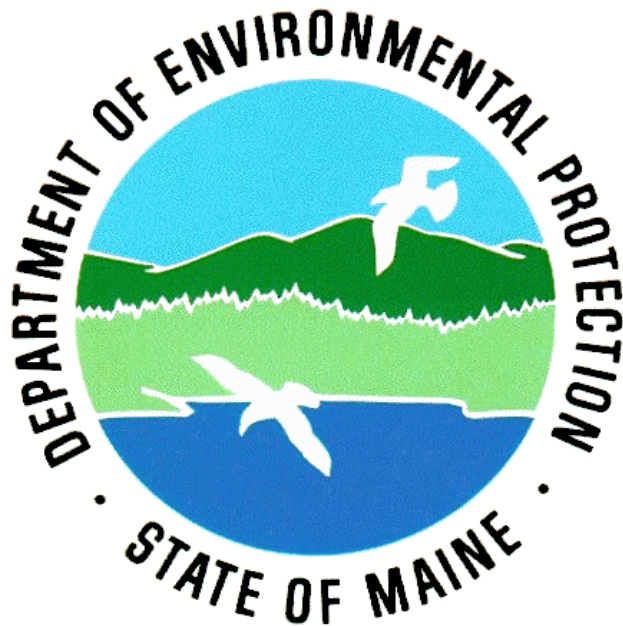


Maine Department
of
Environmental Protection

Marine Oil Spill
Contingency Plan





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LETTER OF PROMULGATION

The Marine Oil Spill Contingency Plan was developed according to 38 M.R.S. § 546-A. The plan provides a mechanism for coordinating response to oil spills along the coast of Maine, and is in effect as of the date below. The Department of Environmental Protection Division of Response Services reviews and updates this plan at least annually. Substantial plan revisions will solicit public comment and be accompanied by a renewed Letter of Promulgation. Comments or suggestions regarding the plan may be submitted at any time and sent to:

Director, Division of Response Services
Bureau of Remediation and Waste Management
Department of Environmental Protection
17 State House Station
Augusta, ME 04333-0017

Originally promulgated December 11, 1992 and signed by Dean C. Marriott,
Commissioner Department of Environmental Protection

Replaced

November 27, 2020


Melanie Loyzim, Acting Commissioner
Department of Environmental Protection



1. INTRODUCTION

1.1. BACKGROUND

In 1990, the Maine Legislature established a Commission to study Maine's Oil Spill Clean-Up Preparedness. The Commission's charge was to review and make changes to the State's response capacity for worst-case scenario oil spill prevention strategies, and Maine's regulatory and statutory framework for prevention, planning and response to marine oil spills. [Recommendations of the Commission](#) included increasing oil spill planning and response efforts by the Maine Department of Environmental Protection (DEP) and other state agencies, especially concerning oil spill response planning for the protection of sensitive areas and the use of mitigation measures. In addition, the Commission suggested the development of various scenarios, including worst-case scenarios, and the responses to be taken under these scenarios for inclusion in a State marine oil spill contingency plan. The development of the Marine Oil Spill Contingency Plan is a result of the Commission's recommendations, which were adopted in 1991.

1.2. PURPOSE

The purpose of the Marine Oil Spill Contingency Plan is to coordinate the State's response to marine oil spills by establishing requirements and procedures for the notification for, assessment of and response to releases or threats of a release of oil. This plan sets forth the roles and responsibilities of the DEP, potentially responsible parties, governmental agencies, and the public in response actions.

While the development of this plan is mandated by [38 M.R.S. §546-A](#), this plan is not a rule and is not intended, by itself, to create or affect the legal rights of persons under Maine law. In the event of a conflict between this plan and any applicable statute or rule, the statute or rule is controlling.

The focus of the DEP is on four key areas of oil spill response:

Prevention. Prevention is the most effective oil spill response strategy. The goal of the DEP is to prepare for an oil spill by planning for its prevention. While this plan does not specifically address prevention, the DEP is actively engaged in measures such as safe product handling education, review of facility response plans and a home heating oil storage tank replacement program.

Preparedness. The DEP provides on-going specialized training and drills to ensure its emergency response personnel are able to respond to marine emergency incidents in an effective and efficient manner. This plan will ensure that state personnel involved in



emergency operations are aware of their roles and the responsibilities of other governmental agencies and the responsible party in emergency operations.

Timely Response. This plan encourages efficient and coordinated response to marine oil spills among the various state agencies involved, and coordination of state actions with federal and local officials and the responsible party in order to minimize damage from a marine oil spill.

Restoration and Disposal. The DEP will ensure that best available technology is used to mitigate damages or restore damaged areas. In addition, the DEP will ensure that all recovered petroleum products and contaminated materials are disposed of according to applicable environmental regulations.

1.3. AUTHORITY

The Marine Oil Spill Contingency Plan is required by 38 M.R.S. § 546-A.

1.4. SCOPE

The Marine Oil Spill Contingency Plan is in effect for the discharge of oil to all coastal waters (as defined by [38 M.R.S. § 542\(3-A\)](#)), estuaries, tidal areas, beaches and lands adjoining the coast of Maine.

1.5. ABBREVIATIONS

ACP	Area Contingency Plan
CONOP	Concept of Operations Plan
DACF	Department of Agriculture, Conservation and Forestry
DEP	Department of Environmental Protection
DMR	Department of Marine Resources
DOI	U.S. Department of Interior
EPA	U.S. Environmental Protection Agency
ERP	Maine DEP Emergency Response Plan
ESI	Environmental Sensitivity Index
EVI	Environmental Vulnerability Index
FEMA	Federal Emergency Management Agency
FOSC	Federal On-Scene Coordinator
GIS	Geographic Information System
GRS	Geographic Response Strategy
ICS	Incident Command System
IF&W	Department of Inland Fisheries and Wildlife
JIC	Joint Information Center



JRT	Joint Response Team
MEMA	Maine Emergency Management Agency
MSCommNet	Maine State Communication Network
MSRC	Marine Spill Response Corporation
NCP	National Oil and Hazardous Substances Pollution Contingency Plan ("National Contingency Plan")
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration
NRC	National Response Corporation / National Response Center
NRP	National Response Plan
NRS	National Response System
OPA 90	Oil Pollution Act of 1990
OSHA	Occupational Safety and Health Administration
OSRO	Oil Spill Response Organization
PIO	Public Information Officer
PRP	Potential Responsible Party
RCP	Regional Contingency Plan
RP	Responsible Party
RRT	Regional Response Team
SONS	Spill of National Significance
SOSC	State On-Scene Coordinator / State Oil Spill Coordinator
SSO	Site Safety Officer
UC	Unified Command
USCG	U.S. Coast Guard
USF&WS	U.S. Fish and Wildlife Service

1.6. SCHEDULE FOR AMENDMENT

Pursuant to [38 M.R.S. §546-A\(5\)](#), DEP shall at least annually review and make recommendations to revise this plan and shall notify all oil terminal licensees and interested parties requesting to be notified of any substantial changes to the plan. The DEP intends to notify interested parties by delivering notice through the Subscriptions.Maine.gov service to those persons who have checked the Maine DEP topic "Opportunity for Comment" at <https://www.maine.gov/portal/subscriptions/email.html>. Interested parties may also request to be notified by contacting the Director of the Division of Response Services, Bureau of Remediation and Waste Management, Maine DEP, SHS 17, Augusta, ME

1.7. OTHER CONTINGENCY PLANS

It is acknowledged that many other contingency plans have been developed. Existing contingency plans affecting Maine include the Maine DEP Division of Response Services Emergency Response Plan, the National Oil and Hazardous Substances Pollution



Contingency Plan (also known as the [National Contingency Plan](#), prepared by the National Response Team), the [Regional Oil and Hazardous Substances Pollution Contingency Plan](#) (prepared by the Regional Response Team, Region I), the [Maine and New Hampshire Area Contingency Plan](#) (prepared by the Maine and New Hampshire Area Committee), and the [Canada-United States Joint Marine Pollution Contingency Plan - Atlantic Annex](#) (CANUSLANT) plan prepared by the U.S. Coast Guard and the Canadian Coast Guard to cover the Atlantic boundary between Canada and the United States. In addition, there are contingency plans prepared by vessels and terminal facilities as outlined in [§300.211](#) of the National Contingency Plan, as well as those prepared by other state and local agencies having responsibility over the spill area.

This Marine Oil Spill Contingency Plan does not supersede any plan prepared by another entity. It is intended to be a comprehensive State contingency plan for response to oil spills along the Maine coast, and will be coordinated with other contingency plans, primarily the Maine and New Hampshire Area Contingency Plan.



2. NOTIFICATION OF SPILLS

2.1. DEP NOTIFICATION

Discharges of oil into or upon any coastal waters, estuaries, tidal flats, beaches and lands adjoining the seacoast of the State, or into or upon any lake, pond, river, stream, sewer, surface water drainage, ground water or other waters of the State or any public or private water supply or onto lands adjacent to, on, or over such waters of the State is prohibited ([38 M.R.S. §543](#)).

Generally, oil discharges reported in accordance with state law to the DEP are not subject to fines or civil penalties if: (1) the notification to DEP is made within two (2) hours of the incident, (2) the discharge is promptly removed in accordance with the rules and orders of the Board of Environmental Protection or DEP Commissioner and (3) proper reimbursement is made for any disbursement made from the Maine Ground and Surface Waters Clean-up and Response Fund within 30 days of demand ([38 M.R.S. §550](#)).

Certain types of facilities subject to DEP rules have specific oil discharge reporting obligations. Facilities subject to the Oil Discharge Prevention and Pollution Control Rules for Marine Oil Terminals, Transportation Pipelines and Vessels ([Chapter 600](#)) must report oil discharges to DEP as soon as practicable but within two (2) hours and must make written reports.

Evidence of a possible leak or discharge of oil from facilities subject to the Rules for Underground Oil Storage Facilities ([Chapter 691](#)) must be reported to DEP within 24 hours of discovery, except for discharges of 10 gallons of oil or less if certain requirements set forth in Section 12(A)(2) of that chapter are met. Oil discharges from rail tank cars subject to the Oil Discharge Prevention and Pollution Control Rules for Rail Tank Cars ([Chapter 696](#)) must be reported to DEP as soon as practicable but within two (2) hours.

Oil discharges from aboveground flammable liquid storage facilities subject to the State Fire Marshal Office's Rules and Regulations for Flammable and Combustible Liquids ([Chapter 34](#)) must be reported to the DEP within two (2) hours.

To Report an Oil Spill to [DEP \(24 hrs\)](#): (800) 482-0777

2.2. FEDERAL NOTIFICATION

The National Response Center (NRC), operated by the U.S. Coast Guard, is the federal agency to be notified immediately in the event of a spill, and maintains a 24-hour toll free



number for notification of oil and chemical spills. The NRC will notify the appropriate pre-designated Federal On-Scene coordinator of the reported spill.

Any person in charge of a vessel or of an onshore or offshore facility is required to immediately notify the NRC as soon as he or she has knowledge of any discharge of oil from such vessel or facility ([40 CFR §110.3](#)).

To Report an Oil Spill to NRC: (800) 424-8802

2.3. INFORMATION REQUIRED AT NOTIFICATION

In the event of an oil spill, the following information should be provided to the DEP:

- Date and time spill occurred or was first noticed;
- Name and telephone number of person making report;
- Name of spiller and company name, address, and telephone number (if applicable);
- Name and telephone number of other informed party or parties;
- Type of product alleged spilled;
- Estimate of total volume spilled;
- Whether or not more spillage is possible, and if so, estimate the amount and duration;
- Resources at risk;
- Location of spill; and
- Specific directions to the site.

