| Sorbent/Snare Boom | Boom | 1 | | - | - |
| Boom Vane [D] | Positioning Device | 1 | | - | - |

A. CISPRI contract vessels (CVs) or CISPRI workboats or power skiffs could be used for these tactics.
B. Boom size/length/type depends on application.
C. Anchoring systems depend on deployment requirements.
D. Boom Vane is an optional tactic.

**Figure 3: Boom Deployment Angles**



## OPERATIONAL CONSIDERATIONS

- Response personnel should configure the boom at a diversion angle that provides a resultant water velocity perpendicular to the boom of less than 1.1 feet per second at peak flow rate. Since entrainment of oil under the boom begins at that velocity, personnel can observe when entrainment begins in order to determine the proper deployment angle. The higher the current, the shallower the boom angle to the shoreline (Figure 3).
- Boom needs to be tended after initial deployment.
- As a guide, one anchor is typically used for every 200 feet of boom.
- Sorbent or snare boom should be replaced as it reaches its recovery capacity. The contaminated snare should be bagged and temporarily stored for later transfer to a waste disposal site.
- Environmental factors:
- High currents /tides (may cause oil entrainment under the boom)
- Debris (may damage boom)
- High winds (may cause oil splash-over)
- Water depth (may preclude effective anchoring)
- Where applicable, the Geographic Response Strategies provide site-specific tactics to protect environmentally sensitive areas. Responders may make modifications dictated by conditions at the time of the spill. (See Tactic CI-SA-2)
- Permits may be required for shoreline protection. (See Tactic CI-LP-6)
- Protected/calm-water boom (appropriate for the conditions) is generally used for this tactic. When boom is secured to the shoreline, an intertidal boom should be used whenever possible between the shore and the boom offshore.
- When the beach type (e.g., rocky) could damage or prevent the use of intertidal boom, solid-flotation boom can be substituted.

**Figure 1:**
**Live Diversion Boom**

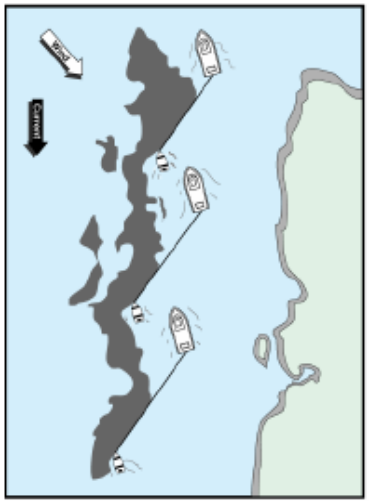
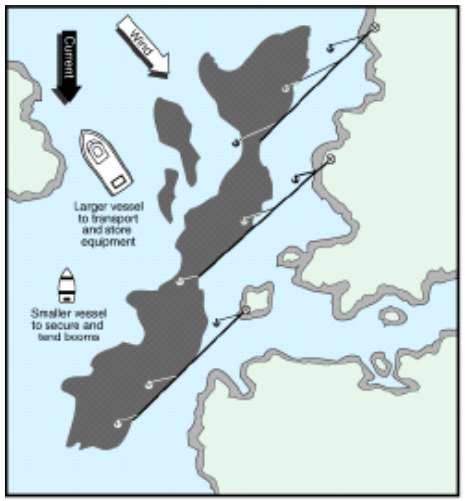



**Figure 2:**
**Fixed Diversion Boom**




## TACTIC PURPOSE AND DESCRIPTION

Diversion booming is the deployment of boom diagonally in front of oil to divert it away from sensitive areas. Figure 1 shows live diversion booming which is attached to vessels, while Figure 2 shows fixed, or anchored diversion booms.

While the concept is simple, the actual deployment can be quite complex when significant depths, winds, tides, or currents are encountered. The force generated by winds and currents provides a continuous load against the side of the boom. Anchor points are effectively reaction points resisting the total load generated by the wind and current. Water depth influences diversion booming because when the anchor-line length is adequate to allow effective anchoring, it can be too long to maintain a diversion configuration. Anchors can be effective between the vessel and shore where depths permit.

For effective diversion booming, operators must have an understanding of how boom responds to various forces. Since boom is flexible, it may tend to "billow" between restraints. The greater the tendency to billow, the harder it is to maintain an effective diversion angle. The tendency to billow increases in proportion to the load imposed by wind and current. Several factors influence the severity of this effect: boom construction, boom draft, deployed length, distance between restraints, and current/wind velocities.

Diversion booming requires strong boom, and the value of increased strength versus additional skirt area should be considered. Boom drafts in excess of 18 inches probably have marginal net value.

Boom will be used in anchored diversion booming to form a seal through the intertidal zone.

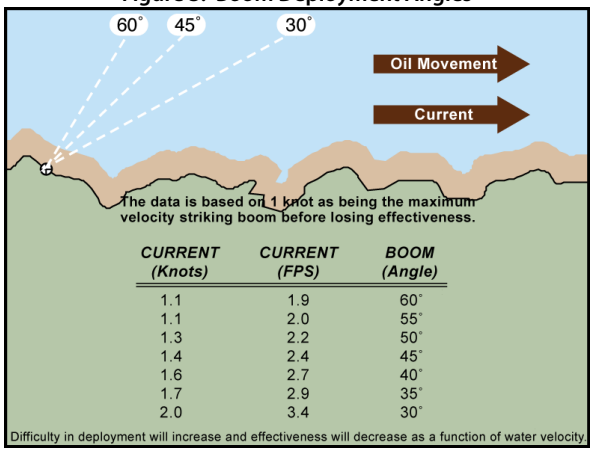
## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | TASK FORCE LEADER | LABORER / RESPONDERS | VESSEL OPERATOR |
|---|---|---|---|---|---|
| Class 3, 4, 5, or 6 CVs or Workboats [A] | Boom Placement | 2 | 1 | 2 | 2 |
| Boom [B] | Protection | Various | | | |
| Anchoring Systems [C] | Secure Boom | Various | | | |
| Boom Vane [D] | Positioning Device | 1 | | | |

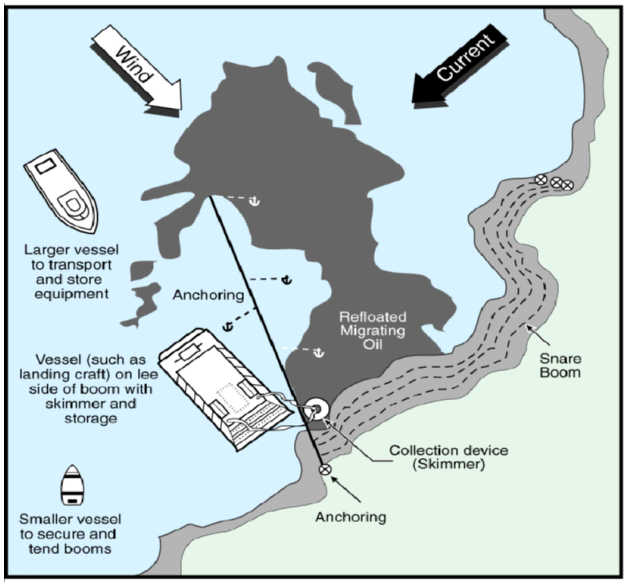
A. CISPRI contract vessels (CVs) or CISPRI workboats or power skiffs could be used for these tactics.
B. Boom size/length/type depends on application.
C. Anchoring systems depend on deployment requirements.
D. Boom Vane is an optional tactic.

**Figure 3: Boom Deployment Angles**



## OPERATIONAL CONSIDERATIONS

- Response personnel should configure the boom at a diversion angle that provides a resultant water velocity perpendicular to the boom of less than 1.1 feet per second at peak flow rate. Since entrainment of oil under the boom begins at that velocity, personnel can observe when entrainment begins in order to determine the proper deployment angle. The higher the current, the shallower the boom angle to the shoreline (Figure 3)
- Boom needs to be tended after initial deployment.
- As a guide, one anchor is typically used for every 200 feet of boom.
- Permits may be required for shoreline protection. (See Tactic CI-LP-6)
- Environmental factors:
  - High currents /tides (may cause oil entrainment under the boom)
  - Debris (may damage boom)
  - High winds (may cause oil splash-over)
  - Water depth (may preclude effective anchoring)
- Where applicable, the Geographic Response Strategies provide site-specific tactics to protect environmentally sensitive areas. Responders may make modifications dictated by conditions at the time of the spill. (See Tactic CI-SA-2)
- Protected/calm-water boom (appropriate for the conditions) is generally used for this tactic. When boom is secured to the shoreline, an intertidal boom should be used whenever possible between the shore and the boom offshore.




## TACTIC PURPOSE AND DESCRIPTION

Shoreline diversion/entrapment — a combination of diversion booming, passive collection, mechanical collection, and cold-water deluge — can be used to entrap oil that has impacted the shoreline and is still mobile, or to divert oil to a shoreline collection area to prevent impact to a more sensitive area. Containment boom can be deployed by a larger vessel offshore and a work boat from the beach to an offshore anchoring point. The intent of this technique is to divert the oil toward the shoreline for containment and collection. As time permits and where possible, deluge and passive collection should be employed with shoreline entrapment to minimize impact to selected areas. Shoreline entrapment is also used to minimize the length of shoreline impacted by oil.

Once boom is deployed and secured both offshore and onshore well above the high tide zone, landing craft with collection equipment or shore side collections equipment can be placed on the lee side of the boom where oil is being concentrated. The crew can then deploy a collection device and begin recovery of oil. To reduce further beach impact, a deluge system can be deployed along with multiple snare booms secured longitudinally along the impacted beach and just off the beach. Oil, as it is impacting the shore, may be captured with the snare boom. A deluge system can further reduce the amount of heavy contaminants adhering to the surface of the beach.

Intertidal boom will be used in shoreline entrapment booming to form a seal through the intertidal zone. This equipment will be available from the staging areas together with anchor packages.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | TASK FORCE LEADER | LABORER / RESPONDERS | VESSEL OPERATOR |
|---|---|---|---|---|---|
| Class 4, 5, or 6 CVs or Workboats [A] | Boom Placement | 2 | 1 | 3 | 2 |
| Boom [B] | Protection | Various | | | - |
| Anchoring Systems [C] | Secure Boom | Various | | | - |
| Class 2 or 3 CV or Workboat [D] | Recovery Vessel | 1 | | | 1 |
| Mini / Micro Barge [E] | Storage | 1 | | | - |
| Fast Tank [E] | Storage | 1 | | | - |
| Skimmer [F] | Recover Oil | 1 | | 1 | - |

A. CISPRI contract vessels (CVs) or CISPRI workboats or power skiffs could be used for these tactics.
B. Boom size/length/type depends on application.
C. Anchoring systems depend on deployment requirements. (See CI-LP-4)
D. Additional vessel may be needed for barge tow if barge is used for storage.
E. If shoreside recovery is used a fast tank could be used for recovered liquids.
F. Skimming system for shoreside recovery.

## OPERATIONAL CONSIDERATIONS

- Where applicable, the Geographic Response Strategies provide site-specific tactics to protect environmentally sensitive areas. Responders may make modifications dictated by conditions at the time of the spill. (See Tactic CI-SA-2)
- Decanting may be conducted only into a boomed area, and approval to decant is required from the State On-Scene Coordinator. Consult the appropriate agencies to determine site-specific stipulations.
- Permits may be required for shoreline diversion/entrapment and also decanting. (See Tactic CI-LP-6)

*This page left intentionally blank*



## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to describe the use of power skiffs/workboats in oil spill response, including the safety aspects of using these small but capable boats, the types of response actions these vessels are capable of performing, and their management and assignment within the response task forces. They are small open vessels less than 28 feet in length, usually with one operator and without human conveniences and shelter. These vessels play a versatile and important role in the contract vessel fleet and have proven useful in spill drills and exercises, especially for nearshore response.

Power skiffs/workboats will be used whenever the weather conditions and the capabilities of the vessel meet the requirements of the task.

Typical task assignments include but are not limited to the following:

- Containment boom towing in conjunction with a parent vessel
- Boom transportation and deployment
- Anchor handling and shoreline assignments
- Deployment of exclusion and diversion boom
- Personnel transportation
- Reconnaissance and surveillance
- Boom tending
- Mini/micro-barge or bladders handling and tending at secondary storage vessels or site
- Wildlife response

## LOGISTICAL SUPPORT

- Power skiffs/workboats will require additional support not normally provided to contract vessels. Consumables, mechanical support, and repair parts will be the responsibility of the parent vessel for the first 72 hours. Fuel is to be provided by the parent vessel until a support vessel such as a tender can be provided, usually by 12 to 24 hours into an incident. Before the contract vessel is dispatched, the vessel's fuel tanks, as well as those of the power skiffs/workboats, should be topped off.
- CISPRI will provide any additional equipment that is directly related to response or the assignment. These include such things as additional lighting, hazing / capture / transportation kits for wildlife, personal protective equipment (PPE), decontamination materials, etc.
- The parent vessel will have responsibility for providing meals, shelter, and housing for power skiffs/workboat crewmembers unless other arrangements are made with the Task Force Leader.
- Radio channels will be assigned by the IMT Communications Unit and should be followed.
- PPE will be provided to the operator before the power skiff/work boat is integrated into the response.
- Transportation to the response site will be the responsibility of the parent vessel, which can delegate this responsibility to another vessel with approval of the Task Force Leader and with notification of the Contract Vessel Administrator.
- The task force will provide waste management support. Schedules for support will be provided, as well as methods for requesting additional support.

## OPERATIONAL CONSIDERATIONS

- Power skiffs/workboats will be dispatched with a parent vessel. Special training requirements such as wildlife hazing will be identified in the contract vessel request and on the dispatch report to show qualifications. The Contract Vessel Administrator will document the power skiffs/ workboat characteristics to provide the Operations Section and Resource Section with the information they need to make assignments and track the vessels. This information will be used to establish tactical assignments and provide logistical support. The Task Force Leader will rely on the parent vessel captain and the power skiff/workboat operator for knowledge of the vessel's limitations in order to change or make new tactical assignments.
- Some general operating considerations include the following:
  - Power skiffs/workboats operate in conjunction with a parent vessel. Some are the life raft for the parent vessel and cannot operate independently. Assignments away from the parent vessel will require approval from the contract vessel owner and the Task Force Leader.
  - Vessels with engines cooled by raw water should be used only in non-oiled areas.
  - Spare parts are not available onboard power skiffs/work boats.
  - Seasonal weather considerations may restrict power skiff/workboat use.
  - If a contract vessel is using its power skiff, then the contract vessel crew must be increased to meet minimum crew requirements.
  - A minimum of two skiffs are required for independent responses away from parent vessel.

## SAFETY CONSIDERATIONS

- The final decision on safe operating conditions or assignment rests with the power skiff/workboat operator and the parent vessel. There are several layers of people responsible for safety. The Task Force Leader is responsible for the safe conduct of the people assigned to them. The contract vessel captain is responsible for the vessel crew. The power skiff/ workboat operators are assigned to a contract vessel or have a parent vessel that is responsible for their safety.
- Operations in the power skiffs/workboats will cease if the operator decides the conditions exceed the ability of the vessel, or when the wave height exceeds 3 feet and/or sustained wind speed is 25 mph or greater.
- Before leaving port, the parent vessel captain and the power skiff/ workboat crew will go through the following safety checklist:
  - Is the necessary safety equipment as dictated by the U.S. Coast Guard onboard the vessel?
  - Are communication methods clear and understood?
  - Is the parent vessel identified?
  - Is the fuel topped off?
  - Are response procedures, directions, and policies clearly understood?
  - If needed, have navigational lights been added to the power skiff/ work boat?

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Spill response is a different operating environment than fishing, and personnel will wear Level D PPE, as well as personal flotation devices. Other PPE may be required as determined by the Task Force Leader. Hard hats will be provided and must be worn when overhead lifting is performed. Additional training and information on PPE are provided in contract vessel training.
- Foul weather gear and/or flotation work suits, with suitable cold-weather foot and hand protection, are to be worn during inclement weather conditions or when the temperature is 40°F or less.

## REQUIREMENT FOR TWO CREWMEMBERS

- When the power skiff/workboat is working more than one-half mile from a parent vessel, it will be considered working independently and will require two crewmembers onboard. Two crew personnel will also

be required in low visibility, during extreme weather, or when the power skiff/workboat is sent away from parent vessel for tasks such as personnel transport.

### WORK PERIODS

- Unless decided by the vessel owner, no operator will be required to spend more than 4 hours in a power skiff/workboat without being relieved or given a break. Every half hour, the parent boat should check in with its assigned power skiff/workboats in order to provide the operator with the opportunity of a bio-break and/or refreshment.
- As weather condition, visible light, and sea states get worse, the work periods will shorten and more frequent breaks will be required.
- All personnel can exercise STOP JOB AUTHORITY at any time conditions become unsafe.

### DECONTAMINATION

- The power skiff/workboat and crew will undergo the same decontamination process that the parent vessel is held to, unless instructed by the Task Force Leader to specifically use an alternative process. See Tactic CI-WM-6 for information on decontamination of small vessels.

*This page left intentionally blank*

# SHORELINE TACTICS

## PURPOSE OF THE SHORELINE TACTICS

This section describes the onshore response tactics used if an oil spill impacts the shoreline. Cook Inlet has a great variety of shoreline types ranging from mud flats, gravel/sand beaches, sheltered beaches to exposed bedrock. These tactics outline some of the main methods for collecting oil and cleaning shorelines.

The tactics for shoreline response are:

- **CI-SL-1, Shoreline Cleanup Assessment Technique (SCAT):** This tactic outlines the SCAT process, which assesses the impact of oil on Cook Inlet shorelines and makes recommendations for shoreline cleanup methods.
- **CI-SL-2, Protective Beach Flooding/Cold Water Deluge:** This tactic describes the use of shoreline flooding for protecting beaches from floating oil washing up on the beach. This procedure can also be used for removing oil from an impacted beach.
- **CI-SL-3, Passive Collection:** This tactic describes the use of sorbent material to protect the shoreline environment.
- **CI-SL-4, Shoreline Cleanup using Mechanical Recovery:** This tactic describes the use of mechanical recovery systems and for collecting oil along a shoreline environment.
- **CI-SL-5, Shoreline Cleanup using Manual or Vacuum Removal:** This tactic describes the manual removal of oil from a shoreline or the use of a Vacuum truck or SuperSucker truck.
- **CI-SL-6, Shoreline Cleanup using Sorbents & Vegetation Cutting:** This tactic describes the use of sorbent material and the removal of oiled vegetation from a shoreline.
- **CI-SL-7, Debris Removal:** This tactic describes the removal of oiled debris from an impacted shoreline.
- **CI-SL-8, Mud Flat Response Tactics:** This tactic describes response tactics to be used on Cook Inlet Mud Flats.

## HOW A SHORELINE RESPONSE IS MANAGED

The shoreline response is under the control of the Operations Sections Chief based in the CISPRI Command Post. In the field, shoreline response is managed by a Task Force Leader (TFL). Initial shoreline assessments will be conducted by the SCAT team that will operate under the Environmental Unit Leader. Following development of the shoreline cleanup plan, the Operations Section will start mobilizing the shoreline cleanup response. A Shoreline Division Supervisor will be assigned to manage the response and arrange for logistical support, and Shoreline Task Force Leaders will be responsible for implementation.

## SAFETY ASPECTS OF SHORELINE RESPONSE

Safety is the most important consideration in onshore response. The safety section of this manual outlines the safety program that is used to ensure that a response is conducted as safely as possible. The Safety Officer based in the Emergency Operations Center has overall responsibility for response safety. The Field Site Safety (FSS) will conduct safety briefings for responders, make PPE recommendations and conduct initial site characterization. An FSS may not

necessarily be assigned to every shoreline division or task force. Safety considerations specific to SL conditions include the following:

- **Vapor levels:** It is possible that vapors can be generated from the oil, and site characterization needs to be conducted to monitor vapor levels, particularly if the response is in summer.
- **Working on oiled or slippery shorelines:** Care needs to be exercised when working on oiled shorelines to avoid slips and falls due to the slippery conditions. Caution needs to be exercised when workers move from the support boats to the shore.
- **Wildlife:** Care must be taken when working on the shoreline to avoid encounters with dangerous wildlife such as bears. The development of an onshore cleanup plan will include consideration for bear guards for shoreline crews.

## COMMUNICATIONS

Communications are very important for safe and effective shoreline response. When arriving on location, all responders will be briefed on task force communications, (see Tactic CI-LP-2).

## HANDLING WASTE

Shoreline response can potentially generate a large amount of waste. The waste management tactics describe in detail the handling and disposal of waste, and the Environmental Unit will develop a waste management plan (see Tactic CI-WM-1).

## PERMITTING AND LAND ACCESS

Prior to response operations, appropriate permitting (CI-LP-6) must be obtained and approval from appropriate landowners received.

**Figure 1: Sample Shoreline Cleanup Assessment Form**

SHORT SHORELINE ASSESSMENT FORM for Cook Inlet Spill Page 1 of 1

| 1. GENERAL INFORMATION | Date (dd/mm/yy) | Time (24h standard/daylight) | Tide Height L/M/H |
|---|---|---|---|
| Segment ID: CI-04 | | | |
| Segment Name: Captain Cook | 29/4/2009 | 1300 hrs to 1430 hrs | H/M/L |
| Survey By: Foot / Boat / Helicopter / Overlook / _____ | | Sun / Clouds / Fog / Rain / Snow / Windy | |

| 2. SURVEY TEAM No. 1 | Name | Organization | Phone Number |
|---|---|---|---|
| | J. Whitney | NOAA SSC | 776-5129 |
| | J. Brown | ADEC | 776-5129 |
| | J. Page | Tesoro - Contractor | 776-5124 |

3. SEGMENT Total Length 600 m/yd Length Surveyed 600 m/yd Differential GPS Yes / No
Start GPS: LAT _____ deg. _____ min LONG _____ deg. _____ min
End GPS: LAT _____ deg. _____ min LONG _____ deg. _____ min

4. SHORELINE TYPE Select only ONE Primary (P) and ANY Secondary (S) types present

| | | | |
|---|---|---|---|
| | Rocky Cliffs | | Riprap |
| | Exposed Man-made Structures | | Exposed Tidal Flats |
| | Wave-cut Platforms | | Sheltered Rocky Shores |
| | Fine-Medium grained Sand Beaches | | Sheltered Man-made Structures |
| | Coarse-grained Sand Beaches | | Sheltered Tidal Flats |
| P | Mixed Sand and Gravel Beaches | | Wetlands |
| S | Gravel Beaches | | Other _____ |

5. OPERATIONAL FEATURES Oiled Debris? Yes / No Type Rip-rap Amount 10 bags
Direct backshore access? Yes / No Access restrictions NONE - Parking lot
Alongshore access from next segment? Yes / No Suitable backshore staging? Yes / No

Zone ID Ø4-Ø3 Description of oil in: Supra / Upper / Mid / Lower Tidal Zone (circle oil location)

| Oil Band Dimensions | Surface Oil Distribution | Surface Oil Thickness | Surface Oil Type | Subsurface Oil Penetration | Subsurface Oil Burial |
|---|---|---|---|---|---|
| Width: 5 m/ft | <1% | Film | Fresh Oil | <1 cm / in | Clean Layer |
| | 1-10% | Stain | Mousse/Tar | 1-5 cm / in | ___ cm / in |
| | 11-50% | Coat | Tarballs/Patties | 5-10 cm / in | |
| Length: 130 m/ft | 51-90% | Cover | Surface Oil Residue | >10 cm / in | Oiled Layer |
| | 91-100% | Pooled | Asphalt Pavement | ___ cm / in | <1 cm / in |
| | ___% | ___ cm / in | Other _____ | | |

Zone ID _____ Description of oil in: Supra / Upper / Mid / Lower Tidal Zone (circle oil location)

| Oil Band Dimensions | Surface Oil Distribution | Surface Oil Thickness | Surface Oil Type | Subsurface Oil Penetration | Subsurface Oil Burial |
|---|---|---|---|---|---|
| Width: 5 m/ft | <1% | Film | Fresh Oil | <1 cm / in | Clean Layer |
| | 1-10% | Stain | Mousse/Tar | 1-5 cm / in | ___ cm / in |
| | 11-50% | Coat | Tarballs/Patties | 5-10 cm / in | |
| Length: 130 m/ft | 51-90% | Cover | Surface Oil Residue | >10 cm / in | Oiled Layer |
| | 91-100% | Pooled | Asphalt Pavement | ___ cm / in | ___ cm / in |
| | ___% | ___ cm / in | Other _____ | | |

8. COMMENTS Cleanup Recommendations; Ecological/Recreational/Cultural Issues; Wildlife Obs.

Manual Removal Only to minimize sediment removal
Very High Priority - State Park Beach
EAGLE NEST IN AREA

Sketch: Yes / No Photos: Yes / No (Roll# 1 Frames 7-9) Video Tape: Yes / No (Tape# _____)

## TACTIC PURPOSE AND DESCRIPTION

Spill responders must often establish priorities for shoreline protection and cleanup resources. The Shoreline Cleanup Assessment Technique (SCAT) guides this prioritization. SCAT uses standardized procedures and terminology to document shoreline oiling. SCAT teams identify and describe human use, ecological and cultural resources, and other factors that may place constraints on cleanup operations. SCAT Teams are managed by the Shoreline Group Supervisor in the Operations Section. The Environment Unit synthesizes their field data into reports used to develop Incident Action Plans.

SCAT surveys of shoreline oiling generally entail four steps:

**Step 1:** Division of the coast into segments within which the shoreline's physical features and sediment type are relatively homogenous; segments can be subdivided if oiling conditions vary significantly within a segment.

**Step 2:** Description of shoreline character (mudflats, bedrock cliff, etc.) in each segment.

**Step 3:** Use of pre-defined, uniform terms to catalog the character and amount of oil stranded on a segment of shoreline; pertinent information collected includes length of oiled shore in the segment, width of the oiled band, percent distribution of oil in that band, and thickness of oil cover.

**Step 4:** Description of relative subsurface oil concentration and character, as well as the thickness and depth of oiled layer penetration; standardized terminology is used.

SCAT teams generally use shoreline assessment forms similar to the one shown in Figure 1. In addition to forms like this one, SCAT survey reports include field sketches or maps of shoreline segments (Figure 2). These maps identify the physical layout of the segment in question, the location of the oil, where samples were collected, where pits were dug, and where photographs were taken.

SCAT teams are made up of state and federal personnel, responsible party personnel, and landowners as appropriate. The majority of CISPRI Member

Companies will contract with outside consultants to facilitate SCAT teams.

As depicted in Figure 1, their reports address the following issues:

- Whether cleanup is necessary at a particular site and, if cleanup is needed, the priority for cleanup at that site;
- Appropriate cleanup methods for impacted sites; and
- Necessary constraints to protect sensitive resources.

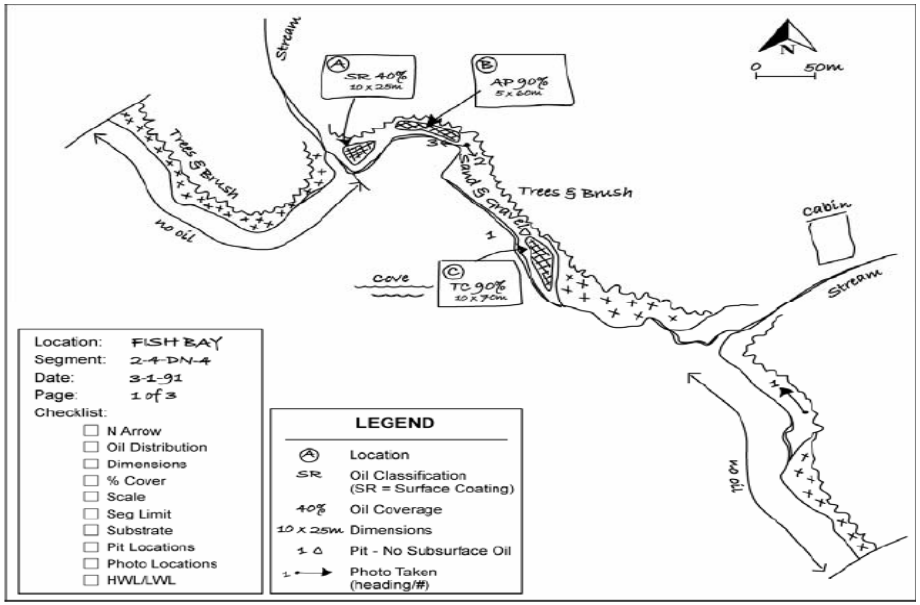
Once response efforts have progressed, SCAT teams also provide input on the effectiveness of cleanup operations and offer recommendations regarding cessation of those operations.

SCAT team members can gather relevant information from pre-existing sources or from field evaluations conducted following a spill. Broad-scale surveys based on pre-existing information, reports from individuals in the field, or low-altitude over-flights provide preliminary data on shoreline oiling and on sensitive resources. SCAT teams refine this data with targeted ground surveys where necessary.

## OPERATIONAL CONSIDERATIONS

- See Tactic CI-LP-3 for information on SCAT contractors.
- Video surveys and pre-spill shoreline assessments have been conducted in most areas of Cook Inlet. This information is available at CISPRI.
- If possible, aerial surveys of moderately to heavily oiled areas should be conducted at low tide to facilitate determination of oil coverage in the intertidal zone.
- The Environmental Unit may consult key federal, state, and local agencies or entities during the shoreline assessment process.
- Prior to response operations, appropriate permitting (CI-LP-6) must be obtained and approval from appropriate landowners received.

**Figure 2: Sample SCAT Sketch Map**




## SHORELINE SEGMENTATION

Shoreline segmentation provides a systematic and uniform framework for documentation, planning and response consideration.

- The shoreline is divided into working units, called “segments”, within which the shoreline character is relatively homogeneous in terms of physical features and sediment type.
- Each segment is given a unique location identifier and is surveyed.
- Segment boundaries can be either prominent geological features (headlands, streams, etc.), changes in shore/substrate types, or changes in oil conditions.
- Segment lengths are small enough to obtain adequate resolution and detail on the distribution of oil, but not so small that too much data is generated. Most segments in oiled areas would be in the range of 0.2 to 2.0 km.

- Segments are identified on an alphanumeric scheme with an alphabetical prefix, keyed to a geographic name (Captain Cook Park)

### SCAT SURVEY TEAM AND RESPONSIBILITIES

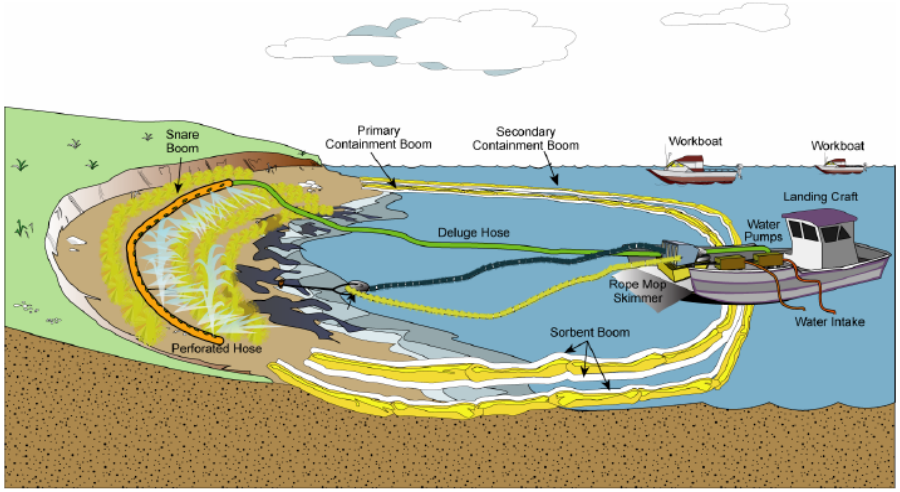
Primary team members for the surveys and their responsibilities are outlined below. Assignments can be modified according to survey objectives and the composition of the team. Government or landowner representatives will participate and may assist in the data collection.

Additional information on the SCAT process is available in the following publications, documents or web site locations:

- NOAA Shoreline Assessment Manual 4th Edition - August 2013 https://response.restoration.noaa.gov/sites/default/files/manual_shore_assess_aug2013.pdf
- Shoreline Assessment Job Aid - August 2007 https://dec.alaska.gov/media/17275/jobaid-scat.pdf
- Shoreline Countermeasures Manual for Alaska https://response.restoration.noaa.gov/sites/default/files/shoreline_countermeasures_alaska.pdf
- Michel, J. and I. Byron. 1997. Shoreline Assessment Manual. Hazardous Materials Response and Assessment Division, National Ocean Service, National Oceanic & Atmospheric Administration, Report No. HAZMAT 97-4.

**Additional information is available on the NOAA Web Site at: https://response.restoration.noaa.gov/**

*This page left intentionally blank*




## TACTIC PURPOSE AND DESCRIPTION

This technique is designed to flood a beach with ambient-temperature sea water to prevent or minimize oil from remaining on the shoreline during tidal movements. Cold-water deluge uses medium to high volume pumps to push ambient-temperature sea water through perforated hoses placed along the high-tide line. This method was developed for protection but can be outfitted with a collection device, containment boom, and cold-water wash hoses.

The objective of this tactic is to flush oil from the shoreline to the water for collection or protect a shoreline area from being contaminated. The system is positioned on a landing craft that transfers personnel and equipment close to the shoreline or can be delivered by vehicle if accessible. To deploy the system, the perforated header section is placed at the top of the beach face, approximately at and parallel to the high-tide line. At one end of the header section, a primary containment boom is strung from an anchor point positioned above the high tide line, down into the water, across the front of the landing craft positioned 15 to 20 yards offshore, and back onshore to a second anchor point positioned above the high-tide line on the other end of the header section. If oil is escaping the containment boom, a secondary containment boom can be strung from anchor points immediately outside the anchor points for the primary containment boom, down into the water, and across the back of the landing craft so that it could be positioned about 10 yards behind the primary containment boom. Gates, if required, could be set in the primary and secondary booms to allow for the movement of vessels in and out of the primary and secondary containment areas.

Sorbent boom can be strung along the inside and outside of the primary containment boom and along the inside of the secondary boom. Snare boom can be strung in rows along the shoreline segment to be cleaned (Note: the rows would be positioned parallel to the high-, mid- and low-tide lines). Snare boom also may be used to prevent oil from migrating in or out of the shoreline segment to be cleaned. This can be done by anchoring snare boom immediately outside the anchor points for the secondary containment boom, running the snare boom along the outside of the boom down to the low-tide line, and then running the snare boom back up to an anchor point above the high-tide line about 5 yards farther away from the anchor point for the secondary boom. The resulting triangle could be filled with loose snare boom.

Once the system is deployed, cold sea water is pumped through the perforated header section and cascades down the beach face carrying oil toward the water. Some of the oil would be trapped in the rows of snare boom strung across the beach face. The rest of the oil would enter the water within the primary containment area. Once the oil is in the water, it could be recovered by a static and/or dynamic recovery device. A static system could be used when there is a large amount of oil coming off the beach. Under these conditions, a rope mop, for example, is set on the gate of the landing craft, the tail pulley anchored on the beach, and the rope mop directed through the floating oil. A dynamic recovery device could be used regardless of the amount of oil coming off the beach. When used, the dynamic recovery system works as closely as possible to the shore to recover oil as it comes off the beach.

## EQUIPMENT AND PERSONNEL
**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | LABORER / RESPONDERS | TF OR ST LEADER | VESSEL OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| Class 3, 4, 5, or 6 Workboat or CV | Support & Tendering | 1 [A] | 3 | 1 | 1 | 1 [C] |
| Landing Craft | Support | 1 | 3 | | 1 | |
| Deluge Equipment | Beach Flooding | ≥ 1 [B] | | | N/A | |
| Shoreline Unit [D] | Flooding & Recovery | 1 | ≥10 | | | |
| Skimmer | Collect Oil | 1 | N/A | | | |

A. Number dependent on size of area.
B. Deluge packages identified in CI-LP-4 and Appendix A.
C. CISPRI initial responders may fill FSS role.
D. Number dependent on size of area.

*Note: The Lead Spill Technician is the Task Force Leader (TFL). Spill responders will manage decon.*

## SUPPORT

- A suitably certified accommodation vessel will be required for the personnel deploying and operating the Shoreline Unit in remote areas, which will require logistical support and re-supply of food and consumables such as PPE for a long-term response. See Tactic CI-LP-3 for information on contract personnel support.
- Waste management will require removal and transportation of waste generated from the shoreline response (see Tactics CI-WM).

## OPERATIONAL CONSIDERATIONS

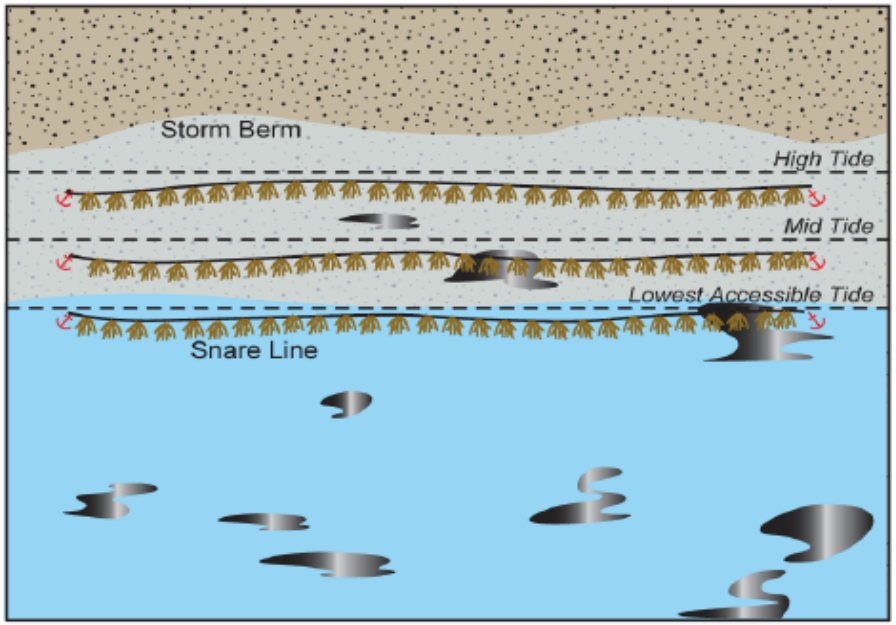
- Applicable Shoreline Types: Suitable on all shoreline types except vertical rock faces.
- When to Use: Best used on fresh oil during the first few days of onshore cleanup operations.
- Biological Considerations: Site-specific biological considerations are identified by the SCAT team. Access across marshes and sheltered tidal flats is restricted and activities supervised to minimize damage. Contact the National Marine Fisheries Service for passive protection strategies for marine mammals.
- Archaeological Considerations: Close observation is required to avoid the removal or destruction of surface artifacts.
- Any permits required for this operation are provided by the Environmental Unit. Refer to Tactic CI-LP-6 for specifics.
- Care must be exercised when agitating pockets or pools of oil on the beach to avoid erosion of underlying fine-grained materials.
- Protective beach flooding can form part of an onshore cleaning tactic in which cold water deluge is used to wash oil back into the nearshore area for collection.
- Support vessels for this response will need to provide accommodations for the responders, resupply of consumables, and waste handling and storage for used PPE. Vessel assignments will be made by the Division Supervisor and/or Task Force Leader based on vessel configuration and crew size.

## ALTERNATIVE DEPLOYMENT

- If shoreline is accessible by vehicle, trucks/loaders, 4 wheelers can be used to transport pumps, boom, etc., to the location. A skiff / work boat launched off the beach can deploy the containment and sorbent boom.
- As an alternative, the pumps can be placed directly on the shoreline, with a suction hose that reaches the seawater below the low-tide line. The skimmer can be operated from the shoreline with on-shore storage (e.g. Fast tank) placed above the high tide line.



To report an oil spill and activate CISPRI, call 907-776-5129




## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to remove oil with sorbents. Snare boom or viscous sweep is deployed along the shoreline parallel to the water line. At a minimum, separate rows are placed at the high-tide and low-tide levels during low tide; other rows can be placed as needed. Steel fence post stakes and wire or rope are used to secure the snare boom. Sandbags or boulders can be used to anchor boom in areas where driving steel stakes is not possible.

Collection occurs as the tide rises and moves the oil into contact with the snare boom. To reduce waste generation, snare boom is replaced when saturated with oil, or as necessary for operations.

Hand collection of oil is effective when shoreline terrain and oil thickness combine to cause pooling. Crews using buckets, absorbents, Pom-Poms and brushes can collect pooled oil during snare-boom deployment activities.

Shovels, rakes and pitchforks can be used to collect and bag contaminated debris. Oiled snare boom is placed in waste bags.

### EQUIPMENT AND PERSONNEL
**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | SUPERVISOR | LABORER / RESPONDERS | VESSEL OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| Viscous Sweep | Passive Collection | Varies [A] | 1 | 2 | N/A | 1 [C] |
| Landing Craft / CV | Support | 1 [B] | | | 1 | |
| Vehicle | Support | 1 | | | N/A | |
| Hand Tools | Collect Debris | Varies | | | | |
| Anchoring Systems | Secure Line | Varies | | | | |
| Misc. Equipment | Support | Varies [A] | | | | |

A. Amount depends on size of area to be passively protected.
B. If inaccessible by road.
C. CISPRI initial responders may fill FSS role.
D. Buckets, absorbents, Pom-Poms and brushes

*Note: The Lead Spill Technician is the Task Force Leader (TFL). Spill responders will manage decon.*

## OPERATIONAL CONSIDERATIONS

- Applicable Shoreline Types: This tactic is applicable on all shorelines except those with vertical surfaces.
- When to Use: Should be used on medium to heavily oiled shorelines while the oil is still fluid and capable of being lifted and transported by tidal action.
- Biological Considerations: Site-specific biological considerations are identified by the SCAT team. Access across marshes and sheltered tidal flats is restricted and activities supervised to minimize damage.
- Archaeological Considerations: Close observation is required to avoid the removal or destruction of surface artifacts.
- Snare boom (Viscous Sweep) needs to be replaced as it becomes saturated with oil.
- Any permits required for this operation will be provided by the Environmental Unit. Refer to Tactic CI-LP-6 for specifics.
- Support vessels for this response will need to provide accommodations for the responders, resupply of consumables, and waste handling and storage for used PPE. Vessel assignments will be made by the Group Supervisor and/or Task Force Leader based on vessel configuration and crew size. See Tactic CI-LP-3 for information on contract personnel support.



## TACTIC PURPOSE AND DESCRIPTION

Mechanical removal is more rapid than manual removal but generates larger quantities of waste. The method of operation varies considerably depending on the type of equipment that may be available and on the ability of that equipment to operate on a section of shore. The cleaning efficiency for each type of equipment is expressed in terms of the rate of cleaning that can be achieved and the amounts of waste that are generated.

Some equipment (e.g., Bobcats, front-end loaders, or vacuum trucks) can remove and transfer material directly to a truck or temporary storage area in a single step. Other types (graders and bulldozers) are less efficient and require two steps to move or side cast material that must then be picked up by other equipment (Bobcats, front-end loaders, etc) for transfer.

Off-site beach cleaning machines that treat or wash and replace oiled materials are included in this part as they involve a waste management program of transfer, temporary storage and treatment, even if replaced on the shore. These off-site cleaners involve a multi-step process as oiled material is removed from a beach and subsequently replaced by one or more types of earth-moving equipment. See Tactic CI-LP-3 for information on contract personnel support.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | LABORER / RESPONDERS | TF/ST LEADER | FIELD SITE SAFETY |
|---|---|---|---|---|---|
| Heavy Equipment [A] | Oil Removal | ≥1 | 3 [B] | 1 | 1 [C] |
| Vacuum Trucks | Support Platform | ≥1 | | | |
| Dump Trucks | Oil Disposal | ≥1 [D] | | | |

A. Depends on amount of debris material could be Back Hoe, Front-End Loader, Bull Dozer, Bob Cat, Grader.

B. Number of laborers depends on amount of debris to be removed.

C. CISPRI initial responders may fill FSS role.

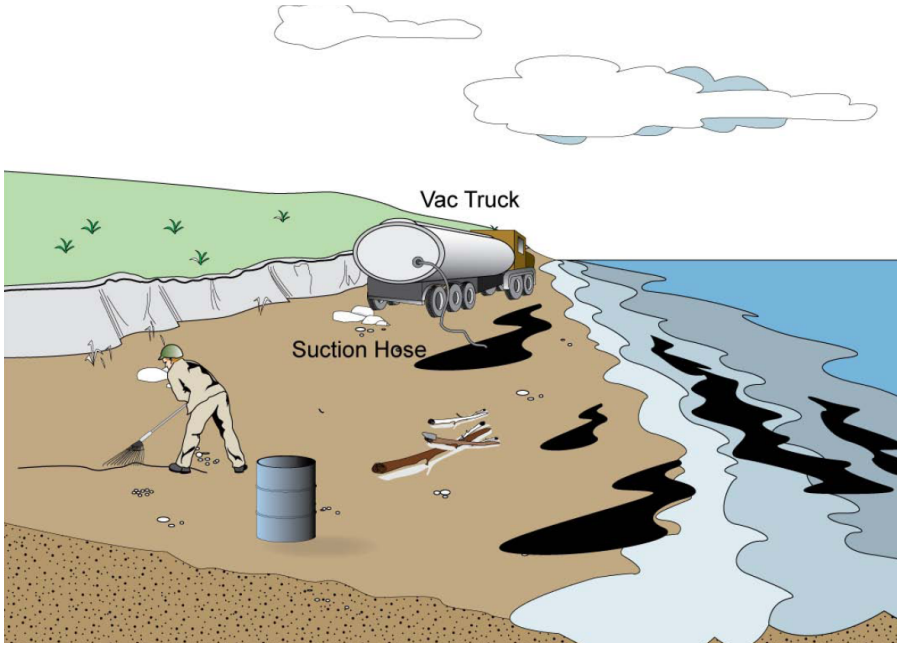
D. All Heavy Equipment comes with operator.

*Note: The Lead Spill Technician is the Task Force Leader (TFL). Spill responders will manage decon.*

## OPERATIONAL CONSIDERATIONS

- **Applicable Shoreline Types:** Any accessible beach.
- **When to Use:** When shoreline areas are impacted by oil that would require heavy equipment and/or vacuum removal.
- **Biological Considerations:** Site-specific biological considerations are identified by the SCAT team.
- **Archaeological Considerations:** To avoid inadvertent collection of archaeological artifacts, these sites may need to be surveyed or evaluated for potential archaeological vulnerability.
- Any permits required for this operation will be provided by the Environmental Unit. Refer to Tactic CI-LP-6 for specifics.

- Waste segregation is an important aspect of debris removal to ensure correct handling and disposal of all waste types (see Tactics CI-WM).
- Mechanical removal can be used on all but solid shoreline types, although it has limited applicability for tidal flats, due to poor bearing capacity. The bearing capacity of the sediments and the slope of the shore zone, as well as the performance characteristics of the individual equipment, control the applicability of different types of machines.
- Use of mechanical techniques on tidal flats or marshes can cause significant adverse impacts, either by mixing oil with clean and/or subsurface sediments or by damaging plant stems and root systems.
- Repeated handling or transfer of oiled sediments during mechanical removal should be avoided as much as possible as this increases the potential for spillage and decreases efficiency.
- The various types of commercially-available earth-moving equipment have different operational requirements and different applications. The most important variable is the ability of a piece of equipment to travel on a beach type without becoming immobilized. Traction for wheeled equipment on soft sediments (low bearing capacity) can be improved by reducing tire pressures. Tracked equipment may be able to operate where wheeled vehicles cannot, but is not a preferred option as tracks disturb sediments or tundra surfaces to a much greater degree than tires.
- Each type of equipment has a particular application:
  - **Graders:** Can operate on only hard and relatively flat surfaces and are capable of moving only a thin cut (<3 inches) of surface material.
  - **Loaders, bulldozers and backhoes:** Can operate in a wider range of conditions and are designed to move large volumes of material and can dig as well as move material.
  - **Backhoes:** Use an extending arm or crane so that they may be operated from a backshore area and can reach to pick up material.
  - **Beach cleaning machines:** Operate in a number of different ways: mobile equipment cleans or treats on a beach whereas other equipment operates off-site (adjacent) to treat sediment so that cleaned material may be replaced on the beach.
  - **Vacuum trucks:** Remove pooled oil or oil collected in lined sumps.
- All earth-moving equipment is designed to move large volumes of material in a rapid and efficient manner, which is not always an appropriate approach for shoreline cleanup. Frequently the objective of a cleanup program is to use the equipment in such a way that only a thin cut of oiled sediment is removed. Usually the operator can advise on which piece of equipment is the most appropriate or practical to achieve a particular goal.




## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to remove contaminated oil stranded on a beach. This tactic involves removal of the oil or oiled materials (sediments, debris, vegetation etc.) from the shore zone to a location where it can be disposed of.

### MANUAL REMOVAL

The technique involves picking up oil, oiled sediments, or oily debris using gloved hands, rakes, pitchforks with screens, trowels, shovels, sorbent materials, buckets, etc. It may include scraping or wiping with sorbent materials or sieving if the oil has come ashore as tar balls. Collected material can be placed directly in plastic bags, drums, etc., for transfer. If the containers are to be carried to a temporary storage area they should not weigh more than can be easily and safely carried by one person. This tactic can be used practically and effectively in any location or on any shoreline type or oil type where access to the shore zone is possible and safe.

### VACUUM

Truck-mounted vacuum systems may be used; the suction end usually is deployed manually to collect oil and/or oily water. These vacuum systems are primarily used where oil is pooled in natural depressions or hollows, or has been herded into collection areas. Vacuums can be used in combination with flooding or deluge techniques to float and collect oil. Vacuum trucks can be used to remove oil that is collected in sumps. A dual-head wash-vacuum system can be used in locations that are hard to access, such as between boulders and logs.

### EQUIPMENT AND PERSONNEL
**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | LABORER / RESPONDERS | TF/ST LEADER | FIELD SITE SAFETY |
|---|---|---|---|---|---|
| Hand Tools [A] | Collect debris | Various | >3 [B] | 1 | 1 [C] |
| Oily Waste Bags/Drums | Recovery | 1 | | | |
| Vacuum Truck | Oil Disposal | 1 [D] | | | |
| Sorbents | Recovery | Various | | | |

A. Rakes, Knifes, Scythe, Sickle, etc. Depends on amount of debris material.

B. Number of laborers depends on amount of debris to be removed.

C. CISPRI initial responders may fill FSS role.

D. Vacuum truck or SuperSucker comes with operator.

*Note: The Lead Spill Technician is the Task Force Leader (TFL). Spill responders will manage decon.*

## OPERATIONAL CONSIDERATIONS

- **Applicable Shoreline Types:** Any accessible beach.
- **When to Use:** When shoreline areas are impacted by oil that would require manual or vacuum removal.
- **Biological Considerations:** Site-specific biological considerations are identified by the SCAT team. Foot traffic should avoid the oiled zone to prevent carrying oil from there into previously clean locations.
- **Archaeological Considerations:** To avoid inadvertent collection of archaeological artifacts, these sites may need to be surveyed or evaluated for potential archaeological vulnerability.
- Any permits required for this operation will be provided by the Environmental Unit. Refer to Tactic CI-LP-6 for specifics.
- **Manual removal** is most applicable for:
  - Small amounts of viscous oil (e.g., asphalt pavement removal),
  - Surface or near-surface oil, and
  - Areas inaccessible to vehicles.
- Manual removal is labor intensive and slow for large oiled areas; although slower than mechanical removal, it generates less waste and the waste materials can be segregated easily at the source.
- Waste segregation is an important aspect of debris removal to ensure correct handling and disposal of all waste types. See Tactic CI-LP-3 for information on contract personnel support.



## TACTIC PURPOSE AND DESCRIPTION

### SORBENTS

Sorbent materials such as rolls or snares are placed in the shore zone to collect oil as it comes ashore (protection mode) or in the oiled area after it has been stranded (cleanup mode).

Usually the sorbents are deployed in fixed position, by stakes and/or anchors, as a line or parallel lines in the form of a floating boom or rope so that they are lifted and can move at the water's edge. Alternately, individual sorbents may be staked to swing over a fixed area as the water rises and falls.

In both the protection and cleanup modes, the sorbent material is left in place to collect oil for subsequent removal and disposal. This technique is distinguished from the use of sorbent materials to manually remove oil. That technique is described under manual removal (see Tactic CI-SL-5).

### VEGETATION CUTTING

Vegetation cutting removes oiled plants to prevent remobilization of the oil and contact by wildlife or to accelerate the recovery of the plants. Usually, this is a manual operation involving knives, powered weed cutters, and/or rakes.

### EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | LABORER / RESPONDERS | TF/ST LEADER | FIELD SITE SAFETY |
|---|---|---|---|---|---|
| Hand Tools [A] | Vegetation Removal | Various | ≥3 [B] | 1 | 1 [C] |
| Weed Eaters | Vegetation Removal | | | | |
| Sorbent Pads/Boom | Recovery | | | | |

A. Rakes, Knifes, Scythe, Sickle, etc. Depends on amount of debris material.

B. Number of laborers depends on amount of vegetation to be removed.

C. CISPRI initial responders may fill FSS role.

*Note: The Lead Spill Technician is the Task Force Leader (TFL). Spill responders will manage decon.*

### OPERATIONAL CONSIDERATIONS

- **Applicable Shoreline Types:** Any accessible beach.
- **When to Use:** When vegetation has been impacted or could potentially be impacted by oil and would require removal or cleaning.
- **Biological Considerations:** Site-specific biological considerations are identified by the SCAT team. Foot traffic from vegetation cutting can cause considerable damage in mud flats or low-lying marsh areas.
- **Archaeological Considerations:** To avoid inadvertent collection of archaeological artifacts, these sites may need to be surveyed or evaluated for potential archaeological vulnerability.
- Any permits required for this operation are provided by the Environmental Unit. Refer to Tactic CI-LP-6 for specifics.
- Sorbents can be used on any shoreline type and for most oil types. It is less applicable for very viscous, volatile oil types and for semi-solid oils.
- **Sorbents** can quickly reach their capacity when in contact with large amounts of oil. When frequent replacement is necessary, which can

occur even for relatively small amounts of oil, this is a labor-intensive activity that can generate large amounts of waste on a daily basis.

- Sections of sorbent boom can be placed at the water level and secured with fence posts every 10 feet to catch any oil that may be going back out into the water.
- **Vegetation cutting** is a labor-intensive technique that is used in marshes or on attached plants, such as seaweed, where there is concern that the oil may be released later to affect other resources, particularly wildlife. Vegetation cutting is also applicable where the presence of oil may pose a contact threat to animals and birds that use the area, or to adjacent healthy organisms.



## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to remove contaminated wood and/or to handle large debris for cleaning. Crews could be transferred to the shoreline via a shallow-draft vessel. Small debris is collected with rakes, pitchforks, and shovels. Hand saws may be used to trim medium-sized debris to fit storage containers. Gasoline-powered chain saws may be used to cut and cord larger logs and trees, and a front end loader may be used to reposition logs for cording or cleaning. In some cases, incineration or in-situ burning may be allowed, but permitting may preclude use of this method. If burning is not allowed, all debris is placed in waste bags or appropriate containers.

This tactic could also be used prior to any predicted oiling.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | LABORER / RESPONDERS | TF/ST LEADER | EQUIPMENT OPERATOR | VESSEL OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|---|
| Hand Tools [A] | Collect debris | Various | ≥3 [B] | 1 | N/A | N/A | 1 [D] |
| Landing Craft | Support Platform | 1 | | | N/A | 1 [C] | |
| Front-end loader | Debris removal | 1 [E] | | | 1 | N/A | |
| Portable Waste Bins | Waste Storage | Varies | | | N/A | N/A | |

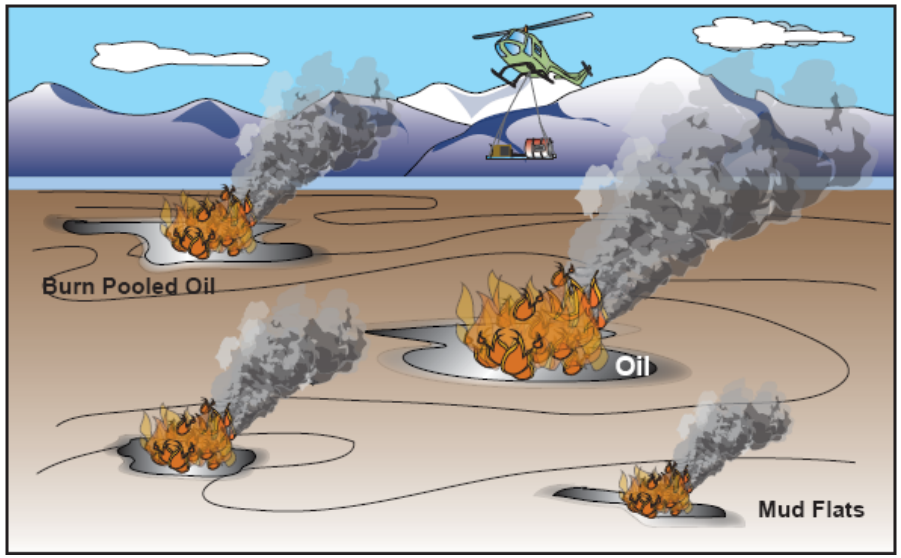
A. Rakes, Knifes, Scythe, Sickle, etc. Depends on amount of debris material.
B. Number of laborers depends on amount of debris to be removed.
C. For remote locations inaccessible by road.
D. CISPRI initial responders may fill FSS role.
E. Front-end loader or bobcat comes with operator.

*Note: The Lead Spill Technician is the Task Force Leader (TFL). Spill responders will manage decon.*

## OPERATIONAL CONSIDERATIONS

- **Applicable Shoreline Types:** Any accessible beach.
- **When to Use:** When vegetation has been impacted or could potentially be impacted by oil and would require removal or cleaning.
- **Biological Considerations:** Site-specific biological considerations are identified by the SCAT team. Foot traffic from vegetation cutting can cause considerable damage in mud flats or low-lying marsh areas.
- **Archaeological Considerations:** To avoid inadvertent collection of archaeological artifacts, these sites may need to be surveyed or evaluated for potential archaeological vulnerability.
- Any permits required for this operation are provided by the Environmental Unit. Refer to Tactic CI-LP-6 for specifics.
- Support vessels for this response will need to provide accommodations for the responders, resupply of consumables, and waste handling and storage for used PPE. Waste segregation is an important aspect of debris removal to ensure correct handling and disposal of all waste types. See Waste Management Tactic CI-W-4. See Tactic CI-LP-3 for information on contract personnel support.

*This page left intentionally blank*




## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to safely remove oil stranded on mud flats prevalent in the upper inlet. Mudflats in Cook Inlet are comprised of a mud-like material whose consistency is not sufficient to safely use mechanical recovery. There are areas with the consistency of quicksand and sufficient suctions to make it extremely difficult for responders to rescue themselves.

There are basically two tactics that can be used in these situations:

- Allowing the oil to remain where it is, and allow the next incoming tide to refloat it. It will then move off the mudflat into deeper water where it can be recovered mechanically or be stranded along the high tide line where appropriate shoreline tactics could be used.
- If the oil pools are sufficiently thick, they can be burned in place, so long as the burning can be completed before the incoming tide.

Efforts have been made to use mechanical recovery using plywood, artificial outdoor carpeting, snowshoes, etc will little to no success. These tools have limited success; however is not weight bearing enough to sustain a response effort. In most cases these tools also tend to sink in the mud. Mechanical recovery is severely limited by the quicksand like features mud flats present.

Caution should be used to not ignite natural materials along the shoreline. Mudflats retain a considerable amount of water on or near the surface. The heat created by burning oil would not penetrate deep enough to impact shellfish or other biota in the mud. This tactic may not be suitable for other intertidal areas with significant vegetation or biota.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | LABORER / RESPONDERS | TF/ST LEADER | FIELD SITE SAFETY |
|---|---|---|---|---|---|
| Helicopter | Burning Platform | 1 | 1 | 1 | 1 [A] |
| Heli-Torch | Burning Device | 1 | | | |

A. CISPRI initial responders may fill FSS role.

*Note: The Lead Spill Technician is the Task Force Leader (TFL).*

## OPERATIONAL CONSIDERATIONS

- The danger associated with working on the mud flats is very real. Unfortunately that lesson has been learned all too well along Cook Inlet shorelines. From a safety prospective CISPRI will not risk the lives of their employees in conducting mechanical responses on mudflats.
- See Non Mechanical tactic for burning options (See CI-NM-5).
- Any permits required for this operation are provided by the Environmental Unit. Refer to Tactic CI-LP-6 for specifics.
- If this operation is to be successful, burning must commence soon after the oil has been stranded. This will ensure the pools of oil are completely burned prior to the incoming tide.
- If burn residue is to be recovered, the decision should be made after the incoming tide has covered the area. If the residue floats, as expected, it can be recovered by small boats or skiffs.

- The Anchorage Fire Department has developed a rescue tool for personnel who become mired in the mud – call dispatcher at 911 and request the "mud tool". They use a SCBA tank and a wand to push air around the mired person's feet to break the suction and move the mud away from their feet. Currently only the Anchorage and Girdwood Fire Departments have this capability.

# INLAND TACTICS

## PURPOSE OF THE INLAND TACTICS

The tactics developed for inland response to a spill in the Cook Inlet Response Zone are designed to collect, recover, and store oil spilled from inland facilities. These can include land based oil storage terminals, pipelines, refineries, and exploration and production facilities. CISPRI is generally involved through the emergency phase (containment and control) of an inland response. Ongoing excavation and clean-up is normally managed by the Responsible Party under a project phase. CISPRI may or may not be fully involved in the project phase.

The tactics for inland response are:

- **CI-IL-1A Containment Berms, Dikes & Dams:** This tactic describes the use berms, dikes and/or dams to temporarily contain oil for recovery.
- **CI-IL-1B Construction of Berms, Dikes & Dams:** This tactic describes the construction of berms, dikes and/or dams to temporarily contain oil for recovery.
- **CI-IL-2 Trenches and Slots:** This tactic describes the construction of trenches and slots to divert or collect oil either on land or in a frozen waterway or drainage to facilitate recovery.
- **CI-IL-3 Culvert Booming/Blocking:** This tactic describes the use and construction of culvert booming and blocking.
- **CI-IL-4 Underflow Dam:** This tactic can be used when there is too much water flow to blockage a stream or drainage pipe.
- **CI-IL-5 Containment Boom on Rivers:** This tactic describes containment boom configurations for inland waters.
- **CI-IL-6 Deflection Boom on Rivers:** This tactic describes boom configurations used to deflect oil from a sensitive area or to a collection area for recovery.
- **CI-IL-7 Diversion Boom on Rivers:** This tactic describes boom configurations used to divert oil from a sensitive area or to a collection area for recovery.
- **CI-IL-8 Exclusion on Rivers:** This tactic describes boom configurations that can be deployed to prevent oil from reaching a sensitive area.
- **CI-IL-9 Excavation:** This tactic is land-based with the objective of removing contaminated soils and gravel and limiting the spread of oil and minimizing impacts to the environment.

## HOW AN INLAND RESPONSE IS MANAGED

The inland response is under the control of the Operations Sections Chief based in the CISPRI Command Post. In the field, inland response is managed by a Task Force Leader (TFL). Initial field assessments will be conducted by the initial responders or Member Company representatives.

## SAFETY ASPECTS OF INLAND RESPONSE

Safety is the most important consideration of an inland response. The safety section of this manual outlines the safety program that is used to ensure that a response is conducted as safely as possible. The Safety Officer based in the CISPRI Command Post has overall responsibility for response safety. The Field Site Safety (FSS) will conduct safety briefings for responders, make PPE recommendations and conduct initial site characterization. An FSS may not necessarily be assigned to every inland task force. Safety considerations specific to IL conditions include the following:

- **Vapor levels:** It is possible that vapors can be generated from the oil, and site characterization needs to be conducted to monitor vapor levels, particularly if the response is in summer. See Tactics CI-S.
- **Working on oiled or slippery riverbanks:** Care needs to be exercised when working in oiled streams or riverbanks to avoid slips and falls due to the slippery conditions.
- **Wildlife:** Care must be taken when working in remote inland areas to avoid encounters with dangerous wildlife such as bears. A Bear Guard should be a consideration for the protection of inland responders. See Tactics CI-W.
- **Pipeline locates and spotters:** When working with heavy equipment around pipelines, a line locate is required and a spotter must be added to each piece of excavation machinery.

## COMMUNICATIONS

Communications are very important for safe and effective inland response. When arriving on location, all responders will be briefed on task force communications (See Tactic CI-LP-2).

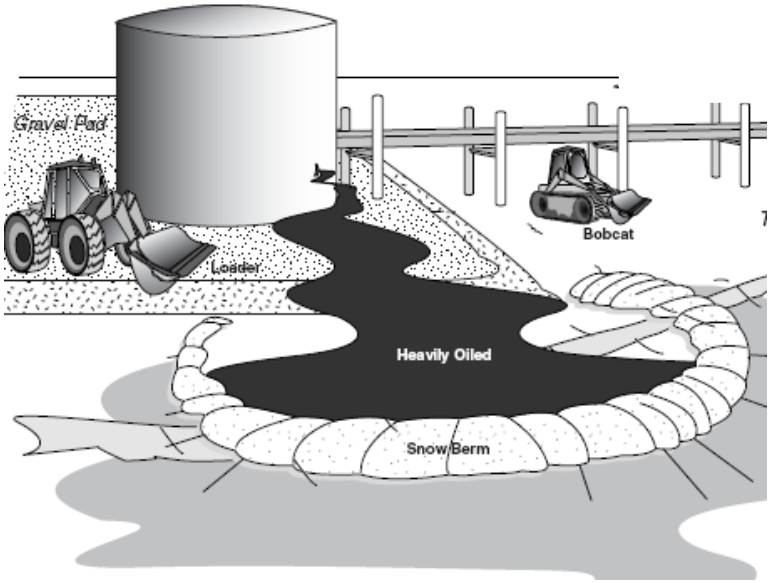
## HANDLING WASTE

An inland response can potentially generate a large amount of waste. The waste management tactics describe in detail the handling and disposal of waste, and the Environmental Unit will develop a Waste Management Plan (See Tactic CI-WM-1).

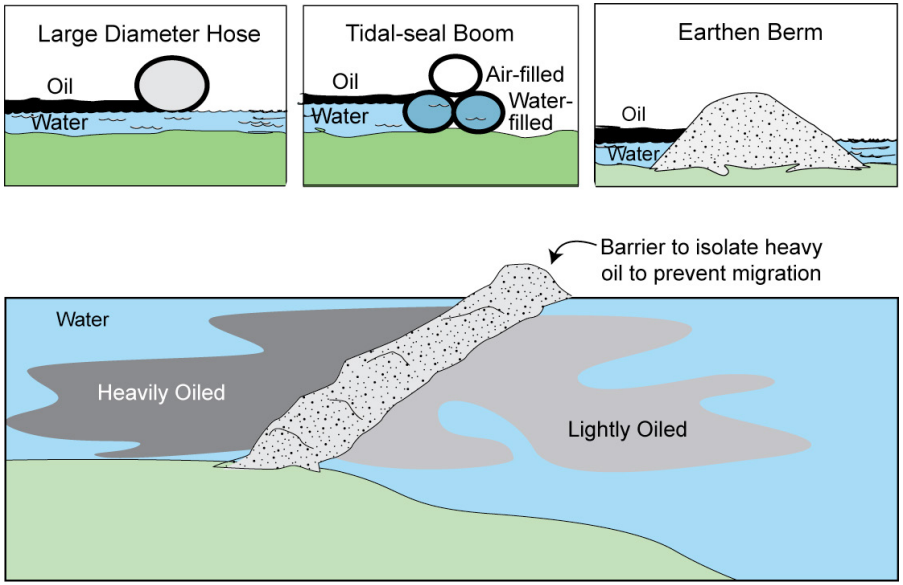
## PERMITTING AND LAND ACCESS

Prior to response operations, appropriate permitting (CI-LP-6) must be obtained and approval from appropriate landowners received.

## TACTIC CI-IL-1A




## TACTIC CI-IL-1B




## TACTIC PURPOSE AND DESCRIPTION

Dikes, berms, and dams are land-based tactics, with the objective of barriers containing spilled oil and limiting spreading of oil slicks, thus minimizing impacts to the environment. Within this tactic the terms dikes, berms or dams are used interchangeably. Dikes, berms, and dams are embankment structures built-up from the existing terrain, placed to contain and accumulate oil for recovery. The size of a dike, berm, or dam construction will depend on how much oil is spilled and how much needs containment.

These barriers can serve to:

- Contain and stabilize a contaminated area
- Contain or divert oil on water or oil that has potential to migrate
- Create cells for recovery
- Use natural depressions to act as containment areas for recovery

A berm is built around the areas of heaviest oiling to contain oil products spilled on land.

A dike, berm, or dam can be built using soil or snow.

A berm on the ground or ice can also be used to intercept the flow of a spill or divert the flow around a sensitive area. Building a berm at right angles to direct the flow of the spill. The berm should be angled slightly downslope (in the direction of surface flow) to avoid excessive pooling within the berm. Use excavated materials to build the berm. In areas with a low water table, line the berm with plastic sheeting or similar impermeable materials.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | TASK FORCE LEADER | LABORER / RESPONDERS | EQUIPMENT OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| Heavy Equipment [A] | Construction | 1 | 1 | ≥4 | 1 | 1 [G] |
| Truck/Trailer [B] | Transport Equipment | 1 | | | 1 | |
| Visqueen | Impermeable Barrier | >10 ft | | | N/A | |
| Tidal-seal Boom | Containment (optional) | >50 ft | | | | |
| Sand Bags | Containment (optional) | Varies | | | | |
| Misc. Hand Tools | Excavation | Varies | | | | |
| ATV [C] | Transportation | 2 | | | | |
| Light Plant [D] | Low Light Operations | 2 | | | | |
| Skimming System [E] | Oil Recovery | 1 | | | | |
| Portable Tank [F] | Recovered Oil Storage | 1 | | | | |

A. Selection of dozer, front-end loader, bobcat depending on application.

B. Used to haul heavy equipment, sand bags (i.e. flatbed truck).

C. ATVs or vehicles depending on conditions, location and accessibility.

D. Light plants depend on light conditions and area of coverage needed.

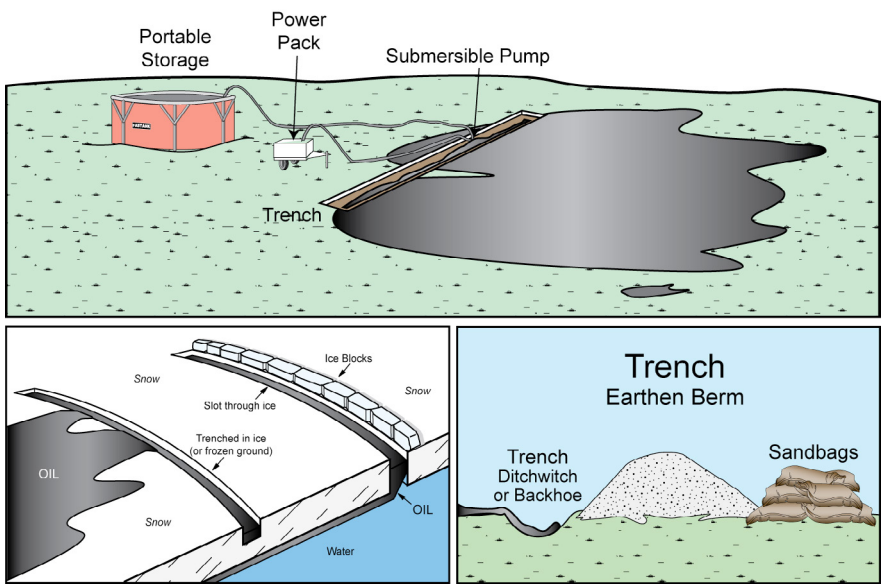
E. Skimmer, hose, diaphragm pumps, etc.

F. Fast tanks, bladders, etc could be used for temporary storage.

G. CISPRI initial responders may fill FSS role.

## OPERATIONAL CONSIDERATIONS

- A front-end loader, dozer, bobcat, or excavator can normally construct a berm, dike, or dam in less than an hour when on site and operational. With additional time, they could shore up a damaged secondary containment dike.
- Disposal of construction material should be considered before using tactic (See Waste Management Tactics CI-WM).
- A plastic liner or sheeting can be used on the walls of the soil or gravel berm to inhibit additional spill penetration into the soils or gravel.
- Approval from the appropriate land owner, agency and Unified Command (through the Environmental Unit) is required prior to any excavation.
- To avoid inadvertent collection of archaeological artifacts, these sites may need to be surveyed or evaluated for potential archaeological vulnerability. See Tactic CI-SA-3.
- Any permits required for this operation will be developed by the Environmental Unit and approved by the Unified Command (See Tactic CI-LP-6).
- Be sensitive to travel restrictions and damage caused by heavy equipment movement. Equipment mats or plywood may be necessary.
- Arrangements will need to be made for removal of the temporary dike, berm or dam, as these are temporary structures.
- Don't place excavated material where it can hinder recovery operations, nor excavate where this activity can cause more damage than the spill.
- If insufficient soil or snow exists, front-end loaders or trucks could supply additional material from adjacent areas.
- Ice-reinforced, snow berms can be used to contain oil that melts out during breakup. This can be accomplished by wetting the snow and letting it freeze.




## TACTIC PURPOSE AND DESCRIPTION

The objective of the Pits, Trenches, and Slots tactic is to contain oil and aid in the recovery of the oil. This is done by excavating a depression or opening in a down-slope/down-current location from the spill into which the oil will pool. This tactic uses local topography and hydrology to move the oil to a collection spot where it can be mechanically recovered. Pits and trenches are deployed on land as well as on ice and ice-covered waters.

Slots are used where oil is present under ice-covered waters. These tactics should be deployed in conjunction with a recovery operation, or In-situ Burning.

The general strategy is to:

- Identify the location and trajectory of the spill or potential spill.
- Select a configuration that best supports the operating environment and available resources.
- Identify, locate, and mobilize equipment and personnel to the location.
- Construct the pit, trench, or slot and, if needed, ensure impermeability using visqueen or geotextile lining.
- Utilize an appropriate recovery system or in-situ burning to
- Remove collected oil.
- Monitor the pit, trench or slot to ensure that it does not overflow and maintains integrity.

### EQUIPMENT AND PERSONNEL
**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | TASK FORCE LEADER | LABORER / RESPONDERS | EQUIPMENT OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| Heavy Equipment [A] | Excavation | 1 | 1 | ≥4 | 1 | 1 [G] |
| Truck/Trailer [B] | Transport Equipment | 1 | | | 1 | |
| ATV [C] | Transportation | 2 | | | N/A | |
| Light Plant [D] | Low Light Operations | 2 | | | | |
| Chain Saws/Hand Saws | Slot Construction | 1 | | | | |
| Augers | Slot Construction | 2 | | | | |
| Visqueen | Impermeable Barrier | >10 ft | | | | |
| Skimming System [E] | Oil Recovery | 1 | | | | |
| Portable Storage [F] | Oil Storage | 1 | | | | |

A. Front-end loader (when location and conditions make it possible).

B. Used to haul heavy equipment.

C. ATVs or vehicles depending on conditions, location and accessibility.

D. Light Plants depends on light conditions and area of coverage needed.

E. Skimmer, hose, diaphragm pumps, etc.

F. Fast tanks, bladders, etc could be used for temporary storage.

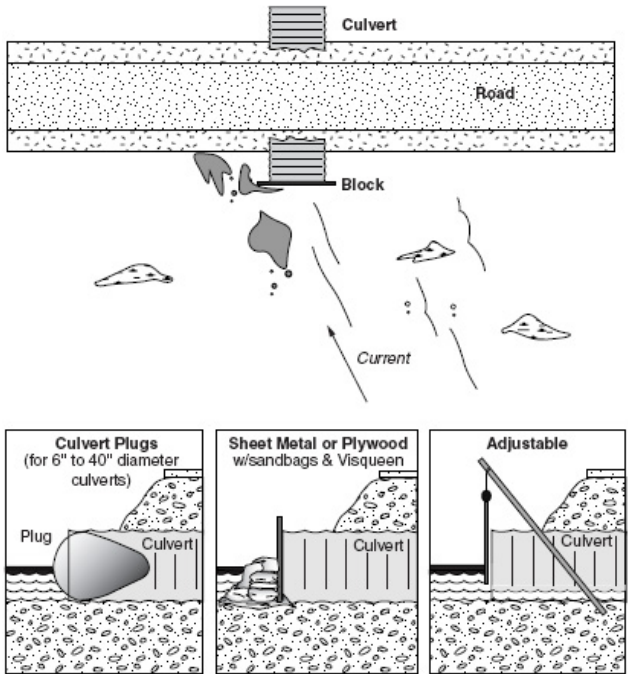
G. CISPRI initial responders may fill FSS role.

## OPERATIONAL CONSIDERATIONS

- An excavator can normally construct a trench in less than an hour when on site and operational.
- Ice-reinforced, snow berms can be used to contain oil that melts out during breakup. This can be accomplished by wetting the snow and letting it freeze or through the use of ice blocks.
- Arrangements will need to be made for removal of any contaminated materials (See CI-WM).
- To avoid inadvertent collection of archaeological artifacts, remote land sites may need to be surveyed or evaluated for potential archaeological vulnerability.
- Don't place excavated material where it can hinder recovery operations, nor excavate where this activity can cause more damage than the spill.
- Any permits required for this operation will be provided by the Environmental Unit. Refer to Tactic CI-LP-6 for specifics.



To report an oil spill and activate CISPRI, call 907-776-5129




## TACTIC PURPOSE AND DESCRIPTION

A culvert is blocked using sheet metal, plywood barriers, inflatable culvert plugs or similar materials. Use a full block only when the culvert will be blocked for the entire cleanup operation, if the oil floating on the water will not contaminate additional soil or tundra, and if blocking the water flow will not threaten the road. Otherwise, an adjustable weir should be used.

