Aerial and Vessel Dispersant Preparedness and Operations Guide

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Glossary

AAR	After Action Report
AC	Area Committee
ACP	Area Contingency Plan
API	American Petroleum Institute
ASTM	ASTM International
BOEM	Bureau of Ocean Energy Management
BSEE	Bureau of Safety and Environmental Enforcement
CGA	Clean Gulf Associates cooperative
Cmd Post	Command Post
COTP	Captain of the Port, U.S. Coast Guard
DADAP	Daily Aerial/Vessel Dispersant Application Plan
DG	Dispersant Group
DMP2	Dispersant Mission Planner 2
DOR	Dispersant to Oil Ratio
DWH	Deepwater Horizon
EDRC	Effective Daily Recovery Capacity
EPA	Environmental Protection Agency
EU	Environmental Unit
FBO	Fixed Base Operator
FOSC	Federal On-Scene Coordinator
FOSCR	Federal On-Scene Coordinator Representative
GIS	Geographical Information System
GPA	Gallons Per Acre
IAP	Incident Action Plan
IC	Incident Commander
ICS	Incident Command System
IMT	Incident Management Team
ISB	in-Situ Burning
JIC	Joint Information Center
JITF	Joint Industry Task Force
MSDS	Material Safety Data Sheet
NOAA	National Oceanic and Atmospheric Administration
NOTAM	Notice to Airmen
NPREP	National Preparedness Response Exercise Plan
NRT	National Response Team
Ops	Operations
OSHA	Occupational Safety and Health Administration
OSRL	Oil Spill Response, Ltd.
OSRO	Oil Spill Response Organization
OSRP	Oil Spill Response Plan
OSRV	Oil Spill Response Vessel
PIC	Pilot-In-Charge
PIO	Public Information Officer
PPE	Personal Protective Equipment
PREP	Preparedness for Response Exercise Program
QI	Qualified Individual
RP	Responsible Party
RRT	Regional Response Team
SIMOPS	Simultaneous Operations
SMART	Special Monitoring of Applied Response Technologies
SSC	Scientific Support Coordinator
TFR	Temporary Flight Restriction
VMD	Volume Median Diameter
VOC	Volatile Organic Carbon

Aerial and Vessel
Dispersant Preparedness and Operations Guide

Purpose and Description

A. Purpose

Pre-planning and preparedness as well as the preparation of a comprehensive operations plan are critical in conducting effective aerial and/or vessel dispersant operations in the event of any offshore oil spill and especially for significant continuous releases of oil. The guidance in this document is designed for use in the United States and discusses in detail response processes within the U.S. regulatory framework. However, the dispersant response guidance, assets and processes described are fundamental and can be easily modified for international operations.

The procedures and processes presented are applicable for all sizes of spills and those of any duration. However, the personnel and assets activated will need to be scaled accordingly for the specifics of the spill and/or the geographical response area, e.g., Tier II and III monitoring may not be possible for a dispersant operation only lasting a day or two. The full ICS based dispersant structure and procedures are explained so that the users of this guidance can have a complete picture of operations to better structure the dispersant response to the spill situation presented.

The purpose of this document is to provide guidance and examples on:

- Preparedness – the planning, organization, training, exercising, and other activities that can be conducted prior to a spill occurring to ensure adequate readiness for dispersant application, and
- Operations – response objectives and checklists, operational plans, procedures, meetings and forms that can be used to aid in obtaining regulatory approval and to effectively manage the dispersant application to a spill.

The guidelines in this document can be used to develop a stand-alone dispersant preparedness and/or operations plan generally following the structure of the guidelines. This information can also be incorporated into applicable oil spill response plans (OSRPs).

The aerial and vessel dispersant guidance, procedures, forms, and other materials represent best practices developed during Deepwater Horizon (DWH) response for safely and successfully applying dispersants to surface oil slicks. Companies may adapt the forms and templates in this document to better fit their company's response organization, operations, and their geographical areas. Nothing herein should be considered a requirement. Although this document has been developed for operations in the United States, most of the sections are equally applicable to aerial and vessel dispersant operations throughout the world.

B. Description

Consistent with the above stated Purpose, this document is divided into two sections: 1) Preparedness Section and 2) Operations Section. A brief description of each section is provided below.

Part 1 – Preparedness

The Preparedness Section provides guidance, templates and information to ensure that all of the components of an effective dispersant response are in place and properly functioning prior to a spill. Key components of an effective dispersant application system include:

- Designating an Aerial and Vessel Dispersant Group that is integrated into the Incident Command System (ICS) based response Incident Management Team (IMT)

- Establishing activation procedures
- Identifying adequate dispersant application assets and dispersant stockpiles
- Assessing Oil Spill Removal Organization (OSRO) dispersant capabilities
- Developing a training and exercise program to maintain proficiency and readiness.

Part 2 – Operations

The Operations Section provides response processes and procedures to establish a dispersant operations program in the event of a spill which includes:

- Activation checklist
- Standardized operational forms
- Identification of potential staging airports
- Developing a generalized concept of operations and associated objectives
- Daily activity flow charts and information on developing the daily application plan
- Documenting and reporting activities and the results of the operations.

C. Systems Approach

Although described in two sections, the Aerial and Vessel Dispersant Preparedness and Operations program covered in these guidelines generally treats aerial and vessel dispersant operations as a "Dispersant System." This will ensure that each component of the system is in place, properly functioning and integrated with the other components. Failure of any one component can significantly reduce the ability to apply dispersants.

The major components of a "Dispersant System" are:

- Application aircraft and vessels and trained crews
- Spotter/air control aircraft and trained crews
- IMT Dispersant Group management/coordination team
- Dispersant Monitor/Observer/Surveillance aircraft
- Trained dispersant observers and monitoring equipment
- Approved dispersant stockpiles in sufficient quantity
- Dispersant stockpiles effectiveness testing procedures
- Communication systems (satellite, marine, aviation) in all spray assets (spray, spotter and observer aircraft and spray vessels) and at staging bases. Communication equipment should allow aviation assets to directly communicate with marine assets.
- Flight tracking systems on spray and spotter aircraft and spray vessels
- Spray pass documentation and report systems on spray aircraft
- Spray system testing and calibration data

- Staging airport/port ground support and management
- Logistics equipment and plans
- Dispersant transfer systems
- Dispersant operations plans, forms and data bases
- Health and Safety Plans
- Spray and support equipment maintenance plans
- Training and exercise program for all personnel and equipment.

PART 1 – PREPAREDNESS SECTION

1-1 Introduction

This portion of the guidance document covers the types of preparedness activities that can be conducted to ensure adequate measures are in place to rapidly and effectively implement an aerial and/or vessel dispersant application response should an oil spill occur.

1-2 Dispersant Operations Incident Management Team Organization

A. Dispersant Operations Group Purpose and Scope

The surface dispersant group organizational structure should be integrated into the overall Incident Management Team prior to a spill to ensure a timely and effective dispersant application response. Descriptions of the dispersant group positions, including their duties and responsibilities, should also be provided to ensure members know who they report to and what specifically they need to accomplish. Setting the organizational structure and position descriptions also aids in determining who can best fill these roles. A primary and at least one alternate should be pre-designated for each position to ensure availability and that they receive the training needed to perform their duties.

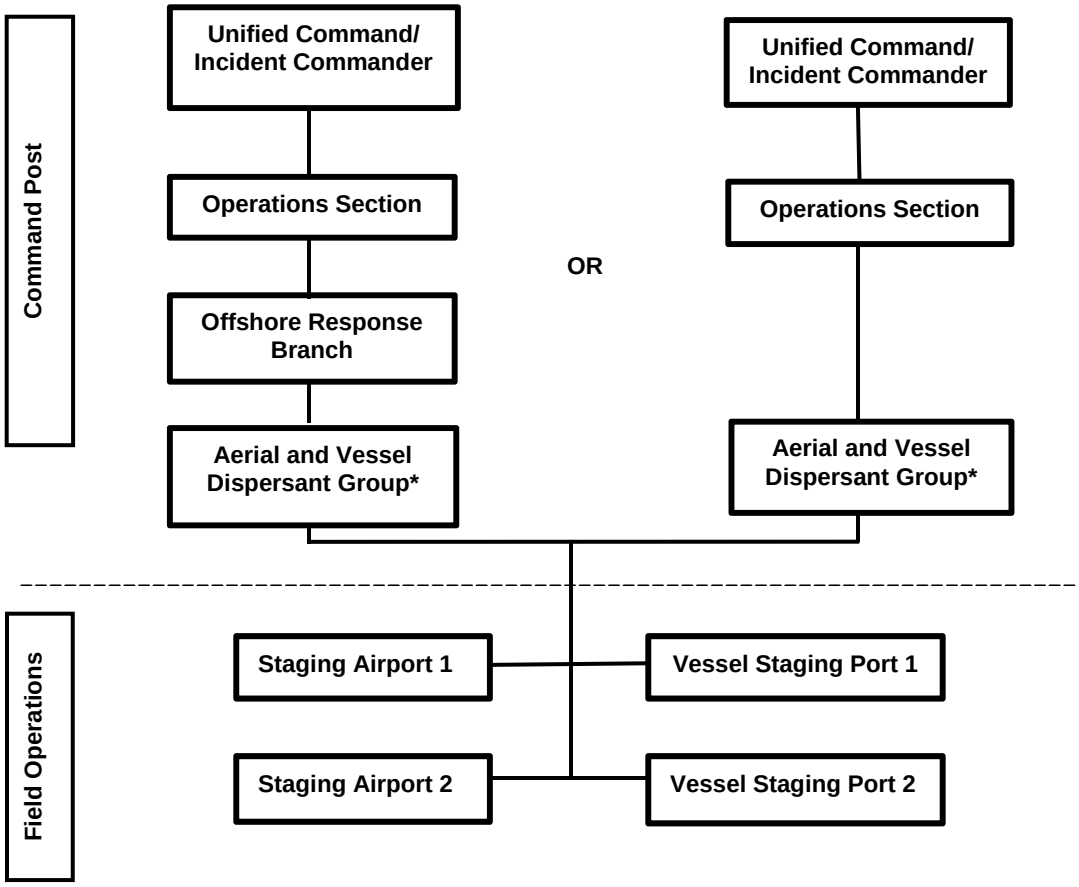
Information provided in this section should be used as guidance in developing a dispersant operations organization, its integration into the overall IMT and the breakdown of functions between the Command Post and various field locations. These recommendations and organizational charts are largely based on what was successfully used during the DWH response.

B. Aerial and Vessel Dispersant Group

Aerial and vessel dispersant application requires a management team in the command post and an operational support team at each aerial and vessel staging base. The recommended organizational structure for each of these teams is described in the following paragraphs and subsections. The responsibilities for each position are described in Appendix A.

The Aerial and Vessel Dispersant Group manages and coordinates all surface dispersant operations and generally reports directly to the Offshore Response Branch as shown in Figure 1-1 and as published in the USCG Incident Management Handbook for the oil spill response. Other IMT structures, such as having the Dispersant Group report directly to the Operations Section Chief or Deputy are equally valid. Plan Holders may use other ICS structures depending on their company policies, spill specifics and the personnel activated. Descriptions and more detailed organizational charts for the Dispersant Group Command Post and the Staging Base components are provided in the following subsections.

Dispersant operations are fast paced. Direct access to the IMT Operations Section Chief is critical for obtaining timely government approval to apply dispersants and to safely coordinate dispersant operations. If the Aerial and Vessel Dispersant Group is placed many levels below the Operations Section Chief, it is difficult to timely obtain operations approvals and make operational adjustments. Because dispersants and their application are very technical and aircraft operations are unique, the Operations chain of command will require the Dispersant Group Supervisor to brief them on dispersant operations and to assist in developing the operational assignments.



* The Aerial and Vessel Dispersant Group coordinates their activities and operations most importantly with the Air Operations Branch and with a number of other ICS branches, groups and units. The organization diagram does not show these interactions as they are numerous. The coordination for aviation safety is more fully described in Section 1-5 C.

Figure 1-1 – Example IMT Organization Chart for Aerial and Vessel Dispersant Group

C. Command Post Aerial and Vessel Dispersant Group

When responding to an oil spill, it is best to over respond by activating all of the response assets that may be needed. Initial reports may not correctly capture the scale of the issue and oil spill situations often change rapidly during the initial stages revealing the need for more personnel and equipment. Therefore, it is important to have a robust dispersant management team in the Command Post to:

- Generate relevant documents for the Incident Action Plan (IAP),
- Provide dispersant technical expertise to the IMT/Unified Command,
- Assist in preparing the dispersant application approval request,
- Develop a daily dispersant operations plan,
- Coordinate dispersant aerial/vessel operations, and
- Document and report on what was accomplished each day.

The number of daily or near daily information requests, technical studies and data needs, asset allocations, etc., made during any spill response cannot be predicted, and are often demanding and time intensive. Successful operations require experienced, knowledgeable experts in the Command Post to keep-up on the response issues including public/risk communications. The Aerial and Vessel Dispersant Group Command Post organizational chart is designed to meet these needs, has been validated during actual response operations and is shown in Figure 1-2.

The “Red” positions are those that should be activated for every spill response involving dispersant application. The other positions should be activated based on the magnitude and needs of the spill response. The roles and responsibilities for each position are provided in Appendix A and a template for listing the names and contact information for each member are provided in Appendix B.

Some of the positions in the Aerial and Vessel Dispersant Group may appear out of place, such as the Dispersant Science Coordinator and the Dispersant Information and Risk Coordinator. However, these positions should be made part of the Dispersant Group because they need to be dedicated to their responsibilities within the group and require close access and collaboration for coordinating their activities and obtaining resources to perform their duties. These two positions also coordinate closely with the Environmental Unit, Public Information Officer (PIO) and Joint Information Center (JIC), and may, as the response progresses, be transferred to these units.

The Aviation Operations Coordinator, Aviation Consultant, GIS Coordinator, and Documentation Coordinator are technical expert positions that require experience in dispersant operations and specialized software to effectively perform their duties. The Aviation Operation Coordinator should be a member of, or have experience with, the Dispersant OSRO so that they know the capabilities of the aircraft and personnel.

D. Airport/Port Staging Base Dispersant Team Organization

The Staging Base Dispersant Team organizations are as important as the Command Post Dispersant Group because this team has responsibility for ensuring that the aircraft and vessels have everything they need to conduct dispersant operations and maintain the readiness of the equipment and personnel. This includes:

- Scheduling and documenting spray sorties
- Working with the Fixed Base Operator (FBO) and Airport or Port Manager on fueling, dispersant transfers and storage, personnel access, and ramping aircraft
- The overall safety of the staging base and field operations and assisting with OSHA inspections.

There are other organizational structures that can be used; however, the structures described below were validated during DWH response and are proven to meet all of the expected and unexpected response needs and the necessary operational coordination and field onsite management.

An example of a typical Airport Staging Base Dispersant Team organization chart is shown in Figure 1-3, and a similar Port Staging Base Dispersant Team organization chart is shown in Figure 1-4. The “Red” positions are those that should be activated for every spill response involving dispersant application. The other positions should be activated based on the magnitude and needs of the spill response. Descriptions of each position are provided in Appendix A and a template for listing the names and contact information for each member are provided in Appendix B.

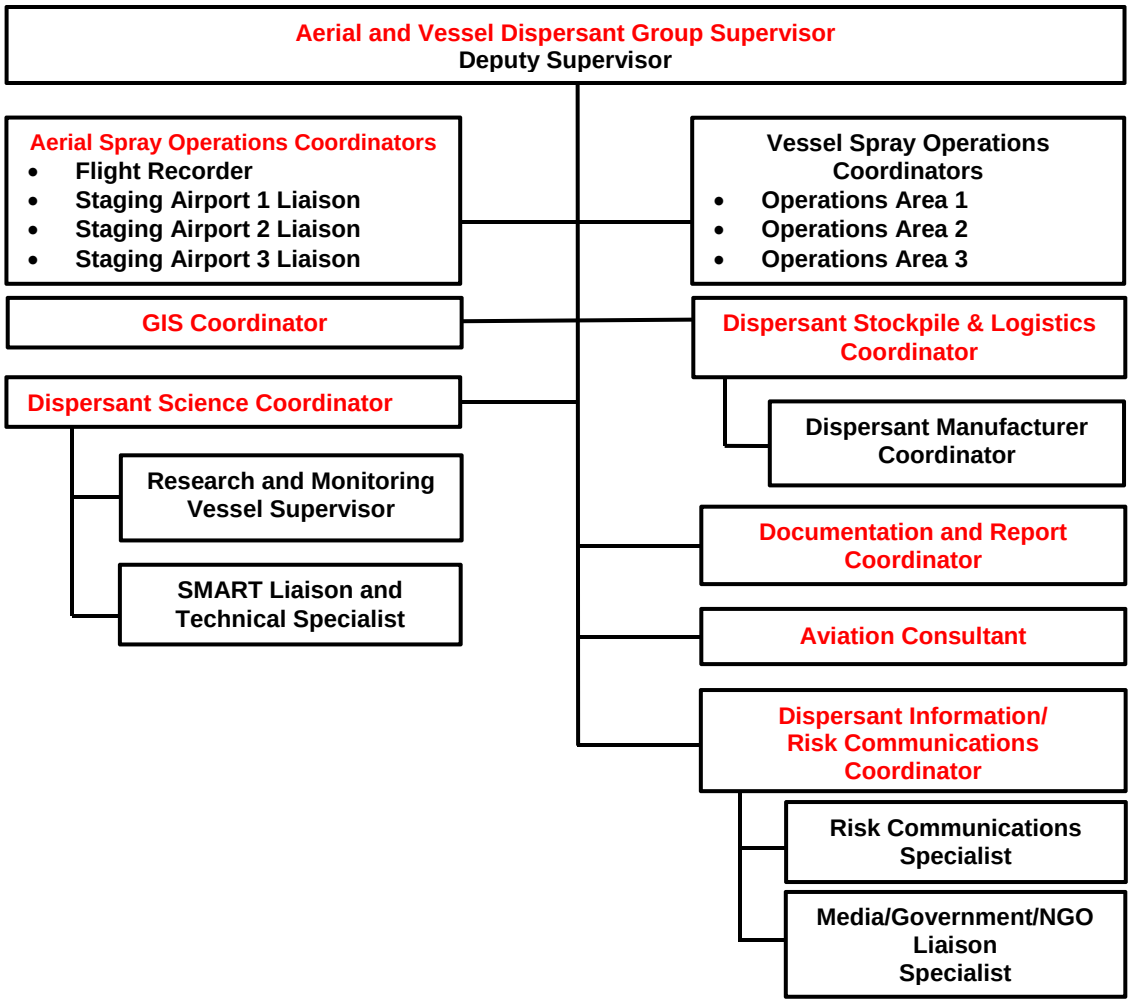


Figure 1-2 – Example Command Post Aerial and Vessel Dispersant Group Organization Chart

There may be additional positions assigned to the Staging Airport by other branches such as an Air Safety Supervisor assigned by Air Operations or a Logistics Coordinator for dispersant stockpiles by the Logistics Section. These positions are not shown on the organization chart as they are not under the management of the Aerial/Vessel Dispersant Group.

The Airport and Port Staging Base Managers should be a member of the Dispersant OSRO providing dispersant application services associated with the staging base. This responder should have knowledge of the aircraft or vessel capabilities and equipment, the pilots or vessel captains and the operating policies and procedures of their company. Additionally, they will be responsible for submitting invoices for services identifying the flight or vessel hours, personnel and other assets and expendables used in the response on a daily basis.

Aerial Surveillance/Observation consultants are included in the Airport Staging Base Dispersant Team staff as experts in identifying oil and reporting on the dispersant application effectiveness. This position provides the Responsible Party with the expertise needed to work with the U.S. Coast Guard SMART teams to ensure accurate reporting of the dispersant spray operation, assessment of the application effectiveness and to assist in evaluating whether to continue or terminate dispersant operations. These Aerial Surveillance/Observation personnel can also be used to monitor the effectiveness of vessel based dispersant applications.