2.4. DEP NOTIFICATIONS

In the event of a marine oil spill, the DEP may notify the following agencies depending on the size and location of the spill. (Federal and Canadian agencies are notified by the U.S. Coast Guard, which is notified by the National Response Center.)

Department of Agriculture, Conservation and Forestry,
Bureau of Parks and Lands (207) 287-4960

Department of Inland Fisheries and Wildlife
Dr. Don Katnik, Oil Spill Biologist (207) 941-4455

Department of Marine Resources
Bill DeVoe, Marine Resource Scientist (207) 592-7084
Oil spill response on call (207) 200-1252
Governor's Office (207) 287-2531



SECTION 2: NOTIFICATION OF SPILLS

Maine Center for Disease Control and Prevention, Public Health Emergency Preparedness	(207) 287-5182
Maine Emergency Management Agency MEMA Duty Officer	(800) 452-8735
Maine Historic Preservation Commission Dr. Art Spiess, Chief Historic Preservationist	(207) 287-2132 Ext. 4
Maine State Police Augusta Dispatch	(800) 452-4664
New Hampshire Department of Environmental Services Spill Response & Complaint Investigation Section	(603) 271-3899; (603) 223-4381 after hours



3. RESPONSE MANAGEMENT STRUCTURE

3.1. NATIONAL CONTINGENCY PLAN

Maine DEP, as well as most agencies, manages responses based on national guidance. The [National Oil and Hazardous Substances Pollution Contingency Plan](#) (40 CFR 300), also called the National Contingency Plan (NCP) was developed in 1968 in response to the *Torrey Canyon* oil spill. The NCP, as amended by the [Clean Water Act](#) (1972) and the Oil Pollution Act of 1990 ([OPA 90](#)), specifies responsibilities for response actions among federal, state and local governments and describes resources available for response. The NCP establishes criteria for state, local and regional oil removal contingency plans, and requires that these plans be consistent with the National Contingency Plan. Local planning is done through Area Committees. Maine is part of the [Maine and New Hampshire Area Committee](#), which is headed by the U.S. Coast Guard, Sector Northern New England.

3.1.1. NATIONAL RESPONSE SYSTEM

The NCP also established a National Response System (NRS) for implementation of the plan, comprised of a National Response Team (NRT), Regional Response Teams (RRTs) and Special Teams and related support agencies. The basic framework for the response management structure is a system (e.g. a unified command system) that brings together the functions of the federal government, the state government and the responsible party to achieve an effective and efficient response where the On-Scene Coordinator maintains authority.

3.1.1.1. ON-SCENE COORDINATOR

The On-Scene Coordinator (for marine oil spills) means the federal official predesignated by the U.S. Coast Guard (Federal On-Scene Coordinator or FOSC) or state official predesignated by the Commissioner of DEP for the State of Maine (State On-Scene Coordinator or SOSOC) to coordinate or direct spill response activities under the NCP.

3.1.1.2. NATIONAL RESPONSE TEAM

The [National Response Team](#) coordinates a program of preparedness planning and response at the national level, facilitates research to improve response activities and provides guidance to Regional Response Teams. The NRT is composed of representatives of 15 federal agencies, including the U.S. Coast Guard, the Environmental Protection Agency and the Department of the Interior.



3.1.1.3. REGIONAL RESPONSE TEAM

The [Regional Response Team](#) consists of a standing team made up of representatives of each federal agency that is a member of the NRT, as well as state and local government representatives. The RRT must make decisions regarding the use of dispersants, in situ burning, bioremediation and the assignment of regional, national and international resources to the response.

3.1.1.4. TRUSTEES FOR NATURAL RESOURCES

Under the Oil Pollution Act of 1990 ([33 U.S.C. §2706](#)), a Federal Trustee of Natural Resources is an official of the federal government who is designated to act on behalf of the public to present claims for and to recover damages to natural resources related to discharges of oil. The National Contingency Plan contains the federal designations, which include the Secretary of Commerce, Secretary of Interior and others in certain circumstances.

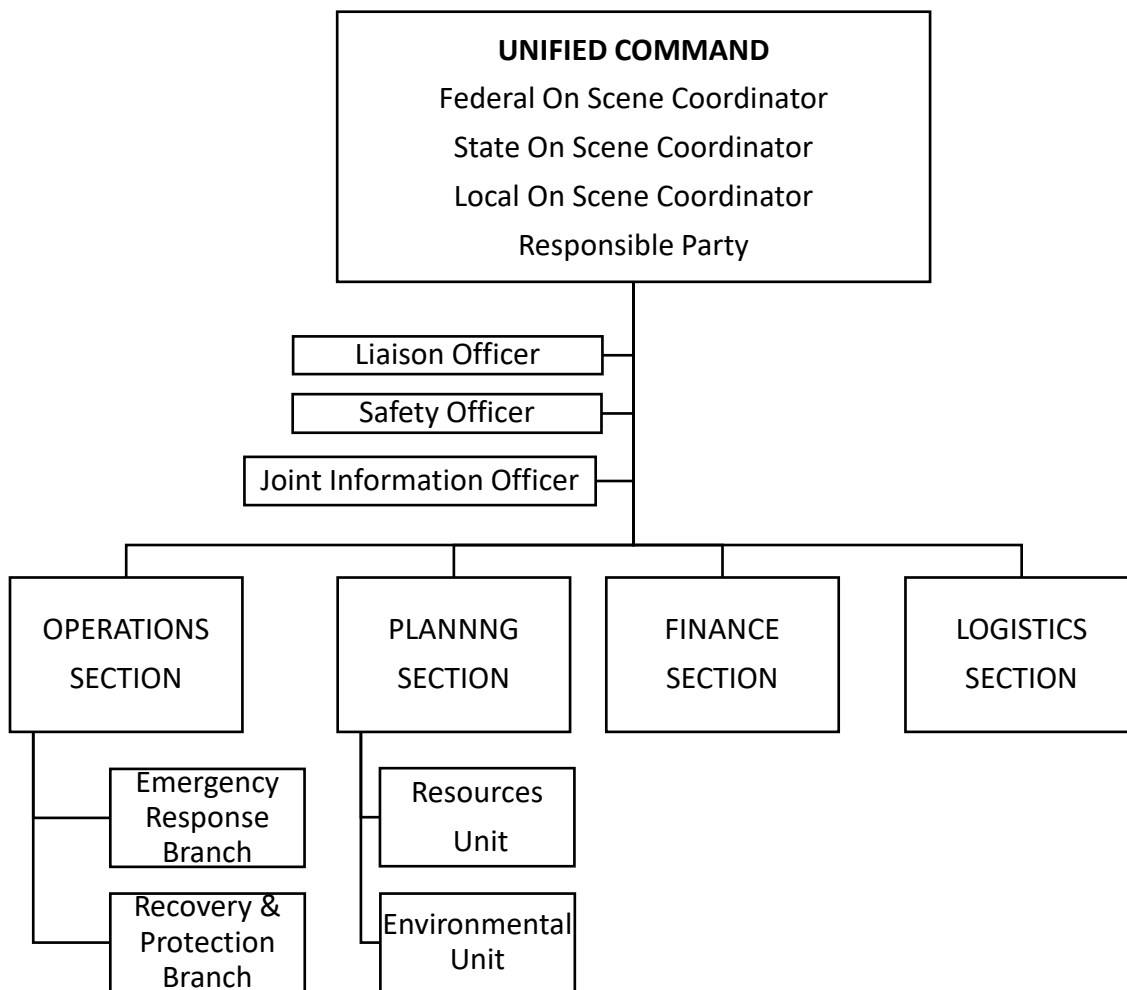
Also under [OPA 90](#), a State Trustee of Natural Resources is an official of state government who is designated by the governor of the state to act on behalf of the public to present claims for and to recover damages to natural resources related to discharges of oil. In Maine, the Governor has designated the Commissioner of the Department of Environmental Protection to act as lead trustee. The Governor has also designated the Commissioners of the Departments of Inland Fisheries and Wildlife, Marine Resources and Agriculture, Conservation and Forestry as trustees.

3.2. INCIDENT COMMAND SYSTEM / UNIFIED COMMAND

The [Incident Command System](#) (ICS) was developed in the 1970s to manage wildfires and consists of a standard management hierarchy and procedures for managing temporary incidents of any size. ICS includes procedures to control funds, personnel, facilities, equipment and communications. ICS became a national model for command structures at a fire, crime scene or major incident. Large marine oil spills are often managed with a Unified Command, an authority structure in which the role of incident commander is shared by two or more individuals, each already having authority in a different responding agency or representing a responsible party. Figure 4-1 identifies the major roles in ICS for a marine oil spill response.



FIGURE 3.1: KEY OIL SPILL ICS ROLES



At a large incident, some time will be required before the complete system is operational. In a catastrophic spill event, or Spill of National Significance (SONS) there may be multiple Unified Commands reporting to one or more Area Commands who may report to a National Incident Command. In addition to the SOSOC, DEP staff may fill a variety of roles as required. This will vary with the severity of the release. Maine DEP Response staff all receive ICS training. The [Area Contingency Plan](#) includes greater detail regarding positions, roles, planning strategies and responsibilities within ICS.



3.3. NATIONAL INCIDENT MANAGEMENT SYSTEM

The Incident Command System is a key feature of the [National Incident Management System](#) (NIMS), which was developed by the U.S. Department of Homeland Security in response to terrorist attacks on the World Trade Center in 2001. NIMS was mandated by Homeland Security Presidential directive ([HSPD-5](#)) in 2003 to enhance collaboration and improve standardization in response to incidents by establishing a single, comprehensive national management system that would be applicable across a full spectrum of potential incidents, hazards and impacts. As a program of the Federal Emergency Management Agency, NIMS is applicable to emergencies of all types such as terrorist acts and natural disasters as well as oil spills. NIMS was designated as the basis for all incident management in the State of Maine by Governor Baldacci on October 4, 2005 via [Executive Order No. 07 FY 06/07](#). Maine DEP will use the National Incident Management System (NIMS) to coordinate response to oil and hazardous material releases



4. ROLES AND RESPONSIBILITIES

4.1. DEPARTMENT OF ENVIRONMENTAL PROTECTION / STATE ON SCENE COORDINATOR

In the event of an oil spill to coastal waters, the Commissioner of the Department of Environmental Protection will directly represent the Governor in all direct abatement, clean-up and resource protection activities in coordination with federal, industry, and other state's response teams. As the State Oil Spill Coordinator, the Director of the [DEP Division of Response Services](#) acts as the Commissioner's representative during spill response activities and is responsible for making any policy decisions relating to spill response. The Division Director is also the State On-Scene Coordinator (SOSC) under the Incident Command System. The SOSC will work with the Federal On-Scene Coordinator (FOSC) and the responsible party (RP) following the National Incident Management System. DEP staff will work with federal, state, and local representatives, as well as the responsible party, to ensure an adequate and timely response. In the event a responsible party does not respond to a spill or is not responding to the satisfaction of the DEP, the DEP may, in consultation with federal authorities, initiate and direct all actions necessary to respond to the incident.