Plywood and/or sandbags can also be used as culvert blocks, but are more labor-intensive and pose a higher potential for injury. A wood block may require a headwall with kickers oriented to support the boards or plywood. Place the blocking materials over the upstream end of the culvert. Plastic sheeting over the outside of the block will prevent oil penetration.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | TASK FORCE LEADER | LABORER / RESPONDERS | EQUIPMENT OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| Truck [A] | Transportation | 1 | 1 | ≥ 2 [F] | N/A | 1 [G] |
| Visqueen | Impermeable Barrier | > 10 ft | | | | |
| Plywood or Metal | Blocking | 1 | | | | |
| Sand Bags | Containment (optional) | Varies | | | | |
| ATV [B] | Transportation | 2 | | | | |
| Light Plant [C] | Low Light Operations | 2 | | | | |
| Skimming System [D] | Oil Recovery | 1 | | | | |
| Portable Tank [E] | Recovered Oil Storage | 1 | | | | |
| Gravel | Blocking Foundation | Varies | | | | |

A. Used to haul sand bags, plywood, gavel, responders (i.e. pickup truck).

B. ATVs or vehicles depending on conditions, location, and accessibility.

C. Light plants depends on light conditions and area of coverage needed.

D. Skimmer, hose, diaphragm pumps, etc.

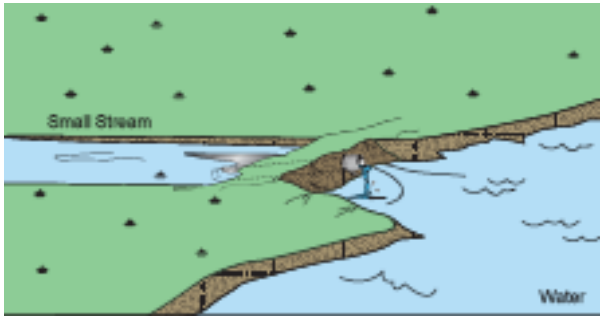
E. Fast tanks, bladders, etc. could be used for temporary storage.

F. Number of responders depends on extent of construction.

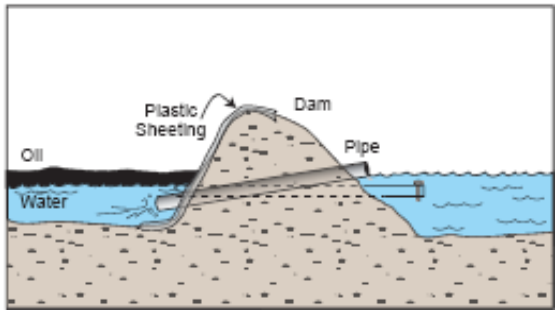
F. CISPRI initial responders may fill FSS role.

## OPERATIONAL CONSIDERATIONS

- Disposal of construction material should be considered before using tactic (See Tactic CI-WM-4).
- Minimize the amounts of materials used appropriate to the response as this structure will later be removed.
- A plastic liner or sheeting can be used along the embankment to inhibit additional spill penetration into the soils or gravel.
- Any permits required for this operation will be developed by the Environmental Unit and approved Unified Command (CI-LP-6).
- Be sensitive to travel restrictions and damage caused by personnel or vehicle movement. Equipment mats or plywood may be necessary.
- Arrangements will need to be made for removal of the blocks as well as contaminated material as these structures are temporary (See Waste Management Tactics CI-WM).
- This is an appropriate tactic to use when the flow to the culvert is small enough that the road will not be washed out.




**Underflow Dam Configuration**




**Underflow Dam**

## TACTIC PURPOSE AND DESCRIPTION

An underflow dam can be used when there is too much water flow to allow for a complete blockage of a drainage channel or small stream. The dam is built of earth, gravel, or other barriers such as sandbags or plywood sheets. Wherever possible, line the upstream side of the dam with plastic sheeting to prevent erosion and penetration of oil into the dam material.

Underflow dams use inclined pipes to move water downstream while leaving the spill contained behind the dam. The capacity of the pipe (or pipes) should exceed the stream flow rate. It may be necessary to use pumps to assist with the movement of excess water to prevent over flow.

Pipes must be placed on the upstream side of the dam, with the elevated end on the downstream side. Make sure that the upstream end of the pipe is submerged and well below the oil/water interface. The height of the elevated downstream end of the pipe will determine the water level behind the dam.

A skimming system and portable tank can be used for oil recovery on the upstream side of the underflow dam. Caution should be used not to reduce the water level below the underflow pipe.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | TASK FORCE LEADER | LABORER / RESPONDERS | EQUIPMENT OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| Heavy Equipment [A] | Construction | 1 | 1 | ≥ 4 [G] | 1 | 1 [H] |
| Truck/Trailer [B] | Transport Equipment | 1 | | | 1 | |
| Visqueen | Impermeable Barrier | > 10 ft | | | N/A | |
| Sand Bags | Containment (optional) | Varies | | | | |
| Pipe 6 inch diameter | Flow Relief | > 10 ft | | | | |
| ATV [C] | Transportation | 2 | | | | |
| Light Plant [D] | Low Light Operations | 2 | | | | |
| Skimming System [E] | Oil Recovery | 1 | | | | |
| Portable Tank [F] | Recovered Oil Storage | 1 | | | | |

A. Selection of front-end loader, bobcat, or backhoe depending on application.

B. Used to haul heavy equipment, sand bags (i.e. flatbed truck).

C. ATVs, or vehicles depending on conditions, location, and accessibility.

D. Light Plants depend on light conditions and area of coverage needed.

E. Skimmer, hose, diaphragm pumps, etc.

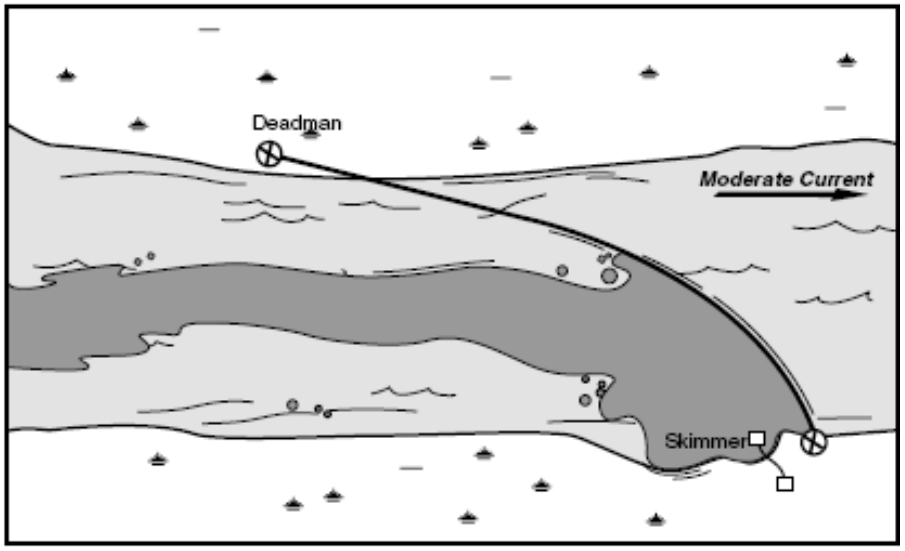
F. Fast tanks, bladders, etc. could be used for temporary storage.

G. Number of personnel depends on number of sandbags needed; at least one CISPRI spill tech will be in attendance.

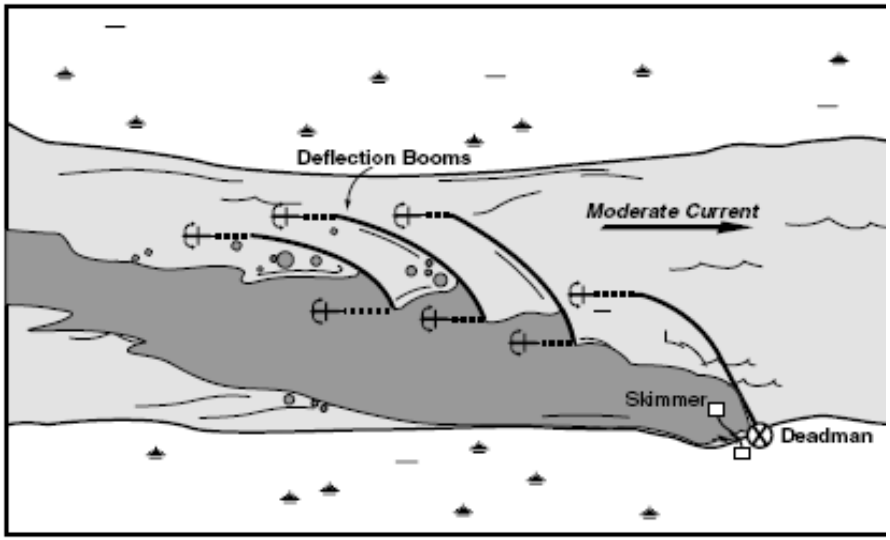
H. CISPRI initial responders may fill FSS role.

## OPERATIONAL CONSIDERATIONS

- Disposal of construction material should be considered before using this tactic (See CI-WM-4).
- Check dams periodically for leakage and integrity, replace eroded materials, and continually monitor the water/oil interface. Valved pipes, pumps, or siphons may require periodic adjustment to compensate for minor changes in stream flow.
- If sufficient underflow cannot be maintained additional piping maybe required. If overflow develops additional dams downstream may be required.
- Gravel or toppings may need to be added continually to the dam if erosion is a problem.
- Damming of a stream mouth may block fish passage. The dam must be removed immediately after it is no longer needed.




**Deflection/Diversionary (Single Boom)**




**Deflection/Diversionary (Cascade)**

## TACTIC PURPOSE AND DESCRIPTION

The object of stream booming is to remove oil from the fastest water and divert it to slower water. A stream can be boomed by deploying the boom either upstream or downstream. In either case, the boom is first set out on the stream bank. Before the boom is deployed, rig anchor points on the boom. The boom is attached to a shore anchor, and then the boom is either towed upstream to a midstream anchor point, or the boom is allowed to drift downstream with the current. Once the boom is set, intermediate anchors are set as needed to ensure that the boom maintains the proper configuration (remembering that the current perpendicular to the boom should not exceed 3/4 knot). For smaller streams this can be done by hand from bank to bank.

### DEFLECTION / DIVERSIONARY (SINGLE BOOM)

A boom is deployed from one bank at an angle to the current and anchored midstream or on the opposite bank for diverting the oil to an eddy or other quiet-water collection point on the shoreline. Alternatively, a single long boom can be used in a multi-channel stream to divert oil so that it stays in one channel.

### DEFLECTION / DIVERSIONARY (CASCADE)

Several booms are deployed in a cascade fashion when a single boom can't be used because of a fast current or because it's necessary to leave openings for boats to get through. This configuration can be used in strong currents where it is impossible or difficult to deploy one long boom. Shorter sections of boom used in a cascade deployment are easier to handle in fast water. However, more equipment is needed than when a single boom is used.

### EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | TASK FORCE LEADER | LABORER / RESPONDERS | EQUIPMENT OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| Boat [A] | Construction | 1 | 1 | ≥ 4 [G] | 1 | 1 [H] |
| Truck/Trailer [B] | Transport Equipment | 1 | | | 1 | |
| ATV/Vehicles [C] | Transportation | 2 | | | N/A | |
| Light Plant [D] | Low Light Operations | 2 | | | | |
| Skimming System [E] | Oil Recovery | 1 | | | | |
| Portable Tank [F] | Recovered Oil Storage | 1 | | | | |
| Boom | Protection | Various | | | | |
| Anchor Systems [J] | Secure Boom | Various | | | | |
| **OPTIONAL EQUIPMENT** | | | | | | |
| Boom Vane | Positioning Device | 1 | - | - | - | - |

A. If stream is large enough.

B. Used to transport boom, skiff, etc.

C. ATVs or vehicles depending on conditions, location and accessibility.

D. Light Plants depends on light conditions and area of coverage needed.

E. Skimmer, hose, diaphragm pumps, etc.

F. Fast tanks, bladders, etc could be used for temporary storage.

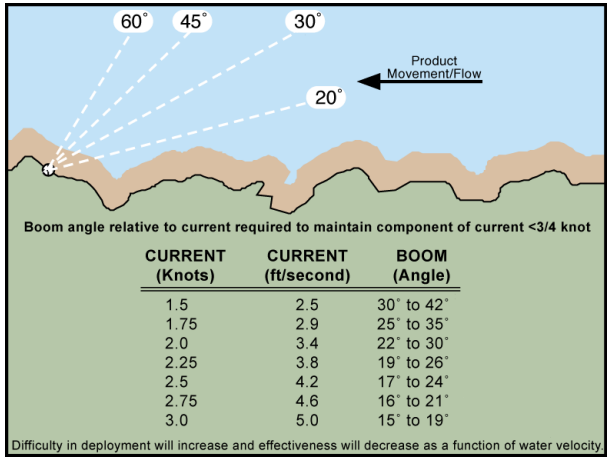
G. Number of personnel depends on size of waterway.

H. CISPRI initial responders may fill FSS role.

I. Anchor selection depends on current/depths/ etc.

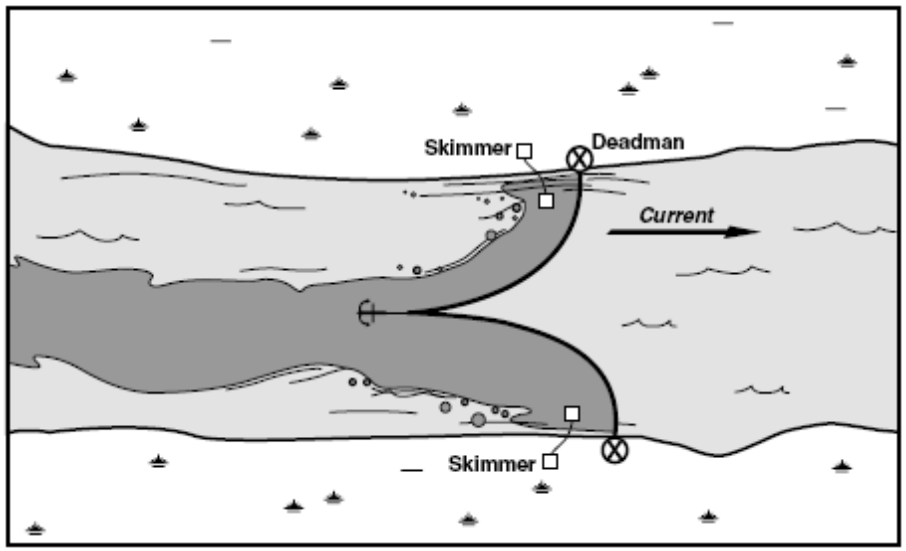
## OPERATIONAL CONSIDERATIONS

- Since the speed of the current perpendicular to the boom must be maintained at 3/4 kt or less, the length of boom needed to stretch across a stream depends on the current. For a stream 100 ft across with a 1 kt current, a boom approximately 140 ft long is needed. If the current is 2 kt, the same stream would require 320 ft of boom. The speed of the current is not equal across the stream; the fastest water is with the deepest water. Oil moving in a stream will be entrained in the fastest water.
- The shortest length of boom available is 50 ft. sections.
- Readjust angles and widths between boom sections as current and wind change. Constantly monitor nearshore boom systems to prevent escape of oil.

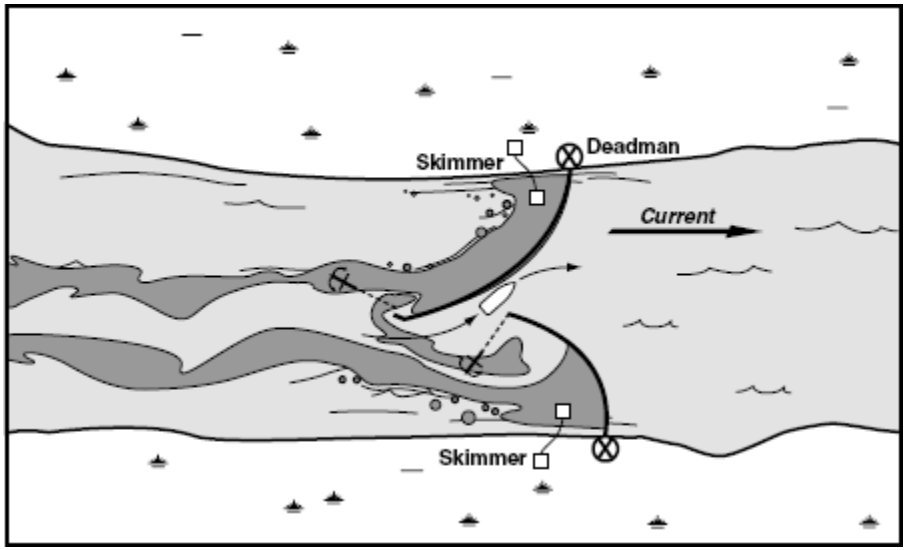



**Boom Angle Relative to Current**

- Approval from the appropriate land owner, agency and/or Unified Command (Environmental Unit) is required prior to any operations.
- To avoid inadvertent collection of archaeological artifacts, these sites may need to be surveyed or evaluated for potential archaeological vulnerability.
- Any permits required for this operation will be provided by the Environmental Unit (See Tactic CI-LP-6).
- Be sensitive to travel restrictions and damage caused by vehicle or foot damage as well as wake damage.




**Closed Chevron**




**Open Chevron**

## TACTIC PURPOSE AND DESCRIPTION

Chevron boom configurations are also for use in fast water. Two booms are deployed from an anchor in the middle of the stream and attached to each bank. A chevron configuration is used to break a slick for diversion to two or more collection areas.

An open Chevron can be used where boat traffic must be able to pass. (The two booms are anchored separately midstream, with one anchor point upstream or downstream of the other).

### EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | TASK FORCE LEADER | LABORER / RESPONDERS | EQUIPMENT OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| Workboat [A] | Boom Deployment | 1 | 1 | ≥ 4 [F] | 1 | 1 [G] |
| Boom [B] | Deflection Booming | 1 | | | | |
| Skimming System [C] | Oil Recovery | 1 | | | | |
| Portable Tank [D] | Recovered Oil Storage | 1 | | | | |
| Anchor Systems [E] | Secure Boom | 1 | | | | |

A. If stream is small enough a workboat may not be needed.

B. Boom amounts vary according to size of waterway.

C. Skimmer, hose, diaphragm pumps, etc.

D. Fast tanks, bladders, etc. could be used for temporary storage.

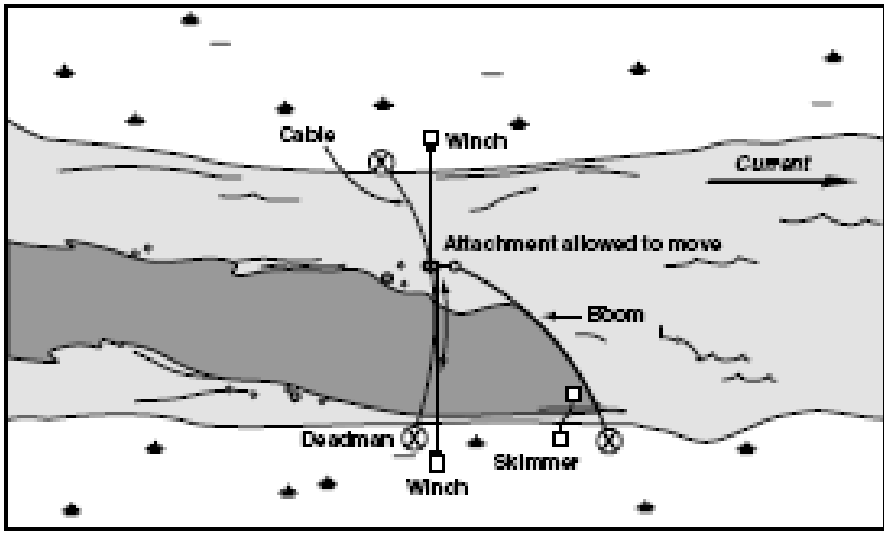
E. Anchor selection depends on current/depths/ etc.

F. Laborers/responders for setup only.

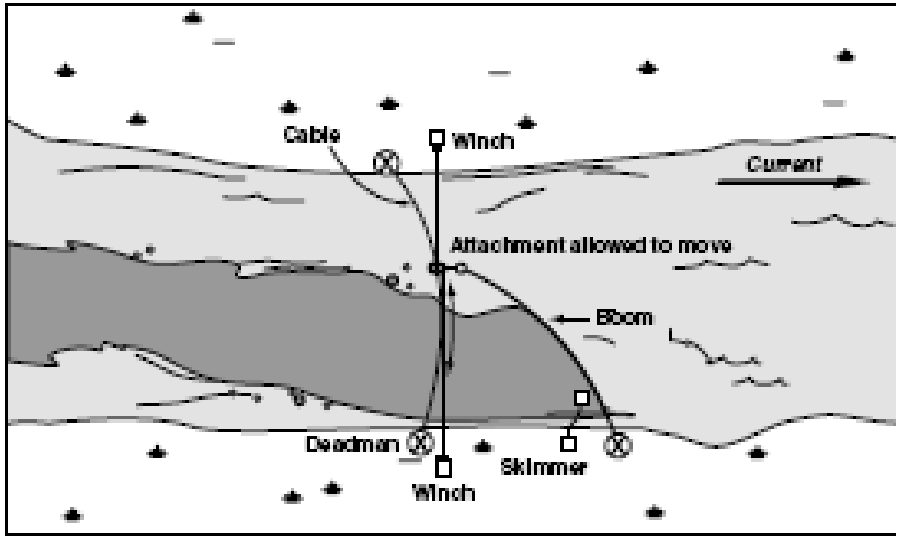
G. CISPRI initial responders may fill FSS role.

## OPERATIONAL CONSIDERATIONS

- CISPRI harbor boom would be most commonly used in this tactic.
- Since the speed of the current perpendicular to the boom must be maintained at 3/4 kt or less, the length of boom needed to stretch across a stream depends on the current. For a stream 100 ft across with a 1 kt current, a boom approximately 140 ft long is needed. If the current is 2kt, the same stream would require 320 ft of boom. The speed of the current is not equal across the stream; the fastest water is with the deepest water. Oil moving in a stream will entrain in the fastest water.
- Approval from the appropriate land owner and/or Unified Command is required prior to any dam construction. Any permits required for this operation will be provided by the Environmental Unit (See Tactic CI-LP-6). Planning Section Chief will ensure proper permits have been approved.
- The shortest length of boom available is 50 ft. sections.
- Readjust angles and widths between boom sections as current and wind change. Constantly monitor nearshore boom systems to prevent escape of oil. Boom angles relative to current are shown in Tactic CI-IL-5.
- Be sensitive to travel restrictions and damage caused by vehicle or foot damage as well as wake damage.




**Catenary**




**Deflection/Trolley**

## TACTIC PURPOSE AND DESCRIPTION

***Catenary (currents less than 1/4 knot):*** The boom is attached to an anchor on one bank, and the other end is towed to the other bank and attached to an anchor there. The current naturally puts the boom in a "U" shape ("catenary"). The deployment and maintenance of a single long boom can be difficult and labor-intensive. It is usually used for recovery operations.

***Trolley (cable-supported diversionary boom):*** A cable or line is strung across a river and the boom attached to the trolley line with a pulley.

### EQUIPMENT AND PERSONNEL
**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | TASK FORCE LEADER | LABORER / RESPONDERS | EQUIPMENT OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| Workboat [A] | Boom Deployment | 1 | 1 | ≥ 4 [F] | 1 | 1 [G] |
| Boom [B] | Exclusion Booming | 1 | | | | |
| Skimming System [C] | Oil Recovery | 1 | | | | |
| Portable Tank [D] | Recovered Oil Storage | 1 | | | | |
| Anchor Systems [E] | Secure Boom | 1 | | | | |
| Chain Saw Winch [H] | Boom Support | 2 | | | | |
| Cable/Line/Pulley | Boom Support | Varies | | | | |

A. If stream is small enough a workboat may not be needed.

B. Boom amounts vary according to size of waterway.

C. Skimmer, hose, diaphragm pumps, etc.

D. Fast tanks, bladders, etc. could be used for temporary storage.

E. Anchor selection depends on current/depths/ etc.

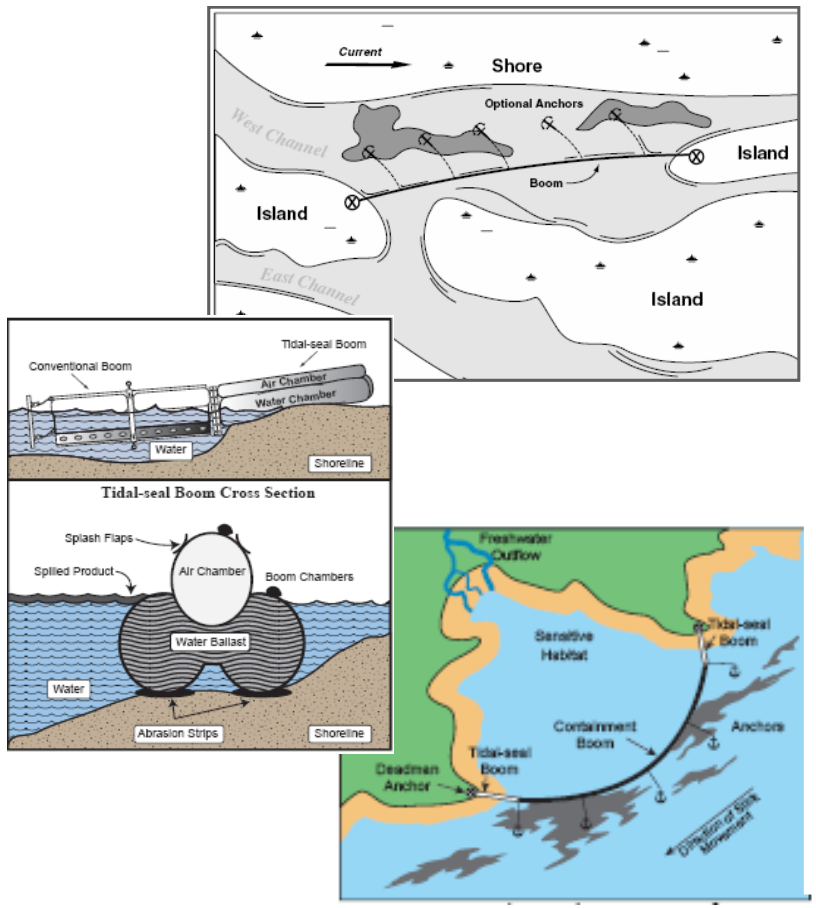
F. Laborers/responders for setup only.

G. CISPRI initial responders may fill FSS role.

H. On smaller streams boom can be moved by hand.

## OPERATIONAL CONSIDERATIONS

- CISPRI harbor boom is most commonly used in this tactic.
- Since the speed of the current perpendicular to the boom must be maintained at 3/4 kt or less, the length of boom needed to stretch across a stream depends on the current. For a stream 100 ft across with a 1 kt current, a boom approximately 140 ft long is needed. If the current is 2kt, the same stream would require 320 ft of boom. The speed of the current is not equal across the stream; the fastest water is with the deepest water. Oil moving in a stream will entrain in the fastest water.
- A cable extended across the river can be dangerous. Make sure everyone knows it's there and that any approaching boats are warned. Mark the cable with buoys.
- Approval from the appropriate land owner and/or Unified Command is required prior to installing anchoring systems. Any permits required for this operation will be provided by the Environmental Unit (See Tactic CI-LP-6). Planning Section Chief will ensure proper permits have been approved.
- The shortest length of boom available is 50 ft. sections.
- Readjust angles and widths between boom sections as current and wind change. Constantly monitor boom systems to prevent escape of oil. Boom angles relative to current are shown in Tactic CI-IL-5.
- Be sensitive to travel restrictions and damage caused by vehicle or foot damage as well as wake damage.




## TACTIC PURPOSE AND DESCRIPTION

Either conventional boom or a Tidal-seal boom can be used to exclude oil from a sensitive area. For example, the Tidal-seal boom can be used in shallow water to boom off a backwater, or a conventional boom can be placed across the mouth of a side channel to keep oil out.

In addition, Tidal-seal boom can be connected to conventional boom to protect the shoreline.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

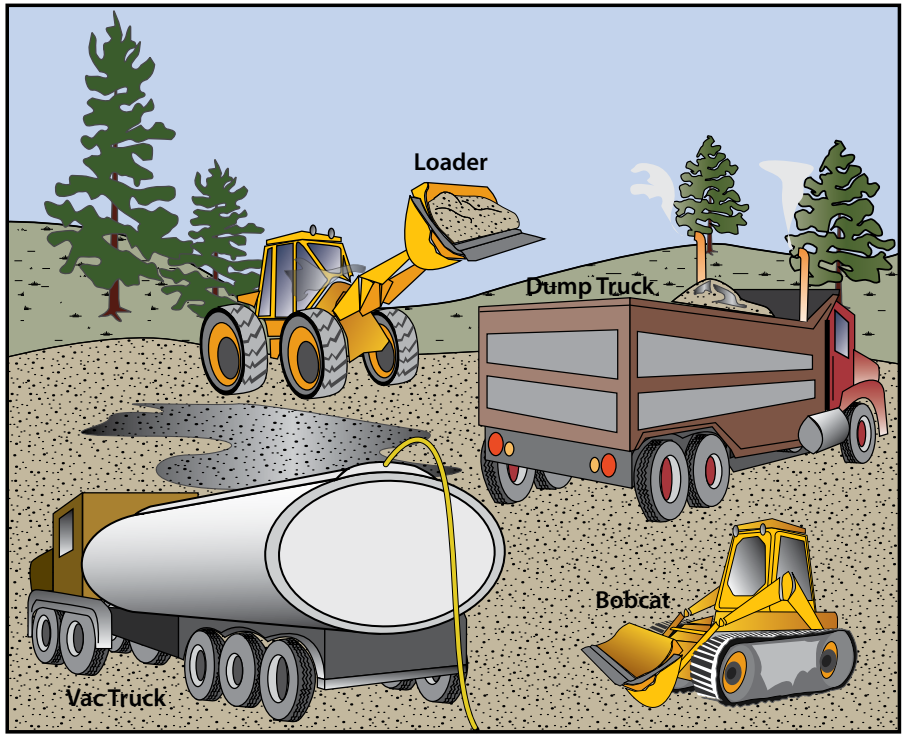
| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | TASK FORCE LEADER | LABORER / RESPONDERS | EQUIPMENT OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| Workboat [A] | Boom Deployment | 1 | 1 | ≥ 3 [E] | 1 | 1 [E] |
| Boom [B] | Exclusion Booming | ≥ 50 ft | | | 1 | |
| Tidal-seal Boom | Exclusion Booming | ≥ 50 ft | | | N/A | |
| Pump/Blower [C] | Tidal-seal Inflation | 1 | | | | |
| Anchor Systems [D] | Secure Boom (Optional) | Varies | | | | |

A. If stream is small enough a workboat may not be needed.
B. Boom amounts vary according to size of area protected.
C. Anchor selection (optional) depends on current/depths/ etc.
D. Laborers/responders for setup only, numbers depend on size of area.
E. CISPRI initial responders may fill FSS role.

## OPERATIONAL CONSIDERATIONS

- CISPRI harbor boom is most commonly used in this tactic.
- Since the speed of the current perpendicular to the boom must be maintained at 3/4 kt or less, the length of boom needed to stretch across a stream depends on the current. For a stream 100 ft across with a 1 kt current, a boom approximately 140 ft long is needed. If the current is 2kt, the same stream would require 320 ft of boom.
- The speed of the current is not equal across the stream; the fastest water is with the deepest water. Oil moving in a stream will entrain in the fastest water.
- The shortest length of boom available is 50 ft. sections.
- Readjust angles and widths between boom sections as current and wind change. Constantly monitor nearshore boom systems to prevent escape of oil. Boom angles relative to current are shown in Tactic CI-IL-5.
- Be sensitive to travel restrictions and damage caused by vehicle or foot damage as well as wake damage.
- Approval from the appropriate land owner and/or Unified Command is required prior to installing anchoring systems. Any permits required for this operation will be provided by the Environmental Unit (See Tactic CI-LP-6). Planning Section Chief will ensure proper permits have been approved.

*This page left intentionally blank*




## TACTIC PURPOSE AND DESCRIPTION

Excavation is a land-based tactic, with the objective of removing contaminated soils and gravel. This tactic is also used to limit the spreading of oil and minimizing impacts to the environment.

Excavation should provide for the approved transport and disposal or short-term storage of contaminated soils.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | TASK FORCE LEADER | LABORER / RESPONDERS | EQUIPMENT OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| Heavy Equipment [A] | Soil/Gravel/Oil Movement | 1 | 1 | 2 | 1 | 1[D] |
| Dump Truck [B] | Transport Oiled Gravel | 1 | | | 1 | |
| Light Plant [C] | Low Light Operations | 2 | | | N/A | |
| Dunnage, Pit Liner, Super Sacks [E] | Containment Construction & Storage | N/A | | 1 | | |

A. Dozer, front-end loader, bobcat, grader, Super Sucker/Vac Trucks depending on application.
B. Must be lined when used to haul contaminated soils.
C. Light plants depend on light conditions and area of coverage needed.
D. CISPRI initial responders may fill FSS role.
E. Dunnage, pit liner, and/or super-sacks for containment construction and temporary storage.

## OPERATIONAL CONSIDERATIONS

- Arrangements will need to be made for removal of the temporary dike, berm or dam as these are temporary structures.
- To avoid inadvertent collection of archaeological artifacts, these sites may need to be surveyed or evaluated for potential archaeological vulnerability.
- Any permits required for this operation will be developed by the Environmental Unit and approved by the Unified Command (See Tactic CI-LP-6).
- In the event that a dump truck cannot access the area, super-sacks and temporary lined containment cells may be used or constructed.

## SAFETY CONSIDERATIONS

- Use caution when excavating. Holes, pits, and trenches can create entrapment and engulfment hazards. The FSS should review and approve of the planned excavation.
- Conduct a line locate for buried pipelines in the area prior to digging.

## ENVIRONMENTAL CONSIDERATIONS

- Consult with the Environmental Unit to determine the appropriate requirements for transport and disposal of contaminated soils. See Waste Management Tactics, CI-WM.

*This page left intentionally blank*

# TRACKING & SURVEILLANCE TACTICS

## PURPOSE OF THE TRACKING & SURVEILLANCE TACTICS

These tactics cover the ability to conduct tracking and surveillance of an oil spill during a response. The tracking and surveillance tactics, which use a combination of visual observations, computer modeling, and electronic tracking of the oil on the water/land surface, produce data on the actual location of the oil, the projected direction that the oil will go, and rough estimates of the amount and type of oil in a certain location. This information assists in planning a response and the tactical deployment of assets.

Tactics associated with tracking and surveillance are:

- **CI-TS-1, Aerial Surveillance:** This tactic describes the use of visual observations from aircraft (Fixed Wing or Helicopter) to locate oil on the water's surface.
- **CI-TS-2, Tracking Buoys:** This tactic describes the use of floating electronic tracking buoys designed to drift with the oil and automatically transmit their positions to the CISPRI Command Post or other designated sites.
- **CI-TS-3, Detection and Delineation of Oil:** This tactic describes the methods and tactics to be used when attempting to locate and delineate a large spill on land.
- **CI-TS-4, Spill Volume Estimation on Water:** This tactic describes several methods for estimating spill volume, including the use of spilled oil color for estimating the thickness of the oil layer on the water and therefore the amount of oil spilled.

## HOW TRACKING AND SURVEILLANCE IS MANAGED

The use of the tracking and surveillance resources is under the control of the Planning Section (Situation Unit). The Situation Unit will make the results of aerial and surface tracking and surveillance available to allow the Planning Section Chief to brief the Incident Command about the location of the oil spill. Spill trajectories may be provided by the NOAA SSC or the Environmental Unit. The results of the trajectory predictions will be posted on the Situation Unit display and will be used by the Planning and Operations Section Chiefs to help plan for the Next Operational Period.

## SAFETY ASPECTS OF TRACKING AND SURVEILLANCE

The safety tactics outline the safety program that is used to ensure that tracking and surveillance are conducted as safely as possible. Because aerial tracking and surveillance of spilled oil involve use of fixed-wing aircraft and helicopters, all operations will be conducted under the control of Air Operations in the Operations Section.

For deploying the tracking buoys, care must be taken when working along the leading edge of the heaviest concentration of oil, site characterization must be conducted to keep deployment platforms (vessels or helicopters) away from potential hazardous vapors. There is potential for deployment to be conducted in exposed conditions such as high winds, rough seas, decks awash, ice, etc., and the vessel masters, with assistance of the Task Force Leader and the Field Site Safety, will assess the safety of operating conditions throughout the response. Normal operating safety procedures must be followed when deploying tracking buoys from vessels.

**COMMUNICATIONS**

Surveillance information from the field will be passed as quickly as possible to the Situation Unit via the Dispatcher located in the CISPRI Command Post. This information will be posted in the Planning Section and communicated to the Operations Section to allow for the proper positioning of response assets. The surveillance teams will also be in direct communication with field operations to facilitate the response (see Tactic CI-LP-2).




## TACTIC PURPOSE AND DESCRIPTION

Several methods can be used to monitor the movement of spilled oil and to provide tactical support for visual surveillance when used for other response tactics such as burning, wildlife, mechanical containment and recovery, etc. These methods include:

- Aerial observation (visual or infrared sensors)
- Visual surveillance by response personnel

The best method of tracking oil slicks is by direct observation either visually or using infrared sensors. Reports on spill coverage, as well as spill mapping and delineation, should be conducted by trained observers from a vessel or aircraft. Aircraft, either fixed wing or helicopter, provide the best observation platforms. Vessels allow an observer to closely examine and sample a slick to confirm its source (natural or anthropogenic), thickness, and state of weathering; however, vessel-bound observers do not have the advantage of perspective provided by aerial observations. Ideally, aerial and vessel-based observations would be made at the same place and time. Observers based on vessels and in airplanes could communicate with shore-based personnel via radio.

In cases where an oil slick is reasonably continuous, a track of the edge of the slick can be recorded with Global Positioning System (GPS) equipment.

Digital photography can also provide a useful record of slick configuration and location.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | TASK FORCE LEADER [C] | LABORER / RESPONDERS | VESSEL OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| Fixed Wing or Helicopter [B] | Track Oil Movement | 1 | 1 | 1 | N/A | 1 [A] |
| Infrared Sensors | Track Oil Movement | 1 | | | | |
| GPS | Identify Location | 1 | | 1 | 1 | |
| Digital Camera | Documentation | 1 | | 1 | 1 | |

A. CISPRI Spill Technicians may fill FSS role.

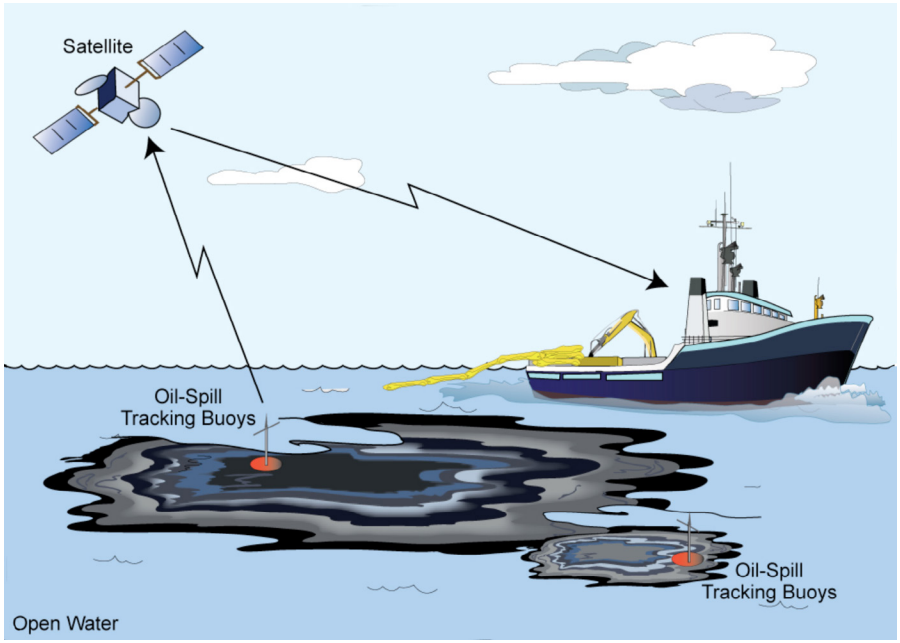
B. Depends on availability - CVs could perform dual role such as deployment and monitoring of buoys as well as other aspects of response (See CI-LP-2).

C. The lead spill technician is the TFL.

## OPERATIONAL CONSIDERATIONS

- As the response progresses and the area to be covered increases, additional aircraft may be ordered by Logistics as coordinated by Air Operations.
- If possible, aerial and marine observations should be made by a team of observers comprised of representatives from each organization or member in the Unified Command. If observation team members strive for consensus at the time of observation, later disagreements about what was observed can be minimized.
- Computerized tracking programs such as OZI-Explorer can be used to document information and display information within the Command Post.
- Responders should maximize the use of aircraft by having them direct response vessels to the spill area as needed or direct them to areas of the heaviest concentrations of oil.

*This page left intentionally blank*




## TACTIC PURPOSE AND DESCRIPTION

Several methods can be used to monitor movement of spilled oil and to assist with trajectory modeling beyond aerial surveillance.

This includes the use of the following sensors:

Plume Delineation can be used in the following operating environments:

- **Tracking Buoys (Satellite Based)**

The satellite based tracking buoys relay position information from an east coast location directly to the CISPRI Command Post.

The tracking buoys can be placed on large ice pans to provide information regarding tidal movement.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | LABORER / RESPONDERS | VESSEL OPERATOR |
|---|---|---|---|---|
| Tracking Buoys [A] | Spill Tracking | Varies | | |
| CISPRI Workboats or Contract Vessels (CVs) | Deploy/Monitor Buoys | 1 [B] | 1 | 1 |

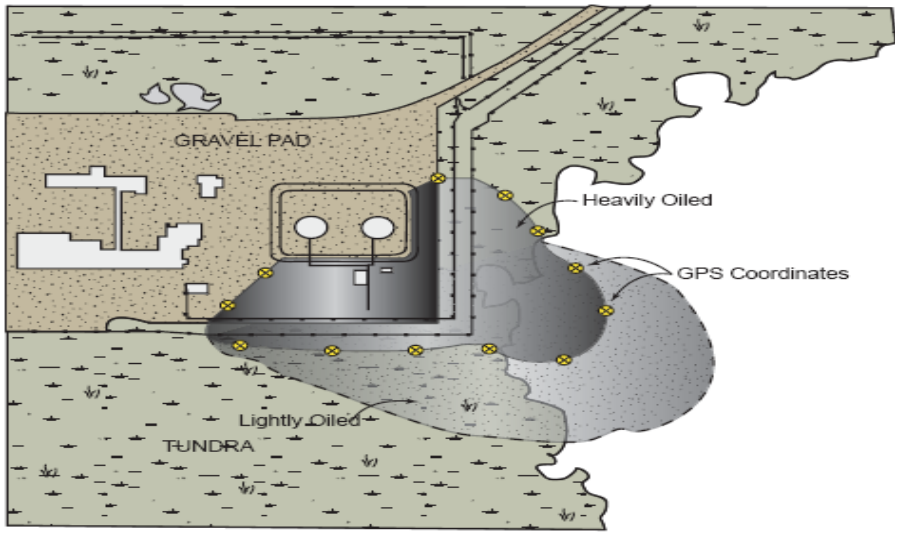
A. Numbers depend on size of spill area being tracked.

B. Depends on availability - CVs could perform dual role such as deployment and monitoring of buoys as well as other aspects of response (See CI-LP-2).

## OPERATIONAL CONSIDERATIONS

- The Operations Section, in consultation with the Planning Section, will decide when and where to deploy the tracking buoys and will coordinate with Logistics - and if needed, Air Operations to deploy buoys.
- Although the CISPRI tracking buoys are designed to drift like an oil slick, the buoys might not remain with a slick. Buoys also do not indicate the thickness, area, coverage, or consistency of a slick.
- The buoys currently in use transmit information via satellite.
- Buoys may require periodic servicing, and their onboard battery has an operational life of approximately 2 months (satellite) of continuous transmission.
- Buoys may need to be recovered and relocated, if necessary, at the leading edge of the heaviest concentration of oil before dark.
- Retrieve buoys using landing nets or other appropriate tools.
- Information on CISPRI tracking buoys can be found in Appendix A.

*This page left intentionally blank*




## TACTIC PURPOSE AND DESCRIPTION

The objective of the tactic is to determine the extent and trajectory of an oil spill plume both on the surface and subsurface. This tactic may be used on Solid Ice, Marsh, Swamp, Gravel Beds, Shoreline, other land areas.

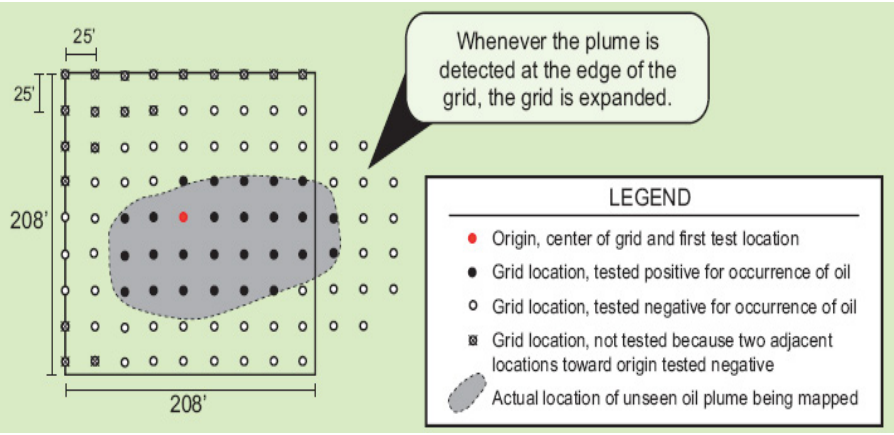
Assuming that the spill area is visible one or two crews walk around the perimeter of the spill, placing stakes in the ground every 50 to 100 feet while recording the stake locations with a handheld GPS. Setting waypoints on the GPS is a convenient way to record the stake locations. Once the stakes are set, a track of the spill edge can be recorded with the GPS. Many GPS devices have a function to calculate the area of a track that forms an enclosure. Digital photographs of the site, taken from several perspectives after the stakes are in place, are also very useful. For smaller spills, one crew may be sufficient.

For locating and mapping larger spills on land, an ATV can be used to assist in moving around the spill, if vehicle use is approved and will not damage the environment. Very large spills may require a helicopter overflight using infrared sensors to assist in mapping. An initial hand-drawn sketch is best drawn on a topographic map or as-built survey, aerial photograph, or other depiction of the site. Individual Member Company contingency plans usually have line drawings and maps of their pipelines and facilities. The initial sketch should have as much detail and labeling as possible. Make sure to note the time, date, and person making the drawing.

The sketch can be used to produce more precise maps when combined with GPS data taken during the survey.

If the perimeter of the spill cannot be seen, because it is below ground or under snow or ice, then a different approach is required. First assess the probable location of the spill and the surrounding terrain to determine the likely migration path of the plume (generally down-slope). In this case a grid may be used to delineate the plume. The grid is first laid out from a starting point where the spill is known or suspected to have occurred. From this origin, the grid is set in all directions. The grid is established with stakes set a consistent distance apart. If the spill is thought to be less than an acre in size, the grid should be set on 25 foot spacing. If the spill is over one acre, the grid spacing can be increased accordingly.

Once the grid is established, a method to test for the occurrence of oil must be established. The method usually involves digging or drilling a hole to the water table or some pre-determined depth to assess for the presence of oil.




Other remote sensing technology, such as infrared cameras or Photo Ionization Detection (PID), can be used. The test method is first applied

at the origin/center of the grid and then to adjacent grid locations in a systematic fashion. If oil is not detected at the origin, re-assess the most likely location of the spill and re-set the grid if necessary. If oil is detected, the adjacent untested grid locations should be tested as well. When an adjacent location tests negative for oil, its adjacent locations are also tested When two successive locations test negative for oil, subsequent locations in the direction away from the oil need not be tested. If a location on the edge of the grid tests positive for oil, then the grid must be expanded. This tactic may have to be modified depending on the terrain and situation. Once the tests are completed, the stakes marking the grid locations with color coded flags to indicate if they were tested. A hand sketch and digital photographs, as described above, should also be completed for the site.

## EQUIPMENT AND PERSONNEL

**(Minimum shown for two teams)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | LABORER / RESPONDERS | TASK FORCE LEADERS | VESSEL OPERATOR |
|---|---|---|---|---|---|
| Wooden Sticks with Flags | Delineate Spill Area | Varies [A] | 4 | 1 | 1 [B] |
| Light Plant | Illumination | Varies | | | |
| Hand Held GPS Unit | Mapping | 2 | | | |
| Digital Camera | Photograph Site | 2 | | | |
| Support Vehicle(s) | Transportation | 2 [C] | | | |
| Digging Equipment | Spill Locator | 2 [D] | | | |
| Infrared Sensor | Spill Locator | 1 | | | |

A. Depends on size of spill area being delineated.
B. CISPRI Spill Technicians may fill FSS role.
C. CISPRI ATVs or similar motorized vehicles (as needed).
D. Augers, drills, shovel, etc, depending on terrain.

## OPERATIONAL CONSIDERATIONS

- If the wind is blowing contaminated snow outside the originally staked perimeter, make subsequent delineations as necessary.
- Use colored flagging on the new stakes to distinguish between various delineation events.
- Designate further staking with different colors of flagging.
- The general strategy used in performing spill plume delineation is to:
    1. Identify the approximate location of the spill
    2. Assess the site characteristics and determine equipment and personnel needs
    3. Deploy equipment and personnel to the location
    4. Commence delineation operation
    5. Repeat as necessary to determine oil movement and trajectory
- Infrared sensors can also be used to locate and track oil under snow.
- Responders should procure copies of any permits issued. (See CI-LP-6)
- Responders should be aware of the potential for cultural resources especially at remote locations. The Member Companies' Environmental Unit should check with DNR prior to venturing into remote areas.
- PPE is required of all personnel in the Hot Zone; consult the incident-specific Site Safety Plan for requirements. Worker exposure to contaminants should be minimized.
- The buddy system should always be used in the Hot Zone.

## ESTIMATING VOLUME OF SPILLED OIL ON WATER

| CODE | DESCRIPTION | LAYER THICKNESS (microns) | LAYER THICKNESS (inches) | QUANTITY OF OIL (bbls/acre) |
|---|---|---|---|---|
| S | **Sheen (Silvery/Grey)** | 0.04 to 0.30 | $1.6x10^{-6}$ to $1.2x10^{-5}$ | .001 - .0078 (about 1 pt./acre) |
| R | **Rainbow Sheen** | 0.30 to 5.0 | $1.2x10^{-5}$ to 0.0002 | .0078 - .0128 (about 1 gal./acre) |
| M | **Metallic** | 5.0 to 50 | 0.0002 to 0.002 | .0128 - 1.28 (about 10 gal./acre) |
| T | **Transitional Dark (or true) Color** | 50 to 200 | 0.002 to 0.01 | .0128 – 5.1 (about 3 bbls./acre) |
| D | **Dark (or true) Color** | >200 | >0.008 | 5.1. - 51 (about 26 bbls./acre) |

**Sheen (Silvery/Grey):** A light almost transparent layer that appears silvery or shimmers.

**Rainbow Sheen:** A sheen that reflects color

**Metallic:** Homogenous color that is also characterized by a metallic or mirror effect.

**Transitional Dark (or true) Color:** Oil that is thick enough for its true color to become dominant in places; thinner areas of the slick lead to discontinuities in true color coverage (the slick itself may be continuous).

**Dark (or true) Color:** Oil that is thick enough for its true color to become dominant – true color is not broken in coverage as is transitional dark.

**Volume in barrels = $(4.14 x10^5)$(Area in $mi^2$)(Thickness in inches)**
**Volume in barrels = (647)(Area in acres)(Thickness in inches)**
**Volume in barrels = $(1.48x10^{-2})$(Area in $ft^2$)(Thickness in inches)**
**Volume in gallons = (0.624)(Area in $ft^2$)(Thickness in inches)**
**1 $km^2$ = 247 acres = 0.386 $mi^2$**
**1 inch = 25,400 µm = 25.4 mm**
**1 barrel = 42 gallons**

Visual observation made from an aircraft is the most reliable technique for detecting and mapping the distribution of spilled oil. The proceeding table, which is based on the BONN Agreement Oil Appearance Code and on the field guide published by the National Oceanic and Atmospheric Administration, serves as a guide for those estimating the volume of a spill from slick color. Estimates should be conducted by personnel with training and experience in aerial slick observation. Many natural phenomena can influence estimates of spill volume based on color, even if conducted by a skilled observer; these estimates are often unreliable.

If the thickness of an oil slick and its area extent are both known, the above equations can be used to estimate spill volume.

### EXAMPLES

**Sheen on Water:** If a sheen is spotted over an area of 0.25 square mile, then the approximate volume of spilled oil could be estimated as follows:

Volume in barrels = (4.14x105)(Area in mi2)(Thickness in inches)

Volume in barrels = (4.14x105)(0.25 mi2)(1.6x10-6 to 1.2x10-5 inches)

Volume in barrels = 0.16 to 1.2 barrels

**Volume in gallons = 6.7 to 50 gallons**

**Discontinuous True Oil:** If discontinuous true oil is present over an area of **0.25 square mile**, then the approximate volume of the spilled oil could be estimated as follows:

Volume in barrels = (4.14x105)(Area in mi2)(Thickness in inches)

Volume in barrels = (4.14x105)(0.25 mi2)(0.002 to 0.01 inches)

Volume in barrels = 207 to 1,035 barrels

**Volume in gallons = 8,694 to 43,470 gallons**

### ENCOUNTER RATE

Encounter rate (EnR) calculations can be used to estimate the amount of oil moving past in a stream, entering a collection boom, or in a windrow or patch of oil:

- EnR in gpm=(37)(Width of oil swath in ft)(Velocity in fps)(Thickness in inches)

- EnR in bbl/hr=(53.33)(Width of oil swath in ft)(Velocity in fps)(Thickness in inches)
- EnR in bbl/day=(1.28x103)(Width of oil swath in ft)(Velocity in fps)(Thickness in inches)
    - gpm = gallons per minute
    - fps = feet per second
    - 1 knot = 1.68 feet per second

## SPILL SOURCE FLOW RATE

It is possible to estimate spill source flow rates from the size of the stream of leaking oil:

- One drop per second = 1 gallon per day
- Thin stream breaking to drops = 24 gallons per day
- Small stream (about 1/8 inch) = 84 gallons per day
- Large stream (about 1/4 inch) = 936 gallons per day
- A rule sometimes used to get gallons per day is to divide 10,000 by the number of seconds it takes to fill a 5-gallon bucket.

## SPILL SOURCE VOLUME ESTIMATION

### Cargo tanks on tankers

- Strap tank to determine depth of oil and refer to appropriate tank gauging table for the tanker to calculate volume of oil in the tank.

### Pipeline per linear foot

- For volume in gallons per foot, square the inside diameter (in inches) & multiply by 4 percent (0.04).
- For volume in barrels per foot, square the inside diameter (in inches) & divide by 1,000.
- To find the volume of a pipeline in barrels per mile, square the inside diameter (in inches) and multiply by 5.13.

### For vertical cylindrical tanks

- Volume in gallons = (0.0034)(Diameter in inches)(Diameter in inches)(Height of liquid in inches).
- Volume in gallons = (5.88)(Diameter in inches)(Diameter in feet)(Height of liquid in feet).

## OPERATIONAL CONSIDERATIONS

- As the response progresses and the area to be covered increases, additional aircraft will be ordered by Logistics as coordinated by Air Operations.
- Spill characteristics might appear differently under varying light conditions, sea states, viewing angles, etc.
- Ice, internal waves, kelp beds, natural organics, pollen, plankton blooms, cloud shadows, jellyfish, algae, and a host of other entities might be mistaken for spilled oil.
- Observations of a slick could be impacted if the observer is wearing sun glasses or a face shield, or is looking through Plexiglas windows. Glare can also impede observation and should be accounted for when planning over-flights. Meteorological conditions such as poor visibility due to fog could hinder effective observation.
- A notable amount of oil might be in a portion of the slick characterized by continuous true oil color, where slick thickness (and therefore spilled oil volume) could vary significantly without any color change.
- Reports on slick characteristics are often based on subjective analyses and could vary widely between observers.
- Increasing wind speeds are accompanied by a decrease in the ability of an observer to detect oil.
- Spilled oil might develop into a water-in-oil emulsion that could increase the apparent volume of actual oil spilled.
- Low light conditions could make it difficult to spot spilled oil.


To report an oil spill and activate CISPRI, call 907-776-5129

# NON-MECHANICAL RESPONSE TACTICS

## PURPOSE OF THE NON-MECHANICAL TACTICS

The non-mechanical tactics available in Cook Inlet involve the application of dispersants and the use of in-situ burning. Both options are considered secondary to mechanical response and require an extensive permitting process before implementation.

The tactics for non-mechanical response are:

- **CI-NM-1, Dispersant Treatment:** This tactic describes when and how to apply chemical dispersants on an oil spill, including operational considerations and the permitting process.
- **CI-NM-2, Dispersed Oil Monitoring:** This tactic describes monitoring spilled oil after the application of the dispersant to assess the effectiveness of the application.
- **CI-NM-3, In-Situ Burning:** This tactic describes methods of burning spilled oil while it is still on the water's surface and collection of the residue after a burn.
- **CI-NM-4, Burning Oiled Vegetation:** This tactic describes methods of burning oiled vegetation and collection of the residue after the burn.
- **CI-NM-5, In-Situ Burning Pools of Oil on Solid Surfaces:** This tactic describes methods of burning spilled oil while it is still on a solid surface such as ice, mudflats, etc and collection of the residue after a burn.

## HOW NON-MECHANICAL RESPONSE IS MANAGED

The use of these response options is under the control of the Operations Section Chief. In the field, separate Non-Mechanical Task Force Leaders will manage the dispersant application and in-situ burning operations.

Permits are required for dispersant use and in-situ burning see Tactic CI-LP-6 and ADEC's References and Tools website: https://dec.alaska.gov/spar/ppr/response-resources/permits-tool/

Dispersant and in-situ burning application forms with instructions for their use can be found in the Permits program available on the ADEC website at: https://dec.alaska.gov/spar/ppr/response-resources/permits-tool/

Once a permit is in place to apply dispersants, the Operations Section Chief will determine the best application method, the resources will be mobilized, and application will begin. The effectiveness of the application will be relayed back to the CISPRI Command Post.

Once a burn permit is in place and resources are on-scene, in-situ burning can begin. Burning effectiveness and smoke plume information will be relayed back to the CISPRI Command Post.

## SAFETY ASPECTS OF NON-MECHANICAL RESPONSE

Safety is the most important consideration in non-mechanical response. The safety section of this manual outlines the safety program that is used to ensure that a response is conducted as safely as possible. The Safety Officer based in the CISPRI Command Post has overall responsibility for response safety. A field-based Field Site Safety (FSS) will be assigned to the Non-Mechanical Group and will provide safety advice, conduct regular safety briefings for responders and recommend appropriate PPE.

Specific safety issues that may be encountered when conducting non-mechanical response include:

- **Air Operations:** For application of dispersants both fixed-wing aircraft and helicopters can be used. For ignition of in-situ burning a helicopter can be deployed. All air operations are under the control of the Air Operations Branch in the Operations Section.
- **Burning Operations:** In-situ burning will be closely monitored and will be conducted only by trained vessel crews and when local conditions allow its use. Safety concerns for the crews include the presence of smoke and fire, as well as handling of gelled fuel.

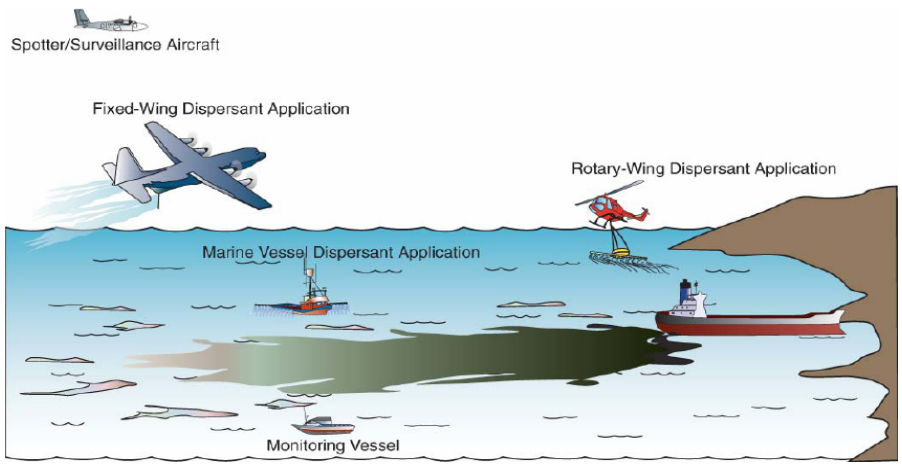
## COMMUNICATIONS

Both dispersant application and in-situ burning require constant communications between the CISPRI Command Post and the field operations and also among the task force members conducting the response. Before any operation begins, the Task Force Leaders will conduct a briefing outlining the communications plan for the response including radio frequencies to be used between resources on the water and any air operations.

In-situ burning can involve the use of a Heli-torch deployed from a helicopter to ignite the oil. Clear communications must be used between the Task Force Leader in the command vessel and the helicopter to ensure a safe burning operation. (See Tactic CI-LP-2)

## HANDLING WASTE

The waste management tactics describes the methods used to handle and dispose of waste generated during a response. A by-product of in-situ burning is solid burn residue that will float for a limited time following the burn. This material needs to be manually collected as soon as possible and bagged for disposal (Tactic CI-NM-3).




## TACTIC PURPOSE AND DESCRIPTION

The objective of this tactic is chemical dispersion of spilled oil. This tactic can only be authorized for use by the Unified Command. Although the primary response strategy for all spills in the CISPRI Response Area (Cook Inlet) is mechanical recovery, non-mechanical response (such as the application of chemical dispersants) may be considered as a secondary option to augment mechanical recovery. Dispersant operations usually focus on certain regions of a slick:

- **Thick Regions:** Oil slicks often appear to be of uniform thickness, but as much as 90% of the oil volume may be contained in as little as 10% of the slick area. Focusing dispersant application on thicker regions of a slick can increase the efficiency of dispersant operations.
- **Leading Slick Edge:** Dispersants might be applied to the leading edge of a slick that threatens sensitive environments.

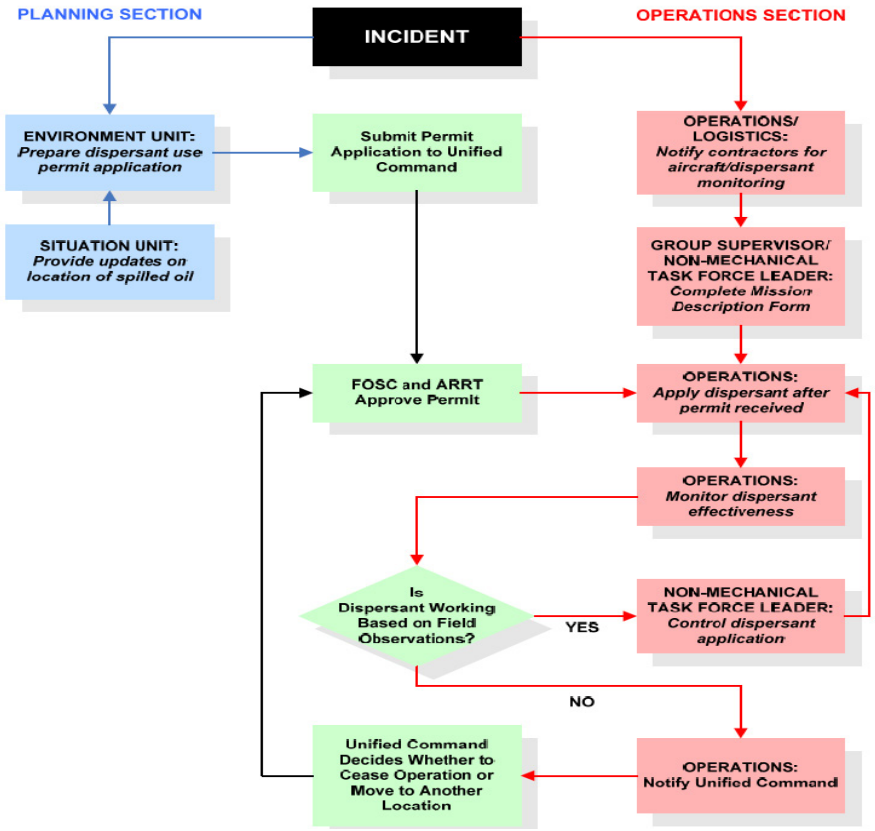
In addition to thick regions and a slick's leading edge, dispersants might also be applied to streamers, windrows, or slicks that have escaped mechanical containment. CISPRI has the ability to apply dispersants from three response platforms and maintains delivery systems for each:

- **Simplex 6860GX340 (240 gal) (Heli-Buckets):** Carried by helicopters, the Heli-bucket is capable of extremely accurate dispersant application including spot application or application near the hull of a stricken tanker. CISPRI would contract for helicopters (LP 3-4), allowing for rapid dispersant response in many situations.
- **MSRC Aerial Application:** The CISPRI Members relying on aerial dispersant application are also members of MSRC. MSRC has the capability to apply dispersant to the pre-authorized dispersant locations within the prescribed timelines as detailed in our Member's respective vessel response plans as approved by the USCG. CISPRI would support MSRC by making our dispersant available to MSRC application sorties flying from either Kenai Airport or from an airport in Anchorage.
- **Spill Spray System & Dispersant Delivery Systems:** Carried by response vessels, these systems allow accurate dosage control. Vessel-based systems can apply dispersants near the hull of a stricken tanker, operate after dark, and "encircle" large areas of spilled oil.

Due to the different strengths of these systems, the optimal delivery platform for a dispersant operation depends on a variety of situational constraints. The type of Dispersant Application Task Force (crop sprayer, helicopter, or surface vessel) chosen is also impacted by these constraints. All Dispersant Application Task Forces benefit from spotter aircraft and monitoring vessels.

Figure 1 provides a graphic summary of the process for obtaining the required dispersant application permits and for planning and implementing a dispersant treatment operation.

**Figure 1: Dispersant Application Permit, Planning & Operating Flowchart**




## EQUIPMENT AND PERSONNEL

### Helicopter

| EQUIPMENT | BASE LOCATION | FUNCTION | EQUIPMENT COMPLIMENT | LABORER | SKILLED RESPONDER | TASK FORCE LEADER | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|---|
| Helicopter | Various | Transport Spray Bucket | 1 | N/A | 2 | 1 | 1 |
| Heli-Bucket | CISPRI | Apply Dispersant | 1 | | | | |
| Spotter A/C | Various | Spotter/Dispersant Monitoring | 1 | | | | |
| Dispersant | Nikiski | Treat Oil | - | | | | |

### Vessel

| EQUIPMENT | BASE LOCATION | FUNCTION | EQUIPMENT COMPLIMENT | LABORER | SKILLED RESPONDER | TASK FORCE LEADER | VESSEL OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|---|---|
| OSV [A] | Nikiski | Transport Spray System | 1 | 2 | 2 | 1 | 1 | 1 |
| Spray Unit | CISPRI | Apply Dispersant | 1 | | | | N/A | |
| Spotter A/C | Various | Spotter/Dispersant Monitoring | 1 | | | | | |
| Dispersant | Nikiski | Treat Oil | - | | | | | |

### Dispersant Transfer

| EQUIPMENT | BASE LOCATION | FUNCTION | EQUIPMENT COMPLIMENT | LABORER | SKILLED RESPONDER | TASK FORCE LEADER | VESSEL OPERATOR | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|---|---|
| OSV [A] | Nikiski | Transport Spray System | 1 | 4 | 2 | 1 | 1 | 1 |
| Spray Unit [B] | CISPRI | Apply Dispersant | 1 | | | | N/A | |
| Spotter A/C | Various | Spotter/Dispersant Monitoring | 1 | | | | | |
| Dispersant | Nikiski | Treat Oil | - | | | | | |

A. Contract vessel could be substituted, Class 1 and 2.
B. CISPRI has a specialized trailer built for transferring to the heli-bucket.
N/A: no additional personnel or not applicable.

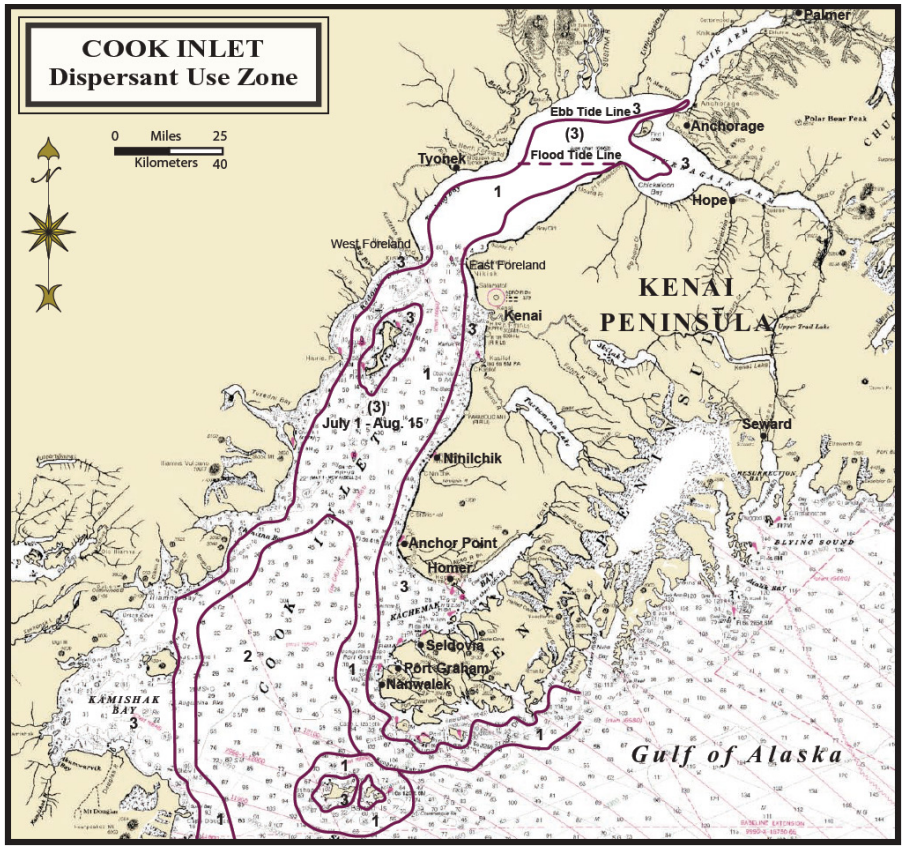
Tactic CI-LP-3 includes contact information on the dispersant application contractors, Tactic CI-LP-4 details dispersant equipment specifications

## OPERATIONAL CONSIDERATIONS

- The Incident Commander and responsible party consult to determine if dispersant use is appropriate. If it is appropriate, the Incident Commander requests approval for dispersant use from the Federal and State On-Scene Coordinator (FOSC & SOSC). The ARRT has established dispersant use zones in Cook Inlet (Figure 2):
  - **Zone 1:** Dispersant use should be considered to prevent oil from harming shorelines or other sensitive resources.
  - **Zone 2:** Dispersant use should only be considered if it will protect sensitive resources.

- **Zone 3:** Dispersant use not recommended.

**Figure 2: Map Showing Dispersant Use Zones in Cook Inlet**




- The ARRT must be consulted before approval can be granted for dispersant application in Zones 2 and 3. The FOSC can approve dispersant use in Zone 1, but must attempt to notify DOI.
- Dispersant use guidelines and permit requirements can be found on ADEC's References and Tools website: https://dec.alaska.gov/spar/ppr/response-resources/permits-tool/
- If spilled oil enters or appears likely to enter predetermined environmentally sensitive areas, the FOSC must obtain approval from the EPA representative to the Alaska Regional Response Team (ARRT) and from ADEC before permitting dispersant application in these areas.

### Application Techniques and Methods

- Once the UC has approved dispersant operations, the Non-Mechanical Group Supervisor distributes a Mission Requirements Form (See Figure 3) to the pilot-in-command of the spraying aircraft or vessel and the spotter aircraft, and the master of the monitoring vessel.
- Aerial Spraying: Aircraft provide the most rapid method of applying dispersants to an oil spill, and a variety of aircraft can be used for spraying. For aerial spraying, dispersant is applied undiluted. Typical application altitudes for dispersant systems are 50 to 150 feet, and typical speeds range up to 120 knots. Actual effective altitudes depend on the application equipment, weather, and aircraft. Careful selection of spray nozzles is critical to achieve desired dose levels, since droplet size must be controlled.
- Dispersant flights are not considered to be passenger-carrying flights and are limited to necessary flight crew members, spray equipment operators, and official observers.
- Aerial operations must be conducted during daylight hours.
- Boat Spraying: Dispersant may be applied by workboats/contract vessels equipped with spray booms. The preferred and most effective method of application from a work boat is to use a low-volume, low-pressure pump so the chemical can be applied undiluted. Spray equipment designed to provide a 5 to 10 percent diluted dispersant solution to the spray booms can also be used. Dispersant should be applied as droplets, not fogged or atomized. Natural wave or boat wake action usually provides adequate mixing energy to disperse the oil.
- System Calibration: Spray systems should be calibrated at temperatures anticipated to ensure successful application and dosage control. Application at sub-freezing temperatures may require a larger nozzle, supply lines, and orifices due to higher product viscosity.
- Concentration/Application Rate: A treatment rate of about 2 to 10 U.S. gallons per acre, or a dispersant-to oil ratio of 1:50 to 1:10 is recommended. This rate varies depending on the type of oil, degree of weathering, temperature, and thickness of the slick.

## Monitoring

- Dispersant application should be monitored for effectiveness, and specific requirements will be contained in the permit (See Tactic CI-NM-2). Use of monitoring vessels might be hindered by weather conditions and remoteness.

## Communications

- Communication and clear understanding of responsibilities are crucial to execution and safety during the dispersant application process (See Tactic CI-LP-2). A communications schedule between response vessels, aircraft and the Operations Section or CISPRI Dispatcher should be established and followed.

**Figure 3: Dispersant Mission Requirements Form: Aerial & Vessel Application**

Spill Location: Latitude_____ Longitude_____
Bearing_____°T Range_____ from Common Geographic Point

Estimated Volume to be Treated: _____bbl
Slick Area: _____ (sq ml/sq ft/acres). Coverage: _____%
Release Status: Continuous:☐ Intermittent: ☐ Stopped:☐

On-Scene Weather: Temperature: Air: _____ Water: _____
Cloud Cover: Percentage: _____ Ceiling:_____(ft)
Wind: Speed: _____(kt) Direction: _____
Turbulence: Surface:_____ Altitude (ft): _____
Sea State: Feet: _____

Spraying Area: N_____ W_____ Corner Points
N_____ W_____
N_____ W_____
N_____ W_____. or
Length (ft/miles): _____ Orientation (°T): _____

Dispersant Dosage: Gal/Acre_____ or Dispersant to Oil Ratio_____

Dispersant Pump Rate: Gal/Min_____ # of Nozzles: _____

Spray Mission Start Time: _____

Spotter Aircraft Designation: Frequency: Primary MHz_____
(Secondary) MHz_____

Monitoring Vessel Designation: Frequency: Primary MHz_____
(Secondary) MHz_____

Recommended Spraying Speed & Altitude (Pilot's discretion): Knots:_____ Feet:_____

Aircraft Loitering Area and Altitude: NAVAID_____. Bearing (°T)_____
Range: _____(miles) Altitude: _____(ft)

Post Mission Actions (i.e. reload for subsequent mission, refuel, etc.):_____

## Dispersants Operations Support Equipment

- CISPRI maintains access to equipment for dispersant delivery platform support.
- A complete dispersant-transfer system that enables pumping of dispersant from an IMO tank to CISPRI's dispersant application equipment is stored in the CISPRI yard.
- Logistical support for dispersant operations is not limited to the dispersant spraying platform and equipment; other factors such as spotter and command-and-control aircraft support, flight crew support, and inclement weather plans must also be considered. Helicopter fuel might need to be staged at various locations close to the spill.

## Dispersant Loading Areas

- Each dispersant application mission must have a support base where the dispersant is loaded into the application system. CISPRI has identified several facilities with sufficient infrastructure to serve as dispersant loading areas:
  - **Kenai Airport:** Loading into a dispersant-application aircraft or into Heli-Bucket delivery system.
  - **McGahan Airstrip:** Loading into a dispersant-application aircraft or into Heli-Bucket delivery system.
  - **Rig Tenders Dock:** Loading into vessel-based delivery system.
  - **Homer Airport:** Loading into a dispersant-application aircraft or Heli-Bucket delivery system.
  - **Homer City Dock:** Loading into vessel-based delivery system.
  - **Anchorage Airport:** Loading into a dispersant-application aircraft or Heli-bucket delivery system.
  - **Kodiak Airport:** Loading into Heli-Bucket delivery system.
- The physical distribution of these loading areas assures a nearby dispersant-application support base for many parts of Cook Inlet and the northern Gulf of Alaska.

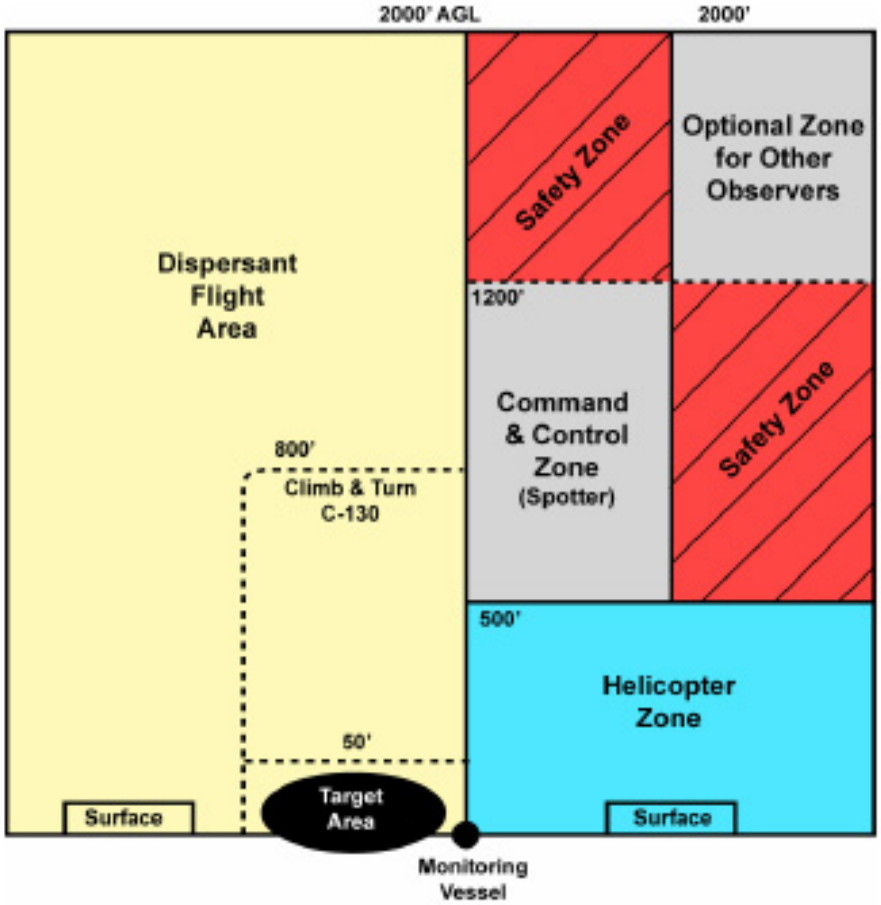
## Dispersant Transport: Stockpile to Loading Areas

- There are numerous scenarios for transporting dispersant from a

stockpile to a loading area. The most feasible route will depend on many factors, such as the stockpiles and loading areas being used, prevailing weather, and preferred dispersant delivery system.