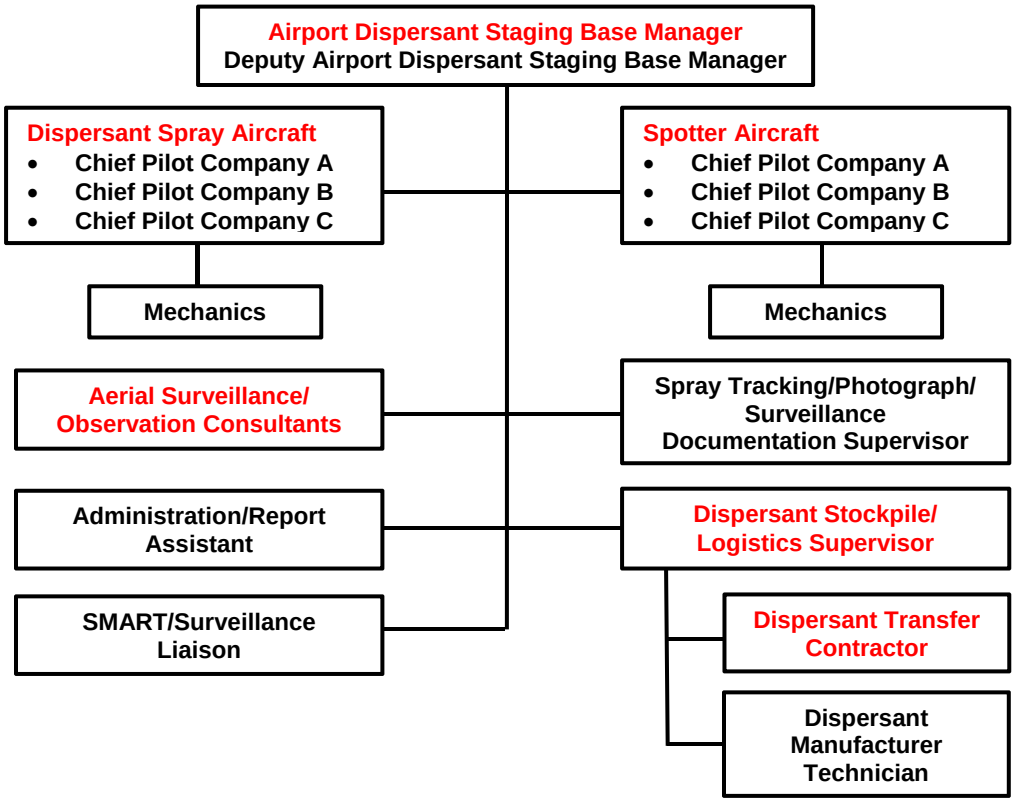


Figure 1-3 – Example Airport Staging Base Dispersant Team Organization Chart

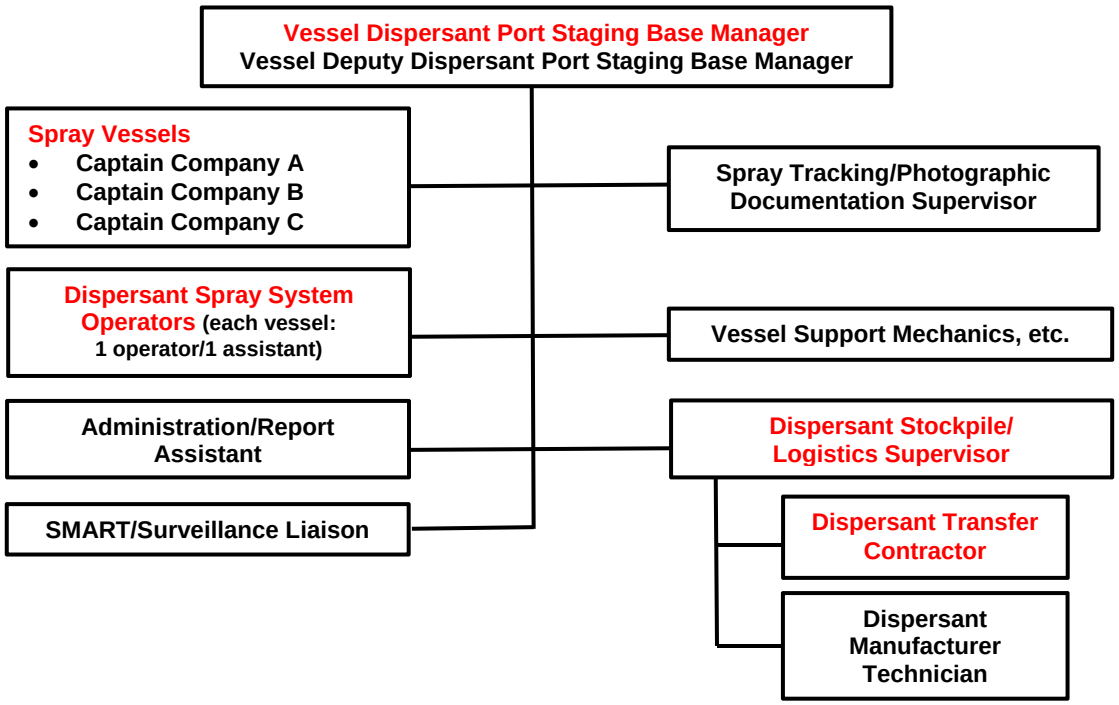


Figure 1-4 – Example Port Staging Base Dispersant Team Organization Chart

1-3 Assessing Dispersant Response Capability

A. Section Purpose and Scope

In the planning process for a particular facility, group of facilities or operations, companies should identify the available dispersant application resources and estimate how much oil can be dispersed. Then a determination should be made if this dispersant capability meets the company's expectations for spill mitigation and meets applicable regulatory requirements. Also, these procedures may be used to answer "what if" questions for changing the number and type of aircraft/vessels or the staging airport(s)/port(s). Therefore, this section provides guidelines and recommendations for accurately estimating and assessing dispersant response capabilities.

The following paragraphs provide a four step procedure for estimating dispersant capability (i.e., the gallons of dispersant that can be applied and the gallons of oil that can be treated and potentially dispersed) with available aerial and vessel dispersant spray assets for a specified oil spill scenario. This information allows responders to design a more effective response to an actual spill situation by activating the appropriate resources. This information also permits assessing the sufficiency of the dispersant response as part of the overall response.

B. Site and Operation Specific Dispersant Capability Estimate

(1) Scenario Description

The first step in estimating dispersant capability for a specific spill scenario involves identifying the spill location, the dispersant staging bases and setting criteria such as how many daylight hours are available for applying dispersants, width/length of the expected spill, dispersant dosage (gallons per acre) to apply, etc. It should be noted that the quantity of the oil spill is not a necessary component in determining capability, but is essential in determining if the capability is adequate for each scenario. Dispersant capability depends mainly on the available spray assets and the location of the spill and the staging bases.

A graphic similar to the example provided in Figure 1-5, should be developed to show the oil spill scenario components (spill location, staging airports/ports, and transit distance to the spill site) that are needed to estimate the dispersant capability. Additional information concerning the type and quantity of oil, description of the source, etc. may be included to provide responders with a better understanding of the spill. If there are multiple facilities and areas, separate graphics or component descriptions should be generated for each, if the scenarios are substantially different.

(2) General Aerial and Vessel Platform Capability

The Dispersant Mission Planner 2 (DMP2) capability calculations in Figure 1-6 are provided to give responders an idea of how much dispersant can be applied and how much oil can be treated by each type of spray aircraft and representative vessel spray systems during a full operational day. These calculations estimate the amount of dispersant an aircraft or a vessel can apply in a 12 hour operational period (average hours of daylight operations) assuming

- a transit distance of 100 nm from the staging airport or port to the spill site,
- a 4 nm pass length for the spill area,
- aerial dispersant application using a race track pattern and a vessel dispersant application using a back and forth pattern,

- a dosage of 5 gallons per acre (gpa) for both aerial and vessel application, and
- loading fuel and dispersant simultaneously.

The 12 hour operational period, 4 nm pass length and 5 gpa dosage are used in this analysis as they are values used in U.S. regulatory materials. See 33 CFR Parts 154 and 155. The 100 nm transit distance was selected as a representative distance for many offshore facilities.

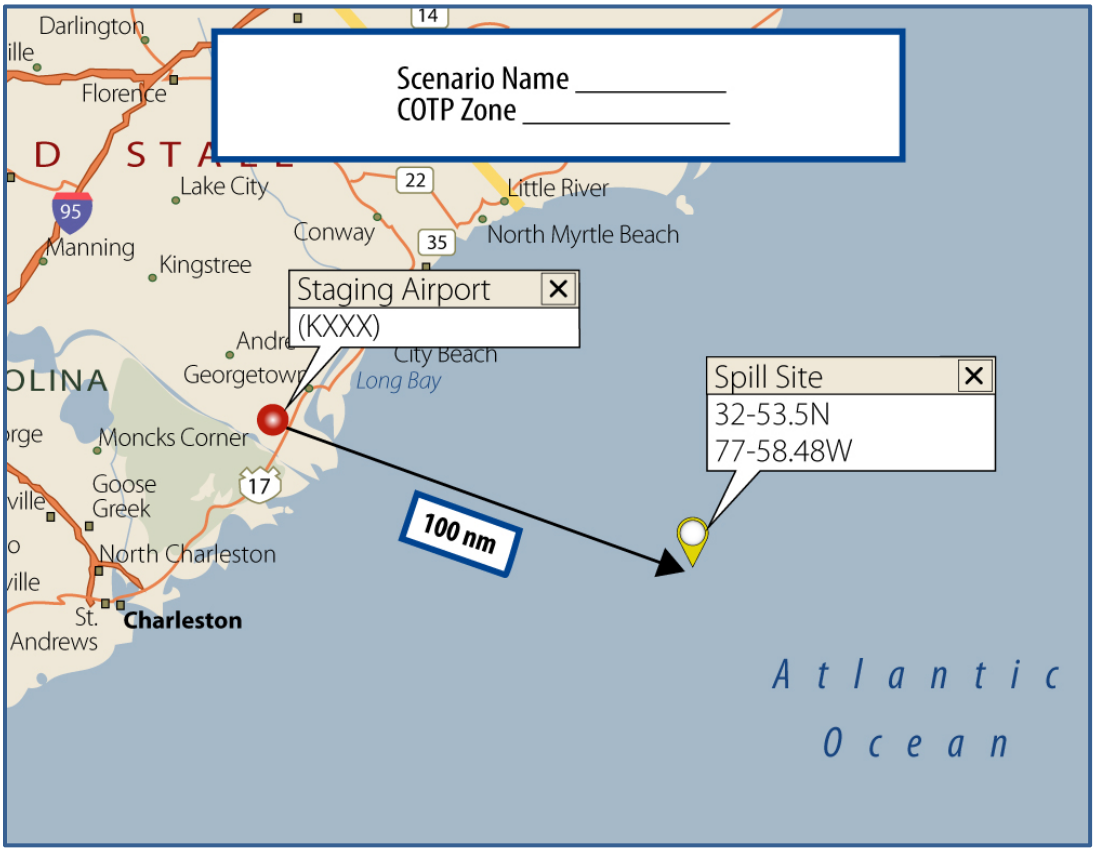


Figure 1-5 – Site Specific Scenario Components

Aircraft	Payload (gallons)	Estimated Dispersant Application Capability 12 Hour Day (gallons)	Estimated Amount of Oil Treated 12 Hour Day * (gallons/barrels)
C-130 with ADDS Pack	5,000	15,000	300,000/7,143
C-130A Internal Spray System	3,250	15,000 **	300,000/7,143**
BT-67	2,000	10,000	200,000/4,762
DC-4	2,000	8,000	160,000/3,810
DC-3	1,200	4,800	96,000/2,286
BE-90	350	2,800	56,000/1,330
Large OSRV	3,000	2,435***	48,700/1,159
Small OSRV	1,000	1,000	20,000/476

* Estimated amounts of dispersant applied are based on a 5 gpa dosage and a DOR of 1:20 to treat a 0.1 mm thick oil slick (solid black or brown in color) and a 100 nm transit distance to the spill site. No estimate for effectiveness is provided as this can range from 50-90% or more depending on the oil, weather conditions, etc. DORs of 1:40 or more may be used for planning, if these dosages are known to be effective for the oil.

** Under the specific assumptions described above, a plane with a smaller payload may be able to treat a similar volume of oil as a plane with a larger payload, since the larger 5000 g payload takes considerably longer to apply dispersant and to reload. In this particular case the smaller payload aircraft (3,250 g) is able to make more sorties than the larger aircraft; thus applying the same amount of dispersant during the 12 hour operation day.

*** Large OSRV capability calculation is for how much dispersant can be applied by having the dispersant stockpiles resupplied by other vessels to the OSRV at the offshore spill site. With the OSRV in port at the beginning of the operational day, there would be no application on Day 1 of the spill because the mobilization time and transit time to the spill site at 10 knots would be greater than 12 hours.

Figure 1-6 – Estimated Aircraft Dispersant Application Capability and Amount of Oil Treated

(3) Dispersant Spray Asset Capability Evaluation

The table shown in Figure 1-7 should be completed by using the DMP2 software to estimate the amount of oil that can be dispersed by the available spray assets over a three day operating period for each scenario described above. The DMP2 software can estimate how many sorties per day can be conducted and the quantity of dispersant that can be applied by each spray aircraft and vessel. DMP2 software is available at the NOAA web site: http://response.restoration.noaa.gov/dmp2.

Standard criteria used for regulatory compliance calculations of dispersant capability are pass length, utilization time, Dispersant to Oil Ratio (DOR) and dosages. However, all of the criteria used in the calculations may be changed to better reflect actual operational criteria.

In completing the right-hand column in the table in Figure 1-7, a value for the effectiveness of the dispersant on the oil must be used for the calculation. The effectiveness will depend on the properties of the crude oil/product spilled, environmental conditions, the dispersant type applied, DOR used, weathering of the oil, etc. Please refer to Section 1-11 for more information about oil dispersibility.

(4) Dispersant Stockpile Evaluation

The table shown in Figure 1-8 can be used to estimate the dispersant stockpile amounts and delivery times to the staging base(s) to ensure that the spray aircraft and vessels will have no delays in spraying due to lack of onsite dispersant stockpiles. The table can also be completed to verify that dispersant stockpiles can be delivered to the staging airport to meet aircraft spray needs for the particular scenario.

The amount of dispersant that can be delivered to the staging airport/port on each day should be compared to the daily dispersant capability totals in Figure 1-7 to determine if supplies are sufficient and can be timely delivered to the designated staging site(s). This will ensure adequate dispersant supplies are available to meet the requirements for each scenario.

Figure 1-8 is intended to assist with compliance with the U.S. regulatory requirements of:

- Day 1 – 8,250 gallons for the Gulf of Mexico and 4,125 gallons everywhere else
- Day 2 and Day 3 – 23,375 gallons each day.

Additional guidance for U.S. regulatory compliance for the times and quantities of dispersant stockpiles to arrive at the staging airport are provided in USCG Policy Letter on Oil Spill Removal Organization (OSRO) Classification Program dated April 24, 2013.

A listing of all dispersant stockpiles in the United States and Canada as of October 1, 2013, are provided in Appendix C. The stockpiles owned by a company or immediately available through a cooperative or OSRO should be highlighted so responders will know which ones to access first. An inventory of globally available dispersant stockpiles is available from Oil Spill Response, Ltd. (OSRL) for their members.

Aircraft/ Home Airport	Payload (gallons)	Estimated Dispersant Capability * (gallons)				Estimated Amount of Oil Dispersed ** (gallons/barrels)			
		DAY 1	DAY 2	DAY 3	Total	DAY1	DAY 2	DAY 3	Total
OSRO 1									
Aircraft 1 (xxxx)									
Aircraft 2 (xxxx)									
Aircraft 3 (xxxx)									
OSRO 2									
Aircraft 4 (xxxx)									
Aircraft 5 (xxxx)									
Vessel 1 (xxxx)									
OSRO 3									
Aircraft 6 (xxxx)									
Vessel 2 (xxxx)									
TOTAL	**------**								

* Calculations are prepared by using Dispersant Mission Planner 2 (DMP2) for a spill that is __ nm wide, ____ nm from the staging airport, applying a dosage of 5 gallons per acre, spraying for a full 12 hour day using a _____ pattern. Day 1 capabilities are calculated based on the aircraft being activated at the beginning of the operational day. This provides a conservative (minimum) Day 1 estimated capability.

Mobilization times for aircraft are OSRO 1 ___ hours, OSRO 2 ___ hours, OSRO 3 ___ and OSRO 4 ___ hours from activation. Capability values are rounded down to the nearest 100 gallons.

The capability listed represents 100% effectiveness for the DOR applied.

** Estimated amounts of oil dispersed are based on a ___% effectiveness value for the dispersant which vary due to the crude oil/product, dispersant, etc.

Figure 1-7 – Site Specific Scenario Dispersant Capability Table
Estimated Dispersant Capability for (Insert Asset/Location Name)
Using Staging Airport (Insert Airport Name & Location)

No.	Stockpile Location	Stockpile OWNER	Dispersant Name	Amount (gallons)	Cascade Time to Staging Airport * (hours)	Estimated Arrival at Staging Airport Date/Time	Running Total (gallons)
DAY 1							
1							
2							
3							
DAY 2							
4							
5							
6							
7							
8							
9							
10							
DAY 3							
11							
12							
13							
14							

* Calculations may be based on 2 to 4 hours stockpile mobilization time and an over-the-road transit speed of 50 mph for realistic transit times. The road distances between stockpile locations and staging bases may be obtained from Google Earth or other software. U.S. regulations should be consulted regarding over the road transit speeds and mobilization time. If stockpiles are air freighted, estimates of the arrival time will need to be developed that include aircraft mobilization time to the loading airport, stockpile mobilization time and transit times to the loading airport, cargo loading times, and finally aircraft transit time to the dispersant staging airport which will depend on the specific freight aircraft used.

Figure 1-8 – Dispersant Stockpile Logistics Plan
Staging Airport or Port (Insert Airport or Port Name and Location)

C. Integration of Dispersant and Other Response Capabilities

Using the above dispersant capability analysis the company should determine if the dispersant response component is sufficient when considering all of the response tools the company has available. It is the company's responsibility to determine the sufficiency of their response assets for the risk posed. No guidance is provided as to what dispersant capability is sufficient, because this will vary greatly due to spill scenarios and the total available response assets.

An estimate of the total amount of oil that theoretically can be recovered and treated using all of the response tools (skimming, dispersants and in-situ burning) can be calculated by using the Response Options Calculator (ROC) software. ROC software is available at the following website: http://www.genwest.com/roc/. The dispersant component of this software is based on the DMP2 algorithms. Other spill modeling software packages (e.g., OSCAR, SIMAP) may also be used in assessing the selection and capability of the response resources and techniques.

1-4 Dispersant Authorization Policies

A. Purpose and Scope

This section describes dispersants authorization policies accepted in the United States and provides references to the dispersants plans developed by several of the Regional Response Teams (RRTs). Area Contingency Plans (ACPs) should also be consulted as they may contain additional guidance and procedures for obtaining approvals and applying dispersants.

B. Authorization Policies

To become familiar with the appropriate dispersant authorization process the company should first determine whether the area of the potential dispersant application is located in a pre-authorized, case-by-case, or excluded dispersant application area. If in a pre-authorized or case-by-case area, the company must then determine which RRT has jurisdiction over the spill site area. Although similar, each RRT has its own dispersant use policies, procedures and approval forms.

It is recommended that the company review, in advance, the RRT dispersant documents for your geographical area(s) to ensure that, during a spill response, you follow the appropriate RRTs guidance for dispersant approval. Additionally, it is helpful to know the FOSC and members of the RRT for your area and understand the dispersant forms, process and information they will use to approve dispersants for a spill response. Attending RRT meetings, which are open to the public, is a means to meet decision makers and stay abreast of dispersant and other response changes. Conducting a table-top exercise with RRT members or participating in a dispersant exercise with the RRT is a good way to learn about, and to gain experience in, how the dispersant approval process works in your area.

The following sections describe various dispersant zones in the coastal areas around the U.S., where dispersants are approved for use. Specific RRT dispersant application procedures and forms are discussed in Section 2-3 of Part 2 – Operations with associated forms provided in Appendix D. The websites where the RRT Dispersant Plans are located are provided in Section 1-4 D below for the plan preparer to review and use as deemed appropriate.

C. Dispersant Offshore Application Areas

The following paragraphs describe the general RRT designations of coastal waters for dispersant application and the RRT jurisdictions and pre-authorized areas are shown in Figure 1-9. The specific RRT plans should be reviewed to determine if any changes should be made to the descriptions. It should be noted that web site information may not reflect the most current RRT policies so the FOSC and/or RRT should be directly contacted to confirm where dispersant may

be sprayed. Some RRTs, such as RRT3 in Delaware Bay, have additional dispersant approval areas. Plan Holders should add the specifics for their particular operating area to their plans; Figure 1-9 may be modified or expanded in the Plan Holders plan to more clearly show the dispersant approval areas, marine sanctuaries, etc. that are applicable to their operations.

(1) Pre-authorization Areas

These areas are the offshore waters where the RRT has pre-authorized the use of dispersants and has delegated the FOSC authority to approve dispersant use without further consultation with the RRT, if the spill meets specified criteria. The FOSC is provided a checklist of information to complete in making the dispersant use decision. This checklist varies for each RRT in both format and content. The FOSC will immediately inform the RRT whenever the pre-authorization authority to apply dispersants is exercised.

(2) Case-by-Case RRT Authorization Areas

Case-by-Case authorization areas (usually near shore areas with relatively shallow water depths) require authorization to use dispersants by the members of the RRT (USCG, EPA, and the affected State(s), with the Department of the Interior (DOI) and Department of Commerce (DOC) being consulted). This authorization requires RRT members to approve dispersant use for the specific situation presented and often will require additional information and a net environmental benefit analysis.