The Governor of Maine has appointed the Commissioner of DEP as the lead state trustee for natural resources. [38 M.R.S. §552](#) establishes that anyone suffering a prohibited discharge as outlined in [38 M.R.S. §543](#) is liable to the State of Maine for all disbursements or other damage incurred by the State, including damage for injury to, destruction of, loss of, or loss of use of natural resources. The DEP will consult with the other state trustees of natural resources (Commissioners or their designees of the Departments of Inland Fisheries & Wildlife, Marine Resources and Agriculture, Conservation and Forestry) in determining and quantifying injury to State natural resources as a result of a spill. The DEP, in consultation with the other State Trustees of Natural Resources, will oversee the development and implementation of plans for the assessment of injuries and damages, and the restoration, rehabilitation, or replacement of natural resources. as authorized under state and federal law. ([33 U.S.C. §2706](#) and [38 M.R.S. §552](#)).

DEP's Division of Response Services maintains trained personnel, vessels and equipment in each of its regional offices in Portland, Augusta and Bangor for response to near-shore marine oil spills. The Division's intent is to remain trained and prepared to mitigate small to medium spills by maintaining the ability to deploy pre-planned booming strategies or other response measures as a first line of defense for marine oil spills.



4.1.1. ADDITIONAL DEP SUPPORT

Other program bureaus and support divisions within the [DEP](#) have specific responsibilities in the event of a marine oil spill.

4.1.1.1. BUREAU OF REMEDIATION AND WASTE MANAGEMENT

Staff of the Division of Materials Management within the Bureau of Remediation and Waste Management will provide guidance on proper treatment, storage and disposal of oil, oil-contaminated debris and hazardous materials. The Division of Petroleum Management will coordinate natural resource damage assessment and recovery. Additional staff within the Division of Response Services will provide Geographic Information System (GIS) support in the form of base maps, situation maps and the locations and identification of sensitive environmental resources in the affected areas.

4.1.1.2. BUREAU OF WATER QUALITY

Staff of the Division of Environmental Assessment within the Bureau of Water Quality are responsible for monitoring and assessing the health of Maine's waters, both fresh and marine. The Division can supply baseline data on the pre-spill status of state waters and may assist in the assessment of damages to natural resources.

4.1.1.3. BUREAU OF AIR QUALITY

Staff will provide field personnel and equipment when requested by the SOSC for monitoring air emissions and provide guidance to responders if in-situ burning is being considered as a response action.

4.1.1.4. OFFICE OF THE COMMISSIONER

In addition to the Commissioner's specific roles as outlined above, the Commissioner's Office coordinates all departmental issues. Staff in this office fill several functions including the role of Public Information Officer (PIO), cost recovery and maintaining the Department Continuation of Operations Planning (COOP) which outlines how critical functions will be accomplished in an emergency.



4.2. OTHER STATE AGENCIES

Many state agencies will be available to provide valuable assistance in the event of a marine oil spill. The degree of participation by each agency will vary depending on the size and location of a spill. All of the agencies listed below perform similar responsibilities, such as providing expertise in their representative fields and making agency resources available during an incident. In addition, these agencies provide specific support for marine oil spills as described below.

4.2.1. DEPARTMENT OF INLAND FISHERIES AND WILDLIFE

The [Department of Inland Fisheries and Wildlife](#) (IF&W) will assist in the identification of sensitive areas and resources in the marine environment that may be threatened by oil spills, and in the development of protection priorities for these areas and resources. IF&W will coordinate all activities related to implementation of the wildlife rehabilitation plan, including the issuance of state permits to handle oiled birds and the use of rehabilitators or trained volunteers. IF&W will monitor and determine the extent of damage to birds and mammals due to oil spills. IF&W is designated by the Governor as a State Trustee of Natural Resources under the Oil Pollution Act of 1990 for non-marine fish and wildlife.

4.2.2. DEPARTMENT OF MARINE RESOURCES

The [Department of Marine Resources](#) (DMR) will monitor and assess damage to the marine environment due to oil spills and will be available to provide assistance in delineating important habitat areas for priority protection and clean-up. DMR will also assist in notifying lobster pounds, local fishermen, aquaculturists, and seafood processing facilities of the potential damage to their catch and equipment if not relocated, and in notifying marinas to relocate boats at anchor if possible. DMR will assess the need for fishery closures and impose limitations on harvesting activities if necessary. DMR is designated by the Governor as the State Trustee of Natural Resources under the Oil Pollution Act of 1990 for marine fish and other marine resources..

4.2.3. DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY

The [Department of Agriculture, Conservation and Forestry](#) has been designated by the Governor as the State Trustee of Natural Resources under the Oil Pollution Act of 1990 for state lands, parks, and preserves. The Maine Geological Survey



will provide scientific support in evaluating seafloor geology and coastal shoreline types and hazards, including impacts to beaches and sand dune systems.

4.2.4. MAINE EMERGENCY MANAGEMENT AGENCY

The [Maine Emergency Management Agency](#) (MEMA) is responsible for carrying out a program for emergency preparedness, including coordination of the activities of all organizations for emergency preparedness within the state. This includes a broad range of functions, such as firefighting, police, medical and health services, emergency welfare, rescue, engineering, evacuation and transportation. Unlike other declared emergencies, marine oil spill clean-up activities are directed by the DEP and do not fall under MEMA authority.

4.2.5. GOVERNOR'S OFFICE

In the event of a disaster or civil emergency beyond local control, the Governor may assume direct operational control over all or any part of the emergency preparedness and public safety functions within the state in accordance with [37-B M.R.S. §742](#). If the disaster is a major oil spill along the coast of Maine, an oil spill emergency proclamation may be issued by the Governor. In the event of an oil spill emergency, the Commissioner of DEP shall represent the Governor in all direct abatement, clean-up and resource protection activities in coordination with federal, industry and other states' response teams as outlined in [38 M.R.S. §547](#). The Governor may also make, amend and rescind the necessary orders, rules and regulations to carry out this subchapter within the limits of authority conferred upon him and not inconsistent with the rules, regulations and directives of the President of the United States or of any federal department or agency having specifically authorized emergency functions.

4.2.6. MAINE HISTORIC PRESERVATION COMMISSION

The [Maine Historic Preservation Commission](#) will assist the SOSOC in the identification of sensitive coastline segments that contain or may contain significant historical or archaeological sites, and in protection priorities and clean-up recommendation for sensitive coastline segments. The Maine Historic Preservation Commission will assist in federal agency responsibilities for protecting historic resources under Section 106 of the National Historic Preservation Act during a major oil spill clean-up.



4.3. NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES

The DEP will coordinate spill response efforts with the [New Hampshire Department of Environmental Services](#) for those spills with the potential to affect both states. Maine and New Hampshire have had a long-standing informal agreement to provide mutual aid in the event of a coastal oil spill. Maine and New Hampshire have formed an Area Committee in accordance with the Oil Pollution Act of 1990. This committee is comprised of federal, state, and local officials whose responsibility is to prepare the Area Contingency Plan.

4.4. REGIONAL RESPONSE TEAM

The [Regional Response Team](#) (RRT) is composed of representatives of both federal agencies and the states in the region. The federal agency members include the Coast Guard, Department of Agriculture, Department of Commerce, Department of Defense, Department of Energy, Department of Health and Human Services, Department of the Interior, Department of Justice, Department of Labor, Department of Transportation, Environmental Protection Agency, Federal Emergency Management Agency, General Services Administration, and Nuclear Regulatory Commission. The state members of the Region I Regional Response Team include Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont. Maine's representative on the Regional Response Team is the Director of the Division of Response Services of the DEP Bureau of Remediation and Waste Management.

The RRT was formed to perform regional planning and coordination of preparedness and response actions. The RRT provides a regional mechanism for the development and coordination of assistance and advice to the Federal On-Scene Coordinator during response actions. The RRT must approve the use of dispersants and bioremediation as response tools.

4.5. FEDERAL ON-SCENE COORDINATOR

Authority to evaluate, coordinate and direct clean-up of oil and hazardous material spills lies with either the U.S. Environmental Protection Agency or the U.S. Coast Guard. Under the National Contingency Plan, the U.S. Coast Guard is responsible for designating the Federal On-Scene Coordinator (FOSC) for coastal waters while EPA is responsible for designating the FOSC for inland waters. Jurisdictional boundaries for each agency are shown in the Maine and New Hampshire Area Contingency Plan. If a spill affects two or more areas, the RRT will designate the FOSC.

The Commanding Officer at the U.S. Coast Guard Sector Northern New England in South Portland is the pre-designated FOSC responsible for evaluating and directing spill response efforts in the event of a marine oil spill along the coast of Maine. The FOSC, in consultation with federal and state officials and the responsible party, will ensure



adequate response efforts are undertaken and will investigate the circumstances surrounding the spill.

4.6. FEDERAL AGENCIES

It is the policy of the State of Maine that all emergency management and homeland security functions be coordinated to the maximum extent with the comparable functions of the Federal Government, including its various departments and agencies (37-B M.R.S. §702). In accordance with the National Oil and Hazardous Substances Contingency Plan, various federal agencies may be called upon to provide assistance in their respective areas of expertise. The agencies listed below are the primary agencies expected to play a role in response activities.

4.6.1. THE NATIONAL RESPONSE CENTER

The [National Response Center](#) (NRC) is operated by the U.S. Coast Guard for a wide variety of federal agencies, including the U.S. Coast Guard, the U.S. Environmental Protection Agency, and the U.S. Department of Transportation. The National Response Center has been designated as the agency to be notified immediately in the event of an oil spill that could reach navigable waters. It is located in Washington, D.C., and maintains a 24-hour toll-free number (800/424-8802) for notification of oil and chemical spills. The National Response Center notifies the appropriate pre-designated Federal On-Scene Coordinator and other agencies, including Maine DEP, upon request.

4.6.2. U.S. COAST GUARD

The [U.S. Coast Guard](#) is the pre-designated Federal On-Scene Coordinator for spills occurring in coastal waters. The U.S. Coast Guard is prepared to act during spills with a nucleus of manpower available 24 hours a day, and may provide backup personnel, equipment, and sophisticated communications gear for large spills. All assets of the U.S. Coast Guard in Maine are directly coordinated by the [U.S. Coast Guard Sector Northern New England](#) in South Portland, which maintains an Incident Management Team for response to discharges of oil and hazardous materials

4.6.3. U.S. ENVIRONMENTAL PROTECTION AGENCY

The [U.S. Environmental Protection Agency](#) (EPA) is designated by federal statute as one of the governmental agencies taking a major responsibility for oil spill matters. EPA has the authority to act as the Federal On-Scene Coordinator for inland spills, and to act as a pollution consultant to the U.S. Coast Guard for spills in coastal waters. Each EPA region has a pre-designated response team ready to



act when an oil spill occurs. [The EPA Emergency Response Section](#) maintains a product schedule of dispersant and other chemical countermeasures that have been accepted for use on oil spills. EPA personnel will be able to provide information on specific chemical countermeasures and where they might be sourced.

4.6.4. NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

The [National Oceanic and Atmospheric Administration](#) (NOAA) provides support with respect to marine resources such as meteorological, hydrological, ice and oceanographic data for marine, coastal, and certain inland waters; tide and current information; charts and maps; and satellite imagery. The [NOAA Scientific Support Coordinator](#) works closely with the U.S. Coast Guard to provide scientific information needed to respond to an incident. NOAA assesses damages, presents claims, and develops and implements restoration or replacement plans for those areas where they serve as the Federal Trustee of Natural Resources. The [National Marine Fisheries Service](#) (part of NOAA) has overall responsibility for marine mammals.