- Based on these and other constraints, dispersant will be transported from storage to a loading area in 330 gallon or 550 gallon totes Some IMO tank trailers have pre-attached dispersant pump skids.
- The Dispersant Mission Spotter coordinates tactical dispersant operations. (The pilot-in-command of the spotter aircraft should not serve as the Mission Spotter.) Duties of the Mission Spotter include the following:
    - Recognition, characterization, and documentation of oil on water.
    - Direction of dispersant delivery platform alignment and position to maximize the amount of dispersant contacting spilled oil. This task will be guided by the application tactic being used and includes direction of the offset of successive passes over a slick.
    - Tactical control of all aircraft assigned to the Dispersant Application Task Force. This task includes coordination of altitude separation between task force aircraft and appropriate distance spacing between assets at similar altitudes. Figure 4 shows a typical air traffic control pattern for dispersant operations.
    - Direction of adjustments to variables of dispersant treatment, such as dosage, application platform speed, and swath width. After calculating necessary changes in these parameters, the spotter relays this information to the application platform and to the Unified Command.
    - Evaluation of dispersed oil plume, including effectiveness of a spray run and amount of subsequent dispersion.
    - Notation of changes to the slick/dispersed oil such as herding, emulsion breaking, or re-coalescence.
- Spotter aircraft are preferably fixed-wing and have long ranges, large windows, and relatively low operating speeds. Surveillance aircraft other than a spotter airplane might be necessary to identify and prioritize oil slicks and relay information on these slicks to the spotter.

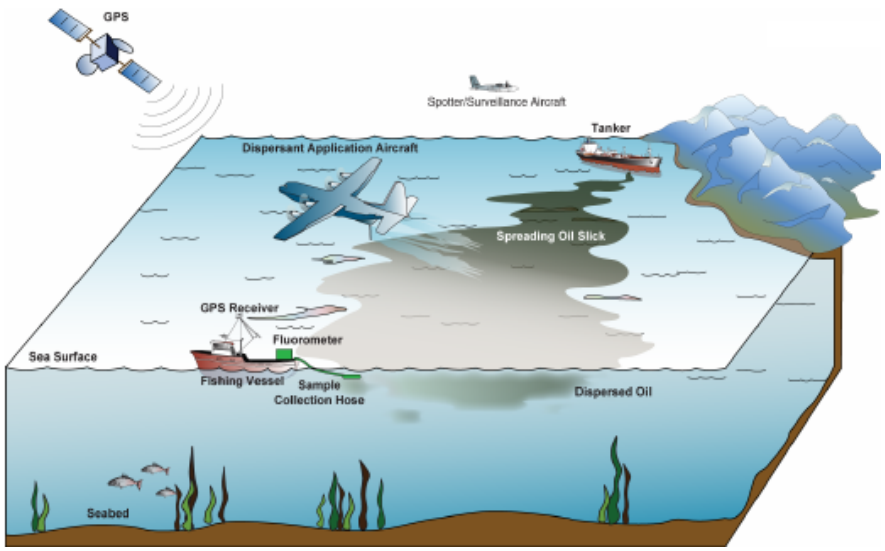
**Figure 4: DISPERSANT MISSION SPOTTING AND AIR CONTROL**






***To report an oil spill and activate CISPRI, call 907-776-5129***

*This page left intentionally blank*




## TACTIC PURPOSE AND DESCRIPTION

Monitoring is required to determine the effectiveness of dispersant application. Monitoring also provides information on whether application methods need modification or if re-application is necessary.

The Special Monitoring of Advanced Response Technologies (SMART) dispersant use protocol is used in conjunction with dispersant operations. This protocol offers three tiers of monitoring based on the needs of a particular incident (the tier used is determined at the time of permit issuance by EPA and ADEC in consultation with resource agencies and the ARRT).

- **Tier 1:** Visual monitoring only (aerial observation if possible). Visual monitoring of dispersant effectiveness should be carried out by trained observers who have participated in a formal training session.
- **Tier 2:** A combination of visual monitoring with real-time on-site water column fluorometry. Tier 2 fluorometry analyses are carried out at a single depth. Water sample collection (grab sampling) is also included in Tier 2 monitoring.
- **Tier 3:** An expanded version of Tier 2, including collection of fluorometric data and samples from multiple depths. There is an option to collect other water quality information such as temperature, dissolved oxygen, pH, salinity, and conductivity during Tier 3 monitoring.

The Non-Mechanical Group Supervisor manages dispersed oil monitoring, and the monitoring vessel transits the area immediately following dispersant application to assess the effectiveness. Results of the dispersant effectiveness monitoring are immediately transmitted through the Task Force Leader, to the Group Supervisor, and back to the CISPRI Command Post to ensure that the Unified Command and Environmental Unit are kept apprised of the results of the dispersant application.

Monitoring of environmental effects and dispersant effectiveness is initially done by visual means. Appearance of a milkfish like, brown-orange or blackish (depending on the type of oil spilled) cloud beneath the slick indicates dispersion of surface oil. This subsurface cloud is sometimes visible upwind of the area of the slick.

Fluorometric sampling and grab sampling, as outlined in the SMART protocol, are employed for Tier 2 and Tier 3 monitoring. The number of samples collected depends on the dispersant spraying operations. (A fluorometer is a device that provides on-site information about the concentration of oil in the water column by measuring the fluorescent properties of the oil's aromatic components. Tests of a mixture of Alaska North Slope crude oil and the dispersant Corexit 9500A dissolved in sea water have shown an increase in fluorometer signal coincident with increasing water column concentrations of oil.)

Grab sampling involves the collection of water samples at prescribed depths. Samples collected by these means are catalogued for laboratory analysis.

## EQUIPMENT AND PERSONNEL

### Helicopter

| EQUIPMENT | BASE LOCATION | FUNCTION | EQUIPMENT COMPLIMENT | SKILLED RESPONDER | TASK FORCE LEADER | FIELD SITE SAFETY |
|---|---|---|---|---|---|---|
| Fluorometer [A] | CISPRI | Monitor Dispersed Oil | 1 | 2 | 1 | N/A |
| CV Vessel | CISPRI | Transport Fluorometer/Team | 1 | | | 1 |
| Sample Jars | CISPRI | Collect Water Samples | 1 | | | N/A |
| Spotter A/C | Nikiski | Observe & Monitor | - | | | N/A |

A. See Tactic CI-LP-3 for contractor information

Tactic CI-LP-3 includes contact information on the dispersant application contractors, Tactic CI-LP-4 details dispersant equipment specifications

## OPERATIONAL CONSIDERATIONS

- Daily weather evaluations, including sea state and visibility conditions as they affect application systems and monitoring are obtained from the Situation Unit.
- Vessel operators should have experience in the appropriate operating environment. Vessels, including work boats, must have a minimum of two crew members onboard.
- Communication and clear understanding of responsibilities are crucial to execution and safety during the dispersant application process. A communications schedule between vessels in transit and the CISPRI Radio Dispatcher should be established and followed. (See Tactic CI-LP-2.)
- The vessel used for dispersant monitoring should have at least 10 feet by 10 feet of free deck space for two monitoring systems, a maximum freeboard of 4 feet, and room in the cabin for a laptop computer station.
- Response personnel should wear PPE as required by the incident-specific Site Safety Plan.
- Wind conditions must be monitored.
- The spotter aircraft identified in Tactic CI-NM-1 will provide aerial observation for dispersed oil monitoring.

*This section left intentionally blank*

**Figure 1: IGNITION OF OIL IN FIRE BOOM**

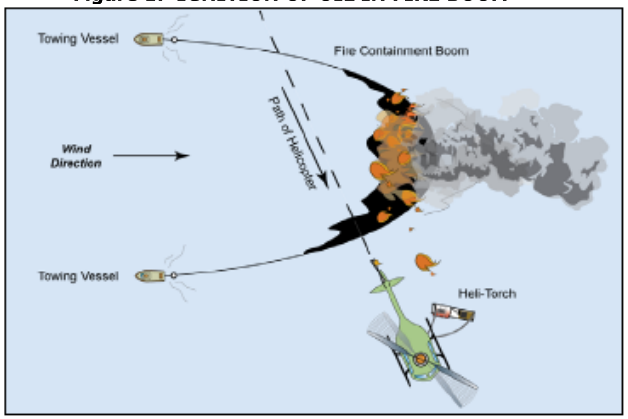
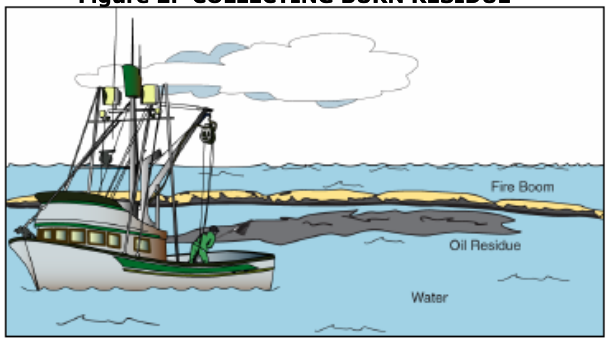



**Figure 2: COLLECTING BURN RESIDUE**




## TACTIC PURPOSE AND DESCRIPTION

In most cases, efficient and controlled burning requires the use of fire-resistant boom to concentrate the oil before ignition. Two vessels operating a safe distance FROM the mechanical recovery operation can use fire boom to concentrate patches of oil until the oil is thick enough for ignition. Burning with containment offers the advantage of greater control over the burn. The area of the burning oil within the boom can also easily be controlled by adjusting the speed of the towing vessels. If the vessels slow, the burning oil moves toward the mouth of the "U"-shaped fire boom. If the vessels speed up, the leading edge migrates toward the boom apex. The burn can be extinguished at any time by releasing the boom and causing the oil to spread below the minimum thickness to sustain combustion or by speeding up until the oil entrains under the boom.

Because oil burns at the fairly constant rate of 2 to 3 mm of slick thickness per minute, shorter burn times are achieved with greater surface area.

However, the amount of burn residue for a large burn area is comparatively greater than for a small burn area of the same volume. Short burn times may be desired when the opportunity to burn is limited due to changing environmental conditions, logistical requirements, or other factors. An effective strategy is to maximize the surface area early in the burn, thus reducing the burn time, followed by consolidation in the later stages to increase removal efficiency and reduce burn residue.

After each burn, unburned hydrocarbon residue remains in the containment boom and must be removed as soon as possible. The burn residue is typically a thick, tarry mat that is viscous enough to be picked up manually with screened rakes, pitchforks, bailers, etc. The higher density of this material makes prompt collection of residues necessary to prevent sinking. Small-mesh fishing nets can also be used to encircle and recover the residue, which can also be picked up with mechanical skimming and suction devices. The residue can then be placed in plastic-lined containers, such as totes or drums, for eventual disposal. All burn residues will be handled under guidelines outlined in the waste management plan (see Tactic CI-WM-1).

## EQUIPMENT AND PERSONNEL

**(Minimum 12 hr Shift - 1 Strike Team)**

| EQUIPMENT | BASE | FUNCTION | EQUIPMENT COMPLIMENT | LABORER | SKILLED RESPONDER | VESSEL/HELO OPERATOR |
|---|---|---|---|---|---|---|
| Helicopter | Various | Transport Heli-torch | 1 | 2 | 1 | N/A |
| Heli-Torch | CISPRI | Drop gelled fuel to ignite oil | 1 | | | 1 |
| Storage Containers | Various | Recovered residue storage | 2 | | | N/A |
| Contract Vessels [A] | Various | Tow boom/Command/collect | 2 | | | N/A |
| Fire Boom | CISPRI | Contain oil | 500' | | | |
| Residue collection [B] | CISPRI | Collect residue | varies | | | |
| Contract vessel | Various | Resupply/manage waste | 1 | | | |
| Batch Mixer | CISPRI | To pump and mix gelled fuel both located on same trailer | 1 | | | |
| Pumps | CISPRI | | | | | |

A. See Tactic CI-LP-3 for contractor information.

B. Residue Collection includes nets, rakes, screens, etc.

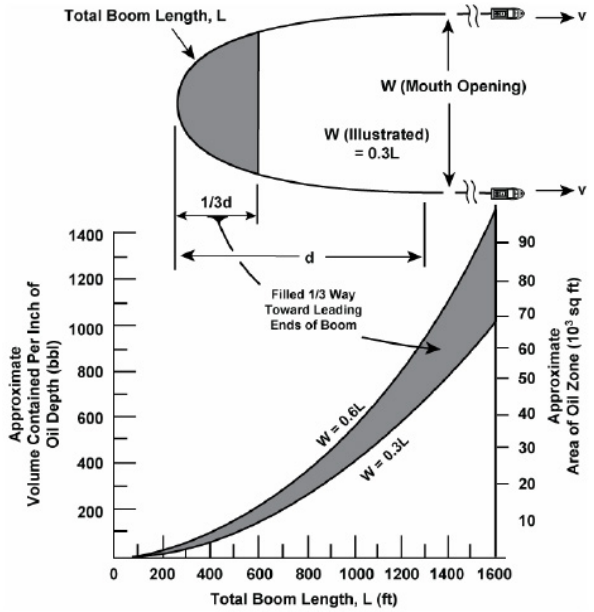
## SUPPORT

- Gel re-supply team at airport.
- Batch mixer to mix gelled fuel.
- Pumps to move gelled fuel to heli-torch.

## OPERATIONAL CONSIDERATIONS

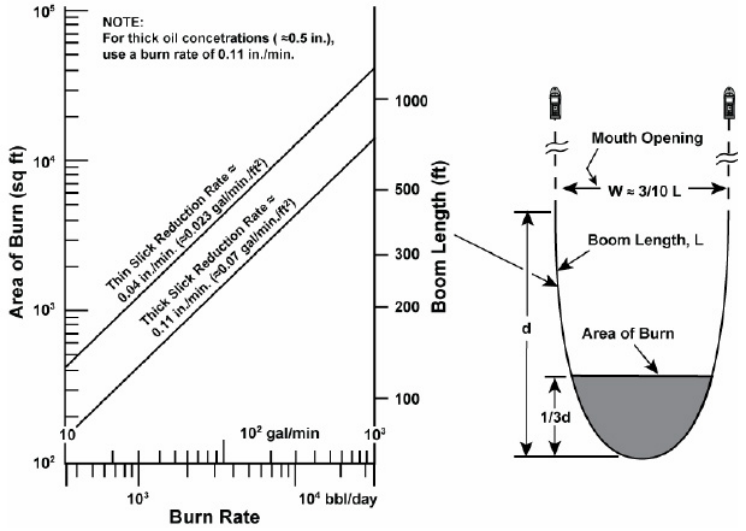
- Safety is the primary concern of this tactic, and all personnel involved must be fully trained in this tactic.
- An in-situ burn subject matter expert must serve as the Task Force Leader (CISPRI Spill Technician or contractor; see Tactic CI-LP-3).
- The Incident Commander in consultation with the Contracting Party decides whether burning is appropriate. Requests for approval for in-situ burning are initiated by the Environmental Unit and are routed to the Unified Command. The permit application for burning requires a burning and residue collection plan. Burning guidelines and permit requirements can be found on ADEC's References and Tools website: https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/
- A surveillance program must be activated to ensure the operation and smoke plume do not impact human populations or the mechanical recovery operations. The USCG-recognized Special Monitoring of Applied Response Technology (SMART) procedures are followed by CISPRI. The SMART protocol states that visual surveillance is first used on the smoke plume and this can be by eye and a camcorder. If it appears that the plume will impact a population center, then monitoring equipment is required. CISPRI does not have monitoring equipment and will not conduct burning if smoke appears likely to impact any population centers in the Cook Inlet area. The effectiveness of burning must also be tracked. Results from surveillance of the plume and effectiveness are reported to the Situation Unit based on the reporting schedule established by the Incident Management Team or permit conditions. Issues of concern, such as smoke threatening a village, town or city, will be reported immediately. The report typically includes an estimate of amount of oil burned, the location of burn, duration, wind direction, plume characterizations, amount of residue, and condition of boom. EPA has air monitoring equipment and contractor (E&E) that can be requested by the FOSC.
- The oil volume and burn rate for a given boom length can be calculated using Figures 3 and 4. Holding capacities and burn rates vary with the boom configuration and oil thickness. For example, the capacity of the typical length of containment boom used in burning (500 ft) is 100 bbl (4,200 gal) per inch of oil. A typical fire boom can hold up to 7 inches of oil and therefore, 700 barrels of oil and could, under ideal conditions, take around one hour to burn.
- In-Situ Burn Task Force(s) can be supported by additional "U" configured boom to help contain and/or corral stray oil to be burned.
- Burn residue is typically between 2 and 5 percent by weight of the original oil. This residue will be collected manually and placed in totes or other suitable containers located on the non-towing vessel of the strike team.

**Figure 3 Boom Volumes**



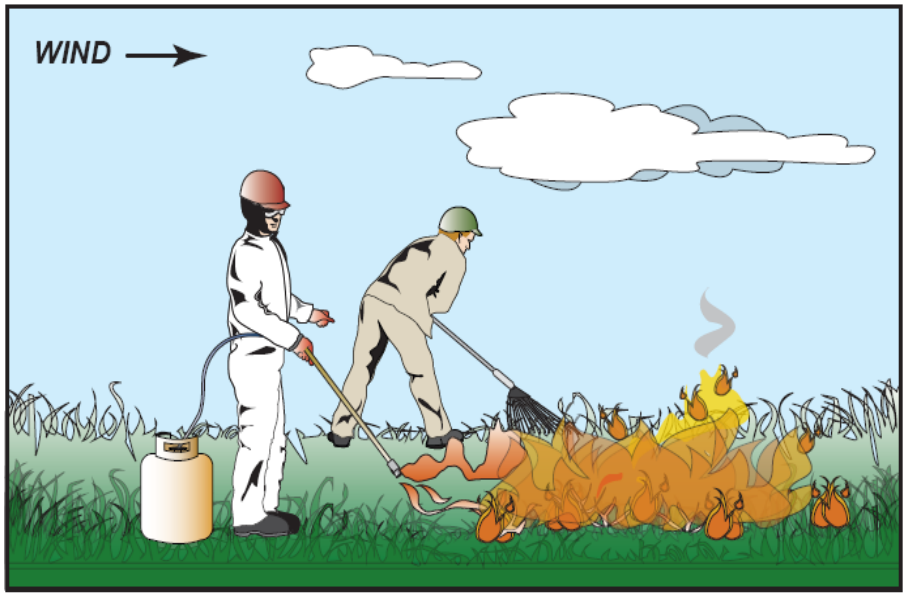

Towing speed of less than 1 knot

**Figure 4 Boom Rate**




*this section left intentionally blank*

*This page left intentionally blank*




## TACTIC PURPOSE AND DESCRIPTION

Response worker rakes oiled vegetation with a metal rake so that grass stems are oriented more or less vertically. A second response worker uses a weed burner, which consists of a flame nozzle, hosing, and a propane tank.

The weed burner is held just above the oiled vegetation until the vegetation is burned down to stubble. Care is taken not to burn vegetation down to soil, which would damage the root system.

Work should be started on the upwind edge of the oiled area and proceeds downwind so that response workers are not exposed.

## EQUIPMENT AND PERSONNEL
**(Minimum 12 hr Shift - 1 Team)**

| EQUIPMENT | BASE | FUNCTION | EQUIPMENT COMPLIMENT | LABORERS | SKILLED RESPONDER |
|---|---|---|---|---|---|
| Propane Weed-Burner | CISPRI | Surface Oil Removal | 1 | 1 | N/A |
| Rake (Metal) | CISPRI | Rake Vegetation Upright | ≥ 1 | 2 | |
| Fire Extinguisher | CISPRI | Fire Control | ≥ 2 | 1 | |

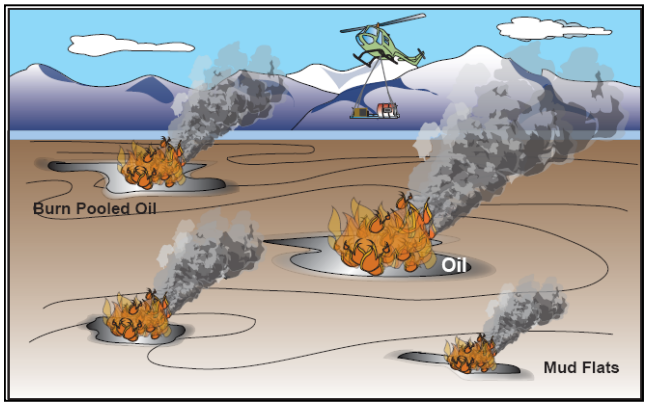
## SUPPORT

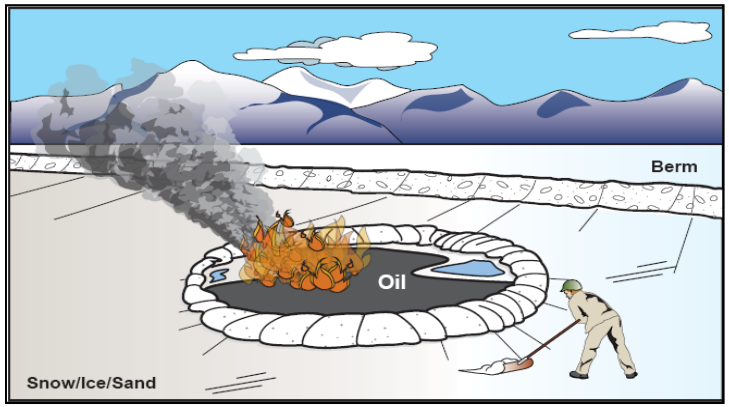
- Pickup trucks and four-wheelers transport personnel and equipment.
- Sorbent may be used in conjunction with the weed burners.

## OPERATIONAL CONSIDERATIONS

- Proper safety procedures must be followed, and the necessary personal protective equipment (PPE) must be used.
- Do not walk on oiled vegetation if it can be avoided.
- Burning of oiled vegetation is conducted as a non-emergency project and has the objective of reducing re-oiling of adjacent areas. Burning must proceed downwind from its starting point. Care is taken to avoid contaminating unaffected areas. Burning is most effective immediately after the spill, before evaporation of volatile components.
- Take care to avoid secondary fires. If there is access to water, the oiled area and the surrounding vegetation can be saturated with water. Wet vegetation will still burn under the direct flame of a weed burner.
- Fire suppression must be on hand, with staff in direct control of it.
- Burned wetlands can regenerate itself, as long as the root structure is left intact. Vegetation can survive if the oil and vegetation are burned, leaving a healthy root structure.
- Minimize disturbance to the area especially with vehicular traffic.
- An ADEC open-burn permit is required.
- One weed burner can cover approximately 50 sq. ft in an hour, depending on terrain and degree of oiling.
- EPA has air monitoring equipment and contractor (E&E) that can be requested by the FOSC. For more information, see Tactic CI-NM-3.

*This page left intentionally blank*




## TACTIC PURPOSE AND DESCRIPTION

Oil can be burned on any solid surface provided the oil is thick enough to support combustion. This includes mudflats ice, snow, or gravel.

In-situ burning on land should be considered only if there is a layer of ice or water covering underlying vegetation to protect it from heat damage. If this is the case, the oil should be pooled into one area and a buffer zone created around this area. Pooling of oil can be accomplished by digging a pit for oil to flow into.

Oil on land can be ignited with torches, igniters, propane weed burners, or a Heli-torch. A Heli-torch is especially good for igniting oil stranded on mudflats.

If the spill is along a pipeline right-of-way or wetlands area, some sort of dike should be built around the oil using soil or sandbags.

In the case of oil initially spilled on the surface and mixed with snow, burning of oiled snow piles can be successfully achieved even in midwinter conditions. Depending on the initial oil spill volume per unit area of ice, the technique of plowing oiled snow into concentrated piles may be the only way of achieving successful ignition and burning. In many cases, waiting for the snow to melt could result in thin oil films incapable of supporting combustion and spread over a large ice area.

## EQUIPMENT AND PERSONNEL
**(Minimum 12 hr Shift - 1 Team)**

| EQUIPMENT | BASE | FUNCTION | EQUIPMENT COMPLIMENT | LABORERS | SKILLED RESPONDER |
|---|---|---|---|---|---|
| Helicopter | Nikiski | Transport Heli-torch | 1 | N/A | 1 |
| Heli-Torch | CISPRI | gelled fuel to ignition | 1 | N/A | |
| Propane Weed-burner | CISPRI | Surface oil removal | 2 | 2 | |
| Residue collection [A] | CISPRI | Collect residue | varies | N/A | |
| Fire Extinguisher | CISPRI | Fire Suppression | ≥ 2 | 2 | |

A. Residue Collection includes nets, rakes, screens, etc.

## SUPPORT

- Pickup trucks and four-wheelers transport personnel and equipment.
- Sorbent may be used in conjunction with the weed burners.

## OPERATIONAL CONSIDERATIONS

- Proper safety procedures must be followed, and the necessary personal protective equipment (PPE) must be used.
- Do not walk on oiled vegetation or mudflats as that will drive the oil into the substrate. Mudflats are extremely dangerous use extreme caution. CISPRI does not allow workers to venture onto mudflats.
- The following oil thicknesses are required to support combustion:
  - 2 to 3 mm (0.08 to 0.12 inch) for fresh crude oil
  - 3 to 5 mm (0.12 to 0.2 inch) for diesel and weathered crude
- Minimize disturbance to the area especially with vehicular traffic.
- An ADEC open-burn permit is required.
- Vegetation damaged area may need to be reseeded.
- EPA has air monitoring equipment and contractor (E&E) that can be requested by the FOSC. For more information, see Tactic CI-NM-3.
- For additional information on working on mud flats, see Tactic CI-SL-8.

# SENSITIVE AREA PROTECTION

## PURPOSE OF THE SENSITIVE AREA PROTECTION TACTICS

Proper identification, prioritization, and protection of sensitive areas from spilled oil is a priority for all responders and response organizations. This section of the manual describes some of the tactics and reference materials used in identifying environmental and cultural sensitive areas as well as a listing of the Geographic Response Strategies sites pre-identified in the Cook Inlet area.

The **Sensitive Area Protection Tactics** are:

- **CI-SA-1, SENSITIVE AREA PROTECTION RESOURCES:** This tactic details the reference material available at CISPRI for use by Member Company Incident Management Teams.
- **CI-SA-2, GEOGRAPHIC RESPONSE STRATEGIES:** This tactic outlines information available on Geographic Response Strategies developed for the Cook Inlet area.
- **CI-SA-3, CULTURAL RESOURCES:** This tactic outlines steps to be taken during a spill to protect culturally sensitive areas.

*This page left intentionally blank*

## SENSITIVE AREA PROTECTION RESOURCES

Member Company Incident Management Teams (IMTs) will work closely with trustee agencies to formulate and carry-out spill response strategies for environmentally or culturally sensitive areas. It is anticipated that the identification of sensitive areas will proceed through stages as protection priorities are developed during a spill response.

Initially the Environmental Unit will utilize the information contained in the "Environmental Sensitivity Index" maps to identify environmentally and culturally sensitive areas. The appropriate state and federal agencies will be contacted to supply both information and knowledgeable personnel.

Extensive environmental sensitivity maps and information are available from the agencies that can be used by the IMT to identify important areas and species so that they can be protected. The following resources are incorporated into the CISPRI Technical Manual by reference.

- **Environmental Sensitivity (ESI) Maps** is a series of four environmental sensitivity maps broken down by state covering different regions throughout each of the four seasons. These maps are considered the standard for identification in oil spill response planning - https://response.restoration.noaa.gov/esi_download#Alaska
- **Environmental Response Management Application (ERMA)** the Arctic ERMA online viewer is an online mapping tool that integrates both static and real-time data - https://erma.noaa.gov/arctic#/layers=3+12864+676+8480&x=-161.91096&y=64.76126&z=4.0&clean=1&panel=legend
- **Alaska Habitat Management Guides** are published by the ADF&G. These guides summarize data on important fish, wildlife, and human use areas throughout the state. Colored map atlas shows seasonal distribution of fish and wildlife is included - http://www.adfg.alaska.gov/index.cfm?adfg=maps.habitatmanagement
- **Catalog of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes** is published by the ADF&G, Division of Habitat. It provides maps showing all anadromous streams in Alaska - https://www.adfg.alaska.gov/sf/SARR/AWC/
- **Alaska State Parks Units** is published by the State of Alaska, Department of Natural Resources. It provides maps and information on all Alaska State Parks on a statewide basis - http://dnr.alaska.gov/parks/parkunits.htm
- **Alaska Sensitive Areas Compendium** is composed of the sentive areas sections developed for the 10 superseded Subarea Contingency Plans. Available on ADECs website - https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/
- **Cook Inlet Geographic Response Strategies** is a supplement to the Cook Inlet Sub-Area Plan developed by a cooperative effort through a working group process. This Plan provides strategies to protect identified environmentally sensitive areas. Copies of GRS's are available on the ADEC website - https://dec.alaska.gov/spar/ppr/response-resources/grs/cook-inlet/
- **Kodiak Geographic Response Strategies** is a supplement to the Kodiak Sub-Area Plan developed by a cooperative effort through a working group process. This plan provides strategies to protect identified environmentally sensitive areas. Copies of GRS's are on the ADEC website - https://dec.alaska.gov/spar/ppr/response-resources/grs/kodiak/
- **Most Environmentally Sensitive Areas (MESAs) - Oil Spill Contingency Maps** ADEC identified the most environmentally sensitive areas along the Alaska coastline that could be impacted by a marine spill. MESAs are available on the ADEC website - http://www.adfg.alaska.gov/index.cfm%3Fadfg%3Dmaps.mesamaps

Additional information regarding environmental and cultural resources at risk may be published by the borough offices near Cook Inlet and Kodiak. The Incident Commander/IMT is encouraged to contact the borough planning departments with requests for information. The borough also has land owner listings and could provide local knowledge.

IMT's should consider contacting various environmental organizations, fishing organizations, tribal interest groups, etc. that also may have local knowledge of environmentally and culturally sensitive areas within a particular location.

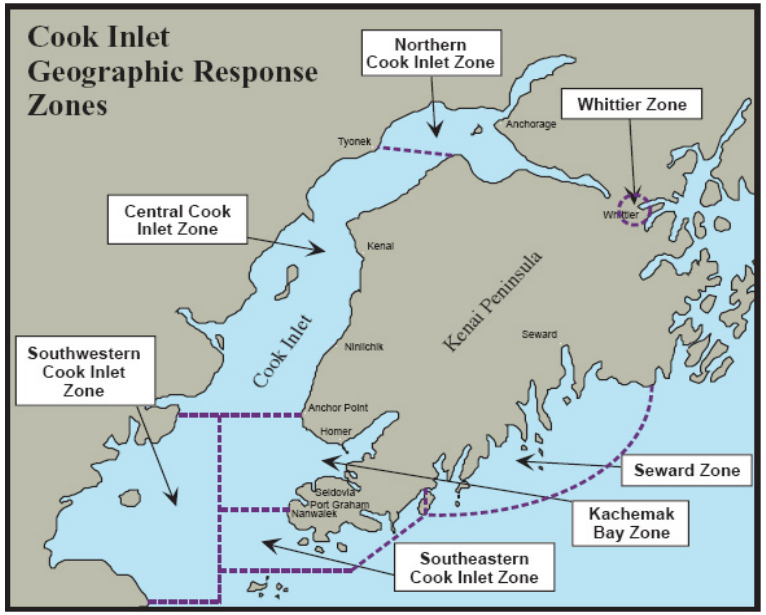
*This page left intentionally blank*

## GEOGRAPHIC RESPONSE STRATEGIES

**Geographic Response Strategies** (GRS) are oil spill response plans tailored to protect a specific sensitive area from oil impacts following a spill. These response plans are map-based strategies that can save time during the critical first few hours of an oil spill response. They show responders where sensitive areas are located and where to place oil spill protection resources. They are also pre-approved so little or no time is lost in the response process.

GRS sites are selected based on: Environmental or cultural sensitivity, risk of being impacted from a water bourne spill, and the feasibility of successfully protecting the site with existing technology.

The Cook Inlet Geographic Zone is subdivided into seven GRS zones (see image below) to include the: Northern Zone, Central Zone, Southwestern Zone, Southeastern Zone, Kachamak Bay Zone, Seward Zone, and Whittier Zone. Several GRS have been developed for each zone within the CISPRI response area, there are no GRS within the Whittier Zone




GRS were developed by area-specific workgroups. Workgroup members included natural resource agency representatives, oil spill response professionals, industry, and tribal organization representatives.

For each of the GRS sites selected in the Cook Inlet area, a response strategy was created which described a GRS for that site. They are NOT prescriptive in nature. They are recommended deployment configurations for initial responders. They can, and should, be adjusted to fit the current situation and environmental conditions.

**GRS are all similar in format and contain the following parts:**

- Map, Photo, and Legend
- Date Created
- ID (e.g. NCI-01-01)
- Location and Description
- Response Strategy
- Implementation
- Response Resources
- Staging Area
- Site Access
- Resources Protected (by month/season)
- Special Considerations

Each document is available for download on the ADEC website:

https://dec.alaska.gov/spar/ppr/response-resources/grs/cook-inlet/

## GEOGRAPHIC RESPONSE STRATEGY EXAMPLE – PAGE 1

Legend & Map Photo



▲ Peterson Bay, KB-04-02 as viewed from the North.



◀ Peterson Bay, KB-04-03 as viewed from the Northwest.

FO-S — Free-oil Containment and Recovery, Shallow Water

EX — Exclusion Booming

Shore-seal Boom

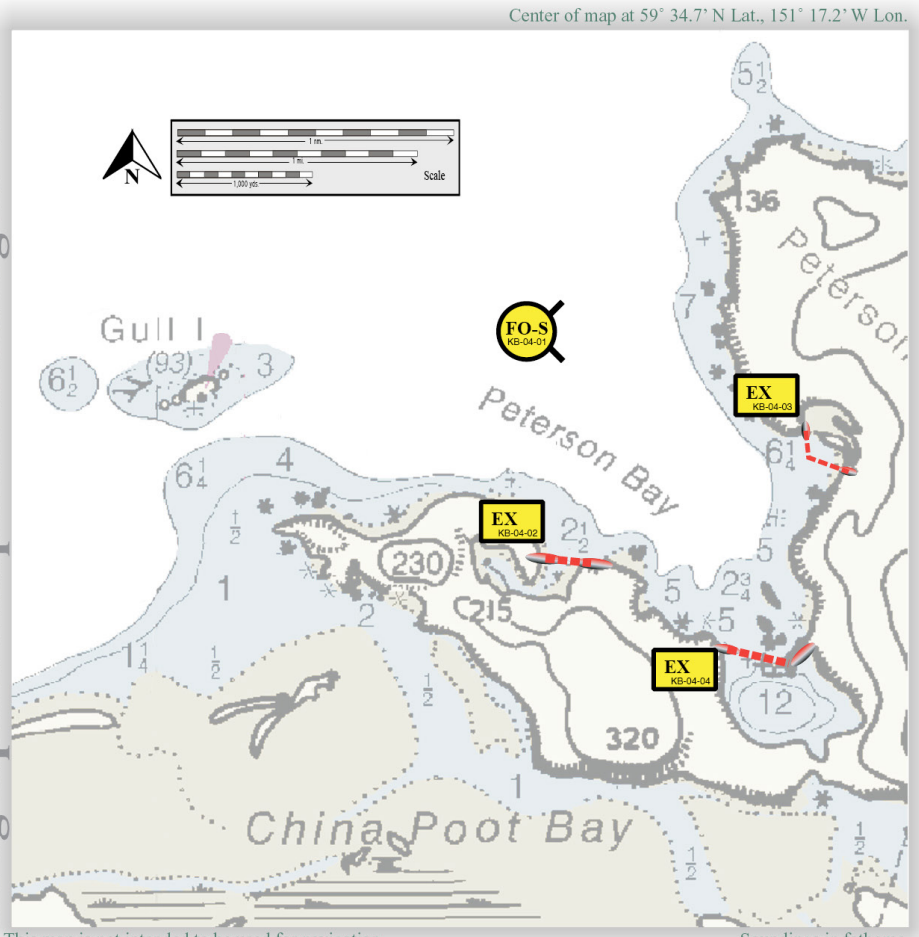
Protected-water Boom



◀ Peterson Bay, KB-04-04 as viewed from the North.

# Peterson Bay, KB-04

Geographic Response Strategies for




December 2001

Tim L. Robertson



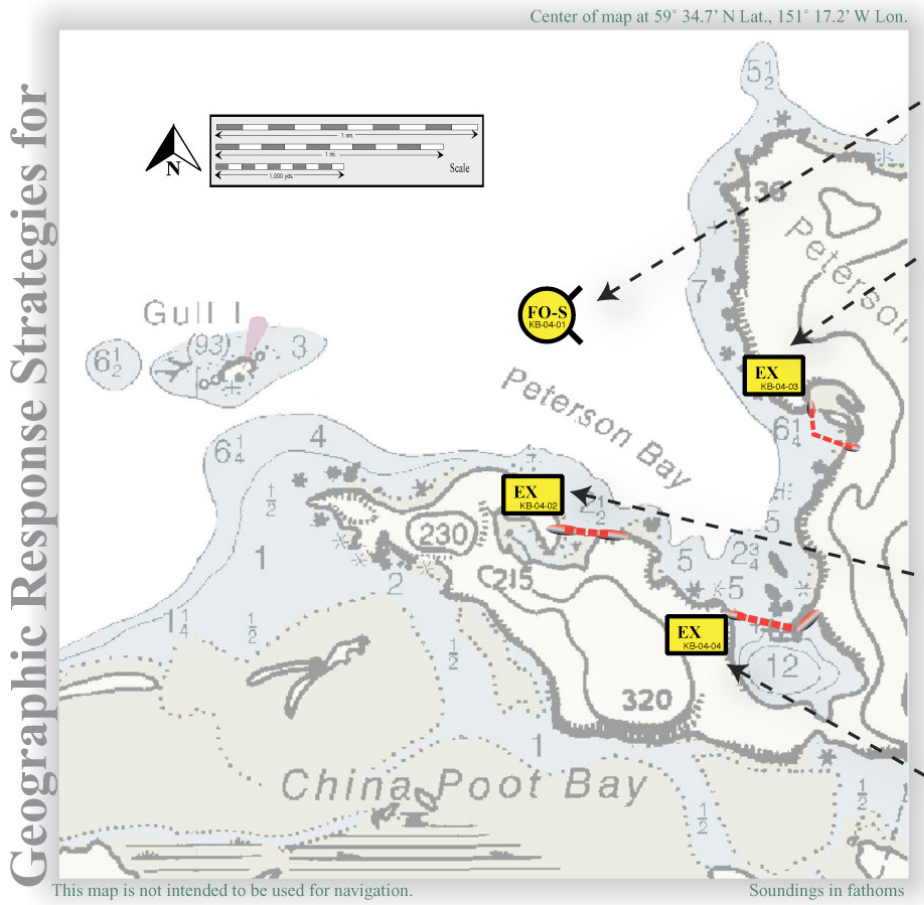
**To report an oil spill and activate CISPRI, call 907-776-5129**

## GEOGRAPHIC RESPONSE STRATEGY EXAMPLE – PAGE 2



| | Location and Description | Response Strategy | Implementation | Response Resources | Staging Area | Site Access | Resources Protected (months) | Special Considerations |
|---|---|---|---|---|---|---|---|---|
| KB-04-01 FO-S | **Peterson Bay**<br>Nearshore waters in the general area of:<br>Lat. 59º 34.7 N<br>Lon. 151º 17.2 W | **Nearshore Free-oil Recovery**<br>Maximize free-oil recovery in the offshore & nearshore environment outside the tidal flats. | Deploy nearshore free-oil recovery strike teams upwind and up current of the river mouth. Use aerial surveillance to locate incoming slicks. | Multiple nearshore free-oil recovery strike teams as required to maximize interception of oil before it impacts sensitive areas. | Homer Harbor, vessel platform or dock in Halibut Cove | Via marine waters. See NOAA chart 16645-1. | Same as KB-04-02 | FOSC Historic Properties Specialist should MONITOR on-site operations. |
| KB-04-02 EX | **Peterson Bay SW Cove**<br>Lat. 59º 34.6 N<br>Lon. 151º 17.7 W<br><br>Located on the South side of Kachemak Bay between Halibut Cove and China Poot Bay, provides good protection from E-W winds. A foul area exists around the small islands near the head of the bay. A submerged rock covered 8 feet is in the center of the channel abeam of the largest island. Depths at the head of the bay are 6 to 14 fathoms. | **Exclusion**<br>Exclude oil from entering cove on southwest side of bay. | Use class 3 and class 4 vessels with deck space to transport equipment to site, and class 6 setnet or seine skiffs to deploy boom and anchors.<br><br>Place 800 feet of protected-water boom, with shore seal on each end, across cove to prevent oil from entering the cove.<br><br>Place shore seal at or near high tide line. | **Deployment**<br>**Equipment**<br>800 ft. protected-water boom<br>100 ft. shore seal boom<br>4 ea. anchor stakes<br>7 ea. anchor systems (40 lbs.)<br><br>**Vessels**<br>1 ea. class 3<br>1 ea. class 4<br>2 ea. class 6<br><br>**Personnel /Shift**<br>9 ea. vessel crews<br><br>**Tending**<br>**Vessels**<br>1 ea. class 4<br>1 ea. class 6<br><br>**Personnel / Shift**<br>3 ea. vessel crew | Homer Harbor, vessel platform or dock in Halibut Cove | Via marine waters. See NOAA chart 16645-1. | Seabird feeding (year-round)<br>Waterfowl concentration area (year-round)<br>Shorebird concentration area (April-May)<br>Marsh<br>Sheltered rocky shoreline<br>High density kelp beds<br>Sea Otters (year-round)<br>Intertidal Herring spawning<br>Aquaculture<br>High use commercial fishing | FOSC Historic Properties Specialist should MONITOR on-site operations.<br><br>Tested: No |
| KB-04-03 EX | **Peterson Bay Northeast Cove**<br>Lat. 59º 34.9 N<br>Lon. 151º 16.0 W | **Exclusion**<br>Exclude oil from entering cove on northeast side of bay. | Place 1300 feet of protected-water boom, with shore seal on each end, across cove to prevent oil from entering the cove. | **Deployment**<br>**Equipment**<br>1300 ft. protected-water boom<br>100 ft. shore seal boom<br>20 ea. large anchor systems<br><br>**Vessels, Personnel, Tending**<br>Same as KB-04-02 | Homer Harbor, vessel platform or dock in Halibut Cove | Via marine waters. See NOAA chart 16645-1. | Same as KB-04-02 | FOSC Historic Properties Specialist should MONITOR on-site operations.<br><br>Tested: No |
| KB-04-04 EX | **Head of Peterson Bay**<br>Lat. 59º 34.3 N<br>Lon. 151º 16.4 W | **Exclusion**<br>Exclude oil from entering head of bay. | Place 1000 ft. protected-water boom from west side of bay to island, and 300 ft. of shore seal boom from island, across sand bar, to east side of bay. Consider extra shore seal boom on 20+ ft. tide. | **Deployment Equipment**<br>**Array 1**<br>1000 ft. protected-water boom<br>300 ft. shore seal boom<br>8 ea. anchor systems (40 lbs.)<br>**Array 2**<br>300 ft. shore seal boom<br>2 ea. anchor systems (40 lbs.)<br><br>**Vessels, Personnel, Tending**<br>Same as KB-04-02 | Homer Harbor, vessel platform or dock in Halibut Cove | Via marine waters. See NOAA chart 16645-1. | Same as KB-04-02 | Oyster farms may conflict with this tactic.<br><br>FOSC Historic Properties Specialist should MONITOR on-site operations.<br><br>Tested: No |

## HOW TO USE GRS TACTICS MAP AND TABLE




| | Location and Description | Response Strategy | |
|---|---|---|---|
| KB-04-01 FO-S | **Peterson Bay**<br>Nearshore waters in the general area of:<br>Lat. 59° 34.7 N<br>Lon. 151° 17.2 W | **Nearshore Free-oil Recovery**<br>Maximize free-oil recovery in the offshore & nearshore environment outside the tidal flats. | D oi up th ac lo |
| KB-04-02 EX | **Peterson Bay SW Cove**<br>Lat. 59° 34.6 N<br>Lon. 151° 17.7 W<br><br>Located on the South side of Kachemak Bay between Halibut Cove and China Poot Bay, provides good protection from E-W winds. A foul area exists around the small islands near the head of the bay. A submerged rock covered 8 feet is in the center of the channel abeam of the largest island. Depths at the head of the bay are 6 to 14 fathoms. | **Exclusion**<br>Exclude oil from entering cove on southwest side of bay. | U ve to si se bo<br><br>Pl pr w er pr th<br><br>Pl ne |
| KB-04-03 EX | **Peterson Bay Northeast Cove**<br>Lat. 59° 34.9 N<br>Lon. 151° 16.0 W | **Exclusion**<br>Exclude oil from entering cove on northeast side of bay. | Pl pr w er pr th |
| KB-04-04 EX | **Head of Peterson Bay**<br>Lat. 59° 34.3 N<br>Lon. 151° 16.4 W | **Exclusion**<br>Exclude oil from entering head of bay. | Pl w si 30 bo sa ba sh ft. |



**To report an oil spill and activate CISPRI, call 907-776-5129**

## CONTENTS OF GRS TACTICS TABLE

| | Location and Description | Response Strategy | Implementation | Response Resources | Staging Area | Site Access | Resources Protected (months) | Special Considerations |
|---|---|---|---|---|---|---|---|---|
| KB-04-01 FO-S | **Peterson Bay**<br>Nearshore waters in the general area of:<br>Lat. 59° 34.7 N<br>Lon. 151° 17.2 W | **Nearshore Free-oil Recovery**<br>Maximize free-oil recovery in the offshore & nearshore environment outside the tidal flats. | Deploy nearshore free-oil recovery strike teams upwind and up current of the river mouth. Use aerial surveillance to locate incoming slicks. | Multiple nearshore free-oil recovery strike teams as required to maximize interception of oil before it impacts sensitive areas. | Homer Harbor, vessel platform or dock in Halibut Cove | Via marine waters. See NOAA chart 16645-1. | Same as KB-04-02 | FOSC Historic Properties Specialist should MONITOR on-site operations. |
| KB-04-02 EX | **Peterson Bay SW Cove**<br>Lat. 59° 34.6 N<br>Lon. 151° 17.7 W<br>Located on the South side of Kachemak Bay between Halibut Cove and China Poot Bay, provides good protection from E-W winds. A foul area exists around the small islands near the head of the bay. A submerged rock covered 8 feet is in the center of the channel abeam of the largest island. Depths at the head of the bay are 6 to 14 fathoms. | **Exclusion**<br>Exclude oil from entering cove on southwest side of bay. | Use class 3 and class 4 vessels with deck space to transport equipment to site, and class 6 setnet or seine skiffs to deploy boom and anchors.<br>Place 800 feet of protected-water boom, with shore seal on each end, across cove to prevent oil from entering the cove.<br>Place shore seal at or near high tide line. | **Deployment**<br>**Equipment**<br>800 ft. protected-water boom<br>100 ft. shore seal boom<br>4 ea. anchor stakes<br>7 ea. anchor systems (40 lbs.)<br>**Vessels**<br>1 ea. class 3<br>1 ea. class 4<br>2 ea. class 6<br>**Personnel /Shift**<br>9 ea. vessel crews<br>**Tending**<br>**Vessels**<br>1 ea. class 4<br>1 ea. class 6<br>**Personnel / Shift**<br>3 ea. vessel crew | Homer Harbor, vessel platform or dock in Halibut Cove | Via marine waters. See NOAA chart 16645-1. | Seabird feeding (year-round)<br>Waterfowl concentration area (year-round)<br>Shorebird concentration area (April-May)<br>Marsh<br>Sheltered rocky shoreline<br>High density kelp beds<br>Sea Otters (year-round)<br>Intertidal Herring spawning<br>Aquaculture<br>High use commercial fishing | FOSC Historic Properties Specialist should MONITOR on-site operations.<br>Tested: No |

- Tactic # - corresponds to map icon.
- Site location and description - includes lat/long coordinates and site description.
- Response strategy and objectives.
- How to implement tactic using resource set listed in GRS table.
- Amount and type of resources (equipment, vessels personnel) required to implement tactic as written.
- Nearest staging area.
- How to access site in order to implement tactic
- List of resources that GRS tactic was developed to protect.
- Special considerations such as presence of cultural resources, site hazards, etc.

*This page left intentionally blank*

## CULTURAL RESOURCES

### Definition of "Cultural Resources"

Federal and state law requires protection of cultural resources in a spill response. **"Cultural Resources"** is a broad term used to refer to ruins, structures, sites, graves, artifacts, deposits, and/or objects that pertain to history or prehistory. The question is not whether someone thinks a resource has value, but whether the resource meets the criteria of federal or state law.

There are two kinds of impacts of concern during a spill response operation:

- Direct impact from spilled substances
- Indirect impacts from ground-disturbing activities, vandalism, & theft

## RESPONSIBILITIES

Cultural resource protection is primarily an agency responsibility. The duties of the responsible party in an oil spill are to:

- Be aware that cultural resources may exist in the response area
- Recognize that their existence may affect how response is conducted
- Cooperate with state and federal officials charged with cultural resource protection
- Assure that all response personnel do not collect, remove, or disturb cultural resources encountered in a response in any way
- Consider retaining a cultural resources specialist as a consultant to the Planning Section in case of a significant spill

## SITE LOCATIONS

Because of federal law and state policy, the exact locations of cultural resource sites are not shown on GRS or Member Company maps. Known cultural resource sites in the Cook Inlet area have been mapped. Access to this information is restricted. Non-site-specific information on known cultural resources sites can found in the Area Contingency Plans. In a spill response, the UC will consult with appropriate ARRT members regarding cultural resources which may be at risk from a spill or response.

The Cook Inlet area contains a multitude of known and identified archaeological and historic sites. Oil spills may result in direct and/or indirect impacts to those cultural resources. On-Scene Coordinators (OSCs) are responsible for ensuring that response actions take the protection of cultural resources into account and that the statutory requirements for protecting cultural resources are met.

Part Nine and Appendix III of the Alaska Regional Contingency Plan outlines responsibilities for protecting cultural resources and provides an expedited process for compliance with Section 106 of the National Historic preservation Act during the emergency phase of a response.

The Alaska Department of Natural Resources (DNR) manages and controls state owned lands and water, including uplands, tide lands, and submerged lands to the 3-mile territorial limit. DNR is responsible for the preservation of historic sites that may be found within this territorial limit. The Office of History and Archaeology (OHA), serves as Alaska's State Historic Preservation Office (SHPO), must be notified in the event a spill may impact lands under the control of DNR.

Notification should be made to:

**Office of History & Archaeology**
**Atwood Building**
**550 West 7th Ave**
**Suite 1310**
**Anchorage, AK 99501**
**(907) 269-8700**
**http://www.dnr.alaska.gov/parks/oha/**

*This page left intentionally blank*

## PURPOSE OF WILDLIFE TACTICS

The Wildlife Response Tactics for the Cook Inlet Region were developed to protect wildlife from an oil spill and provide treatment for oiled wildlife. All wildlife response activities require prior authorization from wildlife trustee agencies. Implementation of most wildlife response strategies will require permits.

Wildlife protection during an oil spill response is categorized into three basic strategies:

1. **Primary Response** – Keep spilled oil away from wildlife
   - Controlling the release and spread of spilled oil and removal oiled debris, including oiled carcasses, from the environment.
2. **Secondary Response** – Keep wildlife away from spilled oil
   - Hazing/deterring wildlife from oiled areas to clean area, and pre-emptive capture, handling, transport, and release of unoiled wildlife.
3. **Tertiary Response** – Response to impacted wildlife – considered "last resort" strategies
   - Capture, handling, transport, cleaning, rehabilitation, holding, and release of recovered oiled or injured wildlife.

The ***Wildlife Protection Guidelines for Oil Spill Response in Alaska*** (WPG) contain the Best Management Practices (BMPs) to protect wildlife and their habitat during a spill response. This document includes the **Startup and Comprehensive Wildlife Response Plans (WRPs)**, essential for wildlife response planning. Developed by the Alaska Regional Response Team Wildlife Protection Committee, this document takes precedent unless otherwise advised by the wildlife trustee agencies. The WPG is available on the ADEA Plan References and Tools webpage.

- https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/#subject

The Tactics for Wildlife Response are:

- **CI-W-1 WRPs, Wildlife Response Contracts, Permits**
- **CI-W-2 Response Forms, Wildlife Recon & Wildlife Observers**
- **CI-W-3 Avian Response & Rehabilitation**
- **CI-W-4 Sea Otter Response & Rehabilitation**
- **CI-W-5 Pinniped and Cetacean Response & Rehabilitation**
- **CI-W-6 Bear Guard**

## HOW WILDLIFE RESPONSE IS MANAGED

Wildlife Response activities may begin when an incident is reported, and an Initial Response Team (IRT) is formed. An IRT may include the Federal and State On-Scene Coordinators (FOSC and SOSC), local emergency response, and Responsible Party/Potentially Responsible Party (RP/PRP) personnel. The IRT will carry out initial response efforts, which includes notification and equipment mobilization. The RP/PRP, if known, is responsible for making notifications to local, state (ADEC) and Federal (U.S Coast Guard (USCG) and U.S. Environmental Protection Agency (EPA) response agencies.

**Initial emergency wildlife response contacts for wildlife trustee agencies can found in the WPG.*

Coordination of wildlife response activities usually occurs with the Wildlife Branch (WB), which works within the Operations Section. Some additional actions that are related to wildlife or can help inform wildlife response efforts occur withing the Environmental Unit (EU) of the Planning Section.

All wildlife response activities take place under the guidance and approval of the Federal and State Wildlife Trustee Agencies – the fundamental responsibility and authority for protecting wildlife lie with those agencies. Any activity directly involving wildlife or may indirectly impact wildlife requires approval from the Wildlife Trustee Agencies.

- **U.S. Fish and Wildlife Service (USFWS)** – Federal trustee for migratory birds and sea otters, and co-trustee with the Alaska Department of Fish and Game (ADF&G) for terrestrial wildlife on federal lands in Alaska (also the federal trustee for walruses and polar bears, though these species are not found in Cook Inlet).
- **National Oceanic and Atmospheric Administration (NOAA) and National Marine Fisheries Service (NMFS)** – Federal Trustee for pinnipeds (seals, sea lions) and cetaceans (whales, dolphins, and porpoises).
- **Alaska Department of Fish & Game (ADF&G)** - Trustee for terrestrial mammals and birds, and a co-trustee with NMFS and USFWS for other wildlife resources in Alaska.

## WILDLIFE PROTECTION GUIDELINES

The Wildlife Protection Guidelines (WPG) for Oil Spill Response in Alaska, include **Best Management Practices (BMPs)** to protect responders and to reduce impacts to wildlife and their habitats during an oil spill response. The responsibilities and requirements of the Federal and State Wildlife Trustees, the RP/PRP, as well as trained wildlife responders are outlined in the WPG.

***The WPG includes the Best Available Technology (BAT) for wildlife response and should be followed when planning/implementing wildlife response activities. Please refer to the WPG for more detailed information, guidance, and instruction.***

The WPG provides tools and background information to address wildlife concerns when planning for and responding to a discharge, or substantial threat of discharge, of oil and/or a hazardous substance from a vessel or on/offshore facility operating within Alaska and surrounding waters.

## FEDERAL WILDLIFE RESPONSE GUIDANCE

In addition to the protocols set forth in the WPG, the WPG incorporates guidance from the following wildlife response documents. These documents are the Best Available Technology (BAT) for Oiled Wildlife Response in the State of Alaska; available on the ADEC Area Plan References and Tools webpage.

- *Arctic Marine Mammal Disaster Response Guidelines*
- *Best Practices for Migratory Bird Care during Oil Spill Response*
- *Cook Inlet and Kodiak Marine Mammal Disaster Response Guidelines*
- *Emergency Care and Rehabilitation of Oiled Sea Otters*
- *Oil Spill Response Plan for Polar Bears in Alaska*
- *Pinniped and Cetacean Oil Spill Response Guidelines (National Guidelines)*

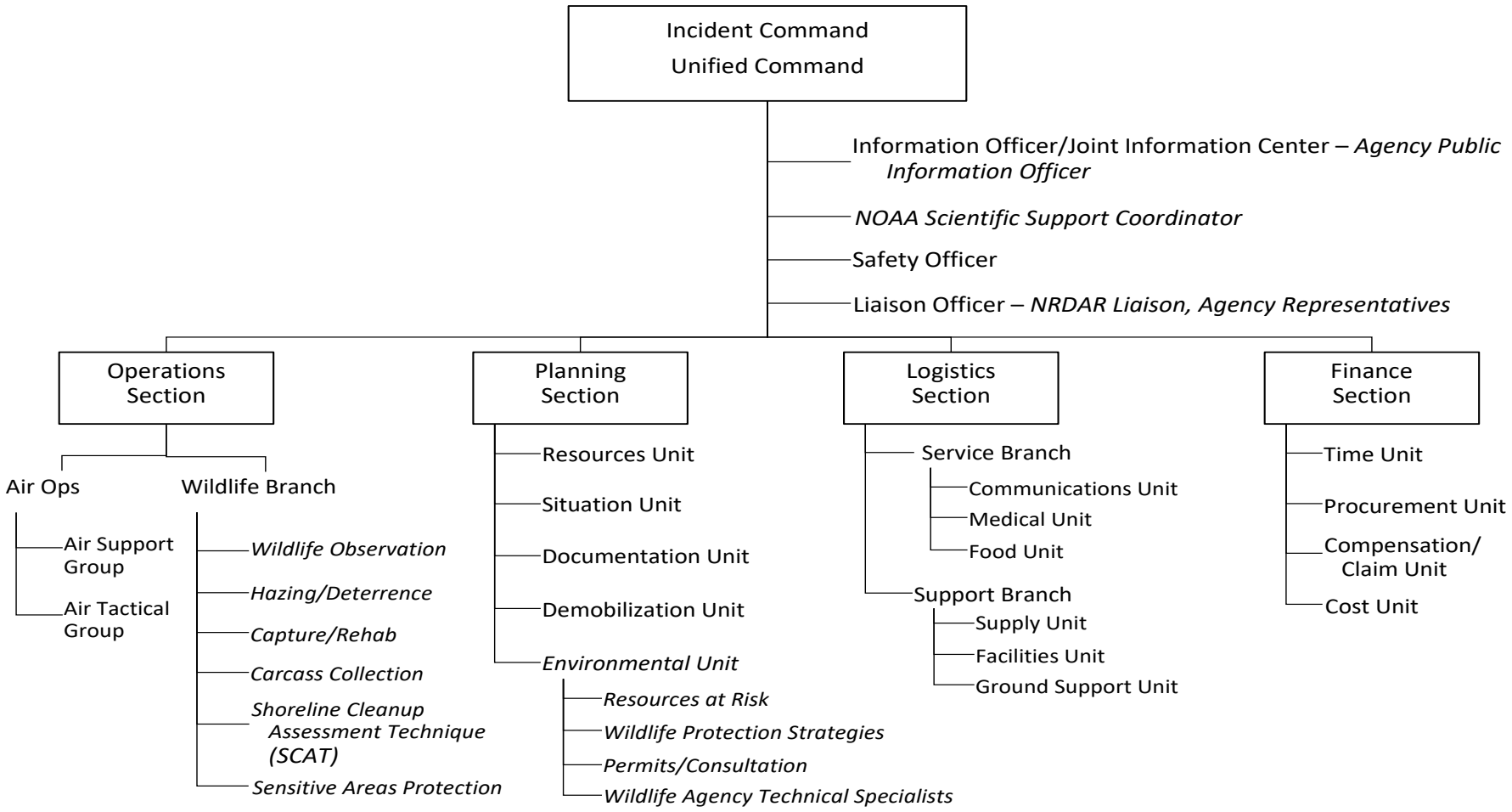
For more detailed information and guidance on oiled wildlife response strategies, including proper documentation, permits and authorizations, techniques, supplies and equipment, human and animal safety, please refer to the WPG and the guidance documents available on the ADEC Area Plan References and Tools webpage.

- https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/#subject

## OPERATIONAL CONSIDERATIONS

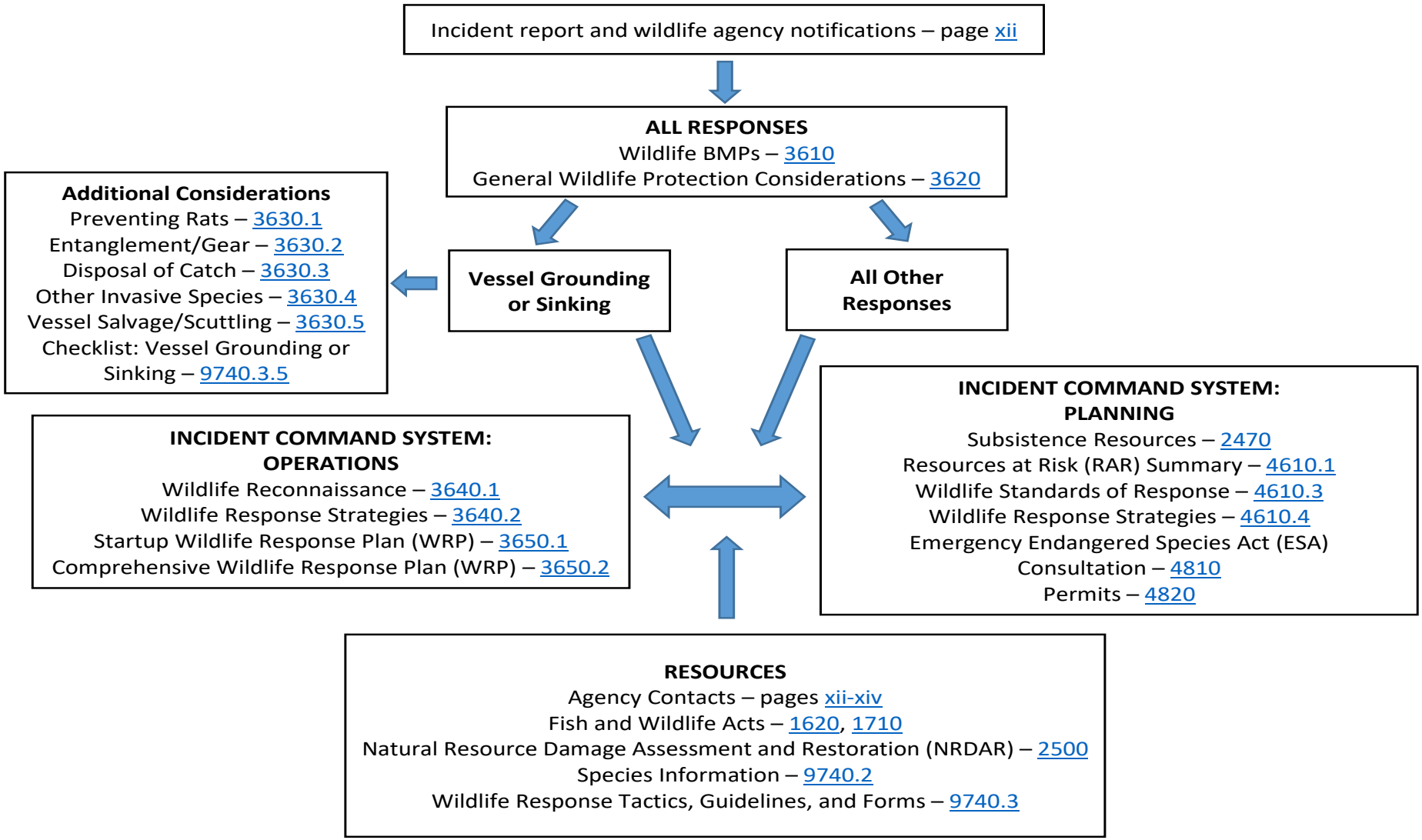
- Prior authorization and permits are required.
- Communication is very important for safe and effective wildlife response – when arriving on location all responders will be briefed on task force communications.
- Safety is of the upmost concern in wildlife response – responders should be trained on wildlife response specific safety concerns and use the appropriate PPE and techniques for the species. Responders should also be trained on animal safety.
  - Species-specific safety concerns and recommendations, for both human and animals, can be found in the WPG and the guidance documents.
- Only trained and approved personnel should be implementing wildlife response strategies.
- Wildlife Task Forces will work under the direction of the Wildlife Branch.
- The size of a spill does not drive the number of Wildlife Task Forces – the number is determined by:
  - Location and severity of the spill.
  - Proximity to wildlife and habitat areas such as, nesting sites, haul-outs, rookeries, etc.
  - Areas of known wildlife concentrations (may change depending on time of the year).
- On-site or aerial surveillance will help the assembly and dispatch Wildlife Task Forces based on observed impacts from the spill.
- CISPRI maintains wildlife response contracts with International Bird Rescue (IBR) and the Alaska SeaLife Center (ASLC).

**Organization Chart of a Typical ICS for an Oil Spill with Wildlife Response. Wildlife-related response activities or roles are in italics.**



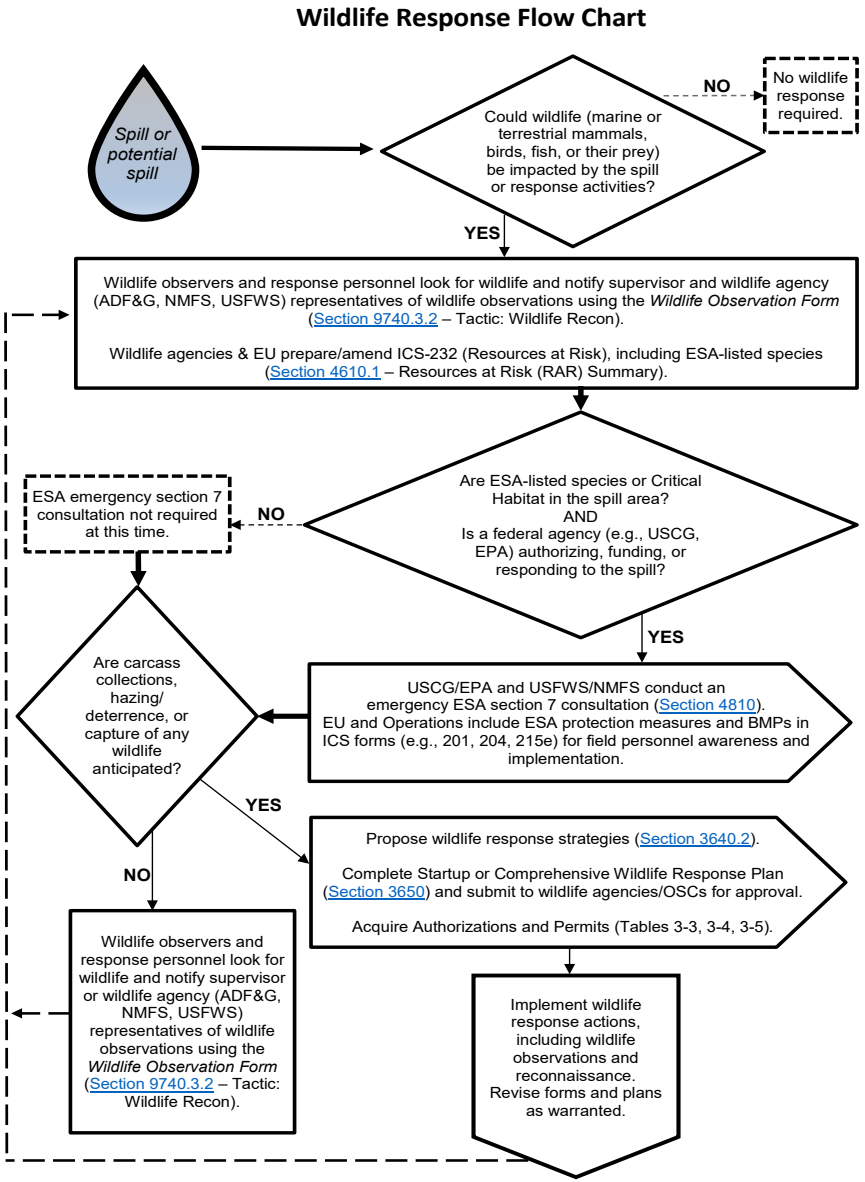

Taken from: Wildlife Protection Guidelines for Oil Spill Response in Alaska

**Wildlife Considerations during Spill Response by Wildlife Protection Guidelines Section.**




Taken from: Wildlife Protection Guidelines for Oil Spill Response in Alaska

## Wildlife Response Flow Chart




Taken from: Wildlife protection Guidelines for Oil Spill Response in Alaska

*This page left intentionally blank*



**To report an oil spill and activate CISPRI, call 907-776-5129**

## WILDLIFE RESPONSE PLANS (WRPs)

During an emergency oil spill response when wildlife is or could become oiled, some wildlife response strategies may need to be implemented before all the details necessary to carry out the strategies are available. The WPG outlines a two-phase process, allowing initial wildlife response strategy implementation as soon as possible, they are:

1. **STARTUP Wildlife Response Plan (WRP)**
   - The Startup WRP is a request to begin the process of authorizing and implementing all or some wildlife response strategies to be conducted for up to 72 hours after the start of spill. Wildlife response activities approved in the Startup WRP will not be authorized beyond 72 hours unless a Comprehensive WRP has been submitted to and approved by the wildlife trustee agencies.
   - **Agency approval of the Startup WRP does not negate the need for permits and other authorizations, which are required before wildlife response activities can begin.**
   - The Startup WRP is an abbreviated version of the Comprehensive WRP.
   - A Startup WRP cannot be used to request pre-emptive capture.

2. **Comprehensive Wildlife Response Plan (WRP)**
   - The Comprehensive WRP includes expanded or additional sections compared to the Startup WRP.
   - The Comprehensive WRP should be completed and approved by the wildlife agencies and the Unified Command before any wildlife response activities begin or before the Startup WRP expires.
   - **Authorizations and permits are still required before wildlife response activities can begin, even with an agency approved Comprehensive WRP.**

This two-phase process allows time to:

- Scale the IMT wildlife sections (Wildlife Branch, Environmental Unit) to the size appropriate for the incident.
- Mobilize wildlife responders.
- Conduct immediate authorized response activities for impacted wildlife.
- Develop details necessary to complete the Comprehensive WRP.

The WPG includes more detail and instruction on both the Startup and Comprehensive WRPs, and the required Startup and Comprehensive WRP forms. Both forms include requests to conduct primary, secondary, and tertiary response strategies, except for pre-emptive capture which is not included in the Startup WRP. Pre-emptive capture may only be requested through the Comprehensive WRP.

The Startup and Comprehensive WRP will typically be filled out by the RP/PRP with wildlife agency input. Fillable full-page versions of the Startup and Comprehensive WRP forms are on the ADEC Area Plan References and Tools webpage.

- https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/#subject

## WILDILFE RESPONSE CONTRACTS

CISPRI maintains the following Wildlife Response contracts for response and rehabilitation of oiled impacted wildlife.

**International Bird Rescue (IBR):** Avian response and rehabilitation services

- Contact:
  - Barbara Callahan – Senior Director, Response Services; Regional Representative, Alaska
  - 1-888-447-1743 or 907-562-1326

**Alaska SeaLife Center (ASLC):** Marine Mammal response and rehabilitation services

- Contact:
  - Chip Arnold – Chief Operating Officer, Oiled Wildlife Response Program Administrator
  - Dr. Carrie Goertz, DVM – Director of Animal Health
  - Stranding/Wildlife Response Hotline – 1-888-774-7325 or 907-224-6395
  - Security 24 hr. # – 907-224-6342

IBR and ASLC are mainly responsible for rehabilitation of oiled wildlife, however, if directed to do so by ICS, both have the training and/or expertise to assist with wildlife related field activities such as, wildlife reconnaissance, carcass collection, hazing/deterrence, pre-emptive capture, and the capture and transport of oiled wildlife. Both have the knowledge and ability to train additional response personnel to assist.

# AUTHORIZATIONS AND PERMITS

**Please refer to the WPG guidelines for additional information and direction on authorizations and permits.*

**WILDLIFE AUTHORIZATIONS AND PERMITS REQUIRED FOR COLLECTING, HAZING/DETERRING, OR HOLDING WILDLIFE**

| Activity | Migratory Birds | Sea otters, walruses, and polar bears | Whales, porpoises, dolphins, seals, and sea lions | Terrestrial mammals, furbearers, and nonmigratory birds | Fish, shellfish, and invertebrates | Bald or golden eagles | Threatened or endangered species[1] |
|---|---|---|---|---|---|---|---|
| Carcass Collection | **USFWS** Migratory Bird Salvage Permit& OLE Authorization[2] | **USFWS** Permit &OLE Authorization[2] | **NMFS** MMHSRP Permit[3] | **ADF&G** Wildlife Response Permit | **ADF&G** Aquatic Resource Permit | **USFWS** Permit &OLE Authorization[2] | **NMFS/USFWS** ESA section 7 consultation[4] & **USFWS** OLE Authorization[2] |
| Haze/Deter | **ADF&G** Wildlife Response Permit | **USFWS** MMPA section 112(c) LOA | **NMFS** MMHSRP Permit[3] | **ADF&G** Wildlife Response Permit | N/A | **USFWS** Eagle Depredation Permit | **NMFS/USFWS** ESA section 7 consultation[4] |
| Capture, Transport, Stabilize, or Rehabilitate | **USFWS** Migratory Bird Rehab Permit | **USFWS** MMPA section 112(c) LOA | **NMFS** MMHSRP Permit[3] | **ADF&G** Wildlife Response Permit | N/A | **USFWS** Eagle Depredation Permit | **NMFS/USFWS** ESA section 7 consultation[4] |

**Acronyms:** ADF&G = Alaska Department of Fish and Game; EPA = U.S. Environmental Protection Agency; ESA = Endangered Species; LOA = Letter of Authorization; MMPA = Marine Mammal Protection Act; MMHSRP = Marine Mammal Health and Stranding Response Program (NMFS); NMFS = National Marine Fisheries Service; OLE = Office of Law Enforcement (USFWS); USCG = U.S. Coast Guard; USFWS = U.S. Fish and Wildlife Service

***Note*:** See **Initial Emergency Contacts** for a list of agency personnel to contact for appropriate authorizations and permits. Found in Wildlife Protection Guidelines.

1 An ADF&G permit is required to deter, collect, or hold any species on the state endangered species list that is not on the federal endangered species list.

2 For species managed by USFWS (i.e., migratory birds, sea otters, walruses, and polar bears).

3 Request verbal case-by-case authorization from the NMFS Regional Stranding Program Coordinator or associated co-investigator.

4 ESA section 7 consultation between federal action agencies (i.e., USCG or EPA) and consulting agencies (USFWS and NMFS).

## RESPONSE FORMS

*Prior authorization is always **required** for all response activities.*

Documentation is essential during all phases of spill response. Filling out forms properly and documenting information is vital to properly document impacts to wildlife from the spill for law enforcement and Natural Resource Damage Assessment and Restoration (NRDAR) purposes.

Forms required for wildlife response activities include but may not be limited to:

- Startup WRP
- Comprehensive WRP
- ESA Section 7 Consultation Form
- Wildlife Observation Form
- Carcass Collection Form
- Carcass ID Tag
- Carcass Chain of Custody Tag
- Transport Log for Carcasses
- Live Animal Capture From
- Capture Log for Live Animals
- Transport Log for Live Animals

Full printable versions of the above forms, except for the Carcass ID Tag and Carcass Chain of Custody Tag, can be found on the ADEC Area Plan and References Tools webpage. Carcass ID and Chain of Custody Tags are provided by the Wildlife Trustee Agencies.

Depending on the species and guidance from the wildlife trustee agencies, additional forms from Federal Wildlife Guidance Documents may be used for response and rehabilitation. The Federal Wildlife Response Guidance documents can be found on the ADEC Area Plan and References Tools webpage, under the header 'Documents Incorporated by Reference'

- https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/#subject

## WILDLIFE RECONNAISSANCE (RECON)

*Prior authorization is always **required** for all response activities.*

**No specific permits are needed for incidental wildlife observations made by responders. Wildlife Observer activities, such as aerial or boat-based surveys, may need permits for incidental disturbance of protected species.*

Wildlife Recon is initiated before any other wildlife protection strategies and is continued in concert with those strategies. The 'grab-and-go' tactic for this response activity is available in the WPG and on the ADEC Area Plan References Tools webpage.

Individuals fulfilling this role may also be referred to as Wildlife First Responders. Wildlife recon can be performed by **any spill responder**, especially in the first 24 to 48 hours, before **dedicated wildlife observers** responders arrive on scene.

Wildlife First Responders may also be tasked with small carcass collection – the 'grab-and-go' tactic for this response activity is available in the WPG and on the ADEC Area Plan References Tools webpage.

It is the WBD's and the RP/PRP's responsibility to understand and implement the necessary coordination with wildlife agencies for proper application of the tactic. If no WB is established, the unified command must coordinate with the EU to ensure sufficient wildlife recon occurs.

The objective of this tactic is to identify and locate any wildlife and sensitive areas that may be present and affected by the spill or response activities. Incidental wildlife observations can be made by any spill responder. In the first hours of a spill, all responders can report birds, marine mammals, or terrestrial animals to their supervisor. Any information will be helpful while waiting for dedicated wildlife observers to arrive on scene.

Dedicated Wildlife First Responders (recon) will, using the Wildlife Observation Form, look for, record information, and report wildlife that are:

- In oiled areas.
- In areas at risk of becoming oiled.
- Where affected wildlife is likely to travel (e.g., onshore).

For more detailed information and guidance on wildlife recon, including proper documentation, permits, authorizations, techniques, supplies and equipment, human and animal safety, please refer to the WPG and the guidance documents available on the ADEC Area Plan References and Tools webpage.