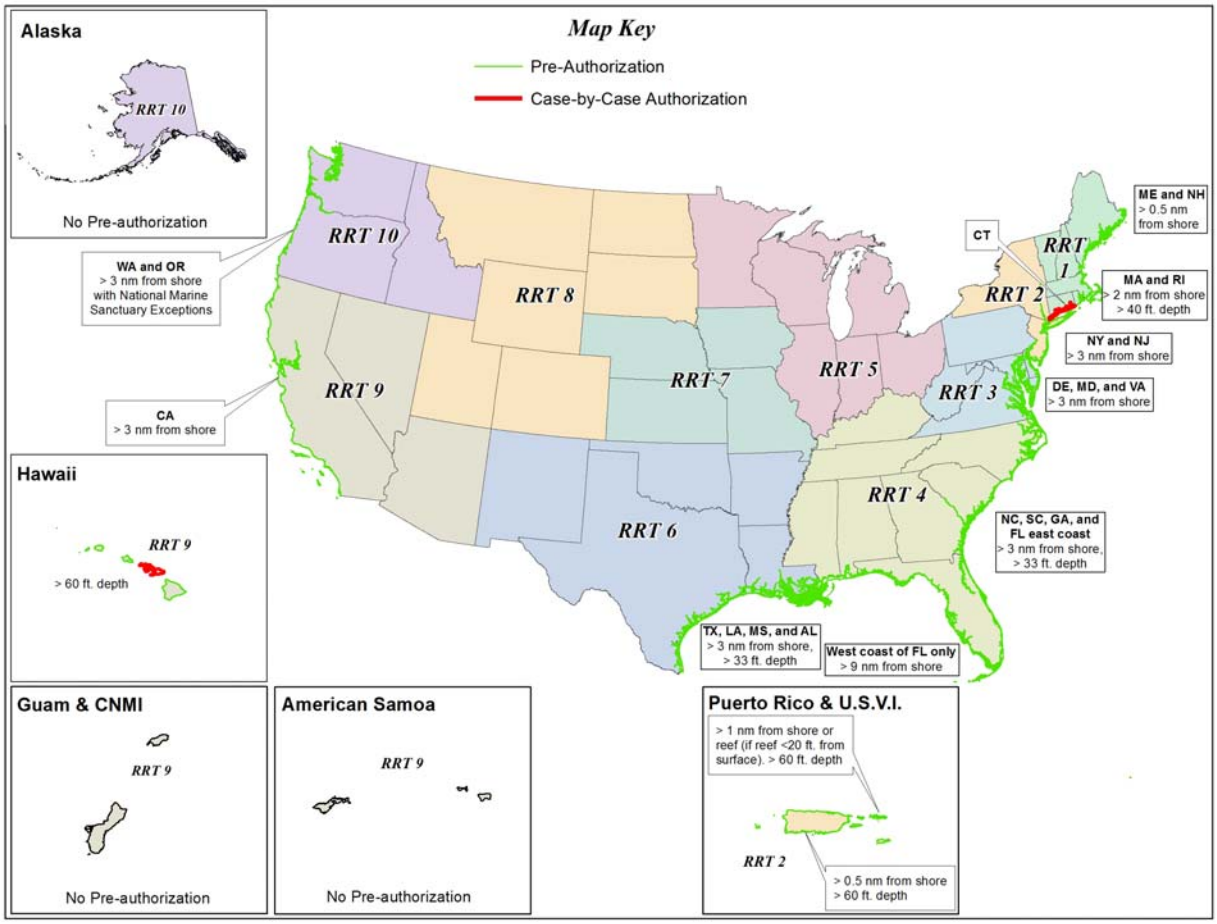
(3) No Dispersant Areas: These are inland water areas, offshore marine sanctuaries or other protected offshore or near shore areas. RRT guidelines should be reviewed for details of these areas and for the notification requirements when dispersants are used in adjacent areas.

D. RRT Dispersant Plans

When pre-planning for dispersant application the specific dispersant response policies, procedures and forms for coastal RRTs associated with the company's facilities or operations should be identified and included in the plan. The following is a list of web links that can be accessed to obtain the applicable RRT dispersant authorization information. The dispersant plans may also be accessed via the U.S, Coast Guard website by clicking on the "Port Directory" tab, then selecting the applicable USCG Sector/COTP office, then scrolling down on the right side of the page to find the "Area Contingency Plan" which will provide specifics on dispersant application in the area. The link to the website is https://homeport.uscg.mil/mycg/portal/ep/home.do. If there are questions, personnel in the USCG Captain-of-the-Port office should be contacted.

RRT 1, 2, 3 and 4	http://www.rrt.nrt.org/
RRT 6	**FOSC Dispersant Pre-authorization Guidelines and Checklist** http://www.losco.state.la.us/pdf_docs/RRT6_Dispersant_Preapproval_2001.pdf
	Near Shore Environment Dispersant Expedited Approval Process and Checklists http://www.losco.state.la.us/pdf_docs/RRT6_Nearshore_Dispersant_EAP_031605.pdf
RRT 9	**California Dispersant Plan and Federal On-scene Coordinator (FOSC) Checklist for California Federal Offshore Waters** http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=15889
	California Area Contingency Plans (ARPs) http://www.rrt9.org/go/doctype/2763/50275
RRT 10	**Section 4610, Northwest Area Contingency Plan** http://www.rrt10nwac.com/NWACP/Default.aspx
CRRT	**Caribbean Regional Response Team** http://www.crrt.nrt.org/
ORRT	**Oceania Regional Response Team** http://www.oceaniarrt.org/go/doc/3911/1039647/

To assist in authorizing the use of dispersants, the application should contain technical information on identifying oils that can be dispersed, dosages that should be applied, the use of trial spray passes, etc. Each RRT has slightly different information requirements, policies and procedures which are of considerable length so will not be reiterated herein.



* Note: The State of Florida has withdrawn their pre-authorization for dispersant application in state waters. Therefore, the west coast of Florida pre-authorization area is 9 nm offshore. See RRT 4 for additional information on the Florida pre-approved area.

Figure 1-9 – RRT Dispersant Application Pre-authorized Areas (as of July 2013)

E. Reference Information

There are excellent publications that provide technical information on individual dispersants, how dispersants interact with the oil, appropriate application techniques and dosages, and descriptions of how to determine when the dispersant is effective. The following is a partial list of dispersant publications that may be consulted for dispersant application technical information. Dispersant OSROs will also have training materials and application information and procedures for their dispersants and spray equipment.

- ExxonMobil Oil Spill Response Field Manual (2008)
- Open Water Oil Identification Job Aid (NOAA 2007)

- Dispersant Application Observer Job Aid (NOAA)
- Introduction to Observing Oil from Helicopters and Planes (NOAA)
- Use of Dispersants to Treat Oil Spills (ITOPF Technical Information Paper)
- Using Dispersant to Treat Oil Slicks at Sea – Airborne and Shipborne Treatment (CEDRE 2005)
- Oil Spill Dispersants (Alun Lewis and SINTEF 2001)
- IMO Guidelines for the Use of Dispersants for Combating Oil Pollution at Sea, 2013.

1-5 Health and Safety Plan for Aerial and Vessel Dispersant Application

A. Section Purpose and Scope

The health and safety of responders is the number one priority in dispersant operations. It is the responsibility of every responder to ensure that the operations they are conducting or are supervising are performed in the safest manner possible.

A Health and Safety Plan should be prepared for every dispersant response. As part of the pre-planning process, a template should be developed to facilitate rapid preparation of a health and safety plan for aerial and vessel dispersant operations. The organization of the Dispersant Operation Health and Safety Plan should follow the Plan Holder's format. The IMT Safety Officer will be responsible for ensuring the plan is completed and integrated into the overall Incident Safety Plan. Because these plans are company specific, detailed guidelines are not included in this section. A description of the aviation safety network and the interaction among aviation safety professionals is provided in Section C below.

B. General Guidelines

The key health and safety operational procedures and personal protective equipment for the various dispersant activities are provided in Appendix E. The supervisors of the dispersant staging airports and ports are responsible for the safety of operations at the staging locations and the aircrafts' Pilot-In-Charge (PIC) and the vessels' captain are responsible for the safety of operations under their supervision. The leader/supervisor of spray equipment teams, monitoring teams and other teams dispatched to operate on either dispersant aircraft or vessels are responsible for the safe operations of their team members and of their equipment. However, the overall responsibility for safety remains with the PIC and the vessel's captain should there be any difference of opinion on safety issues.

C. Aviation Safety

Aviation safety is a critical aspect of dispersant operations as dispersant application involves multiple aircraft working together at low altitudes in offshore areas often out of the sight of land. Aviation Safety during a response relies on a network of safety professionals working together to ensure the safe operations. For dispersant operations this safety network consists of the IMT Safety Officer, who has overall incident safety responsibility, and members of the Air Operations Branch, Aviation Consultant in the Aerial/Vessel Dispersant Group, OSRO safety managers, safety managers/organizations of the contracted dispersant aircraft companies and most importantly the Pilots-In-Charge (PICs) of the dispersant aircraft. The Dispersant Aviation Consultant works closely with Air Operations Branch by attending the daily Air Operations briefings and meetings and assisting in developing aviation procedures to ensure dispersant activities are represented, fully coordinated and integrated with overall air space management.

The Aviation Consultant also meets with and coordinates the aviation operations procedures with the aviation staging base personnel. This network provides both the experience in aviation operations as well as dispersant application to enable sound safety plans and operational procedures to be developed and timely communicated and executed.

The OSRO and its dispersant aviation contractors will prepare safety and operational plans for the operations at the staging airports they are assigned. This staging base safety and health plan will be prepared based on the standard operating and safety procedures that are part of each aviation contractors Operational Plan and which are exercised during annual training and dispersant application flights. During a response the contractor safety and operational plans will incorporate the guidance and procedures that are developed by the Air Operations Branch for the specific spill incident (i.e., separation distances, communications frequencies, etc.).

During a response the Air Operations Branch will prepare guidance that will apply to all aircraft operators and operations (e.g., surveillance aircraft, logistics aircraft, observation aircraft, etc.) and will cover the areas described below. Examples of this guidance are not provided as it will depend on the specifics of the spill incident and the plan holders aviation policies and procedures.

- Request Temporary Flight Restrictions (TFRs) or other necessary operational restrictions on air space
- Establish coordination procedures for aircraft operators
- Establish flight and duty hour time limits for pilots and ground support personnel. It should be noted that additional flight and/or support crews may need to be activated to ensure flight duty hour limits are met.
- Coordinate and publish air-to-air and ground-to-air radio frequencies
- Set altitude separation, entry & exit point operational criteria, check-in and check-out and safety stand down procedures, and other criteria for de-confliction and management of air operations throughout the response area
- Coordinate and publish air traffic control procedures
- Develop Aviation Site Safety Plan as part of the Incident Safety Plan prepared by Incident Safety Officer
- Prepare aviation accident-near-miss investigation procedures and conduct investigations
- Prepare guidance on conducting mission and flight risk assessments and the frequency of risk assessments
- Assign aviation safety personnel to staging bases, as needed.

1-6 Dispersant Application Systems and Operations

A. Section Purpose and Scope

Prior to obtaining authorization for dispersant use, the FOSC or RRT will likely require documentation that the dispersant application system has been designed and tested to satisfy applicable regulatory requirements. See 33 CFR Parts 154 and 155. Therefore, the company should become familiar with those standards and, as part of the pre-planning process, ensure

the available systems are compliant. This documentation should be prepared in advance and be available to include in the dispersant authorization application, if requested by the FOSC or RRT. Consequently, this section provides some background on aerial and vessel dispersant application systems as well as design and calibration information.

B. Application System Standards

There are numerous aerial and vessel dispersant application systems that are available from commercial sources or that have been specially fabricated for specific aircraft or vessels. All dispersant spray systems must satisfy applicable regulatory requirements to meet ASTM Standards for droplet size and distribution, dosage and swath width for the planned application speed and height off the water. See 33 CFR Parts 154 and 155. It would be prudent for the Plan Holder to request and review test and calibration data from the Dispersant OSRO to ensure the OSRO application systems are in compliance with ASTM Standards. Specifically this data should include up-to-date dosage spray charts for each spray asset and documentation that spray operations are being recorded, including where each spray pass is conducted and its associated information.

C. Aerial Dispersant Application System and Operations

Aerial spray systems only apply dispersant neat (pure, i.e., without any dilution with water) due to their high application speeds. Before being FAA certified to apply dispersants, all aircraft must have their spray system installation engineering plans approved by the FAA and flight tested to ensure the aircraft can operate safely while applying dispersant. The aircraft must also comply with other FAA requirements for offshore operations.

Aerial spray systems, prior to use, must be tested to ensure proper operation (i.e., no leaks), steady flow through the nozzles and that the spray systems can apply the proper dosage, droplet size and droplet distribution at the application altitude, speed and swath width according to ASTM standards.

Additionally, a Dosage Spray Chart should be available on the aircraft showing the dosages that can be applied at various application speeds and boom pressures for each dispersant that will be used. An example of the Dispersant Application (Dosage) Spray Chart is provided as Figure F-1 in Appendix F.

D. Vessel Dispersant Application System and Operations

Newer vessel boom spray systems apply dispersant neat (pure, without any water dilution) and older spray systems mix the dispersant with water usually via an overboard eductor system. All vessel spray systems should be tested to determine compliance with ASTM Standards for swath width, droplet size and distribution and application dosages. A Dosage Application Chart for each vessel, similar to that shown in Figure F-1 in Appendix F for aerial application, should be available on the vessel. The Dosage Application Chart provides the dosage applied for various boom pressures and application speeds.

Vessel fire monitor systems may also be used to apply dispersants. These systems will require dilution of the dispersant with sea water and these systems must comply with the requirements of ASTM F2465, Standard Guide for Oil Spill Dispersant Application Equipment: Single-point Spray Systems.

1-7 SMART (Special Monitoring of Applied Response Technologies) Operational Key Actions and Activities

A. Section Purpose and Scope

(1) In order to obtain authorization to use dispersants, the FOSC or RRT will require that a monitoring program be in place primarily to evaluate dispersant effectiveness. Other monitoring or sampling may also be required for response personnel's potential exposure to airborne dispersants or water column samples to determine hydrocarbon and/or dispersant concentrations at various depths. In any case, the widely accepted SMART protocols will generally be used to conduct the monitoring. Therefore, this section is intended to enable Plan Holders to become familiar with SMART such that they can rapidly develop a fit for purpose monitoring program in the event of a spill where dispersants are a viable option.

(2) SMART is an option available for the Unified Command to assist in decision-making. While every effort should be made to implement SMART or parts of it in a timely manner, dispersant application should not be delayed to allow the deployment of the SMART team, unless required by the FOSC.

B. SMART Monitoring Overview

SMART is a monitoring program developed by U.S. government agencies and consisting of standardized, scientifically-based monitoring protocols for providing real-time field data on dispersant effectiveness. It has been adopted by the RRTs as their monitoring procedure and implemented by USCG monitoring teams.

SMART monitoring provides the Unified Command with a confirmation that the dispersants are applied according to plan and that the dispersants are effective in dispersing the oil into the water column. It may be required to be in place prior to the initial application as part of the FOSC dispersant approval process.

It should be noted that changes are being developed to the SMART protocols. One change that will be made is adding a Quality Assurance/Quality Control (QA/QC) form that will review the SMART field information and determine if the dispersant:

- was effective,
- was not effective, or
- the observations were inconclusive.

A draft SMART QA/QC Form is provided in Appendix G.

C. SMART Monitoring Tiers

SMART recommends a three-tiered approach for dispersant monitoring. These tiers are unique to dispersant monitoring and should not be confused with response tier categories. The following paragraphs briefly describe the SMART monitoring tiers:

- **Tier I** is the visual observation by trained observers, usually from aircraft, to determine the dispersant application effectiveness. The Responsible Party may need to provide an aircraft for the SMART observers. A list of fixed wing aircraft and helicopter companies that can provide aircraft for SMART observations and other surveillance activities should be

prepared in advance. A template for compiling aircraft information is provided below in Figure 1-10.

- **Tier II** consists of towing a fluorometer under the oil slick before and after dispersant application to determine the increase in oil droplets in the water column at 1 meter depth. Water samples may also be taken for later analysis.

- **Tier III** expands the fluorometry monitoring to two depths, usually 1 m and 10 m, and may incorporate a portable water laboratory to determine water temperature, pH, conductivity, turbidity, etc.

Aircraft Companies That Can Provide Suitable Offshore Surveillance Aircraft			
_____ STATE			
Aircraft Company	**Phone Number**	**Aircraft Available #-Type-#passengers**	**Comments**

Figure 1-10 – Template for Pre-identifying Surveillance Aircraft

SMART document version 8 dated 2006 can be obtained at the following web site: http://docs.lib.noaa.gov/noaa_documents/648_SMART.pdf. Included in the SMART guidelines is a syllabus for training personnel to conduct Tier I, II and III observations and monitoring and the forms to record pertinent information.

D. General Operational and Equipment Information

To conduct effective SMART monitoring there are many procedures that should be followed to facilitate joint operations and improve communications, reporting and overall dispersant application. These procedures, as well as the aircraft and vessel requirements for conducting SMART monitoring, are described in Appendix G.

Most RRTs state that monitoring should not delay dispersant application and does not have to be initially conducted. It is a good practice to have SMART Tier 1 monitoring, so fixed wing monitoring aircraft should be identified and immediately made available during a response. It has been found that, unless the SMART monitoring team works closely with the aerial and vessel dispersant group, it is difficult, if not impossible, for the SMART team to be in position for aerial observations. It is even more important in the case of Tier II and III monitoring as vessels need to be in position outside of dispersants spray zone, but near the application area to conduct fluorometry and water sampling of the dispersed oil immediately after the application is completed.

1-8 Dispersant After Action Report

A. Section Purpose and Scope

After Action Reports (AARs) are generally required to record many aspects of the dispersant operations conducted and to capture associated lessons learned to continually improve aerial and vessel dispersant application operations. Therefore, the Dispersant Group members should become familiarized in advance with the AAR topics and the critical information to record daily to enable more accurate reporting upon termination of the response.

Some RRTs have detailed requirements for AARs such as topic sections and a time frame in which to submit the after action report. Other RRTs simply require that a report is submitted to them. This section provides an overview of the AAR and checklists that can be used to develop an AAR following an incident. The AAP should be structured for the specific response and may not contain information on all of the topics listed in the Table of Contents below.

B. Report Overview

It is important to document the actions taken during a response, analyze their effectiveness, and develop lessons learned to improve future responses. Separate aerial and/or vessel dispersant AARs should be prepared to ensure all activities conducted, the accomplishments of the operations as well as the lessons learned are captured. It is also important to document the monitoring conducted and the conformance of operations with FOSC/RRT government direction.

The Aerial and Vessel Dispersant Group will prepare the AAR and should submit the report to the Operations Section Chief, or others as directed, within 45-60 days of the termination of surface dispersant operations or as otherwise required by the RRT or Unified Command. The report should provide the amounts, types, and locations of the dispersant applied on a daily basis, the OSROs, aircraft and vessels activated and a review of the lessons learned.

C. Table of Contents

(1) The following Table of Contents is based on RRT 6 guidance for the preparation of the dispersant after action report. The report should be structured for the duration, magnitude and complexity of the spill response and may not include all of the sections listed.

AFTER ACTION REPORT
TABLE OF CONTENTS

- **Incident Overview**
- **Oil Slick Trajectory and Behavior**
- **Justification for Dispersant Use**
- **Chronology (Date and Time) of Dispersant-Related Events**
- **Overview of Dispersant Operations**
- **Completed Dispersant Application Form**
- **Lessons Learned**

Suggested outline for the report: The report should be tailored to the complexity of the spill response. Not all of the sections identified below may be necessary.

Incident Overview

- Description of initial report (date, time, source, etc.)
- Spill source
- Spill location
- Estimated quantity & potential quantity
- Environmental conditions

Oil Slick Trajectory and Behavior

- Expected movement of slick

- Expected weathering and behavior of product
- Observations of same

Justification for Dispersant Use

- Potential impact areas and their respective sensitivities to impact
- Location of the spill relative to the dispersant approval areas
- Potential for use of other recovery methods (e.g., mechanical recovery, in-situ burning)
- Weather and sea state

Chronology (Date and Time) of Dispersant-Related Events

- Government notification of spill
- Reconnaissance aircraft requested
- Reconnaissance aircraft "wheels up"
- Monitoring initiated and monitoring assets
- Reconnaissance aircraft on-scene and reports
- Source and field sample requested
- Dispersant use approved under guidelines
- Dispersant asset operators notified
- Dispersant stockpiles requested
- Dispersant stock en-route
- Dispersant stocks arrive at airport/dock
- Spotter aircraft "wheels up"
- Dispersant aircraft/boat "wheels up"/left dock
- Spotter aircraft on-scene
- Dispersant aircraft/boat on-scene
- Source and "in-water" sample collected
- First application
- Spotter aircraft opinion of efficacy and continued reports
- Additional applications, Spotter aircraft opinions, and sampling (as required)
- Termination of dispersant operation

Overview of Dispersant Operations

- Map indicating dispersant operating area(s) and exclusion zones
- Amounts and times of dispersants applied
- Any extenuating circumstances affecting the deployment of any element (spotters, dispersant, etc.)
- Estimates and observations of efficacy
- Any discrepancies between estimates
- Any discrepancies between observations

- Any sightings of pelagic/migratory birds, sea turtles, or marine mammals

Lessons Learned

- Statement of the Lesson Learned
- Discussion of the response issues that generated the lesson learned
- Recommendations for improving response operations

1-9 Training, Exercises and Oversight

A. Section Purpose and Scope

Annual training and exercises are needed to educate and prepare responders for their responsibilities, to test activation procedures and to ensure dispersant response readiness of service providers. The basic tenant is, “Train and exercise the same way you respond.” It is the responsibility of the Plan Holder to ensure that their response team(s) and dispersant service providers participate in reasonable training and exercise programs to ensure response readiness. The training and drill program developed by the Plan Holder with respect to dispersant application should be included in their oil spill response plan or a separate dispersant preparedness plan. This section describes the types and frequency of training and exercises recommended for dispersant operations. Guidelines for an audit program are also provided.