4.6.5. U.S. DEPARTMENT OF INTERIOR

The [US Department of Interior](#) (DOI) is a Federal Trustee of Natural Resources, and is a member of both the Regional Response Team and the Joint Response Team. Along the coast of Maine, DOI is the trustee for a number of natural, cultural and recreational resources which fall under the responsibility of the National Park Service, the Bureau of Indian Affairs, and the U.S. Fish and Wildlife Service (USF&WS).

4.7. JOINT RESPONSE TEAM

The [Joint Response Team](#) is composed of members of the Regional Response Team and their counterparts in Canada. The Joint Response Team performs the same role as the Regional Response Team, but at an international level. The [Canada-United States Joint Marine Pollution Contingency Plan – Atlantic Regional Annex](#) (CANUSLANT) provides a framework for cooperation in response to pollution incidents that pose a significant threat to the coastal areas of both countries, or for incidents that are so large as to justify a call on the other for assistance. Invocation of the plan could result in the establishment of a Joint incident command post or separate incident command posts at an appropriate location(s) in the United States or Canada. The CANUSLANT plan is coordinated out of the First Coast Guard District in Boston, MA. Maine is a member of the Joint Response Team and as such will participate in any decisions made regarding spill response activities affecting the state of Maine.



4.8. LOCAL GOVERNMENT

Local fire and police departments may be involved in the response to an oil spill as they are often the first responders. It is anticipated local government will continue to participate in spill response even after the state and federal officials have arrived on-scene. Local fire personnel may assist by controlling the spill scene in the event of fire or explosion hazard. Local police may assist by providing crowd and traffic control, and escort for clean-up vehicles.

4.9. RESPONSIBLE PARTY

Vessels transporting oil and terminals handling petroleum products are required by OPA 90 to develop oil spill contingency plans for various spill scenarios and to have resources as necessary to respond to spills. In Maine, terminals are also liable for carriers destined for their facilities from the time the carrier enters state waters until such time as the carrier leaves state waters ([38 M.R.S. §552](#)). In the event of a spill, the responsible party (RP) is required to invoke its plan and is expected to handle response operations. It is expected the RP will lead the spill response efforts for most spills. Many industry representatives have undergone lengthy response training and are capable of taking the lead in response to an oil spill. One exception is the role of the Environmental Unit Leader when an incident command post is established, which should be filled by a state or federal natural resource agency representative. Many companies have pre-designated contractors who will represent these companies during an oil spill. If a RP does not respond to a spill, or is not responding to the satisfaction of the SOS, the SOS may, in consultation with the Federal On-Scene Coordinator, initiate and direct all actions necessary to respond to the incident. The RP is liable for all costs incurred as a result of the spill.

In almost all larger spills, a Spill Management Team contracted by the RP will arrive from out-of-town which involves an inherent logistical delay. Additionally, it is reasonable to expect that many members of the contract team will be essentially unfamiliar with the local port and environmental conditions. Additional time may be necessary after their on-scene arrival to familiarize themselves with local issues prior to assuming any responsibilities. It is not unreasonable to expect that 18-24 hours will elapse before any elements of a RP's SMT will be in place and able to contribute to the spill response effort. During this most critical time in a spill response, it is essential that all available resources be effectively utilized to promptly mitigate the effects of the spill.

4.10. OIL SPILL RESPONSE ORGANIZATIONS AND COOPERATIVES

Private oil spill response organizations provide a coordinated approach to the prevention and clean-up of spills. There are four private oil spill response organizations that have



the ability to respond to spills in Maine. Typically, these organizations respond when requested to do so by a member such as a licensed terminal or vessel.

4.10.1. Clean Harbors Environmental Services

17 Main Street
So. Portland, ME 04106
Phone: (207) 799-8111 or (800) 645-8265
Fax: (207) 779-0349

Clean Harbors, Inc. is an Oil Spill Response Organization (OSRO) which handles oil and oil related products of all types in water and on land for their customers. Their resources include personnel, response vessels, containment boom, skimming and recovery equipment as well as disposal services. They have many resources throughout the country with a full-service facility in South Portland Maine.

4.10.2. Marine Spill Response Corporation

14 Union Warf
Portland, ME 04101
Phone: (207) 780-1821 Duty Officer: (800) 259-6772

The Marine Spill Response Corporation (MSRC) is an independent nonprofit corporation formed to assist in responses to large oil spills in the tidal and coastal waters of the United States. It makes available to federal government entities and responsible parties with whom it has response contracts a national supply of equipment and personnel for spills beyond the local response capacity. Vessels, equipment and response personnel are stationed at numerous locations, including Portland, Maine.

4.10.3. National Response Corporation, a US Ecology company

31 Waldron Way
Portland, ME 04103
Phone: (207) 252-6756 24 Hr. Emergency: (800) 899-4672

The National Response Corporation (NRC) was formed to assist vessel owners and operators and facility managers to meet the requirements of the Oil Pollution Act of 1990. NRC provides a national supply of equipment and personnel for



spills beyond the local response capacity. Vessels, equipment and response personnel are stationed at numerous locations, including South Portland, Maine.

4.10.4. Penobscot River Oil Pollution Abatement Committee

c/o Coldbrook Energy
809 Main Rd. N.
Hampden, ME 04444
Phone: (207) 945-9465

The Penobscot River Oil Pollution Abatement Committee (PROPAC) is a cooperative of several area businesses and agencies that own property along the Penobscot River. Its purpose is to promote and foster abatement of pollution in the Penobscot River and Penobscot Bay caused by the discharge of petroleum products into those water bodies. Its members include oil terminal operators on the Penobscot River and Penobscot Bay as well as the Bangor International Airport and local industries.

4.11. OIL SPILL CLEANUP CONTRACTORS

Local clean up contractors typically clean up all but the smallest spills for responsible parties. Each response office maintains a list of contractors available in the area, and Appendix I, the Equipment and Support Services Directory, contains additional information regarding contractors and available equipment. If additional personnel are needed, temporary workers could be used providing the workers meet the current Occupational Safety and Health Act requirements. See Section 12, Worker Health and Safety, for the appropriate requirements.

4.12. VOLUNTEERS

Volunteers who wish to participate in mitigating the effects of an oil spill may be utilized as deemed appropriate by the Federal On-Scene Coordinator. If the responsible party is known, volunteers will be directed to its representative. If the responsible party is not known, or if the responsible party has not assumed responsibility, the FOSC / SOSC may elect to use volunteers. Typically, volunteers will be assigned to tasks that have minimal safety risks such as some aspects of wildlife rehabilitation or logistical support. Volunteers will not be used for physical removal of pollutants and must have had training meeting the applicable Occupational Safety and Health Act training requirements before they will be allowed on site. See Section 12, Worker Health and Safety, for the appropriate requirements. More information on a Volunteer Program can be found in the [Maine and New Hampshire Area Contingency Plan](#).



5. RESPONSE OPERATIONS

5.1. DISCOVERY AND NOTIFICATION

Initial agencies to be notified in the event of a marine oil spill are contained in Section 1, Notification of Spills. The DEP Division of Response Services will make additional notifications as appropriate as outlined in Section 3.4 of the DEP Emergency Response Plan (ERP), Notification Protocols. Appendix 1 of the ERP contains an extensive listing of contacts for both oil spills and hazardous materials incidents.

A marine oil spill is usually discovered in several ways:

- A report is made by the person in charge of the vessel or facility involved in the spill;
- A report is made by a member of the public; or
- The spill is observed by local, state, or federal personnel during routine patrols or inspections.

A spill along the coast of Maine would most likely be first reported to the U.S. Coast Guard and then to the DEP.

5.2. PRELIMINARY ASSESSMENT

The Federal On-Scene Coordinator / representative or a Maine DEP Oil and Hazardous Materials Responder will make a preliminary assessment of the incident by contacting the person reporting the spill, governmental officials, and the responsible party. The preliminary assessment will aid in:

- Evaluating the magnitude and impact of the discharge or threat of discharge on the public health, welfare, and the environment;
- Determining the jurisdiction in which the incident occurred;
- Determining or confirming the responsible party;
- Determining or confirming the source of the spill;
- Determining whether the spill has been stopped or is ongoing, and how quickly it can be controlled;
- Assessing the need for state or federal assistance; and
- Assessing the feasibility of removal and determining the equipment needed to remove the oil.

The responsible party will be given an opportunity to clean up the spill, but the Federal On-Scene Coordinator or DEP may take over the clean-up if progress is not satisfactory. The responsible party is responsible for all costs in either case in accordance with applicable state and federal law.



5.3. INCIDENT OBJECTIVES

Incident objectives will be developed within the Incident Command System. Preplanning for the initial operational phase is part of this Marine Oil Spill Contingency Plan. During any oil spill incident, Department personnel will initiate action and develop objectives utilizing the following priorities:

1. Protecting human health and safety of the responders and the public must be the first and foremost priority.
2. Stopping the source of the discharge.
3. Containing, confining and recovering product.
4. Protecting sensitive areas as determined using the [Environmental Sensitivity](#) and [Vulnerability Index Maps](#) and by using the [Geographic Response Strategies](#) for protective booming.
5. Minimizing economic impacts.

5.4. CONTAINMENT AND CONTROL

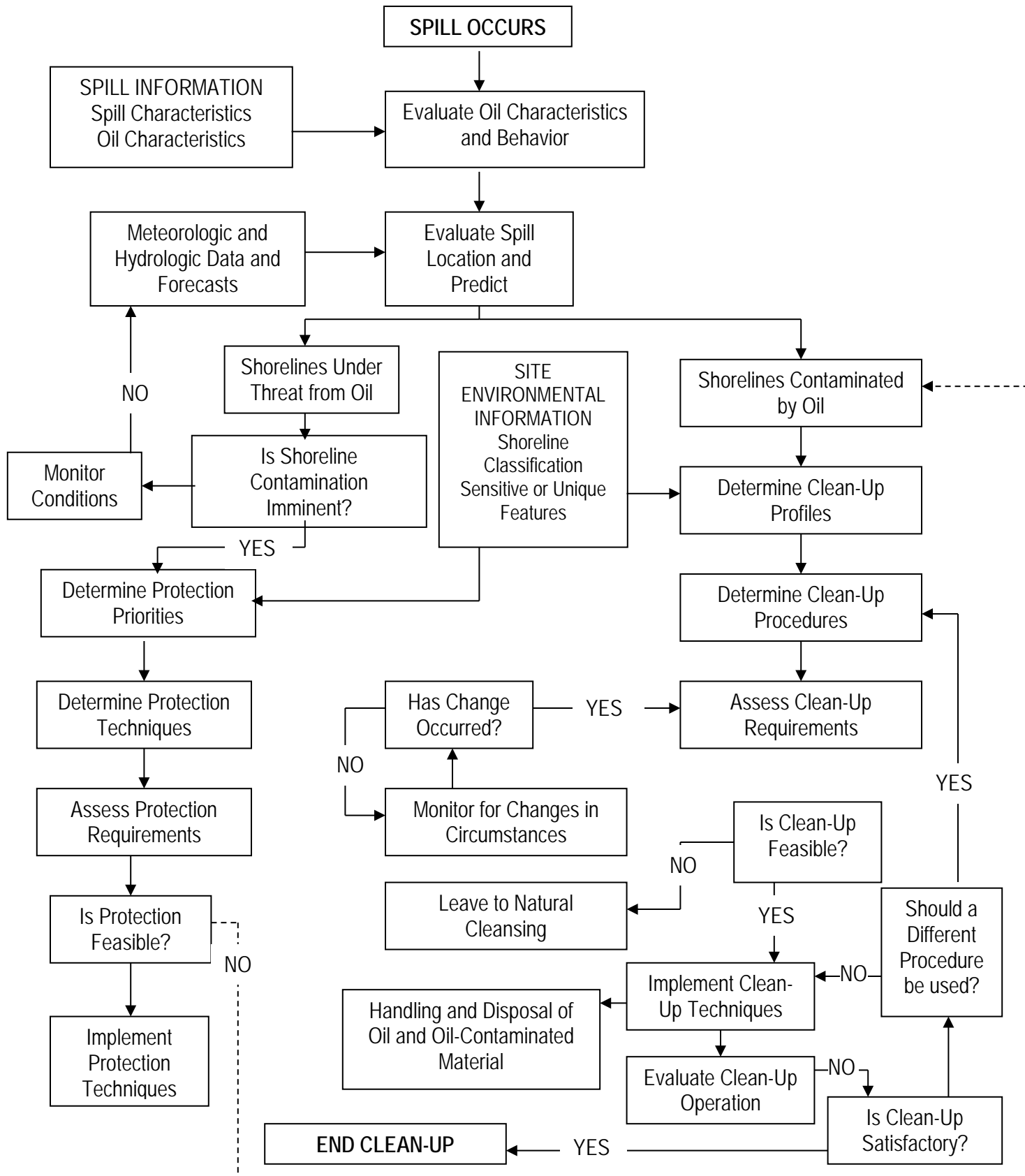
Clean-up actions must begin as soon as possible to minimize the effect on natural and economic resources. These actions may include locating the source of the discharge and preventing any further spillage, placement of containment boom to control the spread of oil and to protect sensitive areas, assessing and sampling the affected area, physical removal of the oil from water and land, the use of chemicals to herd or disperse the oil, and in situ burning. The official coordinating the spill response must address many questions, including, but not limited to:

