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#### 9730.1 Geographical Areas.

Along the East Coast of North Carolina, five geographical area types are routinely encountered during a response. The strategies outlined are recommendations and should not be adhered to in a strict manner because the variables involved in the proper mitigation of a spill are different from case to case. The greatest effect on controlling a spill comes from good decision-making of the person(s) in charge. In the event of a worst-case discharge, quick, decisive actions are the key to a successful response.

The five geographical area types in the COTP zone are:

##### 9730.11 Marshes, Tidal Flats and Seagrass Beds.

These are high sensitivity areas where cleanup is not generally recommended because heavy equipment and laborers may cause more damage than good. Since a complete cleanup is nearly impossible, the best strategy is to protect the area prior to contamination. Considerations on whether a cleanup should be carried out would depend, in part, upon seasonal variations such as migrating bird patterns. The most effective procedure, if indeed a cleanup is carried out, would be skimmers along the waters edge and the deployment of deflection boom in order to shield the area from any recontamination. Tidal fluctuations are a prime concern. Another is the shallow depth of water making access by water more difficult. Strict avoidance of land contact should be made. The area should only be accessed via waterways. Booming or skimming operations would be difficult if not impossible during maximum flood or ebb tide. These areas are home to sea grasses, and numerous fauna, aquatic and fowl. Most often these are the sensitive areas requiring special attention.

##### 9730.12 Sand Beaches.

Cleanup along sandy beach depends on the amount and type of fuel involved. If a sandy shoreline has heavy and extensive fuel coverage the use of heavy industrial equipment such as bulldozers or road graders could be utilized (this would be followed by the replacement of the sediment). In the case of minor ecological damage, a manual cleanup may be performed, if possible, which would eliminate the removal of sediment and the overall effect on the ecological balance of a particular beach. Cleanup efforts must include effective measures to protect nesting sea turtles and shore birds.

- Different types of cleanup methods may involve rock-washing, use of sorbent equipment, harbor boom for corralling a product against land and vacuum trucks to pick up the product.

- Given the economic aspects of the tourist trade on the local economy, beach contamination and cleanup is very visible to the public and the press.

### 9730.13 Bays and Water Inlets

The most effective weapon to combat an inlet-waterway spill is a quick response. The prompt, proper placement of deflection booming or corralling oil in boom for open water pockets can help reduce the spread of a product. Deflection boom should be used to guide the leading edge of a spill into a natural collection point where the product can be skimmed, vacuumed or absorbed with sorbent equipment.

### 9730.14 Offshore Areas.

In-areas offshore, the use of dispersant materials may be beneficial depending on on-scene weather, product type, quickness of application after spill, proper application and current patterns. The proper use of dispersants, offshore, can minimize shoreline impact. A combination of unmanageable seas and wind conditions could impede the use of other forms of mitigation such as skimmers, booms or sorbents. A spill out at sea may not be as bad as a near shore spill because the effects of nature affect mitigation process as the product can be broken up or dissipate long before it creates a problem along the coastline. Refer to Section 9730.1 Dispersants for more information regarding to dispersant use.

### 9730.15 Islands.

Along the coast, there are many barrier islands, which are inhabited by people and various species of wildlife. An oil spill in these areas could have a devastating impact on the ecological balance of a particular habitat. The use of protective booming placed along the shoreline of islands as well as skimmer usage is the most effective means in reducing the effects of a spill.

## 9730.2 Environmental Sensitivity Maps

The following environmental maps will aide in responding to a spill or hazardous substance release. They provide data about specific areas and the sensitive characters the area contains, as well as strategies on how to protect resources within the area. The AOR maps in this section contain data sheets, which provide critical data for priority and response activities. Listed resource trustees should be contacted to participate in establishing protection priorities and response activities. Trustees are equipped with updated information on the status of resources, which may not be depicted, on the maps.

Source: **Environmental Sensitivity Index Atlas of North Carolina**
ESI Maps\INDEX.PDF
Description: Coastal North Carolina is covered via 113 maps at a scale of 1"= 1 kilometer in a two volume set.
Shorelines are categorized for their sensitivity on a scale of 1 (least sensitive = seawalls and piers) to 11 (most) sensitive = extensive inter-tidal marshes).

Concentration areas of "oil sensitive wildlife", such as waterfowl, wading birds, oysters, clams, shrimp, and turtles (A14) are identified as are known habitat for threatened and endangered species and nursery areas for anadromous and estuarine fish. Marinas, boat ramps, parks, refuges, and public beaches are examples of "Socioeconomic Features" which are also noted. Maps were prepared by the Virginia Institute of Marine Science, under funding by NOAA. These maps are currently used by the USCG for oil and hazardous material spill response. Potential areas for locating oil spill response equipment are marked on the maps.
Limitation: Only three sets of the maps (NCDEM, USFWS - Raleigh, and USCG MSO - Wilmington) have been identified among those likely to be involved in spill response. A complete set of maps costs in excess of $4,000.