B. Program Overview

The training, exercises and oversight actions below are divided into three sections. Section C includes the activities that the Plan Holder’s IMT should conduct, and Section D includes the activities that the Plan Holder’s dispersant service provider should conduct and Section E provides audit guidelines. Although the Section D activities are performed by the service provider, it is the Plan Holder’s responsibility to verify that the Dispersant OSRO meets the U.S. dispersant regulatory requirements. Additionally, the USCG has published detailed guidelines on how they will classify dispersant OSROs to meet the regulations. Consequently, Section E provides guidelines for conducting audits to ensure dispersant service providers are meeting the regulatory training and exercise requirements, properly conducting equipment maintenance and calibration, and ensuring the effectiveness of dispersant stockpiles. These audits may be conducted by the Plan Holder or the Plan Holder may accept the audits conducted by the OSRO or OSRO members.

The Coast Guard and the Bureau of Safety and Environmental Enforcement (BSEE) are updating the National Preparedness Response Exercise Plan (NPREP) program to establish exercise requirements for aerial and vessel dispersant operations for compliance with U.S. dispersant regulations. As changes to the NPREP are published, the Plan Holder should revise this section of their plan to reflect the most current requirements. Currently the proposed NPREP guidance published in January 2014 states that an annual exercise should be conducted of “Each dispersant package listed in the plan and relied on by the plan holder in meeting response equipment capability requirements, including dispersant delivery vehicles, application equipment, and dispersed oil plume monitoring equipment.”

The Section D activities performed by the Dispersant OSRO are equally credited to its other members, i.e., Dispersant OSRO’s are not required to conduct every exercise with each plan holder. Plan Holders should maintain records of the training and exercises conducted by their OSROs.

C. Company IMT Training and Exercise Activities

(1) Aerial and Vessel Dispersant Group Table-Top Exercises

The Plan Holder's Incident Management Team (IMT), Qualified Individual (QI) and members of the Aerial and Vessel Dispersant Group should train and participate periodically (recommend annually) in a table-top exercise simulating dispersant application with the Dispersant OSRO to ensure familiarity with the dispersant plan. Company IMT participation in Dispersant OSRO field exercises is encouraged so they become familiar with operational procedures and equipment.

The designated QIs should participate in the exercises to review the activation procedures and activities listed in the dispersant activation checklist provided in Part 2. The exercise may include reviewing the dispersant authorization procedures and may include contacting the local USCG Captain of the Port to obtain authorization to use dispersants. QI participation in IMT exercises with activation of dispersant assets would also meet the purpose of the dispersant exercise and training. These exercises can be conducted in person or by telephone and can be of short duration. The main purpose is to provide an opportunity for the QI to review the dispersant activation checklist, procedures and processes.

Unannounced table-top exercises may also be conducted annually for QIs and Operations Section Chiefs to review activation procedures, activities and contact information and ensure knowledge of spray equipment and RRT approval procedures. These exercises should be short, 1 or 2 hours, to exercise the most important activities to the activation checklist.

(2) Field Equipment Deployment Exercises

Periodically, a field exercise with the IMT members and the Dispersant OSRO should be conducted to exercise, in real-time, all aspects of dispersant operations. The purpose is to demonstrate the ability to deploy, operate and maintain the equipment and to manage the overall operations.

D. Dispersant OSRO Activities

The following exercises should be conducted by Dispersant OSROs to ensure the readiness of their equipment, pilots and support personnel and to ensure the spray equipment is operating in compliance with ASTM Standards. It is a reasonable expectation that Dispersant OSROs will have instituted their own exercise program. Plan Holders should observe and/or verify that the below or similar exercises are successfully conducted. An example of what an OSRO exercise program should entail is described below. The Dispersant OSRO should confirm annually that the exercises were successfully conducted. Plan Holders and OSROs will comply with the new dispersant exercise requirements in the NPREP when they are published.

Spray and Spotter Aircraft Training and Exercises

The spray and spotter joint exercise is important to review and practice communication procedures to direct spray aircraft on the spill, prepare joint flight plans, and review joint operational procedures. Suggested training and exercise activities include:

- Spray and spotter aircraft should individually conduct monthly training flights to practice standard operating procedures and to exercise all of the dispersant spray, tracking, recording and communications equipment.

- Spray and spotter aircraft should train together twice a year or at least annually to practice all aspects of offshore spray operations. This training and exercises should be conducted offshore, out of sight of land, to provide the pilots the opportunity to apply water in a realistic situation where the only reference is the air/sea horizon.

Unannounced Dispersant OSRO Exercises

Dispersant OSROs should consider conducting an unannounced activation exercise for each of their aircraft to maintain crew and equipment readiness. These exercises may entail mobilizing the aircraft and pilots to the point of take-off or actually flying offshore and spraying water.

Spray System Testing and Calibration

The static and field testing of aerial and vessel dispersant spray systems is necessary to ensure the systems continue to operate within regulatory requirements and to ensure the dosages of dispersant applied to an oil slick are known. Otherwise dispersant effectiveness cannot be properly evaluated. The dispersant OSRO's testing program should be referenced in the Plan Holder's OSRP or dispersant plan to enable the IMT Dispersant Group to access that information, if needed, during the dispersant authorization process and to provide assurance on the scope of the program. A description of a standard testing program is provided below.

Dispersant spray systems must meet applicable regulatory requirements, including ASTM Standards as required. Dispersant OSROs should test their aerial and vessel spray systems as indicated in the following paragraphs. Dispersant OSROs may elect to conduct testing more frequently.

- Field collector card testing of the spray system to determine Volume Media Diameter (VMD) droplet sizes, droplet distributions, swath width and application dosages. Although there is no set time stated in the ASTM Standards for this test, it is recommended the testing be conducted every 3-5 years or whenever major changes to the spray system are made.

- Static calibration of spray systems should be conducted annually or after making any system configuration changes according to ASTM Standard F1460 to ensure flow rates and to prepare Dispersant Application (Dosage) Spray Charts (see Appendix F, Figure F-1) are accurate and the system is functioning properly, i.e., no plugged nozzles, leaking pumps, proper boom pressures, etc.

E. Dispersant OSRO Program Audit

It is the Plan Holder's responsibility to ensure the OSROs are compliant with the applicable regulatory requirements. Therefore, it is recommended to conduct a regulatory compliance audit of the company's contracted Dispersant OSRO(s). Although both vessel and aircraft systems should be audited, only the aerial dispersant systems are covered here as they are much more complex.

The audit should cover both the aircraft and aircrews and the spray systems as described in the following paragraphs.

(1) Audit Frequency

An audit of Dispersant OSROs should be conducted periodically and an audit report filed. If there are any discrepancies noted during the audit they should be reviewed with the Dispersant OSRO and a schedule for resolution developed and tracked until the discrepancy is corrected.

Aviation Audit

The aviation segment of the audit should review the aircraft, aircrews, support equipment, maintenance records, personnel training records and qualifications for compliance with FAA regulations, compliance with the International Association of Oil and Gas Producers (OGP) Aviation Guidelines and Plan Holder aviation policies.

An audit checklist is not provided here because an aviation checklist is extensive and should be provided by the Plan Holder's aviation group or independent aviation consultant performing the audit. The aviation audit segment should be conducted by the Plan Holder's aviation personnel or a certified aviation inspector. Additionally, the Plan Holder may accept the audit of an independent third-party, certified aviation consultant contracted by the Dispersant OSRO or the dispersant aircraft company.

(2) Spray System and Dispersant Stockpile Audit

There are no prepared dispersant spray system and stockpile audit checklists published. The below is a short listing of the major components that should be audited and is not all inclusive or sufficiently detailed for conducting an audit.

a. Spray System and Associated Equipment

- Review Dispersant Health and Safety Plan including Material Safety Data Sheets (MSDSs) for dispersant stockpiles
- Review documentation showing compliance with Federal and State dispersant regulations
- Check collector card field tests showing compliance with ASTM standards for swath width, VMDs (Volume Median Droplet) sizes, and dosages
- Check annual static tests of spray system with water showing the flow rates tested and the ability to spray 5 gpa at selected application speeds and boom pressures
- Dosage Spray Chart available in the cockpit of each spray aircraft
- Inspect flight tracking and spray pass recording equipment e.g., SkyConnect, SatLoc, and other dispersant related equipment.
- Check dispersant communications systems (marine radio, satellite phone, intercom system, etc.)
- Review training and exercise records and OSRO dispersant response plans
- Review Hurricane and Decontamination plans

b. Dispersant Stockpiles and Transfer Equipment

- Inspect trailers, ISO tanks and other dispersant stockpile storage devices and areas
- Inspect dispersant transfer and metering systems
- Check dispersant stockpiles records, labeling, MSDSs

- Check that the dispersant's effectiveness testing was conducted by a certified laboratory using an acceptable testing procedure and that the dispersant was found to have acceptable effectiveness. Every 3-5 years is a common testing frequency, unless the effectiveness is deteriorating.

1-10 Dispersant Response Phone Book

To be adequately prepared to respond it is essential to have dispersant contact information readily available for all of the assets, equipment and personnel that may immediately be called upon for dispersant activation. Ready access and contact numbers to vetted assets is critical to successfully initiating and continuing to respond to a spill. Therefore, a fill-in-the-blank template for an Aerial and Vessel Dispersant Application Response Contact Phone Book is provided in Appendix B. This template identifies each asset category that may be needed with the contacts or companies that are capable of adequately providing those assets or expertise. The Phone Book should be modified for the types of spill risks identified and for the geographical operating area/country where the spill may occur.

Appendix B can be published as a small 5 in. x 7 in. separate document to permit responders to carry hard copies with them or it can be uploaded into portable electronic devices or downloaded from the company's intranet. The Phone Book can be supplemented with other information such as the Operations Checklist, Dispersant Response Objectives, and other items to make a "Quick Guide" for the initial dispersant response actions.

1-11 Oil Characterization and Dispersibility Evaluation

It is the Responsible Party's task to provide regulators with information indicating that the dispersant used will be effective on the oil spilled. This can be accomplished in several ways:

(1) By using the initial oil properties (API gravity, viscosity, Pour Point, etc.) as well as modeling predictions of how these properties will change as oil weathers at sea.

- A viscosity of 10,000 cSt is often used as a an indication of oil's dispersibility (IMO, 2013). Oils with viscosity (at seawater temperature) of up to 10,000 cSt are considered to be potentially dispersible. As oil weathers at sea its viscosity increases until it is no longer dispersible. Emulsification and evaporation processes increase oil viscosity and decrease its dispersibility. The time during which oil remains dispersible is called "the window of opportunity for dispersion." It varies according to the type of oil and the environmental conditions.

- Pour Point indicates a temperature at which oil may become semi-solid. Oils are dispersible when they are liquid, i.e., at a temperature above its Pour Point.

- API gravity indicates whether oil is lighter than water. Only oils floating on the water surface are dispersible.

(2) By providing laboratory test data on the dispersants effectiveness. It is important to note that most of the bench-top laboratory procedures were designed for an evaluation of different dispersants and they purposefully create an environment with low mixing energy only allowing the most effective dispersants to pass the test. These tests are not meant to simulate the actual performance of these dispersants in the field and often significantly underestimate their performance.

(3) By providing test tank data if available. Several oils and dispersant combinations have been tested in test tanks in US, Canada, France, and Norway. These tests can better

represent possible dispersants effectiveness in the field, although identification of a test with similar oil properties and environmental conditions will be required.

(4) Considering the uncertainty around the prediction of dispersion effectiveness, it's recommended to conduct a "trial test" when a limited amount of dispersant is sprayed on the slick to determine if the dispersant is effective under the existing field conditions. This allows making an informed decision about the applicability of dispersants use in a given response situation.

In addition to assisting in the prediction of oil dispersibility, oil properties are also used to provide an estimate of how much oil will be present on the water surface and in the water column over time (mass balance), aid in trajectory analysis and assist in determining the level of response resources, i.e., mechanical recovery, dispersant spray systems and ISB systems that will be needed for the oil spill cleanup effort.

Standard analytical procedures that are used to determine oil characteristics mentioned above are indicated in Figure 1-11 below:

Oil Characterization Analysis Tests		
Property	**Test Temperature**	**Procedure**
Dispersant Effectiveness	To Be Specified	SFT, EXDET, Baffled Flask or WSLTest
Evaporation	To Be Specified	ASTM D86
Density	To Be Specified	ASTM D4052
Viscosity	To Be Specified	Various tests
Interfacial Tension	Room temperature	ASTM D971
Pour Point	N/A	ASTM D97
Flash Point	N/A	ASTM D93
Emulsification Tendency/Stability	To Be Specified	(Zagorski and Mackay 1982, Hokstad and Dailing 1993)

Figure 1-11 – Oil Characterization Tests

PART 2 – OPERATIONS SECTION

2-1 Introduction

This second section of the guidance document describes the procedures and forms for responding to a spill from the time of discovery through the end of the first day of dispersant operations. Once the first day of operations is completed, succeeding days follow a similar process and produce similar documents so no additional guidance is provided here. It is important to note that only the key facets of dispersant response are presented.

The guidelines and recommendations in this part can be used with the guidance in Part 1 – Preparedness, to develop a stand-alone dispersant operations plan generally following the structure of the guidelines as presented below or this information can be incorporated into the applicable oil spill response plans (OSRPs).

2-2 Dispersant Response Objectives and Strategies

A. Section Purpose and Scope

During an oil spill response, it is essential to establish clear response objectives and associated strategies to focus response actions on accomplishing these objectives. Setting and prioritizing objectives will assist responders in determining and prioritizing their strategies and tactical actions associated with each objective. This section will identify common oil spill objectives that involve dispersant application and the relevant strategies to aid responders in quickly determining the most appropriate strategies. The timely determination of strategies and the tactics for their implementation will greatly expedite the plan development process.

B. General Objectives and Strategies

The UC or IC will almost always set two primary objectives:

- Ensure the health and safety of the general public and response personnel
- Minimize environmental impacts

Dispersant use is one of the strategies often chosen to assist in achieving the above two objectives. The Aerial and Vessel Dispersant Group will generally be tasked with identifying strategies and the tactics for their implementation. Dispersant related strategies for ensuring health and safety are typically associated with vessel application of dispersants near the source to control volatile organic carbons (VOCs) as a mitigation measure for fire, explosion or inhalation hazards. Dispersant strategies for minimizing environmental impacts are often associated with aerial and/or vessel dispersant application. The specifics for how to accomplish these strategies are covered in the subsequent sections of this plan.

Although many of the strategies below appear to be obvious, they still should be stated because these fundamentals drive response decision-making, especially decisions on how to use the various response options simultaneously.

Examples of strategies to achieve the health and safety objective include:

- Reduce/prevent contact of the public and responders with oil in the near-shore, onshore areas and offshore areas
- Reduce the exposure to VOCs and other hazards to source control and oil spill responders.

Examples of strategies to achieve the environmental objective include:

- Reduce shoreline and near-shore environmental and economic impacts
- Reduce offshore wildlife impacts
- Facilitate faster ecosystem recovery
- Establish dispersant effectiveness monitoring program using Special Monitoring for Applied Response Technologies (SMART).

To accomplish the above using all of the response tools (mechanical recovery, dispersants and in-situ burning) the primary response objective for offshore oil spills is **"to remove as much oil from the surface of the water as quickly as possible to minimize net human and environmental impacts."** How this can be specifically accomplished is discussed in the Concept of Operations section below.

C. Aerial and Vessel Dispersant Group Objectives and Strategies

When responding to a spill it is important to focus on fundamental activities to be successful. For the Aerial and Vessel Dispersant Group the fundamental objective is to implement an effective dispersant application program with the associated strategies being shown below. Everyday these strategies should be reviewed to determine if the objective is being met and, if not, what can be done to improve these areas. Often these areas may overlap with other IMT objectives or strategies; therefore, there will be a need to communicate and coordinate activities to ensure the UC and IMT are working together in how these fundamentals are being met.

- Activate Sufficient Dispersant Assets
- Thoroughly Document Response Activities
- Assess Dispersant Effectiveness and Environmental Impacts
- Effectively Manage Dispersant Operations: Command, Staging and Field Sites
- Effectively Communicate Dispersant Risks and Information.

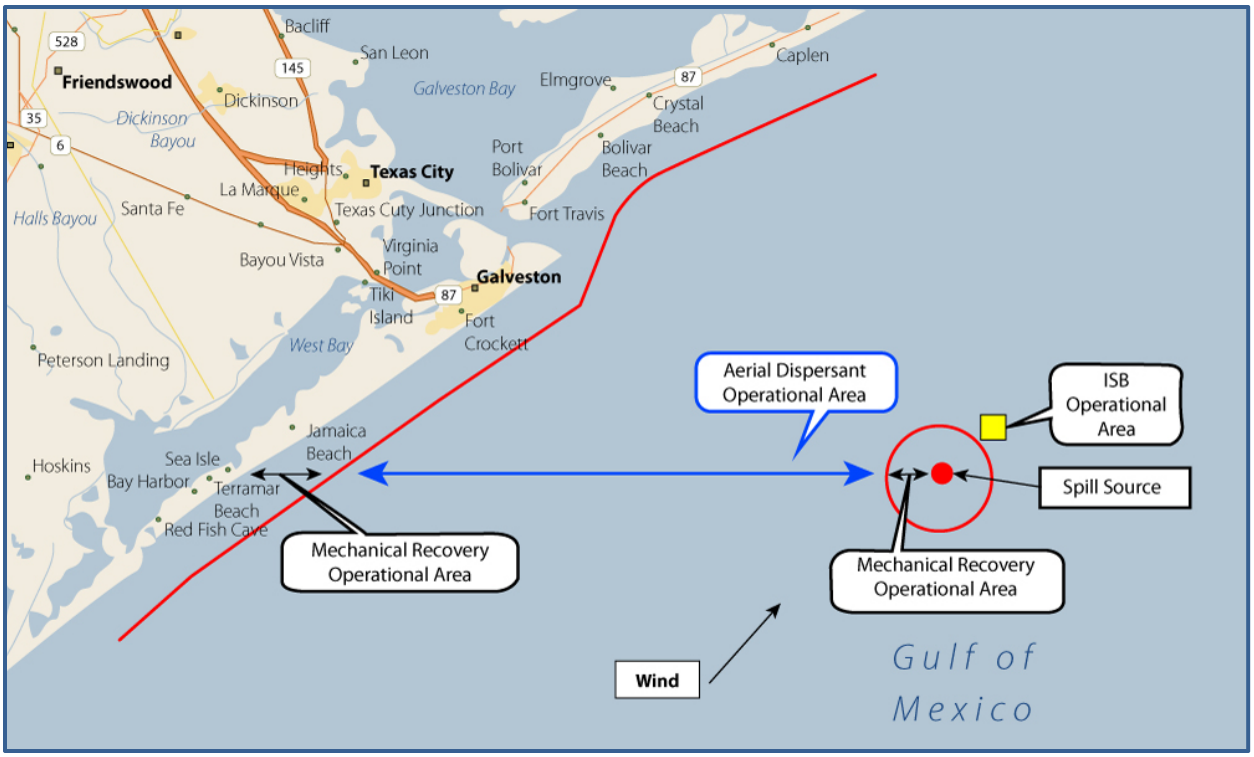
D. Concept of Operations

Setting a concept of operations is important for guiding responders in how best to use the response tools – mechanical recovery, dispersants and in-situ burning (ISB). Providing clear direction from the start of the response and designating response areas for the various response tools will assist in preventing conflicts and maximize the overall oil removal capability. As spill information is updated and the spill response progresses, the concept of operations will need to be revised daily to account for weather conditions, effectiveness of response tools, asset changes and spill location.

During a major oil spill response, all response tools (mechanical recovery, dispersants and ISB) should be activated and used simultaneously to maximize the ability to remove oil from the water's surface as quickly as possible, i.e., the primary response objective. An example Concept of Operations strategy is graphically depicted in Figure 2-1.

For safe, simultaneous operations (SIMOPS), it is critical to de-conflict dispersant, mechanical recovery and ISB within the response area of operations. Utilizing the Concept of Operations

approach, (example shown in Figure 2-1), will aid in de-conflicting operations for a continuous offshore oil release. In conducting SIMOPS it is imperative that all response assets have sound command and control and communication capability and that the assets adhere to the response areas assigned. For batch/instantaneous spills the concept of operations below may need to be adjusted for the spill specifics to meet the primary response objective of removing as much surface oil as quickly as possible.



Note: Vessel dispersant application may take place within the source area for VOC suppression and at other locations throughout the response area depending on the specific incident circumstances.