- How large an area will the spill cover?
- How thick will the slick be?
- How fast and in what direction will the slick drift?
- When and where will the oil hit the shoreline?
- What will happen to the oil if it is not removed?
- What is the value and sensitivity of the resource at risk?

The answers to these questions will determine what response actions are taken. Figure 5-1 graphically describes the oil spill response process.



FIGURE 5.1: SPILL RESPONSE PROCESS





5.4.1. NATURE OF A SPILL

The natural occurrences that take place following an oil spill on water include the spreading of the oil slick, changes in its direction or movement, and its gradual weathering. The behavior of an oil slick is highly dependent on the type of oil spilled and on the ambient climatic conditions.

5.4.1.1. PHYSICAL AND CHEMICAL PROPERTIES OF OIL

The term "oil" is applied to a wide variety of petroleum products ranging from crude oils to different grades of refined products. Crude oil is not a uniform substance and its properties vary widely from one location of origin to another. Because of this fact, it is difficult to predict the type of oil that might be spilled off the coast of Maine.

Carbon and hydrogen are the most abundant elements in crude oil, accounting for more than 95% of the composition. Crude oil may also contain dissolved gases, solids, water and colloidal particles. Hydrocarbons are separated from crude oils through boiling and vapor recovery processes. The lighter hydrocarbons generally vaporize at lower temperatures. As an example, gasoline would be one of the first products distilled from a crude oil, and lubricating oils are derived from a higher temperature fraction. The majority of compounds that make up residual fuels come from the fraction left behind after most of the lighter fractions are distilled.

The spreading of an oil slick and the subsequent breakup of the oil film, as well as the rates and extent of emulsification, evaporation and biodegradation processes are all intimately related to the physical and chemical properties of the spilled oil. The physical and chemical characteristics of oil which affect its behavior on water and the efficiency of cleanup operations include density, viscosity, pour point, flash point, solubility in water, and changes in these parameters with time. Physical and chemical properties of oil are measured at a standard or constant temperature and atmospheric pressure. However, the physical properties of oil will vary depending on local environmental conditions and may vary considerably from values reported for "standard" conditions. The methods for dealing with spilled oil should be based on field observations, even when product-specific information is available.

Note: This section focuses on actions taken for oil spills, but spills of gasoline or ethanol have additional considerations. See Appendix V for a more detailed description of actions required for responding to gasoline or ethanol releases



5.4.1.2. SPREADING OF OIL ON WATER

Immediately on contacting a water surface, oil begins to move away from the spill site. It rapidly spreads to a very thin layer under the influence of physical and chemical forces. It also begins to drift under the influence of wind and currents. Each force dominates at a different time in the life of an oil slick. When oil is first spilled in water it begins to spread by gravity. As the slick gets thinner, the driving force for gravitational spreading decreases and the rate of spreading due to this mechanism is less important.

In the event of an oil spill, a rough estimate of the total volume of the spill is needed to establish equipment and personnel needs and disposal site requirements. Because early estimates of spill size are often either unavailable or of questionable accuracy, on-site estimations are generally necessary. A rough estimate of spill volume can be attempted by considering slick size and thickness.

5.4.1.3. OIL WEATHERING PROCESS

Oil spilled on water undergoes a progressive series of changes in physical and chemical properties which are referred to as weathering. The weathering of oil starts immediately after it has been spilled and proceeds at a rate which varies according to the type of oil involved and ambient climatic conditions. Weathering rates are not constant throughout the duration of an oil spill and are usually highest in the first few hours. The process of weathering occurs simultaneously with the spreading and movement of an oil slick. Major processes which contribute to the weathering of oil spilled on water include evaporation, dissolution, oxidation, emulsification, and microbial degradation. In effect, weathering is the loss of certain components of the oil through a series of natural processes which begin when the spill occurs and continue indefinitely while oil remains in the environment. The lighter and more volatile components of the spilled oil are lost most rapidly. Consequently, the rate of weathering is highly dependent of the type of oil spilled; light crudes and fuel oils typically weather at a much faster rate than heavy crudes or heavy fuel oils which contain a smaller proportion of light fractions.

5.4.1.4. MOVEMENT OF OIL ON WATER

In large oil slicks, the waves will be partly suppressed and wave transport will be reduced. The movement of an oil slick on the surface of water is determined mainly by the current and wind velocity in the area.

Current velocities depend on wind velocities, geographical latitude, the presence of eddies, viscosity, position in the water column, tidal changes, water depth, and proximity to coasts. In the long term, surface currents are directed to the right (in the Northern Hemisphere), decreasing and turning more to the right with depth.



Winds can be broadly divided into prevailing winds, which vary over time periods of weeks to seasons, and short-term winds which vary over time periods of hours to weeks. High winds are also generated infrequently by storms and hurricanes. Rapidly varying winds, such as gusts, which vary over time periods of seconds to minutes are not of primary importance for oil spill applications.

When wind and currents are in different directions, they can interact in a complex manner to break up an oil slick into windrows. Windrows are long, narrow columns of relatively thick oil separated by wide bands of relatively oil-free water. In most mathematical models of an oil slick drift, the oil is assumed to drift under a combination of influence of the surface current and wind. A floating oil slick is dragged along the water surface by wind friction whereas oil dispersed into the water column is not.

When wind and current are not in the same direction, each tends to drive the slick in a different direction at a different speed.

There are a number of spill trajectory models suitable for use in the event of an oil spill along the coast of Maine. In the event of a major spill, the DEP will rely on support from NOAA for updated trajectory forecasts with current meteorological and oceanographic data, rather than duplicate NOAA resources.

5.4.2. CONTAINMENT OF OIL

Booms are the primary method used to contain, deflect, or exclude oil floating on the water. Booms are typically classified according to form or location of use and have the following characteristics:

- A flotation unit or freeboard designed to contain or divert the oil as well as to resist oil splashing over the top;
- A skirt or curtain to prevent oil from being carried beneath the boom;
- A longitudinal strength member (usually cable, chain or high tensile strength fabric) that serves to join boom sections and provide anchoring points, and
- A ballast unit or weight designed to hold the skirt perpendicular to the current flow.

Containment booming encircles and contains the floating oil so that it can be collected and recovered. A simple spill in calm water and with minimal current movement can be contained by stretching a boom across a waterway perpendicular to the path of the spill.

Deflection booming attempts to intercept, deflect, or shunt a slick towards a more desirable recovery site. Deflection booming is used when swift currents render containment booming ineffective.



Exclusion booming is largely a protective measure. Instead of being deployed to contain or intercept the oil slick exclusionary boom is used to protect sensitive areas such as marshlands, water intakes, and shorelines by keeping oil out of an area. Exclusionary booming may be coupled with deflection booming to provide the best overall defense.

5.4.2.1. MECHANICAL RECOVERY OF OIL

In offshore areas mechanical clean-up with skimmers is usually begun immediately after containment measures have been implemented. Oil skimmers are used to recover oil from the surface of the water. Skimmers come in a variety of designs and sizes. Small skimming units can be used successfully on spills ranging from minor spills to major offshore disasters. Large self-propelled skimming vessels are generally used on larger, open-water spills

5.4.2.2. ALTERNATIVE COUNTERMEASURES

In certain circumstances, the timely effective mechanical containment, collection, and removal of the oil may not be possible, and the utilization of alternative countermeasures, alone or in conjunction with conventional removal methods, may be considered as a means to minimize a threat to public health or welfare, or minimize serious environmental damages. Dispersants, in-situ burning, surface washing and bioremediation agents are all tools that have demonstrated usefulness in past oil spills. Thoughtful consideration must be given to all oil spill response options in order to maximize the response effort.

General procedures for authorizing the use of chemical and biological countermeasures are contained in [Subpart J of the National Oil and Hazardous Substances Pollution Contingency Plan](#), 40 CFR Part 300. Unless pre-approval for their use has been given, the Federal On-Scene Coordinator must obtain approval from the EPA representative to the Regional Response Team and the State representative(s) to the Regional Response Team from the affected state(s) before they can be applied. Specifics on in-situ burning and the use of dispersants are outlined in the sections below.

As the State's representative on the Regional Response Team, the State On-Scene Coordinator must authorize the use of alternative countermeasures. However, the Federal On-Scene Coordinator may authorize the use of chemical and biological countermeasures without the concurrence of the Regional Response Team representatives in situations hazardous to human life



5.4.2.2.1. IN SITU BURNING

In situ burning involves the containment of oil with fire-proof boom so it can be ignited. In order for in situ burning to be effective in most situations, the burn must take place within a few hours after the spill, or the oil will have dispersed too much to be burned successfully. Effective burning requires a minimum oil thickness of about 0.1 inch (0.25 cm). The RRT Region I In Situ Burning Pre-Authorization Agreement was finalized in 1999 and is attached as Appendix VI, along with a decision tree and checklists that may be used when determining if in-situ burning is appropriate. In general, the FOSC may authorize in-situ burning beyond 6 miles of the coastline provided no endangered or threatened species are present in the immediate burn area. Between 1-6 miles, it is a joint FOSC / SOSC decision. Within 1 mile of the coastline, the decision must be made jointly by the FOSC/SOSC in consultation with federal trustees (NOAA and DOI).

Where the SOSC has decision making authority, he or she will consult the DEP Bureau of Air Quality on all in situ burns unless the delay will hamper the immediate response to an oil spill which may result in long-term damage to the State's natural resources.