- https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/#subject

**CISPRI maintains a set of Wildlife First Responder 'go-kits' with the initial supplies to fulfill this response activity. Additional supplies will be ordered as needed.*

## WILDLIFE OBSERVERS

*Prior authorization is always **required** for all response activities.*

Wildlife observers hold a specific position within the ICS and will follow an incident-specific wildlife observation protocol, generally developed by the wildlife agencies. **Dedicated Wildlife Observers** will be deployed based on spill conditions, location, and species likely to be present. The skills and duties of Wildlife Observers differ from those of first responders conducting initial wildlife recon and all other responders. Wildlife observers must:

1. Be proficient at identifying marine and terrestrial mammals and birds to *species* (or species group for some birds) for species likely to be in the area, especially ESA-listed wildlife.
2. Not be assigned any other duties, such as Shoreline Cleanup Assessment Technique (SCAT) teams, maintaining boom, or overseeing skimming operations.

A Wildlife Observer's sole duty is to observe, record, and report information on wildlife. It is the responsibility of the RP/PRP and/or wildlife trustee agencies to identify qualified individuals to fill both the Wildlife Recon and Wildlife Observer roles.

For more detailed information and guidance on wildlife observers, including proper documentation, permits, authorizations, techniques, supplies and equipment, human and animal safety, please refer to the WPG and the guidance documents available on the ADEC Area Plan References and Tools webpage.

- https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/#subject

## OPERATIONAL CONSIDERATIONS

- Prior authorization and permits are required.
- A Wildlife Task Force will conduct these operations.
- Only trained and approved personnel should be implementing wildlife response strategies.
- Oiled and unoiled carcasses must be managed separately from other spill response waste.

## AVIAN RESPONSE & REHABILITATION

*Prior authorization is always **required** for all response activities.*

Make initial emergency contacts as listed in the WPG.

CISPRI maintains a response contract with International Bird Rescue (IBR) for response and rehabilitation of oiled impacted birds.

**International Bird Rescue (IBR)**

- Barbara Callahan – Senior Director, Response Services; Regional Representative, Alaska
- 1-888-447-1743 or 907-562-1326

**Guidance Documents**

- Wildlife Protection Guidelines for Oil Spill Response in Alaska
- USFWS Best Practices for Migratory Bird Care During Oil Spill Response
- Both can be found on the ADEC Area Plan and References Tools webpage
    - https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/#subject

Untreated oiled birds often die. Feather oiling results in compromised ability to thermoregulate and subsequent hypothermia, which can prove deadly in the cold waters of Alaska. Depending on the type of oil and its toxicity, birds can also suffer toxic effects through dermal contact with oil, ingestion of oiled prey, or ingestion of oil during preening of oiled feathers.

Birds exhibit obvious immediate behavioral changes in response to oil exposure. In particular, they preen excessively to clean oil from their feathers. Excessive preening may cause them to abandon normal feeding, nesting, and movement, resulting in weakness and increased vulnerability to hypothermia and predation. Oil on feathers can be transferred to eggs and result in embryo death.

Responders can apply for authorization to conduct primary, secondary, and tertiary response strategies through completing and submitting a Startup WRP and/or a Comprehensive WRP to the OSC and/or wildlife agencies. A Startup WRP cannot be used to request pre-emptive capture. It is the Wildlife Branch Director's and the RP/PRP's responsibility to understand and implement the necessary coordination with wildlife agencies and obtain needed authorizations and permits

For more detailed information and guidance on primary, secondary, and tertiary response strategies, including proper documentation, permits, authorizations, techniques, supplies and equipment, human and animal safety, please refer to the WPG and the guidance documents, available on the ADEC Area Plan References and Tools webpage.

- https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/#subject

**CISPRI and IBR keep the appropriate supplies and equipment on-hand to initiate primary, secondary, and tertiary response strategies. Additional supplies will be ordered as needed.*

## PRIMARY RESPONSE STRATEGIES

Primary response activities emphasize preventing oil from reaching birds or their concentration area, as well as the removal of oiled carcasses from the environment.

The Unified Command and the NRDA Trustees have two goals in removing incident related carcasses – minimize secondary contamination of scavengers and provide evidence of environmental harm. The two require different levels of documentation, therefore it is critical that the Unified Command and NRDAR Trustees coordinate any carcass collection plans as early in the incident as possible.

**Carcass Collection**

Incident-specific **authorization** to collect carcasses or samples from carcasses, as well as **permits** to possess carcasses are required before carcasses can be collected. The "grab-and-go" tactic for this response activity is available in the WPG as well as on the ADEC Area Plan and References Tools webpage.

The objective of this tactic is to remove oiled and unoiled carcasses in the spill area as soon as possible to avoid attracting or contaminating scavengers. Oiled wildlife carcasses need to be collected in a manner that preserves the carcass in its original state, or as close as possible. Each collected carcass must be recorded on the Carcass collection form and be assigned an individual carcass identification tag and follow chain of custody protocol when transferred.

Carcasses may only be collected by wildlife agencies or parties permitted by those agencies; some species also require additional agency authorization. Authorizations are given on an incident-specific basis.

** For more detailed information on carcass collection please refer to the WPG and the guidance documents.*

## SECONDARY RESPONSE STRATEGIES

Secondary response strategies emphasize keeping birds away from oiled areas by hazing/deterrence and the pre-emptive capture and subsequent holding, transport, and release of unoiled birds.

### Hazing & Deterrence

Hazing and deterrence techniques can be used to discourage birds landing in, near, or away from an oil contaminated area. If warranted, deterrence activities should be initiated as soon as possible following an oil spill.

Only individuals trained and certified within the past three years by the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), in bird deterrence techniques will be authorized to conduct migratory bird deterrence activities. Additional individuals may be approved by ADF&G on a case-by-case basis.

Birds can be deterred from entering spill area by using audible or visual methods such as pyrotechnics (screamers, bangers, propane cannons, etc.) and Mylar tape, scarecrows, effigies, etc. Hazing and deterrence will be developed on an incident-specific basis

A summary of deterrent methods and supplies, including a discussion of their effectiveness and their limitations, can be found in *Best Practices for Migratory Bird Care during Oil Spill Response*, available on the ADEC Area Plan References and Tools web page.

**For more detailed information on hazing and deterrence please refer to the WPG and the guidance documents.*

### Pre-emptive Capture

Pre-emptive capture includes the capturing, handling, transporting, short-term holding, and releasing of healthy, uncontaminated wildlife. Bird Capture and handling may only be done by trained, permitted, and approved individuals. Handling and restraint techniques appropriate for specific species need to be applied.

When conducting pre-emptive capture, considerations should be made for human safety, wildlife safety, and minimizing transportation and holding times. Appropriate release locations should be identified and approved prior to beginning a pre-emptive capture.

**For more detailed information on pre-emptive capture please refer to the WPG and the guidance documents*.

## TERTIARY RESPONSE STRATEGIES

Tertiary response strategies will be considered when birds become oiled.

Tertiary response includes the capture, handling, transporting, stabilization, rehabilitating, holding, and releasing of healthy birds. Initiating a capture, stabilization, and rehabilitation program as soon as possible after a spill occurs may reduce the severity of impact to birds from oiling.

The goal of rehabilitating oiled birds is the release of a healthy bird back into its natural environment. Release will likely involve transporting birds from the rehabilitation center to a location near the initial capture site.

Capture, transport, stabilization, rehabilitation, and release of oiled birds should follow the guidelines set forth in the '*Best Practices for Migratory Bird Care during Oil Spill Response',* available on the ADEC Area and Plan References and Tools webpage.

### Capture and Transportation

The conditions under which oiled birds are captured can vary widely and is incident specific to the spill. A variety of capture methods and techniques can be employed to maximize success.

Only authorized and trained individuals are allowed to perform capture and treatment of oiled birds under the direction of a permitted rehabilitator. Handling and restraint techniques appropriate for specific species need to be applied.

Oil contaminated birds that are captured or collected by field teams may require stabilization in the field prior to being transported to an off-site rehabilitation facility. Field stabilization is provided to oiled birds that are likely to remain in the field longer than 2-3 hours. Field stabilization is considered a 'first aid' method, only to be performed by trained personnel. Steps and techniques for stabilization can be found in the document '*Best Practices for Migratory Bird Care during Oil Spill Response'*

Oiled captured birds should be moved to an appropriate stabilization or treatment center at the earliest opportunity. Only appropriately trained and approved personnel may transport birds. It is preferable to transport birds in an enclosed vehicle with adequate ventilation to allow for sufficient air flow and temperature

control. However, routes and means of transportation are incident specific and may include but are not limited to trucks, ATVs, vessels, etc.

Once birds have been captured and stabilized, the birds will be transported to the Alaska Wildlife Response Center (AWRC), managed by IBR, for continued care and rehabilitation. The AWRC is in Anchorage, AK.

**For more detailed information on capture and transportation please refer to the WPG and guidance documents.*

**Rehabilitation & Release**

IBR is under contract to CISPRI to provide implementation of bird rehabilitation services. Oiled birds would be captured, stabilized in the field (if warranted), and then transported to the AWRC by the best mode of transportation available.

The goal of rehabilitating oiled birds is the release of healthy birds back into their natural environment. Release will likely involve transporting birds from the rehabilitation center to a location near the initial capture site. Release locations require prior authorization.

Only trained and experienced personnel may assist with rehabilitation activities. Rehabilitation and release of oiled birds should follow the guidelines set forth in the '*Best Practices for Migratory Bird Care during Oil Spill Response',* available on the ADEC Area and Plan References and Tools webpage.

Managed by IBR, the AWRC is a 4,800 sq ft wildlife care facility in Anchorage, Alaska, that is designed for oiled wildlife rehabilitation and stands stocked, equipped, and ready to respond to oil impacted birds. The AWRC is a 'turnkey' facility with the potential to expand outdoor 'lay-down' space by utilizing heavy duty tent structures for expanding animal holding areas, and potentially outdoor pools. The AWRC can be operational within 72 hours of notification.

The AWRC is equipped with the necessary items to initiate and complete medical stabilization, cleaning, reconditioning, and full rehabilitation of oiled birds. The center features veterinary equipment, wash stations, on-demand water heater, water softeners, tertiary sewer system for oily wastewater, holding pens, sea bird pens, flight kennels, and pools.

Additionally, the facility has office space, a dedicated food preparation area, veterinary ICU and treatment room, washer and dryers, and rest rooms.

**For more detailed information on rehabilitation and release please refer to the WPG and the guidance documents.*

**OPERATIONAL CONSIDERATIONS**

- Prior authorization and permits are required.
- A Wildlife Task Force will conduct these operations.
- Only trained and approved personnel should be implementing wildlife response strategies.
- Oiled and unoiled carcasses must be managed separately from other spill response waste.

**Alaska Wildlife Response Center**



*This page left intentionally blank*

## OTTER RESPONSE & REHABILITATION

*Prior authorization is always **required** for all response activities.*

Make initial emergency contacts as listed in the WPG.

CISPRI maintains a response contract with the Alaska SeaLife Center (ASLC) for response and rehabilitation of oiled impacted sea otters.

**Alaska SeaLife Center (ASLC):** Marine Mammal response and rehabilitation services

- Chip Arnold – Chief Operating Officer, Oiled Wildlife Response Program Administrator
- Dr. Carrie Goertz, DVM – Director of Animal Health
- Stranding/Wildlife Response Hotline – 1-888-774-7325 or 907-224-6395
- Security 24 hr. # – 907-224-6342

**Guidance Documents**

- Wildlife Protection Guidelines for Oil Spill Response in Alaska
- Emergency Care and Rehabilitation of Oiled Sea Otters
- Both can be found on the ADEC Area Plan and References Tools webpage
    - https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/#subject

Sea otters are extremely vulnerable to oil spills, regardless of age, due to their small size, dependence on fur rather than blubber for insulation, and heavy use of near shore habitats. Because sea otters do not have blubber and rely on their fur for insulation, oiling of more than a small portion of their fur can result in death from hypothermia. Sea otters will spend a great deal of time grooming to remove the oil and maintain their fur.

Sea otters have high metabolic requirements, and the additional time spent grooming can increase metabolic needs, reduce forage time, and lead to lowered metabolic efficiency. If unresolve, this condition will result in starvation and death. Ingestion of hydrocarbons during the grooming process or through feeding on oiled prey items can result in digestive-tract irritation, neurological effects, and physiological changes, which in turn, can lead to organ injury, dysfunction, and death. Aromatic hydrocarbons can cause inhalation injury and death before either hypothermia or ingestion affects the animals.

The southwest Alaska distinct population segment of northern sea otters are listed as threatened. If primary, secondary, or tertiary response strategies are proposed in locations where northern sea otters are or may be present, the FOSC will need to immediately consult with USFWS to ensure compliance with the Marine Mammal Protection Act (MMPA) and ESA. All sea otters in Alaska are protected under the MMPA.

Responders can apply for authorization to conduct primary, secondary, and tertiary response strategies through completing and submitting a Startup WRP and/or a Comprehensive WRP to the OSC and/or wildlife agencies. A Startup WRP cannot be used to request pre-emptive capture. It is the Wildlife Branch Director's and the RP/PRP's responsibility to understand and implement the necessary coordination with wildlife agencies and obtain needed authorizations and permits.

For more detailed information and guidance on primary, secondary, and tertiary response strategies, including proper documentation, permits, authorizations, techniques, supplies and equipment, human and animal safety, please refer to the WPG and the guidance document, available on the ADEC Area Plan References and Tools webpage.

- https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/#subject

**CISPRI and ASLC keep the appropriate supplies and equipment on-hand to initiate primary, secondary, and tertiary response strategies. Additional supplies will be ordered as needed.*

## PRIMARY RESPONSE STRATEGIES

Preventing oil from reaching sea otter pupping, feeding, and other otter concentration or sensitive areas, should be empathized for sea otters because of their vulnerability to oiling, as well as the removal of oiled carcasses from the environment.

The Unified Command and the NRDA Trustees have two goals in removing incident related carcasses – minimize secondary contamination of scavengers and provide evidence of environmental harm. The two require different levels of documentation, therefore it is critical that the Unified Command and NRDAR Trustees coordinate any carcass collection plans as early in the incident as possible.

Sea otters spend their time in the open water and use a variety of terrain (including ice) to haul-out. Haul-outs may be used to escape predators, rough weather, or be established near rich prey areas. Protection strategies will be based on the terrain on which haul outs are identified.

Sea otters are highly variable in their response to disturbance, including exhibiting curiosity to something new in their environment. Response-related disturbance may drive sea otters into oiled areas. Sea otter response to all response activities should be monitored by Wildlife Observers.

**Carcass Collection**

Incident-specific **authorization** to collect carcasses or samples from carcasses, as well as **permits** to possess carcasses are required before carcasses can be collected. The "grab-and-go" tactic for this response activity is available in the WPG as well as on the ADEC Area Plan and References Tools webpage.

The objective of this tactic is to remove oiled and unoiled carcasses in the spill area as soon as possible to avoid attracting or contaminating scavengers. Oiled wildlife carcasses need to be collected in a manner that preserves the carcass in its original state, or as close as possible. Each collected carcass must be recorded on the Carcass collection form and be assigned an individual carcass identification tag and follow chain of custody protocol when transferred.

Carcasses may only be collected by wildlife agencies or parties permitted by those agencies; some species also require additional agency authorization. Authorizations are given on an incident-specific basis.

**For more detailed information on carcass collection please refer to the WPG and the guidance documents.*

## SECONDARY RESPONSE STRATEGIES

Secondary response strategies emphasize keeping sea otters away from oiled areas by hazing/deterrence and pre-emptive capture and the subsequent holding, transport, and release of unoiled sea otters.

**Hazing & Deterrence**

The use of deterrence to either attract of disperse sea otters has been found to be ineffective. Auditory deterrence such as the use of propane cannons may have some application for short-term attempts to keep sea otters off oiled haul-outs. In general, sea otter hazing from oiled areas will not be authorized unless the hazing will be conducted by someone who is very familiar with sea otter behavior and who can judge the effectiveness of the hazing/deterrence technique in real time.

A summary of deterrent methods and supplies, including a discussion of their effectiveness and their limitations, can be found in the guidance document '*Emergency Care and Rehabilitation of Oiled Sea Otters*', available on the ADEC Area Plan References and Tools web page.

**For more detailed information on hazing and deterrence please refer to the WPG and the guidance documents.*

**Pre-emptive Capture**

Pre-emptive capture includes the capturing, handling, transporting, short-term holding, and releasing of healthy, uncontaminated wildlife.

Pre-emptive capture may be a viable response strategy for moving sea otters away from areas contaminated by oil, especially if small numbers of sea otters have a high potential of being oiled. Principal concerns when capturing and handling sea otters are minimizing transportation and holding times and clear communications between response personnel. Sea otters should be regarded as dangerous to response personnel and need to be handled as little as possible during response operations. Handling will need to be conducted by qualified personnel who have documented experience in sea otter capture.

When conducting pre-emptive capture, considerations should be made for human safety, and wildlife safety. Appropriate release locations should be identified and approved prior to beginning a pre-emptive capture.

Sea otter safety should focus on stress reduction by having the equipment necessary to handle and transport as quickly and efficiently as possible, reducing the number of vessels used to capture in each area, avoid unnecessary noise and disturbance, never pushing a sea otter to the point of exhaustion, providing thermoregulatory monitoring and ambient temperatures, and minimizing contact with animals.

A summary of pre-emptive capture can be found in the guidance document '*Emergency Care and Rehabilitation of Oiled Sea Otters*', available on the ADEC Area Plan References and Tools web page.

**For more detailed information on pre-emptive capture please refer to the WPG and the guidance documents.*

## TERTIARY RESPONSE STRATEGIES

Tertiary response strategies will be considered when otters become oiled.

Tertiary response includes the capture, handling, transporting, stabilization, rehabilitating, holding, and releasing of healthy sea otters. Initiating a capture, stabilization, and rehabilitation program as soon as possible after a spill occurs may reduce the severity of impact to sea otters from oiling.

The goal of rehabilitating oiled sea otters is the release of a healthy sea otter back into its natural environment. Release will likely involve transporting sea otters from the rehabilitation center to a location near the initial capture site.

Capture, transport, stabilization, rehabilitation, and release of oiled sea otters should follow the guidelines set forth in the '*Emergency Care and Rehabilitation of Oiled Sea Otters',* available on the ADEC Area and Plan References and Tools webpage.

### Capture & Transportation

Successfully rehabilitating sea otters impacted by oil depends on a rapid and efficient response. As such, only qualified personnel with documented experience in capture and handling of sea otters will be approved for the capture and handling of and subsequent transport of sea otters.

Capturing oiled sea otters may take place on-water or on-land. Three techniques are used for the non-lethal capture of sea otters – dip net, tangle net, and Wilson trap. The method used will depend on variables such as, location, the activity level of the otter, if pups are present, personnel capture expertise, and ocean conditions. Otters are highly susceptible to capture related stress and can cause their condition to change rapidly, due to this handling should be minimized. Otters that evade a first attempt at capture will become more wary and more difficult to capture, while a tired otter may be easier to capture, otters should not be pursued to the point of exhaustion.

Communication between capture teams, transport personnel, and the rehabilitation facility is essential for successful rehabilitation of oiled otters. Field stabilization may be required if transport to the rehabilitation facility will take longer than 2-3 hours.

Once an otter has been captured it should be transferred from the net to a kennel as soon as possible. Otters are generally transported via boat, aircraft, or truck – preferably with options for temperature control, adequate ventilation, and sufficient air flow. Routes and means of transportation are incident specific. After capture and before/during transport otters should be examined for sign of hypo/hyperthermia, behavioral changes, and other medical conditions.

Once otters have been captured and stabilized, the otters will be transported to the Sea Otter Rehabilitation Facility (SORC) in Seldovia, AK, where ASLC animal care professionals will provide continued care and rehabilitation. The goal is to transport otters to the rehabilitation facility as quickly and safely as possible, minimizing time between capture and treatment.

**For more detailed information on capture and transportation please refer to the WPG and the guidance documents.*

### Rehabilitation& Release

ASLC is under contract to CISPRI to provide implementation of otter rehabilitation services. Oiled otters would be captured, stabilized in the field (if warranted), and then transported to the SORC by the best mode of transportation available.

The goal of rehabilitating oiled sea otters is the release of healthy sea otters back into their natural environment. Release will likely involve transporting birds from the rehabilitation center to a location near the initial capture site. Release locations require prior authorization.

Only trained, approved, experience personnel may assist with rehabilitation activities. Rehabilitation and release of oiled sea otters should follow the guidelines set forth in the '*Emergency Care and Rehabilitation of Oiled Sea Otters',* available on the ADEC Area and Plan References and Tools webpage.

Managed by CISPRI, the SORC is in Seldovia, Alaska, and is only accessible by plane or boat. The rehabilitation center has purpose-built conex units for wildlife response. The units include a vet clinic/office, exam room/sedation and triage, ICU/recovery, pup temporary holding, washing, drying, food preparation, maintenance, and storage. As well as three 13' ft pools and 4 condos with access to water and dry resting space. While the units are labeled the units and facility are flexible and can be modified to fit the specific needs the response.

The facility also features a floating dock, pre-release pens, floating haul-outs, access to both fresh and saltwater, two oil/water separator units, fencing around the perimeter of the facility with multiple access points, and human/laundry facilities.

Additionally, ASLC has two sets of mobile response units, built with flexibility in mind, each comprising of a vet clinic, food preparation, staff support, utility unit, and a Mobile Treatment and Rehabilitation Enclosure (wet or dry holding) that

could be transported to the SORC to support rehabilitation efforts. The SORC can be operational within 72 hours of notification

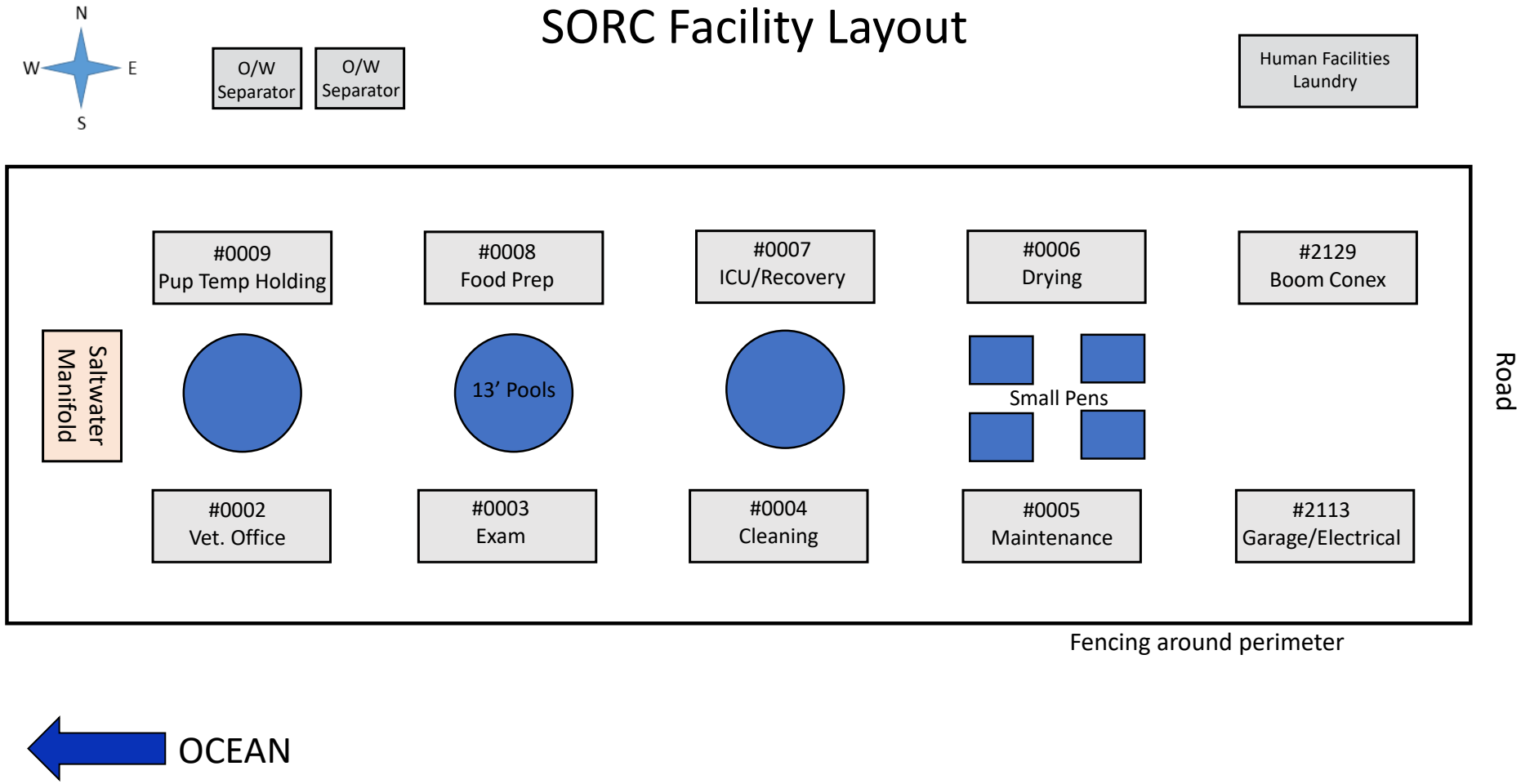
Animal flow and potential hot/colds zones of the facility have been pre-determined. However, the SORC was designed to be flexible and animal flow as well as hot/cold zones can be modified to fit the specific needs of the response as it evolves. The following images provide the general layout of the SORC and an example with hot/cold zones and animal flow.

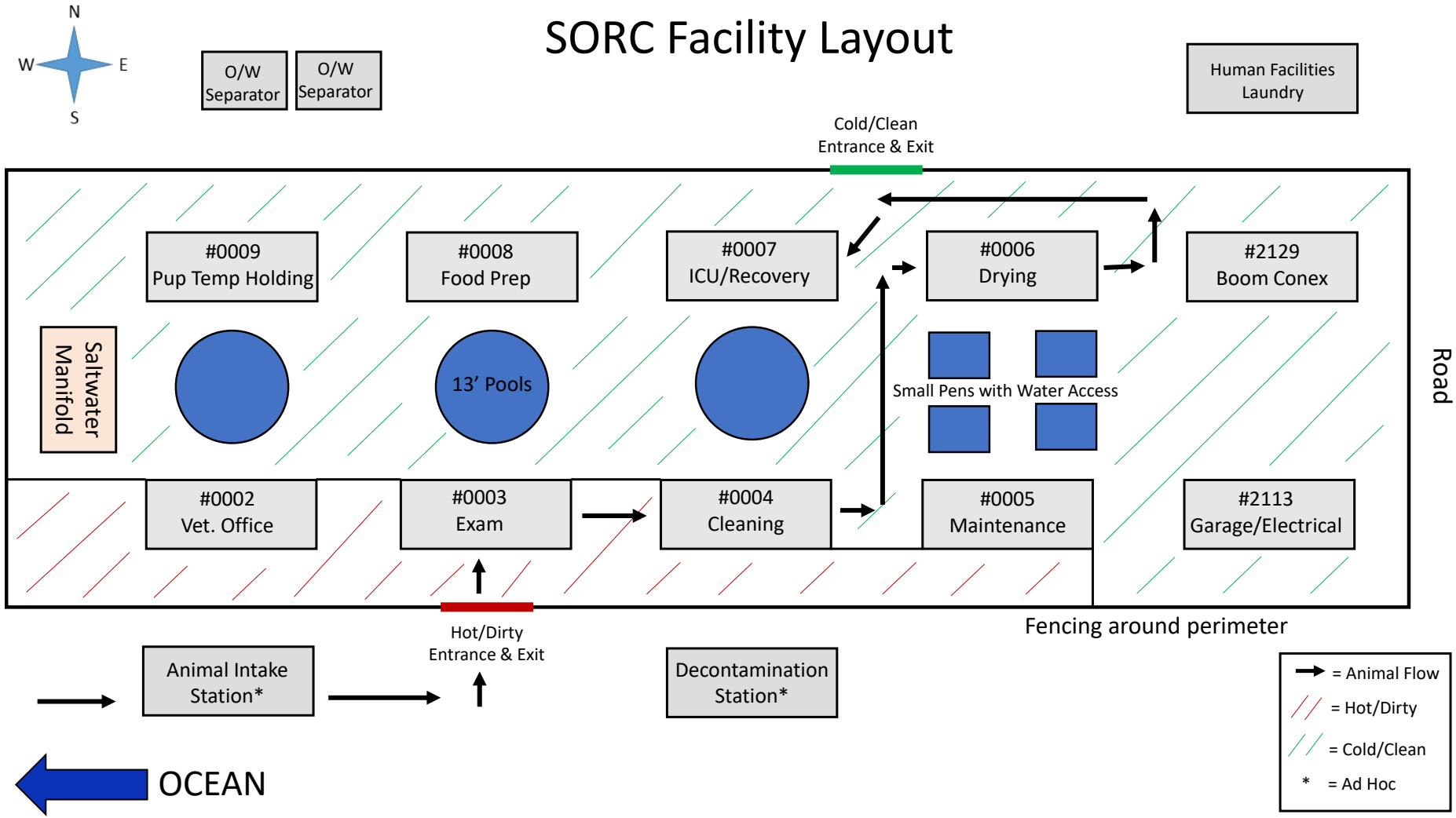
**For more detailed information on rehabilitation and release please refer to the WPG and the guidance documents.*

## OPERATIONAL CONSIDERATIONS

- Prior authorization and permits are required.
- A Wildlife Task Force will conduct these operations.
- Only trained and approved personnel should be implementing wildlife response strategies.
- Oiled and unoiled carcasses must be managed separately from other spill response waste.

# SORC Facility Layout








**To report an oil spill and activate CISPRI, call 907-776-5129**

## PINNIPED/CETACEAN RESPONSE & REHABILITATION

*Prior authorization is always **required** for all response activities.*

Make initial emergency contacts as listed in the WPG.

CISPRI maintains a response contract with the Alaska SeaLife Center (ASLC) for response and rehabilitation of oiled impacted pinnipeds and two live small cetaceans.

**Alaska SeaLife Center (ASLC):** Marine Mammal response and rehabilitation services

- Chip Arnold – Chief Operating Officer, Oiled Wildlife Response Program Administrator
- Dr. Carrie Goertz, DVM – Director of Animal Health
- Stranding/Wildlife Response Hotline – 1-888-774-7325 or 907-224-6395
- Security 24 hr. # – 907-224-6342

**Guidance Documents**

- Wildlife Protection Guidelines for Oil Spill Response in Alaska
- NMFS Pinniped and Cetacean Oil Spill Response Guidelines
- NMFS Arctic Marine Mammal Disaster Response Guidelines
- NMFS Cook Inlet and Kodiak Marine Mammal Disaster Response Guidelines
- Both can be found on the ADEC Area Plan and References Tools webpage
    - https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/#subject

Spill response activities of marine mammals can be complicated due to the larger size of some species/sexes, mammalian zoonotic diseases (diseases that can be transmitted from animals to humans), and heightened safety concerns for response personnel working in the marine environment.

Marine mammals can exhibit highly variable responses to spilled oil due to differences among marine mammal species, age classes, and habitat. Direct exposure of marine mammals to oil can result in conjunctivitis; ingestion of oil can lead to digestive tract bleeding and liver and kidney damage. Inhalation of fumes can result in nerve damage, behavioral abnormalities, mortality, and long-term impacts to reproductive success. Ingestion of oil is of greater concern for species that groom themselves with their mouths, such as sea otters, fur seals, and polar bears. Like sea otters, fur seals do not have thick blubber layer for insulation and depend on fur for insulation.

Prioritized response strategies for different species or species groups may be established on an **incident-specific basis**. Species may be prioritized in the planning process based on whether to the species is known to be particularly vulnerable to oil impacts; if the species in the area represents a significant portion of the species 'total world population'; if the species is listed as threatened or endangered; if the species is an important subsistence resource; and/or if the species is known to have an important breeding site in the planning area. Specific habitats may also be prioritized.

**Cetaceans:** Primary and secondary response strategies are generally the only feasible response strategies for this group of marine mammals, as capture and rehabilitation of larger cetaceans is impracticable. Some species, particularly large whales, could possibly be steered away from the spill site. Other species are attracted to ship traffic and human activity and might be attracted to the spill. If primary, secondary, or tertiary response strategies are proposed in locations where cetaceans are or may be present, the FOSC and/or the OSC will need to immediately consult with NMFS regarding the proposed strategies to ensure compliance with the MMP and the ESA.

Responders may apply for authorization and for primary, secondary, and tertiary response activities by completing a Startup or Comprehensive WRP and submitting to the OSC and/or wildlife agencies A Startup WRP cannot be used to request pre-emptive capture. It is the Wildlife Branch Director's and the RP/PRP's responsibility to understand and implement the necessary coordination with wildlife agencies and obtain needed authorizations and permits.

For more detailed information and guidance on primary, secondary, tertiary response activities, including proper documentation, authorizations and permits, supplies and equipment, human and animal safety please refer to the WPG, and the guidance documents, available on the ADEC Area Plan and References Tool Page.

- https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/#subject

**CISPRI and ASLC keep the appropriate supplies and equipment on-hand to initiate primary, secondary, and tertiary response strategies. Additional supplies will be ordered as needed.*

- *In the case of **Cetaceans**, CISPRI and ASLC may be reliant on NOAA-NMFS for response supplies, particularly primary and secondary response strategies. Supply needs are incident specific.*
  - *Simple deterrence devices, such as oikomi pipes, can be made with supplies from hardware stores.*
- ***Cetacean** response is a highly regulated activity and would likely be done by federal employees.*
- *ASLC has the facilities and expertise to rehabilitate 2 live small cetaceans.*

## PRIMARY RESPONSE STRATEGIES

Controlling and containing the oil release is of the utmost importance to marine mammals. Priority protection areas include haul-outs and rookery beaches, particularly for species that from male-harem bonds and have strong territorial attachment to specific rookery sites.

Primary response strategies also include removal of oiled carcasses from the environment to prevent predators from ingesting oil as they scavenge for food. The Unified Command and the NRDA Trustees have two goals in removing incident related carcasses – minimize secondary contamination of scavengers and provide evidence of environmental harm. The two require different levels of documentation, therefore it is critical that the Unified Command and NRDAR Trustees coordinate any carcass collection plans as early in the incident as possible.

All primary response activities should avoid marine mammals to prevent disturbance to them, especially at pinniped haul-outs and rookery locations. Disturbance of haul-out and rookery locations can result in mass stampedes of animals into the ocean and can cause severe impacts such as direct physical injury, death of pups, separation of mothers and pups, movement to areas with less favorable conditions, and location abandonment. Wildlife agencies can provide guidance regarding species-specific responses to disturbance and recommended buffers around sensitive areas.

If primary response strategies are proposed in locations where marine mammals are or may be present, the FOSC will need to immediately consult with NMFS and USFWS regarding the proposed response strategies to ensure compliance with the MMPA and ESA.

### Carcass Collection

Incident-specific **authorization** to collect carcasses or samples from carcasses, as well as **permits** to possess carcasses are required before carcasses can be collected. The "grab-and-go" tactic for this response activity is available in the WPG as well as on the ADEC Area Plan and References Tools webpage.

The objective of this tactic is to remove oiled and unoiled carcasses in the spill area as soon as possible to avoid attracting or contaminating scavengers. Oiled wildlife carcasses need to be collected in a manner that preserves the carcass in its original state, or as close as possible. Each collected carcass must be recorded on the Carcass collection form and be assigned an individual carcass identification tag and follow chain of custody protocol when transferred.

Carcasses that are too large to remove from the environment need to be documented and potentially sampled. For information on large carcass processing refer to the NMFS *Cook Inlet and Kodiak Marine Mammal Disaster Response Guidelines* available on the ADEC Area Plan and References Tools webpage.

Carcasses may only be collected by wildlife agencies or parties permitted by those agencies; some species also require additional agency authorization. Authorizations are given on an incident-specific basis.

**For more detailed information on carcass collection please refer to the WPG and the guidance documents.*

## SECONDARY RESPONSE STRATEGIES

Secondary response strategies emphasize keeping potentially affected wildlife away from oiled areas using deterrence techniques and pre-emptive capture and the subsequent holding, transport, and release of healthy marine mammals.

### Hazing & Deterrence

Deterrence techniques for marine mammals includes herding animals away from oil on the water or from oil-contaminated near-shore and beach areas and the use of various acoustic techniques. It is challenging to effectively deter many marine mammal species because they may habituate to tactics or may be attracted to the equipment, noise, and activity in their environment.

Hazing and deterrence of marine mammals should only be performed by qualified and approved personnel.

**For more detailed information on hazing and deterrence please refer to the WPG and the guidance documents.*

**Pre-emptive Capture**

Pre-emptive capture may be used for small numbers of marine mammals and must be performed only by qualified approved personnel with experience in capturing and handling the species. Pre-emptive capture of marine mammals should not be taken lightly because of the danger of shock and stress to animals from being captured and relocated, and the dangers to responders, may far outweigh the potential for an animal to become oiled.

Pre-emptive capture to prevent the oiling of sensitive species may be considered only under dire circumstances. Decisions to capture should consider factors such as sex, age, reproductive status, sensitivity to being oiled, size, and proximity to other marine mammals.

**For more detailed information on pre-emptive capture please refer to the WPG and the guidance documents.*

## TERTIARY RESPONSE STRATEGIES

Tertiary response strategies include the capture, handling, transport, stabilizing, rehabilitating, and release of healthy marine mammals. Tertiary response strategies should only be considered if it is determined that the probable survival of the oiled marine mammals is very low, and the likelihood of successful rehabilitation is high.

The goal of rehabilitating marine mammals is the release of healthy marine mammals back into the environment; however, this is not always possible, and, in some cases, marine mammals will be placed in authorized zoos or aquariums. Species specific information on response strategies for pinnipeds/cetaceans are provided in the WPG as well as the guidance documents.

As previously mentioned, the successful capture and rehabilitation of larger **cetaceans** is impracticable. However, smaller beached cetaceans should be considered for response.

**Capture & Transportation**

In general, capture and transportation of oiled marine mammals must only be attempted by trained handlers. Some species of older male pinnipeds may be too aggressive and/or large to safely capture and clean. Decisions to capture should consider factors such as sex, age, reproductive status, sensitivity to being oiled, size, and proximity to other marine mammals.

If oiled marine mammals are captured for rehabilitation, they will either be transported to SORC, in Seldovia AK, or ASLC, in Seward AK, where ASLC animal care professionals will provide continued care and rehabilitation. The facility impacted marine mammals are sent for rehabilitation will be incident-specific and species specific. While the SORC is labeled as a Sea Otter Rehabilitation center, the space flexible and can be used to rehabilitate smaller pinnipeds, such as harbor seals. However, this may not be feasible if otters are being rehabilitated at the SORC, in this case smaller pinnipeds would be transported to ASLC for treatment.

- If larger pinnipeds are captured for rehabilitation, they will be transported to ASLC.
- If two small cetaceans have been captured for rehabilitation, they will be transported to ASLC.
- Smaller pinnipeds may be transported to the SORC and/or ASLC based on incident specific needs.

Field stabilization should be considered for live marine mammals if it will be more than one or two hours until the animal reaches the rehabilitation facility. The goal is to transport marine mammals to the rehabilitation facility as quickly and safely as possible, minimizing time between capture and treatment. A cohesive plan for capturing and transporting the animals quickly, safely, and efficiently to a rehabilitation facility needs to be in place to ensure animals do not linger after capture.

Marine mammals are generally transported via boat, aircraft, or truck – preferably with options for temperature control, adequate ventilation, and sufficient air flow. Routes and means of transportation are incident specific. After capture and before/during transport marine mammals should be examined for signs of behavioral changes and other medical conditions.

** For more detailed information on capture and transportation please refer to the WPG and the guidance documents.*

**Rehabilitation& Release**

ASLC is under contract to CISPRI to provide implementation of pinniped/cetacean rehabilitation services. Once captured, marine mammals would be transported to either ASLC or the SORC by the best mode of transportation available. Only small pinnipeds would be considered for treatment at the SORC.

The goal of rehabilitating marine mammals is the release of healthy animals back into their natural environment. In some cases, marine mammals may be placed in zoos or aquariums. Only trained and experienced personnel may assist with rehabilitation activities. Rehabilitation and release of marine mammals should follow the guidelines set forth in the WPG and the guidance documents.

**Please refer to tactic CI-W-4 for facility information regarding the SORC.*

The ASLC, in Seward, AK, is a permitted marine mammal rehabilitation facility. The ASLC stranding facility remains in a ready state year-round for wildlife response. ASLC has a dedicated outdoor and indoor rehabilitation spaces, as well as a dedicated research space on the southside of the building.

The ASLC rehabilitation area features space for – food preparation and storage, vet clinic, surgery, necropsy, sample storage, diagnostics, staff support, indoor wet/dry holding, and outdoor wet/dry holding. The research space on the southside of the building provides additional outdoor pools and holding areas, and indoor support space such as an office, food prep, human facilities, and storage/lab.

Additionally, ASLC has two sets of Mobile Response Units (MRUs), built with flexibility in mind, each set features a vet clinic, food preparation, staff support, utility unit, and a Mobile Treatment and Rehabilitation Enclosure (wet or dry holding). The MRUs feature the option to operate either off the use of local infrastructure or remotely using propane, fuel, generators, water tanks, pumps, and pools. The units are equipped to support washing and drying.

In combination, these spaces give ASLC the ability to configure multiple levels of quarantine and species-specific treatment areas.

Prior to the arrival of captured marine mammals, the MRUs would be set up outside of ASLCs main rehab area (or other dedicated space based on the incident), for initial treatment and cleaning. The number of mobile response units used, and layout will be incident specific. Once the marine mammals are cleaned, they would be moved into one of the available rehab areas at ASLC for continued care and treatment. Rehabilitation and release criteria set forth in the WPG and the guidance documents will be followed.

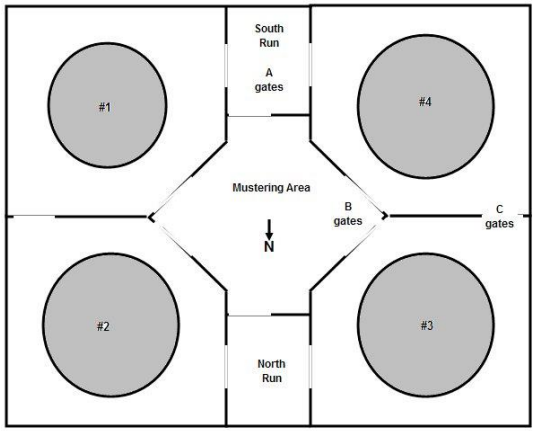
Release will likely involve transporting marine mammals from the rehabilitation center to a location near the initial capture site. Release locations require prior authorization. Decisions regarding the release of rehabilitated marine mammals will be species-specific and incident specific. These release decisions will be made by the wildlife agencies with trust responsibility for that species, in consultation with rehabilitation experts and veterinarians.

** For more detailed information on rehabilitation and release please refer to the WPG and the guidance documents.*

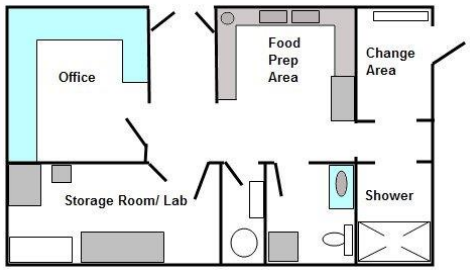
## OPERATIONAL CONSIDERATIONS

- Prior authorization and permits are required.
- A Wildlife Task Force will conduct these operations.
- Only trained and approved personnel should be implementing wildlife response strategies.
- Oiled and unoiled carcasses must be managed separately from other spill response waste.

## ASLC South Beach Research Facility



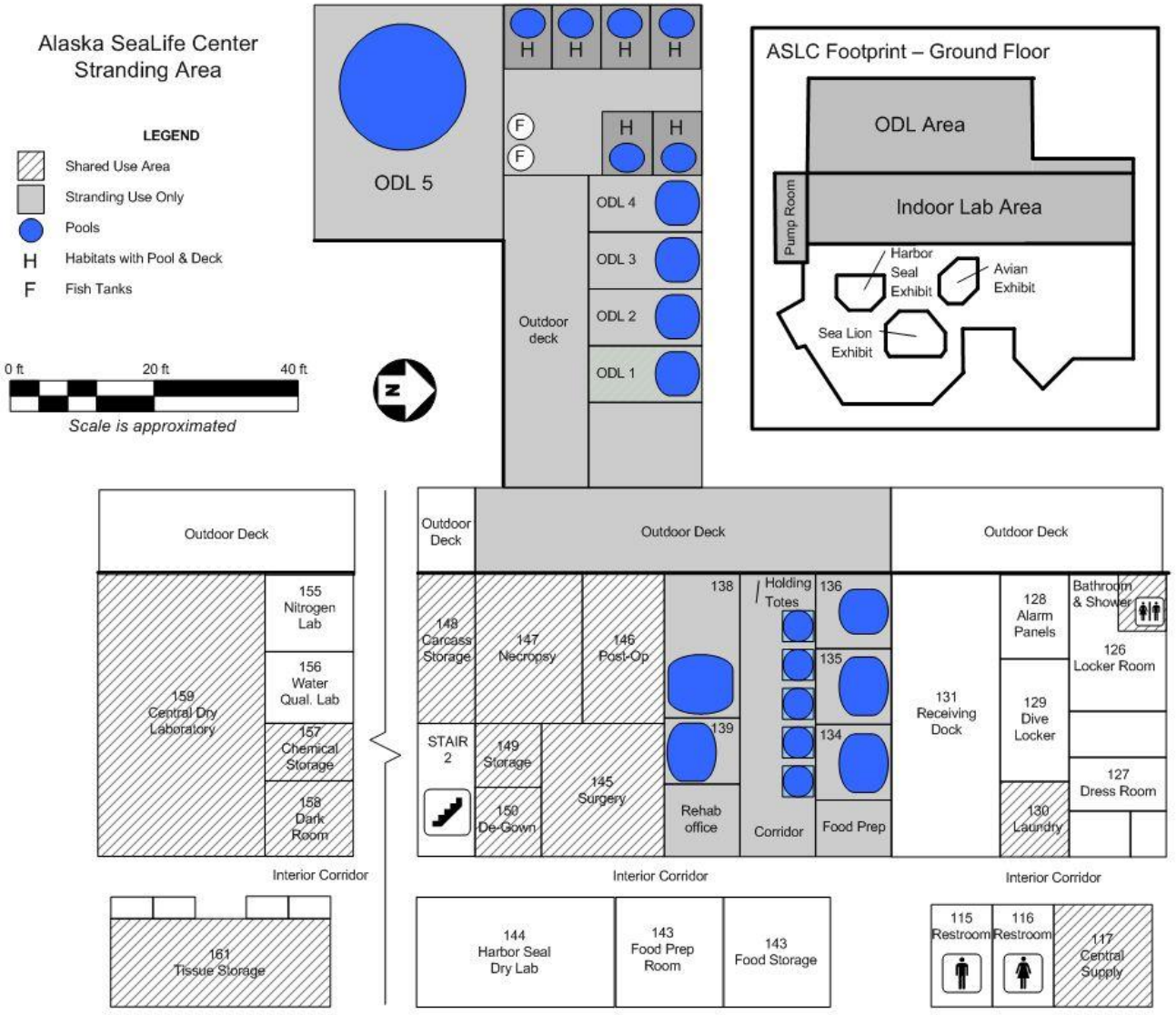

Walkway

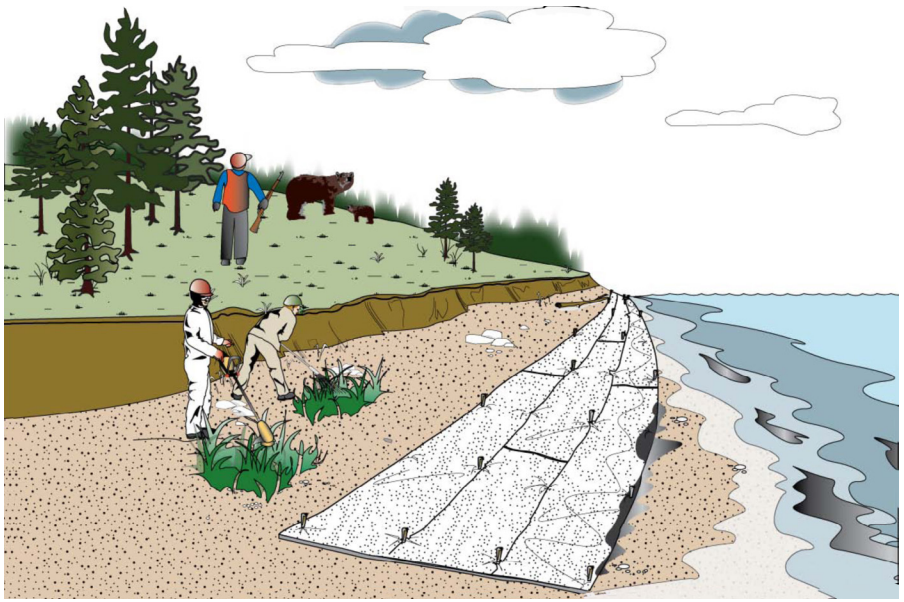





**To report an oil spill and activate CISPRI, call 907-776-5129**

# ASLC Rehabilitation/Stranding Area





## TACTIC PURPOSE AND DESCRIPTION

It is not uncommon to encounter moose, brown bear, black bear or wolves when conducting a shoreline or land based response in the Cook Inlet region. There have been several occasions where bears or moose have visited a response site. In situations where responses take our responders in potential bear areas a Bear Guard may be necessary. Protection of spill responders is the first and only priority of a Bear Guard. Most wildlife will leave an area quickly once they are aware of human presence. Bears may be the exception if the response area is near a food source.

Bears are very intelligent and extremely, curious. They have an amazing sense of smell with good vision and hearing. Bears are strong and very fast on their feet. They are good swimmers.

Responders should be aware of the dangers both brown and black bears pose and should be vigilant at all times.

Most attacks are caused by:

- When a bear thinks you are a threat to itself, its cubs or its food.
- When you surprise a bear or enter its personal space
- When you get between a sow and her cubs.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift/per site)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | BEAR GUARD |
|---|---|---|---|
| Magnum Rifle or 12 Gauge Shotgun [A] | Protect Responders | 1 | 1 |
| ATV [B] | Transportation | 1 | |

A. CISPRI Wildlife Guards typically use a 12 Gauge shotgun.

B. If needed some areas accessible by road.

## OPERATIONAL CONSIDERATIONS

- The designated Bear Guard should have no other duties assigned.
- The designated Bear Guard should have received Bear Guard training.
- Make sure your presence is known.
- Do not leave the area where the responders are located.
- Don't attract bears with food. Keep the response area clean and all foodstuffs properly secured in air tight containers.
- Weapons will not be left unattended by the Bear Guard unless unloaded, rendered safe, in a secured location or locked vehicle.
- Bear Spray should be kept in close proximity to the field responders.

## POST DEFENSE OF LIFE OR PROPERTY (DLP) OR HAZING EVENT

- Initiate reports to IC and / or investigating government agency
- Document names & contact information of all personnel who witnessed the event
- Use stakes or rock cairns to mark and preserve locations of responders, bear guard, animal at time of DLP
- Control photography, scene documentation only. No trophy photos!
- Cooperate and support Wildlife Protection Officials conducting the investigation.



To report an oil spill and activate CISPRI, call 907-776-5129

# WASTE MANAGEMENT TACTICS

## PURPOSE OF THE WASTE MANAGEMENT TACTICS

This section covers waste management issues associated with oil spill response. In any size spill, waste is generated almost immediately and soon can become an issue that needs to be addressed to maintain an ongoing response.

Tactics associated with waste management are:

- **CI-WM-1, Waste Management Plan and Permitting:** This tactic describes the categories of waste generated in a spill, the development of a waste management plan, and the permits necessary to handle, transport, and dispose of waste.
- **CI-WM-2, Management of Liquid Wastes:** This tactic provides additional information about the types of liquid waste generated in a response and the options for handling and disposing of them.
- **CI-WM-3, Decanting:** This tactic describes the process to remove water from primary storage to provide more room for recovered oil.
- **CI-WM-4, Management of Solid Wastes:** This tactic describes the types of solid waste generated in a response and the options for removing or disposing of them.
- **CI-WM-5, Decontamination (Small Vessel):** To avoid the spread of oil from impacted areas, it is vital to clean response vessels before they are re-deployed to a different area. This tactic describes the methods used to clean (decon) small response vessels.
- **CI-WM-6, Decontamination (Large Vessel):** It is necessary to clean large vessels before they move from an impacted area. This tactic describes the methods used to clean (decon) large response vessels.
- **CI-WM-7, Decontamination (Equipment):** Equipment used to collect and recover spilled oil will become oiled during a response and will need to be cleaned. This tactic describes the methods used to clean (decon) equipment.
- **CI-WM-8, Oiled Debris:** This tactic describes the process used for removal of oil woody debris within the tidal rips in Cook Inlet.

## HOW WASTE MANAGEMENT IS MANAGED

Management of waste generated in a response is the responsibility of the Environment Unit Leader (EUL) working in the Planning Section. The Environment Unit develops the Waste Management Plan, which covers the estimates for the types and quantities of waste generated by the response.

The Resources Unit ensures that waste handling is adequately resourced in terms of vessels and on-scene waste handling and storage. An on-scene Task Force Leader will be assigned to direct all waste management operations and keep in communication with the EUL via the CISPRI Dispatcher in the Command Post. Much of the field waste classification is conducted in the field by trained contractor personnel.

## SAFETY ASPECTS OF WASTE MANAGEMENT

Safety is the most important aspect of waste management activities. The safety section of this manual outlines the safety program that is used to ensure that a response is conducted as safely as possible. The Safety Officer based in the CISPRI Command Center has overall responsibility for response safety. A Field Site Safety (FSS) will be assigned to monitor and ensure that field waste management is conducted safely. The FSS will conduct regular safety briefings for responders and will recommend PPE for them.

Specific safety issues include the following:

- **Lifting and moving waste containers:** A large amount of waste can be generated during a response and will need to be lifted and transported from the shoreline and from response vessels to the transport vessels. Responders must take care when moving waste containers.
- **Heavy Machinery:** Responders must take care when working around heavy machinery used for moving waste.
- **Hazardous waste:** Waste will be sorted and characterized once collected and safe handling procedures of waste must be followed.

## COMMUNICATIONS

There will be regular communication between the field responders and the CISPRI Dispatcher. The Waste Management Task Force Leader will keep the Planning Section/EUL apprised of the amounts and types of waste collected, and coordination will be necessary to handle large amounts. Good coordination between the Environmental Unit and the Operations Section is necessary for adequately resourcing the waste management effort (Tactic CI-LP-2).

## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to identify the types of wastes generated in spill response, to provide guidance on developing a plan for managing that waste, and to identify the permits that may be needed.

Collection, storage, transportation, treatment, and disposal of spill-related waste will be conducted in a manner that minimizes environmental and public health impacts. Procedures are in place to ensure that all regulations are followed and that necessary permits are obtained. Procedures to sample, analyze, and monitor waste to determine proper management practices are also in place. Waste management options include recycling or reuse (e.g., injection into the crude process stream), treatment, and land disposal.

The term "waste" means materials that are generated as a direct result (e.g., recovered oils) or as an indirect result (e.g., refuse, sewage, and hazardous wastes) of an oil spill. "Waste" is not used here to classify these materials for purposes of state and federal solid waste and hazardous waste statutes and regulations. In this context, "waste" does not mean "solid waste" as defined by AS 46.03.900(5)/18 AAC 60.910(53) or by 42 USC § 6903(27).

**Table 1: Waste Categories**

| WASTE CATEGORY | EXAMPLES |
|---|---|
| **Oily Liquids** | • Recovered or skimmed oily mixtures<br>• Used engine oils, hydraulic fluids<br>• Fuels contaminated with water and solids<br>• Engine room bilge/ballast waters from vessels<br>• Rain water runoff from waste storage areas<br>• Wash waters from cleaning boats, equipment, gear, or recovered wildlife<br>• Other oily waters |
| **Non-Oily Liquids** | • Sewage, liquid human wastes (gray and black waters)<br>• Lab wastes, liquid animal wastes, medical biohazard waste |
| **Oily Solids** | • Sand/gravel/tar balls<br>• Asphalt patches<br>• Sludge<br>• Sorbent pads/boom/wood<br>• Shoreline debris including kelp and pop weed<br>• Logs and driftwood<br>• Oily personnel gear and clothing<br>• Damaged or disposable response equipment and gear<br>• Empty drums/containers |
| **Non-Oily Solids** | • Domestic garbage<br>• Discarded equipment and construction materials |

## WASTE MANAGEMENT PLAN

In the event of a spill, the Environmental Unit will develop a site-specific Waste Management Plan, outlining waste stream transportation, treatment, and disposal options, and identifying equipment, staffing, and other support necessary to address waste management issues. The management plan will include:

1. **Field survey of waste:** When applicable, a detailed survey of the wastes will be undertaken to collect information to identify appropriate management options. Types of data to be collected include:
   - Origin or source of the waste
   - Type of waste
   - Location(s)
   - Volume or weight that must be managed
   - Means of containerization (in drums, barges, bags)
   - Means required to effect transfer, if necessary
2. **Identification of applicable regulatory requirements:** The specific regulatory approval process will be identified for each waste management alternative, and relevant agencies will be consulted to incorporate site-specific stipulations.
3. **Selection of waste management alternatives:** Applicable disposal tactics will serve as a guide for the selection of appropriate management alternatives.

Table 2 identifies permits that may be required for waste management.

Expansion of field operations could include the development of task forces based on the needs of waste management. Contract vessels (CVs) designated as waste management boats can support, and work under, operational groups depending on the size of the incident. Waste handlers in the field transporting bagged waste are required to have a site-specific waste handling briefing. CV crews will receive a job-specific and site-specific briefing on how to handle waste. The briefing is part of the Waste Management Plan developed during a spill. CV crews primarily transport characterized waste. Waste management duties are assigned within a Waste Management Task Force.

A generic Waste Management Plan is provided in Appendix D. A Job aid for Waste Management and Disposal and the mentioned permits is available on the ADEC website at https://dec.alaska.gov/spar/ppr/response-resources/permits-tool/

## WASTE MANAGEMENT TASK FORCES (ON WATER)

In a major spill Waste Management Task Forces will be composed of a variety of vessel types, including small boats to collect waste from other vessels or sites and transport to a large collection vessel such as a tender or storage barge. Consideration will be given to the need for separate vessels for incompatible waste streams and for large specialty vessels to carry sewage pump trucks for pumping small vessels, etc.

**Table 2. PERMITS RELATED TO WASTE MANAGEMENT**

| ACTION | PERMIT | REGULATION | COMMENT |
|---|---|---|---|
| **Open Burning** | ADEC Open Burning Permit | • AS 46.03.020 Powers of ADEC<br>• 18 AAC 15 Administrative Procedures<br>• 18 AAC 50.030 Open Burning | Application must be submitted 5 days before a burn is to be conducted. |
| **Incineration** | ADEC Air Quality Permit to Operate | • AS 46.03.010 Declaration of Policy<br>• AS 46.03.140 Emission Control Requirements<br>• AS 46.03.150 Classification and Reporting<br>• AS 46.03.160 Additional Contaminant Control Measures<br>• AS 46.03.170 Variances<br>• 18 AAC 14 Administrative Procedures<br>• 18 AAC 50 Air Quality Control | Permit will cover construction and operation of an incinerator with rated capacity of 1,000 pounds per hour or more. |
| **Burial or Landfilling** | ADEC Solid Waste Disposal Permit | • AS 46.03.020 Powers of ADEC<br>• AS 46.03.100 Waste Disposal Permit<br>• 18 AAC 15 Administrative Procedures<br>• 18 AAC 60 Solid Waste Management | Submit application at least 60 days before operations commence. |
| **Oil/Water Separation** | ADEC Wastewater Disposal Permit; a federal NPDES Permit is required if the wastewater system discharges into a waterway | • AS 46.03.100 Waste Disposal Permit<br>• AS 46.03.090 Plans for Pollution Disposal<br>• AS 46.03.110 and .720 Waste Disposal Permit Procedure<br>• 18 AAC 15 Administrative Procedures<br>• 18 AAC 70 Water Quality Services<br>• 18 AAC 72 Wastewater Disposal<br>• 40 CFR 125 NPDES | If the discharge is into a waterway and an NPDES Permit is acquired, this permit will also satisfy the requirement for an ADEC Wastewater Permit. |
| **Decanting** | ADEC Decanting Permit | • 18 AAC 75.310 | Also see "Oil/Water Separation" above. Authorization must be obtained for all offshore recovery operations that include oil/water separation. Verbal authorization to undertake decanting operations may be granted by ADEC but must be followed by a written plan from Incident Command. |

| | | | |
|---|---|---|---|
| **Domestic Wastewater** | Federal NPDES Permits, certified by the state, are required for discharges into navigable waters.<br>ADEC wastewater disposal permit is required for disposal on land. | • AS 16.10.010 Interference with Salmon Spawning Streams and Waters<br>• AS 46.03.050 Authority<br>• AS 46.03.090 Plan for Pollution Disposal<br>• AS 46.03.100 Construction and Operation of Certain Facilities Prohibited<br>• 8 AAC 72.060 Plan Review | The Federal On-Scene Coordinator (FOSC) may allow discharges without a permit. |
| **Hazardous Waste** | No permits are needed for collection and temporary storage. However, materials must be removed within 90 days of collection. | • AS 46.03.299 Radiation and Hazardous Waste Protection<br>• 18 AAC 62.020 Identification of Hazardous Wastes<br>• 40 CFR 262.34 TSD Permit Requirement | - |
| **Right-of-Way Over Native Land** | Right-of-way authorization | • 25 USC 323 Right-of-Way for Any Purpose Across Native Land<br>• 25 CFR 1616 Right-of-Way Over Native Land | - |
| **Leasing Native Land** | Revocable Land Use Permits are necessary for short term land uses | • 25 USC 415 Lease of Restricted Land<br>• 25 CFR 131 Leasing and Permitting | Revocable Land Use Permits are limited to the term of the specified activity (usually one year or less). |
| **Rights-of-Way Over State Land** | Alaska Department of Natural Resources (ADNR) Permit | • AS 38.05.035 Powers and Duties of the Director<br>• AS 38.05.330 Permits<br>• 11 AAC 58. 200 Right-of-Way or Easement Permit | Permits from the Alaska Department of Fish and Game and Alaska Department of Commerce and Economic Development may also be required. |
| **Land Use** | ADNR Permit | • AS 38.05.035 Powers and Duties of the Director<br>• AS 38.05.330 Permits<br>• 11 AAC 96 Miscellaneous Land Use Regulations<br>• 11 AAC 62 Tide and Submerged Land<br>• 11 AAC 60.140 Stock Driveways<br>• 11 AAC 58.210 Special Land Use Permits | - |

*This page left intentionally blank*

## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is the handling, storage, and transportation of recovered liquid waste to disposal facilities. A response will generate large amounts of various types of liquid waste. During development of the Waste Management Plan (see Tactic CI-WM-1), the types of waste and quantities of waste will be estimated and resources will be ordered to be in place for this tactic.

### Recovered Oil and Oily Liquids (Waterborne)

Recovered oil and oily liquids can be collected into primary or secondary storage barges such as micro/mini-barges, pollutanks, OWS, and CISPRI barges. The amount of oil and oily liquids stored and transported can be greatly increased by decanting water from the barges or tanks as described in Tactic CI-WM-3.

- **Mini or Micro-barges:** Used for the collection and transport of oil and oily water in the nearshore response arena. Mini/micro-barges are transported to secondary storage for offloading and then return to recovery operations if needed.
- **Secondary Storage Barges:** Barges such as the Barge 141 and the CISPRI Responder can used for temporary storage before the liquids are loaded onto a tanker-of-opportunity (TOO) or to a Cook Inlet facility for final disposal.

### Non-Oily Liquids (Waterborne)

Sewage and gray water produced in a response operation will be transported to a local municipal wastewater treatment facility. Transport of non-oily liquids will be by designated barges or other vessels with suitable storage and handling capabilities.

### Recovered Oil and Oily Liquids (Landbased)

Recovered oil and oily liquids can be collected during an inland response in fast tanks, baker tanks, etc. These can be removed off site via vacuum truck, portable tanks, etc.

- **Fast Tanks or Portable Tanks:** Fast Tanks or Portable (500 bbl) tanks can be used for the collection of oil and oily water in shoreside or land based response areas.
- **Tank Trucks:** Tank Trucks or Vacuum Trucks can be used for temporary storage before the liquids are transported to a Cook Inlet facility or waste management facility for final disposal.

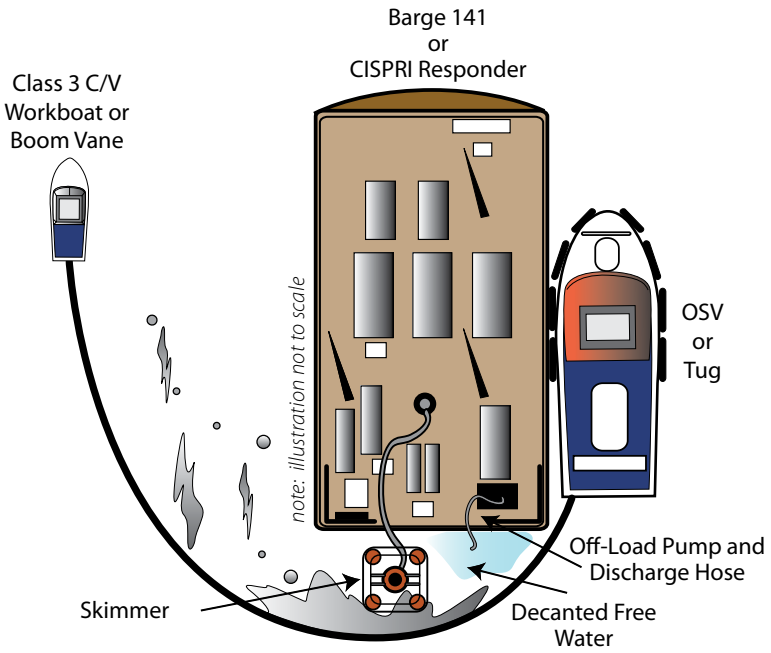
### Non-Oily Liquids (Landbased)

Sewage and gray water produced in a land based response operation will be transported to a local municipal wastewater treatment facility. Transport of non-oily liquids will be by vacuum trucks or honey wagons with suitable storage and handling capabilities.

Table 1 provides a display of waste handling and disposal options.

**TABLE 1: LIQUID HANDLING AND DISPOSAL SUMMARY**

| Category | Specific Waste | Generation Source | Initial Container at Source | Transfer Platform | Management Options |
|---|---|---|---|---|---|
| Recovered Oil | - | • Oil recovery sites | • Vacuum trucks<br>• Portable tanks<br>• Recovery barges<br>• Mobile skimmers<br>• Pollutanks<br>• Response vessels<br>• Fast tanks<br>• Mini or micro-barges<br>• OWS | • Temp storage tanks<br>• Vacuum trucks<br>• Portable tanks<br>• Recovery barges<br>• Mini or Micro-barges<br>• Vessel of Opportunity<br>• Member Company facility | • On-site separation: water separation by decanting, then:<br>• Member Company facility or Vessel-of-Opportunity to out-of-state facility<br>• Off-site recycling facility |
| Oily Liquids | Water covered with crude or non-crude oil | • Oil recovery sites | • Vacuum trucks<br>• Portable tanks<br>• Recovery barges<br>• Mobile skimmers<br>• Pollutanks<br>• Response vessels<br>• Fast tanks<br>• Mini or micro-barges<br>• OWS | • Temp storage tanks<br>• Vacuum trucks<br>• Portable tanks<br>• Recovery barges<br>• Mini or micro-barges<br>• Tanker or Barge of Opportunity<br>• Member Company facility | • On-site separation: water separation by decanting, then:<br>• Member Company facility or Vessel-of-Opportunity to out-of-state facility<br>• Off-site recycling facility |
| | Oily decontamination and waste storage cell water, including oil contaminated snow. | • Decontamination areas<br>• Wildlife and otter treatment areas<br>• Hydro-flushing<br>• Snow melting | • Portable tanks or drums<br>• Temporary containment<br>• Settlement ponds<br>• Vacuum truck<br>• SuperSucker<br>• Baker tanks | • Tanker or Barge of Opportunity | • Member Company facility<br>• Off-site recycling facility |
| Non-Oily Liquids | Sewage and Gray Water | • Porta-potties (discharge to POTWs only)<br>• VMT wildlife and otter treatment areas<br>• Response vessels | • Collected by Porta-potty contractor<br>• Wildlife facilities sewage systems tanks<br>• Cook Inlet Facilities sewer systems | • Sewage pumping contractor | • City of Kenai POTW<br>• City of Homer POTW<br>• Municipality of Anchorage POTW |
| Oily Snow | Oily Snow | • Oil recovery sites | • Temporary pit<br>• Bulk bin | • Tank truck<br>• Vacuum truck<br>• SuperSucker<br>• Baker tanks | • Natural melt<br>• Snow melters<br>• Heaters<br>• On-site separation, then off-site recycling facility |




## TACTIC PURPOSE AND DESCRIPTION

Decanting is the process of draining recovered water from portable tanks, internal tanks, collection wells, or other storage containers to increase the available storage capacity for recovered oil.

The Environment Unit will work with the Operations Section to collect the information necessary to complete an ADEC Oil Spill Decanting Application/Authorization. Once approval of a specific decanting operation has been received and oily liquid storage tanks have been gauged, decanting operations can begin. Decanted water should be discharged into a contained area (e.g., boomed) that is suitable for secondary oil recovery.

Decanting application forms with instructions for their use and can be found in the permits program available on the ADEC website at:

https://dec.alaska.gov/spar/ppr/response-resources/permits-tool/

## EQUIPMENT FOR DECANTING CISPRI BARGES

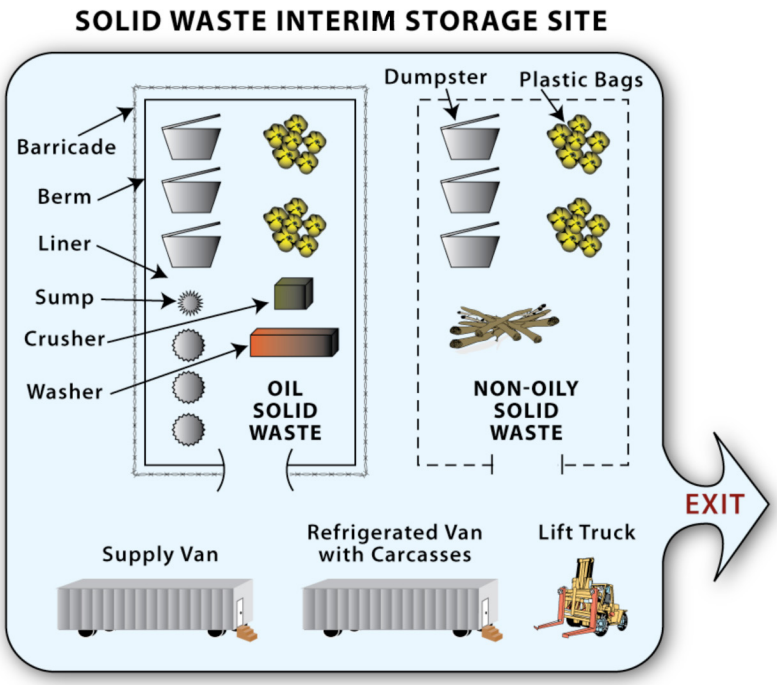
| EQUIPMENT | FUNCTION | LOCATION OF EQUIPMENT | AMOUNT AVAILABLE |
|---|---|---|---|
| Transfer Pumps | Decanting | Barge 141 or CISPRI Responder | 1 |
| Discharge Hoses | Liquid transfer | | 1 |
| Sounding tools | Tankerman tools | | 1 |
| Containment Boom | Oil Collection | | Amount |
| Sorbent Boom | Secondary Containment | | Varies |
| Sample jars | Hold samples for estimating skimmer efficiency and oil/water ratio in the discharge | | Various |

## OPERATIONAL CONSIDERATIONS

- In the State of Alaska decanting requires a permit (See CI-LP-6).
- In some situations, decanting may proceed simultaneously with loading (from skimmers or other containers).
- Record keeping is required for each decanting operation (decanting logs are recommended), and volumes loaded and decanted are passed back to the IMT.
- Each barge has specific loading/decanting/offloading procedures:
- The loading procedure outlines the barge tank-loading sequence.
- The decanting procedure outlines the barge tank-decanting sequence.
- The offloading procedure outlines the barge tank-offloading sequence.

**TYPICAL CONDITIONS OF ADEC-APPROVED DECANT PLAN**

- Water discharged in decanting must not have any oil sheen and must contain a lesser concentration of oily contaminants than the oil/water mixture being recovered.
- Decant water must be discharged within the collection boom or area, vessel collection well, recovery belt, weir area, or directly in front of a recovery system, unless approved otherwise.
- Vessels not equipped with an oil/water separator must allow a specified retention period of 4 hours for large recovery barges (>10,000 bbl). Decanted water must be withdrawn a minimum of 12 inches below the oil/water interface in any temporary storage tank.
- Close control over the skimmer/discharge system must be continually maintained by operating personnel to prevent discharge of concentrated oil.
- Tankermen shall document all decanting operations, including location of the decanting, time decanting started & stopped, and decanting pump rates.
- ADEC staff shall have access to the decanting operation for purpose of evaluating its effectiveness and to collect samples if needed.
- Follow any additional conditions in the decanting authorization.




## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to describe options and procedures for managing and disposing of oily and non-oily solid waste generated by a spill response operation.

### OPERATIONAL CONSIDERATIONS

Area for oily and non-oily solid wastes will be designated by the Environmental Unit. Solid waste interim storage sites will be selected based on expected logistics of specific events. This information will be included in the site-specific waste management plan. Some of the possible interim solid waste storage sites for Cook Inlet include the Hilcorp Rig Tenders Dock, Homer (Chip Area), Port of Anchorage, Kenai Pipeline Company, and other Member Company designated areas. Additionally, temporary storage sites may be designated at Kodiak, Seldovia, etc. based on incident-specific information.

Personnel will follow several steps in handling waste that arrives at the designated site:

- Segregate wastes by type;
- Place oily wastes on a liner (runoff from the liner will be collected in a sump, separated into oil and water phases, and disposed of in accordance with Tactic CI-WM-2); and
- Tally waste containers by type.

Within a day of the bags' arrival at the storage site, 10 percent of oily waste bags will be sampled according to EPA SW-846, Chapter 9, for TCLP benzene, reactivity (sulfides), and ignitability. Bags will be held pending laboratory results. Bags in lots failing the test are considered hazardous waste and must be managed as such.

Table 1 lists the most common types of solid waste that may be generated, along with treatment disposal options and operational/environmental considerations. Tables 2 describe specific options with contact information and applicable limitations for use.

### HAZARDOUS OILY SOLID WASTES

It is possible that hazardous wastes as defined by 40 CFR 261 under the Resource Conservation and Recovery Act (RCRA) may be generated by spill response activities. These wastes could include spill-related materials determined to be hazardous, maintenance wastes generated by vessels and other vehicles, and laboratory wastes and residues from testing and disposal of spill-related material.

Hazardous wastes should be segregated from non-hazardous wastes, handled in accordance with the RCRA, and shipped by the Responsible Party hazardous waste contractor to an EPA-permitted treatment, storage, or disposal (TSD) facility in the continental United States (See Tactic LP-6). A hazardous waste storage area will be established for hazardous wastes awaiting export to a permitted disposal facility. If necessary, satellite accumulation areas will also be established. Proper container storage and labeling practices will be followed at storage areas.

Hazardous waste management procedures include the determination that

response contractors are aware of regulatory requirements related to the handling of hazardous wastes.

## NON-HAZARDOUS OILY SOLID WASTE

### Disposal

Non-hazardous oily solid waste may be disposed at the Kenai Peninsula Borough landfill with specific approval if concentrations are below 500 mg/Kg GRO, 1,000 mg/Kg, and 50 mg/Kg BTEX (Benzene, Toluene, Ethylbenzene, Xylenes). Other regulated non-hazardous oily waste will be disposed via waste disposal contractors such as Entech, Alaska Soil Recycling or Republic Services. Shipping is determined on a material basis, and can include bulk transport, super sacks, roll offs, drums, and other containers.

### Incineration

Small portable incinerators can be used on site at multiple locations. These require permits, but approval of their use should be obtained in the waste management plan for the spill.

Ash generated by incineration will be tested for hazardous characteristics and transported for disposal at appropriately permitted facilities. Gases resulting from combustion will be treated to remove particulates.

### Landfilling

Solid waste not suitable for incineration (such as rain suits and some kinds of boom) will be shipped to landfill disposal sites. At this time, no landfill facility in Alaska will accept significant amounts of oily solid wastes. In the event of a large spill, landfill disposal in Alaska will only be feasible if ADEC permits disposal of significant amounts of oily waste at existing sites and/or expedites permitting of proposed sites. If in-state landfill capacity for oily solid waste is exceeded, these wastes will be shipped to the continental United States for disposal.

### Open Burning

See Tactic CI-LP-6 for information on permits required for open burning.

On-site open burning can be used for non-hazardous oil-stained rock-and-sand mixtures, tar balls, logs, driftwood, and miscellaneous solid wastes.

While open burning may be a feasible disposal method for large quantities of combustible oily wastes that are stockpiled in remote areas, this method generally requires weather that encourages smoke dispersal. Additionally, residue produced by open burning needs to be collected, tested for hazardous characteristics, and properly transported to disposal sites. Open burn pits should be designed to facilitate efficient removal of residues.

Sustained burns of logs and other large items can penetrate some substrates to a depth of about 1 foot to remove oil.

## NON-HAZARDOUS NON-OILY SOLID WASTE

Non-oily waste material may be incinerated (see previous section) or sent to an appropriate municipal landfill. The Responsible Party will coordinate with borough officials and provide technical assistance if requested. In the event of a large cleanup operation, it will be important to work with the community receiving spill wastes to meet increased personnel and equipment requirements.

## PLANNING ASSUMPTIONS

Areas available in the CISPRI response zone as identified in the introduction mainly rely on Member Company solid waste storage options and properties. Additional storage areas will be identified as needed at the time of the response — as determined by availability, authorization by the Unified Command, and/or contractual agreements, but could include the CISPRI yard, Hilcorp Rig Tenders Dock or Member Company locations.

- Assumptions for estimating waste volumes generated:
  - Upper limit for bagged waste is 40 lb/bag.
  - Three 40-lb bags fill a drum.
  - A drum is approximately ¼ cubic yard.
  - 12 bags = 1 cubic yard.
  - 20-cubic-yard bins hold about 240 bags of waste.