Figure 2-1 – Example Concept of Operations for Offshore Oil Spills

2-3 Dispersant Authorization Process

Federal On-Scene Coordinator (FOSC) or Regional Response Team (RRT) authorization is required before applying dispersants within the United States. No spray operations either by aircraft or vessels should ever be conducted without written approval of the FOSC or RRT.

A. Purpose and Scope

Before dispersants can be used in an oil spill incident, the FOSC or RRT must approve their use. Section 1-4 (Part 1 – Preparedness) described the dispersant policies in various coastal regions. This section should be reviewed to obtain a background on the authorization process along with the information in this section such that the dispersant approval process can be implemented expeditiously and effectively following a determination that dispersants would be an effective response tool. Therefore, this section describes the dispersant approval process and Appendix D includes representative dispersant approval forms for RRTs 4 and 6 that apply to the Gulf of Mexico as representative examples. For international use the dispersant policies

and maps of offshore areas where dispersants may be used should be included in the Plan Holders dispersant plan in place of the U.S. RRT policies and guidance.

Some RRTs require the FOSC staff to complete the forms while others require the Plan Holder to submit the application. In either case the Plan Holder needs to be prepared to commence the dispersant approval process simultaneously with activating resources. Information on the spray aircraft or vessel, spotter aircraft, dispersant to be used, etc. will need to be provided to satisfy the approval information requirements.

The approval process to apply dispersants in pre-approved offshore areas may take from 2 to 8 hours or more depending upon the spill scenario. Obtaining approval to spray in case-by-case areas requiring RRT approval may take 24 hours or more. The FOSC can, however, authorize dispersants without RRT concurrence in pre-approved areas or situations where there is an eminent health and safety hazard posed by the spill to responders or the public.

Detailed descriptions of the approval process for all RRTs are not provided here as this guidance and procedures are quite voluminous and are referenced in Section 1-4D. The general approval process, however, is initiated by the Responsible Party's Incident Commander (IC) informing the FOSC/Unified Command that dispersants are a viable response option with a request for approval to apply dispersant. The FOSC/Unified Command and/or the RRT then determines whether or not dispersant use is appropriate, based on incident specific considerations. If the spill is located in a pre-approved area, the FOSC can unilaterally approve dispersant use and then immediately informs the RRT of the decision.

If the spill is not in a pre-approved area, the FOSC obtains concurrence from the RRT. This is typically accomplished by means of a conference call, which is scheduled by the RRT Co-Chair from the USCG. Information needed to support the RRT call is provided to RRT members by the USCG RRT Coordinator and/or Responsible Party and includes the approval application forms, Unified Command signature page and incident data form. Generally a dispersant operations plan and dispersant monitoring plan is also required. These documents comprise what is commonly referred to as the "RRT Concurrence Package."

An overview of the information provided is conducted by the members of Unified Command, and the IC typically provides the incident summary. The RRT will determine whether or not to concur with the FOSC authorization. If concurrence is obtained, the RRT may request modifications or additions to the plans provided, and will probably establish data reporting procedures and additional coordination requirements. As the response progresses, the FOSC and RRT will probably schedule additional coordination calls, and changes to dispersant application and monitoring practices may result.

In requesting authorization to apply dispersants timeliness is important, especially to conduct the first spray sortie, because this spray pass will provide the best indicator as to whether the dispersant is effective on the oil spilled under the field conditions. FOSCs/RRTs should be requested and encouraged to permit an initial trial spray of 100 to 200 gallons of dispersant to determine its effectiveness. Although it is best to have a spray aircraft operate with a spotter aircraft, this initial spray sortie may be conducted by a single spray plane, if it is equipped with spray pass recording equipment and photograph/video documentation systems. Subsequent spray flights should always be conducted with a spotter aircraft.

2-4 Dispersant Activation Activities Checklist

A. Section Purpose and Scope

It is important to have a complete checklist of the actions necessary to activate, deploy and commence dispersant operations because there are many details that can bring a halt to the

dispersant operations. This section provides guidance and an example of a checklist that identifies the activities that should be completed in a response and the sequence of activities. Companies may choose to modify the checklist by adding, deleting or reordering activities to better mesh with the operation of their IMTs.

B. Dispersant Activation Checklist

The checklist in Figure 2-2 provides sequential activities for the Incident Commander (IC) and IMT Operations Section to activate dispersant resources. These are brief statements to be used as reminders of actions to be taken. The activation checklist is designed to be completed in approximately 2 hours. To meet this timeframe personnel must be trained and well versed in completing the activities.

The checklist simultaneously initiates both the dispersant authorization process and the activation of dispersant equipment, stockpiles and personnel to commence dispersant application as soon as possible. Referral to other forms, computer programs, response plans, etc., will need to be made to complete many of the activities. QI/IC is used in the check list as some companies will have their own QIs who may also be ICs, while other companies may contract for QI services and have an employee serve as IC. The dispersant activities can be and should be delegated, in whole or in part, to other knowledgeable responders or contractors who have been trained to complete each activity.

	Activity	*CK*
1	**QI/IC Obtain initial spill info** — **Spill Location (Lat/Long)** — **Amount & Source** — **Spill Continuing or stopped** — **Type of oil, API, Viscosity, Pour Pt**	
2	**QI/IC Determine** — **RRT Location?** — **FOSC?**	
3	**QI/IC Call OSROs to alert of spill and possible need of dispersants**	
4	**QI/IC Call FOSC** — **Request to use dispersants** — **Indicate will submit info on RRT Authorization Initial Checklist**	
5	**QI/IC Activate Dispersant Group (DG)** — **Provide spill info** — **State OSROs alerted/activated** — **Provide FOSC info** — **Provide Cmd Post & contact info**	
6	**DG determine (jointly with Env. Unit)** — **Spill in pre-approved area or RRT area?** — **Is oil dispersible?** — **If RRT approval required, provide info to Env Unit for dispersant application request** — **What spray assets are needed?** — **What monitoring assets are needed?**	
7	**DG inform IC of assets needed**	
8	**QI/IC Call OSROs to activate selected Dispersant Assets** — **Record OSRO name/phone #** — **Inform to work directly with DG**	
9	**QI/IC dispatch rep to FOSC Cmd Post and Inform rep to contact & coordinate with DG**	
10	**DG contact OSRO(s)** — **Record name / phone # OSRO** — **Confirm/adjust dispersant assets** ○ ***Alert*** ○ ***Standby*** ○ ***Activate (load dispersants?)*** ○ ***Fly to staging airport with 2nd crew*** — **Obtain info for FOSC or RRT initial checklist** — **Request aerial observers** — **Request SMART aircraft at staging airport ASAP** — **Request SMART vessel, if needed**	
11	**If spill in RRT approval area, DG assist Env Unit in preparing & submitting Dispersant Pre-authorization Initial Checklist to FOSC (copy QI/IC/DG & OSROs)**	
12	**QI/IC Request FOSC to approve dispersant use**	
13	**DG Call IC – inform actions taken** — **OSRO assets, etc.** — **Verify FOSC requested to use dispersant** — **Ask for oil character company contact** — **Ask for Ops Section chief's name & # or Cmd Post #**	
14	**QI/IC Call FOSC – info of dispersant actions taken**	
15	**DG update Ops Section Chief**	
16	**QI/IC Provide FOSC info on** — **oil & location** — **confirm FOSC/RRT authorization**	
17	**DG Activate members to** — **Dispersant Cmd Post** — **Staging airport** — **Aviation specialist** — **Contractors/Consultants** — **(GIS, Documentation, Logistics, SMART, etc.)** — **Science/Env (dispersants)** — **Disp Info/Risk Comms Info Coord.**	

The IC's (QI's) specific activities are highlighted in yellow to more clearly show which activities they should perform as compared to those of the Dispersant Group.

Figure 2-2 – Dispersant Activation Checklist

18	**DG – Contract dispersant consultants, if needed**	
19	**DG Ask OSRO to confirm in writing equipment activated and the cost**	
20	**QI/IC Approve in writing** — **OSRO assets activated to OSRO**	
21	**DG assist Env Unit & FOSC with authorization information, as needed**	
22	**DG Call OSRO update & request** **OSRO prepare & submit draft Daily Aerial / Vessel Dispersant Application Plan to DG** — **Staging airport to be used** — **FBO name and phone #** — **OSRO person/# @ staging airport** — **Spray aircraft** o **tail #s** o **time arrive staging airport** o **crew list and contact info** o **payloads** o **dosage spray chart each aircraft** o **documentation for spray system testing on each spray aircraft** — **Spotter aircraft** o **tail #s,** o **time arrive staging airport** o **crew list and contact info** — **Estimated Time over spill** — **Est. dispersant apply Day 1, 2, 3** — **Stockpile logistics plan** — **Ask copy Marine and Aviation Wx Rpt for spill site** — **Ask copy aviation report for staging airport** — **Advise wheels-up time each aircraft** — **Observer aircraft** o **advise tail #s** o **crew list and contact info** o **time arrive staging airport** — **Observer names & time arrive staging airport** — **Access to internet to view aircraft & ETA at staging airport** o **crew list and contact info** — **Estimated Time over spill** — **Est. dispersant apply Day 1, 2, 3**	

23	**DG Estimate amount of dispersant needed using DMP2 and confirm sufficient spray aircraft activated**	
24	**DG Update QI/IC & Ops Section Chief**	
25	**DG Prepare draft Monitoring Plan**	
26	**DG request FOSC Identify SMART observers**	
27	**DG prepare/submit Daily Aerial/Vessel Dispersant Application Plan (DADAP) to IC for signing by FOSC**	
28	**DG Contact FOSC every 30 min until dispersant plan signed**	
29	**QI/IC Obtain written authorization (DADAP)/conditions for dispersant use from FOSC**	
30	**DG Send written FOSC authorization to OSRO**	
31	**DG obtain OSRO update aircraft arrive/start spray**	
32	**DG Check TFR and NOTAM (10nm) done**	
33	**DG Prepare chart of spill site**	
34	**DG check hotel/cars for responders are arranged** — **Arrange at staging airport thru FBO** — **Arrange at command post thru LOG**	
35	**DG Update IC with info**	
36	**QI/IC Update FOSC with dispersant info**	
37	**DG Send FOSC signed DADAP to** — **IC** — **DG members** — **OSROs** — **RP Legal, Planning, Ops, etc.**	
38	**DG Track aircraft on Sky Connect or equivalent**	
39	**DG Review assets activated, and reconfirm, if sufficient**	
40	**DG consider activating dispersant manufacturing**	

The IC's (QI's) specific activities are highlighted in yellow to more clearly show which activities they should perform as compared to those of the Dispersant Group.

Figure 2-2 – Dispersant Activation Checklist (Continued)

2-5 Staging Airport Selection Criteria for Aerial Dispersant Operations

A. Staging Airport Selection Criteria. In selecting a staging airport for dispersant operations there are many factors to consider. The following is a brief discussion of staging airport facilities necessary for dispersant operations. The best way to acquire the necessary information is to visit the airport and speak with the airport authority management and the Fixed Base Operators (FBOs).

(1) Ramp Space. Space is needed to ramp all of the aircraft that may be involved in dispersant operations. The following is the space required for ramping a C-130 Hercules and a typical spotter aircraft, a King Air BE-90 (see Figure 2-3). Additional aircraft similar to the spotter aircraft for observation and for monitoring and for public information should also be included. It is prudent to select an airport that can ramp 2-3 C-130s and 2-3 spotter/observer/monitoring aircraft. Ramping of 727s spray aircraft will require slightly more space (108 ft x 153 ft).

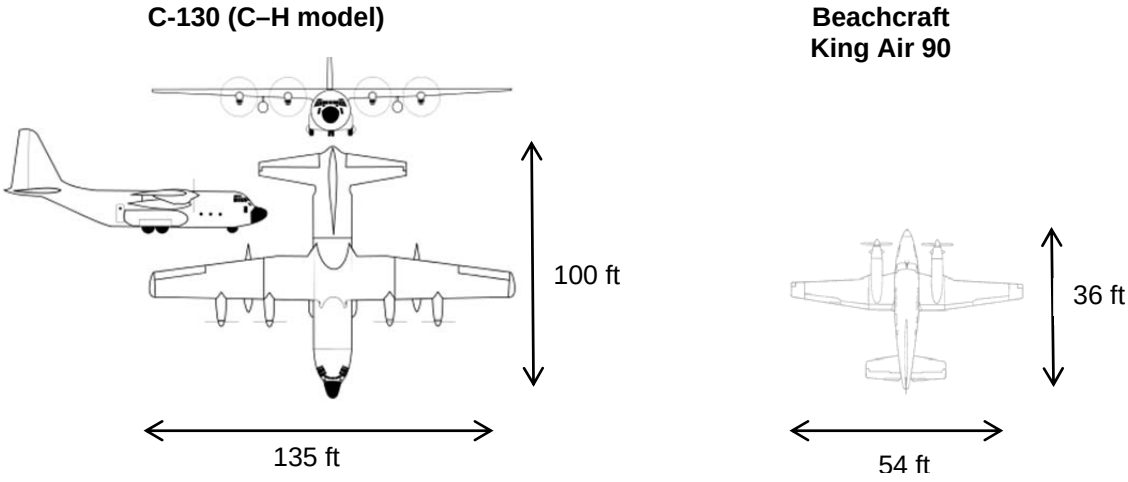


Figure 2-3 – Ramp Space for C-130 and King Air (BE-90)

Runway Length and Runway, Taxiway and Ramp Weight Bearing Considerations.

To operate at a staging airport the runways must have sufficient length to permit fully loaded spray aircraft to take off and land. Additionally, the runway, taxiways and ramp areas must be able to bear the weight of fully loaded spray aircraft, not only for landing and tank-offs, but also for allowing a fully loaded aircraft to remain on the ramp for several days should it not be able to conduct its spray sortie. Weight bearing is especially important for large spray aircraft such

as the C-130 and 727. The DMP2 software provides information on these considerations, except for the latest 727 spray aircraft. Figure 2-4 provides the runway lengths and weight bearing requirements for a fully loaded C-130 and 727, which were provided by the 727 operator Oil Spill Response Ltd. (OSRL).

Specification	C-130A	C-130 B, C, E & G	727-100	727-200
Runway Length	4,800 ft	7,050 ft	5,800 ft	5,800 ft
Runway Weight Bearing	124,200 lbs	155,000 lbs	176,000 lbs	205,000 lbs

Figure 2-4 – C-130 and 727 Runway Length and Weight Bearing Specifications

(2) Dispersant Transfer Operations and Storage. A location to transfer dispersants into aircraft is necessary. The area for this operation should be large enough to permit an ISO tank or truck load of drums or totes to be delivered to the site for transfer. A storage area for approximately 50,000 gallons of dispersant that may be stored in drums, totes and ISO tanks should be established as close to the dispersant transfer area as possible. This represents an area of approximately 2,000 sqft (185 sq meters). See Figure 2-5.

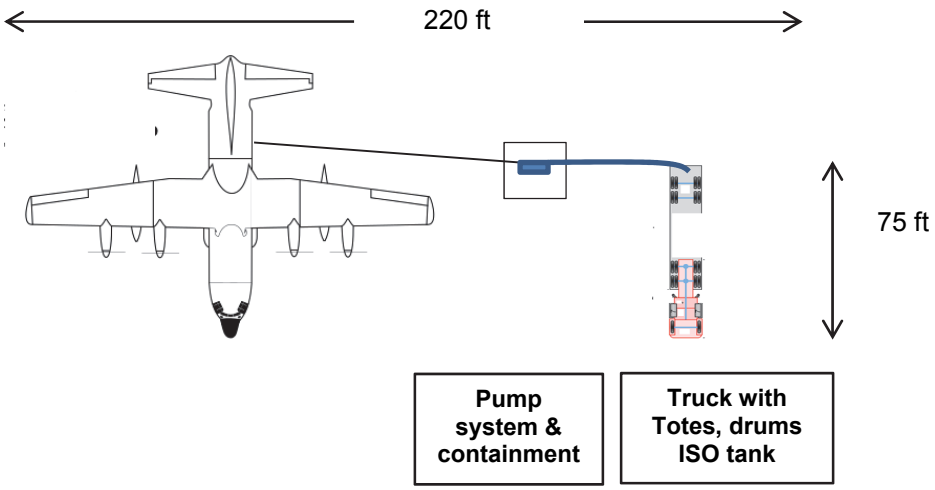


Figure 2-5 – C-130 Dispersant Transfer Area Ramp Space

(3) Fuel Requirements. The quantity, quality and type of fuel should be available at the airport to permit un-delayed, continuous flight operations. If sufficient fuel is not available, arrangements can be made to have fuel trucks standby at the airport. For C-130s a rough estimate of Jet A fuel requirement is for 4 dispersant spray sorties a day, each of approximately 4 hours. This would require approximately 12,000 gallons of fuel per day per C-130 aircraft. In regards to fuel quality, most airports have an established fuel quality testing program. If the airport does not have a fuel testing program this will need to be provided.

(4) Other Criteria. The following is a list of other criteria for selecting a staging airport.

- Inside meeting area for 15 pilots and crew to discuss and plan daily spray operations. If this is not available an area in a hangar may be used or a transportable office delivered to the site.

- Wifi available to forward reports, spray pass data and photographs to the Aerial and Vessel Dispersant Group. May also arrange to have portable wifi station delivered to the site.
- Operating hours for when tower manned?
- List types of cargo aircraft that can land at the airport to deliver dispersants, 737, 747, etc.
- Onsite fork lift able of lifting 4,000 -10,000 pounds is needed to move dispersant totes and other equipment and materials. If not available arrangements to rent a forklift should be made.
- Is there a hangar or other area (tent) where an office can be setup to coordinate and record dispersant operations?
- Are there any restrictions on landings or take-offs? Time of day for noise restrictions, scheduled multiple air freight flights in the morning?
- What are the security requirements for operating at the airport? Badges, escorts, fencing, armed guards, operating hours, etc.
- Are there costs for landings and take-offs?
- Are there repair and maintenance capabilities at the airport?
- For emergency operations would dispersant aircraft be given priority for take-off?
- Does the airport have instrument landing and take-off capability?
- How many take-off and landings occur daily at the airport? The less amount of activity the better.
- Are there seasonal weather conditions that limit or prevent operations (i.e., fog)? What is the number of operational days per year?
- Are there services for car hire, hotel reservations, food services that can be provided onsite to the aircrews?
- Is there a restaurant on the premises or nearby catering?

2-6 Initial Staging Airport Supervisor Checklist

The following checklist is designed to be completed by the first responder that arrives at the staging airport, since it is important to commence preparations for dispersant operations as soon as possible. When the designated Staging Airport Supervisor arrives at the airport that person can be briefed and then assume completing the remainder of the checklist.

#	Activity	CK (X)	Comments
	Items 1-6 Should be obtained from the Dispersant Group		
1	**Contact Number to Reach Dispersant Branch Director (Name/Number:_____)**		
2	**IC Name:**		
	Phone Number:		**Alt Phone#:**
3	**E-Mail:**		
4	**Spill Information**		
	• **Spill Location (Lat/Long)**		
	• **Source (spill continuing)**		
	• **Type of Oil, API Gravity, Pour Point**		
5	**Designated Staging Airport Information**		
	• **Designated Staging Airport & Airport ID**		
	• **Airport Management or Manager Phone#**		
	• **Staging Airport FBO Contact #**		
	• **Airport Security Contact Number**		
	• **Number & Type of Dispersant Aircraft**		
	• **ETA Staging Base for Dispersant Aircraft**		
6	**Determine contractors to activate, contact name and phone number**		
7	**Coordinate the logistics of dispersant stockpiles to staging airport**		
8	**Upon Arriving Staging Airport**		
	Meet FBO Manager – give overview and –		
	• **Set up a Temporary Cost Account with FBO for items to be invoiced directly to _____**		
	• **Determine with FBO ramp parking area for spray and spotter aircraft**		
	• **Determine with FBO area for transferring dispersant into aircraft**		
	• **Determine with FBO Dispersant trailer storage area (2-4 trailers) if no office space available**		
	• **Determine with FBO area for refueling dispersant aircraft, if different from dispersant loading**		
	• **Arrange with FBO to meet airport security requirements or arrange for security escorts**		
	• **Ask FBO arrange hotel rooms, rental cars and food as needed for aircrews, or arrange for them**		

#	Activity	CK (X)	Comments
	yourself		
	• Arrange for meeting room		
	• Obtain info for WiFi access or arrange for WiFi to be installed		
	• Determine if FBO has 4,000 - 10,000 lb forklift – If not have FBO Rent Forklift		
9	Inform Airport Manager you are on-scene; give overview of operation and how to contact you		
10	Obtain Weather Reports for Staging Airport and Spill Site from Dispersant Group		
	Dispersant Operations		
11	Meet each aircraft upon arrival and inform of arrangements made and current situation		
12	Obtain DADAP copies for recording spray & spotter aircraft info and insert known information		
13	Verify ETA of aircraft and crews and report operational status of dispersant aircraft to the Dispersant Branch		
14	Manage & assist the transfer of the dispersant to the dispersant aircraft		
15	Obtain portable ground & aviation radios		
16	Ensure Safety Briefing for Aircrews and Ground Personnel		
17	Obtain from aircrews after each sortie or each day spray pass data (SatLoc or GPS storage devices), digital photos/videos, and charts, notes, etc.		
18	Maintain contact hourly with DG		
19	Provide reports to DG on aircraft ETD/ETR, number of sorties, amount of dispersant applied, location of where the dispersant was applied and other aircraft documentation of the dispersant operations.		
20	Coordinate the dispersant application with other aerial activities.		
21	Maintain/Update Ops & Status Reporting with airborne aircraft		
22	Brief upon arrival at staging airport • Staging Airport Supervisor		
23	When directed; Transfer responsibility of the dispersant operation to the Designated Staging Airport Supervisor		
24	Maintain Personal and Unit Log		
25	Additional Items –		

Figure 2-6 – Staging Airport Supervisor Activity Checklist

2-7 Daily Aerial/Vessel Dispersant Application Plan (DADAP)

A. Section Purpose and Scope

The Daily Aerial/Vessel Dispersant Application Plan (DADAP) is the most critical form to be completed because it is used to obtain FOSC written approval to apply dispersants and provides all of the information required for the daily dispersant operations. Due to its operational importance, this section provides detailed section by section descriptions of the contents of this form and how to obtain the information to prepare each section to expedite preparation of the DADAP. DADAP can be scaled and adapted depending on the response scenario and complexity.