5.4.2.2.2. DISPERSANTS

Dispersants are chemicals that reduce the interfacial tension between oil and water. This enables waves to break an oil slick into tiny droplets and suspend them in the water column. As a result, the oil will present less of a threat to shorelines and coastal resources, but may increase toxicity in the water column to vulnerable species or life stages. Once the oil is dispersed into the water, chemical and biological processes convert it to carbon dioxide, oxygen, salts and other materials. Dispersants require a certain amount of surface mixing energy (typically a few knots of wind and a light chop) to be effective. At higher wind and sea conditions, dispersant evaporation and wind drift will limit dispersant effectiveness, and at high sea states (~25 knot winds, 10 ft waves), natural dispersion will be more effective, particularly for light oils.

Chemical dispersants may be effective in areas where environmental or logistical considerations will not allow the deployment of clean-up equipment and personnel. Dispersants are most effective if used within 24 hours after the spill occurs; therefore the decision to use dispersants must be made as early in the spill as possible. Dispersants will:

- Break the slick into tiny droplets which expedites biodegradation and decomposition of the oil spill;
- Reduce the overall level of effort and manpower requirements necessary for responding to major spills; and



- Prevent or reduce adverse effects on coastal birds and land-based mammals.

However, dispersants are not effective for oil spills in water with low temperatures, low salinity, or broken ice. They also accelerate the transfer of oil into the water column and thereby temporarily create high localized concentrations of dispersant/oil mixtures which could be toxic to some marine life.

Under provisions of the National Oil and Hazardous Material Spills Contingency Plan, chemical agents shall not be considered for use as dispersing agents unless they have been accepted by the EPA, and listed in the [National Contingency Plan Product Schedule](#) (also available by calling the NCP Hotline at 202-260-2342).

The Maine and New Hampshire Area Committee has developed a Pre-Authorization plan and Unified Command Worksheet for the use of dispersants, which are included as Appendix VII of this plan. Under the pre-authorization agreement, dispersants may be used seaward of 12 nautical miles of the coastline with the authorization of the FOSC in consultation with: EPA, the state with jurisdiction over the navigable waters threatened by the release and RRT DOC and DOI trustees. Dispersant use between 3 and 12 nautical miles of the coastline requires concurrence of the state RRT representative (SOSC) as well as the consultations above. The use of dispersants is not preauthorized within 3 nautical miles of the coastline.

5.4.2.2.3 SURFACE WASHING AGENTS

Surface washing agents are liquid products designed to make it easier to remove oil from surfaces and structures that have been oiled and to minimize sources of secondary oiling. Several surface washing agents that meet basic requirements for use during a spill response are included in the National Contingency Plan Product Schedule. Approval from the FOSC, SOSC and the RRT is required before a surface washing agent can be used in a manner that could cause it to be released into the environment.

5.4.2.2.4 HERDING AGENTS

Herding agents are water and oil immiscible compounds used to deflect oil slicks. Because they have a greater surface tension than oil, they can be used to stop the intrusion of a slick by preventing the flow of oil onto the water to which they have been applied. Herding agents are most effective in areas with low wave energy. They are usually applied at low dosage rates, and may be applied much more rapidly than conventional boom. Maintenance consists of reapplication.



Herding agents can buy time for the placement of boom, or allow more effective use of the available boom. Increasingly, herding agents are used to aid in thickening patches of oil to help facilitate in-situ burning. Herding agents do not disperse an oil slick into the water column and so do not increase the solubility of the existing slick. They do not hold the spill in place. Herding agents will not interfere with skimming operations, if applied properly.

Because herding agents perform best in calm water, the likelihood of their use in Maine is low. If herding agents were considered for use at a spill, many of the same factors as those used for dispersants would be evaluated. They are not suitable for very shallow water or fish-spawning areas. Approvals from the FOSC, SOSC and RRT would be required. The SOSC will rely on the expertise of DEP response staff, the Department of Inland Fisheries and Wildlife, the Department of Marine Resources, and other state and federal agencies in making a decision.

5.4.2.2.5. BIOLOGICAL COUNTERMEASURES

Use of biological countermeasures, or bioremediation, involves the use of specially developed organisms, or environmental or chemical enhancement of indigenous bacteria. They are used to break down oil more quickly than would occur without their introduction into the area of a spill, but only where nutrients are limiting the use of natural biodegradation. They are most effective on light to medium crude oil and fuel oils. The approval process for bioremediation is the same as for herding agents, above.

5.5. COMMUNICATIONS

Communications on-scene will be primarily by radio and cell phone.

5.5.1. RADIOS AND FREQUENCIES

There are a few different options available to Maine DEP responders for radio communications during a spill event.

The Maine State Communications Network ([MSCommNet](#)) was developed by Maine state government in 2015 to provide a unified statewide digital mobile radio network for state law enforcement, public safety and public service agencies.

MSCommNet serves the following agencies: Department of Public Safety (Maine State Police); Department of Inland Fisheries and Wildlife (Game Wardens);



Department of Agriculture, Conservation & Forestry (Forest Rangers); Department of Marine Resources (Marine Patrol) and Maine Emergency Management Agency, in addition to DEP. A complete listing of programmed frequencies for DEP responders can be found in the DEP Emergency Response Plan.

All DEP response vehicles are equipped with 100 channel, 100 watt State Police radios, and responders have access to Harris P5400 multimode portable radios, enabling communication with these agencies and others statewide. Many of these state agency radios are programmed with specific channels for spill response. Additionally, DEP responders have access to marine radios installed on DEP vessels, as well as handheld units.

In the event of a large coastal oil spill, radio communications with OSROs, contractors and USCG will likely be through an agreed upon marine or other VHF radio frequency as outlined in the Communications Plan (ICS 205).

5.5.2. STATE OF MAINE CONCEPT OF OPERATIONS PLAN ([CONOPS](#)) FOR INCIDENT COMMUNICATIONS INTEROPERABILITY

Should an event occur that meets or exceeds three (3) of the following four (4) criteria the incident commander may request a “Con-Ops” authorization from MEMA to support their operations.

- An event/incident involving response from four (4) or more agencies;
- An event/incident involving a duration of at least six (6) or more hours;
- An event/incident involving response from at least three (3) levels of government, or
- An event/incident where normal use of common simplex (local talk-a-round) channels will not support the incident commanders needs.

To make the request, the incident commander should call MEMA at 1-800-452-8735 (24/7/365), summarize the situation, request specific frequencies, identify the incident inbound calling frequency, and give contact information.

The MEMA director is the sole and final authority for approving a CONOPS request. The table below lists the six frequencies to be used during a CONOPS scenario.



TABLE 5.1: CONOPS FREQUENCIES

DAY-TO-DAY FREQUENCY (PERMANENT ASSIGNMENT)		
SWSP	154.7100	STATE WIDE STATE POLICE
NWCC	155.4750	NATION WIDE CAR TO CAR
EMS/LASAR	155.1600	EMERGENCY MEDICAL SERVICES/ LAND/AIR SEARCH & RESCUE
SPCC	154.9350	STATE POLICE CAR TO CAR
SWF	154.3100	STATE FIRE
SWCC	154.6950	STATE WIDE CAR TO CAR
MAINE HAILING	155.7525	VCALL 10 RX&TX PL 156.7

More CONOPS information is available at: <https://www.maine.gov/mema/ema-community/communications/conops>

5.5.3. CELLULAR TELEPHONE USE

All Response Services staff have cellular telephones, to be used for state business. These may be taken aboard water craft and used to augment marine radios or portable radios.

5.5.4 SIGNALS FOR USE ON SITE

TABLE 5.2: SIGNALS FOR USE ON SITE

Hand Signals	
Hands clutching throat	Choking or out of air, cannot breathe
Hand drawn across throat	Kill the engine
Clenched fist held above shoulder level	Stop
Hands on top of head	Need assistance
Arms waving upright	Send back-up support
Two fingers pointed at eyes, then at someone else	I want to see you
Grip partner's wrist	Leave area immediately
Waving arms up and down	Leave area immediately



Two thumbs up	OK or yes; I understand; I'm alright
Two thumbs down	No, negative, I don't understand
Upraised thumb	One

5.6. WILDLIFE RELOCATION, DETERRENCE AND REHABILITATION

In the event of an oil spill, it may be necessary to disturb or capture and relocate wildlife in order to prevent them from being oiled. An attempt should be made to deter wildlife from contaminated areas where it is not feasible to protect them from contamination. Methods of deterring wildlife from oil-contaminated areas vary between wildlife species and habitats, as well as with changes in current, wind, and water temperature. Biologists from IF&W and DMR will provide the SOSOC with information on the presence of vulnerable species within a spill area, and guidelines for deterrent and relocation strategies. See Appendix II for the Wildlife Rehabilitation Plan.

5.7. DISPOSAL

A list of disposal facilities is contained in Appendix I, the Equipment and Support Services Directory. Contact the DEP Division of Materials Management, Solid Waste Unit for information and assistance: 207-287-7688.

5.7.1. OILY DEBRIS

Oily debris includes sorbents, seaweed, carcasses, and other material contaminated with oil as a result of an oil spill. Oily debris recovered during response activities must be disposed of in accordance with state and federal law. State regulations (DEP Maine [Solid Waste Management Rules](#), Chapter 405) state that oily debris can be landfilled or incinerated and the resultant ash landfilled.

5.7.2. WASTE OIL

The requirements of DEP's [Waste Oil Management Rules](#) (Chapter 860) must be met for storage and transportation of waste oil. Waste oil is any petroleum-based oil which through use or handling, has become unsuitable for its original purpose due to the presence of impurities or loss of original properties. Waste oil includes any oil spilled to land or water, but does not include oily waste debris generated from the clean-up of oil spills or water generated from oil/water separation process at waste oil facilities. Rules, forms and additional information can be found at <https://www.maine.gov/dep/waste/wasteoil>.



5.8. TEMPORARY STORAGE

In the event of a major spill, the volume of oily debris will most likely be greater than the capacity of available disposal facilities. Therefore, temporary storage (less than 45 days) must be used as an interim measure. The DEP has no permitting requirements for the temporary storage of oily debris. Options include storing oily debris in covered dumpsters or covered "roll-off" containers, or in temporary engineered containment structures with oil-resistant liners.

5.9. NATURAL RESOURCE DAMAGE ASSESSMENT AND RESTORATION

Determining and quantifying injury to State natural resources as a result of a marine oil spill will be overseen by the State Trustees, designated by the Governor, with assistance from federal natural resource trustees, private organizations, and contractors. The State trustees include DEP, as the appointed lead administrator, the Department of Inland Fisheries and Wildlife, the Department of Marine Resources, and the Department of Agriculture, Conservation and Forestry. Guidelines for damage assessment and restoration pursuant to the requirements of the [Oil Pollution Act of 1990](#) have been developed by the National Oceanic and Atmospheric Administration ([15 CFR Part 990](#)). In the event of a significant discharge incident, the DEP will consult with NOAA, the U.S. Fish and Wildlife Service and others for guidance to ensure use of the most current procedures. The DEP Division of Petroleum Management maintains a list of prequalified contractors to assist with field services to document injury and damages, and to perform natural resource damage assessments.

5.10. DOCUMENTATION AND COST RECOVERY

Documentation will be collected and maintained for all costs incurred by the State during clean-up operations. Documentation will provide an identification of the responsible party or parties, and the impact on the public health, welfare, and the environment. The SOSOC will oversee the necessary collection and safeguarding of information, samples and reports. Information and reports obtained by the Federal On-Scene Coordinator will be sent to the appropriate offices for follow up actions.