## OPERATIONAL CONSIDERATIONS

- The first priority in collection of oily and non-oily solid wastes is that they are not mixed during collection, storage, transportation, and disposal.
- Operators must ensure that proper permits are in place prior to commencing an open burn (see Tactic CI-WM-1; CI-LP-6).
- Only HAZWOPER-trained personnel are authorized to collect & handle oily waste.
- All waste generated must be counted and recorded.
- Hazardous or potentially hazardous waste will be collected and stored in labeled, with applicable RCRA regulations. (see tactic LP-6) Hazardous waste potentially generated at a response site include RCRA characteristic oily waste, batteries, filters, paints, lamps, and Draeger tubes.
- Threat of spreading (forest fires) and biological impacts of heat should be considered before conducting open burning operations.
- It is possible that non-oily solids waste could be buried or burned at or near the site of collection. Both of these options require permits and approvals from ADEC and would be coordinated through the Environment Unit. Specific information for the response activity would be addressed in an incident-specific Waste Management Plan. Information regarding field activity would then be included in the site-specific waste management briefing.
- For animal carcasses, the following procedures will be implemented in accordance with Tactics CI-W-3:
- Tag and place the animal carcasses in clear bags. Separate oiled from un-oiled carcasses. Label the bags and place them in a refrigerated container, if available.
- Call the Environmental Unit to coordinate the retrieval the carcasses;
- Place un-oiled dead fish above the high-water mark.
- The size of the spill and response activity will determine the equipment and personnel needed to support a response effort. If the recovery warrants the effort, 20-cubic-yard bins will be staged at cleanup sites to collect waste bags. If the response is smaller, it is more likely that waste collected will be stored onshore, above the high-tide mark, until transfer to a waste transportation vessel is arranged.
- All solid waste is collected into either clear (oily) or blue (non-oily) plastic bags. Oily waste must be held in interim storage on a lined site. It is not necessary to store non-oily waste on a liner. No single bag of waste is to weigh more than 40 pounds.
- Large debris, whether oiled or un-oiled, can be held in dumpsters, drums, or totes or similar type containers. Any container used for storing oily debris must be lined.

**Table 1: WASTE TREATMENT AND DISPOSAL OPTIONS**

| Category | Specific Waste Streams | Treatment & Disposal | Operational/Environmental Considerations |
|---|---|---|---|
| **Oily Solids** | Sorbents, boom, PPE, clothing, sludge | • Wringer/presses to remove free oil<br>• Air-curtain incinerator<br>• Non-hazardous – burn in commercial incinerator<br>• Hazardous – CISPRI or Member Company hazardous waste contractor | • See waste management plan for characterization.<br>• ADEC approval and/or air quality permit needed for air-curtain incinerator use. |
| | Vegetation and debris | • Open burning at or near spill site/cleanup operations<br>• Hot water washing to remove and collect oil<br>• Air-curtain Incinerator | • ADEC approval needed for open burning or air-curtain incinerator use<br>• Hot-water washing can generate large volumes of dirty water that will need to be managed. |
| | Contaminated soil, sand, gravel | • In-situ remediation<br>• Non-hazardous – Commercial contaminated-soil incinerator<br>• Thermal desorption unit for oil recovery<br>• Hazardous – CISPRI or Member Company hazardous waste contractor | • In-situ remediation must be approved by ADEC.<br>• Thermal desorption unit can be used to recover oil from soil that would otherwise have hazardous waste characteristics. |
| **Non-Oily Solids** | Construction material, garbage | • Burial at spill site<br>• Open burning<br>• Municipal landfill (Soldotna, Kenai, Homer, Kodiak Anchorage)<br>• Ship out of state | • Burial of solid waste at or near spill site requires ADEC approval and/or a solid waste disposal permit.<br>• Open burning of solid waste at or near spill site requires ADEC approval and/or an open burn permit.<br>• Local approval needed for disposal of waste in municipal landfills. Landfills must have sufficient storage capacity |
| **Hazardous & Other Regulated Wastes** | Hazardous waste (batteries, filters, paints, lamps, Draeger tubes) | • CISPRI or Member Company hazardous waste contractor | • Manage in accordance with CISPRI/ Member Company hazardous waste disposal procedures. |
| | Coolants (antifreeze, glycol) | • Member Company hazardous waste contractor<br>• Recycle | • Member Company will make arrangements for Disposal or recycling. |
| **Carcasses** | Oiled & non-oiled carcasses | • Store in refrigeration vans until disposition approved by appropriate resource agency | • Handled in accordance with Tactic CI-W-4. |

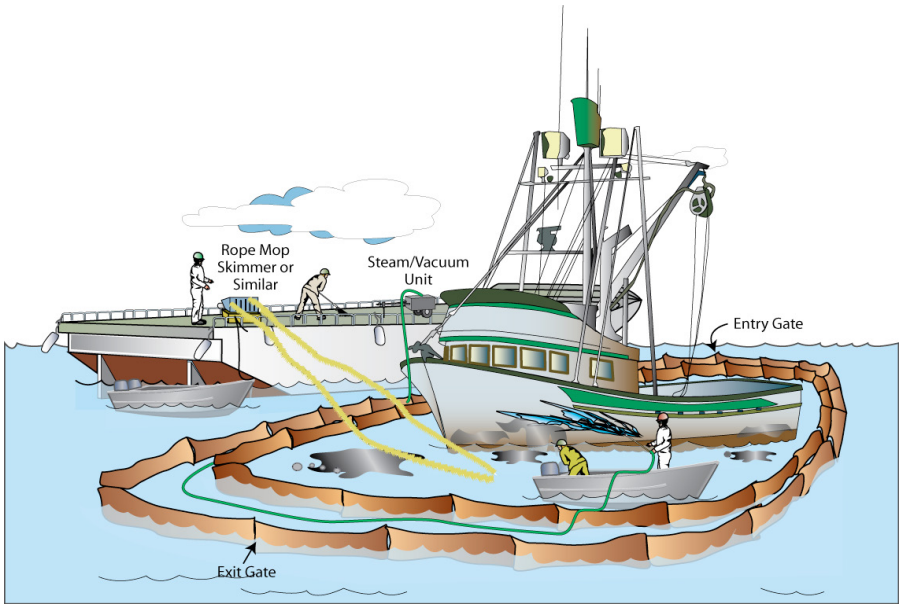
Note: See Tactic CI-LP-3 for contract sources for waste management.

**Table 2: OILY SOLIDS WASTE MANAGEMENT OPTIONS**

| | OILY DEBRIS VEG/SORBENT BOOM/PPE/ ETC | NON-OILY SOLID WASTE | Combustible Waste – This is an option for oily and non oily solids (debris) | NON-HAZARDOUS SOLID WASTE SAND /GRAVEL/SOILS |
|---|---|---|---|---|
| **Option** | Oily waste disposal contractor. | Local Landfills | On-site burning. | Initial lined and covered stockpile. Dispose at thermal oxidation contractor. |
| **Location** | Anchorage. | Anchorage, Soldotna, Seward, Homer. | Project Specific | Anchorage/ Alaska Soil recycling Fairbanks/On-site OIT |
| **Status** | Private / Commercial | Borough. | | Private / Commercial |
| **Volume Limitations** | Availability of bins, bags, totes | Approval may be required from landfills | Project Specific | N/A |
| **Delivery Mode** | DOT totes/bags/drums, other contractor approved containers. | Bulk Transport | On-site. | Bulk Transport, covered, ADEC approval required. |
| **Waste Limitations** | No hazardous waste contractor acceptance required. | Local landfill acceptance for standard and special wastes. | Will require land owner, borough, fire department and ADEC approval. | Oxidation contractor approval required. Must be solid and non-hazardous. |
| **Testing Requirements** | Contractor specific requirements or generator knowledge. | Material specific or generator knowledge. | To be determined. | GRO, DRO, BTEX and/or RRO (AK Methods). Generator knowledge may be acceptable. |
| **Manifesting & Labeling** | Non-haz labels/DOT transporter manifests | Not required. | N/A | Transport approval letter must accompany each load. |

Note: See Tactic CI-LP-3 for contract sources for waste management.

*This page left intentionally blank*




## TACTIC PURPOSE AND DESCRIPTION

Vessels leaving contaminated work sites are decontaminated prior to entering clean areas. Once released from the working task force, vessels are directed to check in with the decontamination crew.

Small vessel decontamination at remote sites is adjacent to a floating platform (barge or landing craft). Sufficient length of boom to surround the vessel being decontaminated is deployed before the process starts. Both hard boom and an absorbent sweep or boom is used. Cleaning typically includes hand-wiping with sorbent and an approved citrus-based cleaning agent. The cleaner is applied to the sorbent. A steam and/or hot water rinse may be used following the sorbent wipe. The decontamination procedure is repeated as necessary to assure a clean hull and deck. This procedure is more related to vessel decontamination when the vessel is demobilized from a response or moving to different response area. More typically, if a vessel will be resuming response actions and is just finishing a shift or response action, a more limited decontamination procedure may be followed such as gross decontamination of the deck and hull before the vessel departs a specific area rather than the more comprehensive procedure outlined above. This will be accomplished by hand-wiping the oiled areas of the vessel with sorbent material.

Oil floating on the water inside the boom is removed by means of a small skimming system or sorbent material (boom, pads, etc.). Recovered oil is stored in drums or other suitable water- and oil-proof containers.

When released from spill response duties to return home, vessels are more thoroughly cleaned, including steam-cleaning fishing vessels and their fish holds as necessary. Fishing vessels are inspected by the Alaska Department of Environmental Conservation (ADEC) before allowed to return to fishing grounds. Permitted Catcher/Processor vessels receive an additional ADEC Seafood Processor inspection before returning to fishing grounds.

Harbors may be used for decontamination if they are located near the spill response area. The vessel is placed in a berth that is boomed with both hard boom and sorbent material. The boom is closed behind the vessel. Decontamination follows the same process as for remote site decontamination. Small vessels could also be placed on trailers and transported to a contracted or Member Companies steam racks for decontamination. The transportation would take place only after gross contamination had been removed or if the vessels were minimally contaminated.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift for 1 Decon Station)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | LABORER / RESPONDERS | VESSEL OPERATOR |
|---|---|---|---|---|
| Barge or Suitable Vessels [A] *(offshore or remote site)* | Work platform | 1 | 4 | 1 |
| Booms [B] | Contained washed oils | 500′ | | |
| Work boats [C] | Boom tending & cleaning | 1 | | |
| Steam or hot water pressure washers [D] | Hull cleaning | 1 | | |
| Skimmer [E] (optional) | Recover floating oils | 1 | | |
| Sorbent pads/boom | Remove contamination | 1 | | |
| Waste Containers/bags/totes | Store waste | | | |
| Drums or liquid (fish) totes | Store recovered liquids | Amount Varies | | |
| PPE Supplies | Protect decon crew | | | |
| Sorbent Boom (optional) [F] | Floating oil recovery | | | |

A. Barge or landing craft could be used for work platform.
B. Boom amounts depend on size of vessels to be cleaned.
C. Number of workboats depends on number of vessels to be cleaned.
D. A citrus based solvent and cold water pressure washer could be substituted.
E. Skimmer depends on amount of floating oil?
F. Sorbent boom may work in lieu of skimmer depending on amount of floating oil/water?
Additional decon supplies and personnel can be procured from local suppliers when needed (See CI-LP-3).

## OPERATIONAL CONSIDERATIONS

- Permits must be obtained prior to on-water decontamination. See Tactic CI-LP-6.
- Site access is strictly controlled to limit spread of contamination.
- All decontamination personnel must be in appropriate PPE.
- All waste from the decontamination process is transported to a permitted disposal facility (See Waste Management Tactics CI-WM) designated in the incident Waste Management Plan.
- When a vessel has completed the response assignment and is demobilized to return to home port or other activities, a two-phase termination procedure is required:

**First Phase:**

a. Account for all equipment and return to designated location.
b. Deposit all waste at a designated location.
c. Undergo field decontamination to ensure hull does not spread contamination.
d. Return to home port or other designated area – Check in with Contract Vessel Administrator or Resources Unit as appropriate.

**Second Phase**

a. Final decontamination to ensure vessels are clean enough to be released home.
b. Inspection by ADEC.
c. Final release Issued by ADEC.

- The locations for field vessel decontamination are designated during a response and communicated to vessel crews by the Task Force Leaders. At the end of each shift, the Task Force Leader evaluates the need for and level of decontamination for each vessel to prevent spread of contamination into clean areas.

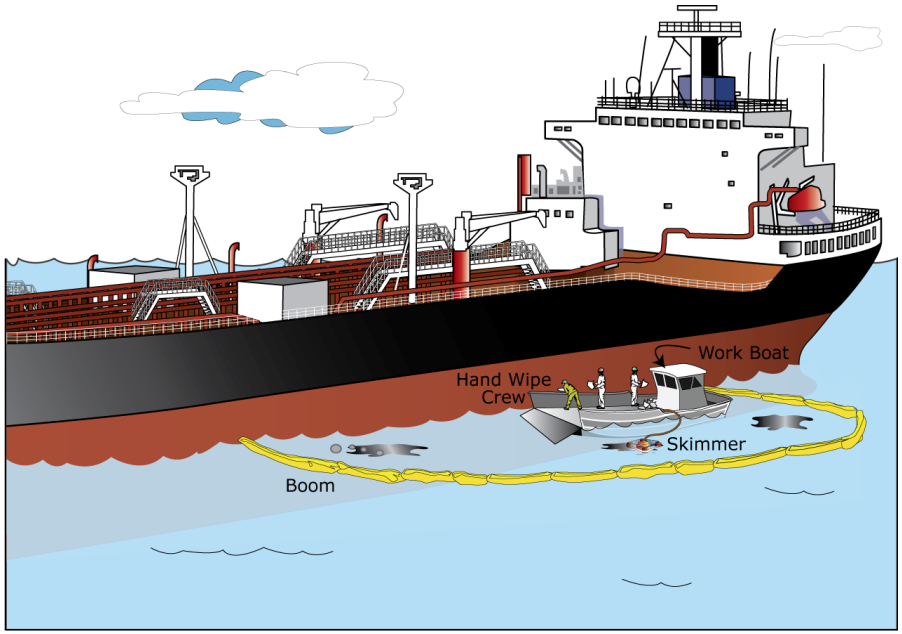
  The Task Force Leader directs vessels according to the following criteria:

  1. No Contamination / No Decontamination. If the vessel has not been exposed to oil, it can be released to transit to an identified safe harbor for re-supply, rest, and other logistical support.
  2. Light Contamination / Self Decontamination. Vessel crew members wipe down the deck and hull before the vessel is released to safe harbor.
  3. Heavy Contamination / Gross Decontamination. Vessel is directed to field gross-decontamination site for cleaning before being released to safe harbor.

- The Staging Area Manager in the Operations Section oversees decontamination operations. There are available waste management contractors in the Cook Inlet area to provide decontamination services if needed (see Tactic CI-LP-3).



To report an oil spill and activate CISPRI, call 907-776-5129




## TACTIC PURPOSE AND DESCRIPTION

Large vessels and tankers are cleaned at their berth as tides and currents allow. A large vessel or tanker could also be cleaned at a remote location (selection of the remote location will be made by the Unified Command). A support platform such as a small work barge is used by the hand-wiping crew to remove excess oil. Hand wiping could include a variety of equipment including brushes, mops, etc. Any oil that is released to the water is collected by sorbents or small skimmers, and the entire operation is contained inside boom.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift for 1 Decon Station)**

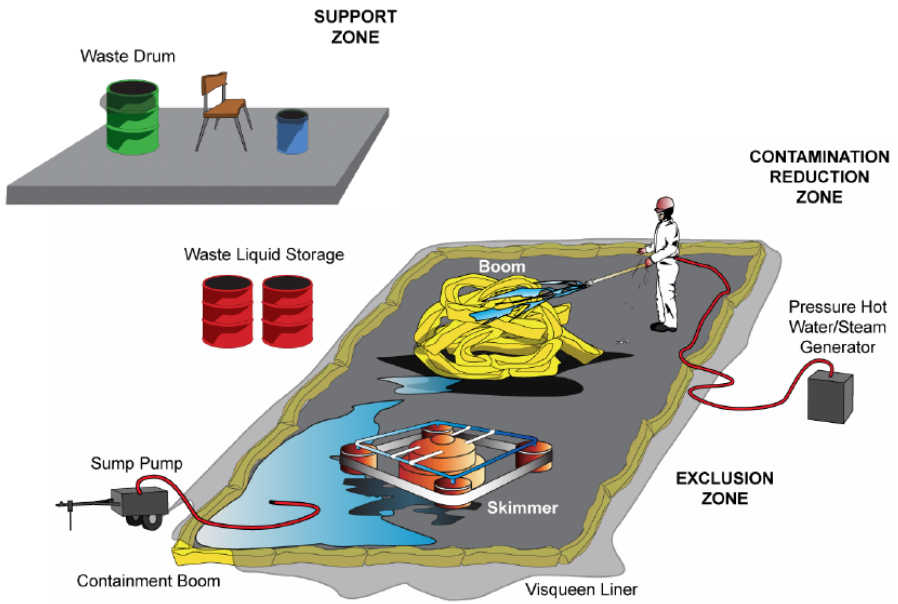
| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | LABORER / RESPONDERS | VESSEL OPERATOR |
|---|---|---|---|---|
| Landing Craft, Barge or Suitable Vessel *(offshore or remote site)* | Work platform [A] | 1 | 4 | 1 |
| Work Boats [B] | Boom Tending & Cleaning | 1 | | |
| Booms [C] | Contain Oils From Washed Vessel | ≥500' | | |
| Sorbent Pads | Remove Contamination | Amount Varies | | |
| Waste Containers/bags/totes | Store Waste | | | |
| Liquid Containers | Store recovered liquids | | | |
| PPE Supplies | Decon Crew | | | |
| Sorbent Boom (optional) [D] | Oil Recovery | | | |
| Skimmer (optional) [E] | Oil Recovery | | | |

A. A small barge or landing craft could be used for work platform.
B. Number of workboats depends on size of area to be cleaned.
C. Boom amounts depend on size of area to be cleaned.
Vessel may already be boomed (if conditions allow).
D. Sorbent Boom may be added to reduce contamination if needed.
E. Skimmer provided as needed. (Hand cleaning may not require a skimmer)

## OPERATIONAL CONSIDERATIONS

- Permits must be obtained prior to on-water decontamination (See Tactic CI-LP-6).
- All decontamination personnel must be in appropriate PPE (See Tactic CI-S-3).
- Site access must be strictly controlled to limit spread of contamination.
- All waste from the decontamination process is transported to a permitted disposal facility. The disposal facility is designated in the incident waste management plan.
- The Operations Section oversees decontamination operations. There are available waste management contractors in the Cook Inlet area to provide decontamination services if needed (See Tactic CI-LP-3).

*This page left intentionally blank*




## TACTIC PURPOSE AND DESCRIPTION

The operationally preferred site for boom / equipment decontamination is the CISPRI yard, Hilcorp Rig Tenders Dock or Homer Commercial dock area. The facility consists of a cleaning area, water, power, a pressure washer, and containment area that contains and allows recovery of decontamination fluids by pump or vacuum truck. Other on-land areas that can facilitate boom and other equipment decontamination include Member Company facilities or local waste management contractors. These areas also provide water, power, and decontamination fluid containment, and are easily accessible for pressure washers.

Barges and vessels can also be outfitted for boom decontamination. Containment and washing systems similar to those described for land-based facilities are used. The actual decontamination can take place within a boomed area adjacent to the vessel (similar to vessel decontamination) or on the vessel decks. The decontamination setup would be described specifically in the incident waste management plan for approval by the Unified Command.

The basic procedure is as follows:

- Remove gross contamination while equipment is in a boomed area still in the water.
- Transport to cleaning facility.
- High pressure / steam or hot water wash with pre-approved solvents / cleaners.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift for 1 Decon Station)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | LABORER / RESPONDERS |
|---|---|---|---|
| Visqueen *(offshore or remote site)* | Containment | Various | 4 |
| Steam, hot water or cold water pressure washers [A] | Decontamination | 1 | |
| Sump Pumps | Collect Liquids | 1 | |
| Waste Containers/bags/totes | Store Waste | Amount Varies | |
| Drums or Liquid Containers | Store recovered liquids | | |
| PPE Supplies | Decon Crew | | |
| Citrus Solvent, Brushes, rags, etc. | Cleaning by Hand | | |
| Sorbent Pads (optional) | Clean Equipment | | |

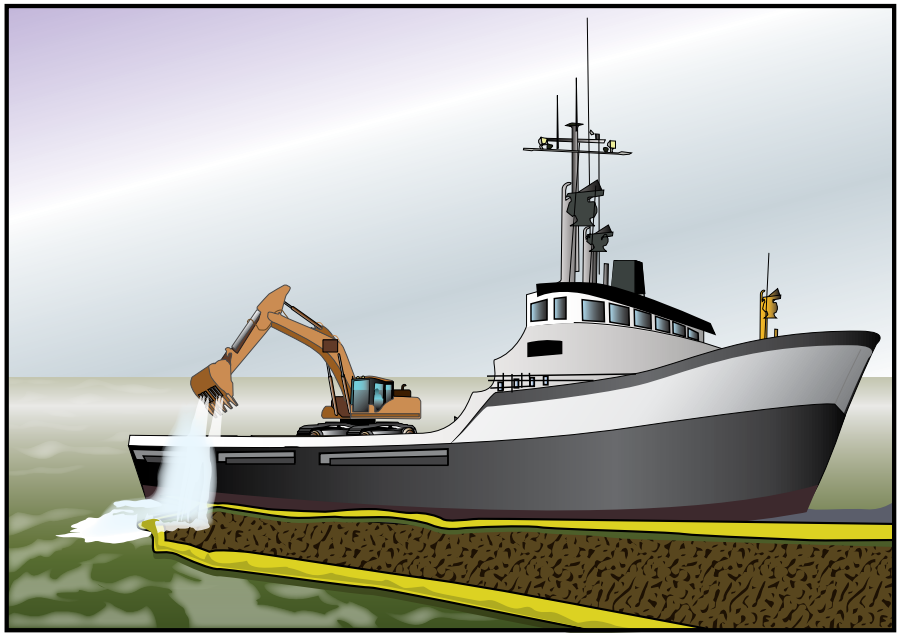
A. A citrus based solvent and cold water pressure washer could be substituted

Additional decon supplies and personnel can be procured from local, suppliers when needed (See CI-LP-3).

## OPERATIONAL CONSIDERATIONS

- All decontamination personnel must be in appropriate PPE (see Tactic CI-S-3).
- Site access must be strictly controlled to limit spread of contamination.
- All waste from the decontamination process is transported to a permitted disposal facility designated in the incident waste management plan (see Tactic CI-WM-3).
- The cleaning area will have site control and personnel decontamination setup as outlined in Tactics CI-S-4, and CI-S-3.
- Gross contamination on any heavy equipment will be cleaned before removal from the response site. Heavy equipment will then be brought to a equipment cleaning station as needed.

*This page left intentionally blank*



## TACTIC PURPOSE AND DESCRIPTION

The purpose of this tactic is to describe the process for the collection / removal of oily debris (free floating i.e. Ice, trees, branches. Tree roots etc.) Within Cook Inlet. Use of an excavator on the deck of a barge, landing craft or Class 1-2 vessel with water relief holes cut/ drilled in the excavator bucket to facilitate the process of dewatering collected debris. Modifications to the excavator will be made before equipment is loaded on the collection platform. Excavator(s) will be outsourced from local vendors.

## EQUIPMENT AND PERSONNEL

**(Minimum for 12-hour shift)**

| EQUIPMENT | FUNCTION | EQUIPMENT COMPLIMENT | LABORER / RESPONDERS | VESSEL OPERATORS |
|---|---|---|---|---|
| Landing Craft, Barge or Class 1-2 Vessel [D] | Collection Platform | 1 | 4 | 1 |
| Excavator | Collection | 1 | 1 | |
| Vessel | Tow Boom | 1 | 2 | |
| Boom 10″ x 12″T-com | Debris Collection | 200-400′ | 0 | 0 |
| PPE Totes [C] | Crew Decon | 2 | Amt Varies | |
| Chain Saws | Debris Handling | 2 | - | - |
| Waste Containers [A/B] | Waste Storage | Varies | - | - |
| Lashing Chain [E] | Lashing of Excavator | 4-10 ′x 3/4″ | | |
| **OPTIONAL EQUIPMENT** | | | | |
| Wood Chipper | Debris Management | 1 | 1 | - |

A. Number of Containers on board vessel is based on deck space of vessel.
B. Waste containers varies in size anywhere from 2 -20 cu. yards, waste containers can be dumpsters, ore bins, totes.
C. PPE Totes contain Tyveks, gloves, eye and ear hearing protection, waste bags, wash tubs cleaning agent (see CI-S-5).
D. USCG Winter Ice Guidelines Phase 1-2 will be adhered to.
E. See Operational Considerations

## OPERATIONAL CONSIDERATIONS

- Containers used to store oil debris must be lined with and impervious liner. Liner type and mil may also be determined by the waste management plan developed by the Environmental Unit. (See Tactic CI-WM-1, CI-WM-4 Appendix D Waste Management).
- All debris process is transported to a permitted disposal facility. The facility is designated in the Waste Management Plan.
- All debris processing personnel must be in appropriate PPE (See Tactic CI-S-3, Personal Protection Section of Equipment Manuals i.e. Chain Saw, Wood Chipper) JSA.
- Types of waste storage containers are: ore bins, dumpsters, drums. Waste containers can vary in size anywhere from 2-20 cu.yards. All

storage container will be lined with impervious liners. (See Tactic CI-WM-1, CI-WM-4 Appendix D Waste Management). Ice collected during this process will be stored in lined containers, once removed from the vessel ice is stored outside to remain frozen until container can be transported to melting facility and disposed of.

- Appropriate personal protection equipment will be determined thru the JSA paperwork process and Site Safety Supervisor / Site Safety Plan.
- Review APPENDIX B REALISTIC MAXIMUM RESPONSE OPERATING LIMITS (RMROL) for weather limitations.
- Weather, tides, temperature, sea state will be taken in to consideration before and during a response. During cold weather response's crews will rotate on and off deck as needed due to cold temperatures wearing appropriate winter clothing.
- Vendor for excavator/ chippers can be found in LP-3 of the CTM.
- Excavators will be out sourced thru local vendors.
- Excavator will be secured to the deck of the vessel using ¾" proof coil chain.

**Table 1: Waste Management and Disposal Options**

| Category | Specific Waste Streams | Treatment & Disposal | Operational/Environmental Considerations |
|---|---|---|---|
| **Oily Solids** | Sorbents, boom, PPE, clothing, sludge | • Wringer/presses to remove free oil<br>• Air-curtain incinerator<br>• Non-hazardous – burn in commercial incinerator<br>• Hazardous – CISPRI or Member Company hazardous waste contractor | • See waste management plan for characterization.<br>• ADEC approval and/or air quality permit needed for air-curtain incinerator use. |
| | Vegetation and debris | • Open burning at or near spill site/cleanup operations<br>• Hot water washing to remove and collect oil<br>• Air-curtain Incinerator | • ADEC approval needed for open burning or air-curtain incinerator use<br>• Hot-water washing can generate large volumes of dirty water that will need to be managed. |
| | Contaminated soil, sand, gravel | • In-situ remediation<br>• Non-hazardous – Commercial contaminated-soil incinerator<br>• Thermal desorption unit for oil recovery<br>• Hazardous – CISPRI or Member Company hazardous waste contractor | • In-situ remediation must be approved by ADEC.<br>• Thermal desorption unit can be used to recover oil from soil that would otherwise have hazardous waste characteristics. |
| **Non-Oily Solids** | Construction material, garbage | • Burial at spill site<br>• Open burning<br>• Municipal landfill (Soldotna, Kenai, Homer, Kodiak Anchorage)<br>• Ship out of state | • Burial of solid waste at or near spill site requires ADEC approval and/or a solid waste disposal permit.<br>• Open burning of solid waste at or near spill site requires ADEC approval and/or an open burn permit.<br>• Local approval needed for disposal of waste in municipal landfills. Landfills must have sufficient storage capacity |
| **Hazardous & Other Regulated Wastes** | Hazardous waste (batteries, filters, paints, lamps, Draeger tubes) | • CISPRI or Member Company hazardous waste contractor | • Manage in accordance with CISPRI/ Member Company hazardous waste disposal procedures. |
| | Coolants (antifreeze, glycol) | • Member Company hazardous waste contractor<br>• Recycle | • Member Company will make arrangements for Disposal or recycling. |
| **Carcasses** | Oiled & non-oiled carcasses | • Store in refrigeration vans until disposition approved by appropriate resource agency | • Handled in accordance with Tactics CI-W-2, CI-W-3, CI-W-4, and CI-W-5. |

# LOGISTICS & PLANNING TACTICS

## PURPOSE OF THE LOGISTICS AND PLANNING TACTICS

The ***CISPRI*** *Technical Manual* contains sections that describe the hands-on tactics that will be used to respond to a spill in Cook Inlet within the **CISPRI** response zone. This section of the manual describes some of the background activities that take place during a response or planning for a response. This section provides logistical information that will be useful in spill response activities especially for out-of-state members of the Incident Management Teams. This section also provides tools for contingency plan writers to help better define response times.

The **Logistics and Planning tactics** are:

- **CI-LP-1, RESPONSE DEPLOYMENT ASSUMPTIONS:** This tactic details transit speeds and times for the major assets that can be used in a response. Most of the larger CISPRI assets have a mobilization time and a transit speed, and therefore time to get from their base location to the area of the spill. This tactic can be used to help in planning for spill response. Making deployment assumptions is especially complicated when ice is present in northern Cook Inlet waters.
- **CI-LP-2, COMMUNICATIONS FOR SPILL PREVENTION AND RESPONSE:** This tactic outlines the methods and equipment used for communications during a response. An extensive and complex communications system covers the entire Cook Inlet area, and this tactic describes the types and capabilities of the system components.
- **CI-LP-3, ACCESSING CONTRACT AND NON-OBLIGATED RESOURCES AND OUT-OF-REGION EQUIPMENT:** This tactic describes the major contracts and agreements in place to supplement the response capabilities of CISPRI, as well as options for other, non-contracted resources.
- **CI-LP-4, CISPRI EQUIPMENT INVENTORY:** This tactic contains specifications on the various components of the CISPRI equipment inventory (see Appendix A.)
- **CI-LP-5, CONTRACTED VESSEL PROGRAM:** CISPRI maintains a significant Contract Vessel Program to use a variety of vessel types for spill response. This tactic describes the program, crew training, and management of the contract vessel fleet.
- **CI-LP-6, PERMITS FOR SPILL RESPONSE:** This tactic includes information about local, state, and federal permits and authorizations that could be required to support a response effort.

Appendix A: A catalog, including photographs and descriptions, of the CISPRI response equipment inventory.

*This page left intentionally blank*

## TACTIC PURPOSE AND DESCRIPTION

The primary tools for moving CISPRI spill response equipment to various spill sites will be vessels and trucks, with the possibility of using aircraft.

The attached tables and figures show estimated mobilization times and travel speeds for various response methods and locations. These tables are CISPRI's estimates under some various conditions, such as transiting against a strong current and in ice, but other factors such as inclement weather, poor visibility, darkness, rigorous sea conditions, etc could additionally impact these time estimates.

This tactic also includes responder availability and mobilization times. With limited responders CISPRI maintains a variety of contacts and contracts to acquire response personnel.

Cook Inlet and the surrounding terrain provide some of the most challenging spill response conditions in the United States. This includes both on-water and on-shore conditions. These issues are described in the RMROL Section of this Manual. The primary considerations that must be considered during a response in Cook Inlet include:

- Tides and currents
- Dynamic, moving ice
- Rips

We have selected an average transit speed of 10 knots for our transit times, but as already noted, the actual speed is subject to the environmental conditions. This is noted in the Tables 1 & 2.

**Winter Conditions Impact on Vessel Operations:**

- CISPRI maintains two spill response barges in Nikiski/Kachemak Bay for storage of recovered oil. During winter months, those barges are moved to Seldovia Bay to keep them from being damaged by the ice.
- CISPRI normally keeps a small vessel in the Homer Harbor during the winter season
- During the winter, tank barges and tank ships waiting to transit to Anchorage or Nikiski often wait in Kachemak Bay for better tides or weather.
- An appropriate response vessel accompanies each tank ship to Drift River so as to remain in compliance with Federal regulations regarding availability of response equipment during oil transfers. During summer operations, the response vessel goes to Drift River around the northern end of Kalgin Island. In the winter, this trip is made by going around the southern end of Kalgin Island due to ice conditions. This makes the trip longer and requires a longer time-frame. Tank Vessels take similar routes.
- Shorefast ice is formed along the shoreline from the constant freezing of the seawater during tidal changes. Shorefast ice can reach thickness of 5 meters or more and can form a protective barrier of shorelines, rivers and streams to prevent oiling of these areas.

### EQUIPMENT LOAD-OUT

The load-out of deeper draft vessels at Hilcorp Rig Tenders Dock is subject to the state of the tide. In an emergency, the vessels will come in with a minimum of 3 feet of water under their keel. At all other times, a minimum of 4 feet will be required.

Hilcorp Rig Tenders Dock has a mobile truck mounted crane to load vessels and deploy spill response equipment. The only other docks in Cook Inlet with sufficient water depth and a crane of suitable size and reach are located at the Port of Anchorage and in Homer. Even under the worst of tidal situations, it is more feasible to wait for sufficient water to conduct load-outs at Hilcorp Rig Tenders Dock, unless the spill is near Anchorage or Homer. The longshoremen at Hilcorp Rig Tenders Dock are familiar with CISPRI's vessels, equipment, deck layouts, etc, and this assists with completing load-outs promptly, efficiently, and safely.

Hilcorp Rig Tenders Dock reports that the average time to recall their longshoremen in an after-hours emergency is 1 - 2 hours. Based on this, they should be on-hand about the same time that CISPRI can recall their personnel and get response equipment moved to the dock.

CISPRI stages the response equipment for the two available offshore supply vessels (other than the Perseverance) at Hilcorp Rig Tenders Dock. The response equipment (skimmer, power pack, outrigger are & containment skirt) are stored on a single whale deck to facilitate movement of the equipment as well as loading it onto a vessel. In general, it takes 3 – 4 crane picks to fully load this equipment onto the vessel (> 1 hour).

During period of low water when deeper draft vessels cannot be loaded, CISPRI's smaller response vessels and mini/micro barges can safely be deployed. They are one crane-pick each.

## SMALL VESSEL OPERATIONS

CISPRI small vessels and smaller contracted vessels are usually tasked to deploy in pairs for safety purposes. If one vessel breaks down there is a second vessel available.

These small vessels do not have facilities for meals or sleeping, and hence will require crew changes at every shift change. If the vessel is to be deployed for any length of time (greater than 8 hours), there should be a "Mother vessel" assigned to provide creature comforts to a group of small boats. This larger vessel would also provide a safe haven during inclement weather. The Mother vessel should try and stay within 30 minutes transit time of the smaller vessels. Options past a Mother vessel include dedicated landings or towns that maintain adequate facilities.

All small vessels and contracted vessels will have a minimum of two crewmembers (vessel operator and one deckhand) onboard prior to deployment. Additional personnel may be assigned if response equipment will be deployed from the vessel.

**Table 1: Travel Time for Vessels**

| OSV Perseverance<br>OSV Endeavor | Hilcorp Rig Tenders Dock Nikiski Bay | KPL Dock | Drift River Terminal | Trading Bay | West Forelands | North Forelands | Port of Anchorage | Kachemak Bay - Homer | Kennedy Entrance |
|---|---|---|---|---|---|---|---|---|---|
| Hilcorp Rig Tenders Dock Nikiski Bay | | 1 | 2.50 | 3 | 1.50 | 5 | 6 | 8 | 14 |
| | | 1.25 | 3.25 | 3.50 | 2.25 | 6.30 | 9 | 10 | 16.30 |
| | | 1.50 | 5 | 5.50 | 3 | 8 | 11 | 10 | 18 |
| KPL Dock | 1 | | 2.25 | 4 | 1.25 | 6 | 7 | 7 | 15 |
| | 1.25 | | 3.25 | 4.50 | 2 | 7.30 | 10 | 9 | 17 |
| | 1.50 | | 4 | 6.50 | 3 | 9 | 12 | 9 | 20 |
| Drift River Terminal | 2.50 | 2.25 | | 3.25 | 1 | 5 | 8 | 7 | 14.45 |
| | 3.25 | 3.25 | | 4.30 | 1.30 | 6 | 11 | 9 | 17 |
| | 5 | 4 | | 6 | 3 | 8 | 13 | 10 | 20 |
| Trading Bay | 3 | 4 | 3.25 | | 1.45 | 2.30 | 5 | 10 | 17 |
| | 3.50 | 4.50 | 4.30 | | 2.15 | 3 | 6.45 | 12.30 | 20 |
| | 5.50 | 6.50 | 6 | | 3.45 | 4.45 | 10 | 15 | 24 |
| West Forelands | 1.50 | 4 | 1 | 1.45 | | 4 | 7 | 7.30 | 15 |
| | 2.25 | 4.50 | 1.30 | 2.15 | | 5.45 | 10 | 8.25 | 16.30 |
| | 3 | 6.50 | 3 | 3.45 | | 7 | 12.30 | 9.30 | 18 |
| Port of Anchorage | 6 | 7 | 8 | 5 | 7 | | | 14.30 | 22 |
| | 9 | 10 | 11 | 8 | 10 | | | 19.30 | 25 |
| | 11 | 12 | 13 | 10 | 12.30 | | | 24 | 30 |
| North Forelands | 5 | 6 | 5 | 2.30 | 4 | | | 12.30 | 18.30 |
| | 6.30 | 7.30 | 6.30 | 3 | 5.45 | | | 14.30 | 20 |
| | 8 | 9 | 8 | 4.45 | 7 | | | 17.45 | 27 |
| Kachemak Bay - Homer | 8 | 7 | 7 | 10 | 7.30 | 12.30 | 14.30 | | 5.45 |
| | 10 | 9 | 9 | 12.30 | 8.25 | 14.30 | 19.30 | | 6.30 |
| | 10 | 9 | 7.45 | 15 | 9.30 | 17.45 | 24 | | 6.30 |
| Kennedy Entrance | 14 | 15 | 14.45 | 17 | 15 | 18.30 | 22 | 5.45 | |
| | 16.30 | 17 | 16.30 | 20 | 17 | 20 | 25 | 6.30 | |
| | 18 | 20 | 19 | 24 | 19 | 27 | 30 | 6.30 | |

**NOTES:**

**GENERAL STEAMING:** Traveling at 10 knots with slack current no ice.

**HEAVY CURRENT:** Bucking a heavy current reduces travel speed. (North of Forelands)

**ICE CONDITIONS:** Ice is heaviest North of the Forelands but can be heavy as far south as Cape Kasilof and can impact travel speed.

**Table 2: Travel Time for Vessels with Barges**

| OSV Perseverance w/Barge<br>OSV Endeavor w/Barge<br>Barge 141<br>CISPRI Responder | Hilcorp Rig Tenders Dock Nikiski Bay | KPL Dock | Drift River Terminal | Trading Bay | West Forelands | North Forelands | Port of Anchorage | Kachemak Bay - Homer | Kennedy Entrance |
|---|---|---|---|---|---|---|---|---|---|
| **Hilcorp Rig Tenders Dock Nikiski Bay** | | 1.30 | 4.30 | 4 | 2.45 | 5.45 | 7.30 | 9 | 15 |
| | | 2.25 | 5.30 | 5 | 4.15 | 6.45 | 9 | 10 | 17.30 |
| | | 3 | 7.45 | N/A | N/A | N/A | N/A | N/A | 17.30 |
| **KPL Dock** | 1.30 | | 3.45 | 5 | 2 | 6.45 | 7.5 | 7.45 | 16 |
| | 2.25 | | 4.45 | 6.25 | 3 | 8 | 11 | 8.3 | 18 |
| | 3 | | 6.30 | N/A | N/A | N/A | N/A | 9.45 | 22 |
| **Drift River Terminal** | 4.30 | 3.45 | | 3.45 | 1.30 | 5.30 | 9 | 7.30 | 15.25 |
| | 5.30 | 4.45 | | 5 | 2.15 | 6.45 | 12.30 | 9.45 | 18.30 |
| | N/A | 6.30 | | N/A | N/A | N/A | N/A | N/A | 21.45 |
| **Trading Bay** | 4 | 5 | 3.45 | | 2.15 | 3 | 5.30 | 11 | 18 |
| | 5 | 6.25 | 5 | | 3.45 | 3.45 | 7 | 13.30 | 21.45 |
| | N/A | N/A | N/A | | N/A | N/A | N/A | N/A | N/A |
| **West Forelands** | 2.45 | 2.30 | 1.30 | 2.15 | | 4.30 | 8 | 8 | 16 |
| | 4.15 | 3.45 | 2.15 | 3.45 | | 6.15 | 9.45 | 9.45 | 18 |
| | N/A | N/A | N/A | N/A | | N/A | N/A | N/A | N/A |
| **Port of Anchorage** | 7.30 | 7.50 | 9 | 5.30 | 8 | | | 15 | 23.30 |
| | 9 | 11 | 12.30 | 7 | 9.45 | | | 20.45 | 26.45 |
| | N/A | N/A | N/A | N/A | N/A | | N/A | N/A | N/A |
| **North Forelands** | 5.45 | 6.45 | 5.30 | 3 | 4.30 | | | 13.15 | 19.30 |
| | 6.45 | 8 | 6.45 | 3.45 | 6.15 | | | 14.50 | 21.15 |
| | N/A | N/A | N/A | N/A | N/A | N/A | | N/A | N/A |
| **Kachemak Bay - Homer** | 9 | 7.45 | 7.30 | 11 | 8 | 13.15 | 15 | | 7 |
| | 10 | 8.30 | 9.45 | 13.30 | 9.45 | 14.50 | 20.45 | | 8 |
| | N/A | 3 | 10 | N/A | N/A | N/A | N/A | | 8 |
| **Kennedy Entrance** | 15 | 16 | 15.25 | 18 | 16 | 23.30 | 19.30 | 7 | |
| | 17.45 | 18 | 18.30 | 21.45 | 18 | 26.45 | 21.15 | 8 | |
| | N/A | 22 | 21.45 | N/A | N/A | N/A | N/A | 8 | |

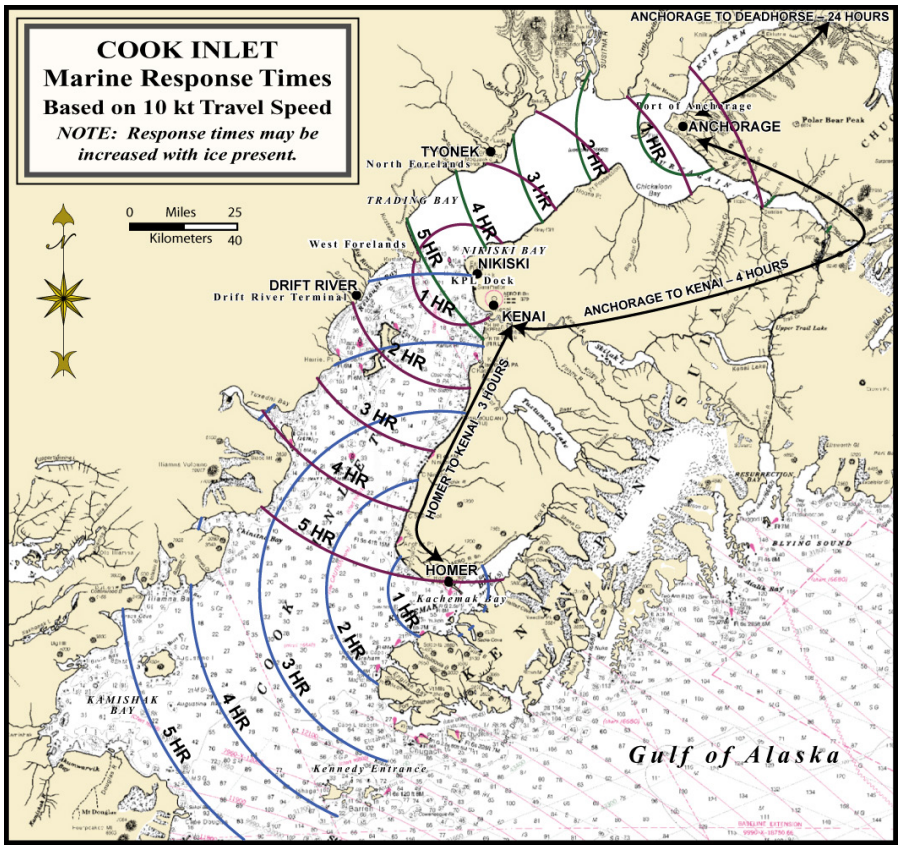
**NOTES:**

**GENERAL STEAMING:** It takes approximately 1 to 2.5 hours to pull anchors and get the barge underway. This is typical in the summer months. When towed on the wire, barges can be towed up to 10 knots. The OMSI vessels do not have an aft tow winch so they would tow on the hip for transits (6 knots).

**HEAVY CURRENT:** Current slows the response timeframes North of the Forelands where you encounter the greatest tidal flows.

**ICE CONDITIONS:** The barges would be anchored up at the southern leading edge of the ice and would not work in heavy ice since that would not be safe with the current and structures that are in the upper inlet.

**Figure 1: MARINE TRAVEL TIMES**




All transit times are approximate to the conditions at the time of the travel.

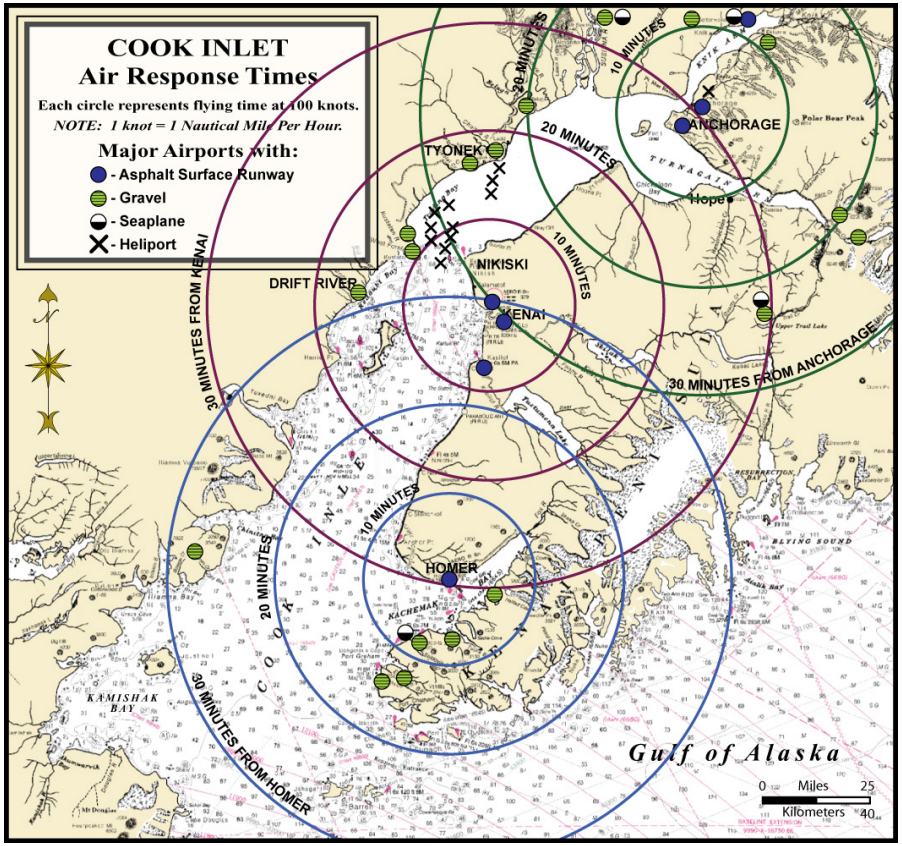
## AVIATION

CISPRI will contract as needed a variety of aviation assets in the event of a spill. Figure 2 provides general aviation travel times. A variety of aircrafts can be used to send responders to various areas including Anchorage to support response activities.

Because of the oil and gas infrastructure of the Cook Inlet basin there is a heli-port available at OSK facility as well as facilities at the Kenai Airport and the McGahan Industrial Airpark. These helicopters can be used to move responders as well as support for non-mechanical responses operations. Figure 2 provides general aviation travel times. See Tactic CI-LP-3 for available aircraft.

## LAND-BASED RESPONSE

**Figure 2: Aviation Travel Times**






To report an oil spill and activate CISPRI, call 907-776-5129

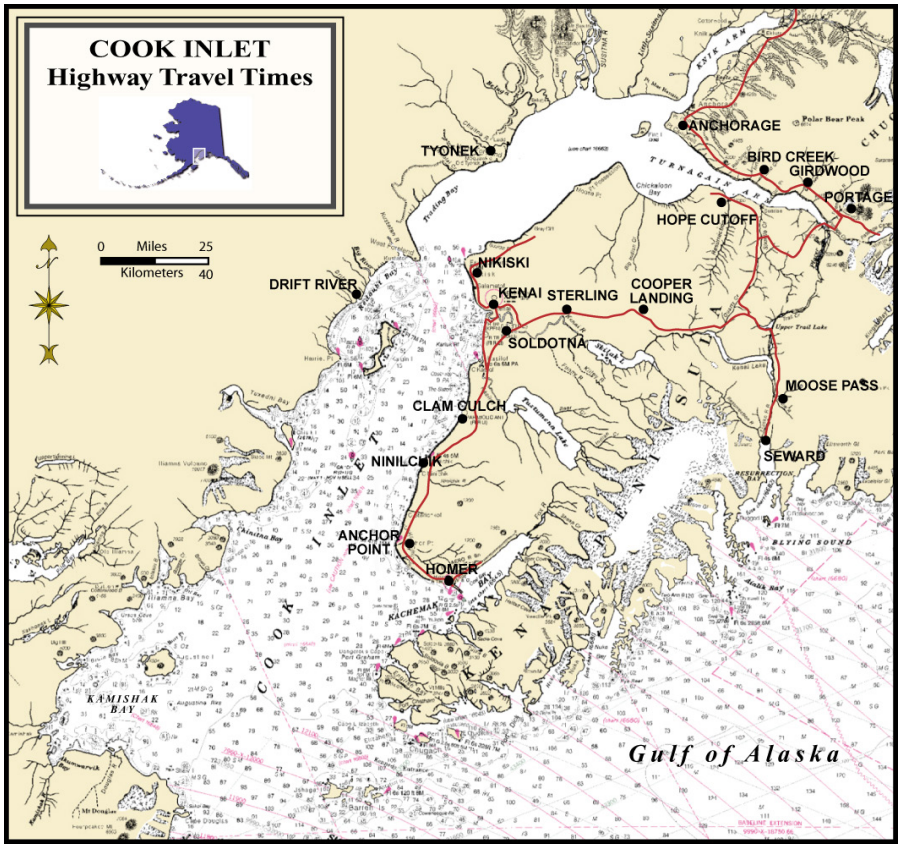
All CISPRI Member Company facilities on the east side of Cook Inlet are accessible by road or highway. In many of the areas equipment is pre-staged such as Homer, Swanson River and the Port of Anchorage. That equipment is listed in Tactic CI-LP-4. Travel distances to the main facility locations are displayed in Figure 3. Local transportation (trucking) companies are listed in Tactic CI-LP-3.

**Table 3: Trucking Travel Times**

| TRUCKING EQUIPMENT OVER THE HIGHWAYS (Time from CISPRI) | |
|---|---|
| **Hilcorp Rig Tenders Dock** | 20 min |
| | 35 min |
| **Beaver Creek** | 1 hr |
| | 2.5 hr |
| **Stariski Creek** | 1.4 hr |
| | 2.2 hr |
| **Homer** | 2.3 hr |
| | 3.3 hr |
| **Swanson River** | 2.5 hr |
| | 3.5 hr |
| **Anchorage** | 3.5 hr |
| | 5 hr |
| **NOTES:** | Summer |
| | Winter |

**CISPRI also maintains resources for remote responses, such as along pipeline right-of-ways. In addition to ATVs listed in caches of gear, CISPRI has an inventory of ATV's with trailers available.**

**Figure 3: Highway Travel Times**




**HIGHWAY MILES FROM CISPRI**

| Seward Highway | | Parks Highway | | Sterling Highway | |
|---|---|---|---|---|---|
| Seward | 119 | Palmer | 215 | Homer | 96 |
| Moose Pass | 90.5 | Wasilla | 214 | Anchor Point | 88 |
| Hope Cutoff | 103 | Houston | 230 | Ninilchik | 67 |
| Portage | 126 | Willow | 252 | Clam Gulch | 44 |
| Girdwood | 134 | | | Soldotna | 27 |
| Bird Creek | 146 | | | Sterling | 39 |
| Anchorage | 172 | | | Cooper Landing | 71 |

*This page left intentionally blank*

## TACTIC PURPOSE AND DESCRIPTION

### Spill Response Personnel

When CISPRI is activated for a spill, they rely heavily on two groups of personnel to provide the support necessary to respond to a spill that exceeds the capability of CISPRI's personnel:

- Short Notice Response Team (SNRT) personnel
- Contracted Vessels and Crews

### Short Notice Response Team (SNRT) Personnel

The Short Notice Response Team (SNRT) personnel are contracted personnel from various companies around Cook Inlet. Each corporate contract has specific numbers or personnel who must respond to a given site within a specific timeframe. The site is normally the company's offices, so there can be an additional increase in arrival time at CISPRI due to transportation. The companies from which CISPRI contracts personnel are usually involved in providing support to the oil industry and must have a minimum of 24 Hour HAZWOPER training (HAZWOPER records maintained by parent company). Hence, they are already familiar with oil characteristics, handling, risks, safety practices, etc. Many have additional skills such as tank cleaning, confined space entry, vessel operations, and others. These personnel are considered to be "general technicians" (unless they have specific skills that can be used elsewhere), and will be used to operate response equipment, once deployed, but under the supervision of a "skilled technician". Once they have proven to have gained specific knowledge and demonstrated "hands-on" proficiency, they may be used in a "skilled technician" position. This would potentially free up an IRT or CISPRI Oil Spill Response Technician to move to another job/location or for the IRT to be released back to his/her parent company.

### Contracted Vessels and Crews

The contracted vessels and crews provide the necessary vessels and skills to be very valuable during an oil spill. Since these vessel crews have had appropriate training, they could be used to augment the spill cleanup in other ways if their vessel were not activated. They could work as second shift personnel on other vessels, or other sites as needed. Before they are allowed to participate in spill response, they must complete a 24 Hour HAZWOPER training course and their vessels must pass a U. S. Coast Guard inspection. Drift net fishermen tow nets as their livelihood, and have the requisite skills to tow containment boom with very little guidance or training. Other vessel types are used as support vessels in wildlife rescue, logistics runs, etc.

### Immediate Response Team (IRT) Personnel

If assigned by their company and available on an as-needed basis is a group known as the Immediate Response Team's (IRT's)

The Immediate Response Team personnel are personnel that are currently working for our various Member Companies. IRT's can provide some great value, as they have vast knowledge of the member company facilities.

IRTs can attend CISPRI training and learn to operate CISPRI's response equipment as their scheduling allows. Many of them are supervisors in the regular jobs and are fully capable of supervising response teams and can fulfill many different roles and duties. Not all of CISPRI's Members support an IRT program.

IRTs should not be considered for other Member Companies spills past their own.

## PERSONNEL MOBILIZATION CHARTS

| CISPRI RESPONDERS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Source | Location of Personnel | Contact | Type of Responders | Number of Personnel Available and Mobilization Time to Nikiski | | | | | Notes |
| | | | | 6 People < 60 min | 2 People 1-6 hours | 6-12 hours | 12-24 hours | 2 People > 24 hours | |
| CISPRI Employees | Kenai Peninsula | (907) 776-5129 | General Manager | 1 | | | | | (1) |
| | | | Operations Manager | 1 | | | | | |
| | | | Vessel Manager | 1 | | | | | |
| | | | Business Manager | 1 | | | | | |
| | | | HEST Manager | 1 | | | | | |
| | | | Operations Coordinator | 1 | | | | | |
| | | | Vessel Coordinator | 1 | | | | | |
| | | | Communications Coordinator | 1 | | | | | |
| | | | Vessel Crew | 8 | | | | | |
| | | | Spill Technicians | 10 | | | | | |
| | | | Finance | 2 | | | | | |
| | | | Admin Assistant | 1 | | | | | |
| | | | Technical Writer | 1 | | | | | |
| | | | TOTALS: | 30 | | | | | |

**Notes**: (1) CISPRI availability does not take into account vacations, illness, etc.



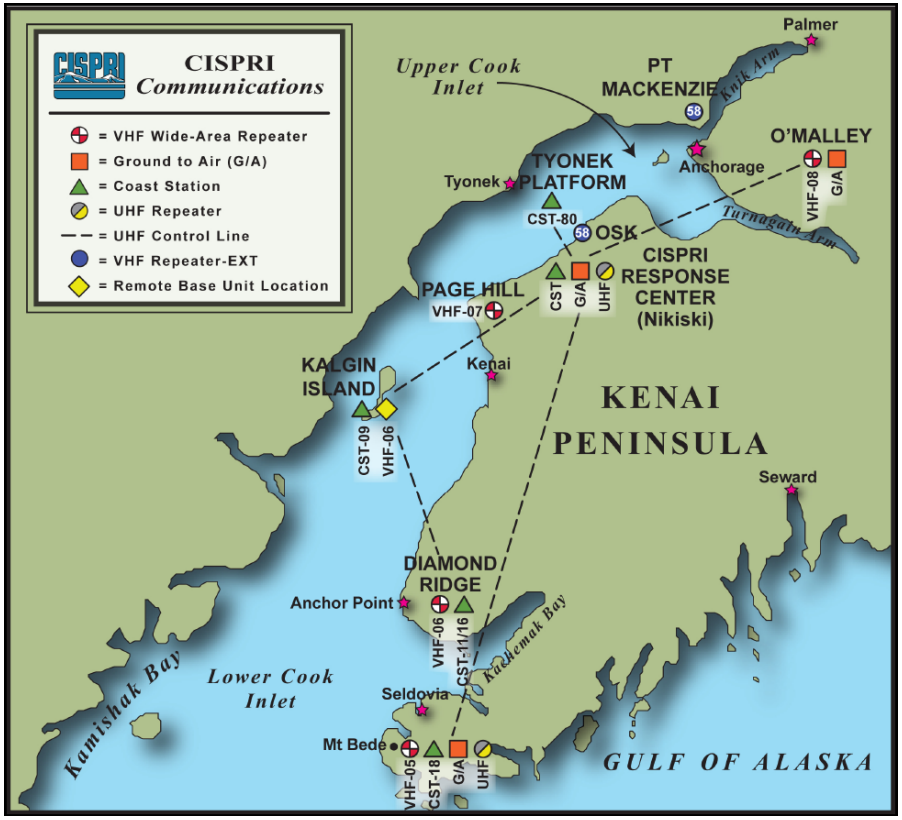
***To report an oil spill and activate CISPRI, call 907-776-5129***

| CONTRACTED COMPANIES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Source | Location of Personnel | Contact | Type of Responders | Number of Personnel Available and Mobilization Time to Nikiski | | | | Notes |
| | | | | 1-6 hours | 6-12 hours | 12-24 hours | > 24 hours | |
| Pacific Environmental Company (PENCO) | Kenai Peninsula & Anchorage Area | 24 Hour Number 907-562-5420 | General Response Personnel | | 15 | | 50 | (1) |
| CCI Industrial Services, LLC | Kenai Peninsula & Anchorage Area | 24 Hour Number 907-258-5755 | General Response Personnel | 4 | 10 | 20 | 63 | (1) |
| Republic Service | Kenai Peninsula | 24 Hour Number 907-258-1558 | General Response Personnel | 12 | 12 | 22 | 25 | (1) |
| Republic Services | Anchorage | 24 Hour Number 907-258-1558 | General Response Personnel | 30 | 16 | 25 | 25 | (1) |
| Seldovia Oil Spill Team | Seldovia, AK | 24 Hour Number 907-234-7400 | General Response Personnel | | | 6 | | |
| | | | TOTALS: | 46 | 53 | 73 | 163 | |

**Notes**: (1) Mobilization time for responders from Anchorage includes 3 hour drive in Summer & 4 hours drive in winter (depending on road conditions).

| NON-CONTRACTED COMPANIES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Source | Location of Personnel | Contact | Type of Responders | Number of Personnel Available and Mobilization Time to Nikiski | | | | | Notes |
| | | | | < 60 min | 1-6 hours | 6-12 hours | 12-24 hours | > 24 hours | |
| PEAK | Kenai Peninsula | 24 Hour Number 907-776-4030 | General Response Personnel | 15 | 15 | 15 | | | |
| | | | TOTALS: | 15 | 15 | 15 | | 45 | |

*This page left intentionally blank*




## TACTIC PURPOSE AND DESCRIPTION

Several communications systems are used during routine daily operations to support oil spill prevention activities throughout Cook Inlet. Initial response activities will rely on these and other pre-existing telecommunications systems.

### SPILL RESPONSE COMMUNICATIONS STRUCTURE

Once a spill is reported, an incident command communications dispatch center will be activated in the CISPRI response center in Nikiski, Alaska. The dispatch center will serve as the central point for command and control communications between the Incident Command Post and oil recovery operations in the field. A Communications Unit will be established to manage all incident communications functions.

**CISPRI** communications systems are divided into four networks:

**CISPRI RESPONSE**

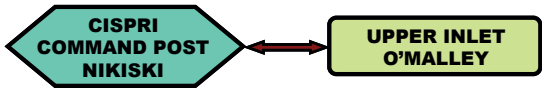
**VHF Wide-Area Repeater Network**




**CISPRI VHF Marine "Coast Station" Network**




**CISPRI Ground to Air (G/A) Network**




**CISPRI Extended (Alternate) Network**



## COMMUNICATIONS PLAN

Communications are managed during a response by means of the Incident Radio Communications Plan, which is prepared on the ICS 205 form as part of the Incident Action Plan (IAP) for the next Operational Period of a response. The Communications Unit Leader completes the ICS 205 and provides it to the Planning Section Chief for inclusion in the IAP. The ICS 205 form (Sample) for the communications plan is shown below:

| 1. Incident Name | 2. Operational Period (Date/Time) From: To: | INCIDENT RADIO COMMUNICATIONS PLAN ICS 205-OS |
|---|---|---|

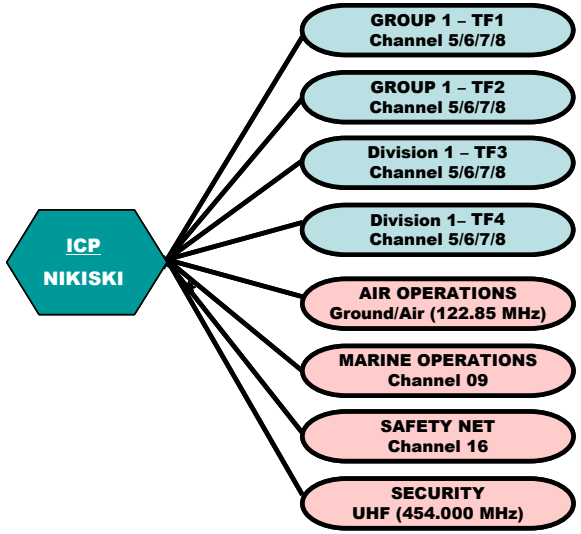
3. BASIC RADIO CHANNEL UTILIZATION

| SYSTEM/CACHE | CHANNEL | FUNCTION | FREQUENCY | ASSIGNMENT | REMARKS |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

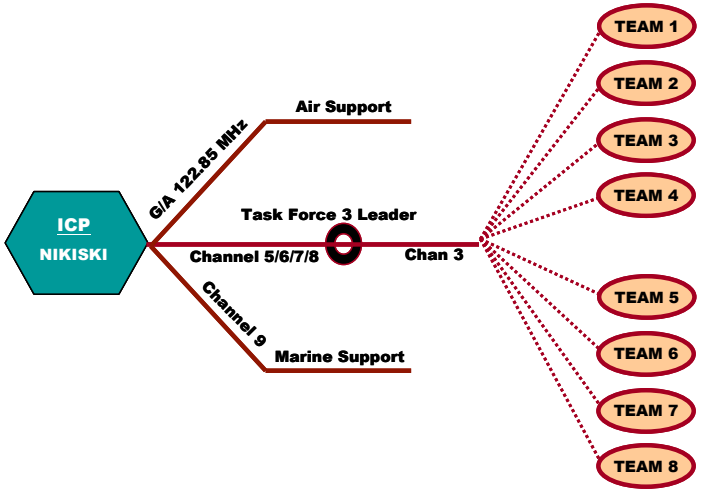
| 4. Prepared by (Communications Unit) | Date / Time |
|---|---|

INCIDENT RADIO COMMUNICATIONS PLAN ICS 205-OS

## INCIDENT COMMAND POST COMMUNICATIONS CHART (EXAMPLE)




## COMMUNICATIONS CHART DIVISION 1, TASK FORCE 3 (EXAMPLE)






To report an oil spill and activate CISPRI, call 907-776-5129

**Table 1: COMMUNICATIONS RESOURCE DIRECTORY**

| Between | Purpose | Equipment | Chan/Freq. Phone No. | Current Status | Location Description |
|---|---|---|---|---|---|
| ICP & VHF Repeaters | Command & Control Network | VHF Base Station | Channel-06 | Operating | Lower Inlet Diamond Ridge Comm. Site |
| | | VHF Repeater | | | |
| | | VHF Base Station | Channel-07 | Operating | Middle Inlet Page Hill Comm. Site |
| | | VHF Repeater | | | |
| | | VHF Base Station | Channel-08 | Operating | Upper Inlet O'Malley Comm. Site |
| | | VHF Repeater | | | |
| | | Links to O'Malley | Channel-58 | Operating | Pt. MacKenzie Repeater-Extender |
| | | Repeater | | | |
| ICP & VHF Marine Coast Stations | VHF Marine Radio Network | VHF Base Station | Channel-09 | Operating | Middle Inlet ICP Base Station |
| | | VHF Remote Base | Channel-09 | Operating | Middle Inlet Kalgin Is. Comm. Site |
| | | VHF Remote Base | Channels 11 or 16 | Operating | Lower Inlet Diamond Ridge Comm. Site |
| ICP & Aircraft | Ground/ Air Radio Network | VHF Remote Base | 122.85 MHz | Operating | Upper Inlet O'Malley Comm. Site |
| | | VHF Base Station | 122.85 MHz | Operating | Middle Inlet ICP Base Station |
| ICP & Vessels with Cellular Telephone | Cellular Telephone Facsimile | Cellular Telephone | 398-1911 | Operating [2] | MV Perseverance |
| ICP & Field | Satellite Telephone Data | Iridium Telephone | (Number available at CISPRI) | Operating | MV Perseverance |

1. Marine VHF Radio Channel: Channel number on CISPRI radios may be different
2. Digital Cellular coverage is limited to eastern side of Cook Inlet

Note: CISPRI has selected a few marine channels to be added CISPRI radios that are not marine radios.

**COMMUNICATIONS TRAILER / MOBILE COMMAND CENTER**




**8' x 20' renovated trailer to support spill response. Capabilities include:**

- Electric generator
- Battery power system
- Heating / ventilation system
- Radios
- Extendable mast-mounted antennas
- Wired and wireless network
- PCs with monitors
- Printer
- Storage

**Location:** CISPRI Yard / Nikiski

**Owner:** CISPRI

*This page left intentionally blank*

## TACTIC PURPOSE AND DESCRIPTION

### MUTUAL AID/RESPONSE ACTION AGREEMENT

The Mutual Aid/Response Action Agreement between Cook Inlet Spill Prevention and Response, Inc. (CISPRI) and Alyeska Pipeline Service Company (APSC) states that these organizations may request response services and equipment from each other in the event of a release or a drill. Approval must be received from the Alaska Department of Environmental Conservation (ADEC) before any resources can be moved out of (Prince William Sound or Cook Inlet). ADEC will be notified of any changes to the Agreement.

The previous paragraph is intended to summarize, not to interpret, the Agreement.

Both Cook Inlet Spill Prevention and Response, Inc. (CISPRI) and Alyeska Pipeline Service Company (APSC) maintain copies of this agreement.

### CONTRACT VESSEL (CV) PROGRAM

CISPRI attempts to maintain 70 contracts with various vessel owners within Cook Inlet to support oil spill response (Tactic CI-LP-5). Contracted vessel operators must remain prepared to respond to spills. CISPRI normally conducts annual training, exercises, and drills for approximately 20 contract vessels. Many of the remaining vessels also fall under the SERVS annual training program. If a spill occurs, operators must respond to, and perform tasks associated with, oil spill containment and cleanup.

CISPRI maintains a database of the contract vessels that provides vessel owner's names, and vessel types, sizes, locations, etc. Vessel files are maintained by CISPRI's Contract Vessel Administrator located in the Homer area. The Contract Vessel Administrator maintains records of vessel operators and crew members who have received spill response training.

### ASSIGNMENT OF CONTRACTORS AND VENDORS

The CISPRI contracts and purchase agreements discussed below are assignable to Member Companies in accordance with:

- The provisions of the Agreements for Oil Spill Response,
- The terms and conditions of the contract or purchase agreement to be assigned, and
- CISPRI and Member Company procedures.

Assignment will be made by execution of the Third-Party Assignment Agreement or a similar agreement.

### MOBILIZING CONTRACTORS AND OTHER RESOURCES

In the early period of a major response, the Operations Section will identify the potential need for additional resources in all aspects of the response. The Planning Section will work with the Resources Unit to ensure that all additional resources are identified, and the Logistics Section will then order all required resources and personnel.

The following tables identify key CISPRI support contracts.

| TABLE | TITLE |
|---|---|
| 1 | Response Personnel (Contracted) |
| 2 | Response Personnel (Non-Contracted) |
| 3 | Rental Equipment |
| 4 | Waste Management |
| 5 | Trucking Freight |
| 6 | Air Transportation |
| 7 | Dispersants |
| 8 | Shoreline Cleanup Assessment Technique |
| 9 | Wildlife Contractors |
| 10 | Stevedore |

**Table 1: Response Personnel (Contracted)**

| Company | Service / Supply | Mob Time | Contact Numbers |
|---|---|---|---|
| Pacific Environmental Corp. (PENCO)<br>6000 A Street Anchorage, AK 99518 | Short Notice Spill Response Team<br>Trained Personnel:<br>• Minimum of 15 people in 4 hrs.<br>• Minimum of 15 people in 8 hrs<br>• Minimum of 15 people in 12 hrs. | 4-12 hrs. | Anchorage Office<br>907-562-5420<br>Anchorage Fax<br>907-562-5426<br>24 Hour #<br>907-562-5420 |
| Republic Services<br>44066 Kenai Spur Hwy<br>Kenai, AK 99611 | Full Service Environmental<br>Remediation Firm / Responders<br>(40 Hr. HAZWOPER)<br>• Minimum of 8 people in 2 hrs. | 2 hrs. | Kenai Office<br>907-258-1558<br>Fax<br>907-746-3651<br>24 Hour #<br>1-800-899-4672 |
| Republic Services<br>1749 Ship Creek Ave.<br>Anchorage, AK 99501 | Full Service Environmental<br>Remediation Firm / Responders<br>(40 Hr. HAZWOPER)<br>• Minimum of 22 people in 2 hrs. | 4 hrs. | Anchorage Office<br>907-258-1558<br>Fax<br>907-746-3651<br>24 Hour #<br>1-800-899-4672 |
| CCI Industrial Services, LLC. Short Notice Spill Response Team<br>PO Box 340097<br>Prudhoe Bay, AK 99734 | • Minimum of 4 people in 6 hrs.<br>• Minimum of 10 people in 12 hrs<br>• Minimum of 20 people in 24 hrs.<br>• Minimum of 63 people in >24 hrs. | 6-24+ hrs. | Prudhoe Bay Office<br>907-670-5572<br>cciindustrial.com |
| Quali Tech Environmental, Inc.<br>318 Lake Hazeltine Dr<br>Chaska, MN 55318 | • Response Specialists (40 Hr. HAZWOPER) Minimum of 5 people in 36 hours. | | Q-T Office<br>952-448-5151 Q-T<br>FAX 952-448-3603<br>24 Hour #<br>612-963-5222 |
| SOS Team<br>P.O. Box 194<br>Seldovia, AK 99663 | Support & Maintenance Assistance for barges and/or vessels staged in Kachemak Bay, and Seldovia Bay | N/A | Seldovia Office<br>907-234-7400<br>Seldovia Fax<br>907-234-7400 |

**Table 2: Response Personnel (Non-Contracted)**

| Company | Service / Supply | Mob Time | Contact Numbers |
|---|---|---|---|
| Peak Oilfield Services, Inc.<br>P.O. Box 7159<br>Nikiski, AK 99635 | Response Personnel<br>(40 Hr. HAZWOPER)<br>• Minimum of 10 people in 4 hrs. | 4 hrs. | Nikiski Office<br>24 hour #<br>907-776-4030 |

**Table 3: Equipment Rental**

| Company | Service / Supply | Mob Time | Contact Numbers |
|---|---|---|---|
| MagTech Alaska, LLC<br>P.O. Box 7687<br>Nikiski Alaska 99635 | Equipment Rental<br>Light Towers/ Genset/Heaters | 1-3 Hrs. | 907-335-6303 |
| Craig Taylor<br>44170 Kalifornsky Beach Rd<br>Soldotna Alaska 99669 | Excavators/ Skid Steers/ Bobcat/ Track Loaders/ Chippers | 1-3 Hrs. | 907-262-5977 |
| Airport Equipment Rental<br>42107 Kalifornsky Beach Rd<br>Soldotna Alaska 99669 | Heavy Equipment/ Generators/ Light Towers/ Skid Steers/ Bobcat/ Loaders/ Forklifts/ Welders | 1-3 Hrs. | 907-335-5466 |
| Ron's Rent-It<br>145 N Willow<br>Kenai Alaska 99611 | Pumps/Chainsaws/ Scissor Lift/ Light Towers | 1-3 Hrs. | 907-283-4232 |
| United Rentals<br>524 Kalifornsky Beach Rd<br>Soldotna Alaska 99669 | Compressors/ Skid Steers/ Loaders/ Scissor Lift/ Excavators/ Light Towers/ Variable Reach Forklift | 1-3 Hrs. | 907-262-8700 |
| T & T Salvage | TT-600 Portable Fire Pump* | On-site | 409-744-1222<br>281-446-4010 |

* More information can be found in Appendix 5

**Table 4: Waste Management**

| Company | Service / Supply | Mob Time | Contact Numbers |
|---|---|---|---|
| Republic Services<br>44066 Kenai Spur Hwy PO Box 1530<br>Kenai, AK 99611 | Used oil treatment and recycling Oil and hazardous waste transportation and disposal<br>• Vacuum Trucks: 2 (80) BBL<br>• Vacuum Trailer: 1 (150) BBL<br>• Misc. Response Equipment | 2 hrs. | Kenai Office<br>907-258-1558<br>Kenai Fax<br>907-395-4610<br>24 Hour #<br>1-877-375-5040 |
| Republic Services<br>1749 Ship Creek Ave<br>Anchorage AK, 99501 | Used oil treatment and recycling Oil and hazardous waste transportation and disposal<br>• Vacuum Trucks: 5 (2-80 / 2-90) BBL<br>• Vacuum Trailer: 3 (150) BBL<br>• SuperSucker: 1 (80/20 Cu.yds)<br>• Misc. Response Equipment | 4 hrs. | Ship Creek Office<br>907-258-1558<br>Anchorage Fax<br>907-746-3651<br>24 Hour #<br>1-800-899-4672 |

SuperSucker units can recover solids (Gravel/soil/sand/etc.) as well.
All equipment comes with experienced operators.