B. Daily Aerial/Vessel Dispersant Application Plan (DADAP) Preparation

The DADAP is a multi-sheet excel form that provides the operational information for conducting all aspects of the aerial dispersant operations. Additional sheets should be added for vessel dispersant application plans. The first DADAP should be started and completed (see Figure 2-2, Item #27) as part of the Dispersant Activation Checklist and should be completed as soon as possible.

The DADAP can be completed at a remote location and forwarded to the company's representative in the Command Post, since most of the information is acquired through telephone conferences and email. A copy of the DADAP should also be provided to other sections of the IMT. Once completed, the Planning Section will determine if the DADAP becomes a part of the Incident Action Plan (IAP).

The following paragraphs describe the purpose of each part of the plan and in certain cases how the information is obtained. Dispersant OSROs may or may not complete this plan due to OSRO or company policies of not managing dispersant operations or limited availability of appropriate personnel. A copy of the entire DADAP form including the various sheets referenced below is provided in Appendix H.

Page 1: FOSC/RRT Authorization/Signature Page Approving Dispersant Operations

This is the cover page of the dispersant plan. It should be modified to only have the signature of the appropriate approval authority, i.e., either FOSC or the RRT representatives. No dispersant application should be conducted until a signed copy of this page of the DADAP is received.

Page 2: Dispersant Response Information

This portion provides information on communications, safety setbacks, dosages to be applied, weather, aircraft involved in operations, etc. Most of the information on this page should be provided by the IC and Dispersant OSRO as to the Staging Airport, Staging Airport Supervisor and contact information, and spill site information.

Weather information for the staging airport and at the spill site is critical for approval and operational planning. Aircraft apply dispersants only in Visible Flight Rule (VFR) operating conditions which are daylight operations only with a visibility of 3 statute miles and a ceiling of 1,000 feet. Usually a weather report is required to be submitted with the dispersant application request and is used to estimate if weather will be adequate for dispersant application. The weather report can be obtained from several sources such as the National Weather Service (NWS) or commercial providers. Commercial contract weather services offer the following advantages in providing weather reports:

- 24/7 operations

- Provide specific customized weather reports for offshore spill site where standard weather reports are not normally available

- Can provide current and 3 day forecast weather within 2 hours of request

- Provide weather reports in a more easily read format clearly showing the visibility, ceiling, winds at spray altitudes and wave heights, which are important operational weather criteria for dispersant application.

Weather reports, regardless of the source, are only advisory. **The determination to fly the aircraft and apply dispersants rests solely with the Pilot-In-Charge (PIC) of the aircraft and the Captain of the spray vessel** as they are in the best position to assess and judge the field situation and if the dispersants can be applied safely and accurately to the oil spill.

The Dosage Section is where the initial application dosage is stated. This is usually 5 gallons per acre (gpa) and should be the initial recommendation. The 5 gpa represents the minimum amount of dispersant that can be applied to the least thickness of oil that can be dispersed. Additionally, any restrictions for safety setbacks from marine mammals and ships and platforms should be stated here and all the pilots and captains conducting the spray operations should be advised of the spray dosages and restrictions. This information should be provided by the NOAA SSC.

The Communication Section provides the frequencies the aircraft will use on site to direct spray operations and to talk with other aircraft and vessels. This information is provided by the spotter pilot after discussion with the other pilots and vessel captain's and is based on locally accepted procedures.

The Aircraft Information section lists all of the aircraft, tail numbers, Pilots-in-Charge, and most importantly on Day 1, their ETA at the staging airport. This is important as it is needed to determine when dispersant operations can commence and the amount of dispersant that can be applied on Day 1 and succeeding days. Similar information is provided for vessels that will be applying dispersant. All of this information should be supplied by the Dispersant OSRO.

Page 3: Flight and Vessel Schedule for Each Aircraft and Vessel During the Operational Day

The flight and voyage schedule should be prepared by the Dispersant OSRO or the Aerial and Vessel Dispersant Group each day to maximize the area of the spill that can be treated with dispersant (i.e., maximum amount of dispersant sprayed).with the spray and spotter aircraft and vessels that are available. A plan should be developed as to the departure time, spray times, etc. for each aircraft and vessel and how they will work together. This plan will then be adjusted in the field by the pilots once they are offshore and conducting the spray operations. The pilots and captains will make the adjustments to account for changing weather conditions, the spray patterns used, the size of the spill, the need to observe the safety setbacks, etc.

At the end of the day the actual flights and voyages of each aircraft and vessel are recorded and the amount of dispersant applied and oil coverage area determined.

This flight and voyage schedule is important as it will give an estimate of the maximum amount of dispersant stockpiles that should be ordered and when they should at the staging bases to maintain the spray operations.

In building the flight and voyage schedule the Dispersant Mission Planner 2 (DMP 2) should be used to determine flight/voyage times, spray pass time, etc. for the various aircraft and vessels activated. The DMP2 can be downloaded from the NOAA website:
http://response.restoration.noaa.gov/dmp2

Page 4: Activity Schedule, Staging Base Briefings and Staging Base Information

This page provides information on the agenda and the briefing topics for the staging airport pilots and vessel captains and support personnel. Because the first flight and vessels should be over the spill site ready to spray at daylight, pilots, captains and support personnel need to arrive an hour or hour and half prior to departure time to prepare the aircraft and vessels and to discuss the day's spray operations. For vessels it may be possible for them to remain offshore and spray for multiple days.

Page 5: Maps of Spill Site and Staging Airports and Ports

This page provides a map of the spill site so everyone has a common picture of the location and has the correct coordinates. The staging airport and port diagrams are helpful to provide directions to truckers delivering dispersant stockpiles, technical observers and others that will be visiting the staging base. The diagrams can also be expanded to provide information on security access procedures. Multiple pages may be needed depending on the number of staging bases activated.

Page 6: Dispersant Stockpile Logistics Plan

The dispersant stockpile plan for each staging base should be prepared by the Dispersant OSRO to show the location, quantities and types of dispersant ordered and when they will arrive at the staging airport or staging port. This information can be quickly compared to the estimated amounts of dispersant (Page 3 of Appendix H) that will be sprayed by the assets at each base to determine if adequate stockpiles have been ordered to keep the spray assets fully operating.

Page 7: Dispersant Monitoring Plan

An abbreviated Dispersant Monitoring Plan template for the first day or two of the response is provided as Page 7 of Appendix H to enable dispersant operations to commence. This template is primarily to initiate Tier 1 SMART monitoring, i.e., visual observations on effectiveness. The monitoring plan should be adjusted on subsequent days as needed for the spill situation and will be prepared by the Environmental Unit for these subsequent days. The initial monitoring plan may be developed by the Aerial/Vessel Dispersant Group in consultation with the Environmental Unit to expedite DADAP development and commencement of dispersant operations.

2-8 Daily Dispersant Operational Flow Charts

A. Section Purpose and Scope

When planning daily dispersant operations it is critical to have a good understanding of the operations and the general time frame in which key activities need to be completed. Therefore, this section provides an overview of the daily dispersant operations and the general timetable of key activities in the command post and the associated forms to be completed. These tools provide responders at the staging airport and command post a checklist of actions and forms to be completed and an understanding of the flow and timing of when major activities should occur. The information in this section can also be used to develop a general plan for dispersant use at the time of an incident.

B. Daily Dispersant Operations

(1) Dispersant Operations Flow Chart

A flow chart and general timeline depicting the daily aerial dispersant operations conducted from each dispersant staging area is provided in Figure 2-7. The activities shown are general in nature. There would be replicate activities for critical items such as pilot briefings which would occur throughout the day when there is an exchange of crews or change in operational procedures. This same general approach can be used for conducting vessel dispersant operations. A description of the documentation procedures and forms associated with these operations as well as the associated files and information is provided in Figure 2-8.

(2) Dispersant Operations Activity Chart

A chart showing the typical activities conducted by the Aerial and Vessel Dispersant Group in the ICP and staging areas and the associated forms that should be used is shown in Figure 2-8. These activities are completed daily to ensure coordination of operations and to accurately record and document the dispersant application operations for historical and compliance purposes. General time frames for the various activities are also shown on the chart. The Daily Aerial/Vessel Dispersant Application Plan (DADAP) form is provided in Appendix H, whereas the other forms referenced in Figure 2-8 are provided in Appendix I.

2-9 Documentation and Forms

A. Section Purpose and Scope

Daily documentation of all aspects of the aerial and vessel dispersant operations is essential for managing and directing the activities and for planning the next day's operations. Such documentation may be useful in responding to claims of liability or natural resource damages. This section references a number of forms often used to document dispersant activities to aid in performing that function.

B. Aerial and Vessel Dispersant Operations and Management Forms

Copies of the various forms that can be used for documenting dispersant activities are provided in Appendix I. For some of the forms a printout of the information available on the web site or from typical aircraft software is provided as examples of the information that is available.

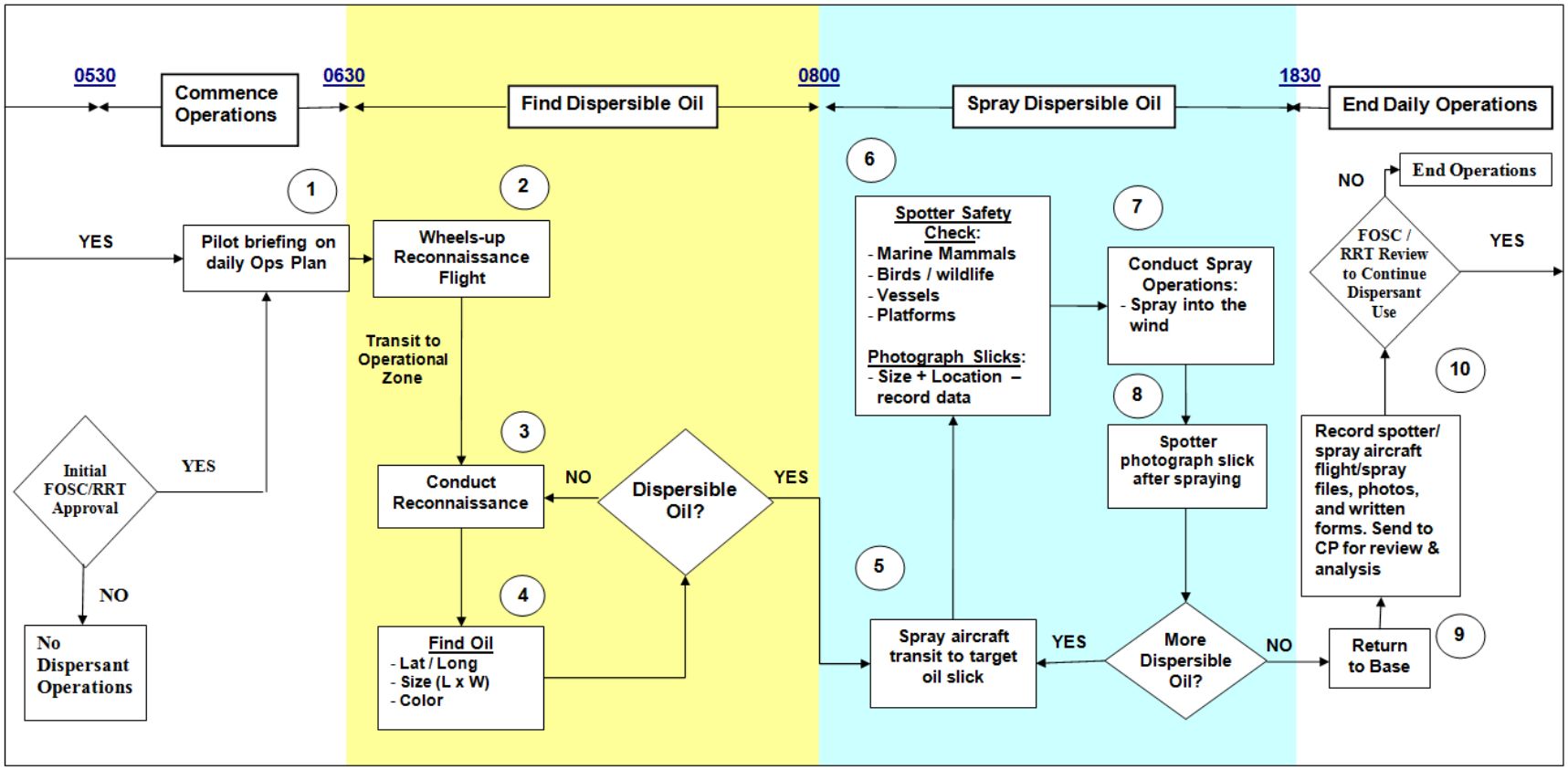


Figure 2-7 – Example of Daily Aerial Dispersant Operations Flow Chart

Time	Activity	Form
0500-0545	Aerial and Vessel Dispersant Group members arrive on site at the staging airport — conduct maintenance and equipment checks — obtain offshore weather conditions — contact staging bases & update operations — verify any changes in flight plans, application dosages, SMART operations, etc.	
0600	Aerial and Vessel Dispersant Group Morning Briefing (All team members)	Morning Briefing Topics (Figure I-3)
0630	Obtain/Confirm FOSC authorization to apply dispersants	DADAP (Appendix H Page 1)
	Commence recording operations and continually update Aerial DADAP and any vessel operations for the actual times of departure, return and amounts of dispersant sprayed	
0700	Attend Operations Section Briefing	
	Review Operation Period Objectives	Form ICS 202
	Attend Air and/or Vessel Operations Group/Branch Meetings	
	Coordinate with SMART and Science Team on SMART Tier 1 monitoring and SMART Tier 2/3 monitoring	
0800	Confirm current arrangements for dispersant stockpiles and commence arrangement for stockpiles for future dates	Update DADAP (Appendix H page 6)
0900	Report to FOSC on observations of spill and effectiveness of the first application of the day. Show photographs and videos	Figure I-14 and photographs & videos
	Commence preparation of spray pass charts as SatLoc files received and Sky Connect files are available online (aerial)	Figure I-12
	Commence storage of all sortie/vessel application files, photos and information	
1100	Attend Tactics Meeting, as requested	
	Commence preparation of authorization request for next day's spraying	DADAP Form for next day
	Revise and update Aerial/Vessel Dispersant Group organization charts	Form ICS 203 & 207
1200	Attend Planning Meeting, as requested	
1300	Prepare and distribute the DADAP for the next day's dispersant operations and to discuss at the aerial and vessel dispersant operations telephone briefings	Figure I-11
1400	Meet with SMART coordinators to plan next day's monitoring	
	Review ICS Resource Summary form for dispersant resources ordered and in operation to ensure the number of assets, personnel and dispersant stockpiles are accurately recorded	Form Resource Summary
1500	Hold Operations Telephone Briefing for Command and Staging base personnel to review current and next day's operations	

Figure 2-8 – Example of Aerial and Vessel Dispersant Group Daily Activity Chart

Time	Activity	Form
1530	Finalize DADAP for the next day's operations	DADAP Appendix H
1600	Submit request and DADAP to UC/FOSC/RRT to apply dispersant for the next day's dispersant operations. This depends on the oil slick information and the dispersant's effectiveness observed during the day.	DADAP Appendix H
	Prepare dispersant stockpile report on stockpiles ordered, expected deliveries and quantities remaining at each staging site	
	Review and update dispersant aircraft and vessel assets on applicable ICS forms and ensure Air Operations has accurately listed dispersant aircraft on the ICS 220.	ICS 220
	Confirm operational status of dispersant spray, spotter, observer, and surveillance aircraft and vessels	DADAP Page 2
1730	Attend Air Operations meeting	
1800	Obtain SMART and Science Team monitoring reports for inclusion in daily summary and QA/QC review and submission to NOAA SSC for approval of results and observations	QA/QC Review (Figure I-13)
1900	Contact staging bases for update on dispersant stockpiles onsite and an update on delivery schedules	
2000	Review and update Unit Log	Form ICS 214
2100-2300	Complete Aerial and Vessel Dispersant Application Reports for the operational Day	Final Daily Aerial/Vessel Dispersant Application Plan updated for actual flight times and amounts sprayed
	Prepare and submit the Dispersant Group Summary Report for the day	Form Figure I-16
	Ensure all documentation properly recorded and filed	

Figure 2-8 – Example of Aerial and Vessel Dispersant Group Daily Activity Chart (Continued)

Appendix A

Roles and Responsibilities of the Aerial and Vessel Dispersant Group & Dispersant Staging Airport and Port Positions

A-1 Aerial and Vessel Dispersant Group Position Descriptions

The following is a brief description of the responsibilities for each position in the Aerial and Vessel Group organization. Additional duties and functions may be added to positions or if there are limited responders the duties and responsibilities may be combined.

Aerial and Vessel Dispersant Group Supervisor

Responsible for the management of all aerial and vessel dispersant operations. Specific duties are:

- Coordinating and communicating with IMT Operations Section Chief and Incident Commander, FOSC and other members of the Unified Command
- Setting daily and long term objectives
- Ensuring the adequacy of spray and spotter aircraft and pilots, dispersant stockpiles, and management and support equipment and personnel
- Preparing daily DADAP and other operational guidance
- Obtaining FOSC/RRT authorization to apply dispersants
- Informing staging airports of when authorization granted to apply dispersants and of any limitations on application operations
- Responding to inquiries concerning all aspects of the dispersant operations
- Ensuring all dispersant activities are documented and files stored
- Investigating reports of over spraying, accidents or inappropriate operations
- Preparing the daily Aerial and Vessel Dispersant Group Summary Report
- Preparing the Surface Dispersant After-Action report including lessons learned

Aerial Spray Operation Coordinators

Responsible to manage and support the aerial operations of the staging airport assigned. The person in this position should normally be from the OSRO that is operating at the staging airport. Specific duties include:

- Acting as the primary means of communication with the staging airport manager
- Providing operational documents and coordinating operations with staging airport manager
- Maintaining in the Command Post the updated spray and spotter flight schedule and provide a updated flight schedule for the Dispersant Group Summary Report
- Supporting staging base with equipment, materials and personnel to ensure continuous operations and assist staging airport manager as requested

Vessel Spray Operation Coordinators

Responsible to manage and support the vessel spray operations at the port(s) assigned. The person in this position should normally be from the OSRO that is operating the vessel(s) at the staging port. Specific duties include:

- Acting as the primary means of communication with the staging port manager
- Providing operational documents and coordinating operations with staging port manager
- Maintaining in the Command Post the updated spray information for the vessels and provide an updated report on the amount and location of vessel spray operations that occurred during the day for the Dispersant Group Summary Report
- Supporting staging base with equipment, materials and personnel to ensure continuous operations and assist staging airport manager as requested

GIS Coordinator

Responsible for all graphic and data analysis and presentations. Specific duties include

- Preparing daily maps of the exact location of each spray pass
- Preparing and maintaining a data base of spray pass information to include
  - Latitude and longitude of start and stop of each spray pass
  - Type and amount of dispersant applied
  - Aircraft tail number and pilots that made the spray pass
  - Track of the aircraft from takeoff to landing
  - Sky Connect and SatLoc (or equivalent) files associated with the spray pass
- Developing spray tracks and locations for investigation of over spray reports
- Preparing data, graphs and charts supporting operations and as requested by the Unified Command, FOSC or the company IC

Dispersant Stockpile and Logistics Coordinator

Responsible for the ordering, delivery and reporting of all dispersant stockpiles to ensure aircraft and vessels have sufficient dispersant for their daily operations. Specific duties include:

- Ordering all dispersant stockpiles from cooperatives or manufacturers through Logistics Section
- Arranging through the Logistics Section the transport of dispersant for timely arrival at the staging bases to ensure daily application requirements are met
- Coordinating dispersant stockpiles for use by aerial and vessel operations, research purposes, and subsea injection, if conducted
- Preparing daily report on the amounts of each type of dispersant at each staging base, the total onsite, and the amounts of stockpiles on order and their arrival date
- Confirming with the dispersant manufacturer’s coordinator on ordering dispersant and the deliveries of dispersant from the factory

- Coordinating replacement of any off-spec dispersants
- Arrange for the testing of dispersant stockpiles when the effectiveness of the dispersant is in question
- Arranging for large storage tanks (stainless steel frac tanks) for use at staging base
- Assisting staging base in the removal of empty dispersant storage tanks, drums, totes and trucks

Dispersant Manufacturer Coordinator

This position is activated if available dispersant stockpiles are determined to be insufficient and additional dispersant volumes need to be manufactured.