The responsible party or parties will be subject to a reimbursement action for all costs incurred by the State related to the spill incident including, but not limited to, costs for containment, clean-up, disposal, remediation, rehabilitation, and natural resource damage assessment and restoration in accordance with applicable state and federal law. If reimbursement is not made within 30 days of demand, the matter may be turned over to a collection agency, the Attorney General, or attorney retained by the DEP with the approval of the Attorney General, for collection. DEP may alternatively file suit in District Court. Reimbursements not paid within 60 days of demand are subject to penalty payments in addition to any other fines or civil penalties authorized by Maine law.



SECTION 5: RESPONSE OPERATIONS

DEP administers a program for third-party damage claims resulting from oil spills. Any person suffering property damage or actual economic damages as a result of a coastal oil spill may apply to DEP within 12 months after the spill, stating the amount of damage alleged to have been suffered. Additional information and application forms are available from DEP's Collections, Claims and Cost Recovery Unit at (207) 287-7860. The law addressing third-party damage claims is [38 M.R.S. §551](#)

Under the Oil Pollution Act of 1990, if claims for removal costs or damages made to the responsible party are not satisfied, a claim may be made to the federal Oil Spill Liability Trust Fund ([26 U.S.C. 9509](#)). The [U.S. Coast Guard National Pollution Funds Center](#) website contains details on oil spill claims.

Additional funds for damages may be available from the Federal Emergency Management Agency (FEMA). The [Maine Emergency Management Agency](#) will coordinate any assistance available through FEMA.



6. RESOURCE PROTECTION PRIORITIES AND PLANS

6.1. BACKGROUND

Sensitive areas are locations identified as valuable natural resources, areas having cultural significance, or areas specifically susceptible to damage from oil spills. Using present technology, it is impossible to protect all sensitive areas at all times from damage by oil. The large number of sensitive resources along the coast of Maine makes it necessary to prioritize protection sites to maximize the effective use of resources and personnel. The DEP has overseen the development of a mapping system using a geographic information system (GIS) to identify sensitive areas; these maps are called [Environmental Vulnerability Index](#) maps (EVI maps). Without ranking the relative worth of any one area or resource, the system identifies known sensitive areas. The mapping system has been developed jointly by the DEP, the Department of Inland Fisheries and Wildlife, the Department of Marine Resources and the Maine Geological Survey.

The completed mapping system, in conjunction with [Environmental Sensitivity Index](#) atlases produced by NOAA and [Geographic Response Strategies](#) (explained in detail in Section 8.3), serve as an important oil spill response tools. Knowing where resources are located and using the priority protection guidelines described below will allow the decision-maker to best allocate the limited personnel and equipment available at the time of a spill.

6.2. PRIORITY AND PROTECTION GUIDELINES

The protection of public health and safety is of primary importance. Once public health and safety have been assured, the source of the discharge must be stopped in order to prevent as much product from being discharged as possible. Either after the discharge has been stopped or while that process is underway efforts must be made to contain and collect the spilled product in order to protect the surrounding environment. Once the public health and the source of the discharge have been addressed, the SOSOC and the Federal On-Scene Coordinator will consider protection of natural and other resources, including deployment of prepositioned boom. Sensitive area maps are designed to assist the SOSOC and the Federal On-Scene Coordinator in determining resource protection priorities at the scene of an oil spill. The State of Maine has adopted the following guidance developed by the [Maine and New Hampshire Area Committee](#). In accordance with the [Incident Command System](#) used as the basis for incident management by both federal and state agencies (Sec. 3.2), decisions on protection priorities during a spill are typically made by the Environmental Unit (led by a state or federal natural resource agency representative) under the Planning Section, and then refined using operational considerations.



6.2.1. PRIORITIZATION FACTORS

1. Significance of Resource (Environmental)

- Biodiversity: (the variety of species or ecosystems in the area)
- The importance of the area to a significant species' life history (seasonality)
- The potential of the impacted area to indirectly affect other species / resources

2. Significance of Resource (Social)

- Cultural and historic value
- Legal standing (e.g. endangered, threatened or protected under law)
- Public significance (broad impacts to the public such as water intakes or aesthetic considerations)

3. Sensitivity to Oil

- Tolerance to oil
- Tolerance to being handled, cleaned or disturbed
- Probability of direct / indirect consumption
- Probability of spreading via social behavior
- Behaviors that increase probability of injury due to exposure

4. Scale of Impact

- Proportion of the total amount of the regional resource that may be affected
- Availability of alternative resources

5. Recovery Potential

- Ability to restore or replace losses with relative ease and effectiveness
- Length of time required for restoration or replacement

Once the resources at risk have been prioritized by the Environmental Unit, the Operations Section must consider the potential for successfully protecting them:

6. Potential for Success

- Protectability of resource given available technology
- Protectability of resource given existing limitations (e.g. weather, personnel, equipment)
- Expense to other protectable resources



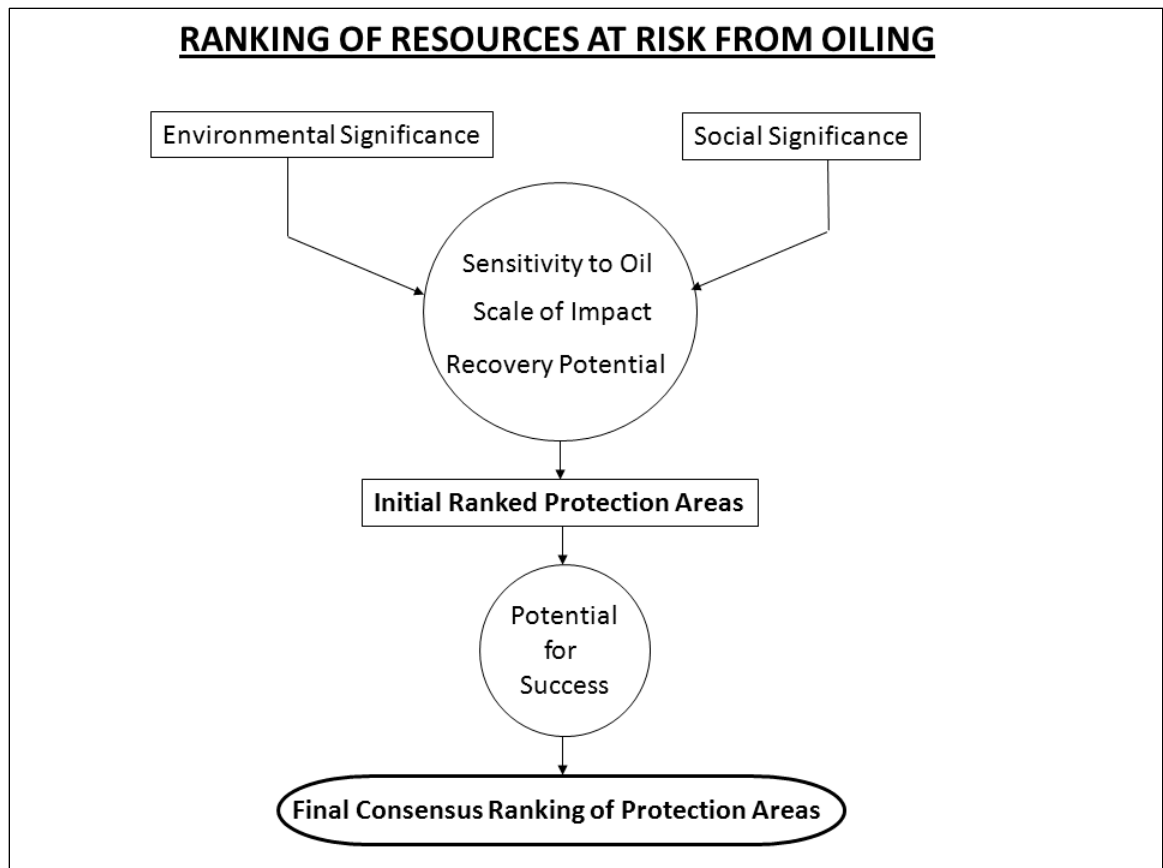
Damage / Cost Recovery – Damages or costs recoverable as a third-party claim through a responsible party, state cleanup funds or the Federal Oil Spill Liability Trust Fund are not prioritized for protection. These include:

- Removal costs
- Real or personal property damage
- Loss of profits & earning capacity, and
- Loss of subsistence use of natural resources

6.2.2. RANKING OF PROTECTION AREAS

Once environmental and operational concerns have been evaluated, the specific ranking of resources at risk for protection is then developed:

FIGURE 6.1: RESOURCE PROTECTION PRIORITIES





6.3. RESPONSE PLANS

6.3.1 GEOGRAPHIC RESPONSE STRATEGIES

Geographic Response Strategies (GRSs) covering the entire coast of Maine and New Hampshire have been developed. The GRSs provide information for protecting priority areas along the coast. GRSs portray protective or deflective booming strategies as well as provide information for implementing those strategies. The intent of the GRSs is that they can be implemented immediately following a spill so that natural resource damage will be minimized. Many are still untested but the DEP has an active program for updating the strategies as they are reviewed and/or tested in the field.

GRSs include nautical charts and aerial photos with proposed booming strategies and a verbal description of the booming strategy, as well as the total length and type of boom required, the tidal range, tidal current information, details on site access and staging areas, and collection points for environmentally sensitive areas. The GRSs are produced by the ME DEP and NH DES.

The GRSs are grouped into the following four areas for Maine:

Area	Coverage
Downeast Maine	Washington County
Penobscot Bay Region	Penobscot, Hancock, Knox and Waldo Counties
Casco Bay	Cumberland, Sagadahoc and Lincoln Counties
NH and Southern Maine	New Hampshire and York County, Maine

GRSs are available on the Department's web site at <https://www.maine.gov/dep/spills/emergspillresp>.



7. PUBLIC INFORMATION

7.1. INFORMATION COORDINATION

Public information efforts will be coordinated with the Federal On-Scene Coordinator and the responsible party. Whenever an oil spill occurs, a critical need exists to clearly and concisely inform the public of the nature of the situation and the actions being taken to mitigate the spill. The SOSC or the Federal On-Scene Coordinator may choose to directly contact and deal with the news media, public officials, and individuals. The SOSC or the Federal On-Scene Coordinator will designate a spokesperson, called a Public Information Officer (PIO) and the location for the information office (or Joint Information Center). In the event of a major coastal spill, it will be the responsibility of the Incident Command to identify the Public Information Officer. The spokesperson will coordinate the dissemination of information with assistance from the DEP, Maine Emergency Management Agency and the Governor's Press Office. The goal is to ensure accurate transfer of information and consideration of local needs and interests.



8. RESPONSE TRAINING AND ANNUAL DRILLS

8.1. RESPONSE TRAINING

Training is important for the readiness and effectiveness of the response team. The training program for the Division of Response Services includes basic training, required annual or periodic training, and enrichment training. Basic training covers topics such as responding to land transportation spills, hazardous materials incident response operations, marine incident response operations, petroleum tanker safety, and incident command. Annual and periodic training includes first aid, annual review of the [Occupational Safety and Health Act](#) safety and training requirements, respiratory refresher training, response workshops, and response safety simulation exercises. Specific training requirements for response staff are contained in the Bureau of Remediation and Waste Management Safety and Training Program.