**Table 5: Trucking (Freight)**

| Company | Service / Supply | Mob Time | Contact Numbers |
|---|---|---|---|
| Weaver Brothers<br>14223 Kenai Spur Hwy<br>Kenai, Alaska 99611 | • All trucking needs<br>- including refrigerator/freezer vans or trucks | 4 hrs. | Kenai Office<br>907-283-7975<br>Kenai Fax<br>907-283-3677 |
| Lynden Transport Inc.<br>41306 Sterling Hwy,<br>Soldotna, AK 99669 | • Freight transportation<br>- including refrigerator/freezer vans or trucks | 4 hrs. | Kenai Office<br>907-260-6500<br>Toll Free<br>888-319-6119<br>Kenai Fax<br>907-260-3363 |
| Peak Oilfield Service<br>PO Box 7159<br>Nikiski, AK 99635 | • Local trucking and equipment | 4 hrs. | Nikiski Office<br>907-776-4030 |
| Peak Oilfield Service<br>2525 C Street, Suite 201<br>Anchorage, AK 99503 | | | Anchorage Office<br>907-263-7000<br>Anchorage Fax<br>907-263-7070 |
| Carlile Transportation<br>1216 Bridge Access Rd<br>Kenai, Alaska 99611 | Carlile Transportation is a full service company for:<br>• Logistics<br>• Heavy Haul<br>• Hazardous Materials<br>• On: Road / Water / Rail / Air<br>• Refrigerator/freezer vans or trucks | 4 hrs. | Kenai Office<br>907-283-2884<br>Kenai Fax<br>(907) 283-2294<br>Toll Free<br>800-478-1853 |
| Carlile Transportation<br>1800 East 1st Ave<br>Anchorage, AK 99501 | | | Anchorage Office<br>(907)276-7797<br>Anchorage Fax<br>(907) 278-7301<br>Toll Free<br>(800) 478-1853 |
| Alaska West Express<br>1048 Whitney Road<br>Anchorage, Alaska 99501 | Alaska West Express is the leader in transporting liquid and dry bulk products, hazardous and non-hazardous chemicals, fuel and other products | 2 days | Anchorage Office<br>907-339-5100<br>Toll Free<br>800-478-2855<br>Anchorage Fax<br>907-339-5117 |
| Alaska Logistic, LLC.<br>755 South Portland St.<br>Seattle, Wa 98108 | Alaska Logistics provides scheduled barge service to and from Seattle Washington and Seward Alaska. | 2 days | Seattle Office<br>206-767-2555<br>Toll Free<br>866-585-3281<br>Seattle Fax<br>206-767-5222<br>After Hours<br>206-799-1840<br>206-799-1555 |
| Alaska Logistic, LLC.<br>SEWARD OFFICE:<br>1101 Port Ave.<br>Seward, AK 99664 | Alaska Logistics provides scheduled barge service to and from Seattle Washington and Seward Alaska. | 2 days | After hours<br>907-422-7128 |
| Homer Expediters | • Trucking Company in Homer, AK | | 907-235-5244 |

### Table 6: Air Transportation

| Company | Service / Supply | Mob Time | Contact Numbers |
|---|---|---|---|
| Alaska West Air<br>45495 Citabria St<br>Nikiski, AK 99635 | Fixed Wing Aircraft<br>• Bushhawk<br>• DHC 3T (3)<br>• DHC-2<br>• PA-19-(3)<br><br>* Contract as needed | 1 hr. | Nikiski Office<br>(907)776-5147 |
| Hilcorp Pilot Helicopter<br>OSK Heliport<br>Nikiski, Alaska 99635 | Nikiski Fleet:<br>• Bell 212 Helicopter (2)<br>Passengers: 9; Max Weight: 2100 Lbs.<br>• Bell 206 A (1)<br>Passengers: 3 | 1 hr. | Nikiski Office<br>(907) 776-6748<br>Emergency / 24 hr.<br>(907) 776-6730 |
| Maritime<br>3520 F.A.A Rd.<br>Homer Alaska, 99603 | Specialty Aviation: Helicopters:<br>• Bell 206 Longranger (7)<br>Mob time 30 mins.<br>• Bell 407 (7)<br>Mob time 30 mins.<br>• Bell 412 (2)<br>Mob time 4 hrs.<br>• Eurocopter BO-105 (2)<br>Mob time 4 hrs.<br>• Augusta AW119<br>Mob time 3 hrs. | 4 hrs | Homer Office<br>(907) 235-7771<br>Fax (907) 235- 7773 |
| Evergreen Alaska<br>Anchorage, Alaska | Helicopters, Types I, II, III and Fixed Wing Aircraft:<br>• Type I Helicopters (3)<br>Weight >5,000 Lbs or 16 pass<br>• Type II Helicopters (4)<br>Weight 4999 Max or 15 pass<br>• Type III Helicopters (9)<br>Weight 2499 Max or 8 pass<br><br>Fixed Wing Aircraft:<br>• Beech King Air 200 (1)<br>• Beechcraft 1900 (1)<br>• Casa C212-200 (1)<br>• Cessna 206 (1)<br>• Gulfstream G-IV (1)<br>• Lear 35A (1)<br>• Lockheed WC-130E (1) | 1 hr. | Anchorage office (907) 257-1500<br>(24 hour a day)<br>Anchorage Fax<br>(907) 279-6816 |
| Grant Aviation<br>Anchorage International Airport<br>Anchorage, Alaska | Passenger Service Fixed Wing Aircraft:<br>• King Air 200 (1)<br>• Cessna (1)<br>• PA-350 Navajo (1)<br>• Cessna 207 (1) | 1 hr. | Central number for all offices:<br>(907) 283-6012 |
| ERA Helicopters<br>Anchorage International Airport<br>Anchorage, Alaska | Helicopters<br>• Helicopter (2) Star 5 passenger Max weight for Pass & Cargo 700 lbs Max weight for external Loads 1700 lbs<br><br>Passenger Service<br>• Dash 8 (4) 37 Pass<br>• Beechcraft (13 ) 18 Pass• | 2 hr. | 24 hr. number<br>(907) 266-8324 |

### Table 7: Dispersants

| Company | Service / Supply | Mob Time | Contact Numbers |
|---|---|---|---|
| Spiltec<br>Redmond, WA 98077 | Environmental Consultant for controlled "In-Situ" Burning and mechanical cleanup, and applications of chemical dispersants | 6 hr. | Office<br>(425) 869-0988<br>Fax<br>(425) 869-7881<br>Emergency<br>(425) 503-6111 |
| Environmental Resources Management<br>825 West 8th Ave.<br>Anchorage, AK 99501 | Services provided:<br>• Site Remediation<br>• Water Resources<br>• Ecological Science<br>• EHS Management<br>• Environmental Monitoring | 8 hr. | Office<br>(907) 258-4880<br>Fax<br>(907) 258-4033<br>Tom Beckman<br>(907) 223-7152 |
| Univar USA, Inc.<br>590 East 100th Ave<br>Anchorage, AK 99515 | Univar USA is the leading chemical distributor in the United States, providing more chemicals and related service than any other company in the market place. | 3 hr. | Anchorage Office<br>(907) 344-7444<br>Anchorage Fax<br>(907) 522-1486 |

### Table 8: Shoreline Cleanup Assessment Teams (SCAT)

| Company | Service / Supply | Mob Time | Contact Numbers |
|---|---|---|---|
| Stantec<br>725 East Fireweed Lane, Suite 200<br>Anchorage, AK 99503 | SCAT Teams<br>Environmental Consulting Services | Varies | (907) 276-4245<br>1 (866) 782-6832 |
| Polaris Applied Sciences | SCAT Teams<br>Environmental Consulting Services | Varies | (206) 842-2861<br>(425) 823-4841<br>Direct:<br>(206) 419-1745 |

**Table 9: Wildlife-Contractors**

| Company | Service / Supply | Mob Time | Contact Numbers |
|---|---|---|---|
| International Bird Rescue | Avain Rehabilitation & Consultation Services | 12 hrs | 1 (888) 447-1743<br>(907) 562-1326<br><br>Barbara Callahan<br>(907) 230-2492 |
| Alaska Sealife Center | Marine Mammal Wildlife Response Service | 24 hrs. | Security 24 hr. #<br>(907) 224-6342<br><br>Stranding Hotline #<br>1-(888)-774-7325 |
| Fair Weather, LLC * | Bear Guard | 6-8 hrs. | (907) 346-3247 |
| Kenai Backcountry Adventures * | Bear Guard | 6-12 hrs. | (907) 331-4912 |
| A.I.S., Inc. * | Wildlife Observers | Varies | (907) 222-2800<br><br>24 Hr. Industry & Observer Hotline<br>(855) 247-6746 |

*** not contracted**

**Table 10: Stevedore**

| Company | Service / Supply | Contact |
|---|---|---|
| NorthStar Terminal & Stevedore Co. | Stevedore | Chris Vernon<br>(Main Contact)<br>790 Ocean Dock Road,<br>Anchorage, AK 99501<br>Ph: (907) 263-0198<br>Cell: (907) 229-122<br>Fax: (907) 272-8927<br>chrisv@northstarak.com<br><br>Andrew Doherty<br>Cell: (907) 227-9920<br>andrewd@northstarak.com<br><br>Brad Robertson<br>Cell: (907) 229-7521<br>bradr@northstarak.com |
| Homer Spit Marine Terminal | Stevedore | Morgan Barrowcliff<br>3232 Homer Spit Rd.,<br>Homer, AK 99603<br>Ph: (907) 226-3180<br>Cell: (907) 399-3180 |
| Hilcorp Rig Tenders Dock | Longshoremen/Stevedore | 55525 Rig Tenders Rd.<br>Kenai, AK 99611 |

*This page left intentionally blank*



To report an oil spill and activate CISPRI, call 907-776-5129

## TACTIC PURPOSE AND DESCRIPTION

Specifications in the following tables of CISPRI Equipment have been drawn from manufactures' data, sheets and Oil Spill World Catalog of Oil Spill Response Products. Due to the age of some CISPRI equipment accurate specifications were not available.

CISPRI utilizes a computerized database to manage their equipment inventory and preventative maintenance program. This maintenance system tracks monthly preventative maintenance tasks. Documentation is available at CISPRI. The location of equipment is subject to change based on season, response priorities, and maintenance activities. The usual locations are listed in the following tables for planning purposes, the actual location is tracked by the equipment inventory data base.

| TABLE | TITLE |
|---|---|
| 1 | Vessels |
| 2 | Barges and Storage Containers (On Water) |
| 3 | Storage Containers (On Land) |
| 4 | Boom |
| 5 | Oleophilic Skimmers |
| 6 | Skimming Oil vs. Water Rates |
| 7 | Oil Recovery Equipment |
| 8 | Application Systems |
| 9 | Dispersants |
| 10 | In-Situ Burning |
| 11 | Wildlife |
| 12 | Anchorage Equipment Cache |
| 13 | Homer Equipment Cache |
| 14 | Seldovia Equipment Cache |
| 15 | Swanson River Equipment Cache |
| 16 | Granite Point Equipment Cache |
| 17 | Miscellaneous Equipment |

**Table 1: Vessels**

| Type | No. | LOA | Beam | GRT/LBS | BBL | Usual Location | Ownership |
|---|---|---|---|---|---|---|---|
| Perseverance | 1 | 207 | 40 | 294 GRT | 2500* | Nikiski Bay | CISPRI |
| Endeavor | 1 | 179 | 40 | 292 GRT | 1170* | Nikiski Bay | CISPRI |
| Resolution (CISPRI) | 1 | 45 | 12.8 | 12 GRT | 0 | Available Dock Space | CISPRI |
| Cook Inlet Responder | 6 | 34.5 | 12 | 26,500 lbs | 0 | Nikiski, Anchorage, Homer, Seward, Kodiak | CISPRI |
| Seal / Tern Landing Craft | 2 | 34 | 9.1 | 12,000 lbs | 0 | Nikiski Yard | CISPRI |
| ATEC Skiffs | 2 | 18 | 8 | 3,000 lbs | | Nikiski Yard | CISPRI |
| Class 6 – Alum Skiff | 1 | 22 | 8 | 2,500 lbs | 0 | Anchorage | CISPRI |
| Class 6 – Alum Skiff | 1 | 18 | 8 | 2,800 lbs | 0 | Nikiski Yard | CISPRI |
| Class 6 – Alum Skiff | 2 | 18 | 8 | 2,000 lbs | 0 | Anchorage | CISPRI |
| Class 6 – Jon Boats | 2 | 17 | 6.1 | 2,000 lbs | 0 | Nikiski Yard | CISPRI |
| Power Skiff | 4 | 20 | 9.5 | 9,000 lbs | 0 | Nikiski Yard, Perseverance, Endeavor | CISPRI |
| RHIB | 1 | 18 | 8 | 1500 Lbs | 0 | Nikiski Yard | CISPRI |

*The emergency use of any below-deck storage must be authorized by the US Coast Guard via the UC prior to use.

*For Equipment information please ask CISPRI Logistics

**Table 2: Barges and Storage Containers (On Water)**

| Type | No. | LOA (ft) | Beam (ft) | Height (ft) | GRT/LBS | BBL | Location | Owner |
|---|---|---|---|---|---|---|---|---|
| Jovalan Barge | 1 | 300 | 68 | 22.3 | 3,799 GRT | 75,000 | Homer | CISPRI |
| Barge 141 | 1 | 257 | 68 | 20 | 2,712 GRT | 59,421 | Nikiski Bay[1] Homer[2] | CISPRI |
| CISPRI Responder Barge | 1 | 168 | 40 | 12 | 676 GRT | 12,405 | Nikiski Bay[1] Homer[2] | CISPRI |
| Redoubt Barge* | 1 | 332 | 74 | 25 | 5,790 | 82,006 | Kachemak Bay, Homer | CISPRI |
| Mini Barge | 14 | 40 | 12 | 5 | 9,500 lbs | 249 | Cook Inlet | CISPRI |
| Micro Barge | 4 | 32 | 8.5 | 5 | 6,500 lbs | 100 | Cook Inlet | CISPRI |
| O/W Separator – 1001 | 1 | 21 | 8.75 | 9.75 | 13,500 lbs | 215 | Cook Inlet | CISPRI |
| O/W Separator – 1002 | 1 | 20.3 | 8.5 | 10 | 13,500 lbs | 215 | Cook Inlet | CISPRI |
| O/W Separator – 1003 | 1 | 21 | 8.5 | 10 | 13,500 lbs | 215 | Cook Inlet | CISPRI |
| O/W Separator – 1004 | 1 | 21 | 8.5 | 10 | 12,500 lbs | 215 | Cook Inlet | CISPRI |
| O/W Separator – 1402 | 1 | 21 | 8.5 | 10 | 13,500 lbs | | Cook Inlet | CISPRI |
| O/W Separator – 1403 | 1 | 21 | 8.75 | 10 | 13,500 lbs | 180 | Cook Inlet | CISPRI |
| Pol-u-tank | 2 | 7 | 5.3 | 4.2 | 1440 lbs | 314 | Cook Inlet | CISPRI |
| Portable Bag – Kepner | 4 | 4 | 4 | 5.5 | 200 lbs | 95 | Cook Inlet | CISPRI |
| Portable Bag – Hoyle | 1 | 44″ | 48″ | 30″ | 500 lbs | 50 | Cook Inlet | CISPRI |
| Portable Bag – Uniroyal | 2 | 44″ | 48″ | 30″ | 1000 lbs | 108 | Cook Inlet | CISPRI |
| Portable Bag – Dunlop | 1 | 16.2 | 7.5 | 8 | 4060 lbs | 3,262 | Cook Inlet | CISPRI |
| Portable Bag – Unitor | 1 | 11.5 | 8.5 | 6 | 5,500 lbs | 3,145 | Cook Inlet | CISPRI |
| Portable Bag – Pillow | 4 | 44″ | 48″ | 30″ | 40 lbs | 23 | Cook Inlet | CISPRI |
| Portable Bag – Pillow | 1 | 44″ | 48″ | 30″ | 40 lbs | 238 | Cook Inlet | CISPRI |
| Portable Bag – Fuel | 1 | 44" | 48″ | 30″ | 40 lbs | 2 | Cook Inlet | CISPRI |
| Unitank | 5 | 48″ | 48″ | 48″ | 95 lbs | 6 | CISPRI Yard/ Warehouse | CISPRI |

[1] Summer moorage, [2] Winter moorage

* Redoubt Barge is primarily used to backfill available temporary storage when barges are dry-docked for regulatory maintenance requirements. Please contact CISPRI before using the barge for planning purposes.

**Table 3: Storage Containers (On Land)**

| Type | No. | Weight LBS | BBL | Location |
|---|---|---|---|---|
| Fast Tank - 2000 | 14 | 140 | 63 | CISPRI |
| Fast Tank - 3000 | 1 | 143 | 71 | CISPRI |
| Fast Tank | 2 | 198 | 125 | CISPRI |
| Markleen Easy Tank | 2 | 185 | 95 | CISPRI |

**Table 4: Boom**

| Boom Type | No. | Length (ft/m) | Operating Wave Heights | Usual Location |
|---|---|---|---|---|
| Open Water | | 30,749 ft | 0-6 | CISPRI |
| Protected Water | | 62,268 ft | 0-3 | CISPRI |
| Calm water | | 13,500 ft | 0-1 | CISPRI |
| Fire Boom | | 2,400 ft | 0-3 | CISPRI |
| Sorbent boom | | 2,960 ft | Calm only | CISPRI |
| Current Busters | 2 | 35.2 m | 0-6 | CISPRI |
| Systems – NOFI | 1 | 660 ft | 0-6 | CISPRI |
| Systems – NOFI | 1 | 1,320 ft | 0-6 | CISPRI |
| Harbour Buster | 2 | 27 m | - | CISPRI |



**To report an oil spill and activate CISPRI, call 907-776-5129**

**Table 5: Oil Recovery Equipment – Oleophilic Skimmers Limitations and Operational Characteristics**

| SKIMMER | NO. | Weight (lbs) | Nameplate Recovery (BPH)* | Auxiliary Equipment | Additional Comments | Location |
|---|---|---|---|---|---|---|
| 8-Rope Foxtail Rope Skimmer | 4 | 1,985 | 503 | • Hydraulic Power Pack<br>• Hoses | • This is a heavy system that requires larger vessel lifting capabilities. | CISPRI |
| 4-Rope Foxtail Rope Skimmer | 3 | 750 | 238 | | | CISPRI |
| Lamor Front Collection Skimming System | 1 | 2,000 | 260 | • Hydraulic Power Pack<br>• Generator<br>• Hoses | • Designed for heavy concentrations of oil | CISPRI |
| Crucial Drum Skimmers | 2 | 100 | 80 | • Hydraulic Power Pack<br>• Hoses | • Protected water | CISPRI |
| Drum Rope Mop Skimmer | 9 | 165 | 10 | • Generator & Pump | | CISPRI |
| Action Petroleum Model 24 | 1 | 30 | 185 | • Hydraulic Power Pack<br>• Hoses | • Protected water | CISPRI |
| Crucial 13-30 Disc Skimmer** | 10 | 632 | 157 | • Hydraulic Power Pack<br>• Hoses | • Open water and Nearshore tactics | CISPRI Perseverance |
| Crucial 56-30 Disc Skimmer** | 3 | 1883 | 402 | • Hydraulic Power Pack<br>• Hoses | • Open water tactics | CISPRI Barges |
| Komara 15, Disc Skimmer | 2 | 84 | 59 | • Hydraulic Power Pack<br>• Hoses | • Open water, Nearshore, Protected water tactics<br>• Equipped with fuzzy discs | CISPRI Yard |
| NOTE: * Nameplate oil recovery rate is validated through ASTM F2709 testing (March, 2009 SL Ross Report). See Table 6 below for derated values.<br>** Crucial Disc Skimmer is used in conjunction with the NOFI "Buster" series oil collection systems to achieve 50% rating. See Table 6 below for derated values. | | | | | | |

**Table 6: Skimming Oil vs Water Rates**

| SKIMMER | Nameplate Recovery (BPH) | Regulatory Deration | Oil Recovered (BPH) | Water Recovered (BPH) | Total Fluids Recovered | Comments |
|---|---|---|---|---|---|---|
| 8-Rope Foxtail Rope Skimmer | 503 | 20% | 101 | 402 | 503 | Calculated based on standard 20% derating as per 18 AAC 75.445(g)(5) |
| 4-Rope Foxtail Rope Skimmer | 238 | 20% | 48 | 190 | 238 | |
| Lamor Front Collection Skimmer System | 260 | 20% | 52 | 208 | 260 | |
| Crucial Drum Skimmer | 80 | 20% | 16 | 64 | 80 | |
| Drum Rope Mop Skimmer | 10 | 20% | 2 | 8 | 10 | |
| Acton Petroleum Model 24 | 185 | 20% | 37 | 148 | 185 | |
| Komara 15, Disc Skimmer | 59 | 20% | 12 | 47 | 59 | |
| Crucial 13-30 Disc Skimmer | 157 | 20% | 32 | 125 | 157 | |
| Crucial 56-30 Disc Skimmer | 707 | 20% | 142 | 565 | 707 | |
| **SKIMMER** | **Nameplate Recovery (BPH)** | **Deration as per USCG (BPH)** | **Oil Recovered (BPH)** | **Water Recovered 70% ORE (BPH)** | **Total Fluids Recovered** | **Comments** |
| **Crucial 13-30 Disc Skimmer** | **157** | **50%** | **79** | **34** | **113** | **NOTE:** For ADEC planning purposes only:<br>When using crucial skimmers with a NOFI 'Buster' series oil collection system, a 50% deration and a 70% Oil Recovery Efficiency (ORE) are allowable. Per the ADEC letter dated March 8, 2013. |
| **Crucial 56-30 Disc Skimmer** | **707** | **50%** | **354** | **152** | **506** | |

**Table 7: Oil Recovery Equipment – Weir Skimmers Limitations and Operational Characteristics**

| SKIMMER | NO. | Weight (lbs) | Nameplate Recovery (BBL/HR) | Efficiency % | Derated Recovery (BBL/HR) | Auxiliary Equipment | Additional Comments | Location |
|---|---|---|---|---|---|---|---|---|
| Desmi Terminator | 4 | 357 | 629 | 20% | 125 | • Hydraulic Power Pack<br>• Hoses | • Ideal light-medium viscosity oil<br>• Effective in shallow water<br>• Can be deployed from most CV's | CISPRI |
| Desmi Ocean 250 | 3 | 357 | 629 | 20% | 125 | • Hydraulic Power Pack<br>• Hoses | • Ideal light-medium viscosity oil<br>• Effective in shallow water<br>• Can be deployed from most CV's | CISPRI |
| Foilex – TDS 150 | 1 | 100 | 220 | 20% | 44 | • Hydraulic Power Pack<br>• Hoses | | CISPRI |
| Skim Pac 18000 | | 12 | 171 | N/A | *** | • Suction Pump | • Ideal light-medium viscosity oil<br>• Effective in shallow water<br>• Can be deployed from most CV's | CISPRI |
| Skim Pac 4200 | 1 | 18 | 96 | N/A | *** | • Suction Pump | Thin profile for use in terrestrial environment | CISPRI |
| Manta Ray 60" | 2 | 76 | 358 | N/A | *** | • Suction Pump | Thin profile for use in terrestrial environment | CISPRI |
| Manta Ray 54" | 1 | 58 | 215 | N/A | *** | • Suction Pump | Thin profile for use in terrestrial environment | CISPRI |
| Manta Ray 48" | 1 | 26 | 171 | N/A | *** | • Suction Pump | Thin profile for use in terrestrial environment | CISPRI |
| Manta Ray 36" | 2 | 50 | 50 | N/A | *** | • Suction Pump | Thin profile for use in terrestrial environment | CISPRI |
| Manitee 18" | 1 | 17 | 35 | N/A | *** | • Suction Pump | Thin profile for use in terrestrial environment | CISPRI |

Note: *** Efficiency ratings for these skimmers are variable depending on oil viscosity, pumping system, encounter speed. De-rated values have not been determined.

**Table 8: Dispersant Application Systems**

| Type | No. | Cap (gals) | LBS | Aerial Coverage (ACRE/MIN) | Spray Time per payload (min) | Treatment Potential (BBL/ Payload) | Swath Width (ft) | Operational Characteristics & Limitations | Location |
|---|---|---|---|---|---|---|---|---|---|
| Transport – Tank | 1 | 525 | | | | | | Mounted on trailer | CISPRI |
| System - Sml marine | 1 | 300 | 540 | 13.5 | Variable | Depends on vessel storage | 47 | Flow rate 5-15 Gal/Min | CISPRI |
| System – Lrg Perseverance | 1 | 300 | 2,400 | 13.5 | Variable | Depends on vessel storage | 72 | Flow rate 5-15 Gal/Min | CISPRI |
| System- Simplex | 1 | 300 | 2,915 | | 6-10 | | 35 | Flow rate 40 Gal/Min | CISPRI |
| System- Simplex | 2 | 240 | 2,352 | | 6-10 | | 35 | Flow rate 42 Gal/Min | CISPRI |

**Table 9: Dispersants**

| Dispersant | Quantity | Storage/Location |
|---|---|---|
| COREXIT 9500A | 12,570 gal | 33 - 310 gal tanks - Nikiski<br>4 - 310 gal tanks - Nikiski<br>2 - 550 gal tanks - Nikiski |

**Table 10: In-Situ Burning Systems**

| Type | No. | Empty Weight | Weight LBS | Capacity gal | Delivery Altitude FT | Speed (MPH) | Expected Burn (MIN) | Operational Characteristics and Limitations | Location |
|---|---|---|---|---|---|---|---|---|---|
| Heli-torch Airborne Ignition System | 2 | 180 | 636 | 55 | 200 | 40 | 8-10 | • Operated by remote control in the helicopter cockpit | CISPRI |
| In-Situ Burning Product | 20 | N/A | 125 | 55 | 200 | 40 | 8-10 | CISPRI has mixing capability | CISPRI |

**Table 11: Wildlife**

| Type | No. | Length | Width | Height | LBS | Location |
|---|---|---|---|---|---|---|
| Van/Conex – SORC* | 8 | 20′ | 8′ | 8′ | 7,000-10,000 | Seldovia |
| Bird rescue kit | 6 | 16″ | 24″ | 17″ | 30 | CISPRI / Seldovia |
| Bird Hazing cannon | 15 | 53″ | 18″ | 12″ | 15 | CISPRI / Seldovia |
| Shotgun – 12 gauge | 9 | 32″-36″ | | | 5-8 | CISPRI / Seldovia |
| Transport Kennel | 20 | 42″ | 26″ | 30″ | 24 | CISPRI |
| Transport Kennel | 5 | 36″ | 25″ | 27″ | 19 | CISPRI |
| Floating Mammal Pens | 3 | 24″ | 12″ | 6″ | 12 | CISPRI |
| Floating Mammal Pens | 3 | 24″ | 12″ | 6″ | 12 | Seldovia |

*** Kit lists for van/conex units in Seldovia will be made available upon request**

**Table 12: Port of Anchorage – Response Equipment Cache**

| EQUIPMENT | AMOUNT |
|---|---|
| Barge 100 Bbl 32′ X 8′ 6″<br>• Trailer 27′<br>• Rope Vertical 92-4 Cs 4 Rope<br>• Hydraulic Power Unit (Kobuta) | 1<br>1<br>1<br>1 |
| Barge 100 Bbl 32′ X 8′ 6″ | 1 |
| Connex 14′ (With)<br>• Anchor System 40 Lb Danforth W/Line<br>• Anchor System 33 Lb Bruce Anchor W/ Line | 1<br>23<br>1 |
| Connex 20′ (With)<br>• Boom Inland 10″ X 12″ X 100′T-Com<br>• Boom Inland 6″ X 8″ X 100′T-Com | 1<br>1200 FT<br>200 FT |
| Connex 20′ (With)<br>• Generator 5 Kw<br>• Generator 2.5 Kw<br>• Pump 2″ Diaphram Diesel (Ch&E)<br>• Pump 2″ Centrif Diesel (Ch&E)<br>• Pump 3″ Trash Diesel (Ch&E)<br>• Rope Mop Electric 3″<br>• Rope Mop Mw-41, Cs<br>• Fast Tank 63 Bbl | 1<br>1<br>2<br>1<br>1<br>1<br>1<br>1<br>1 |
| Connex 20′ (With)<br>• Boom River 6″ X 8″ X 100′ | 1<br>1325 FT |
| Connex 20′ (With)<br>• Boom Inland 11″ X 10″ X 50′ Tidal Seal | 1<br>1396 FT |
| Connex 40′ (With)<br>• Sorbent Felt Rolls 32″ X 200′<br>• Sorbent Boom 8″ X 40′<br>• Sorbent Pads 17″ X 19″<br>• Sorbent Rolls 38″ X 144′<br>• Containment Berm 10′ X 10′ X 1″ | 1<br>42<br>47<br>5 BAGS<br>56 ROLLS<br>1 EA |
| Trailer Enclosed 30′<br>• Boom Inland 10″ X 12″ T-Com | 1<br>1300′ |
| Trailer Enclosed 24′ (With)<br>• Boom Inland 8″ X 6″ X 50′ T-Com<br>• Fast Tank 63 Bbl | 1<br>100′<br>1 |
| Cook Inlet Responder Vessel | 1 |
| Vessel 22′ Alum (With)<br>• Trailer 27′ | 1<br>1 |
| Vessel 18′ (With)<br>• Trailer 20′<br>• Outboard Motor 75 Hp (Etec) | 2<br>2<br>2 |

**Table 13: Homer – Response Equipment Cache**

| EQUIPMENT | AMOUNT |
|---|---|
| Barge : 100 Barrel | 1 |
| CONNEX 20 Ft<br>• Boom Inland 10" X 12"X100' T-Com | 1<br>1200 FT |
| CONNEX 20'<br>• Boom Inland 10" X 12" X 100' T-Com | 1<br>1200 FT |
| CONNEX 20'<br>• Boom Inland 10" X 12" X 100' T-Com | 1<br>1200 FT |
| CONNEX 20 Ft'<br>• Boom River 6" X 8" | 1<br>2000 FT |
| CONNEX 20'<br>• Boom Inland 11" X 10" Tidal Seal Guardian | 1<br>396 FT |
| CONNEX 20' W Voss System Including:<br>• Hydraulic Power Unit Hyde<br>• General Decon Kit<br>• Out Rigger (With) 3 Part<br>• Out Rigger Floats<br>• Desmi Ocean 250 Weir Skimmer<br>• Boom Inflator/Blower Unit | 1<br>1<br>1<br>1<br>1<br>1<br>1 |
| CONNEX 20 Ft (With)<br>• Pump 3 " Diaphram Diesel Ch&E<br>• Pump 2" Centrif Diesel Ch&E<br>• Boom Inflator/Blower Unit<br>• Generator Diesel 5 Kw<br>• Decon Kit Personnel Only<br>• Rope Mop Mw-41 Cs W/ Drum Collection & Rope<br>• Manta Ray Weir Skimmer 48"<br>• Fast Tank 63 Bbl<br>• Weather Port 10" X 10" | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| CONNEX 20 Ft (With)<br>• Viscous Sweep | 1<br>1230 BAGS |
| CONNEX 20' (With)<br>• Anchor Systems & Tag Lines, 40 Lb Anchors W/Line | 1<br>42 EA |
| Boom Reel (With)<br>• Nordan Skirt 16" X 20" | <br>180 FT |
| **WILD LIFE CONNEX** | **AMOUNT** |
| CONNEX 20' (W)<br>• Mammal Capture Box Wood<br>• Mammal Capture Box Alum<br>• Mammal Float Pen 12' X 24'<br>• Mammal Capture Net | 1<br>1<br>3<br>1<br>2 |

**Table 14: Seldovia – Response Equipment Cache**

| EQUIPMENT | AMOUNT |
|---|---|
| CONNEX 20'<br>• Connex #2 Veterinary Clinic | 1 |
| CONNEX 20'<br>• Connex #3 Sedation Van | 1 |
| CONNEX 20'<br>• Connex #4 Cleaning Van | 1 |
| CONNEX 20'<br>• Connex #5 Maintenance Van | 1 |
| CONNEX 20'<br>• Connex #6 Drying Van | 1 |
| CONNEX 20'<br>• Connex #7 ICU/Recovery Van | 1 |
| CONNEX 20'<br>• Connex #8 Food Preparation Van | 1 |
| CONNEX 20'<br>• Connex #9 Nursery | 1 |
| CONNEX 20'<br>• Two connex un-numbered for ancillary equipment | 2 |
| Floating Dock | 1 |
| Floating Otter Pens | 2 |
| 13' Diameter Pools<br>• Enclosed with plexi glass, dry resting area | <br>3 |
| Fish totes / condos<br>• Dry resting area with water access, enclosed with plexi glass | <br>4 |
| ATV | 1 |
| ATV Trailer | 1 |
| Oil/Water Separator | 2 |
| RIB | 1 |
| RIB Trailer | 1 |

**NOTE: Kit-lists for each connex unit will be made available upon request**



*To report an oil spill and activate CISPRI, call 907-776-5129*

**Table 15: Swanson River – Response Equipment Cache**

| EQUIPMENT | AMOUNT |
|---|---|
| Ice Auger, Gas 8" Power Head | 1 |
| Boom, Inland 11" X 10" Tidal Seal | 66 |
| Boom River, 6" X 8" | 620 |
| Generator Diesel 5 Kw | 1 |
| Generator Gasoline 2.5 Kw | 1 |
| Heater, Construction, Kerosene | 1 |
| Pump 3" Centrif, Diesel Ch&E | 3 |
| Manta Ray Weir Skimmer, 60" | 2 |
| Manitee Weir Skimmer, 36" | 1 |
| Rope Mop, Mw-41, Cs W/Pully | 1 |
| Fast Tank, 63 Bbl | 1 |
| Weather Port 10' X 10' | 1 |
| Trailer Van 27' | 1 |

**Table 16: Granite Point – Response Equipment Cache**

| EQUIPMENT | AMOUNT |
|---|---|
| CONNEX 20' (WITH)<br>• Boom Inflator/Blower Unit, Stihl<br>• Diesel Generator, 6500W<br>• Generator Engine Gasoline, 2.5K<br>• Pump 2" Honda Gas<br>• Saw, Chain 25", Stihl<br>• Skimmer, Manta Ray 42"<br>• Fast Tank, 63 BBLs | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |

**Table 17: Miscellaneous Equipment**

| Description | No. | Location | Ownership |
|---|---|---|---|
| Infrared Cameras, Vessel Mounted | 1 | Perseverance | CISPRI |
| Infrared Camera, Hand Held Unit | 1 | CISPRI | CISPRI |
| Small Unmanned Aircraft System | 1 | CISPRI | CISPRI |

*This section left intentionally blank*

*This page left intentionally blank*



## TACTIC PURPOSE AND DESCRIPTION

**These vessel could be involved in the following operations:**

- **Oil Containment and Recovery**
- **Logistical Support (resupply, personnel, equipment, etc)**
- **Command & Control**
- **Safety**
- **Sensitive Area Protection/GRS Implementation**
- **Wildlife Hazing, Capture, Transport**
- **Transportation of Waste Materials**
- **Support of Non-Mechanical Response Operations**

Note: Basic vessel types and classes are provided in Table 2. This list was originally developed for the STAR Manual and does not necessarily reflect the types of vessels CISPRI has under contract.

## VESSEL DATABASE

CISPRI's contracted vessel program was developed to support CISPRI and its Member Companies during oil spill response operations.

- CISPRI contract vessels are maintained in a database that can be accessed by both CISPRI and the Vessel Administrator. CISPRI data base is reviewed periodically by CISPRI's staff to insure availability, compliance and accuracy.
- Vessel Administrator contacts the vessel Owners on a monthly basis and documents the availability of each vessel.

The database includes:

- Specific information about the vessel
- Contact information
- Survey's & Inspection information, photographs, etc.

The database will be used by the Vessel Administrator (and potentially the IMT Logistics Section) during oil spills or exercises to locate and select potential vessels that meet the operational requirements of the situation. The Vessel Administrator will contact the potential vessels, and activate the contracts of those that have agreed to participate in the response.

## PROGRAM ADMINISTRATION

The Contract Vessel Program is administered by CISPRI's contracted Vessel Manager. The Vessel Administrator is selected based on his/her overall knowledge of vessel types, operations, Cook Inlet waters, and communications skills. The Vessel Administrator stays in direct contact with the "fleet" on a frequent basis to verify their availability, manages the database, and is directly involved during an oil spill. The Vessel Administrator also verifies that the vessels get the Coast Guard safety inspections and other applicable documentation maintained.

CISPRI maintains a target of seventy (70) Contract Vessels to support the Contingency and Response Plans of our Member Companies. The Vessel Administrator will be primarily responsible to maintain the fleet;

ensuring that the Contract Vessel Operator's stay informed as to training opportunities and compliant with the requirements of this Program. CISPRI and the Vessel Administrator will maintain a list of contract vessels to ensure the fleet can be called upon at all times. CISPRI Contract Vessel Fleet will be broken into two major groupings, the Primary Fleet and Secondary Fleet.

## ACTIVATION

CISPRI maintains contracts with 70 vessels to insure there are 35 available vessels to respond at all time. CISPRI has two fleet classifications, a Primary Fleet of approximately 15 vessels, and a Second Fleet of approximately 55 vessels. Each contracted vessel that is activated for an oil spill is required to arrive on-site with provisions and fuel for a minimum of 72 hours. Logistics and the Vessel Administrator will ensure that they receive additional provisions and fuel after that time.

**1) Primary Fleet –**

- The Primary Fleet will remain ready to deploy within 6 hours.
- The Primary Fleet will receive a harbor fee or slip allowance in their respective home ports and would be the first vessels called into action, regardless of season.

**2) Secondary Fleet –**

- The Secondary Fleet, if called into action, would be expected to be made ready and launched within 60 hours of initial notification, regardless of season.
- The Secondary Fleet would be called upon and integrated within the Primary Fleet as required by the event. The responding member's Incident Management Team would make those determinations.

**Table: 1 Primary Fleet/ Secondary Fleet**

Classification Requirements

| Class | CISPRI Contract Vessel Primary Fleet Minimum Requirement | CISPRI Contract Vessel Secondary Fleet Minimum Requirement | Crewing Specifications |
|---|---|---|---|
| 1 | 0 | 0 | Crew sizing is based on COI. |
| 2 | 0 | 4 | Crew sizing is based on COI. |
| 3 | 5 | 10 | Captain and two Crew |
| 4 | 5 | 10 | Captain and two Crew |
| 5 | 2 | 5 | Captain and one Crew |
| 6 | 3 | 6 | Captain and one Crew |
| 7 | 0 | 0 | These vessels will be contracted as needed. |
| 8 | 0 | 0 | These vessels will be contracted as needed. |
| 9 | 0 | 0 | These vessels will be contracted as needed. |
| 10 | 0 | 0 | These vessels will be contracted as needed. |
| 11 | 0 | 0 | These vessels will be contracted as needed.[1] |
| | **17 vessels total** | **35 vessels total** | |

1 Vessel crewing past the CISPRI minimum requirements is at the discretion of the vessel operator.

**Table 2: Vessel Classification List**

| CLASS 1 – OFFSHORE RESPONSE VESSEL (OSV) |
|---|
| Class 1 vessels are large, deep draft, steel hull vessels generally longer that 150 ft. and over 1,500 HP. These vessels are capable of providing all offshore services required during a response, i.e., major skimming systems, berthing, command vessel, hauling cargo, etc. They generally have large open rear decks, elevated wheelhouses and are USCG inspected. They can be used in any offshore region of Alaska. These vessels may be able to provide limited support services to other vessels in the fleet, i.e., berthing, meals, fuel, water, repair, etc. They are not restricted by seasonal or most sea ice constraints. |
| **CLASS 2 – LARGE RESPONSE VESSEL** |
| Class 2 vessels are slightly smaller than a Class 1 vessel, typically between 90' and 140' in length All have steel hulls with drafts generally less than 12 ft. They can include larger landing crafts, have forward or aft houses, and have adequate deck space for deployment/operation of VOSS systems, boom deployment/towing, and barge assist. They may have limited accommodation space. These vessels may be able to provide limited support services to other vessels in the fleet, i.e., fuel, water, repair, etc. They are not restricted by seasonal or most sea ice constraints. |
| **CLASS 3 – LARGE FISHING/WORK VESSEL** |
| Class 3 vessels are typically 58' to 90' in length and are dedicated oil spill response vessels and the largest vessels of the fishing fleet, including large seiners, longliners, gillnet boats, and tenders. They may have steel, aluminum or fiberglass hulls. Deck space is adequate for small skimming system deployment/ operation. HP is generally over 400, allowing them to tow boom up to open water size. These vessels may have accommodations, but are usually limited to the vessel crew plus one or two. They are not restricted by seasonal use, but will be restricted in sea ice concentrations over 70% ice cover. |
| **CLASS 4 – SMALL FISHING/WORK VESSEL** |
| Class 4 vessels are smaller fishing vessels, typically 30' to 57' in length, including seiners, longliners, and gillnet boats. They have limited deck space and accommodations. They are well-suited for towing protected water or calm water boom, but can be used for towing ocean boom in areas of lower current speed. These vessels work best in nearshore areas with support from Class 1, 2, or 3 vessels. They are perfect for bays and protected waters. They are shallow draft vessels, made of aluminum or fiberglass, and usually have no additional accommodations. They may be limited by seasonal constraints and are not expected to work in sea ice concentrations over 50% ice cover. |
| **CLASS 5 – GENERAL VESSEL** |
| Class 5 vessels are small, generally less than 30 ft., with no accommodations. These day-use vessels are used for placing and towing protected water or calm water boom in nearshore areas or river mouths. They may be used for scouting, wildlife hazing/capture, and miscellaneous assignments within various on-water task forces. These vessels may be limited by seasonal constraints. |
| **CLASS 6 – WORK BOAT OR SKIFF** |
| Class 6 vessels are work boats, jitneys, skiffs, or other open small boat type vessels, generally with outboard motors and no accommodations. They may be used to handle protected water or calm water boom in nearshore areas or river mouths, and other miscellaneous assignments within on-water task forces. Class 6 vessels are generally not suited for transport/towing/working in exposed waters or handling long arrays of boom. |
| **CLASS 7 – PASSENGER VESSEL** |
| Class 7 vessels are passenger charter vessels designed and licensed to carry passengers such as supervisors, media, or regulatory agency representatives. They are generally for day use and can also be used to support field command/ safety staff, wildlife hazing/capture, and logistics. |
| **CLASS 8 – TOW VESSEL** |
| Class 8 vessels are inspected or uninspected towing vessels, designed and equipped for towing large or small barges. |
| **CLASS 9 – DIVE VESSEL** |
| Class 9 vessels are dive vessels, designed or equipped to support diving operations. |
| **CLASS 10 – SALVAGE VESSEL** |
| Class 10 vessels are salvage vessels, designed or equipped to support marine salvage operations. |
| **CLASS 11 – TANK BARGE** |
| Class 11 vessels are tank barges or tank vessels designed and equipped to carry liquid cargoes. |

## TRAINING

All personnel who participate in the Contract Vessel Program must satisfactorily complete a 24 Hour HAZWOPER training program, and must maintain their annual 8 hour refresher course.

Contract Vessels must also satisfactorily pass the Coast Guard inspection under the Commercial Fishing Vessel Safety Exam Program.

CISPRI relies on a two-prong plan to ensure that a sufficient number of contracted vessels receive training on an annual or bi-annual basis to provide a solid foundation for the vessels that would be needed in the event of a spill:

1. CISPRI-provided Training
2. Joint Training with other entities, such as SERVS

CISPRI's annual training program includes several opportunities for contract vessels to participate in on-water equipment deployments. In addition to the on-water training, CISPRI provides HAZWOPER training, tailored to oil spill response, for the vessel crews. It includes classroom, "hands-on" training with specific equipment while on-shore or on a dock, and full deployment on the waters or shorelines of Kachemak Bay. All vessels that participate in training events are given credit for oil spill response training with CISPRI.

## SMALL VESSEL SAFETY CONSIDERATIONS

The final decision on safe operating conditions or assignments rest with the work boat / skiff (class 6 vessel) operator and the parent vessel. There are several layers of people responsible for safety. The Task Force Leader is responsible for the safe conduct of the people assigned to them. The contract vessel captain is responsible for the vessel crew. The work boat/ skiff operators are assigned to a fishing vessel or have a parent vessel that is responsible for their safety.

Operations in a workboat/skiff (Class 6 Vessel) will cease under the following conditions:

- The operator feels it is unsafe
- The Supervisor, Lead Safety Officer, Task Force Leader determines it is unsafe
- Marine conditions exceed the ability of the vessel

Before leaving port, the parent vessel and the work boat/ Skiff (Class 6 Vessel) will go through the following safety check list:

- Vessel Safety Meeting
- Is all the necessary safety equipment as dictated by the USCG on board the vessel? (I.e. PFD, Flares, Life ring, etc…)
- Communication methods are clear and understood
- Response procedures, directions policies and CISPRI Technical Manual (CTM) Tactics clearly understood
- Are the vessel's fuel tanks totted off
- Ensure navigation lights been added to the vessel in use

### Personal Protective Equipment (PPE)

- USCG approved Floatation Devices
- Foul weather gear and /or floatation work suit with suitable cold-weather foot and hand protection are worn during inclement weather or when temperature is 40 degrees Fahrenheit or less.
- Safety glasses, Gloves suitable to the job at hand, Hard Hat, Steel Toe Boots

### Work Boats/ Skiff (Class 6 Vessel) Work Periods

Unless decided by the vessel owner, operator will not be required to spend more than 2 hours in a work boat/vessel (Class 6 Vessel) without being relieved or given a break every half hour (1/2 hr.) The parent vessel will conduct a radio check with it assigned Class 6 vessel in order to provide the operator with an opportunity for a bio-break and or food /refreshment. No operator of a class 6 vessel should be required to work more than three consecutive 2-hour periods without a 4 hour break from the work boat/skiff.

## VESSEL CONSIDERATIONS FOR HEAVY WEATHER TRANSIT

The Vessel Operators make the final decision about leaving port and traveling in bad weather. Prior to departing for an oil spill response vessel captains should consider the following safety conditions.

- Obtain current weather briefing on all areas in which they intend to travel
- Review nautical charts of destination
- Identify area of safe refuge
- Chart a course with safe harbor in mind
- Review Tides and currents for area of Transit
- Vessels will use the buddy system when applicable
- Conduct a safety briefing with all crew members
- Ensure all gear is properly stowed and secure
- Inspect all safety and survival gear/ equipment and ensure it is in good order
- Ensure all required USCG equipment is onboard in good working order
- Ensure skiffs are properly secured for heavy weather

*This page left intentionally blank*

## TACTIC PURPOSE AND DESCRIPTION

A series of local, state, and federal permits and authorizations would be required to support a response effort. The Environmental Unit Leader is responsible for ensuring permits and authorizations are requested. It is each Section Chief's responsibility to ensure a permit has been issued or an authorization received prior to beginning any work that requires a permit. See individual tactics for guidance on permits and authorizations.

The list below shows response activities and applicable permits with the responsible issuing agency. Additional information on permits (with instructions and examples) for spill response may be obtained using ADEC's References and Tools website:

https://dec.alaska.gov/spar/ppr/response-resources/permits-tool/

**Table 1: Permits for Spill Response**

| Category | Permit / Application / Plan | Agency |
|---|---|---|
| Beach Cleaning Operations | BLM/DOI Archaeological Investigation | BLM,DOI |
| | Consultation on Historic and Cultural Sites | ADNR |
| | Environmental Risk Questionnaire | ADNR |
| | Field Archaeological Permit | ADNR |
| | Fish Habitat Permit | ADF&G |
| | Land Use Permit (Uplands, Off-Road Traffic, Tidelands) | ADNR |
| | Open Burn Permit | ADEC |
| | Special Area Permit | ADF&G |
| Boom Deployment | Fish Habitat Permit | ADF&G |
| | Land Use Permit (Uplands, Off-Road Traffic, Tidelands) | ADNR |
| | Special Area Permit | ADF&G |
| | Special Park Use Permit | ADNR |
| | Structures/Work Affecting Nav Water (Section 10/404 Permit) | COE |
| | Temporary Water Use Permit | ADNR |
| Buoy Mooring | Application for Private Aids to Navigation | USCG |
| Communications | Radio and Wire Communications Permits | FCC |
| | Technical Data for Communications Type Land Use | USFS |
| Decanting | Decanting Authorization | ADEC |
| Dispersant App | Permit for Dispersant Application | ARRT |
| Harvesting Fish | Certificate of Inclusion: Marine Mammals | USDOC |
| | Fish Resources Permit Application | ADF&G |
| | Fish Transport Permit | ADF&G |
| | Scientific and Educational Collection Permit | ADF&G |
| | Scientific Permit for Salmonoids | NMFS |
| | Special Area Permit | ADF&G |
| Hazardous Materials Shipments | Letter of Compliance | USCG |
| | Permits for Facilities/Vessels to Handle Hazardous Material | USCG |
| | Special Permit for Bulk Solid Hazardous Material Shipments | USCG |
| Open Burning | Burning Permit (Forestry) | ADNR |
| | BLM/DOI Archaeological Investigation | BLM,DOI |
| | In-Situ Burning Application and Burn Plan | FOSC |
| | Open Burn Permit | ADEC |
| Oily Waste Disposal | Air Quality Construction Permit | ADEC |
| | Air Quality Control Permit to Operate | ADEC |
| | BLM/DOI Archaeological Investigation | BLM,DOI |
| | Field Archaeological Permit | ADNR |
| | Solid Waste Disposal Permit | ADEC |
| Oily Waste Incineration | Air Quality Construction Permit | ADEC |
| | Air Quality Control Permit to Operate | ADEC |
| | Air Quality Permit to Open Burn | ADEC |
| | BLM/DOI Archaeological Investigation | BLM,DOI |
| | Burning Permit (Forestry) | ADNR |
| | Field Archaeological Permit | ADNR |
| | Solid Waste Disposal Permit | ADEC |
| Solid Waste Disposal | Air Quality Construction Permit | ADEC |
| | Air Quality Control Permit to Operate | ADEC |
| | BLM/DOI Archaeological Investigation | BLM,DOI |
| | Burning Permit (Forestry) | ADNR |
| | Field Archaeological Permit | ADNR |
| | Marine Sanitation Device Certificate/Authorization | USCG |
| | Open Burn Permit | ADEC |
| | Solid Waste Disposal Permit | ADEC |

| | | |
|---|---|---|
| Temporary Camp/ Staging Area | Land Use Permit | ADNR |
| | Marine Sanitation Device Certification/Authorization | USCG |
| | Permit for Oversize/Overweight Vehicles | ADOT |
| | Permits for Facilities/Vessels to Handle Hazardous Material | USCG |
| | Plan Review for Sewage Systems of Water/Wastewater Wks | ADEC |
| | Prevention of Accident/Health Hazards Inspection | ADOL |
| | Radio and Wire Communications Construction Permits | FCC |
| | Solid Waste Disposal Permit | ADEC |
| | Surface Oiling Permit | ADEC |
| | Temporary Camp Practices Consolidated App & Worksheet | ADEC |
| | Temporary Land Use Permit | BLM |
| | Temporary Water Use Permit | ADNR |
| | Wastewater Disposal Permit (depends on type of discharge) | ADEC |
| Waste Disposal | Marine Sanitation Device Certificate Authorization | USCG |
| | Permit to Discharge Into Surface Waters (NPDES) | EPA |
| | Plan Review for Sewage Systems of Water/Wastewater wks | ADEC |
| | Wastewater Disposal Permit (permit depends on type of discharge) | ADEC |
| Wildlife | Please refer to CI-W-1 and the WPG for guidance on permits for wildlife response activities. | |

| | | | |
|---|---|---|---|
| ADEC | AK Dept of Environmental Conservation | DOI | Department of Interior |
| ADF&G | AK Dept of Fish and Game | EPA | Environmental Protection Agency |
| ADNR | AK Dept of Natural Resources | FOSC | Federal On-Scene Coordinator |
| ADOT | AK Dept of Transportation | NMFS | National Marine Fisheries Service |
| BLM | Bureau of Land Management | USCG | U.S. Coast Guard |
| COE | Corps of Engineers | USDOC | U.S Department of Commerce |

*This section left intentionally blank*



**To report an oil spill and activate CISPRI, call 907-776-5129**

# APPENDIX A

## CISPRI EQUIPMENT SPECIFICATIONS

This appendix contains descriptions of equipment owned or leased by CISPRI. The specifications for this equipment have been drawn from manufacturers' data sheets. Equipment is frequently rotated through the system and may not always be located where listed in this document.

**CISPRI** equipment is listed in the following categories:

**A – 1 Vessels**

**A – 2 Barges & Storage**

**A – 3 Boom**

**A – 4 Skimmers**

**A – 5 Non-Mechanical Response**

**A – 6 Onshore Response**

**CISPRI** equipment is stored at the following facilities:

- **Facilities in Nikiski**
- **Onboard response vessels and barges**
- **Storage Areas in Anchorage**
- **Storage Areas in Homer**
- **Storage Areas in Seldovia**
- **Storage Areas at Swanson River**
- **Storage Areas at Drift River**

**CISPRI** uses a computerized maintenance management system which:

- **Maintains records describing each preventative job, including resources required.**
- **Shows predictive, schedule to start, in progress, delayed or completed work.**
- **Provides the ability to view maintenance history which could be used to help analyze potential causes of equipment failures.**

The oil recovery rates listed for the skimmers are from manufacturer's specification sheets and the World Catalog. These values may not necessarily reflect recovery rates in actual operational situations. Recovery rates depend on encounter rate, oil thickness, oil characteristics, weather, and recovered oil storage. Manufacturer's specifications do not represent a guarantee of performance, either by CISPRI or the manufacturers.

*Intentionally Left Blank*



**OSRV PERSEVERANCE – CLASS 1 VESSEL**

Length: 207 ft Beam: 40 ft Draft: 16 ft 9 in
Displacement: 2,158 long tons
Deadweight: 960 long tons
Deck Space: 118 ft x 32 ft
Gross Tons: 299
Crew: 6
Accommodations: 24
Speed: 15 kt (maximum) 10 kt (cruising)
Bollard Pull: 80 tons
Horsepower: 5,750
Commissioned: 1978
Type: Anchor Handling/Towing/Supply Vessel
Class: Tug/Supply Ice Class "A"

**CAPACITIES**

| | |
|---|---|
| Recovered Oil Storage: | 2,500 |
| Deck Tank: | 215 bbl |
| Ballast: | 3,700 bbl |
| Fuel Oil: | 127,235 gal |
| Potable Water: | 53,810 gal |
| Bulk Tanks: | 6,000 cu ft |
| Deck Cargo: | 475 long tons |

**MACHINERY**

Main Propulsion: 2 ea. 16-546-E7A EMD Diesels, 5750 bhp total, each operating a propeller in a Kort nozzle
Bow Thruster: 400 hp diesel
Generators: 2 ea. 200 kW, 1 ea. 100 kW diesel

**SPILL RESPONSE EQUIPMENT**

Crucial 13-30 Skimmer
1 ea. Hydraulic power pack
1 ea. Containment Skirt 52" x 67'
1 ea. Outrigger 45'
1 ea. Infrared camera
1 ea. Deck crane
NOFI Current Buster II

**OPTIONAL SPILL RESPONSE EQUIPMENT**

NOFI Current Buster
Crucial 56-30 Skimmer
8 Rope Foxtail skimmer w/transfer pump

**LOCATION**

Nikiski Bay

**OWNER**

CISPRI

---




**SPILL RESPONSE EQUIPMENT**

1 ea. Crucial 13-30 Coated Disc Skimmer
1 ea. Skirt, 52 in x 67 ft w/45 ft outrigger
1 ea. Engine driven Hydraulic System
1 ea. 1170 bbl onboard storage
1 ea. Deck crane
1 ea. Infrared Camera
NOFI Current Buster II

**OPTIONAL SPILL RESPONSE EQUIPMENT**

NOFI Current Buster
Crucial 56-30 Skimmer
8 Rope Foxtail skimmer w/transfer pump

**OSV ENDEAVOR – CLASS 1 VESSEL**

Length: 179 ft
Beam: 40 ft
GRT: 292
Draft: 12 ft
Speed: 12 kt (maximum) 10 kt (cruising)
Horsepower: 3000 bhp
Crew: 5
Accommodations: 15

**Storage: 1170 bbls**

**LOCATION**

Nikiski Bay

**OWNER**

CISPRI



**JET SKIFF (CISPRI) - 4 EA. – CLASS 5 VESSEL**

| | |
|---|---|
| Length: | 20 ft |
| Beam: | 9.5 ft |
| GRT: | 9,000 lbs |
| Draft: | 2 ft |
| Speed: | 20 kt |
| Horsepower: | 330 hp |

**LOCATION**: Nikiski

**OWNER:** CISPRI

**Vessel Names**
Little "P"
Little "E"
Explorer
Eagle



**RESOLUTION (CISPRI) – CLASS 4 VESSEL**

| | |
|---|---|
| Length: | 45 ft |
| Beam: | 12.8 ft |
| GRT: | 12 |
| Draft: | 5 ft |
| Speed: | 20 kt |
| Horsepower: | 600 hp |

**LOCATION:** Nikiski

**OWNER:** CISPRI

**SPILL RESPONSE EQUIPMENT**

| | |
|---|---|
| Crane: | 1 ea. Deck Crane |
| Skimmers: | 2 ea. Lori side Collectors |
| Skirt: | 2 ea. Skirts with 20ft outrigger |
| Power: | 1 ea. Engine driven Hydraulic System |
| Pump: | 2 ea. 5 in Hydraulic Screw Pumps |
| Storage: | Can pump directly to a 249 bbl, 100 bbl barge, or towable bladders |



**CISPRI SEAL & TERN – CLASS 4 VESSEL**

| | |
|---|---|
| Length: | 34 ft |
| Beam: | 10 ft |
| Weight: | 12,000 lb |
| Draft: | 4 ft |
| Horsepower: | 450hp |

**LOCATION**: Nikiski

**OWNER:** CISPRI

**SPILL RESPONSE EQUIPMENT**
The Seal and Tern are typically used as personnel transport and safety vessels. When required, they are used for recovery operations and can tow boom.



**CLASS 8 VESSEL**
Length: 100
Beam: 34 ft.
4400 HP
Draft Light: 12 ft.
Draft Loaded: 17 ft.
Depth: 16 ft.

**LOCATION:**
Anchorage
Nikiski
Homer

**CAPACITIES FOR :**
Fuel:
Water:
Lube:
Hydraulic Oil

**OTHER EQUIPMENT**
Auxiliaries Engines:
Deck Machinery & Fendering
Deck Winch
Towing Lines
Anchor Handling

COOK INLET SPILL PREVENTION & RESPONSE, INC.
AND CISPRI SERVICES LLC
(COLLECTIVELY REFERRED TO AS CISPRI)

51377 KENAI SPUR HWY., KENAI, ALASKA 99611-9269 • (907) 776-5129 • FAX (907) 776-2190

# Cook Inlet Responder Vessels

# 6 ea.



| DOCUMENTATION | |
|---|---|
| Flag | U.S.A. |
| Year Built | 2007 |
| Alaska # | COD |
| Builder | KVICHAK |

| MAIN PARTICULARS | |
|---|---|
| Length, Overall | 34.5 feet |
| Beam | 12 feet |
| Depth | 4 feet |

| CAPACITIES | |
|---|---|
| Fuel | 300 Gallon, Diesel |
| Potable Water | None |

| CARGO DECK | |
|---|---|
| Aluminum Landing Craft | N/A<br>4 foot |
| Open Deck | 12.5 ft. (approx.) |
| Unladen Weight | 26,500 lbs. |
| Tow Post | 8000,10,000 |
| Capstan | Small |

| SAFETY EQUIPMENT | |
|---|---|
| USCG Compliant | Yes |
| Life Raft | No |

| MACHINERY | |
|---|---|
| Main Engines | Two 305Hp Cummins |
| Generators | Northern Lights 120 VAC |
| Propulsion | Two Prop 30” 4 Blade |

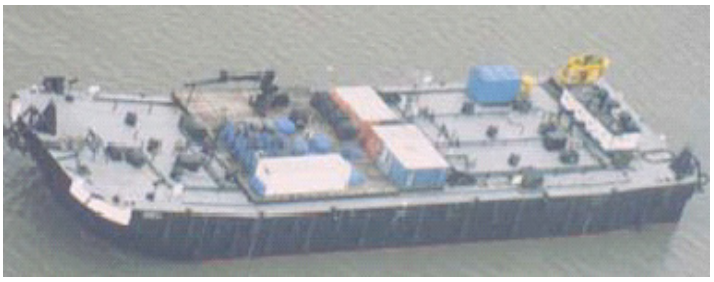
| PERFORMANCE | |
|---|---|
| Maximum Speed | 16-20 knots |
| Cruising Speed | Weather Dependent |

| ELECTRONICS & CONTROLS (12 VOLT SYSTEM) | |
|---|---|
| Depth Sounder | Yes |
| GPS | Yes |
| Radar | Yes |
| VHF | Yes |

| ACCOMMODATIONS | |
|---|---|
| Cabin | Yes (seats 6) |
| Heater | Diesel |
| Head | Yes |
| Crew | 2 (Minimum) |
| Passengers | 4 |

| OIL SPILL RESPONSE EQUIPMENT |
|---|
| None |

*Intentionally Left Blank*



**RESPONSE/LIGHTERING BARGE 141**

| | |
|---|---|
| Length: | 257 ft |
| Beam: | 68 ft |
| Draft: | 17.5 ft (loaded) |
| GRT: | 2,712 |
| Storage Capacity: | 59,421 bbl |
| Location: | Nikiski Bay/Seldovia Bay |
| Owner: | CISPRI |

**SPILL RESPONSE EQUIPMENT**

| | |
|---|---|
| Skimmer: | Crucial 56-30 |
| Skirt: | Ro-Boom deployed in J-configuration |
| Power: | Hydraulic Power Unit |
| Pump: | 5 in Hydraulic Screw Pump |

**ADDITIONAL EQUIPMENT**

2- 1000' reels of gated 50" Sea Sentry boom




**RESPONSE/LIGHTERING BARGE CISPRI RESPONDER**

| | |
|---|---|
| Length: | 168 ft |
| Beam: | 40 ft |
| Draft: | 11 ft (loaded) |
| GRT: | 676 |
| Storage Capacity: | 12,405 bbl |
| Location: | Nikiski Bay/Seldovia Bay |
| Owner: | CISPRI |

**SPILL RESPONSE EQUIPMENT**

| | |
|---|---|
| Skimmer: | Crucial 56-30 Skimmer |
| Power: | Hydraulic Power Unit |
| Pump: | 5 in Hydraulic Screw Pump |

**ADDITIONAL EQUIPMENT**

2,000 ft Ro-Boom 1500



**LIGHTERING BARGE/JOVALAN BARGE**

| | |
|---|---|
| Length: | 300 ft |
| Beam: | 68 ft |
| Depth: | 22.3 ft |
| Draft Empty: | 3 ft |
| Draft Loaded: | 18 ft 3.5 in |
| Regulatory: | Built in 1979 |
| Gross Tonnage: | 3,799 GRT |
| Net Tonnage: | 3,799 NRT |
| Capacity, Cargo: | 70,000 bbls @ API 65 |
| Arrangement: | Cargo Tanks - 10 ea.<br>Isolated Cargo System - 1 ea.<br>Deck Crane - 1 ea. |
| Location: | Kachemak Bay - Homer, Alaska |
| Owner: | CISPRI |



**MITIGATION RESPONSE/LIGHTERING BARGE REDOUBT ****

| | |
|---|---|
| Length: | 332 ft |
| Beam: | 74 ft |
| Draft Loaded: | 22 ft 5 in (loaded) |
| Draft Empty: | 3 ft |
| Gross Tonnage: | 5,790 |
| Net Tonnage: | 3,846 |
| Storage Capacity: | 82,006 bbl |
| Location: | Kachemak Bay, Homer |
| Owner: | CISPRI |

** Redoubt Barge is primarily used to backfill available temporary storage when barges are dry docked for regulatory maintenance requirements. Please contact CISPRI before the barge for planning purposes.



**PORTABLE BARGE, POL-U-TANK**

| | |
|---|---|
| Length: | 36 ft |
| Width: | 15 ft |
| Height: | 4 ft |
| Capacity: | 314 bbl bbls |
| Location: | CISPRI Yard |
| Owner: | CISPRI |

**OPERATING CONSIDERATIONS**

- Towed by fishing vessels or similar small boats
- Units can be stacked for transport
- Shallow draft for supporting nearshore and shoreline operations
- Barge can be anchored and used to recover light oil or sheen and decant as needed

The Pollutank is an inflatable floating settling tank/storage device. It is a passive container to transport oil water mixtures as part of an oil spill recovery system. The Pollutank is containerized for protection from the weather and easy deployment.



**MINI-BARGE (14 EA.)**

| | |
|---|---|
| Weight: | 9500 lb |
| Length: | 40 ft |
| Width: | 12 ft |
| Maximum Draft: | 3 ft 6 in |
| Cargo Tanks: | 4 |
| Displacement: | 14.9 GT |
| Deck Space: | 380 sq ft |
| Capacity: | 249 bbl |
| Location: | Nikiski |
| Owner: | CISPRI |

The mini-barge is a portable, non-self-propelled, aluminum hull barge used as a storage container to transport recovered oil as part of an oil spill recovery system. All necessary towing gear, tie-up lines, fendering, and towing lights are stowed in the mini-barge. Contract vessels or small work boats tow the barges to and from a spill site for loading and discharging. Though the barges have no skimming capabilities, power packs and skimmers can be placed on accompanying contract vessels to accommodate a spill response.



**MICRO-BARGE (4 EA.)**

| | |
|---|---|
| Length: | 32 ft |
| Beam: | 8.5 ft |
| Height: | 5 ft |
| Draft: | 1 ft 6 in |
| Weight: | 6,500 lbs |
| Capacity: | 100 bbl |
| Location: | 2 ea. in Anchorage<br>1 ea. in Homer<br>1 ea. in CISPRI Yard |
| Owner: | CISPRI |

The micro-barge is a portable, non-self-propelled, aluminum hull barge used as a storage container to transport recovered oil as part of an oil spill recovery system. All necessary towing gear, tie-up lines, fendering, and towing lights are stowed in the mini-barge. Contract vessels or small work boats tow the barges to and from a spill site for loading and discharging. Though the barges have no skimming capabilities, power packs and skimmers can be placed on accompanying contract vessels to accommodate a spill response.



**PORTABLE BAG, UNITOR OIL BAG (1EA.)**

| | | | |
|---|---|---|---|
| Length: | 123 ft | Capacity: | 3,145 bbl |
| Width: | 28.5 ft | Draft: | 6.2 ft. min., 7.9 ft. max. |
| Height: | 6 ft | Circumference: | 63.9 ft. |
| Weight: | 3,520 lbs | Capacity: | 3,145 bbl |
| Owner: | CISPRI | Location: | CISPRI Yard/Warehouse |

**ACCESSORIES**

4 in Camlock Hose 34 ft long
Aluminum Container
Towing Bridle
Tow Line
Lifting Rope

The Unitor Oil Bag (UOB) is a portable temporary storage bladder. The UOB is made of an oil- and sea-water-resistant polyester textile. Filling and discharging of the UOB are done through the same 4-inch hose connected to the steel nose cone. A decanting fitting is also located in the nose cone. The UOB can be towed up to 10 knots while empty using the towing bridle, or can be brought to the scene and then deployed form its aluminum container. The UOB can be emptied by partially lifting the aft end. Viscous oil can be forced into offloading pump by lifting the aft end. They are located in the warehouse and with the Valdez Star.

**Safety Note:** The bag should never be towed by the stern when loaded. Tow should only be done from the nose cone.



**DUNLOP (1 EA.)**

| | |
|---|---|
| LOA: | 216 ft |
| Beam: | 10.9 ft |
| Diameter: | 10 ft 9 in |
| Weight: | 8,930 lbs |
| Capacity: | 100% 3,262 bbl., 80% 2,773 bbl. |
| Location: | CISPRI Yard/Warehouse |
| Owner: | CISPRI |



**BLADDER**

| | |
|---|---|
| Length: | 10.5 ft |
| Width: | 10 ft |
| Height: | 5 ft |
| Weight: | 158 lb |
| Capacity: | 6.3 bbl |
| Location: | CISPRI Yard/Warehouse |
| Owner: | CISPRI |



**PORTABLE BAG – PILLOW**

| | |
|---|---|
| LOA: | 44 in |
| Beam: | 4 ft |
| Height: | 30 in |
| Capacity: | 238 bbls |
| Location: | CISPRI Yard/Warehouse |
| Owner: | CISPRI |




**UNITANK (5EA)**

| | |
|---|---|
| Length: | 48 in |
| Width: | 48 in |
| Height: | 48 in |
| Weight: | 95 lb |
| Capacity: | 6 bbl |
| Location: | CISPRI Yard/Warehouse |
| Owner: | CISPRI |




**FASTANK**

**2000 (14 EA)**

| | |
|---|---|
| Weight: | 140 lb |
| Capacity: | 63 bbl |
| Location: | CISPRI Yard/Warehouse |

**3000 (1EA)**

| | |
|---|---|
| Weight: | 143 lb |
| Capacity: | 71 bbl |
| Location: | CISPRI Yard/Warehouse |
| Owner: | CISPRI |



**MARKLEEN EASYTANK 15 (2 EA)**

| | |
|---|---|
| Model: | Easytank 15 |
| Diameter: | 4190 mm |
| Height: | 1500 mm |
| Weight: | 90 kg |
| Capacity: | 125 bbl |
| Location: | CISPRI Yard/Warehouse |
| Owner: | CISPRI |



**OIL/WATER SEPARATOR UNITS**

**220 BBL (4EA)**

| | |
|---|---|
| LOA: | 21 ft |
| Beam: | 8.75 ft |
| Height: | 9.75 ft |
| Weight: | 12,000-13,500 lbs |
| Capacity: | 215 bbls |
| Location: | CISPRI Yard<br>Homer<br>Seldovia |

**180 BBL (2EA)**

| | |
|---|---|
| LOA: | 21 ft |
| Beam: | 8.5 ft |
| Height: | 10 ft |
| Location: | CISPRI Yard |
| Owner: | CISPRI |



**FASTANK - Troiltank**

| | |
|---|---|
| **Model:** | **Troiltank 10,000** |
| Weight: | 62 lbs |
| Capacity: | 70bbl |
| Location: | CISPRI Yard/Warehouse |
| Owner: | CISPRI |


To report an oil spill and activate CISPRI, call 907-776-5129

*Intentionally Left Blank*



**OPEN-WATER, NOFI VEE SWEEP 600 BOOM**

| | |
|---|---|
| Weight: | 1,530 lb/section |
| Freeboard: | 24 in |
| Draft: | 30 in |
| Composition: | PVC-coated polyester |
| Connector: | Dynamic response connector "G" hooks |
| Location: | CISPRI Yard |
| Owner: | CISPRI |

**AUXILIARY EQUIPMENT**

West Coast Power Pack
Air Blowers

**PERFORMANCE**

| | |
|---|---|
| Transit Speed: | 1.4-1.6 kt |
| Tow Speed: | 1.4-1.6 kt |

This boom is stowed on a reel in a CONEX at CISPRI. It consists of three parts: the outer guide boom, the inner guide boom, and the vee-sweep. The guide boom is 606 ft and the vee-sweep is 196 ft. The boom is inflated by deck crews and deployed with the help of a tow boat. The guide boom is towed into the position that provides the best conditions for spill recovery, adapting to the prevailing weather, debris, and oil conditions. The unique shape and net design of the vee-sweep allow for faster towing speeds, reduce the effect of wave action, and concentrate the oil in a thicker layer for recovery by onboard skimming systems



**OPEN-WATER, RO-BOOM 1500**

| | |
|---|---|
| Weight: | 11.8 lb/ft |
| Freeboard: | 20 in. |
| Draft: | 30 in. |
| Composition: | Oil-resistant rubber/fabric-reinforced neoprene |
| Connector: | Hinge and pin |
| Location: | CISPRI Yard |
| Ownership: | CISPRI |

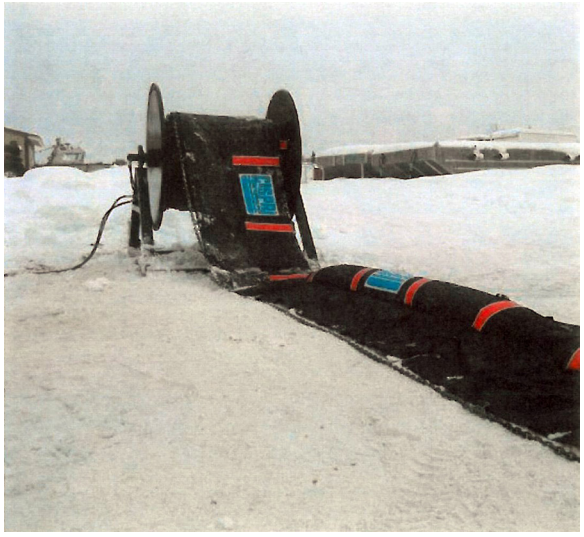
**AUXILIARY EQUIPMENT:**

Hydraulic Deck Reel
Diesel Hydraulic Power Packs
Air Blowers

**PERFORMANCE:**

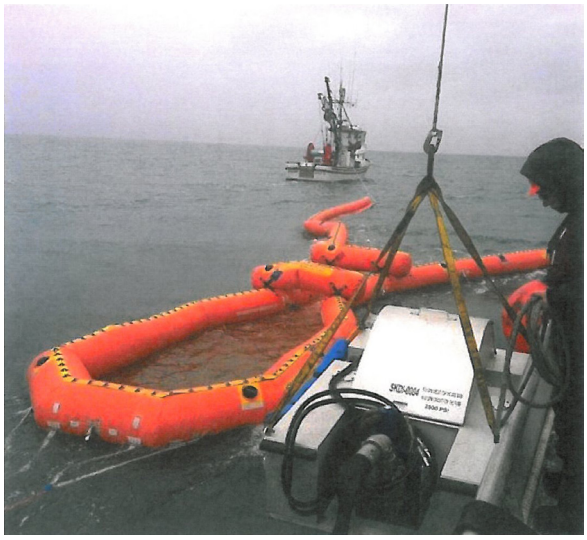
| | |
|---|---|
| Transit Speed: | 10 kt |
| Tow Speed: | 0.5-1 kt |

This boom is intended for offshore oil spill containment and is stowed on reels and deployed from the reel by a work boat. The segments are manually inflated and deployed using compressed air or blowers.



**SEA SENTRY II MODEL: 20-33**

| | |
|---|---|
| Freeboard: | 500 mm (24 in.) |
| Draft: | 750 mm (30 in.) |
| Overall Height, Inflated: | 1,250 mm (50 in.) |
| Overall Height, Deflated: | 1,450 mm (59 in.) |
| Weight/ft. approx.: | 11.2 kg/M (7.5 lb./ft.) |
| Section Length: | 110 ft. |
| Location: | CISPRI Yard |
| Ownership: | CISPRI |



**NOFI CURRENT BUSTER II (HARBOR BUSTER) - 4 EA.**

| | |
|---|---|
| Freeboard: | 600/500/400 mm dia. (24 in./19 in./16 in.) |
| System Length: | 27 m (88 ft.) |
| Depth of Separator: | 1.4 m (4.5 ft.) |
| Separator gross vol: | 15 m3 (95 bbls.) |
| Max. Front Opening: | 20 m (65.5 ft.) |
| Total System Weight: | 560 kg. including towing lines (1,250 lbs.) |
| Location: | CISPRI Yard |
| Owner: | CISPRI |

*Standard Accessories consisting of:*

| | |
|---|---|
| 1 Bridle/Towing Line: | 2.5/20 m long – 20 mm dia. |
| High Cap. Air Blowers: | 2 ea. including hose and nozzle |
| Chafer Mat: | 6 x 4 m |



**PROTECTED-WATER, NOFI CURRENT BUSTER - 2 EA.**

| | |
|---|---|
| Weight: | |
| Freeboard (Separator): | 24 in. |
| System Length: | 113 ft |
| Swath Width: | 66 ft |
| Storage Volume (Gross): | 200 bbl (in separator) |
| Composition: | PVC-coated polyester |
| Location: | CISPRI Yard |
| Owner: | CISPRI |

**PERFORMANCE**

Tow Speed: Up to 4kt

**AUXILIARY EQUIPMENT**

Air Blower

The boom system, which is inflated by an air blower, includes front sweep booms and a separator/temporary storage section that contains a layer of calm oil for skimming. The system can contain oil while being towed at speeds up to 4kt in calm seas and 2-3kt in waves. This boom is stored on a reel in the CISPRI yard.



**CALM-WATER, CSI BOOM**

**HARBOR, 8-IN. FLOAT**

| | |
|---|---|
| Weight: | 2.7 lb/ft |
| Freeboard: | 8 in. |
| Draft: | 12 in. |

**HARBOR, 10-IN. FLOAT**

| | |
|---|---|
| Weight: | 4 lb/ft |
| Freeboard: | 10 in. |
| Draft: | 18 in. |
| Composition: | PVC-coated nylon |
| Connector: | Universal slide (ASTM) |

**PERFORMANCE**

Transit Speed: 10 kt

Tow Speed: 0.5 to 1 kt

Location: CISPRI YARD Ownership: CISPRI

Harbor boom is designed for use in relatively sheltered waters. This boom is a top-tension containment boom designed to withstand strong currents and tidal surges. It is used primarily for protection of small sensitive areas, particularly fish hatcheries. This boom can be deployed off the Barge 500-2 by using a tow boat with manual assistance from the barge's deck crew. Locations include the CISPRI Responder, Barge 141, CISPRI yard, and off site locations.



**CALM WATER, SNARE BOOM**

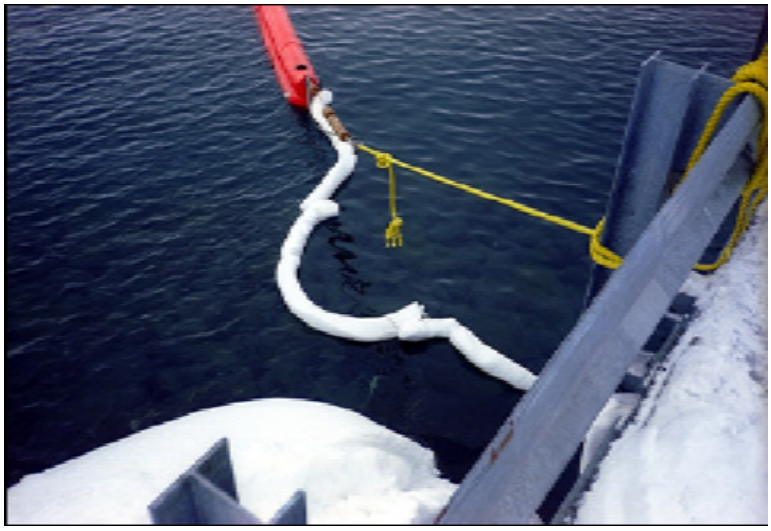
| | |
|---|---|
| Length per Section: | 50 ft |
| Weight per Section: | 30 lb (dry) |
| Snares per Section | 30 |
| ¼" poly line | |

**PERFORMANCE:**

Absorption Rate: 15:1 to 20:1 oil:sorbent ratio

Snare boom comes in 50-ft sections and can be used for both containment and absorption. It can be deployed on a beach or with a conventional containment boom to provide backup.

Location: CISPRI Yard/Warehouse
Owner: CISPRI



**CALM WATER, SORBENT (SAUSAGE) BOOM**

| | |
|---|---|
| Freeboard: | 4 in |
| Draft: | None |
| Length: | 10 ft |
| Weight: | 16 lb (dry) |

Sorbent boom is made from polypropylene and has an indefinite shelf life. Sorbent boom is designed to be linked into barriers of any length for containment and absorption. They are easy to deploy and tow, however, are very heavy when they have absorbed a large amount of oil.

Location: CISPRI Yard/Warehouse
Owner: CISPRI



**TIDAL SEAL BOOM**

| | |
|---|---|
| Weight: | 2 lb/ft |
| Freeboard: | 10 in. |
| Draft: | 11 in. |
| Composition: | Polyurethane |
| Connector: | Universal slide (ASTM) |

This type of boom is used for nearshore oil containment and may be deployed by boats or by crews onshore. It The boom is designed to allow for tidal changes while keeping a positive seal at the water's edge. The bottom chamber is filled with water and the top chamber is filled with air.

**Locations include the CISPRI yard and offsite locations.**

Owner: CISPRI



**RIVER BOOM**
Weight: 1lb/ft
Freeboard: 6in
Draft: 8in
Composition: 22oz PVC
Connectors: Universal Slide

**Locations include the CISPRI yard and off site locations.**

Owner: CISPRI



**NEARSHORE BOOM**
Height: 21in
Freeboard: 10in
Draft: 11in
Weight: 2lb/ft

**Locations include the CISPRI yard and off site locations.**

Owner: CISPRI




**LAMOR FRONT COLLECTOR SKIMMING SYSTEM (2 EA.)**

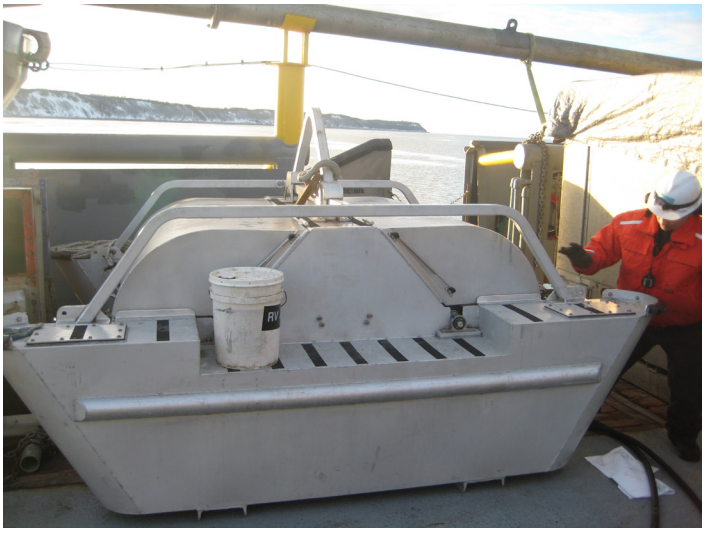
| | |
|---|---|
| Dimensions (LxWxH): | 94 in x 33 in x 83 in |
| Weight: | 1210 lb |
| Draft: | 12 in |
| Freeboard: | 71 in |

**PERFORMANCE**

| | |
|---|---|
| Nameplate Recovery: | 130 bbl/hr x 2 = 260 bbl/hr |
| Efficiency: | 20% |
| De-rated Recovery: | 26 bbl/hr x 2 = 52 bbl/hr |
| Model # LSC3C2300 | |

| | |
|---|---|
| Location: | CISPRI Base |
| Owner: | CISPRI |

The Lamor Front Collector is a brush-type device. The skimmer has three brush chains each of which rotate down through an oil slick. The oil that clings to the brushes is combed off near the top of the rotation cycle, falls into a sump, and then is pumped off with a positive displacement pump. The skimmer is designed to be used in an advancing mode at a speed of up to 3 knots.