Specific duties include:

- Arranging for the manufacturing and delivery of dispersant stockpiles from the factory to the staging sites designated as determined and directed by the Unified Command, Logistics Section, Aerial and Vessel Dispersant Group and the Subsea Dispersant Injection Group
- Coordinating with manufacturing representatives at the staging bases for the delivery and transfer of dispersant to field storage containers or stockpiling

These duties may be completed by someone provided by the dispersant manufacturer, by someone from the company's Incident Management Team or by a contractor or consultant.

Documentation and Report Coordinator

Responsible for completing daily ICS forms and preparing and storing all documents and reports associated with the Dispersant Group. Specific duties include:

- Preparing, reviewing and revising all ICS forms and ensuring corrections are made into the software systems used to manage the spill response
- Attending daily IMT/ICS meetings
- Preparing daily reports, operational summaries, etc. and ensure all materials filed and archived
- Maintaining files of all equipment and personnel requests, deliveries and terminations
- Coordinating dispersant activities with Planning, Logistics, Environmental Unit, SMART, Air Operations and other branches in the command post
- Archiving all Dispersant Group personnel files
- Preparing special reports of dispersant data that are requested by the Unified Command, FOSC or the company IC
- Preparing the Dispersant Group Summary Report daily and distributing to appropriate ICS sections and other organizations
- Preparing and distributing Hurricane and Command Center evacuation plan
- Preparing demobilization plan and coordinating demobilization efforts in the command post

Aviation Consultant

Responsible for providing advice on aviation related operations, questions and investigations and may be assigned to special duties as events present themselves. Specific duties include:

- Preparing, reviewing and revising dispersant air operation procedures assignment of operational areas for spraying, multi-aircraft operations, etc.
- Assist OSRO and dispersant aircraft contractors develop Safety Plans based on the guidance and procedures set forth by the Air Operations Branch
- Assisting in the preparation of the Aerial Dispersant Application Plan
- Investigating accidents or miss-haps involving aircraft, as requested by Air Operations
- Coordinating dispersant operations with the Air Operations Branch and the FAA
- Ensuring appropriate TFRs or NOTAMs are published concerning dispersant operations
- Coordinating aircraft issues with Air Spray Coordinators and staging bases
- Reviewing aircraft maintenance procedures and records and aircraft airworthiness
- Reviewing pilots qualification
- Reviewing aircraft compliance with FAA regulations
- Assuring the crews perform risk assessments during changing conditions
- Making sure the aircraft are operated within the operating limitations set forth by the manufacturer
- Making sure the quality and quantity of fuel meets safety standards
- Developing and overseeing a flight following system
- Assisting in the training of ramp and ground handling personnel
- Assuring crew (pilots, mechanics, ramp personnel) duty times and rest periods are maintained

Dispersant Science Coordinator

Responsible for coordinating scientific aspects of dispersants use and works closely with Environmental Unit on conducting and assessing dispersants effectiveness and sampling program. Specific duties include

- Managing the science teams on research and monitoring vessels
- Ensuring chain of custody and proper storage of all samples taken
- Developing monitoring and analysis procedures for determining effectiveness and assessing potential impacts of dispersant applications
- Coordinating sampling and analysis to evaluate dispersed oil concentrations in the water column
- Preparing analysis and reports of sampling conducted

- Coordinating activities with the Environmental Unit, NOAA, EPA, USCG SMART, and others involved in the environmental analysis
- Coordinating and managing any special requests for dispersant sampling from the Unified Command, FOSC or Plan Holder IC
- Establishing procedures for processing samples taken by responders or the public to determine the presence of dispersant

Research and Monitoring Vessel Supervisor

Responsible for all sampling and analysis operations on the vessel. Specific duties include

- Obtaining water samples from 1 m, 10 m and other depths and storing for future toxicity and hydrocarbon analysis
- Operating fluorometer(s) to determine the effectiveness of the dispersant operations
- Coordinating sampling and analysis operations with spray aircraft and arranging departure and rendezvous times and locations for monitoring

SMART Liaison and Technical Specialist

The responsibilities of the SMART Liaison and Technical Specialist are to work closely with the USCG SMART teams to obtain the best monitoring data possible. Specific duties include

- Coordinating spray flights with SMART personnel so that SMART teams will be in place to observe dispersant applications
- Acting as an observer on SMART Tier 1 operations to assess dispersant effectiveness and to review dispersant operations
- Photographing and/or videoing before, during and after dispersant application to document results
- Answering SMART monitoring team questions about dispersant operations and resolves any differences in joint observations
- Reviewing SMART data and photographs and assess independently the effectiveness of the application
- Preparing SMART data for posting in response data bases and for publishing as part of the Dispersant Group Summary Report (See sample SMART Tier II report format in Forms Section)
- Acting as technical expert on fluorometry operations and data analysis

Dispersant Information and Risk Communication Coordinator

This position works closely with the Environmental Unit, Joint Information Center (JIC), Public Information Officer, as well as Community and Regulatory Liaison Officer. Specific duties include:

- Coordinating preparation of information on dispersants use.
- Attending town hall meetings, media interviews, and other public events to track and gauge dispersant issues and develop tools to respond to the issues raised

Risk Communications Specialist

Specific duties include:

- Preparing and maintaining short information handouts on dispersant topics such as
  - — Dispersant authorization process
  - — Health and safety of dispersants
  - — Toxicity of dispersants and their components
  - — How dispersants work and the benefits of using dispersants
  - — How dispersants are operationally applied, etc.
- Participating in town hall meetings or presentations to the public about dispersants and dispersant operations
- Supporting the Dispersant Information and Risk Communications Coordinator

Media/Government/NGO Liaison

This position works closely with the Joint Information Center, Public Information Officer, as well as Community and Regulatory Liaison Officer. Specific duties include

- Working closely with the Risk Communications Specialist to obtain and provide dispersant facts and information
- Support Joint Information Center, Public Information Officer, as well as Community and Regulatory Liaison Officer by providing information on dispersants and dispersant operations for communicating to federal, state and local government decision makers, affected associations such as fishermen, tourism and environmental NGOs, media and the general public.
- Monitoring news channels and preparing information to address raised concerns.
- Assisting Public Information Officer and Liaison Officer by providing dispersant information for their news releases and by preparing company speakers to discuss the use of dispersants

A-2 Airport Dispersant Staging Base Position Descriptions

Airport Dispersant Staging Base Manager

Usually provided by the Dispersant OSRO that is operating the majority of spray and spotter aircraft. Specific duties include:

- Managing all dispersant operations, safety and security at the staging airport
- Acting as the main point of communication with the Command Post Aerial and Vessel Dispersant Group, the airport manager and the fixed base operator
- Preparing and managing daily flight schedule for spray and spotter aircraft
- Maintaining flight schedule board for each sortie and forwards completed flight board to the Dispersant Group daily

- Preparing and submitting daily response reports to the Aerial and Vessel Dispersant Group
- Coordinating all visits and inspections by government officials, media and members of the UC/ IMT

Dispersant Spray Aircraft Chief Pilots and Mechanics

The Chief Pilot of each aviation company providing the spray aircraft coordinates all spray system, maintenance and repair activities for their company aircraft. Specific duties include:

- Ensuring company air and support crews meet flight and duty hour requirements and follow the safety plan procedures
- Assisting in the preparation of the daily dispersant flight plans and attending associated meetings
- Ensure mechanics and conducting aircraft maintenance in accordance with regulatory, manufacturer and company requirements
- Recording and providing information on where and when each spray pass made and the amounts and types of dispersant sprayed

Spotter Aircraft Chief Pilots and Mechanics

Chief Pilot of each aviation company provides the spotter aircraft, coordinates operations, maintenance and repair activities for company aircraft. Specific duties include:

- Ensuring company air and support crews meet flight and duty hour requirements and safety plan
- Assisting in the preparation of the daily dispersant flight plans and attending associated meetings
- Ensure mechanics and conducting aircraft maintenance in accordance with regulatory, manufacturer, and company requirements
- Holding daily morning flight briefing to finalize the flight schedule and operations for the day and reviewing any safety or other items of special interest

Aerial Surveillance/Observation Consultants

Specific duties include:

- Observing response operations, charting oil slick, identifying shoreline impacts, etc. and reporting observations
- Observing and reporting on marine mammals, birds and other wildlife in or near to the oil slick and the areas for dispersant application
- Photographing and/or videoing areas to document observations

Spray Tracking/Photograph/Video/Surveillance Documentation Supervisor

Specific duties include:

- Reviewing and recording SatLoc files by aircraft tail number and data and maintaining data base of all spray pass data

- Repairing and calibrating SatLoc systems as needed
- Filing all photographic and video data and references to spray pass files

Administration/Report Assistant

Specific duties include:

- Preparing, storing and backing-up reports, plans, and all other correspondence and files for the dispersant operations at the staging airport
- Maintaining master file of all emails, reports, correspondence, etc. for each member assigned to the staging airport
- Maintaining organization chart of personnel at the staging airport and checking personnel in and out

Dispersant Stockpile/Logistics Supervisor

Specific duties include:

- Receiving, storing, loading, accounting and reporting on dispersant stockpiles at the airport and the amounts of dispersant used
- Arranging for the disposal of empty totes and return of empty tank trucks

Dispersant Transfer Contractor

This is usually a 3-4 person crew that loads dispersant onto the aircraft and handles transfer equipment and hoses. Specific duties include:

- Connecting and disconnecting transfer system hoses
- Setting up containment around transfer pumps
- Metering amounts of dispersant loaded onto the aircraft
- Moving dispersant stockpiles to and from the loading area

Dispersant Manufacturer Technician

Specific duties include:

- Coordinating dispersant deliveries and tracking deliveries from manufacturer's site to the staging base
- Maintaining and processing receipts for the delivery of dispersant at the staging base and verifies that the dispersant has met quality standards for the product
- Assist in directing the storage of dispersant onsite and the return of tank trucks to the manufacturer

  These duties may be completed by someone provided by the dispersant manufacturer, by someone from the company's Incident Management Team or by a contractor or consultant

A-3 Vessel Dispersant Port Staging Base Position Descriptions

Vessel Dispersant Port Staging Supervisor

Usually provided by the Dispersant OSRO that is operating the majority of spray vessels. Specific duties include:

- Directing all dispersant operations, safety and security at the port dispersant staging base
- Acting as the main point of communication with the Command Post Dispersant Group, the port manager
- Preparing sailing schedule for spray vessels
- Maintaining schedule board for each vessel spray sortie and forward completed spray pass information to the Dispersant Group daily
- Preparing and submitting daily response reports
- Ensuring vessel has aviation radios to talk directly with spotter and spray pilots, as necessary
- Coordinating all visits and inspections by government officials, media and members of the UC/ IMT

Spray Vessel Captains

The Captain of each vessel coordinates all spray system, maintenance and repair activities for company vessels and ensures they are operational ready. Specific duties include:

- Ensuring company vessel and support crews meet duty hour requirements and safety plan
- Attending and assisting in the preparation of the daily dispersant plans
- Recording and providing information to the Aerial and Vessel Dispersant Group on each spray pass made and the amounts and types of dispersant sprayed

Dispersant Spray System Operator

Specific duties include:

- Calibrating, maintaining and repairing the spray system on board the vessel
- Operating the spray system during dispersant application
- Recording the date, time, latitude, and longitude of each spray pass and daily submitting a report of each pass and summary to the Aerial and Vessel Dispersant Group

Spray Tracking/Photographic Documentation Supervisor

Specific duties include:

- Reviewing and recording spray pass files and vessel route itinerary for each vessel and maintains data base of all spray pass data
- Filing all photographic and video data and references to spray pass files for the vessel involved

Vessel Support Mechanics

Specific duties include:

- Supporting vessel operations with fuel, repairs, stores, charts, etc. to ensure the vessel stays operational, manned and outfitted to perform assigned tasks

Dispersant Stockpile/Logistics Supervisor

Specific duties include:

- Receiving, storing, loading, accounting and reporting on dispersant stockpiles at the staging port and the amounts of dispersant used
- Arranging for the disposal or return of empty totes and drums and the return of empty tank trucks

Dispersant Transfer Contractor

Usually a 3-4 person crew that loads dispersant onto the vessels and handles transfer equipment and hoses. Specific duties include:

- Connecting and disconnecting transfer system hoses
- Setting up containment around transfer pumps
- Moving dispersant stockpiles to and from the loading area

Dispersant Manufacturer Technician

Specific duties include:

- Coordinating dispersant deliveries and tracks deliveries from manufacturer's site to the staging base
- Maintaining and processing receipts for the delivery of dispersant at the staging base and verifies that the dispersant has met quality standards for the product
- Assisting in directing dispersant storage onsite and arranging the return of tank trucks, totes, and drums to the manufacturer to be refilled

Administration/Report Assistant

Specific duties include:

- Preparing and documenting daily reports, plans, and all other correspondence and files for the dispersant operations at the staging port
- Maintaining master file of all emails, reports, correspondence, etc. for each member assigned to the staging port

SMART/Surveillance Liaison

Specific duties include:

- Coordinating dispersant applications with SMART personnel to enable SMART teams to be in place observe dispersant application

- Observing dispersant application and observations as to dispersant effectiveness and prepares report of monitoring and results of the dispersant application
- Photographing and/or videoing before, during and after dispersant application to document results
- Answering SMART monitoring team questions about dispersant vessel operations and spray systems and resolves any differences in joint observations

Appendix B

Aerial and Vessel Dispersant Application Response Contact Phone Book

B-1 Introduction

Appendix B Aerial and Vessel Dispersant Application Response Contact Phone Book is provided in a fill-in-the-blank (see Figure B-1) format to facilitate updating, distribution and use of the plan. Additionally, Appendix B can be published as a small 5 in. x 7 in. separate document to permit responders to carry hard copies with them or it can be uploaded into portable electronic devices or downloaded from the company's intranet. Ready access to assets and procedures during a response is critical.

Many sections of the template contain a short discussion in italics which explains the section's purpose and provides amplifying information on the material presented. Companies using the template may retain the italicized discussion in their plans or may elect to omit this material.

B-2 Purpose

The purpose of the Dispersant Response Phone Book is to publish in one location

- all of the contacts and phone numbers that are needed to activate a dispersant response, and
- the checklists and other necessary response information tailored to the Plan Holder response plans and procedures.

The Dispersant Response Phone Book is recommended to be published as a separate small (5 in. x 7 in.) booklet that can be carried with responders so they can have all of the information needed to activate dispersants from wherever they are located, i.e., in the office, at home or on the road. Having the contact information all in one location makes it easier to update, distribute, and track changes. Responders and their phone numbers often change as employees and contractors move quite frequently within the response community.

The following is a list of the responder information that may be in the Phone Book. Responsible Parties should add material that they deem important and needed for an emergency response. Additionally, the Phone Book can be expanded to cover other response situations and can also be kept on a company server for employee access and updating.

- Organization charts for Plan Holder's IMT and the Aerial and Vessel Dispersant Group
- QI and Dispersant Group Checklists
- Estimate of Aerial Dispersant Application at furthest point offshore in each COTP zone for each type of dispersant aircraft
- Operational Flow Charts
- Contact information for
    - — QIs and selected IMT members and Business Unit Executives
    - — Command Post Phone Numbers

— Aerial and Vessel Dispersant Group Members Phone Numbers

- OSRO Phone Numbers
- FOSC Phone Number
- SSC Phone Numbers
- Dispersant Stockpile Contact Phone Numbers and Stockpile Locations
- Fixed Wing Aircraft Phone Numbers for SMART and wildlife observers

PLAN PREPARER:			
	Name	***Office/Cell***	***Email***
Plan Holder's QUALIFIED INDIVIDUALS (QI's) and OPERATIONS BRANCH CHIEFS			
Position	***Name***	***Office/Cell***	***Email***
QI 1			
QI 2			
Ops 1			
Ops 2			
Oil Characterization			
Oil Characterization			

COMMAND POST PHONE NUMBERS		
Location	***Phone Number***	***Address***
Command Post 1 Location		
Command Post 2 Location		

AERIAL AND VESSEL DISPERSANT GROUP MEMBERS			
Position	***Name***	***Office/Cell/Home***	***Email***
Manager 1			
Deputy 1			
Aviation Consultant 1			
Aviation Consultant 2			
GIS Specialist 1			
GIS Specialist 2			
Dispersant Stockpile Coordinator 1			
Dispersant Stockpile Coordinator 2			
Dispersant Manufacturer Coordinator 1			
Dispersant Manufacturer Coordinator 2			
Documentation 1			
Documentation 2			

Figure B-1 – Dispersant Response Phone Book Template

Position	*Name*	*Office/Cell/Home*	*Email*
Dispersant Risk Info/ Communications 1			
Dispersant Risk/Info Communications 2			
Media/Gov/NGO Liaison 1			
Media/Gov/NGO Liaison 2			
Dispersant Science Coordinator 1			
Dispersant Science Coordinator 2			
Research/Monitoring Vessel Supervisor 1			
Research/Monitoring Vessel Supervisor 2			
SMART Liaison 1			
SMART Liaison 2			
AIRPORT DISPERSANT STAGING BASE RESPONSE MEMBERS			
Locations	*Phone Number*	*Local Office*	*Email*
Airport Dispersant Staging Base Manager			
Aerial Surveillance/Observation Consultant			
Documentation Supervisor			
Spray Tracking Supervisor			
Dispersant Stockpile Supervisor			
Dispersant Transfer Contractor			
Dispersant Manufacturing Technician			
Administrative Assistant			
SMART Liaison			
VESSEL DISPERSANT PORT STAGING BASE RESPONSE MEMBERS			
Position	*Name*	*Office/Cell/Home Phone Number*	*Email*
Vessel Dispersant Port Staging Manager/Deputy			
Dispersant Spray System Operators			
Administration/ Report Assistant			
SMART Liaison			
Documentation Supervisor			
Vessel Support Mechanics			
Dispersant Stockpile/ Logistics Supervisor			
Dispersant Transfer Contractor			
Dispersant Manufacturing Technician			

Figure B-1 – Dispersant Response Phone Book Template (Continued)

AIRPORT MANAGERS and FBO'S (Fixed Base Operators) for selected dispersant staging bases *(Note: Airport Information can be obtained at the following web site: www.airnav.com)*		
Staging Airport	*Contact*	*Phone Number*
Airport Manager		
FBO		
Airport Manager		
FBO		
Airport Director		
FBO		

OSRO VESSELS CAPABLE OF SPRAYING DISPERSANTS				
Vessel/Operator	Dispersant Payload	Type / Size (length x width)	Home Port	Activation Contact Information

VESSESL DISPERSANT SPRAY SYSTEMS AVAILABLE FOR RESPONSE			
Vessel Dispersant Spray Systems	# Units	Location	Activation Contact (Name & Phone #)

OSRO PHONE NUMBERS			
Locations	Phone Number	Local Office	Email
OSRO 1			
OSRO 2			
OSRO 3			

AIRCRAFT COMPANIES THAT CAN PROVIDE SUITABLE OFFSHORE SURVEILLANCE AIRCRAFT			
_____ STATE			
Aircraft Company	*Phone Number*	*Aircraft Available #-Type- #passengers*	*Comments*

DISPERSANT MONITORING PERSONNEL AND EQUIPMENT			
TRAINED "VISUAL" DISPERSANT MONITORS AND OBSERVERS			
Company/ Location	*Name*	*Location*	*Phone Number*
FLUOROMETER OPERATORS AND EQUIPMENT			
Company	*Location*	*Phone Number*	*Other*

Figure B-1 – Dispersant Response Phone Book Template (Continued)

FOSC COMMAND POST PHONE NUMBERS	
Locations	***Phone Number***
EAST COAST	
GULF OF MEXICO	
WEST COAST	
HAWAII	
PUERTO RICO	

NOAA SCIENTIFIC SUPPORT COORDINATOR (SSC) PHONE NUMBERS			
Regional Response Team	***Name***	***Phone Number***	***Email***

OTHER GOVERNMENT (Federal, State, Local) AGENCIES TO BE CONTACTED			
Agency	***Contact Person***	***Office Phone Number***	***Other***

Figure B-1 – Dispersant Response Phone Book Template (Continued)

Appendix C

Dispersant Stockpile Quantities, Access Information and Logistics

C-1 A list of the U.S. and Canadian organizations, OSROs, cooperatives and NALCO (Corexit manufacturer) dispersant stockpiles showing the stockpiles locations, quantities, containers and points of contact is provided in Figure C-1. The organizations and stockpiles that the Plan Holder owns or has immediate access to can be highlighted in red in column 1 to more easily locate these stockpiles and determine total quantities. Although a Plan Holder may have access to many cooperative stockpiles, the amount that any cooperative or organization will provide is based on that organization's policies which may restrict access to only a percentage of the stockpile. At this time each cooperative or OSRO must be contacted individually to determine quantities of dispersant that will be made available. Stockpiles to which the Plan Holder does not have access may still be made available upon request to the owner/contacts of those stockpiles and should be retained in the stockpile listing.