8.2. ANNUAL DRILLS

The DEP will hold annual drills to test the adequacy of this plan and the preparedness of its response team. The annual drills may vary in scope from informal tabletop exercises, to exercising an individual component of the plan, to involving all federal, state, and local participants. Annual drills will be coordinated with drills scheduled by oil spill cooperatives, industry, the U.S. Coast Guard, and others.



9. WORKER HEALTH AND SAFETY

9.1 RESPONSIBILITY FOR HEALTH AND SAFETY

All government agencies and private employers are directly responsible for the health and safety of their own employees. When response operations are undertaken, an occupational health and safety program, including a site health and safety plan, must be made available to workers at the scene of operations. The site health and safety plan must be followed, in addition to meeting any applicable provisions of federal and state occupational safety and health regulations. All workers must be apprised of the site hazards, site safety practices, and other provisions of the site health and safety plan. A generic Marine Site Safety Plan for use during the initial phase of an oil spill response has been developed by the DEP and is attached as Appendix III of this plan. During a larger spill specific site safety plans will be developed as part of the ICS planning process as outlined in Section 4.2 of this plan.

9.2 FEDERAL AND STATE REQUIREMENTS

The Occupational Safety and Health Administration (OSHA) has promulgated health and safety standards that apply to all private and federal employees ([29 CFR Part 1910](#)). The State of Maine's Bureau of Labor Standards regulates state and local employees. As authorized by [26 MRS §565](#), Maine's Board of Occupational Safety and Health has formulated rules for safe and healthful working conditions, including rules requiring the use of personal protective equipment, monitoring and record keeping. [Chapter 2](#) of these rules has adopted by reference the requirements of 29 CFR Part 1910 along with additional amendments for Respiratory Protection. OSHA has approved Maine's standards under the [Occupational Safety and Health Act of 1970](#), which provides that a state which desires to assume responsibility for the development and enforcement of standards relating to any occupational safety and health issue with respect to which a federal standard has been promulgated may submit a State Plan for the development and enforcement of occupational safety and health standards applicable only to employees of public agencies of the state and its political subdivisions. Maine's State and Local Government Only State Plan, known as the "Maine State Plan", designates the Maine Department of Labor as the agency responsible for occupational safety and health standards applicable to state and local government employment throughout the state and was approved by OSHA in 2015.

The [Maine State Plan](#) includes any employee of the state, including but not limited to members of the Maine State Legislature, members of the various state commissions, persons employed by public universities and colleges and employees of counties, cities, townships, school districts and municipal corporations. Volunteers under the direction of a public employer or other public corporation or political subdivision are also covered. However, the definition of public employee does not extend to students or incarcerated or committed individuals in public institutions. (In states without a State Plan, any compensated or non-compensated workers engaged in hazardous waste operations



controlled directly by a state or local government fall under rules adopted by the U.S. Environmental Protection Agency ([40 CFR 311](#)). The two agency rules contain nearly identical requirements, since 40 CFR 311 incorporates the provisions of 29 CFR Part 1910.120).

All persons who respond to oil spills in any capacity must receive training which is in compliance with 29 CFR Part 1910.120. Hazardous Waste Operations and Emergency Response ([HAZWOPER](#)) training is divided into two phases, an emergency phase and a post-emergency phase. Training requirements vary depending on the phase of clean-up.

9.2.1. EMERGENCY RESPONSE VS. POST EMERGENCY RESPONSE

The HAZWOPER standard identifies two basic phases of a response action: emergency response and post-emergency response. Depending on the size of the spill, these phases may be managed differently. In addition, workers who participate ONLY in post-emergency response require different training than emergency response workers receive.

Emergency response is "a response effort ... to an occurrence which results, or is likely to result, in an uncontrolled release of a hazardous substance" (29 CFR Part 1910.120(a)(3)). For marine oil spills, an uncontrolled release is a situation in which the oil and its associated airborne and surface contamination hazards are releasing into the environment or are in danger of releasing into the environment and posing a worker exposure hazard. Oil in grounded ships, which is in danger of being released into the environment, represents an emergency response situation. On-water containment, skimming operations, and underwater oil recovery operations also are considered to be emergency response activities because the oil is still in danger of being further released into the environment. Shoreline cleanup is normally considered to be a post-emergency response unless the oil is below the high-tide mark or storm surge boundary (active or forecasted) and can reasonably be expected to be re-released into the marine environment.

Post-emergency response is performed "after the immediate threat of a release has been stabilized or eliminated and cleanup of the site has begun" (29 CFR Part 1910.120(a)(3)). Oil spilled into a marine environment is considered to be stabilized when it is in a stable container with no compromised structural integrity, to limit the potential for worker exposure to associated hazards. This includes floating bladders, barges, drums, and roll-off containers on shore. Oil also is considered to be stabilized when it is stranded on shore and not reasonably expected to re-release into the environment through wave or storm effects. Floating oil is not considered to be stabilized, even if contained within a boom.

During response to a large release such as a marine oil spill, emergency response and post-emergency response cleanup activities may occur at the same time. In these



cases, the boundaries between the emergency response area and the post-emergency response area must be well defined and explained to responders and cleanup workers.

9.2.2. APPLYING THE HAZWOPER STANDARD TO MARINE OIL SPILLS

For marine oil spill emergency response, the HAZWOPER provisions that most directly apply include:

Emergency response operations in HAZWOPER paragraph (q), and Post-emergency response cleanup operations in paragraph (q)(11).

See also emergency response training provisions in paragraph (q)(6), and post-emergency response training requirements in paragraph (q)(11).

9.2.3. WHEN HAZWOPER DOES NOT APPLY

HAZWOPER does not apply to incidental releases that are limited in quantity and pose no safety and health threat to employees working in the immediate vicinity of the spill. These oil spills can be absorbed or controlled at the time of the release by employees in the immediate vicinity. The difference between emergency spills and incidental releases is described in the definition of emergency response in HAZWOPER paragraph (a)(3). An incidental release does not have the potential to become an emergency within a short time. If an incidental release occurs, employers do not need to implement HAZWOPER.

9.2.4. HAZWOPER COVERAGE FOR VOLUNTEERS

Volunteers may occasionally participate in marine oil spill response, but Federal OSHA standards do not cover uncompensated workers. In Maine and other states approved to manage their own occupational health and safety program (called OSHA State Plan states), volunteers under the direction of a public employer or other public corporation or political subdivision are covered under State Plan HAZWOPER requirements.

9.3. HAZARDS TO MARINE OIL SPILL RESPONDERS

Marine oil spill responders face a variety of health and safety hazards, including fire and explosion, oxygen deficiency, exposure to carcinogens and other chemical hazards, heat and cold stress, and safety hazards associated with working around heavy equipment in a marine environment. A full discussion of these hazards is beyond the scope of this document, but a brief list of chemical hazards and their known health consequences is shown in Table 1. Workers should be trained to anticipate and control exposure to the hazards associated with their assigned duties.



To determine acceptable levels of exposure, consult OSHA's exposure limits in [29 CFR Part 1910](#) Subparts G and Z. If OSHA does not regulate an exposure of concern, consult the National Institute of Occupational Safety and Health ([NIOSH](#)) Recommended Exposure Limits (RELs) and Immediately Dangerous to Life and Health (IDLH) levels. If neither OSHA nor NIOSH has established a limit, consult the American Conference of Government Industrial Hygienists ([ACGIH](#)) Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) for chemical, physical, and biological agents. A more protective limit than OSHA's may be used if one has been established and controls planned for accordingly. [Safety Data Sheets](#) from the product manufacturer may provide useful information for worker training.

TABLE 9.1: HAZARDOUS CHEMICALS AND THEIR EFFECTS

Hazardous Chemicals	Adverse Health Effects
Benzene (crude oils high in BTEX, benzene, toluene, ethyl benzene, and xylene)	Irritation to eyes, skin, and respiratory system; dizziness; rapid heart rate; headaches; tremors; confusion; unconsciousness; anemia; cancer
Benzo(a)pyrene (a polycyclic aromatic hydrocarbon reproductive [see below], formed when oil or gasoline burns)	Irritation to eyes and skin, cancer, possible effects
Carbon dioxide (inerting atmosphere, byproduct of combustion)	Dizziness, headaches, elevated blood pressure, rapid heart rate, loss of consciousness asphyxiation, coma
Carbon monoxide (byproduct of combustion) Irritation to eyes, skin, and respiratory	Dizziness, confusion, headaches, nausea, weakness, loss of consciousness, asphyxiation, coma
Ethyl benzene (high in gasoline)	Irritation to eyes, skin, and respiratory system; loss of consciousness; asphyxiation; nervous system effects
Hydrogen sulfide (oils high in sulfur, decaying plants and animals)	Irritation to eyes, skin, and respiratory system; dizziness; drowsiness; cough; headaches; nervous system effects
Methyl tert-butyl ether (MTBE) (octane booster and clean air additive for gasoline, or pure MTBE)	Irritation to eyes, skin, and respiratory system; headaches; nausea; dizziness; confusion; fatigue; weakness; nervous system, liver, and kidney
Polycyclic aromatic hydrocarbons (PAHs) (occur in crude oil, and formed during burning of oil)	Irritation to eyes and skin, cancer, possible reproductive effects, immune system effects
Sulfuric acid (byproduct of combustion of sour petroleum product)	Irritation to eyes, skin, teeth, and upper respiratory system; severe tissue burns; cancer
Toluene (high BTEX crude oils)	Irritation to eyes, skin, respiratory system; fatigue; confusion; dizziness; headaches; memory loss; nausea; nervous system, liver, and kidney effects



Xylenes (high BTEX crude oils)	Irritation to eyes, skin, respiratory system; dizziness; confusion; change in sense of balance; nervous system gastrointestinal system, liver, kidney, and blood effects
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There are additional hazards that marine oil spill responders may need training to work safely around. The responder should decide which hazards apply to their operations.

- Biological (e.g., plants, animals, insects, remediation materials)
- Drowning
- Noise
- Electricity
- Slips and Trips
- Biohazardous debris (e.g., syringes on shoreline)
- Ergonomic Stresses (e.g., repetitive strain, low back pain)
- Sunburn
- Confined Spaces
- Underwater Diving
- Falls
- Unguarded Equipment
- Cranes
- Fatigue
- Vehicles (e.g., aircraft, boats, cars, trucks)
- Cutting and Welding
- Fire and Explosion
- Degreasers
- Heat or Cold Stress
- Dispersants
- In-Situ Burning Particles

Additional OSHA standards in [29 CFR Part 1910](#) that may apply to marine oil spill response and cleanup operations:

- 1910 Subpart D - Walking-Working Surfaces
- 1910 Subpart E - Means of Egress
- 1910 Subpart F - Powered Platforms, Manlifts, and Vehicle-Mounted Work Platforms
- 1910 Subpart G - Occupational Health and Environmental Control
- 1910 Subpart H - Hazardous Materials
- 1910 Subpart I - Personal Protective Equipment
- 1910 Subpart J - General Environmental Controls
- 1910 Subpart K - Medical and First Aid
- 1910 Subpart L - Fire Protection
- 1910 Subpart M - Compressed Gas and Compressed Air Equipment



SECTION 9: WORKER HEALTH AND SAFETY

- 1910 Subpart N - Materials Handling
- 1910 Subpart P - Hand and Portable Powered Tools and Other Hand-Held Equipment
- 1910 Subpart S – Electrical
- 1910 Subpart T - Commercial Diving Operations
- 1910 Subpart Z - Toxic and Hazardous Substances