**CRUCIAL 56 DISC SKIMMER (3 EA.)**

| | |
|---|---|
| Model: | c-disk 56/30 |
| Length: | 10.5 ft |
| Width: | 7.5 ft |
| Height: | 4.5 ft |
| Weight: | 1883 lb |

**PERFORMANCE**

See Logistics & Planning 4-3, Table 5

| | |
|---|---|
| Nameplate Recovery: | 707 bbl/hr |
| De-rated Recovery 50%: | 354 bbl/hr |
| De-rated Recovery 20%: | 142 bbl/hr |

| | |
|---|---|
| Location: | CISPRI Yard/OSRVs |
| Owner: | CISPRI |



**WEIR SKIMMER, DESMI TERMINATOR**

| | |
|---|---|
| Dimensions (LxWxH): | 7 ft x 5 ft 6 in x 3 ft |
| Weight: | 357 lb |
| Draft: | 2 ft 6 in |

**AUXILIARY EQUIPMENT**

Hydraulic Power Pack
Discharge Hose
Air Compressor

**HYDRAULIC REQUIREMENTS**

| | |
|---|---|
| Skimmer/Pump: | 42 gpm@3,000 psi |

**PERFORMANCE**

| | |
|---|---|
| Nameplate Recovery: | 629 bbl/hr |
| Efficiency: | 20% |
| De-rated Recovery: | 125 bbl/hr |
| Location: | CISPRI Yard |
| Owner: | CISPRI |

This high-performance remote-adjusting weir skimmer is capable of handling thick oil that contains debris. The intake of the skimmer is positioned in the oil layer just below the surface. The recovered oil-and-water mixture is passed through a built-in DESMI transfer pump to storage on the parent vessel. CISPRI has a Helix bursh unit that can be used in heavy oil.



**CRUCIAL 36 DRUM SKIMMER (2 EA.)**

| | |
|---|---|
| Dimensions: | 54 in long x 39 in wide x 21 in high |
| Weight: | 90 lb |
| Draft: | 9.25 in |

**PERFORMANCE**

| | |
|---|---|
| Nameplate Recovery: | 80 bbl/hr |
| Efficiency: | 20 % |
| De-rated Recovery: | 16 bbl/ hr |
| Model #: | 1CD18H-36 Drum Skimmer |
| Location: | CISPRI Yard/Warehouse |
| Owner: | CISPRI |

This skimmer is a single drum, 18 inches in diameter and 36 in length. The drum is covered with fibrous outer layer. In operation, the drum rotates down through the surrounding oil slick and then a single scraper cleans the drum, the oil emptying into a sump forward of the drum. The discharge pump is a positive displacement lobe pump.




**WEIR SKIMMER, SELF-CONTAINED WEIR SKIMMER, SKIM PAK, MODEL 18000**

| | |
|---|---|
| Weight: | 12 lb |
| Dimensions: | 2 ft 6 in x 1 ft 6 in x 9 in (LxWxH) |
| Draft: | 3 in |

**AUXILIARY EQUIPMENT**

Suction Pump

**PERFORMANCE**

| | |
|---|---|
| Nameplate Recovery: | 428 bbl/hr |
| Efficiency: | N/A |
| De-rated Recovery: | N/A |
| Location: | CISPRI Yard/Warehouse |
| Owner: | CISPRI |

This skimmer is designed to float in the oil layer. A built-in weir system skims a mixture of oil and water, which is transferred to storage tanks. The weir is self-adjusting to limit the amount of water intake.



**OLEOPHILIC SKIMMER, OLEOPHILIC ROPE SKIMMER, 8 ROPE FOXTAIL**

| | |
|---|---|
| Weight w/Mop: | 1,985 lb |
| Length: | 5 ft 8 in |
| Width: | 5 ft |
| Height: | 3 ft 8 in |

**AUXILIARY EQUIPMENT**

Power Pack
Storage Device or Container

**PERFORMANCE**

| | |
|---|---|
| Nameplate Recovery: | 500 bbl/hr |
| Efficiency: | 20% |
| De-rated Recovery: | 100 bbl/hr |
| Location: | CISPRI Yard |
| Owner: | CISPRI |

This Oleophilic skimmer consists of eight endless loops of rope mop that are continuously rotated through the oil. When the rotation brings oil-soaked rope back to the main unit, rollers squeeze out the oil. Recovered oil is pumped to storage containers. While some skimmer systems recover large amounts of water with the oil, the rope mop skimmer is highly efficient; up to 90% of the recovered liquid is oil.




Designed for use in harbor or nearshore spills, the Manta Ray skimmer floats in the surface layer of oil. Attached hoses and pumps siphon an oil and water mixture to waiting storage tanks. Because of its thin profile, the Manta Ray skimmer may also be used for spills on land and with a vacuum truck.

Location: CISPRI Yard/Warehouse/Offsite Locations

### SUCTION SKIMMER, MANTA RAY

**AUXILIARY EQUIPMENT**

Suction Pump

**60" (1 EA.)**

| | |
|---|---|
| Weight: | 76 lb |
| Nameplate Recovery: | 358 bbl/hr |
| Efficiency: | N/A |
| De-rated Recovery: | Based on pumping system |

**54" (1 EA.)**

| | |
|---|---|
| Weight: | 58 lb |
| Nameplate Recovery: | 215 bbl/hr |
| Efficiency: | N/A |
| De-rated Recovery: | Based on pumping system |

**48" (2 EA.)**

| | |
|---|---|
| Weight: | 26 lb |
| Nameplate Recovery: | N/A |
| De-rated Recovery: | Based on pumping system |

**36" (2 EA.)**

| | |
|---|---|
| Weight: | 50 lb |
| Nameplate Recovery: | N/A |
| De-rated Recovery: | Based on pumping system |

Owner: CISPRI



Location: CISPRI Yard/Warehouse
Owner: CISPRI

### DESMI OCEAN 250 WEIR SKIMMER

| | |
|---|---|
| Weight: | 440 lbs |
| Draft: | 24 in |

**AUXILIARY EQUIPMENT**

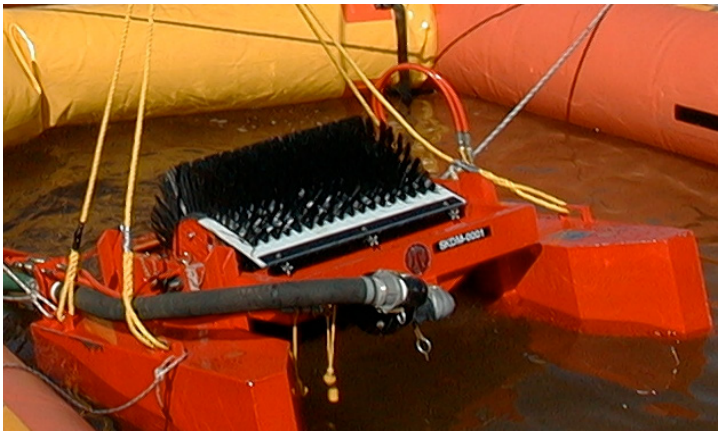
Hydraulic Power pack
Discharge Hose
Air Compressor

**HYDRAULIC REQUIREMENTS**

| | |
|---|---|
| Skimmer/Pump: | 42 GPM @ 3000 psi |
| Air Compressor: | 8 GPM @ 1200 psi |

**PERFORMANCE**

| | |
|---|---|
| Maximum Recovery: | 629 bbls/hr |
| Efficiency: | 20% |
| De-rated Recovery: | 125bbl/hr |



### ACTION PETROLEUM MODEL 24 SKIMMER

| | |
|---|---|
| Length: | 3 ft |
| Width: | 2 ft |
| Height: | 1 ft 6in |
| Weight: | 30 lb |

**AUXILIARY EQUIPMENT**

Hydraulic Power Pack
Hoses

**PERFORMANCE**

| | |
|---|---|
| Nameplate Recovery: | 185 bbl/hr |
| Efficiency: | 20% |
| De-rated Recovery: | 37 bbl/hr |
| Location: | CISPRI Yard/Warehouse |
| Owner: | CISPRI |

This unit has options to use brushes, discs, or a drum.




**FOILEX TDS 150 SKIMMER**

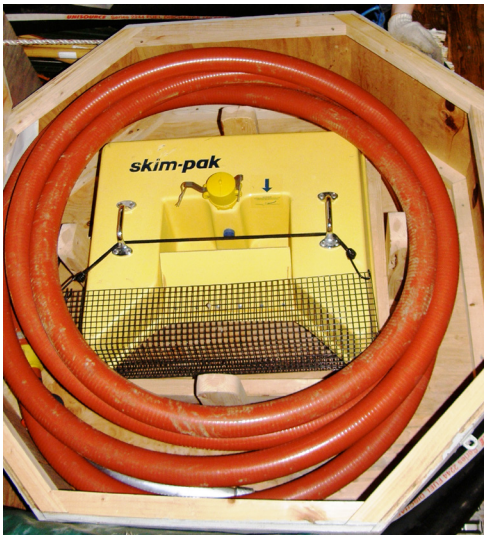
| | |
|---|---|
| Length: | 4 ft |
| Width: | 4 ft |
| Height: | 2 ft |
| Weight: | 100 lb |

**AUXILIARY EQUIPMENT**

Hydraulic Power Pack
Hoses

**PERFORMANCE**

| | |
|---|---|
| Nameplate Recovery: | 220 bbl/hr |
| Efficiency: | 20% |
| De-rated Recovery: | 44 bbl/hr |
| Location: | CISPRI Yard/Warehouse |
| Owner: | CISPRI |




**SKIM PACK 4200**

| | |
|---|---|
| Length: | 25 in |
| Width: | 24 in |
| Height: | 8 in |
| Weight: | 100 lb |

**PERFORMANCE**

| | |
|---|---|
| Nameplate Recovery: | 96 bbl/hr |
| Efficiency: | N/A |
| De-rated Recovery: | Based on pumping system |
| Location: | CISPRI Yard/Warehouse |
| Owner: | CISPRI |



**4 ROPE FOXTAIL**

| | |
|---|---|
| Length: | 6 ft |
| Width: | 5 ft |
| Height: | 3 ft |
| Weight: | 750 lb |

**PERFORMANCE**

| | |
|---|---|
| Nameplate Recovery: | 100 bbl/hr |
| Efficiency: | 20% |
| De-rated Recovery: | 20 bbl/hr |
| Location: | CISPRI Yard/Warehouse |
| Owner: | CISPRI |




**VERTICAL ROPE MOP**

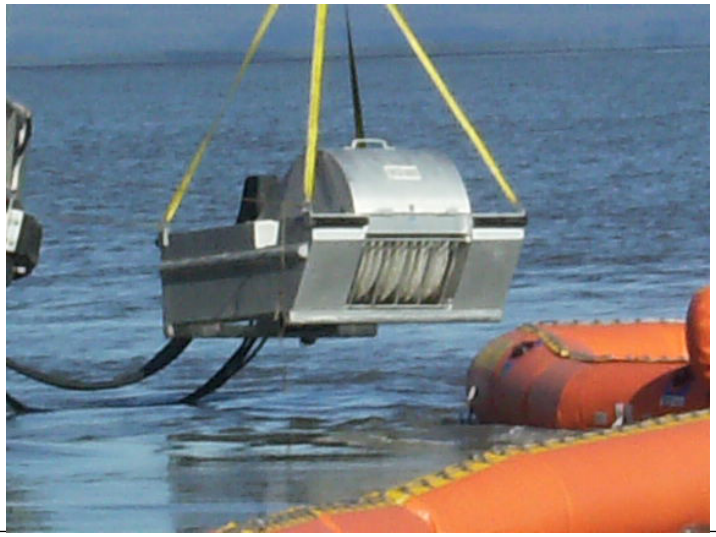
**MODEL MV 41**

| | |
|---|---|
| Length: | 30 in |
| Width: | 17 in |
| Height: | 24 in |
| Weight: | 165 lb |

**PERFORMANCE**

| | |
|---|---|
| Nameplate Recovery: | 6.25 bbl/hr |
| Efficiency: | 20% |
| De-rated Recovery: | 1.25 bbl/hr |

Location: CISPRI Yard/Warehouse/Offsite Locations
Owner: CISPRI



**CRUCIAL 13 DISC SKIMMER (10 ea.)**

| | |
|---|---|
| Model: | c-disk 13/30 |
| Length: | 6 ft |
| Width: | 4.5 ft |
| Height: | 3.5 ft |
| Weight: | 632 lb |

**PERFORMANCE**

| | |
|---|---|
| ASTM F2709 performance results: | 157 bbl/hr |
| Nameplate Recovery: | 157 bbl/hr |
| De-rated Recovery 50%: | 79 bbl/hr |
| De-rated Recovery 20%: | 32 bbl/hr |

Location: CISPRI Yard/Warehouse
Owner: CISPRI




**KOMARA 15 DUPLEX SKIMMING SYSTEM (2EA) - DISC SKIMMER**

| | |
|---|---|
| Model: | IMP 65FS |
| Length: | 3 ft |
| Width: | 3 ft |
| Height: | 1.5 ft |
| Weight: | 84 lb |
| *Note: | Equipped with fuzzy discs |

**PERFORMANCE**

| | |
|---|---|
| ASTM F2709 performance results: | 59 bbl/hr |
| Nameplate Recovery: | 59 bbl/hr |
| De-rated Recovery 20%: | 12 bbl/hr |

Location: CISPRI Yard/Warehouse
Owner: CISPRI

*Intentionally Left Blank*



**DISPERSANT SPRAY SYSTEM, SIMPLEX**

| | |
|---|---|
| Capacity: | 240 gal |
| Weight: | 355 lb |
| Spray Rate: | Variable up to 100 gpm |
| Spray Boom Length: | 20 or 30 ft |
| Power: | Self-contained power source |

**PERFORMANCE:**

| | |
|---|---|
| Aerial Coverage: | 8 to 10 acres/min |
| Spray Time/Payload: | 2 to 20 min |
| Treatment Potential: | 4,200 gal per payload |
| Swath Width: | 30 ft |
| Location: | CISPRI Yard |
| Owner: | CISPRI |

The fiberglass bucket is designed to be carried by a boat or stored on land. The bucket is hauled by helicopter to the site of a spill, and twin spray booms release oil dispersant 100 to 150 feet above the affected area. The bucket is refilled on the ground.



**VESSEL-MOUNTED DISPERSANT SPRAY SYSTEM, SPILLSPRAY**

| | |
|---|---|
| Weight: | 300 lb |
| On-board Tankage: | 3,000 gal of concentrate liquid |
| Portable Tankage: | 1,500 gal of concentrate liquid |
| Dispersant Flow Rate (deducted): | 5 to 15 gpm, can be increased |
| Spray Boom Length: | 35 ft on each side |
| Power: | 6.5 hp diesel |

**PERFORMANCE:**

| | |
|---|---|
| Treatment Potential: | 100's to 1000's bbl depending on vessel storage |
| Swath Width: | 100 ft |
| Spray Time/Payload: | Depends on vessel storage and dilution rate |
| Location: | CISPRI Yard |
| Owner: | CISPRI |

The Spillspray unit is a self-contained portable unit that can be assembled on vessels suitable for oil spill operations. Mounted on 4 inch diameter support posts, the unit can adjust spray arm to sea angle up to 15° for rough weather. Spillspray system is normally located at the CISPRI facility. Dispersant is stored in 330 and 550 gallon totes with lifting eyes and forklift pockets. Will be loaded onto vessel via crane.




**DISPERSANT TRANSFER LOADING SYSTEM**

| | |
|---|---|
| Length: | 84 in |
| Width: | 58 in |
| Height: | 60 in |
| Capacity: | 600 gallons |
| Location: | CISPRI Yard |
| Owner: | CISPRI |




**DISPERSANT: COREXIT (R) EC9500A**

State Right to Know: Propylene Glycol 57-55-6

Location: CISPRI Yard
Owner: CISPRI



**AIRBORNE IGNITION SYSTEM, HELI-TORCH**

Empty Weight: (55 gal) 180 lb
Gross Weight: (55 gal) 636 lb
Location: CISPRI Yard Owner: CISPRI
**(2EA.)**

Capacity: 55 gal
Delivery Altitude: 200 ft
Speed: 40 mph
Expected Burn: 8 to 10 min
**(1EA.)**

Capacity: 30gal
Altitude: 150 ft
Speed: 30 mph
Expected Burn: 12 to 17 min

The Heli-torch Airborne Ignition System's function is to provide remote ignition of oil slicks using gelled petroleum. The Heli-torch is an igniter suspended beneath a helicopter and operated by remote control from the helicopter cockpit. The Heli-torch releases burning particles of gel fuel 150 to 200 feet above a waterborne oil slick. The particles ignite the oil upon impact. They systems are stored at the CISPRI facility.




**HAND HELD THERMAL INFRARED CAMERA**

Model: Palm IR 250 Digital
Dimensions: 9.5" x 4" x 4"
Weight: 2.6 lbs without battery
Location: 1 Vessel Mounted Unit
1 mounted on Perseverance
1 Hand Held Unit
CISPRI
Owner: CISPRI

**FEATURES**

Spectral Response: 7 to 14 microns
Standard Lens: 75 mm
Field of View: 12° x 9°
Focus Range (Typical): 20 feet to infinity
Range to Detect a Person: 2400 feet
Power Source: Rechargeable camcorder battery
Operating Time: Approximately 5 hours




**VOYAGER TRACKING BUOY**

| | |
|---|---|
| Diameter: | 250 mm |
| Height: | 660 mm |
| Approx. Weight: | 6 kg |
| Material: | High Density Polyethylene (HDPE) |
| Power Supply: | Alkaline D Cell Battery Pack (12 X D-Cell, 9V) |
| Communications: | Iridium short burst data – Iridium Satellite & GPRS |
| Temperature Sensor | |
| Operating Environment: | Water Temp: -2 to +65 degrees celsius |
| Operating Life: | Around 2000 transmissions with fully charged battery pack |
| | |
| Location: | CISPRI Warehouse |
| Owner: | CISPRI |





CISPRI is not a Marine Fire Fighting or Salvage Company. CISPRI would support fire fighting efforts from shipboard, provided that activity doesn't detract from spill response responsibilities, or put personnel in fire fighting situations that they are not trained for.

**TT-600 PORTABLE FIRE PUMP (1 EA.)**

| | |
|---|---|
| Capacity: | 2,650 GPM@190PSI<br>600 M3/HR @13 BAR |
| Monitors: | 2 X ALCO HR 475 HAND |
| Line Connections: | 6 X 2.5"<br>3 X1.5" |
| Foam Induction: | 0-6% |
| Dimensions: | 8 x 4 x 7.3 ft |
| Weight: | 6,600 lb |
| Throw Distance: | 300 ft |
| Throw Height: | 170 ft |
| Engine: | John Deer 6081 |
| Fuel Capacity: | 126 gallons |
| Pump: | NUHUIS NCDI 150-5205 |
| Location: | CISPRI Yard |
| Owner: | T & T Salvage |
| Note: | Can be set up on a vessel or on land |

*Intentionally Left Blank*



**DELUGE SYSTEM**

The deluge system is designed for response to shoreline oil spills. The system integrates a landing craft, pumps, supply hoses, and nozzles to deluge (flood) an oiled beach with sea water. This is a relatively non-intrusive and effective way to move oil from beaches to open water. Once the oil is gathered in a containment area, it can be recovered with skimmers and other response equipment. These systems can also be used to keep oil from reaching the shoreline.

Location: CISPRI Yard/Warehouse
Owner: CISPRI

*Intentionally Left Blank*

# APPENDIX B

## Realistic Maximum Response Operating Limits (RMROL)

**Realistic Maximum Response Operating Limitations (RMROL)** refers to a description of the limitations to oil spill response that might be encountered based on environmental and safety considerations. State regulations require that Oil Discharge Prevention and Contingency Plans describe the realistic maximum response operating limitations (RMROL) that might be encountered at a facility or operation and provide an analysis of the frequency and duration that those limitations would render mechanical response methods ineffective. This requirement ensures that plan holders have considered potential situations where a response might not be feasible, and identified additional prevention or response measures to reduce environmental consequences if a spill should occur during such periods.

This appendix describes how the adverse weather and environmental conditions that occur in the Cook Inlet area could limit response operations. All RMROL are based on available data and do not reflect the potential for wide variations in operating conditions throughout the Cook Inlet region at any given time. This section also provides information regarding the operating limits for CISPRI response equipment and systems, to assist member companies in developing their operationally-specific RMROL analysis per 18 AAC 75.425(e)(3)(D) and 18 AAC 75.445(f).

## FACTORS THAT MAY LIMIT RESPONSE OPERATIONS

Alaska state regulations identify five types of factors that should be considered in planning for oil spills, to account for the fact that there may be times where conditions on-scene are such that a response is not possible.

These factors are:

- **Weather** (wind, visibility, precipitation, and temperature)
- **Sea state, tides and currents**
- **Ice and debris presence**
- **Hours of daylight**
- **Other known environmental conditions** that might influence the efficiency of the response equipment or the overall effectiveness of a response effort.

This section discusses in general terms how each of these factors might impact mechanical response operations performed by CISPRI responders and contractors.

# WEATHER

The Cook Inlet region has distinct weather and oceanographic conditions that may affect or limit spill response activities. The response options available to contain and control an oil spill may be negligible under adverse weather conditions. At no time is the safety of personnel, equipment, or the environment to be compromised by CISPRI operations.

Response to oil spills will be made under all weather or oceanographic conditions; however, the response may be limited only to notification and documentation should conditions be such that safety hazards would limit response or that equipment or response methods would be ineffective. Wind, visibility, precipitation, and temperature may all impact a spill response.

Archived and current weather data for the area can be found on the **National Weather Service webpage**

- https://www.weather.gov/wrh/Climate?wfo=afc

# WIND

## Impacts on Oil Spill Response Operations

Wind affects cleanup operations in several ways. Wind tends to move surface oil at three to five percent of the wind velocity and at approximately 10º – 20º to the right of the wind direction. This effect of the wind will either move the oil faster along its path in conjunction with currents or will oppose currents and slow movement.

Depending upon its speed and direction, wind also may hamper a crew's ability to maneuver boats and boom. High winds and waves may swamp boom, allowing oil to escape both over the top and beneath the skirt. In addition, heavy winds will create mixing effects. Water-in-oil "mousse" is a wind-induced water/oil emulsion that is difficult to recover. High winds can also force the suspension of aerial operations such as over-flights for spill tracking or response monitoring.

Wind negatively influences the effectiveness of a response when it approaches 30 to 40 knots or greater. Temperature, sea state, visibility and precipitation may vary the effect of a specific wind speed on response effectiveness. In some circumstances, such as a bay with limited fetch, response may be possible in 30- to 40-knot winds, while in open seaways, response tactics may be more affected by the wind.

- Modern ocean booms are designed to withstand 50-knot winds, but their ability to hold or contain oil decreases as wind speed increases. This is especially true when the booms are towed windward.
- Although efficiency is diminished, in some circumstances boom can be deployed and operated in 30- to 40-knot winds.
- In very high winds with fully developed storm seas, oil can be mixed into the upper water column.
- High winds driving water against booms may put pressure on anchor points

that can result in failure of boom moorings.

- Most skimmers are stable enough to operate in rough sea conditions associated with high winds. Skimming efficiency is reduced by waves that accompany high winds.
- Winds affect the launching and recovery of response equipment. Launching and recovery may be undertaken safely on the lee side of barges and boats.
- Strong winds may make it dangerous for personnel to operate on a vessel's deck.
- Safety considerations limit launching, recovering or operating small skiffs and workboats in strong winds and seas
- Large vessels and tugs are largely unaffected by strong winds; however, crews may not be able to perform response tasks on deck or over the side due to safety considerations.
- Both strong winds and flat-calm conditions affect dispersant and burning efficiencies.

## COOK INLET WIND CONDITIONS

The prevailing winds in Cook Inlet are generally from the north and northeast during the fall, winter, and spring, with common speeds between 0 and 11 knots. Conversely, southerly winds are more frequent during the summer months.

The wind speed and wind direction regimes for Anchorage, Kenai, Homer, and Kodiak, Alaska, are compiled in Appendix E to the Cook Inlet Ice Atlas.[1] These data were assembled and summarized from hourly observations of the mean wind speed for the period of record Jan. 1973–Dec. 1997 (except Jan. 1973–Oct. 1997 for Homer). Gust winds are not included (when gust winds were included, the mean wind speeds increased approximately 5% at Anchorage, Homer, and Kenai and 11% at Kodiak). **Figure 1** summarizes the extreme maximum and mean monthly wind speeds for each area based on the 1973-1997 data from the Cook Inlet Ice Atlas.

Current weather data for the area can be found on the National Weather Service web-page, as well as archived data by month and year.

### National Weather service:

- https://www.weather.gov/wrh/Climate?wfo=afc

Cook Inlet weather buoys operated by the National Buoy Data Center (NDBC) record real-time wind observations for a number of locations in the Cook Inlet region (See Figure 9). Updated information on Cook Inlet wind conditions may be compiled from the NDBC records.

### National Data Buoy Center:

- https://www.ndbc.noaa.gov/

---

**Figure 1. Summary of Historical Wind Observations for Cook Inlet**

| Location | Month | Extreme maximum (knots) | Mean monthly maximum (knots) | Mean monthly (knots) | Mean monthly minimum (knots) |
|---|---|---|---|---|---|
| Anchorage | Jan | 54 | 12.8 | 6.0 | 1.7 |
| | Feb | 57.0 | 14.1 | 6.5 | 1.7 |
| | Mar | 62.0 | 12.9 | 6.2 | 1.7 |
| | Apr | 56.0 | 13.9 | 6.5 | 1.7 |
| | May | 37.0 | 16.6 | 7.5 | 2.0 |
| | Jun | 54.0 | 16.3 | 7.6 | 2.2 |
| | Jul | 62.0 | 14.2 | 6.7 | 1.9 |
| | Aug | 60.0 | 13.5 | 6.3 | 1.6 |
| | Sep | 59.0 | 13.9 | 6.4 | 1.7 |
| | Oct | 59.0 | 13.1 | 6.3 | 1.8 |
| | Nov | 52.0 | 12.7 | 6.1 | 1.8 |
| | Dec | 44.0 | 12.3 | 5.9 | 1.5 |
| Kenai | Jan | 59.0 | 15.3 | 7.0 | 2.1 |
| | Feb | 55.0 | 16.2 | 7.3 | 2.0 |
| | Mar | 55.0 | 16.1 | 7.5 | 2.3 |
| | Apr | 55.0 | 15.7 | 7.5 | 2.2 |
| | May | 58.0 | 15.3 | 7.6 | 2.0 |
| | Jun | 55.0 | 15.1 | 7.9 | 2.3 |
| | Jul | 53.0 | 13.7 | 7.3 | 2.2 |
| | Aug | 53.0 | 13.6 | 6.5 | 1.5 |
| | Sep | 55.0 | 14.7 | 6.5 | 1.5 |
| | Oct | 50.0 | 15.5 | 6.7 | 1.7 |
| | Nov | 62.0 | 14.5 | 6.5 | 1.8 |
| | Dec | 50.0 | 15.3 | 7.1 | 1.9 |
| Homer | Jan | 55.0 | 15.7 | 7.2 | 2.0 |
| | Feb | 54.0 | 15.5 | 7.1 | 1.9 |
| | Mar | 57.0 | 15.4 | 7.1 | 1.8 |
| | Apr | 55.0 | 16.2 | 7.4 | 1.9 |
| | May | 45.0 | 16.3 | 7.6 | 1.7 |
| | Jun | 55.0 | 15.7 | 7.5 | 1.4 |
| | Jul | 55.0 | 14.1 | 6.6 | 1.3 |
| | Aug | 50.0 | 13.7 | 6.5 | 1.4 |
| | Sep | 55.0 | 14.9 | 6.9 | 1.9 |
| | Oct | 45.0 | 15.2 | 7.1 | 2.1 |
| | Nov | 57.0 | 15.2 | 7.4 | 2.4 |
| | Dec | 68.0 | 16.0 | 7.4 | 2.1 |
| Kodiak | Jan | 61.0 | 24.1 | 11.4 | 4.4 |
| | Feb | 72.0 | 24.0 | 11.5 | 4.8 |
| | Mar | 66.0 | 23.4 | 11.2 | 4.5 |
| | Apr | 55.0 | 21.4 | 10.7 | 4.7 |
| | May | 57.0 | 19.1 | 10.0 | 4.4 |
| | Jun | 57.0 | 16.4 | 8.9 | 3.7 |
| | Jul | 58.0 | 14.2 | 7.6 | 2.7 |
| | Aug | 57.0 | 16.3 | 8.1 | 2.7 |
| | Sep | 61.0 | 20.1 | 9.3 | 3.3 |
| | Oct | 59.0 | 22.9 | 10.5 | 4.0 |
| | Nov | 68.0 | 25.0 | 11.4 | 4.3 |
| | Dec | 68.0 | 24.7 | 11.3 | 4.1 |

(*Source: Cook Inlet Ice Atlas*)

# VISIBILITY

## Impacts on Oil Spill Response Operations

A response can be conducted in darkness; however, shoreline protection and cleanup activities are limited at night. Generally, the rougher the weather, the more darkness may adversely affect safety and the capability to operate. An RMROL based solely on the hours of daylight is determined on a case-by-case basis.

Visibility generally affects spill response as follows:

Darkness, fog, falling snow, heavy rain and low clouds hinder aircraft surveillance and vessel operations. Response vessel operations generally remain effective in conditions that preclude aircraft operations unless the vessels cannot locate oil. Blowing snow can cause "white-out" conditions that make travel and work dangerous or inefficient.

Flight surveillance operations limitations are based on visual flight rules for rotary and fixed-wing aircraft. They are:
500-foot ceiling and one-mile visibility if in sight of land, or
500-foot ceiling and three-mile visibility if over open water and land is not in sight.

In addition to these minimums, dispersant aircraft require five miles of visibility for dispersant operations.

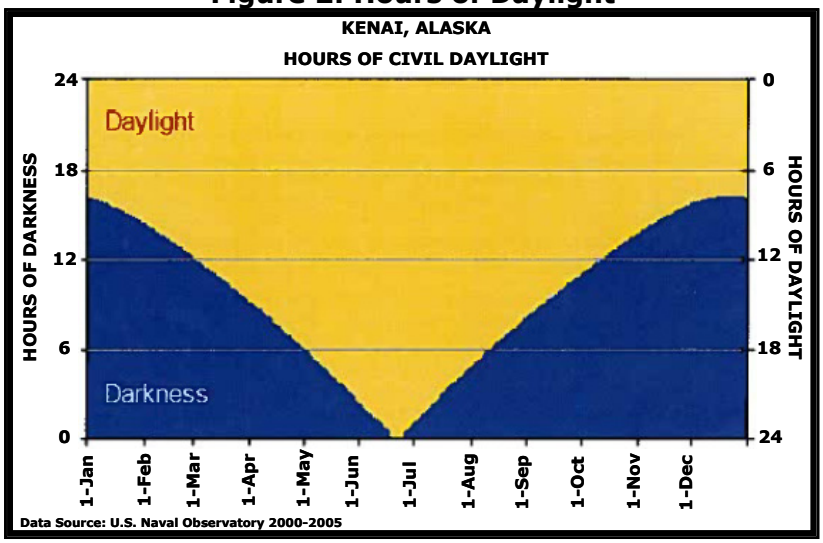
Booming and skimming vessels require between 0.125 nautical miles (nm) (200 meters) and 0.5 nm (800 meters) of visibility, depending on temperature, sea state, wind and precipitation. A visibility RMROL affects response vessels differently depending on whether they are already engaged in oil recovery or are seeking oil to recover. Vessel Captains set operating limits for their vessels when actively booming and skimming in oil based on safety and operating efficiency. Vessels seeking oil and requiring aircraft surveillance are subject to the aircraft minimums presented above.

The vessel-mounted infrared systems can provide information to other vessels and allow them to continue work during times of low visibility so long as it is safe to do so. The hand-held sensor can also be used from an aircraft during hours of darkness or low visibility. This information can likewise be used to keep other vessels in the heaviest concentration of oil. Tracking buoys may also help to track oil movement during periods of limited visibility.

## COOK INLET VISIBILITY CONDITIONS

In the Cook Inlet region, length of daylight ranges from about 5.5 hours in midwinter to 19.5 hours in midsummer. Response activities may progress slower during hours of darkness but will typically continue. Light plants powered by diesel generators can be used as necessary to provide adequate light for response activities in onshore and nearshore areas. Vessels used for on-water response should be equipped with lights, although some on-water response may be limited to daylight operations. Most CISPRI vessels (except the jon boats) have lighting systems designed for locating oil and keeping the work areas well lit for safety.

**Figure 2: Hours of Daylight**




Recorded visibility thresholds for Anchorage by the U.S. Naval Observatory indicate that conditions where visibility is less than one nautical mile occur less than 4 percent of the time in Anchorage for all months except for January where such conditions exist 5.5 percent of the time. November through February are the months when poor visibility exists the most often. As weather conditions vary widely across the area, visibility is often localized.

# PRECIPITATION

## Impacts on Oil Spill Response Operations

Precipitation – rain or snow – is common in Cook Inlet, especially in coastal regions, and is not necessarily an operating limit. However, the potential for precipitation to cause slick surfaces or icing raises safety considerations, and icing conditions on vessels may make vessel-based spill response slower or unsafe. In some cases, falling snow may make it difficult to track and monitor on-land spills, although snow is usually an advantage in terrestrial spills because it can aid the containment of a spill through its natural absorbent qualities. CISPRI has infrared systems that will track oil beneath the snow, up to a depth that depends on the "wetness" of the snow (Tactic CI-TS-3). It is more efficient in dry snow than wet snow. It is also effective in fog and rain, up to a point. This allows us the capability to continue to work when others would have to give up, Snow can also be moved with relative ease to make berms and dikes. Snow may, however, reduce the efficiency of responders and machines trying to move and work in it.

A RMROL based solely on precipitation may not be defined except in those cases where it causes poor visibility or dangerous operating conditions. The impact of precipitation may also be influenced by temperature, sea state, wind and visibility.

**Precipitation Considerations:**

- Fog, falling snow, heavy rain and low clouds may hinder aircraft and vessel operations and surveillance.

- Response vessel operations generally remain effective in conditions that preclude aerial surveillance unless the vessel operation is not able to locate oil.
- Certain rain conditions may calm the water surface, making containment and recovery easier.
- Moderate to heavy snowfall can cover grounded oil, making detection difficult.
- In some circumstances, snow may be an effective sorbent, with dry snow usually acting as a better sorbent than wet snow.
- Icing caused by freezing rain may limit the effectiveness of spill response equipment and affect personnel and vessel safety.

**Figures 3 through 5** summarize average precipitation and snowfall for the Anchorage, Kenai, Homer, and Kodiak areas. The data in Figures 4 and 5 was compiled by the University of Utah Atmospheric Sciences department from observations through 1993.

**Figure 3.**

**Average Precipitation Amounts for Cook Inlet**

| Location | Average Annual Rainfall (inches) | Average Annual Snowfall (inches) |
|---|---|---|
| Anchorage | 15.9 | 69 |
| Kenai | 20 | 87 |
| Homer | 24 | 55 |
| Kodiak | 67 | 78 |

(*Source: DCRA*)

**Figure 4. Average Monthly Rainfall (in inches)**

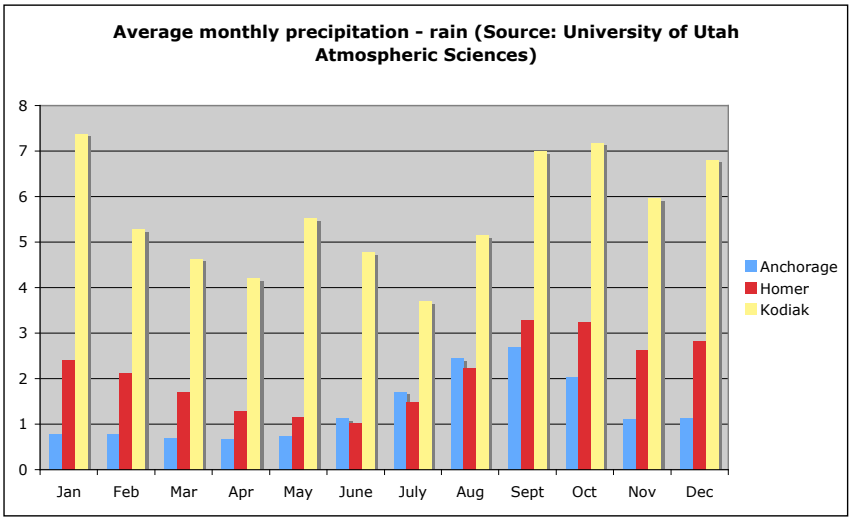
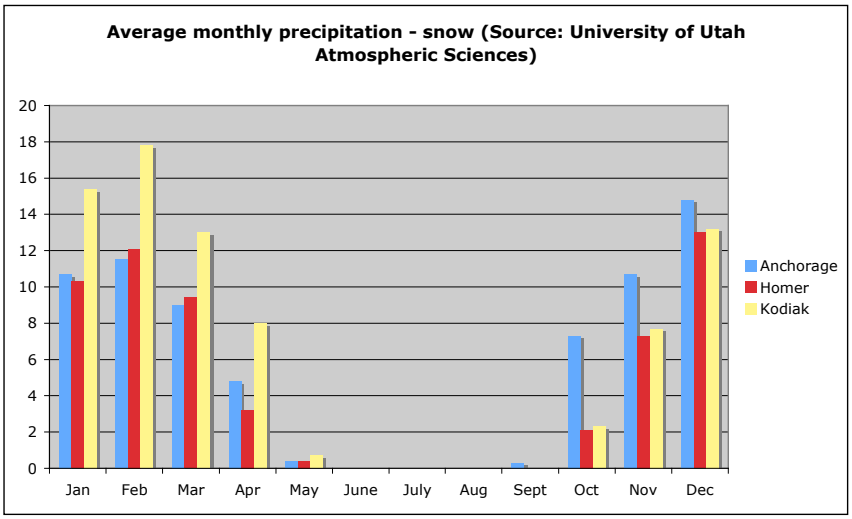


**Figure 5. Average Monthly Snowfall (in inches)**



# COLD TEMPERATURES

## Impacts on Oil Spill Response Operations

Although CISPRI has taken various measures to make our equipment and personnel cold weather ready, there are still aspects of cold weather that may limit the effectiveness of a response during extreme cold. Cold temperatures may cause machinery to freeze up or fail, and may cause brittle failure of some metals. We have modified our vessels, skimmers, and other equipment to work in cold weather as much as possible. We use winter grade oil and hydraulic fluids, and arctic grade hoses. If the 8 Rope Foxtails "gum up" with viscous oils, we have spray bars mounted on them to apply diesel fuel to the ropes to remove the viscous oil.

In colder climates, the viscosity of petroleum products is increased and the evaporation rate is decreased. Therefore, while fire hazards from accumulated vapors are lessened, a greater concentration of harmful oil fractions remains in direct contact with the environment. On the other hand, the increased viscosity of the oil slows the spread of the slick. To an extent, thicker, non-persistent oil also is easier to skim or pump. Cold temperatures also impacts responders; when temperatures are low, response personnel must work shorter shifts and be provided with the opportunity to warm up at regular intervals to avoid frostbite or hypothermia. CISPRI trains in cold weather to ensure that they are ready to respond.

Cold temperatures may complicate response operations, particularly on the mudflats or on Cook Inlet when ice is present. Subfreezing temperatures would not prevent an on-shore spill response effort but could make the response effort much more difficult because of cold temperature efficiency losses, problems processing and decanting water/ice from recovered fuel, safety considerations for responders, the need for more frequent responder breaks, or cold weather injuries.

At temperatures below 15F and winds at 24 to 28 knots, wind chill becomes a factor in response operations. Wind chill poses a safety and health hazard for responders, and the time and precautions required to protect or to relieve responders may hamper response efficiency. Responders use wind chill indices that combine temperature, wind and length of exposure to determine the amount of time it is safe to work and the amount of time needed to recover from the effects of wind chill.

Temperature and Wind Chill Considerations:

- Wind chill impacts worker safety more than ambient temperature.
- Freezing temperatures and the potential for hypothermia can impact personnel safety, health and work efficiency.
- Boom handling and other in-water operations become difficult to perform when cold water numbs the hands.
- Colder temperatures affect equipment efficiencies.
- Low temperatures may contribute to vessel and equipment icing.
- Viscosity of spilled oil increases at low temperatures; however, in some situations this can make it easier to collect.
- Ignition of oil for in-situ burning may be more difficult during extreme cold temperatures.
- Temperatures can vary greatly throughout Cook Inlet.

# COOK INLET TEMPERATURES

Subfreezing temperatures are common throughout much of Cook Inlet from about mid-October to mid-March, coinciding with the presence of ice in Cook Inlet. Figures 6 through 8 summarize average high and low temperatures, and average number of days where minimum temperature is below freezing (32 degrees Fahrenheit).

**Figure 6. Average Daily Maximum Temperature by Month**

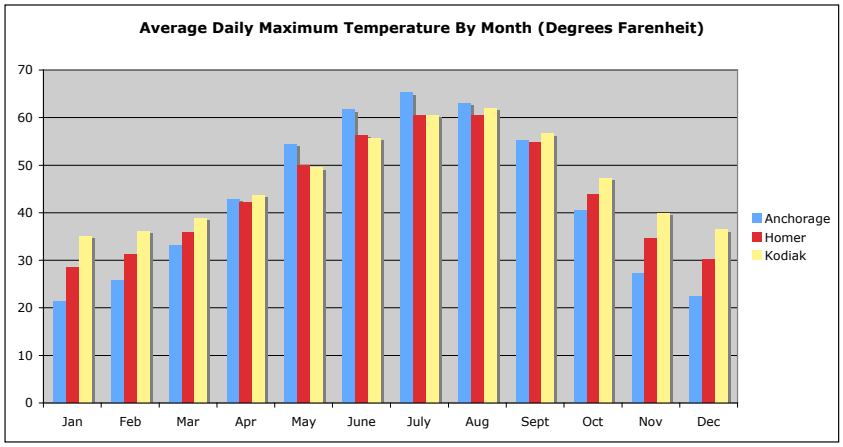



**Figure 7. Average Daily Minimum Temperature by Month**

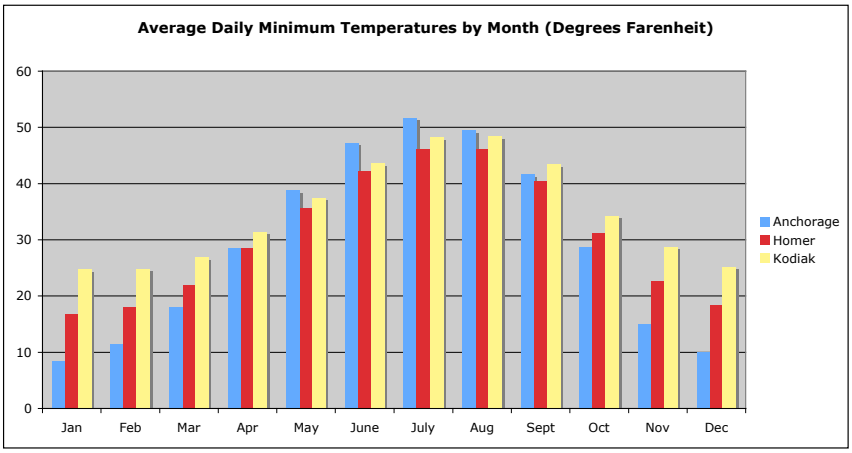
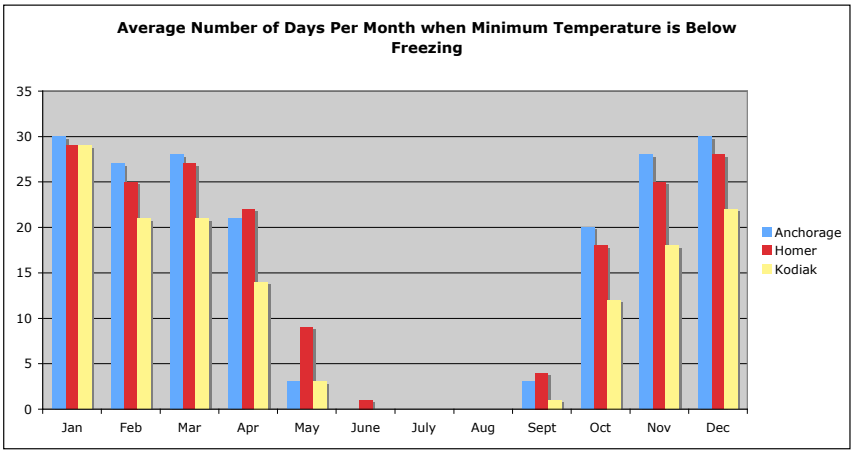



**Figure 8. Average Number of Days Per Month with Sub-Freezing Minimum Temperatures**



# SEA STATE, TIDE, AND CURRENTS

## Impacts on Oil Spill Response Operations

Marine conditions – sea state, tide, and current – can impact the safety and effectiveness of on-water mechanical response. Waves may affect oil spill response by limiting safe boat operation, exceeding boom specifications, and by mixing and emulsifying oil. Tides and currents may affect oil mixing and movement, and may also impact the safety of on-water operations.

Generally much of the Cook Inlet is protected by high bluffs sheltering the full wind effect. The impact of tides and currents are determined on a case-by-case basis. Other ways in which marine conditions may impact the effectiveness or safety of on-water mechanical response include the following.

- Mechanical containment, recovery equipment and in situ burning function best in calm seas.
- Heavy seas often preclude beach landings.
- Short, choppy waves generally limit response equipment efficiency; however, longer-period swells do not usually impede efficiency.
- Launching and recovery of skimmers is affected in rough sea conditions.
- Decks awash in heavy seas may make it dangerous for personnel to work.
- Small launches and workboats may not always be safely launched, recovered or operated in strong winds and seas.
- Large vessels and tugs are generally unaffected by large seas; however, the crews may not be able to perform response tasks on deck or over side.
- Sea states can be dampened by thick oil. Different tide cycles produce differing sea states requiring different approaches to response.
- Heavy seas combined with low temperatures may contribute to vessel icing and create safety concerns for the vessel and crew.
- In some circumstances, sea states resulting from winds greater than 30 knots can drive oil below the surface and mix into the top 20 feet of the sea.
- Heavy sea states may hamper or preclude rescue of endangered personnel from shorelines, distressed vessels or man overboard.

Several different scales exist to quantify marine conditions. Based on wind speeds, wave heights, and the sea surface, Table 1 shows describes sea state and Beaufort Scale measurements. Tactic LP-1 also addresses operating limits from sea state, tides, and currents.

**Table 1.**
**Definition of Sea States and Beaufort Scale**

| Wind Speed (knots) | Beaufort Scale | Max. Wave Height (m) | Sea State | Appearance |
|---|---|---|---|---|
| 1 – 3 | 1 | 0.1 | 0 | calm – small ripples, without foam crests |
| 4 – 6 | 2 | 0.3 | 1 | small wavelets, do not break |
| 7 – 10 | 3 | 1.0 | 2 | large wavelets, beginning to break |
| 11 – 16 | 4 | 1.5 | 3 | small waves, frequent foam crests |
| 17 – 21 | 5 | 2.5 | 4 | large wave, many foam crests |
| 22 – 27 | 6 | 4.0 | 5 | large waves, some spray, foam crests everywhere |

Table 2 summarizes the classification scheme for on-water operating environments. This classification scheme is used by most manufacturers of boom, skimmers, and other oil spill response equipment to characterize its appropriateness for use under a range of conditions.

Booming and skimming operations are most effective when sea state is less than 3 (Beaufort Scale <4), wind speed is less than 10 knots, and wave height is less than 3 ft (1 m) (see Tables 2). Wave heights induced by a given wind speed and duration within a sheltered harbor, bays, or in the lee of islands or other landforms will be much less than in open water, unless channeled.

**Table 2.**
**Equipment Ratings by Operating Environment**

| Operating Environment | Significant Wave Height | Examples of General Conditions |
|---|---|---|
| Open water | ≤ 6 ft. | Moderate waves, frequent white caps |
| Protected water | ≤ 3 ft. | Small waves, some white caps |
| Calm water | ≤ 1 ft. | Small, short non-breaking waves |
| Fast water | ≤ 1 ft. | Small, short non-breaking waves with currents exceeding 0.8 knots, including rivers |
| Broken ice | ≤ 1 ft. | Ice coverage exceeds 10% |
| Solid ice | N/A | Ice coverage is 100% and is of sufficient strength to support response operations |

# Cook Inlet Conditions

Sea state conditions in Cook Inlet vary greatly by location and time of year. Many of the effects of sea state are sheltered in the mid to upper Cook Inlet because high bluffs shelter the full wind effect, reducing wind-driven waves, and the narrowness of the inlet limits fetch. The presence of sea ice will typically reduce wave action and sea state as well.

The National Data Buoy Center (NDBC) has several weather buoy stations in the Cook Inlet area that record real-time observations of wind speed and wave height. Figure 9 shows the location of NDBC locations on a map. The Alaska Ocean Observing System (AOOS) also records real-time wave height and period data for Cook Inlet. Neither NDBC nor AOOS compile historical wave data, but they do keep observations going back several days.

NDBC data from these stations can be accessed online at any time at: http://www.ndbc.noaa.gov/station_page.php?station=46106. AOOS can be accessed at https://aoos.org

**Figure 9. Locations of National Data Buoy Center Buoys In Cook Inlet Area**




**Current marine warnings, watches and advisories for Alaska can be found at:** http://pafc.arh.noaa.gov

Cook Inlet experiences one of the largest tidal fluctuations in the world, frequently exceeding twenty feet, with tidal current velocities as fast as 8 knots. There are many tidal rips in Cook Inlet, including three major ones that are persistently found east of Kalgin Island between Anchor Point and the Forelands. These major tide rips are known as the East Rip, the Mid-Channel Rip, and the West Rip. Figures 10 through 13 show the major tidal rips and the variation for flood and ebb tides.

**Figure 10**
**MIDDLE COOK INLET NET CIRCULATION AND CONVERGENCE ZONES**

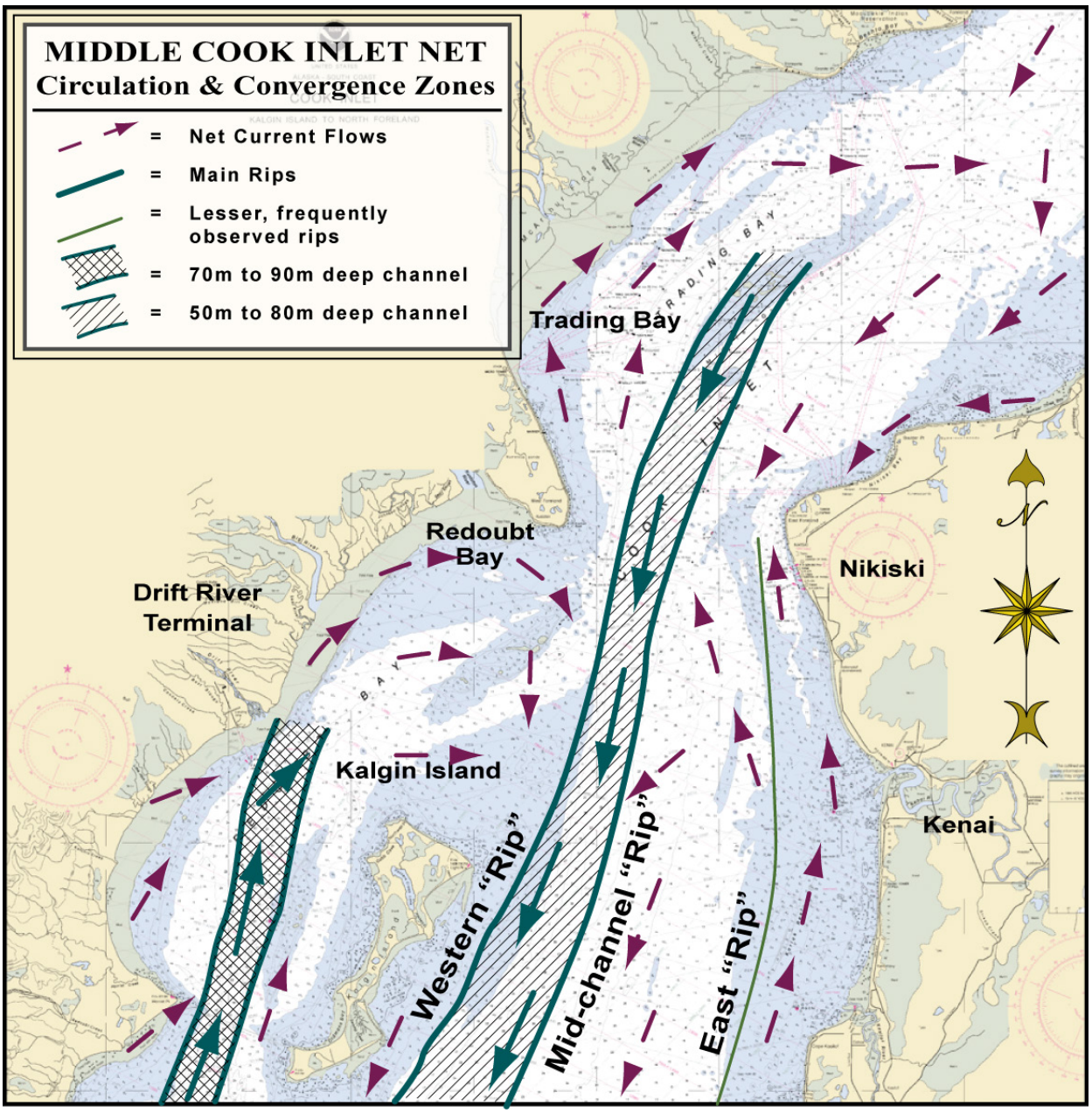


**Figure 11. COOK INLET RIP ZONES (FLOOD TIDE)**

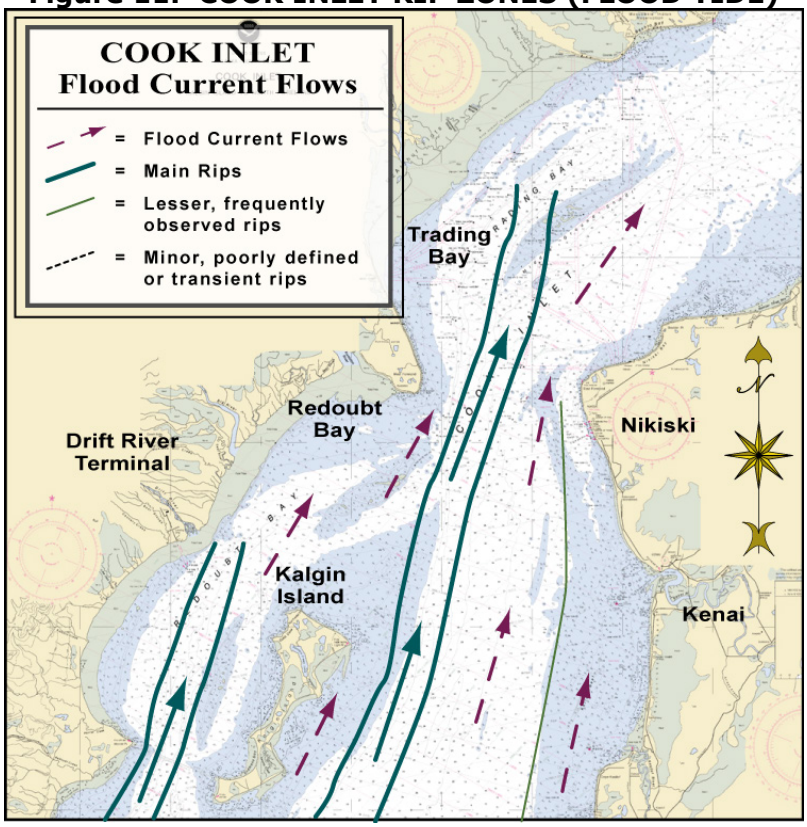



**Figure 12. COOK INLET RIP ZONES (EBB TIDE)**

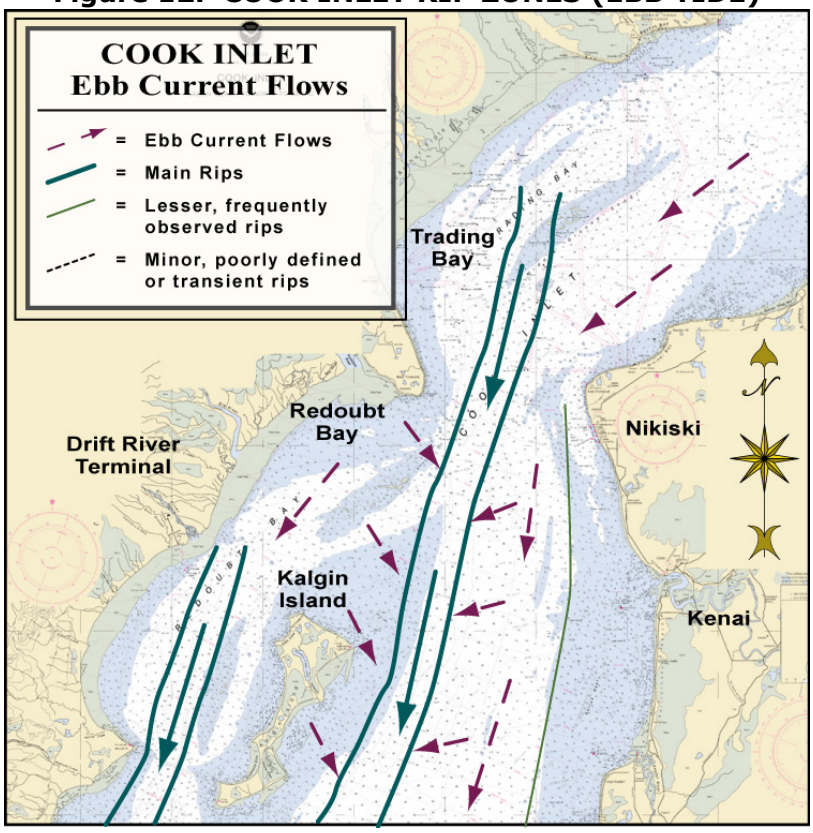
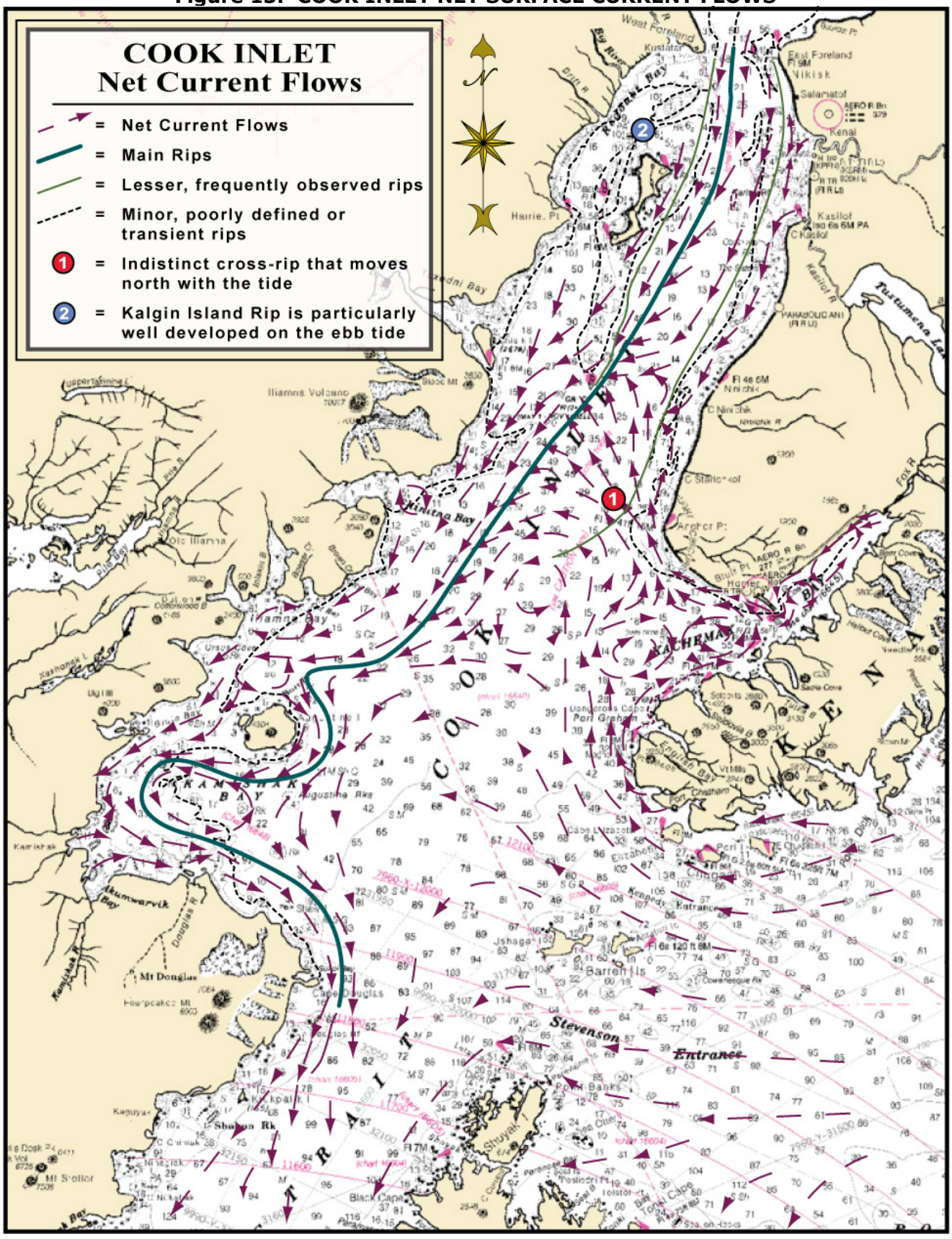


**Figure 13. COOK INLET NET SURFACE CURRENT FLOWS**



# SEA ICE CONDITIONS
## Impacts on Oil Spill Response Operations

The ability to clean up oil spills in the presence of sea ice or debris is limited. Only large vessels with ice-strengthened hulls may be used in heavy ice concentrations, and booms must be extremely sturdy. Conventional boom is not normally designed to withstand the stresses of ice loading and may be torn apart.

Ice can create unsafe working conditions and impact the efficiency of a mechanical response. Ice can be present as sea ice, shore-fast ice or superstructure icing. Ice and debris considerations are:

- Booms and skimmers could be affected by ice accumulation and debris. Large volumes of small ice pieces can impact and breach containment boom.
- Sea ice may actually benefit a response by trapping and concentrating the oil.

## COOK INLET ICE CONDITIONS

As described in the Cook Inlet Ice Atlas, published by the U.S. Army Corps of Engineers (USACE) in cooperation with the University of Alaska Anchorage, Cook Inlet ice generally begins forming in October, covers a large area by November, and melts completely in the spring (USACE, 2001). On the east side of Cook Inlet, ice may extend to Anchor Point, and on the west side, to Cape Douglas (USACE, 2001). As discussed in the Kenai Peninsula Borough (KPB) Coastal Management Plan, ice concentrations or cover are sometimes found in Kamishak Bay extending outward to Augustine Island, and Chinitna, Tuxedni and other western Cook Inlet bays (KPB, 2007). The primary factor for ice formation in upper Cook Inlet is air temperature, and the major influences in lower Cook Inlet are the Alaska Coastal Current temperature and inflow rate (MMS, 2003).

The ice in Cook Inlet comes from four different sources: pack ice, shorefast ice, stamukhi, and estuary and river ice (USACE, 2001). Pack ice forms in seawater and is formed by the direct freezing of seawater. Shorefast ice is formed from freezing of surrounding water, from ice being piled and refrozen. Mud exposed to the air by the ebbing tide can freeze, and when seawater contacts the frozen mud, beach ice forms. Stamukhi are massive ice blocks created by repeated wetting and accretion of seawater, crushing and piling of ice blocks, and stranding of successive layers of ice which freeze together. Estuary ice forms from freshwater in estuaries and rivers. River ice is much stronger than sea ice and is generally unaffected by tidal action until spring breakup (USACE, 2001).

Although Upper Cook Inlet does not freeze solid, ice floes during a hard freeze are typically in the 3 foot thick range, and may cover most of the surface. This dynamic ice environment may pose challenges for on-water response. CISPRI's open water response tactics (CI-OW-1) can be used in ice coverage of up to 30%, and open water tactics (CI-OW-2) may be used in concentrations up to 70 or 80%.

A significant portion of Cook Inlet's ice is freshwater ice that forms in the rivers and estuaries, especially in Knik and Turnagain Arms. Most of the river mouths freeze solid during the winter, or at least on the surface (with some fresh water escaping beneath the frozen top layer). While the presence of ice may reduce spill response options, this is a form of ice-armoring that protects the river from oil being forced upstream.

Ice forecast and information for Alaska can be obtained through the National Ice Center webpage at:

- https://usicecenter.gov/

In addition to the National Weather Service Alaska Sea Ice Program (ASIP) webpage at:

- https://www.weather.gov/afc/ice

The Marine Ice Atlas for Cook Inlet, AK (2001), contains mean ice conditions and probabilities for ice for Cook Inlet. Images in the Atlas provide examples of actual ice conditions in Cook Inlet by month in 2001.

The 2001 Marine Ice Atlas for Cook Inlet, currently (as of 2021), is the most recent and can be located at:

- https://apps.dtic.mil/sti/pdfs/ADA392126.pdf

CISPRI conducts sea ice observations beginning when freezing conditions occur and ending when ice has thawed.

# VOLCANIC CONDITIONS

## Impacts on Oil Spill Response Operations

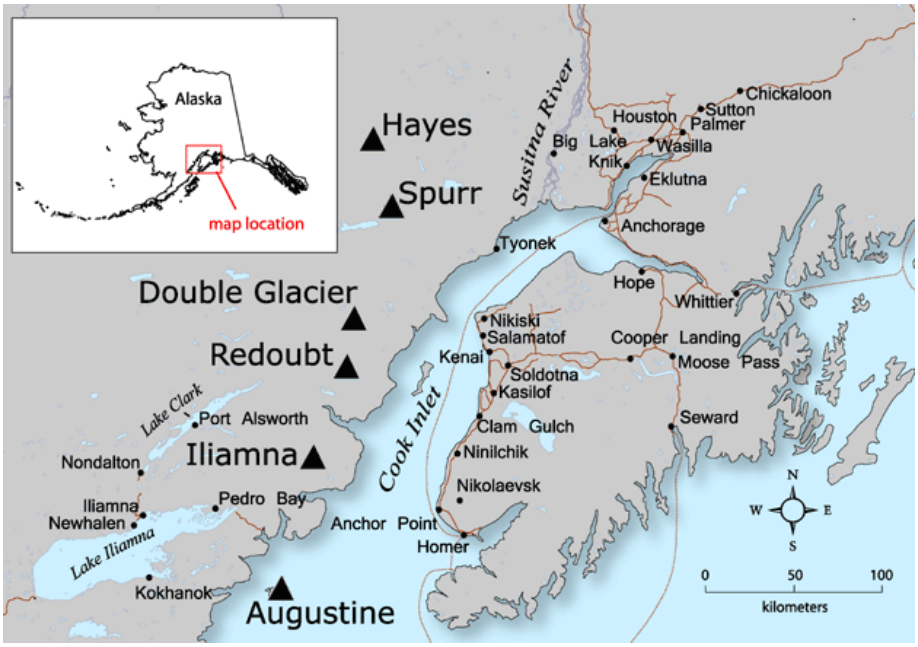
Cook Inlet is bordered on the West side by several Volcanoes.

The series of 1989-1990 eruptions from Mt. Redoubt were the second most costly in the history of the United States, and had significant impact on the aviation and oil industries, as well as the people of the Kenai Peninsula. On the Kenai Peninsula, during periods of continuous ash fallout, schools were closed and some individuals experienced respiratory problems. At the Drift River oil terminal, lahars and lahar run-out flows threatened the facility and partially inundated the terminal on January 2, 1990.

The most recent eruptions from Mt. Redoubt came in March of 2009. A large Unified Command was formed to mitigate the effects of Mt. Redoubt on the Cook Inlet Oil and Gas infrastructure.

The three eruptions of Mt. Spurr's Crater Peak in 1992 deposited ash on Anchorage and surrounding communities, closed airports, made ground transportation difficult.

**Volcanoes in the Cook Inlet Area**




Many of the largest and most destructive historical lahars accompanied eruptions from volcanoes mantled by a substantial cover of snow and ice. Pyroclastic flows are the most common volcanic events that generate lahars--even relatively small pyroclastic flows can quickly melt large quantities of snow and ice. The hot flowing rock debris erodes and mixes with snow and ice to form water and trigger snow avalanches on steep slopes. Lava flows moving slowly across snow usually do not melt snow and ice rapidly enough to form large lahars but the eruption of lava beneath a glacier can result in substantial ponding of water, which may lead to enormous outpourings of water.

Small jagged pieces of rocks, minerals, and volcanic glass the size of sand and silt (less than 2 millimeters (1/12 inch) in diameter) erupted by a volcano are called volcanic

ash. Very small ash particles can be less than 0.001 millimeters (1/25,000th of an inch) across. Volcanic ash is not the product of combustion, like the soft fluffy material created by burning wood, leaves, or paper. Volcanic ash is hard, does not dissolve in water, is extremely abrasive and mildly corrosive, and conducts electricity when wet.

Volcanic ash is formed during explosive volcanic eruptions. Explosive eruptions occur when gases dissolved in molten rock (magma) expand and escape violently into the air, and also when water is heated by magma and abruptly flashes into steam. The force of the escaping gas violently shatters solid rocks. Expanding gas also shreds magma and blasts it into the air, where it solidifies into fragments of volcanic rock and glass. Once in the air, wind can blow the tiny ash particles tens to thousands of kilometers away from the volcano.

Volcanic eruptions may limit oil spill response due to limited visibility, excessive ash in the air (respiratory safety concern), failure of rotating machinery due to abrasive nature of the ash fall, and potential electrostatic charges in the ash cloud. Ash is also very conductive and can easily short out equipment. To mitigate these response limitations, operations may be adjusted to avoid areas of active ash fall, and responders will be outfitted with appropriate PPE.

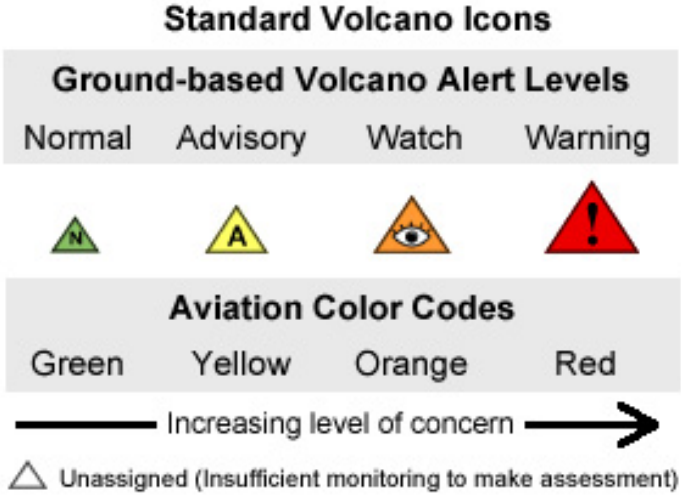
Proper PPE is a must for anyone working outside during ash fallout. Personnel should limit any responses in the field during an ash event.

## Communications

Recent advances in volcano monitoring, new and refined volcano-hazard assessments, and better warning schemes have significantly improved our capability to warn of volcano hazards and impending eruptions. Our volcano information and warnings, however, no matter how timely or precise, will reduce volcanic risk only if they are communicated effectively to a wide audience, especially to people who live and work in potentially hazardous areas and to emergency-management specialists. The Alaska Volcano Observatory (AVO) is the primary source of information on area volcanoes.

Additional information is available at: http://www.avo.alaska.edu

**Icons for USGS Volcanic Activity Alert-Notification System**



## Summary of Cook Inlet RMROL for Various Response Methods

| Conditions That Could Adversely Impact a Response | Considerations for Cook Inlet Response Operations |
|---|---|
| **MECHANICAL RECOVERY** | |
| • High Winds, but dependent on the impact of other variables.<br>• Precipitation that either decreases visibility to the point described above or causes unsafe working conditions.<br>• Long-term below freezing temperatures, combined with high winds and waves, could preclude response activities.<br>• Sea ice, and shorefast ice, that persist over the entire response area for the entire time of the response.<br>• Darkness limits the capability to locate oil. (Infrared technology may allow for operations during low visibility). | • Winds of 30 knots are reached or exceeded on an annual basis less than 1% of the time in Anchorage, Kenai, and Homer. Winds of 30 knots are reached or exceeded in Kodiak approximately 2% of the time.<br>• RMROL conditions for sea state will vary greatly by location throughout Cook Inlet.<br>• Current velocities exceed 8 kts in some areas of Cook Inlet due to extreme tidal range. Currents are highly variable and localized and will vary with tide stage.<br>• Recorded visibility thresholds for Anchorage indicate that conditions where visibility is less than one nautical mile occur less than 4 percent of the time in Anchorage for all months except for January where such conditions exist 5.5 percent of the time. November through February are the months when poor visibility exists the most often.<br>• Day length ranges from 5.5 to 19 hours.<br>• Sea ice and shorefast ice are common from December to March. Probability of sea ice highest in Upper-Mid Cook Inlet. Shorefast ice may act as shoreline armor in most cases. |
| **DISPERSANTS** | |
| • High Winds across the track of the dispersant aircraft would likely preclude airborne application of dispersant.<br>• Visibility may preclude air operations, but not application of dispersant by vessel.<br>• Temperature should have no appreciable impact on dispersant operations.<br>• Dispersant use in widely scattered ice (10% or less) is unaffected. Dispersant use in shelter bays where shorefast ice may occur should be carefully considered prior to use. | • Winds of 30 knots are reached or exceeded on an annual basis less than 1% of the time in Anchorage, Kenai, and Homer. Winds of 30 knots are reached or exceeded in Kodiak approximately 2% of the time.<br>• Night-time dispersant operations require specialized tracking and monitoring capability.<br>• Sea ice and shore-fast ice are common from December to March. Probability of sea ice highest in Upper Cook Inlet. |
| **IN-SITU BURNING** | |
| • High Winds make it difficult to ignite oil or maintain the burn.<br>• In situ burning in open water may be limited by sea state in instances where fire boom is required to contain the oil.<br>• Temperature should have no appreciable impact on in-situ burning operations.<br>• Burning is not restricted to daylight hours unless surveillance and ignition requires daylight operations only. The Unified Command may restrict night burns if populated areas or response personnel could be exposed and extended surveillance is required.<br>• Sea ice and shore-fast ice that persist over the entire response area for the entire time of the response will not preclude a burning response. Ice will restrict the spread of oil. | • Winds of 20 knots are reached or exceeded on an annual basis less than 10% of the time for Anchorage, Kenai, and Homer. Winds of 20 knots are reached or exceeded approximately 10% of the time in Kodiak.<br>• Sea ice and shorefast ice are common from December to March. Probability of sea ice highest in Upper-Mid Cook Inlet. |

# RMROL PREVENTION OR RESPONSE MEASURES

## PREVENTION OR RESPONSE MEASURES IMPLEMENTED AS CONDITIONS WARRANT

| PREVENTION MEASURES |
|---|
| • Pilotage requirements, including having a state licensed pilot onboard from the Homer Pilot Station to docks within Cook Inlet. |
| • Safe Anchorage options (Kachemak Bay safe anchorage) |
| • Prevention Training programs |
| • Substance abuse programs. |
| • Emergency towing practices and equipment on CISPRI OSV Perseverance. |
| • USCG Winter Ice advisories |
| • Ice Scouts required during winter ice conditions. |
| • Alaska Volcano Observatory & Emergency Management Volcano alerts |

| MECHANICAL RECOVERY |
|---|
| • Skimming vessels will work down-wind/current to minimize entrainment, or will drift with the current. |
| • Responding vessels mobilizing to the spill site are advised to travel in groups for safety purposes. |
| • Cook Inlet weather conditions can vary greatly from Northern Cook Inlet to the Gulf of Alaska. The response organization (Unified Command) will maximize oil recovery for the conditions by assigning resources where they can work most effectively. |
| • Limited visibility may cause response resources to stay closer to the spill site. Infrared technology will be used to track oil during periods of low visibility to maximize recovery efficiencies. |
| • During times when open water mechanical recovery may be precluded by operating conditions, shoreline protection in sheltered areas would continue. Nearshore oil recovery vessels could be diverted to remove oil collecting in containment booms. |

| DISPERSANT APPLICATIONS |
|---|
| • Aerial dispersant application limited to directly downwind and upwind to avoid inaccurate application in high crosswinds. Vessel applications still might be viable in stronger wind conditions. |
| • If winds are too strong dispersant applications may need to be curtailed. |

| IN-SITU BURNING APPLICATIONS |
|---|
| • In-situ burning activities may be ineffective if winds are to strong. |
| • As wind velocities increase, on land In-Situ Burning will need to be closely evaluated so that any resulting burns do not get out of control. Proper safeguards will need to be in place such as fire department on site. |

# APPENDIX C

# SITE SAFETY PLAN
# (Example)

This Appendix contains an example of a Generic Site Safety Plan used by many of the CISPRI Members. This Site Safety Plan has been vetted in several exercises including a large scale "Area Exercise".