Source: **Environmental Report Visual II: Study Area for Coastal NC**.
Description: Map of sensitive environments produced by the NC Outer Continental Shelf Office (NC Department of Administration) and U.S. Department of the Interior Minerals Management Service for Mobil Oil Leases. Scale is 1"= 5 nautical miles. Marked on he map are habitats of Federal listed endangered and threatened species (American alligator, bald eagle, peregrine falcon, piping plover, roseate tern, three endangered plants, and sea turtles).

Concentration areas for gulls, terns, skimmers, marsh birds, shorebirds, and wading birds are marked as are nesting areas for anhinga, brown pelicans, and colonial water birds.

Other habitat designations on the map include oyster clutch sites, sea grass beds, extensive march, sheltered tidal flats, artificial reef locations, primary nursery areas, freshwater marsh, and fringing marsh. Limitation: Coverage is from Jockey's Ridge south to Emerald Isle. Coverage extends westward to include portions of Bogue Sound, Core Sound, Pamlico Sound and the Neuse and Pamlico Rivers. Not widely distributed.

Source: **Atlantic Coast Ecological Inventory Maps**
Description: Maps are at scale of 1:250,000 and depict important habitat for fish and wildlife and special land-use areas such as National Wildlife Refuges, National Seashores, and State Gamelands. Maps covering portions of southeastern North Carolina include Rocky Mount, Beaufort, Manteo, Florence, and Georgetown. There is the companion document to the maps: Beccasio, A. D., G. H. Weissberg, A. E.

Redfield et al. 1980. Atlantic coast ecological inventory: user's guide and information base.

Biological Services Program, U.S. Fish and Wildlife Service,

FWS/OBS-80/51. 163 pp.
Limitation: Out of print

## 9740 Chemical Countermeasures

The decision concerning what mix of countermeasures to use on a given spill depends on the size and location of the spill, the type of oil, the weather and sea conditions, and the availability of the various countermeasures, including deployment. The use of dispersants should be considered when sensitive shoreline (e.g., wetlands) or surface ecological environments (e.g., those used by surface–feeding birds) are threatened or when important aesthetic (recreational beaches) or socioeconomic areas (e.g., marinas) could be adversely affected. The contingency planning phase must rank important environments for protection, both with mechanical means and by chemical measures, and define the criteria for use of such measures. The decision to use dispersants must evaluate whether it could reduce adverse environmental impact, whether it is the best response tool available to protect certain sensitive resources based upon the conditions of a spill, and whether a dispersant operation could be successfully launched.

NOAA publishes a Shoreline Countermeasures Manual as an assistance document to shoreline countermeasures. This document can be found at:

http://response.restoration.noaa.gov/counter/temperate.pdf

### 9740.1 Dispersants

The USCG, EPA, DOI, DOC, and the coastal states of RRT IV have adopted the use of dispersants as an approved tool to respond to spilled or discharged oil on ocean and coastal waters within the jurisdiction of RRT IV. The RRT has developed a guide/job aid, which includes a comprehensive review of all countermeasures, alternate sorbents, bioremediation, dispersants, elasticity modifiers and insitu burns. Information can be obtained by visiting their website at http://www.nrt.org.

The specific dispersant plan for RRT IV may be found at:

http://www.nrt.org/nrt/home.nsf/ba1c0a4822583347852564490005 67e2/c3eee91c5f9a86d58525674500586767?OpenDocument

RRT IV Checklists for Dispersant use can be found at http://www.nrt.org/nrt/home.nsf/WebPages/rrt_iv_osctoolbox.html/$FILE/Rrt4di_2.pdf

Sections 3.5, 3.6, 3.7, 3.9, 3.10, and 3.14 of NOAA's Special Monitoring of Applied Response Technologies document contain checklists pertaining to the use of dispersants.

http://response.restoration.noaa.gov/oilaids/SMART/SMART.pdf

In general, use of dispersants' pre-authorization exists 3 miles seaward of any land providing that the water depth is at least 10 meters deep. Three zones have been established to delineate locations and conditions under which dispersant application operations may take place in waters of federal Region IV. They are:

**Green Zone**. (Pre-authorization for dispersant application) The Green zone is defined as any offshore water within federal Region IV in which ALL of the following three conditions apply:

a. waters not classified within a "Yellow" or "Red" zone;

b. waters at least three miles seaward of any shoreline;

c. waters at least 10 meters in depth

**Yellow Zone**. (Waters Requiring Case-by-Case Approval) The Yellow zone is defined as any waters within federal Region IV which have not been designated as a "Red" zone, and in which ANY of the following conditions apply:

a. waters under State, or special federal management jurisdiction;

b. waters within three miles of a shoreline, and/or falling under state jurisdiction

c. waters are less than 10 meters in depth

d. waters in mangrove or coastal wetland ecosystems, or directly over living coral communities which are in less than 10 meters of water.

**Red Zone**. (Exclusion Zone) The Red zone is that area, or areas, designated by the Region IV Response Team in which dispersant use is prohibited. No dispersant application operations will be conducted at any time in the Red zone unless:

a. dispersant application is necessary to prevent or mitigate a risk to human health and safety;

b. an emergency modification of the Region IV Response Team dispersants agreement is made on an incident-specific basis

Note - The Region IV Response Team has not currently designated any areas as Red zones, but retains the right to include areas for exclusion in the future.

Note- There are no pre-authorized zones for dispersant use within the state waters. Dispersants are not to be used in estuarine or inland waters of the State or in ocean waters where they are likely to adversely impact estuarine or inland water associated fisheries resources (i.e., immediately seaward of inlets) or ocean fisheries resources.

## 9740.2 In-Situ Burning

In-Situ burning alters the composition of the spilled oil by diminishing the volume and moving many of the petroleum-related compounds from the water surface into the atmosphere.

To obtain information on fire boom suppliers, contact U.S. Coast Guard, Atlantic Strike Team at (609) 724-0008.

NOAA's website on in-situ burning contains position papers, guideline documents, and general information pertaining to the use of in-situ burning as a cleanup and protection option.

http://response.restoration.noaa.gov/oilaids/ISB/ISB.html

Sections 3.4, 3.5, and 3.8 of NOAA's Special Monitoring of Applied Response Technologies document contain checklists pertaining to the use of in-situ burning

http://response.restoration.noaa.gov/oilaids/SMART/SMART.pdf.

RRT IV in-situ burning policy for open and coastal waters can be found at http://www.nrt.org/nrt/home.nsf/ba1c0a4822583347852564490005 67e2/c3eee91c5f9a86d58525674500586767?OpenDocument

Note- There are no preauthorized zones for In-situ Burning within the state waters. In-situ burning is not to be used in estuarine or inland waters of the State or in ocean waters where they are likely to adversely impact estuarine or inland water associated fisheries resources (i.e., immediately seaward of inlets) or ocean fisheries resources.

### 9740.3 Oil Spill Applied Technologies

RRT IV has developed a Selection Guide to be a source of "best available" information and guidance to responders for the timely evaluation of non-conventional or "applied" and infrequently-used technologies, i.e chemical and biological products and response strategies, for a wide range of oil spill conditions and circumstances. The Selection Guide contains information on 12 types of products and 5 types of strategies contained in separate volumes.

The first volume is found at:

http://www.epa.gov/reg3hwmd/sgosat/S.G. Volume I.pdf

Volume I includes decision-making information, which includes information to conduct proactive evaluations by response decision-makers of a preliminary technology category, individual product, or technology during planning or incident specific use. This information has been designed to be applicable nationwide.

The second volume is found at:

http://www.epa.gov/reg3hwmd/sgosat/S.G. Volume II.pdf

Volume II contains guidance procedures to implement and monitor their use, as well as document lessons learned. Much of the information in Volume II is region-specific.

## 9750 Technical References List

### 9750.1 NCP Product List

EPA maintains a schedule of dispersants and other chemical or bioremediation products that may be authorized for use on oil discharges in accordance with procedures set forth in 33 C.F.R. Part 300.910. This schedule, called the NCP Product Schedule, may be obtained from the Emergency Response Division (5202-G), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460. The telephone number is (202) 260-2342. It may also be found at:

http://www.epa.gov/oilspill/ncp.htm

### 9750.2 Catalog of Crude Oil & Oil Product Properties

There are numerous resources available to identify the properties and hazards of materials shipped through the COTP Wilmington ports. The National Response Team has assembled a list of these, accessed through their Web Page at http://www.nrt.org/linkcshr.htm.

### 9750.3 CHRIS Manual

The Chemical Hazards Response Information System (CHRIS) is a database of chemical, physical, toxicological, thermodynamic, and response information for use by responders. Further information about CHRIS and how to use the system is located at http://www.uscg.mil/hq/g-m/mor/Articles/CHRIS.htm.

### 9750.4 Field Operations Guide (FOG)

The Field Operations Guide is intended to be a guidance document in forming a response management system for oil spills. This system is adopted from the NIMMS Incident Command System which is the predominant public domain response management system in use nationwide, and is consistent with the NCP.

Field Operations Guide 2000 may be found at: http://www.uscg.mil/hq/g-m/nmc/response/fog/fog.htm

## 9760 Fish and Wildlife Response Plan

A comprehensive North Carolina Coastal Area Wildlife Contingency Plan (WCP) has been developed to identify the roles and responsibilities of wildlife response agencies, contractors and responsible parties. The WCP is updated periodically to incorporate new policies and procedures, and contact information.

Wildlife Contingency Plan\Wcp1999.doc

## 9770 ICS Form Database

The NOAA database provides up to date ICS forms for oil spills. This is an interactive database which allows for data entry. The web site can be found at: http://www.noaa.gov