A Site Safety Plan is also available on line via the following Website:

**https://dec.alaska.gov/spar/ppr/response-resources/permits-tool/**

Instructions and Examples are also provided on the Website for completing a Site Safety Plan.

*Intentionally Left Blank*

# PERMIT & PLAN SIGN-OFF SHEET

**INCIDENT NAME:** _____ **DATE PREPARED:** _____

**OPERATIONAL PERIOD:** _____

# HEALTH AND SAFETY PLAN

***(PLAN OR PERMIT NAME)***

***APPROVED BY:***

| | |
|---|---|
| RPIC | DATE |
| FOSC | DATE |
| SOSC | DATE |
| LOSC | DATE |

COMMENTS:

# TABLE OF CONTENTS

A. SITE DESCRIPTION ..... Page C-5
B. ENTRY OBJECTIVE ..... Page C-5
C. OFFSITE ORGANIZATION AND COORDINATION ..... Page C-6
D. OFFSITE CONTROL ..... Page C-6
E. HAZARD EVALUATION ..... Page C-8
F. PERSONAL PROTECTIVE EQUIPMENT ..... Page C-9
G. ON SITE WORK PLANS ..... Page C-11
H. COMMUNICATION PROCEDURES ..... Page C-11
I. DECONTAMINATION PROCEDURES ..... Page C-12
J. MEDICAL PLAN ..... Page C-14
K. AIR MONITORING PLAN ..... Page C-15
L. EMERGENCY PROCEDURES ..... Page C-16

## A. SITE DESCRIPTION

| **Location:** | **Date:** |
|---|---|

**Major Hazards:**

- Crude Oil: inhalation and skin hazard; PPE must be worn
- Flammable vapors
- Ensure emergency response and clean up equipment are grounded
- Non sparking tools are used
- All electrical energy is isolated
- Hypothermia potential, drowning (off shore activities) and slips due to icy conditions

| **Area Affected:** |
|---|
| **Surrounding Population:** |
| **Topography:** |
| **Current Weather Conditions:** |

## B. Entry Objective

**The objective of the <u>initial</u> entry to the contaminated area is to:**

- Initiate Site Control (Security)
- Identify, Evaluate and Control all hazards
- Conduct Exposure and Area monitoring
- Identify Proper PPE
- Establish and secure Site Work Zones
- Establish Emergency Evacuations Procedures

## C. Offsite Organization and Coordination

**(SEE INCIDENT COMMAND CHART)** The following personnel are designated to carry out the stated job functions on site. (Note: One person may carry out more than one job function.)

| |
|---|
| **TASK FORCE LEADER:** |
| **SITE SAFETY OFFICER:** |
| **SITE SECURITY:** |
| **CONTRACTORS:** |

**NOTE: All personnel arriving or departing the site must log in and out with the Site Security Guard. All activities on site must be cleared through the Project Team Leader.**

**Other:** Drinking water, hand-washing stations, and potable-toilets have been supplied to all work locations.

## D. Offsite Control

- All access and staging areas must be positioned upwind from Hot zone.
- The prevailing wind conditions are:_____

### Site Preparation

Ensure safe access to Command Post, Staging Areas, Docks, and other areas that will involve access by incident responders and applicable equipment (this may include building roadways in certain situations). Ensure roads are sanded if conditions are icy. In addition:

Arrange traffic flow patterns

Eliminate physical hazards from work area including:

- Ignition sources in flammable hazard areas
- Exposed or ungrounded electrical wiring and low overhead wiring
- Sharp or protruding edges (glass, nails, metal) that could puncture PPE and cause cuts
- Debris, holes, loose steps, flooring, slippery surfaces, or unsecured railings

- Unsecured objects (bricks, gas cylinders, ladders)
- Debris and snow that obstruct visibility

Install skid resistant strips and other anti-skid devices on slippery surfaces
Construct staging areas and decontamination stations
Provide adequate illumination for work activities
Install wiring and electrical equipment IAW national electric code

**Site Access**
Purcell has been designated to coordinate access control and security at the Command Post and the Staging areas. All individuals must initially login and log-out at the Command Post until the staging areas are established. All individuals performing tasks associated with the incident must login and log out (always at the same place) at one of the access control points (whichever one is closest). Spill response vessels will notify dispatch of vessel occupants.

Safe perimeter has been established at:_____
No unauthorized person allowed in this area.

**Staging area**
The onsite Command Post and staging area have been established at:
_____

## Delineation of zones
Control boundaries have been established and have been identified as follows:

Hot zone (the contaminated area)

Decontamination Zone (dirty equipment and decontamination area),

Support Zone (clean area)

**Buddy System**
A buddy system shall be utilized at all times while in the hot zone, during high-risk tasks, fire fighting, use of SCBAs, IDLH atmospheres, on boat decks, in hazardous areas, remote locations, or night Time work.

## E. Hazard Evaluation

The following substance(s) are known or suspected to be on site. The primary hazards of each are identified.

| Substances Involved | Concentrations | Primary Hazards |
|---|---|---|
| ANS Crude Oil (Spilled) MSDS attached | To be determined | Skin, eyes, inhalation. |
| | | |

Hazard evaluations have been completed for each major task associated with spill responses. See attached “Task Hazard Evaluation” forms.

## F. Personal Protective Equipment

When engineering controls are not feasible, personal protective equipment (PPE) shall be worn to protect individuals from physical, chemical, biological and other hazards. A hazard assessment has been conducted on each significant spill response task (see attached) to determine all potential hazards, engineering controls to mitigate hazards, and PPE in the event engineering controls are not feasible.

All PPE must be inspected before and after (non-disposable) each use, cleaned regularly, and stored properly in a clean protected area. In the event PPE should become damaged, it must be replaced or repaired by a qualified person.

**Standard PPE**

Onshore

At a minimum, all onsite personnel must wear hardhat, safety glasses, safety toed shoes, long sleeve shirt and pants. Leather gloves must be worn when handling non-contaminated objects/equipment.

Offshore

At a minimum, PFD (vest, coat, or mustang suit), hardhat (when work is taking place), safety glasses, safety-toed boots, long sleeve shirt and pants, and (depending on weather conditions), rain suits. All boats must be equipped with survival suits.

*PFD requirements*

Mustang suits, float coats, or vests will be worn based on operations, location in relation to other vessels, and the weather forecast. The following guidelines will be adhered to:

- Skiff operators will wear mustang suits
- Mid size vessel operators and crew as well as fishing vessels operators and crew will wear either float coats or mustang suits when on deck. The choice will be based on weather considerations.
- Large Vessel and Barge personnel will wear work vests, or Float coats or Mustang Suits. The choice will be based on weather considerations or operational activities.
- All personnel involved in operations which require leaning outside the railing of the vessel or the barge or operating in close proximity of the edge of the dock will wear a minimum of a float coat or will be secured to the vessel with fall protection

**Chemical protective PPE**

To minimized exposure to chemical and physical hazards, specialized PPE may need to be worn. PPE requirements for spill incident tasks are outlined in the attached "Task Hazard Evaluation" forms.

All personnel must be trained to recognize when to wear prescribed PPE, its limitations, storage, and care.

Initial incident PPE requirements are outlined below:

| Location | Job Function | Level of Protection |
|---|---|---|
| **Hot zone** | **Initial Site characterization and site control** | **Level B:** if benzene air concentrations >50 PPM<br>**Level C:** if benzene air concentrations <50 PPM. APR w/ organic vapor cartridge |
| **Decontamination zone** | **Decontaminating people and equipment** | **Level B:** if benzene air concentrations >50 PPM<br>**Level** C: if benzene air concentrations <50 PPM. APR w/ organic vapor cartridge |

Specific protective equipment for each level of protection is as follows:

| LEVEL A | LEVEL B | LEVEL C | LEVEL D | OTHER |
|---|---|---|---|---|
| Level A fully encapsulated suit | Saranex chemical resistant suit | Saranex or Tyvek chemical resistant suit | Flame resistant clothing | |
| SCBA | SCBA or Supplied Air line | Air purifying respirator | Hard hat<br>Safety Glasses | |
| Nitrile inner chemical resistant gloves and booties | Inner/outer nitrile gloves and booties | Inner/outer nitrile gloves and booties | Work gloves and Safety toes shoes | |

**NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE**

**WITHOUT THE APPROVAL OF THE SITE SAFETY OFFICER AND THE PROJECT TEAM LEADER.**

### Respiratory Protection

All individuals that are required to wear respirators must be clean-shaven, trained, respiratory fit-tested, and medically approved.

If conditions warrant the use of air purifying respirators, organic vapor cartridges shall be used when protecting against hydrocarbons. If protection is needed against chemicals other than hydrocarbons, then the onsite Safety Officer will designate cartridge type.

## G. On Site Work Plans

Work activity for spill response will be outlined on ICS forms. Work plans to be reviewed are:

- ICS 204
- Site Safety Plan

## H. Communication Procedures

### Communication information

Telephone communication to the Command Post should be established as soon as practical. The phone number at the Command Post is: 776-5129
Communication information is outlined on the following forms:

- ICS 205
- ICS 216
- ICS 217

SEE ATTACHED

### Hand Signals

- Hand gripping throat - *Out of air, can't breath*
- Grip partner's wrist of both hands around waist - *Leave area immediately*
- Hands on top of head - *Need assistance*
- Thumbs up - *I am alright, I understand*
- Thumbs down - *Negative*

Personnel in the **HOT ZONE** should remain in constant radio communication or within sight of the Project Team Leader. Any failure of radio com-

munication requires an evaluation of whether personnel should leave the **HOT ZONE**.

## I. Decontamination Procedures

Decontamination involves the orderly controlled removal of contaminants (crude oil and other contaminants) from equipment and non-disposable and disposable PPE. All contaminated items must be decontaminated before leaving the spill response sight.

**Personnel Decontamination and Small Equipment**

All sight personnel should minimize contact with contaminants in order to reduce the need for extensive decontamination. Decontamination will be set up by the Operations unit in the following locations:

_____

Upon leaving the hot zone, each individual will go through the following decontamination stations and follow the following procedure:

1.) Exit the work area after removing gross contamination and leaving it in contaminated area for later disposal. Enter the decontamination area by stepping on absorbent roll.

If the responder is wearing a Mustang suit, remove as much contamination as possible and place in designated bag bin for future decontamination and survey. If Mustang is lightly oiled clean and place in reuse bin. Step out of and away from boots and clothing

2.) Station #2 – Step into Galvanized wash tubs and remove all visible contamination from clothing and boots. Focus on getting boots as clean as possible as we will reuse them as long as we can get them cleaned. Use the long handle brush and decontamination solution. (orange-solv). Absorbent pads and water sprayers are available at this station to assist in the cleaning.

3.) Station #3 – Stepping from wash tub walk on absorbent roll, remove outer gloves and place in waste can

4.) Station #4 – A. Continuing on absorbent roll step into next wash tub, remove protective clothing down to the boots

5.) Station #5 – Throw disposable clothing in waste bin and place boots in personal bags for reuse

6.) Station #6 – Remove and dispose of inner glove and exit decon line into sheltered area

**Location of site-specific decontamination stations and other important information**:

Location of Decontamination Stations:

_____

Pre fabricated / Mobile Decontamination stations are available at CISPRI. Directions for their use and set up are located on the tote lid. 6 decon. totes are available.

Individuals managing Decontamination Stations: Operations

Location of rest rooms, hand washing facilities and shower facilities: There are designated areas in each location at

_____

There are also warm-up shelters at each of these locations.

**Large Equipment and Vessel Decontamination**
Information located in the Environmental Waste Management Plan

**Disposition of Decontaminated Wastes**

1.) All decontamination waste must be contained and disposed of properly
2.) Disposable PPE shall be disposed of in marked drums
3.) All Equipment and solvents used for decontamination shall be cleaned or disposed of properly
4.) The disposal of decontamination waste will be managed by the Environmental Unit Leader

See Environmental Waste Management Plan for additional information.

## J. Medical Plan

### Medical Surveillance

Medical monitoring programs are designed to track the physical condition of employees engaged in hazardous waste clean up and other activities, i.e., respirator wearers, fire fighters, emergency responders, etc. Prior to being assigned to a hazardous or potentially hazardous activities involving exposure to toxic materials, applicable employees must receive a pre-assignment or baseline, periodic, and exit physical to determine fitness-for-duty (refer to "Occupational Safety and Health Guidance Manual for Hazardous Waste Operations").

As a follow-up to an injury or possible exposure above established exposure limits, all employees are entitled to and encouraged to seek medical attention and physical testing. Depending on the type of exposure, it is critical to perform follow-up testing within 24 – 48 hours.

### First Aid and Emergency Medical

- SEE ATTACHED MEDICAL PLAN (ICS 206) FOR EMERGENCY NUMBERS
- All teams, crews, and vessels are equipped with basic first aid supplies and eye wash bottles
- Transportation of on board injuries will be facilitated by transport to either the Designated Safety Boat, or one of the nearest locations with a Helo pad.
- Serious injuries may require the release of the vessel on which the patient is, so that he/she can be transported directly to shore without having to be transferred vessel to vessel.
- _____medical and eye wash/shower stations with EMT's have been established and are located:_____
- All injuries will be reported to the Site Safety Officer and an Accident/Incident report will be initiated. The supervisor of the injured person and the Accident/Incident investigation team must complete this report.
- In the event of an emergency (see communication plan):
  Call dispatch on channel _____and 911 will be initiated or call 911 via cell phone and then notify dispatch.

- The Safety Officer must be notified in the event of an emergency
- In event of a tsunami, earthquake, or other emergency, the Command Post Communication will broadcast over both working and emergency frequencies.

- Helicopter landing site is located:_____
- Before handling any chemicals, consult MSDSs to become familiar with signs and symptoms of over exposure and first aid instructions.

## K. Air Monitoring Plan

To ensure spill response personnel are not exposed to hazardous chemicals, oxygen enriched or deficient atmospheres, or a flammable work environment, atmospheric and personal monitoring shall take place. The following monitoring instruments shall be used on site at the specified intervals.

| Instrument | Task/Chemical | Interval |
|---|---|---|
| Organic vapor analyzer (HNU/OVA) | Monitor for organic vapors during spill response activities | As needed before a tasks begins, if a change occurs in task or to identify level of PPE |
| Four gas meter (measures LEL/O2/H2S, CO) | Conduct monitoring before Hot work, general work if working in potentially flammable, H2S, CO or O2 enriched or deficient atmospheres, and confined spaces. | - monitor before work, and a minimum of every 3 hours or continuous monitoring |
| UltraRae, Colorimetric Tubes | Capability of monitoring for specific chemicals such as benzene | As needed before task begins, if a change occurs in task or to identify level of PPE |
| Personal Monitoring equipment | To determine spill responders TWA | In atmospheres suspected to be at or above the PEL |

Individuals shall also be assessed for heat stress, hypothermia, and frostbite.

## L. Emergency Procedures

The emergency procedures outlined below, shall be followed by onsite personnel. The Site Safety Officer shall be notified of any onsite emergencies and be responsible for ensuring that the appropriate procedures are followed.

Tsunami/earthquake evacuation: All shore side personnel will evacuate to _____ until completion of alert. Small vessels shall come to shore and evacuate with on shore personnel. Large vessels will move to open water off shore and ride the wave. Any tsunami advisory will be relayed by the Coast Guard to Command for relay on all broadcast frequencies.

**Emergency Medical Care**

(SEE ATTACHED MEDICAL PLAN ISC 206)

**Personnel Injury**

Follow medical plan

**Fire/Explosion:**

Upon notification of fire or explosion on site, the emergency signal shall be sounded and broadcast on the emergency channel. In the event of a shore-based fire, all site personnel shall assemble at a safe distance from the area and notify the local fire department via dispatch or 911.

**Personal Protective Equipment Failure:**

If any site worker experiences a failure or alteration of protective equipment that affects the protection factor, that person and his/her buddy shall immediately stop work and leave the area. Reentry shall not be permitted until the equipment has been repaired or replaced.

**Other Equipment Failure:**

If equipment failure occurs, the Site Supervisor and Site Safety Officer shall be notified immediately. It will then be determined if the failure will impact personnel safety. In the event equipment failure affects personnel safety, work will stop until appropriate actions are taken.

**In all situations, when an onsite emergency results in evacuation of the area, personnel shall not reenter until:**

(1) The conditions resulting in the emergency have been corrected.
(2) The hazards have been reassessed.
(3) The Site Safety Plan has been reviewed.
(4) Site personnel have been briefed on any changes in the Site Safety Plan.

(should be modified as required for incident)

The following standard emergency procedures will be sued by onsite personnel. The Site Safety Officer shall be notified of any onsite emergencies and be responsible for ensuring that the appropriate procedures are followed.

**Personnel Injury in the HOT ZONE:**

Upon notification of an injury in the HOT ZONE the designated emergency signal _____shall be sounded. All site personnel shall assemble at the decontamination line. The rescue team will enter the HOT ZONE (if required) to remove the injured person to the hotline. The Site Safety Officer and Project Team Leader should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to movement to the Support Zone. The onsite EMT shall initiate the appropriate first aid, and contact should be made for an ambulance and with the designated medical facility (if required). No persons shall reenter the HOT ZONE until the cause of the injury or symptoms is determined.

**Personnel Injury in Support Zone:**

Upon notification of an injury in the support Zone, the Project Team Leader and Site Safety Officer will assess the nature of the injury. If the cause of the injury or loss of the injured person does not affect the performance of onsite personnel, operations may continue, with the onsite EMT initiating the appropriate first aid and necessary follow-up as stated above. If the injury increases the risk to others the designated emergency signal _____ shall be sounded and all site personnel shall move to the decontamination line for further instructions. Activities on site will stop until the added risk is removed or minimized.

*Intentionally Left Blank*

# APPENDIX D

# WASTE MANAGEMENT PLAN (Example)

This Appendix contains an example of a Generic Waste Management Plan used by many of the CISPRI Members. This Waste Management Plan has been vetted in several exercises including a large scale "Area Exercise".

A Waste Management Plan is also available on line via the following Website:

**https://dec.alaska.gov/spar/ppr/response-resources/permits-tool/**

Instructions and Examples are also provided on the Website for completing a Waste Management Plan.

This is an incident-specific plan to address management of oily wastewater and solid waste materials during the emergency phase of a marine or other oil spill response. Wastes generated during a spill response effort are collected, containerized, and managed by the Operations Section. The Environmental Unit in the Planning Section provides guidance on waste management and makes waste disposal decisions. The oil spill response team roster and ICS organization chart should be used to identify roles and responsibilities.

The goal of the spill response effort is to remove oil from impacted areas as soon as possible and to treat, recycle, or dispose of recovered oily material in the most efficient and environmentally sound manner. This plan provides guidance on how to manage the waste generated during an oil spill response effort and forms to document actions taken.

Member companies are encouraged to develop their own Waste Management Plans to reflect the needs of their individual companies.

*Intentionally Left Blank*

# PERMIT & PLAN SIGN-OFF SHEET

**INCIDENT NAME:** _____ **DATE PREPARED:** _____

**OPERATIONAL PERIOD:** _____

# WASTE MANAGEMENT & DISPOSAL PLAN

***(PLAN OR PERMIT NAME)***

***APPROVED BY:***

| | |
|---|---|
| RPIC | DATE |
| FOSC | DATE |
| SOSC | DATE |
| LOSC | DATE |

# TABLE OF CONTENTS

**1.0 PURPOSE AND SCOPE OF WASTE MANAGEMENT AND DISPOSAL PLAN**

**1.1** Typical Reclaimable Materials and Waste Streams
**1.2** General Waste Management Practices
**1.3** Waste Handlers

**2.0 WASTE DESIGNATION**

**2.1** Waste Characterization
**2.2** Waste Sampling Procedures
**2.3** Sampling Guidelines
**2.4** General Management Guidelines
**2.5** Accumulation of Hazardous Waste
**2.6** Management of RCRA-Regulated Waste

**3.0 INTERIM STORAGE, SEGREGATION AND TRACKING**

**3.1** Locations for Temporary Waste Storage Areas
**3.2** Waste Storage Area Construction Materials and Supplies
**3.3** Waste Segregation, Containerization and Inventory
- **3.3.1** Contaminated Soil
- **3.3.2** Oiled Debris
- **3.3.3** Contaminated Sorbent Material and PPE
- **3.3.4** Contaminated Rinsate Water from Decontamination Stations
- **3.3.5** Hazardous Waste
- **3.3.6** Non-Oiled Waste Generated from Spill Response Activities
- **3.3.7** Sewage/Sanitary Waste from Spill Response Activities

**3.4** Tracking of Waste Types and Amounts
**3.5** Agency Approval of Temporary Waste Storage Areas

**4.0 WASTE DISPOSITION AND FINAL DISPOSAL**

**4.1** Available Disposal Options
- **4.1.1** Incineration
- **4.1.2** Landfilling
- **4.1.3** Bioremediation and Off-Site Biodegradation

**4.2** Final Report

## LIST OF ATTACHMENTS

**Attachment A** Oil Spill Waste Management Disposal Plan Form
**Attachment B** Hazardous Waste Manifest
**Attachment C** Land Disposal Restriction Notification
**Attachment D** Daily Survey Waste Tabulation Form
**Attachment E** Field Survey Waste Removal/Transfer Form

## LIST OF TABLES

**Table 1** Hazardous Waste Accumulation Area Inspection Form
**Table 2** Summary of Construction Materials and Equipment for Temporary Waste Staging Area(s)

## LIST OF FIGURES

**Figure 1** Waste Staging Area Schematic

## NOTE:

Associated materials not included herein:
Supplemental Spill Response Documents

# 1.0 PURPOSE AND SCOPE OF WASTE MANAGEMENT AND DISPOSAL PLAN

This is an incident-specific plan to address management of oily wastewater and solid waste materials during the emergency phase of a marine or other oil spill response. Wastes generated during a spill response effort are collected, containerized, and managed by the Operations Section. The Environmental Unit in the Planning Section provides guidance on waste management and makes waste disposal decisions. The oil spill response team roster and ICS organization chart should be used to identify roles and responsibilities.

The goal of the spill response effort is to remove oil from impacted areas as soon as possible and to treat, recycle, or dispose of recovered oily material in the most efficient and environmentally sound manner. This plan provides guidance on how to manage the waste generated during an oil spill response effort and forms to document actions taken. A final report or incident action plan (IAP) should be developed at the conclusion of response activities detailing what waste was generated, and how it was disposed of/and or treated. The information generated during the spill response effort should provide this information.

## 1.1 TYPICAL RECLAIMABLE MATERIALS AND WASTE STREAMS

Spill response, cleanup, and decontamination will typically produce the following wastes and reclaimable materials:

**A.** Recovered oil (crude or refined petroleum product) from the release
**B.** Oily residue from vessels, debris, and other oiled material
**C.** Oily water (oil and seawater or oil and fresh water), including decontamination and wash waters
**D.** Oil-saturated booms and sorbents from clean-up of the spilled oil
**E.** Other debris, including oil contaminated sand, vegetation, and soil that may become waste

## 1.2 GENERAL WASTE MANAGEMENT PRACTICES

The following management practices must be followed in the management of wastes generated in a spill response effort:

**A.** Dispose or manage wastes and recoverable materials in permitted or otherwise authorized locations and facilities only. Unauthorized disposal or management will not be tolerated.
**B.** Reduce waste generation whenever practical. This is known as waste minimization or pollution prevention.
**C.** Reuse or recycle materials whenever practical. This not only lowers consumption of raw materials; it also eliminates the need for waste disposal. Recycling and reuse of recovered oil and oily water is the preferred option.

**D.** Avoid co-mingling wastes of different classifications. For example, never place non-hazardous wastes in the same container as hazardous waste. In addition, keep recyclable material separate from non-recyclable waste. It may be difficult or impossible to separate wastes after they are generated.

**E.** Maintain good housekeeping practices. Employees and contractors should maintain neat, clean work areas to reduce the need for additional clean up and the wastes it would generate.

**F.** Properly store wastes, especially hazardous wastes, to avoid releases to soil, water, or air, until they can be appropriately managed.

**G.** Clearly identify waste containers. Use a label or other means to clearly identify the contents of containers of hazardous, non-hazardous and inert wastes.

**H.** Document quantities and disposition of all hazardous and non-hazardous wastes as instructed in this plan. Waste tracking can help to manage costs, and is required for all hazardous wastes. This information will be included in the final report developed at the conclusion of response activities.

**I.** Recovered liquids (oil, water, sludge) should be collected and stored in as large a container as possible (Department of Transportation [DOT] drum, tote tank, frac tank, or barge) to maximize decanting potential, facilitate uninterrupted recovery, and to minimize equipment decontamination requirements.

**J.** Communicate your ideas for waste minimization or waste management improvements to supervisors and fellow employees in different areas.

## 1.3 WASTE HANDLERS

Liquid materials recovered will be collected for proper disposal or recycling by the following oil recycling company:

# 2.0 WASTE DESIGNATION

The process of classifying waste as solid or hazardous waste is termed "waste designation." Petroleum products such as diesel generally do not designate as hazardous waste. Recovered oily liquids and other materials contaminated by oil that are not designated as hazardous waste may be recycled, burned, or blended for fuel without following the requirements for management of hazardous waste. Recovered oily liquids and other materials contaminated by oil that cannot be recycled, burned or blended for fuel are considered solid waste and subject to designation as a hazardous waste as determined through testing. If they do not designate as a hazardous waste they are classified and managed as a solid waste.

## 2.1 WASTE CHARACTERIZATION

Wastes that can typically be identified as non-hazardous via operator or generator knowledge include non-oiled waste from the response activities and minimally oiled wastes such as some discarded decontaminated or personal protective equipment (PPE). Knowledge of the material spilled, (e.g., marine diesel fuel) can be used to classify all of the released material. Marine diesel fuel-impacted material would be classified as 100 percent non-hazardous.

Some oiled waste material may be tested to determine if the waste is a federal or state hazardous waste. If the waste is designated as not hazardous, testing will identify if the waste concentration is low enough in total oil and grease or total organic carbon to be accepted in the local landfill or Resource Conservation and Recovery Act (RCRA) Class III disposal facility. Spent oiled boom and sorbent material as well as contaminated soil, sand or other loose, natural material would be composite sampled as means to classify the material.

All oily waste streams will be characterized to ensure the wastes are managed in accordance with federal and state hazardous waste regulations. The testing results will determine the final disposition and disposal of the waste. A minimum of 10 percent of a waste stream (e.g. oily waste bags) will be tested if operator knowledge indicates hazardous waste may be present. Sample analyses will include toxicity characteristic (benzene only), reactivity, ignitability; and other analyses, as necessary.

## 2.2 WASTE SAMPLING PROCEDURES

Samples will be collected in pre-cleaned glass containers and stored and transported in specially designated portable coolers. These supplies will be provided by the Member Companies accredited analytical laboratory. Member Companies local contract analytical laboratory is:

**Company name:**
**Company address:**
**Phone:**
**Fax:**
**Contact Name:**

Containers will be labeled with date and time, sample type, sample location (waste storage area number), unique sample number, and the samplers' signature. The contract analytical laboratory will provide labels.

Samples will be collected with the assistance of a clean scooping device such as a hand trowel (either a one-time disposable or a device that can be decontaminated between each sample). Reusable sampling equipment will be decontaminated with isopropyl alcohol and water between collection of each sample. Nitrile gloves will be worn during the collection of each individual sample and changed between samples.

The samples will be stored in the field in chilled coolers (4° C). The samples then will be moved to a refrigerator or delivered to an analytical laboratory within the sample holding time specified for the analytical methods selected. Proper chain of custody protocol will be followed.

## 2.3 SAMPLING GUIDELINES

For oil sampling exercises, the following guidelines will be used:

**A.** Third party contractors will be used to collect all neat and contaminated material samples.
**B.** Third party contractors will be used to gauge all tanks containing oil-water mixtures.
**C.** Samples will be collected in pre-cleaned glass containers provided by an accredited analytical laboratory.
**D.** Containers will be labeled with information such as the date, sample type, and sample location.
**E.** Solid material type samples (e.g., PPE) will be collected with the assistance of a utility knife or scissors.
**F.** Liquid type samples will be collected with the assistance of an appropriate liquid sampling device.
**G.** Sampling equipment will be decontaminated with isopropyl alcohol and water and
thoroughly rinsed between each sample collected.
**H.** Nitrile gloves will be used for sample collection, and changed between samples to prevent cross contamination.
**I.** All spent sampling equipment and contaminated material associated with sampling will be consolidated, containerized and moved to the waste staging area.

Proper chain of custody protocol will always be followed.

## 2.4 GENERAL MANAGEMENT GUIDELINES

All waste generated during oil spill response efforts should be managed using the following guidelines:

**A.** Solid waste will be placed in a lined/bermed area for subsequent off-site transport, treatment and disposal.
**B.** Temporary storage of oil-contaminated materials will be in closed-top, 55-gallon drums, sealed plastic bags or roll-off boxes, all segregated within the lined/bermed containment areas.
**C.** Wastes accumulated in temporary storage locations will be categorized, segregated, inventoried and transported off-site for recycling or disposal.
**D.** Ultimate disposal of recovered materials will be determined, in part, by the cleanup criteria established by the regulatory agency with jurisdiction over the event. The Member Company Responsible Party (RP) and the Unified Command (U.C.) will determine the most feasible disposal alternative for recovered materials that meets federal, state, and local requirements.
**E.** Testing of accumulated materials will be performed in accordance with appropriate
regulatory guidelines.
**F.** Necessary permits will be obtained for transportation to and disposal of any wastes at approved landfills.

## 2.5 ACCUMULATION OF HAZARDOUS WASTE

No permits are needed for collection and temporary storage of hazardous waste in an emergency oil spill clean-up as long as waste is properly contained, labeled, and stored. Storage requirements for hazardous waste are more stringent than for non-hazardous waste. A hazardous waste storage area inspection form, provided as **Table 1**, should be used to document that waste was appropriately managed. Generators of hazardous waste must obtain a state/Environmental Protection Agency (EPA) identification number since hazardous waste may not be shipped offsite without an identification number.

Use the Oil Spill Waste Management Disposal Plan Form in **Attachment A** to summarize the event and site-specific implementation of this waste management and disposal plan. Hazardous waste manifest requirements will be fulfilled to transport the waste off site. Examples of Hazardous Waste Manifest and Land Disposal Restriction Notification Forms are provided in **Attachments B** and **C**, respectively. Originals of these forms must be completed and accompany waste transported off-site for disposal. Forms from **Attachments A**, **B**, and **C** and portions or portions of this plan may be submitted as part of the IAP for this response activity. Materials safety data sheet (MSDS) information should be included in the IAP with the Waste Management Disposal Plan to facilitate residuals management decision-making by the U.C.

## 2.6 MANAGEMENT OF RCRA-REGULATED WASTE

Many hydrocarbon products contain benzene, which can be considered a hazardous waste under the RCRA toxicity characteristic rule. As a result, oily waste (excluding marine diesel fuel contaminated wastes) that cannot be recycled/reclaimed will be analyzed for hazardous characteristics before choosing a treatment or disposal option. Tesoro will use standard procedures approved by RCRA regulations for sampling, analyzing, and monitoring oil and oily waste material. Representative samples will be collected and analyzed for hazardous characteristics (ignitability, corrosivity, reactivity, or toxicity) by the Toxicity Characteristic Leaching Procedure (TCLP) to determine if the waste should be handled as hazardous.

If oily waste is determined to be hazardous under RCRA, the wastes will be sent to an EPA- or state-permitted hazardous waste management facility for treatment and disposal. If the material spilled is itself a RCRA-listed hazardous waste, any resulting spill residue is automatically a RCRA-listed hazardous waste.

Use the Oil Spill Waste Management Disposal Plan Forms contained in **Attachment A** to summarize the event and site-specific implementation of this Oil Spill Waste Management and Disposal Plan. Forms from **Attachment A**, and portions or all of this plan, should be submitted as part of the IAP for this response activity. MSDS information should be included in the IAP with the Waste Management Disposal Plan to facilitate residuals management decision-making by the U.C.

# 3.0 INTERIM STORAGE, SEGREGATION, AND TRACKING

This section provides information on the interim storage of spill-generated waste, includes guidance on the segregation of different types of waste to facilitate proper and efficient management, and provides waste disposition tracking forms.

## 3.1 LOCATIONS FOR TEMPORARY WASTE STORAGE AREAS

Temporary waste staging areas (Waste Staging Areas) will be established in the following locations:

**A.** Waste Staging Area Location Number 1:

**B.** Waste Staging Area Location Number 2:

**C.** Waste Staging Area Location Number 3:

It is important to show how each site will be constructed, bermed, or covered to minimize rainwater infiltration and leaching. Maps should be provided to locate the Waste Staging Areas for the IAP.

Describe below the measures that will be taken following completion of spill response activities to return the waste staging areas to their original condition. Include in the discussion, at a minimum, efforts to: classify and containerize materials used to construct the temporary storage areas; decontaminate the location; and collect and dispose of washdown/rinsate that may evolve during temporary waste staging area decommissioning.

## 3.2 WASTE STORAGE AREA CONSTRUCTION MATERIALS AND SUPPLIES

Typical material and supplies needed for constructing a Waste Staging Area include the
following:

- Reinforced visqueen or rolled polyethylene liner
- Railroad ties, hay bails, or other berm material for under Visqueen
- Roll-off boxes and/or dumpsters (empty containers used to accumulate waste collected in satellite accumulation areas)
- Yellow caution or “Do Not Enter” tape
- Temporary fencing and/or barricades, if needed
- Traffic cones
- Absorbent materials and pads
- Wooden pallets for drum storage
- Drums
- Plastic bags (55-gallon drum size)
- Decontamination equipment (potable water, soap, brushes, tubs, etc.) in portable totes
- PPE

A tally of construction material and supplies needed for this event is presented in **Table 2**. A schematic diagram of the Waste Staging Area(s) is presented in **Figure 1**. Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements for personnel entering the waste staging area are summarized in the Site Safety Plan contained in the IAP.

## 3.3 WASTE SEGREGATION, CONTAINERIZATION AND INVENTORY

All loads moving into the temporary Waste Staging Area should be weighed prior to off-loading the waste. Oiled sand/soil should be placed into visqueen-lined dump trucks or roll-off boxes and transported off-site or to the non-liquid waste storage section in the temporary Waste Staging Area. All loads of oily sand and soil must be weighed and documented.

The on-site weighing location for waste management during this spill response is described below.

**Weigh Station Locations:**

Label all containers (bags, drums, roll-off boxes, totes, dumpsters, etc.) with the following information:

- Type of material (oiled boom, absorbent pads, etc.)
- Location (waste generation site)
- Date
- Name and phone number of contact person
- Include the term "Recovered Oil- _____ (put type of material here, such as sand, PPE, debris) Contaminated Material."

Oily wastes will be placed in leak-proof containers to prevent leakage during handling and transportation. The containers may be 55-gallon drums, portable tanks, tank trucks, roll-off boxes, dumpsters, storage barges, or containers that can be sealed and covered to prevent spillage. Double-walled plastic bags may be used for this purpose or all oil-contaminated materials can be double-bagged and tied or closed with duct tape. Not more than 20 pounds of debris are to be placed in each double bag. Each container of collected debris will be labeled as to its contents (tar balls, oily debris, or non-oily rubbish). Similar waste types should be staged together as a key task in the spill response waste segregation strategy.

All equipment used to excavate the sand or soil must be decontaminated and the wash waters managed per the procedures provided in the Decontamination Plan included in the IAP.

The management of recovered oil and oil/water mixtures will be addressed in the *Recovered Oil and Water Management Plan*. This section includes the segregation and management of contaminated soil, oiled debris, oiled sorbent material and PPE, rinsate water from decontamination stations, hazardous waste, non-oiled waste and sewage/sanitary waste generated from spill response activities.

Where possible, waste should be segregated according to media and degree of toxicity, as described below.

### 3.3.1 CONTAMINATED SOIL

Contaminated soil and shell material can be stockpiled in designated lay-down areas near cleanup activities. Paved areas or areas prepared for stockpiling impacted materials are preferred. Stockpile areas underlain with visqueen and covered with visqueen or other sheeting may be required to prevent rainfall infiltration and runoff. Stockpiling of contaminated soils should be viewed as a temporary measure, as the soil will eventually be containerized for off-site treatment and/or disposal. Soil will be characterized and stored as per direction from the Environmental Unit.

### 3.3.2 OILED ORGANIC DEBRIS

Oiled organic debris includes wood, grasses, aquatic vegetation, and similar organic matter that cannot be treated and restored. Oiled organic debris should be segregated from dissimilar debris and containerized in clear plastic bags so the contents inside can be viewed. This material typically is designated for disposal at an approved solid waste landfill.

### 3.3.3 OILED DEBRIS

Oiled debris includes equipment and materials that are not deemed to be treatable or material that cannot be returned to its original service. This may include oiled wooden material from beaches, oiled nets and floats, buoys, oiled trash collected from the beach, and oiled equipment. Oiled debris will be containerized in 55-gallon drums or roll-off boxes and/or dumpsters. This material typically is designated for disposal at an approved solid waste landfill.

### 3.3.4 CONTAMINATED SORBENT MATERIAL AND PPE

Contaminated sorbents (absorbent booms, pads, wipes, etc.) will be transferred from decontamination areas to the nearest waste staging area. Oiled sorbents and PPE will be containerized in plastic bags, drums, roll-off boxes, or dumpsters as appropriate. Plastic bags, taped closed and stored in roll-off boxes is the preferred technique.

### 3.3.5 CONTAMINATED RINSATE WATER FROM DECONTAMINATION STATIONS

Contaminated rinsate from personnel or equipment decontamination areas will be containerized in open top 55-gallon drums fitted with bung-sealing lids. Contaminated rinse water and other oily water generated during the spill response typically will be transported by vacuum truck from points of generation to frac tanks and portable oily water storage tanks supplied by the oil spill response organization or oily water reclamation contractor. The frac or Baker tanks typically will be co-located with the Waste Staging Areas.

### 3.3.6 HAZARDOUS WASTE

Hazardous waste will be kept in designated areas within the temporary waste staging areas. Hazardous waste will typically be containerized in drums or visqueen-lined roll-off boxes with volatile organic compound (VOC) controls, if necessary. Hazardous waste will not be commingled with non-hazardous waste. An example of a hazardous waste manifest, needed for transportation and disposal of any hazardous waste, is provided in **Attachment B. Attachment C** contains an example Land Disposal Restriction Notification that must be filled out and accompany the waste and waste manifest.

### 3.3.7 NON-OILED WASTE GENERATED FROM SPILL RESPONSE ACTIVITIES

Non-oiled waste material includes trash generated at the on-site oil spill response center(s), trash generated from response boats, and packing material that cannot be recycled. Non-oiled waste may be kept in plastic bags at the Waste Staging Area, but must be clearly identified as nonhazardous garbage (e.g., using color-coded plastic bags or color-coded bag tags).

### 3.3.8 SEWAGE/SANITARY WASTE FROM SPILL RESPONSE ACTIVITIES

Oil spill cleanup operations produce large amounts of liquid sewage wastes that originate from domestic sources such as toilets, laundry and shower facilities, cooking, and gathering centers. This waste must be characterized by type and disposed of properly.

## 3.4 TRACKING OF WASTE TYPES AND AMOUNTS

Daily Survey Waste Tabulation and Field Survey Waste Removal/Transfer Forms are provided in **Attachments E** and **F** to document the amount of waste generated during the spill response effort. Continually reporting and updating the Situation Unit with waste management data is a crucial aspect of response. Waste management data are used to assess the progress of the response and to determine potential response needs. Typically waste management data will be summarized on ICS Form 209, which includes total volumes recovered, stored, and disposed. The Environmental Unit in conjunction with the Situation Unit must assure that this information is accurately reported. Clear lines of communication must be quickly established with Operations to assure that an adequate tracking system is in place. Waste disposal plans should describe the waste tracking system. The use of waste disposition tracking forms is highly recommended.

### 3.5 AGENCY APPROVAL OF TEMPORARY WASTE STORAGE AREAS

Agencies such as the Alaska Department of Environmental Conservation (ADEC) request consultation and approval to maintain a Temporary Waste Storage Area (TWSA). The following information will be provided to ADEC and gain approval for the TWSA operation continuance:

- Location of TWSA
- Materials managed
- Summary of TWSA oversight
- Rationals for continuing operation
- Anticipated duration
- Approval signature of ADEC or SOSC

# 4.0 WASTE DISPOSITION AND FINAL DISPOSAL

The waste management data for this spill response effort should be summarized on ICS Form 209. This form includes total volumes recovered, stored, and disposed of. Other waste disposition forms provided in this document can also be used to complement ICS Form 209.

Following the collection of information needed to estimate the quantity of recovered oil, absorbent materials affected by the released oil and other oily waste debris such as oily solids, oil-stained rock and soil/sand mixtures, tar balls, and other miscellaneous combustible wastes, it must first be determined that all proper tracking forms have been completed. Once tracking of waste generated has been confirmed, waste may be disposed of through on or more of the following methods: (1) incineration, (2) landfilling, and (3) off-site bioremediation. Copies of receipts from disposal facilities must be kept with the completed ICS Form 209.

## 4.1 AVAILABLE DISPOSAL OPTIONS

Information for each of these disposal methods, including possible permitting requirements, is provided below.

### 4.1.1 INCINERATION

Incineration can be used to dispose of oily waste materials (including oily wood, oiled debris, PPE, sorbents, and other organic material) collected during cleanup operations) if a facility is within a logistically feasible transportation distance. Permitting, transportation and facility availability issues should be addressed and approved by the Incident Command. The debris will be transported from the interim storage site by _____ to _____.

Transporter(s) _____ Facility _____
_____ _____

### 4.1.2 LANDFILLING

Landfilling of waste materials produced as part of a spill response will occur only at a commercial facility permitted for the disposal of hazardous and non-hazardous solid waste. Coordination with the landfill is required to 1) verify that appropriate waste characterization analyses have been completed, 2) verify that the landfill is permitted to receive the waste, and 3) identify the labeling, transportation, and manifesting requirements for the landfill to receive the waste.

The following transporters will transport waste suitable for land farming to the identified facilities.

Transporter(s) _____ Facility _____
_____ _____

### 4.1.3 BIOREMEDIATION AND OFF-SITE BIODEGRADATION

Bioremediation involves adding nutrients (nitrogen and phosphorous) to enhance indigenous microbial activity to degrade the hydrocarbon-impacted material. Successful bioremediation can accelerate the cleanup of a spill and reduce the amount of oily wastes requiring disposal. Bioremediation can be conducted either in-situ (where the spill occurred) or *ex situ* (remove the contaminated material and place into a bio-treatment area designed and built for that purpose). This technique is limited to impacted soils and sediments.

*Ex situ* land farming is a preferred method of oily waste management. In land farming, oily sludges are spread on a selected site and then combined with soil, moisture and nutrients in the presence of oxygen to promote bacterial degradation of the hydrocarbon components. Smaller items, such as sand, pebbles, short seaweed (less than 6” long) sludges, and contaminated soils can also be processed this way. This method requires approval by the SOSC and/or FOSC, a permit, and monitoring. Often the treated soils can be placed back into the area from which they were excavated.

## 4.2 FINAL REPORT

A final report must be developed at the conclusion of response activities. The final report should state in detail the types of waste generated as well as the amount of each waste type generated, disposed of, or treated. Other forms used here can be attached to supplement this information.

# ATTACHMENT A

## APPROVED OIL RECLAMATION FACILITIES

# ATTACHMENT A

## OIL SPILL WASTE MANAGEMENT DISPOSAL PLAN FORM



Incident Name: _____

Date Prepared: _____

Time Prepared: _____

Location(s)/Division(s) Covered By Plan: _____

ACP/Other References Consulted: _____

### GENERAL INFORMATION

Source of Spill: _____

Total Amount Spilled: _____

Total Amount At Risk: _____

Type of Material Spilled: _____

### AGENCY INFORMATION

Lead Agency: _____

Agency Representative(s): _____

_____

Telephone(s): _____

Comments: _____

_____

## OIL SPILL WASTE MANAGEMENT DISPOSAL PLAN FORM



### VARIANCES

Inquiry Made to Obtain Variances on: _____

_____

Individual(s) Contacted for Variances: _____

_____

Telephones(s): _____

Comments: _____

_____

### SAMPLES

Media(s)/Date(s) Sampled:

_____

Sample(s) Sent Via:

_____

Laboratory Name(s):

_____

**Sampling/Analysis Plan(s) Attached?** **Yes** **No**

**Chain of Custody Form(s) Attached?** **Yes** **No**

Comments:_____

_____

## OIL SPILL WASTE MANAGEMENT DISPOSAL PLAN FORM



### WASTE COVERED BY PLAN

**SOLIDS**

| TYPE | Description(s) | Estimated Volume(s) |
|---|---|---|
| ☐ Oiled Natural Inorganic (sand, pebbles, etc.) | | |
| ☐ Oiled Natural Organic (driftwood, seaweed, etc.) | | |
| ☐ Man-Made Materials (PPE, sorbents, etc.) | | |
| ☐ Unoiled Solids | | |
| ☐ Other(s) | | |

**Suspected Hazardous Waste?** **Yes** **No**

**Determination By Generator Knowledge?** **Yes** **No**

**Hazardous Waste Code:** _____

**Comments:** _____

_____

## OIL SPILL WASTE MANAGEMENT DISPOSAL PLAN FORM



### LIQUIDS

| Types | Description(s) | Estimated Volume(s) |
|---|---|---|
| ☐ Oil/Water Mixtures | | |
| ☐ Uncontaminated Petroleum Products | | |
| ☐ Waste Water | | |
| ☐ Spent Solvents/Dispersants/ Fuels | | |
| ☐ Other(s) | | |

## OIL SPILL WASTE MANAGEMENT DISPOSAL PLAN FORM



**Suspected Hazardous Waste?** **Yes** **No**

**Determination By Generator Knowledge?** **Yes** **No**

**Hazardous Waste Code(s):** _____

**Comments:** _____

_____

_____

_____

### TEMPORARY WASTE STORAGE

**Estimated Storage Required (roll-offs, tanks, etc.):**

| Storage Type | Estimated Capacity/Number Required |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |

## OIL SPILL WASTE MANAGEMENT DISPOSAL PLAN FORM



Preferred Location(s):

_____

_____

_____

Permit(s) Required For Temporary Storage:

_____

_____

_____

**Ground/Runoff Protection Required For Storage Area? Yes No**

**Liners/Cover Protection Required For Storage? Yes No**

Comments: _____

_____

_____

## OIL SPILL WASTE MANAGEMENT DISPOSAL PLAN FORM



### WASTE TRANSPORTATION

**Proposed Transportation Method (s):**

| Waste Type/Description | Proposed Transport Method |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |

**Permit(s)/license(s) required for transportation**: _____

**Liners/cover protection required for transportation?** **yes** **no**

Comments: _____

## OIL SPILL WASTE MANAGEMENT DISPOSAL PLAN FORM



### DISPOSAL METHOD(S)

| Method | Waste Type/Description | Available | Selected |
|---|---|---|---|
| Natural Degradation/Dispersion | | ☐ | ☐ |
| Wastewater Treatment Plant | | ☐ | ☐ |
| Landfill | | ☐ | ☐ |
| Land Farms | | ☐ | ☐ |
| *In situ* Burning | | ☐ | ☐ |
| Open Pit Burning | | ☐ | ☐ |
| Portable Incineration | | ☐ | ☐ |
| Process Incineration | | ☐ | ☐ |
| Reprocessing | | ☐ | ☐ |
| Reclaiming | | ☐ | ☐ |
| Recycling | | ☐ | ☐ |
| Well Injection | | ☐ | ☐ |
| Other | | ☐ | ☐ |

Comments: _____

## OIL SPILL WASTE MANAGEMENT DISPOSAL PLAN FORM



### DISPOSAL RESOURCE (S)

**Proposed resources(s) for disposal method(s) selected (landfill operators, incinerator facilities, etc.):**

| Disposal Method | Resource (s) |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |

**Permit(s) required for disposal:** _____

Comments:

## OIL SPILL WASTE MANAGEMENT DISPOSAL PLAN FORM



### HEALTH AND SAFETY PROCEDURES

_____

_____

_____

_____

_____

_____

_____

_____

Health/Safety Plan Attached? Yes No

Comments: _____

_____

### ADDITIONAL COMMENTS

_____

_____

### CONTACTS AND APPROVALS

Contact For Further Information:

_____

Approved By: _____ Time/Date: _____

# ATTACHMENT B (Sample)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

**UNIFORM HAZARDOUS WASTE MANIFEST**

1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | 4. Manifest Tracking Number

**GENERATOR**

5. Generator's Name and Mailing Address — Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address — U.S. EPA ID Number

Facility's Phone:

| 9a. HM | 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) | 10. Containers No. | 10. Containers Type | 11. Total Quantity | 12. Unit Wt./Vol. | 13. Waste Codes |
|---|---|---|---|---|---|---|
| | 1. | | | | | |
| | 2. | | | | | |
| | 3. | | | | | |
| | 4. | | | | | |

14. Special Handling Instructions and Additional Information

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name — Signature — Month Day Year

**INT'L**

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter signature (for exports only): Date leaving U.S.:

**TRANSPORTER**

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name — Signature — Month Day Year

Transporter 2 Printed/Typed Name — Signature — Month Day Year

**DESIGNATED FACILITY**

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. | 2. | 3. | 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name — Signature — Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

# ATTACHMENT C

## LAND DISPOSAL RESTRICTION NOTIFICATION

# ATTACHMENT D

## DAILY SURVEY WASTE TABULATION FORM

A detailed survey of the wastes will be undertaken to identify appropriate management options. The following list summarizes the type of data to be collected:

What is it?

- Origin or source of the waste:

---

Where is it and how much is there?

- Location(s): _____
- Number of people working and hours worked: _____ / _____

| Container | No. | Contents | Capacity/Mass | Samples (Y/N) |
|---|---|---|---|---|
| Drums | | | | |
| | | | | |
| | | | | |
| | | | | |
| Red/Orange Oily Bags | | | | |
| | | | | |
| | | | | |
| Blue, Regular Trash Bags | | | | |
| | | | | |
| | | | | |
| Clear Bags for Oiled Organic Matter | | | | |
| | | | | |
| | | | | |
| Dumpsters | | | | |
| | | | | |
| | | | | |
| | | | | |

# ATTACHMENT E

## FIELD SURVEY WASTE REMOVAL TRANSFER FORM

**What is it?**

- Origin or source of the waste: _____
- Type of waste: _____

**Where is it and how much is there?**

- Location (s):

_____

- Volume of weight that must be managed:

_____

- Means of containerization (e.g., in drums, barges, bags):

_____

- Drums:

_____

- Roll-off:

_____

- Dumpsters:

_____

- Bags:

_____

## Table 1

### HAZARDOUS WASTE ACCUMULATION AREA INSPECTION FORM

Inspector's Name: _____ Title: _____
Location: _____ Area Description: _____
Inspection Date: _____ Time of Inspection: _____

| Item | Area-Specific Information | Acceptable | Not Acceptable | Recommended Action | Date |
|---|---|---|---|---|---|
| Container Placement | Access, drums on concrete, aisle spacing | | | | |
| Container Condition | Drum condition, bungs in place, liquid residue presence | | | | |
| Container Labeling | Proper labels and accumulation date | | | | |
| Incompatible Waste Segregation | Acids vs. bases, oxidizers, flammables and combustibles | | | | |
| Area Security | Limited access | | | | |
| Fire Extinguisher Access | Accessible, charged, inspected | | | | |
| Spill Control Equipment | Absorbent, shovel, etc. | | | | |
| Shower/Eye Wash | Functioning properly, regular inspections | | | | |
| Warning Signs | No smoking, hazardous waste area, etc. | | | | |
| PPE & Other Equipment | Gloves, goggles, level of PPE listed where appropriate | | | | |

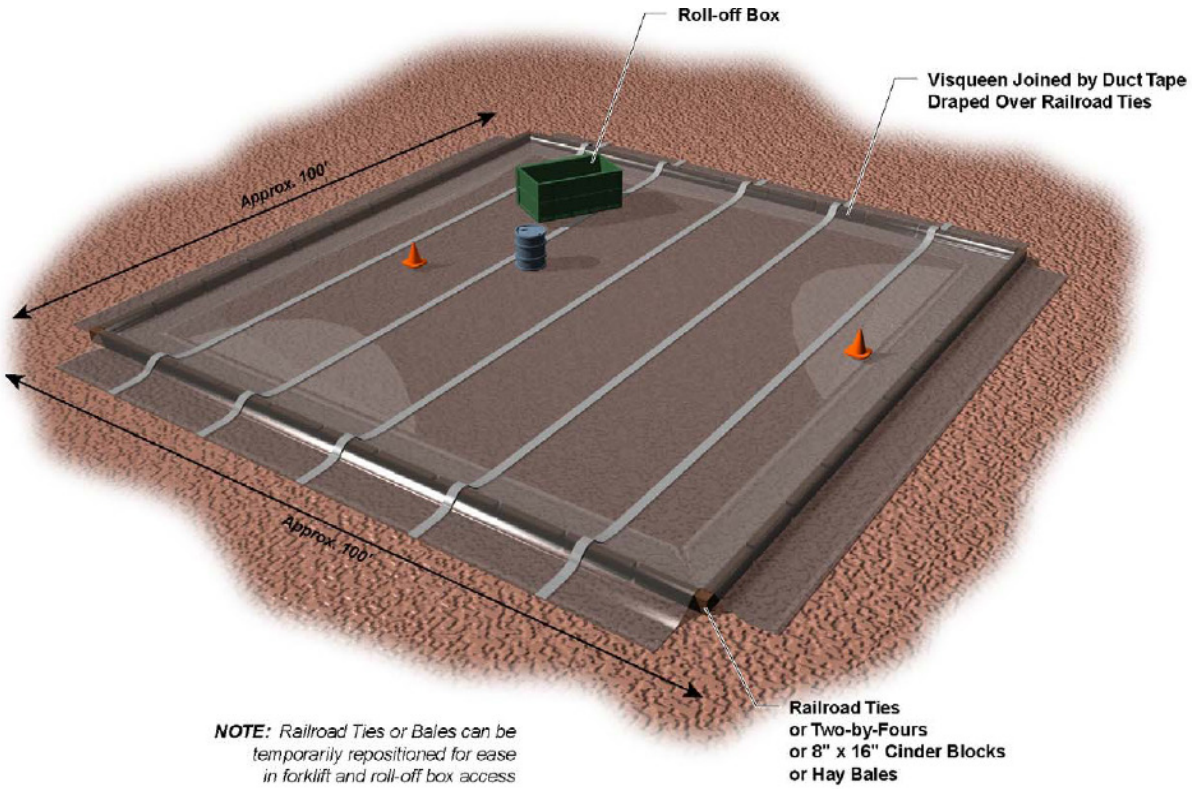
Signature: _____
Comments: _____

## Table 2
### SUMMARY OF CONSTRUCTION MATERIALS AND EQUIPMENT FOR TEMPORARY WASTE STAGING AREA(S)

| Staging Area | Visqueen (square feet) | Railroad Ties or Bails (feet) | Roll-Off Boxes or Dumpsters (#) | Caution Tape (feet) | Temporary Fencing or Barricades (feet) | Traffic Cones (#) | Absorbent Pads (#) | Pallets (#) | Drums (#) | Plastic Bags (#) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| Total | | | | | | | | | | |

** These items have been requisitioned through Operations on _____(date at _____(time).

## Figure 1
### Schematic Drawing of the Waste Staging Area




SCHEMATIC DRAWING OF WASTE STAGING AREA

*Intentionally Left Blank*

# APPENDIX E
# CISPRI RESPONSE TRAINING

CISPRI has developed an aggressive training program for its Oil Spill Response Technicians and other employees as well as Member Company Immediate Response Team (IRT) personnel. This training, when combined with deployment exercises, provides these response personnel with the knowledge, skills and practical experience necessary to activate safe and effective spill response operations. Field Training is regularly conducted to measure the effectiveness of the training and to improve the overall readiness of CISPRI as a spill response organization. CISPRI has adopted the National Preparedness Response Exercise Program (NPREP) for its exercise schedule and format. Each of CISPRI's Member Companies receives NPREP credit for each field deployment that CISPRI undertakes, and CISPRI is careful to ensure that these field deployments are carefully scheduled and documented so as to meet the intent of the program.

CISPRI develops its training schedule annually, and bases it on the following:

- Equipment deployments to meet the NPREP program with emphasis on open water (both summer and winter), nearshore, shoreline and onshore tactics. Training is generally held in sites where equipment is staged.
- Other training required by regulation or company decision; ie. Confined space entry & rescue, HAZWOPER refresher, small boat operations, barge Tankerman, etc.
- Training to ensure our contracted response vessels are compliant.
- Geographic Response Strategies evaluation
- Joint-training with other spill co-ops.
- Other miscellaneous opportunities

CISPRI provides copies of the training schedule to the member companies, and those which provide IRTs will schedule their IRTs attendance at the training. The companies providing IRTs also receive the "goals and objectives" of each training event prior to the actual date of the training so that the IRTs have as much advance knowledge of the event as possible.

IRTs also receive additional training, including safety training, from their parent companies. Those records are maintained by the parent company.

The table below summarizes the contents, duration, and frequency of response training that CISPRI technicians complete.

It should be noted that not all CISPRI personnel or IRTs are able to attend every training event as all parties have other operational commitments that must be met. For instance, CISPRI tries to keep a minimum number of responders readily available at the CISPRI facility in the event of a spill.

CISPRI'S Oil Spill Response Technicians are rotated through a variety of job assignments to ensure that they are crossed-trained in the many spill response assignments to which they could be assigned. That same concept is applied during training. The position of team leader for each training event is randomly assigned. This includes the responsibility of laying out goals and objectives, equipment list, logistical needs, etc for the training event. The purpose is to develop the proper thought process to keep ahead of problems that constantly arise during the ever changing situations during a spill. The team leader then takes on the role of lead instructor during the training event. Periodically, these assignments are made to IRTs. Field training (equipment deployment) exercises are normally conducted once per week.

| TRAINING COURSE | TRAINING DESCRIPTION & DURATION | FREQUENCY ATTENDANCE |
|---|---|---|
| **40-hour HAZWOPER** | • Provide responders with hazardous materials response training in compliance with OSHA requirements for general site worker<br>• 5-day course | Initial hire [A] |
| **8-hour HAZWOPER Refresher** | • Provide responders with hazardous materials response refresher training in compliance with OSHA requirements for general site worker<br>• 1-day course | Annual refresher after completion of 40-hr |
| **Basic Boating Skills & Seamanship** | • General instruction includes types of boats, trailer handling, rules of the road, knots, navigation aids, pilotage, weather, and radio communications<br>• Hands-on practice with chart reading, compass usage, plotting, and tracking<br>• 1-day course | Initial hire (if needed) |
| **ICS 100 & 200** | • Basic Incident Command System Training under National Incident Management System<br>• Reinforced through drills and exercises | During first year |
| **Basic First Aid** | • Basic emergency first aid including choking, rescues, rescue breathing, CPR, bleeding, shocks, fractures, strokes, seizures, and other emergency medical conditions<br>• 1-day course | Biennial<br>• All CISPRI Spill Techs |
| **Safety Tactics** | • Review and demonstrate understanding of Tactics CI-S-1 through CI-S-7<br>• Site entry procedures and site characterization<br>• Site safety plan development<br>• Personal Protective Equipment (PPE) types and usage<br>• Personnel decontamination (typical and emergency)<br>• Incorporated into other training opportunities. | Annual [B C]<br>• All CISPRI Spill Techs |
| **Respirator Training** | • Familiarization with CISPRI's Respiratory Protection Program<br>• Sources of inhaled toxic hazards and evaluation of hazards based on MSDS and monitoring equipment<br>• Types of respiratory protection available and selection of respirator type<br>• Symptoms and effects of exposure and medical surveillance requirements<br>• Hands-on practice using SCBA, EEBA, air purifying respirator for painting and welding<br>• Hands-on practice with using, storing, inspecting, cleaning, and caring for various respirator types<br>• Respirator fit test<br>• 1- 2 hr training | Annual [B]<br>• All CISPRI Spill Techs |
| **Portable Fire Extinguishers** | • Familiarization with the functioning and use of portable fire extinguishers in industrial fire control for Class A, B, C and D fires<br>• 1- 2 hr training | As needed<br>• All CISPRI Spill Techs |
| **Confined Spaces** | • Understanding confined space considerations – shoreside and marine<br>• OSHA regulations and NFPA standards and permit requirements<br>• Use of air monitoring equipment and interpretation of results<br>• Confined space equipment, entry, and rescue<br>• Hands-on practice of confined space monitoring, entry, and rescue<br>• 1-day course | Annual [B]<br>• All CISPRI Spill Techs |
| **Bear Guard** | • Familiarization with bear traits, awareness, warning signs, procedures for safe retreat<br>• Target practice for bear attacks<br>• Reporting requirements for incidents where bears may be harmed<br>• ½ day course with field activities (range) | Biennial [B]<br>• All CISPRI Spill Techs |
| **Cold Water Survival** | • Immersion Suit Training<br>• Donning and actual water deployment<br>• Use of Rescue Ladder<br>• Entry into a life raft<br>• 2-3 hr training and field exercise. | Annual<br>• All CISPRI Spill Techs<br>• Select IRT(s) |

| TRAINING COURSE | TRAINING DESCRIPTION & DURATION | FREQUENCY ATTENDANCE |
|---|---|---|
| **Boat Operator Training** | • Review boat safety, operations, launching, and navigational safety<br>• Review tactics for using workboats and skiffs for nearshore response (CI-NS-6)<br>• Field exercise to verify skills and knowledge<br>• <1-day course | Annual<br>• All CISPRI Spill Techs<br>• Select IRT(s) |
| **Navigation Skills** | • Application of piloting and navigation tools and methods, including magnetic compass, dead reckoning, fuel and voyage planning, using nautical charts and coastal pilot, GPS, etc.<br>• Understanding tides and currents and their impact on navigation<br>• Practice with radar plotting, correcting for current, compass correction, chart plotting, voyage planning and plotting, and GPS use. | Annual<br>• All CISPRI Spill Techs<br>• Select IRT(s) |
| **Tankerman Barge Training** | • Instruction on proper methods of cleaning tanks, preventing pollution, loading & unloading barges, connecting & disconnecting cargo lines, vessel stability, and fire fighting<br>• Course includes a USCG Tankerman Examination<br>• Training includes the fire fighting course that is a prerequisite to receiving the Tankerman endorsement<br>• 5-6 day course | As needed<br>• Select CISPRI Spill Techs |
| **Open Water Tactics – Primary Response Vessel & Barge Task Forces** | • Deployment and operation of primary response vessel task force (CI-OW-1A)<br>• Deployment and operation of barge task force (CI-OW-4)<br>• Purpose and description of vessel-based task forces, personnel requirements for each task force, and operational considerations<br>• Field exercise<br>• <1-day course | Annual<br>• All CISPRI Spill Techs<br>• Select IRT(s) |
| **Open Water Tactics – Dynamic Ice Skimming** | • Review of winter response considerations<br>• Deployment and operation of dynamic ice skimming system (CI-OW-1B)<br>• Purpose and description of dynamic ice skimming operations, personnel and equipment requirements, and operational considerations<br>• Field exercise<br>• <1-day course | Annual<br>• All CISPRI Spill Techs<br>• Select IRT(s) |
| **Open Water Tactics – Lightering** | • Lightering procedures and considerations for large and small vessels (CI-OW-3A and 3B) (Large vessels discussion only)<br>• Purpose and description of lightering operations, personnel and equipment requirements, and operational considerations<br>• <1-day course | Annual<br>• All CISPRI Spill Techs<br>• Select IRT(s) |
| **Nearshore Tactics U & J Module Configuration** | • Deployment of U and J booming configurations (CI-NS-1)<br>• Purpose and description of U and J booming operations, personnel and equipment requirements, vessel support, and operational considerations<br>• Field exercise<br>• <1-day course | Annual<br>• All CISPRI Spill Techs<br>• Select IRT(s) |
| **Nearshore Tactics Current Buster** | • Deployment of current buster system (CI-NS-2)<br>• Purpose and description of booming operations, personnel and equipment requirements, vessel support, and operational considerations<br>• Field exercise<br>• <1-day course | Annual<br>• All CISPRI Spill Techs<br>• Select IRT(s) |
| **Nearshore Tactics Shoreline Protection** | • Deployment of shoreline protection through exclusion booming tactic (CI-NS-3)<br>• Deployment of shoreline protection through diversion booming tactic (CI-NS-4)<br>• Deployment of shoreline diversion/entrapment tactic (CI-NS-5)<br>• Purpose and description of shoreline protection using variety of techniques, personnel and equipment requirements for each tactic, vessel support, and operational considerations<br>• Field exercise<br>• <1-day course | Annual<br>• All CISPRI Spill Techs<br>• Select IRT(s) |

| TRAINING COURSE | TRAINING DESCRIPTION & DURATION | FREQUENCY ATTENDANCE |
|---|---|---|
| **Shoreline Cleanup Tactics** | • Deployment of protective beach flooding/cold water deluge tactic (CI-SL-2)<br>• Deployment of passive collection/manual removal tactic (CI-SL-3)<br>• Deployment of shoreline cleanup using mechanical recovery (CI-SL-4)<br>• Deployment of shoreline cleanup using manual or vacuum removal (CI-SL-5)<br>• Deployment of shoreline cleanup using passive recovery or vegetative cutting (CI-SL-6)<br>• Debris removal for shoreline cleanup (CI-SL-7)<br>• Purpose and description of shoreline cleanup and debris removal using variety of techniques, personnel and equipment requirements for each tactic, vessel support, and operational considerations<br>• Various Field exercise and discussions (*Field restrictive in some cases*) | Annual<br>• CISPRI Spill Techs<br>• Select IRT(s) |
| **Inland Tactics Dams, Trenches, and Other Blocking Techniques** | • Discussion of berms, dikes and dams (CI-1L-1A and 1B)<br>• Discussion on the Deployment of trenches and slots (CI-IL-2)<br>• Discussion on the deployment of culvert blocking using boom, barriers, or natural materials (CI-IL-3)<br>• Discussion on the construction and use of underflow dams (CI-IL-4)<br>• Purpose and description of inland response tactics that use berms, dams, trenches and other blocking techniques, personnel and equipment requirements for each tactic, shoreline support, and operational considerations<br>• Various Field exercise and discussions (*Field restrictive in some cases*) | Annual<br>• CISPRI Spill Techs<br>• Select IRT(s) |
| **Inland Tactics Booming in Rivers and Streams** | • Deployment of deflection and diversion booming in inland waterways (CI-IL-5)<br>• Deployment of deflection boom in a stream (CI-IL-6)<br>• Deployment of diversion boom in a stream (CI-IL-7)<br>• Deployment of exclusion boom in a river or stream (CI-IL-7)<br>• Purpose and description of inland river and stream booming tactics, personnel and equipment requirements for each tactic, vessel and shoreline support, and operational considerations<br>• Various Field exercise and discussions | As needed<br>• CISPRI Spill Techs<br>• Select IRT(s) |
| **Waste Management** | • Basic Waste management planning and permitting (CI-WM-1)<br>• Liquid waste management, storage, and disposal by RP (CI-WM-2)<br>• Decanting procedures (CI-WM-3)<br>• Various discussions | Annual<br>• All CISPRI Spill Techs<br>• Select IRT(s) |
| **Decontamination** | • Small vessel decontamination procedures (CI-WM-5)<br>• Large vessel decontamination procedures (CI-WM-6)<br>• Decontamination of response equipment (CI-WM-7)<br>• Field exercise<br>• Various discussions | Biennial<br>• All CISPRI Spill Techs<br>• Select IRT(s) |
| **Communications (CI-LP-2)** | • Communications plan discussion and oil spill communications procedures<br>• CISPRI communications resources and networks<br>• Communication frequencies<br>• <½-day course | Annual<br>• All CISPRI Spill Techs<br>• Select IRT(s) |
| **Dispersant Application Tactics** | • Dispersant planning and operations, including application platforms and application ratios<br>• Dispersant application tactic (CI-NM-1)<br>• Environmental and safety considerations<br>• Discussion of Dispersed oil monitoring (CI-NM-2)<br>• Dispersant efficiency compared to other response techniques<br>• Logistical support needs<br>• Familiarization with CISPRI equipment<br>• ½ day training | Biennial<br>• All CISPRI Spill Techs<br>• Select IRT(s) |

| TRAINING COURSE | TRAINING DESCRIPTION & DURATION | FREQUENCY ATTENDANCE |
|---|---|---|
| **Shoreline Tactics SCAT** | • Use of Shoreline Cleanup Assessment Technique (SCAT) forms for shoreline assessment<br>• SCAT survey process, team members, and job aids (CI-SL-1)<br>• Shoreline segmentation and sketch maps<br>• Operational considerations<br>• Familiarization Discussion Only | Case by case as needed<br>Normally contracted to others<br>• Select CISPRI Spill Techs |
| **Tracking and Surveillance** | • Aerial surveillance of oil on water (CI-TS-1)<br>• Plume delineation of oiled snow or land (CI-TS-2)<br>• Mapping and delineation of oiled land, ice and snow (CI-TS-3)<br>• Spill volume estimation (CI-TS-4)<br>• Purpose and description of tracking and surveillance techniques, personnel, aircraft and vessel support, and operational considerations<br>• Job aids and tools for surveillance<br>• Familiarization of CISPRI equipment (Infrared)<br>• Various discussions | Annual<br>• Select CISPRI Spill Techs |
| **In-Situ Burning Tactics** | • In-situ burning planning and operations<br>• Tactic for in-situ burning and residue collection (CI-NM-3)<br>• Burning oiled vegetation (CI-NM-4)<br>• Burning pooled oil (CI-NM-5)<br>• Environmental and safety considerations<br>• In-situ burning efficiency compared to other response techniques<br>• Logistical support needs<br>• Familiarization with CISPRI equipment<br>• ½ day training | Biennial<br>• CISPRI Spill Techs<br>• Select IRT(s) |
| **Wildlife Response and Rehabilitation** | • Overview of Cook Inlet wildlife rescue operations, procedures, and equipment.<br>• Bird hazing tactic (CI-W-1)<br>• Capture and transportation of birds and otters (CI-W-2)<br>• Bird and otter carcass retrieval (CI-W-3)<br>• Bird rehabilitation and release (CI-W-4)<br>• Otter rehabilitation and release (CI-W-5)<br>• Discussion only of above tactics | Case by Case<br>Wildlife Contracted to others |
| **Deployment Exercise** | • Field deployment exercise to ensure that contracted vessels and/or vessels of opportunity are available, can carry and utilize CISPRI response equipment, and are adequately trained (including HAZWOPER) for use in a spill situation<br>• Training conducted in an area remote from Anchorage and Kenai<br>• >1-day exercise | Annual<br>• CISPRI Spill Techs<br>• Select IRT(s) |

A. Required for all CISPRI Spill Technicians and Immediate Response Team Members.
B. IRT's receive Member Company initiated training that is documented at their respective companies.
C. Safety Tactics are frequently included in other training events as a critical portion of the training.

Note: Some training opportunities are weather and/or seasonal dependent

*Intentionally Left Blank*

# APPENDIX F
# BIBLIOGRAPHY

The following table lists, in alphabetical order, key references and resources that were used in developing this manual.

| Reference | Author/ Publisher | Web Address & Description |
|---|---|---|
| Alaska Clean Seas Technical Manual | Alaska Clean Seas | http://www.alaskacleanseas.org/<br>Oil spill response tactics manual developed by oil spill response co-operative on North Slope. |
| Alaska Federal and State Preparedness Plan for Response to Oil and Hazardous Substance Discharges and Releases (Alaska Regional Contingency Plan) and Area Contingency Plans for Arctic and Western Alaska. | Alaska Regional Response Team | http://alaskarrt.org/<br>https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/<br>This is the State/Federal plan that outlines oil spill response procedures and policies for the State of Alaska. It contains substantial reference information including contact information for local, state and federal agencies. Ten subarea plans provide specific information and contacts for the 10 geographic subareas within the state, including local government, interest groups, media outlets, resource lists, logistical information, and environmental sensitivity data. |
| Alaska Geographic Response Information Network (GRIN) | Cook Inlet Regional Citizens' Advisory Council | https://nukaresearch.com/<br>Beta version of computer-based program that can be run from a CD-rom or online to assist responders in identifying logistics, safety, public information, and liaison information and resources for Alaska coastal communities. Data currently limited to Cook Inlet, but may be expanded statewide. |
| Alaska Geographic Response Strategies | Alaska Regional Response Team (as part of Subarea Plans) | https://dec.alaska.gov/spar/ppr/response-resources/grs/cook-inlet<br>Map-based response strategies for pre-identified sensitive areas in most of the Alaska subareas. GRS projects are ongoing and new strategies are regularly added. |
| Alaska Oil Spill Response Permit Tool | Alaska Department of Environmental Conservation | https://dec.alaska.gov/spar/ppr/response-resources/permits-tool/<br>Computer-based program that can be run online to facilitate the process of identifying and filing permit forms required for response activities in Alaska. |
| Alaska Potential Places of Refuge Projects | Alaska Department of Environmental Conservation | https://www.arcgis.com/home/item.html?id=224679b362b9472582e188bcdaba7550<br>Map-based documents identifying potential safe anchorages and places of refuge for vessels in distress or in need of repair. |
| Alaskan Seabird Colony Catalog | USFWS | https://www.fws.gov/r7/mbsp/mbm/northpacificseabirds/colonies/<br>The Beringian Seabird Colony Catalog is a computerized, GIS-based database, maintained by the Division of Migratory Bird Management, U.S. Fish and Wildlife Service, in anchorage, Alaska. It contains the locations and names of seabird breeding colonies in Alaska (AK) and Russia (RU), the species of birds that nest in each colony, and the numbers of each species. The colony number consists of a map number and a site number. Map number (1 - 153) refers to a USGS 1:250,000 quadrangle, which is not the same as official USGS map number. A site number refers to a specific colony and is not duplicated within the quadrangle. The site name is derived from an official name on USGS map, if one exists; otherwise a descriptive name was invented. |

| Reference | Author/ Publisher | Web Address & Description |
|---|---|---|
| Alaska Shoreline Countermeasures Manual | NOAA | NOAA Hazardous Materials Response Division, April 1994. |
| Best Practices for Migratory Bird Care during Oil Spill Responses | USFWS | Best Practices for Migratory Bird Care during Oil Spill Responses, November 2003, by Catherine Berg USFWS |
| CISPRI Sea Otter Rehabilitation Center Technical Manual | Wildlife Rapid Response Team | Information on CISPRI's Sea Otter Rehabilitation Center including diagrams, equipment lists, etc |
| CISPRI SORC TM | ASLC/CISPRI | A reference guide that outlines the basic processing and care procedures to follow in the event of an oil spill response involving oiled sea otters. |
| Cook Inlet Tide and Current Data | NOAA Scientific Support Coordinator | Not available online.<br>Information on water circulation, tides, and tidal currents in Cook Inlet was provided by the NOAA Scientific Support Coordinator and used to develop maps in the RMROL analysis in this manual. |
| Description of Summer and Winter Environmental Conditions within Cook Inlet, Alaska | William G. Nelson, University of Alaska, Anchorage and Dr. John Whitney, NOAA HAZMAT | Provides a description of Summer and Winter environmental conditions within Cook Inlet, Alaska. |
| IBR Oiled Wildlife Rescue & Rehabilitation Manual | IBR | https://www.birdrescue.org/ IBR identifies, stabilizes, and rehabilitates birds. The manual describes their procedures and equipment used for bird rescue & rehabilitation. |
| Oil Spill Response Recovery System for Ice Infested Waters | Alaska Department of Environmental Conservation | Report on ice recovery in ice infested waters, that includes the Foxtail skimming systems. |
| In-Situ Burning Guidelines for Alaska | Alaska Department of Environmental Conservation | https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/#nogo<br>Guidelines for conducting and monitoring in-situ burning operations in Alaska. |
| Marine Ice Atlas for Cook Inlet, Alaska | NOAA | https://apps.dtic.mil/sti/pdfs/ADA392126.pdf |
| NIMS ICS Forms | FEMA | http://www.training.fema.gov/<br>http://www.training.fema.gov/emiweb/is/icsresource/icsforms.htm<br>all NIMS-ICS Forms in PDF and Word formats. |
| NOAA ICS Forms | NOAA | https://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/electronic-incident-command-system-ics-forms<br>Copies of NOAA ICS forms in Filemaker Pro database. |
| NOAA Spill Tools | NOAA Hazmat | http://response.restoration.noaa.gov/<br>Spill Tools is a set of three programs designed for oil spill planners and responders: the Mechanical Equipment Calculator, the In-situ Burn Calculator, and the Dispersant Mission Planner. |

| Reference | Author/ Publisher | Web Address & Description |
|---|---|---|
| Sensitive Area Map Series | Alaska State Geospatial Data Clearinghouse – data/maps compiled from multiple agencies & sources | https://dec.alaska.gov/media/17900/ak-sensitive-areas-compendium.pdf<br>https://dec.alaska.gov/spar/ppr/contingency-plans/response-plans/tools/<br>Map series for each subarea providing information regarding environmental sensitivities: aquatic farm locations; Environmental Sensitivity Index (ESI) maps; GRS maps (same as ADEC website); land management maps; Most Environmentally Sensitive Areas (MESA) maps; rare plant maps; public access atlases; seabird maps; Steller sea lion maps; state land plat record maps; State Parks maps; and USFWS wetlands maps. |
| SERVS Technical Manual | Alyeska/SERVS | Not available online.<br>Oil spill response tactics manual developed by oil spill response co-operative for Prince William Sound. |
| Shoreline Assessment Job Aid | NOAA | NOAA Ocean Services, Office of Response & Restoration, Hazardous Materials Response Division (Sept 2002). |
| Shoreline Assessment Manual | NOAA | Third Edition, Office of Response & Restoration Hazardous Materials Response Division, National Oceanic & Atmospheric Administration (NOAA) Report No. HAZMAT 2000-1 (Aug 2000). |
| Shoreline Assessment Manual | Michel, J. and I. Byron and NOAA | Hazardous Materials Response and Assessment Division, National Ocean Service, National Oceanic & Atmospheric Administration, Report No. HAZMAT 97-4 (1997). |
| SMART Protocol | NOAA Spill Tools | http://response.restoration.noaa.gov/smart<br>Protocols and job aids for use in Special Monitoring of Applied Response Technologies for dispersant and in-situ burning applications. |
| Spill Tactics for Alaska Responders (STAR) Manual | Alaska Department of Environmental Conservation | https://dec.alaska.gov/spar/ppr/response-resources/star-manual/<br>Tactics manual describing mechanical and non-mechanical response techniques and methods for spills to water, land, and ice. |
| USCG Homeport Website | USCG | https://homeport.uscg.mil/<br>USCG ICS forms in Word and pdf formats. |

*Intentionally Left Blank*