C-2 OSROs that are providing dispersant services normally will arrange and provide transportation for their stockpiles to the staging airport. Other OSROs/cooperatives will require the Plan Holder's logistics section to provide transportation. NALCO Environmental Solutions, LLC has assisted in delivering their stored and manufactured stockpiles to the staging airport and may also assign personnel to assist in receiving, recording and storing dispersant at the staging airport.

C-3 Plan Holders may have access to other dispersant stockpiles located outside of the United States. The worldwide inventory list is not provided here as the number of stockpiles is considerable. Oil Spill Response, Ltd. should be contacted to obtain copies of the worldwide inventory. Additionally, in using any stockpile outside of the U.S., it is necessary to ensure that the dispersant is listed on the National Contingency Plan (NCP) Product Schedule for use in the United States and to verify the effectiveness of the dispersant as depending on how the dispersant was stored and its age, its effectiveness may have deteriorated.

U.S. & CANADA DISPERSANT INVENTORY

OCTOBER 1, 2013*

Sponsored by the Global Response Network

Prepared by C. A. Huber, Inc.

** Inventory levels and locations may change from those shown herein. Organizations should be contacted for verification and availability.*

Part 1: MARINE SPILL RESPONSE CORPORATION (MSRC) DISPERSANT INVENTORY

Randy Anzalone - Dispersant Manager
(281) 776-4335 Office
(713) 471-2680 Cell

#	Dispersant Mobilization Contact	Location of Dispersant	Method of Storage (# of Containers)	Amount (Gallons)		TOTAL AMOUNT (Gallons)
				Corexit EC9500A	Corexit EC9527A	
1	Randy Anzalone Dispersant Manager	MSRC Site 14 Union Wharf Portland, Maine 04101	330 gallon Poly Tote (3)	990		990
2	Randy Anzalone Dispersant Manager	Wilcomico Regional Airport-Corporate#6 5485 Airport Terminal Road Salisbury, Maryland 21804-1599	330 gallon Poly Tote (1)	330		330
3	Randy Anzalone Dispersant Manager	MSRC Site 220 Boat Yard Road Chesapeake City, MD 21915	330 gallon Poly Totes (27) 4,560 Gallon ISO Tank (1)	8,910 4,125		13,035
4	Randy Anzalone Dispersant Manager	Deleware Bay River Co-Op 100 Passwaters Drive Milford, Deleware 19963	330 gallon Poly Tote (1)	330		330
5	Randy Anzalone Dispersant Manager	MSRC Site 1020 Port Blvd Miami, Florida 33132	330 gallon Poly Tote (3)	990		990
6	Randy Anzalone Dispersant Manager	MSRC Site PMB 391 90 Avenue Rio Hondo Bayamon, Puerto Rico 00961-3105	330 Gallon Poly Totes (3) 330 Gallon Poly Totes (10)	3,300	900	4,200
7	Randy Anzalone Dispersant Manager	MSRC Site 1305 Shoreline Ave - #PA 129 Tampa, Florida 33605	330 Gallon Poly Totes (16)	5,280		5,280
8	Randy Anzalone Dispersant Manager	Moran Environmental 2600 Seaboard Coastline Dr, Savannah, GA 31415	330 Gallon Poly Totes (21)	6,930		6,930
9	Randy Anzalone Dispersant Manager	Stennis International Airport 7110 Roscoe Turner Road Kiln, MS 39556	5,283 Gallon ISO Tank/trailer (1) 330 g Poly Totes (36)	4,129 11,880		16,009
10	Randy Anzalone Dispersant Manager	MSRC Site 8400 Old Causeway Road Galveston, TX 77554	330 Gallon Poly Tote (35)	11,550		11,550
11	Randy Anzalone Dispersant Manager	MSRC Site 1667 Main Street Ingleside, TX 78362	330 Gallon Poly Totes (10)	3,300		3,300
12	Randy Anzalone Disperant Manager	Phoenix-Mesa Gateway Airport 6033 S. Sossaman Rd. Mesa, AZ 85212	5,000 Gallon ISO Tank/trailer (1) 330 Gallon Poly Tote (1)	3,000 330		3,330
13	Randy Anzalone Dispersant Manager	Tesoro Marine Terminal 3300 E. Spring Street Long Beach, CA	330 Gallon Poly Totes (28)	9,240		9,240
14	Randy Anzalone Dispersant Manager	Long Beach PPS Yard 3300 E.Spring St Long Beach, CA 90806	330 Gallon Poly Totes (11)	3,630		3,630
15	Randy Anzalone Dispersant Manager	Richmond RRC Warehouse 702 National Ct. Suite 1 Richmond, CA 94804	330 gallon Totes (3)	990		990
16	Randy Anzalone Dispersant Manager	Chevron Environmental Mgmt Co 990 Hensley St. Richmond, CA 94801	4,560 Gallon ISO Tank/trailer (1) 330 Gallon Poly Totes (14)	4,125 4,620		8,745
17	Randy Anzalone Dispersant Manager	Buchanan Field (CCR) Airport 550 Sally Ride Drive Concord, California 94520	330 gallon Totes (1)	330		330

Figure C-1 – U.S. and Canadian Dispersant Stockpiles as of October 1, 2013

#	Dispersant Mobilization Contact	Location of Dispersant	Method of Storage (# of Containers)	Amount (Gallons)		TOTAL AMOUNT (Gallons)
				Corexit EC9500A	Corexit EC9527A	
18	Randy Anzalone Dispersant Manager	MSRC Site 990 West Waterfront Drive; Suite B Eureka, California 95501	330 gallon Totes (2)	660		660
19	Randy Anzalone Dispersant Manager	MSRC Warehouse- Pacific Northwest 1330 Industry Street; Suite #100 Everett, WA 98203-7123	330 Gallon Poly Totes (43)	14,190		14,190
20	Randy Anzalone Dispersant Manager	MSRC-OSRV "Hawaii Responder" Pier 35, Honolulu, HI 96819	350 Gallon SS Totes (2)		600	600
			MSRC TOTAL	103,159	1,500	104,659
Part 2: NATIONAL RESPONSE CORPORATION (NRC) DISPERSANT INVENTORY						
	NRC - International Operations Center - (800) 899-4672 **Chris Eilers - Dispersant Supervisor** **631-328-2517 Office** **631-383-5213 Cell**					
1	Chris Eilers Dispersant Supervisor	NRC Equipment Storage Site Braintree, MA	1 - Flatbed trailer with 16 totes, 265 gaL each	4,240		4,240
2	Chris Eilers Dispersant Supervisor	NRC Equipment Storage Site Dennisville, NJ	1 - Flatbed trailer with 16 totes, 265 gal each	4,240		4,240
3	Chris Eilers Dispersant Supervisor	NRC Equipment Storage Site Wilmington, NC	1 - Flatbed trailer with 16 totes, 265 gal each	4,240		4,240
4	Chris Eilers Dispersant Supervisor	NRC Equipment Storage Site Jacksonville, FL	1 - Flatbed trailer with 16 totes, 265 gal each	4,240		4,240
5	Chris Eilers Dispersant Supervisor	NRC Equipment Storage Site Opa-Locka, FL	1 - Flatbed trailer with 16 totes, 265 gal each	4,240		4,240
6	Chris Eilers Dispersant Supervisor	NRC Equipment Storage Site La Porte, TX	1 - Flatbed trailer with 16 totes, 265 gal each	4,240		4,240
7	Chris Eilers Dispersant Supervisor	NRC Equipment Storage Site Corpus Christ, TX	1 - Flatbed trailer with 16 totes, 265 gal each	4,240		4,240
8	Chris Eilers Dispersant Supervisor	NRC Equipment Storage Site Alameda, CA	1 - Flatbed trailer with 16 totes, 265 gal each	4,240		4,240
9	Chris Eilers Dispersant Supervisor	NRC Equipment Storage Site Long Beach, CA	1 - Flatbed trailer with 16 totes, 265 gal each	4,240		4,240
10	Chris Eilers Dispersant Supervisor	NRC Equipment Storage Site Portland, OR	1 - Flatbed trailer with 16 totes, 265 gal each	4,240		4,240
11	Chris Eilers Dispersant Supervisor	NRC Equipment Storage Site Seattle, WA	1 - Flatbed trailer with 16 totes, 265 gal each	4,240		4,240
12	Chris Eilers Dispersant Supervisor	NRC Equipment Storage Site San Juan, PR	1 - Flatbed trailer with 16 totes, 265 gal each	4,240		4,240
13	Chris Eilers Dispersant Supervisor	NRC Equipment Storage Site St. Croix, USVI	50 drums, 55 gal each - staged in warehouse		2,750	2,750
			NRC TOTAL	50,880	2,750	53,630

Figure C-1 – U.S. and Canadian Dispersant Stockpiles as of October 1, 2013 (Continued)

#	Dispersant Mobilization Contact	Location of Dispersant	Method of Storage (# of Containers)	Amount (Gallons)		TOTAL AMOUNT (Gallons)
				Corexit EC9500A	Corexit EC9527A	
PART 3 - DISPERSANT INVENTORIES MAINTAINED BY OTHER ORGANIZATIONS						
1	Clean Harbors Cooperative Linden, NJ Dennis McCarthy **908-8482-1494 cell**	Linden, NJ	Totes (3)	**1,200**		**1,200**
2	Oil Spill Response Americas Ft. Lauderdale, FL Skip Prezlomski **954-983-9880 24/7** **skipprezlomski@ oilspillresponse.com**	Pt. Everglades, FL	330 g Poly Totes (93 full)	**30,690**		**30,690**
3	Airborne Support, Inc. 3626 Thunderbird Road Houma, LA Brad Barker **985-851-6391 24/7**	Houma, LA	Totes	**13,940**		**13,940**
4	LOOP, Inc. Cindy Gardner-LeBlanc **985-276-6299 Office** **504-289-6307 Cell** **504-565-9797 Pager**	ASI Hangar Houma Airport Houma, LA	2,000 Gal. Tanks	**15,000**		**15,000**
5	Clean Gulf Associates New Orleans, LA Frank Paskewich - James Hanzalik **504-799-3035 Office** Frankie Palmisano- **504-875-2460 Office** **504-234-1279 Cell**	Houma, LA (stored at ASI facilities) Venice - Grand Bay OSRV Morgan City, LA - RW Armstrong OSRV Aransas Pass, TX - Timbalier Bay OSRV Lake Charles, LA - Bastian Bay OSRV	330 Gallon Tote (100) 330 Gallon Tote (1) 330 Gallon Tote (1) 330 Gallon Tote (1) 330 Gallon Tote (1)	**33,300**	**330** **330** **330** **330**	**34,620**
6	Nalco Environmental Solutions, (NES, LLC) Sugarland, TX **281-263-7200 After Hours** Debby Albright **832-851-5164 cell** **281-263-7709 off**	Sugarland, TX	Totes	**0**	**	**0**
7	BP, Gulf of Mexico David D. Breen **281-366-7201 office** **713-557-9213 cell** Dennis Johnson **281-366-7828 office** **713-822-7106 cell**	Preservation and Maintenance Facility 1551 Hwy 311 Schriever, LA 70395	ISO tanks	**263,000**		**263,000**
8	Marine Well Containment Co. Carmine Dulisse **281-820-8811 Office** **281-820-8800 24/7**	Isochem 11000 Beaumont Hwy Houston 77078	35 ISO Tanks 5700 gallons	**200,000**		**200,000**
9	Clean Seas, LLC. Carpenteria, CA Kyle Hanson - **805-684-3838 Office**	Carpenteria, CA Carpenteria, CA Santa Barbara - OSRV Ocean Scout Santa Barbara - OSRV Ocean Defender Santa Barbara - OSRV Ocean Sentinel Santa Barbara - OSRV Ocean Guardian	550 Gallon SS Totes (17) 500 g SS Totes (2) 550 g SS Totes (15) Tote Tote Tote Tote	**8,900** **250** **250** **250** **250**	**9,250**	**19,150**
10	CISPRI (CIRO) Nikiski, AK Todd Paxton (GM) **907-776-5129 Off** Mike Watson Operations Manager Greg Edelman - Operations Supv	Univar, Anchorage, AK Nikiski, AK	330 Gallon Totes (37) 550 Gallon Toes (4)	**11,000** **2,200**		**13,200**

Figure C-1 – U.S. and Canadian Dispersant Stockpiles as of October 1, 2013 (Continued)

#	Dispersant Mobilization Contact	Location of Dispersant	Method of Storage (# of Containers)	Amount (Gallons)		TOTAL AMOUNT (Gallons)
				Corexit EC9500A	Corexit EC9527A	
11	Alyeska Pipeline Service Company Anchorage, AK Martin Parsons Sam Swartzell **907-834-6978**	Univar, Anchorage, AK Univar, Anchorage, AK Valdez, AK	Bulk Storage Tanks (4) 13,168.75 ea 220 g Totes (42) ISO tanks (2) Totes	**52,675** **9,240** **10,093** **880**		**72,888**
12	ASRC Energy Services, Response Operations LLC Anchorage, Alaska Joe LoSciuto (GM) **907-339-7665 off** Jim Rosenberg **907-339-5488 off** **907-602-6503 cell**	Univar, Anchorage, AK	350 Gallon SS Totes (75)	**25,000**		**25,000**
13	Clean Islands Council & State of Hawaii* Honolulu, HI Kim Beasely **808-536-5814 24/7** **808-845-8465 Office**	Tesoro SPM Yard-91-141 Kalaeloa-Honolulu, HI Kalaeloa Airport Building 2102 Honolulu, HI	4,520 g ISOs (7) 5,550 g ISO (2) OSRV Clean Islands	**27,080** **10,588** **700**		**38,368**
			TOTAL OTHER ORGANIZATIONS	**716,486**	**10,570**	**727,056**
			TOTAL UNITED STATES	**870,525**	**14,820**	**885,345**
PART 4 - CANADIAN DISPERSANT INVENTORIES						
1	Canadian Coast Guard Victoria, B.C., Canada Superintendent Don Rodden **604-270-3273 Office** **604-340-1954 Cell**	Victoria, B.C.	Tank Truck (1)		**5,000**	**5,000**
2	Canadian Coast Guard Halifax, Nova Scotia, Canada Seward Benooit **902-625-4166**	Newfoundland	drums (65)		**3,575**	**3,575**
3	Canadian Coast Guard Halifax, Nova Scotia, Canada Superintendent Joe LeClair **902-426-3699** Robert Grant **709-772-0846**	Newfoundland	300 g Totes		**4,000**	**4,000**
			TOTAL CANADIAN STOCKPILES	**0**	**12,575**	**12,575**
	TOTAL U.S. AND CANADA			**870,525**	**27,395**	**897,920**

* State of Hawaii owns 30,000 gallons of Corexit 9500 which is stored by Clean Island Council.

** Represents amount of dispersant in stock when survey was conducted. Continuous supply requires two weeks preparation.

Figure C-1 – U.S. and Canadian Dispersant Stockpiles as of October 1, 2013 (Continued)

Appendix D

Dispersant Use Approval Forms

RRT 4 DISPERSANT / APPLICATION FORM FOR DISPERSANT USE

(as of September, 2012)

Name of the Spill Incident: _____

Responsible Party (if known): _____

Date and Time of the Spill Incident: _____

I. OIL TYPE:

1. **Spilled oil/substance name (if known):** _____
2. **Viscosity:** _____
3. **API Gravity:** _____
4. **Pour Point:** _____
5. **Percent Evaporation in: 24 Hours –** _____

   48 Hours – _____
6. **Did oil emulsify within the operational period?**

   _____

**** Any information from visual over flights of the slick, including estimations of slick thickness, should be included here. All additional available information pertaining to physical characterization of spilled oil should be included here.**

II. ENVIRONMENTAL CONDITIONS:

1. **Wind Speed:** _____
2. **Wind Direction:** _____
3. **Visibility:** _____
4. **Ceiling:** _____

III. DESCRIPTION OF SPILL INCIDENT AND SPILL SITE:

Note all relevant details concerning the spill incident and spill site here. Be sure to note whether the spill was a one-time or continuous release, the amount of cargo remaining aboard the vessel, the stability of the vessel, and sensitive environmental conditions in the vicinity of the vessel. An estimated amount of oil on the water should be made, if possible, by using available information on the area of the slick and the estimated slick thickness (as indicated by the color of the slick). Also included should be a description of the location of the spill site, including the nearest major port.

_____

_____

_____

_____

_____

IV. DESCRIPTION OF AREA OVER WHICH DISPERSANTS WERE APPLIED:

1. **Distance from Shoreline:** _____
2. **Depth of Water:** _____
3. **Jurisdiction (i.e., federal or state):** _____
4. **Special Management Zone Area (as defined in LOAs):** _____
5. **Safety Zone Established in Operational Area:** _____

V. AVAILABILITY OF PERSONNEL AND EQUIPMENT:

1. **Availability of Application and Spotter Aircraft/Vessel:** _____
   - **Source:** _____
   - **Point of Contact:** _____
   - **Type:** _____
   - **Travel Time to Spill:** _____
2. **Type of Aircraft/Vessel Used:** _____
3. **Aircraft/Vessel's Dispersant Load Capability:** _____
4. **Availability of Qualified Personnel:** _____
   - **Source:** _____
   - **Point of Contact:** _____
   - **Travel Time to Spill:** _____
5. **Time Required for Delivery to the Aircraft Staging Area:** _____

VI. INFORMATION ON DISPERSANT PRODUCT:

1. **Name of Dispersant:** _____
2. **Manufacturer:** _____
3. **Amount Available:** _____
4. **Source:** _____

**** A Material Safety Data Sheet of the Product Should Be Attached Here.**

VII. IMPLEMENTATION OF RECOMMENDED MONITORING PROTOCOLS:

1. **Was the Gulf Strike Team's monitoring protocol deployed?** _____

**** A full report documenting the activities and results of any monitoring activities should be attached here.**

RRT 6 Dispersant Pre-Approval Initial Call Checklist (as of September 2012)

Dispersant Pre-Approval Initial Call Checklist

Boxes denote essential Information

CALLER

Time of Initial Call: Date: _____/_____/_____ Time: _____ CT
(Month Day Year (24 hour clock))

Name of Caller: _____

Telephone #: (_____) _____- _____

Name of Alternate Contact: _____

Telephone # (_____) _____-_____

Company Name: _____

Address:

Street: _____

City: _____

State: _____ Zip Code: _____

SPILL

Initial Time of Spill: Date: _____/_____/_____ Time: _____CT
(Month Day Year (24 hour clock))

Location of Spill: LAT: N LON: W

Block Name: _____ Block Number: _____

Type of Release: [(Instantaneous ( ) or Continuous Flow ( )]

Oil: Name: _____

API: _____ Pour Point: _____(^{o}C or ^{o}F)

Amount Spilled: _____[GAL or BBLS (42 GAL/BBL)]

Flow Rate, if Continuous Flow (Estimate): _____

ON-SCENE WEATHER (Note: If not available contact SSC for Weather)

Wind Direction From (Degrees): _____ Wind Speed _____Knots
Surface Current (Direction Toward Degrees): _____Speed _____Knots
Visibility: _____nautical miles
Ceiling: _____Feet
Sea State (Wave Height): _____ Feet

DISPERSANT SPRAY OPERATION

Dispersant Spray Contractor

Name: _____

Address:

Street: _____

City: _____

State: _____ Zip Code _____

Telephone: (_____) _____-_____

Dispersant: Name: _____

Quantity Available: _____

Platform: Aircraft Type: _____

Multi-Engine ( ) or Single Engine ( )

Boat Type: _____

Other: _____

Dispersant Load Capability (Gal) :

RRT 6 Dispersant RRT Approval Initial Call Checklist (as of March 16, 2005)

NSE EAP Initial Call Checklist

CALLER INFORMATION

Time of Initial Call: Date: ____/____/____ Time:_____CT
(Month / Day / Year) (24 hour clock)

Name of Caller:_____

Telephone #: (__ __ __) __ __ __ - __ __ __ __

Name of Alternate Contact:_____

Telephone #: (__ __ __) __ __ __ - __ __ __ __

Company Name:_____

Address:

*Street:*_____

*City:*_____

*State:*_____ *Zip Code:*_____

SPILL INFORMATION

Initial Time of Spill: Date: ____/____/____ Time:_____CT
(Month / Day / Year) (24 hour clock)

Location of Spill: LAT:_____N LON:_____W

Block Name:_____ Block Number:_____

Type of Release: [Instantaneous ( ) or Continuous Flow ( )]

Oil: Name:_____

API:_____ Pour Point:_____(°C or °F)
Circle One

Amount Spilled: _____[GAL or BBLS (42 GAL/BBL)]
Circle One

Flow Rate if Continuous Flow (Estimate): _____

Additional volume at risk of being spilled:_____

Source of Spill: (e.g. pipeline, platform, vessel)_____

ON-SCENE WEATHER (Note: If not available contact SSC for Weather)

Wind Direction From (Degrees): _____ Wind Speed: _____Knots

Surface Current (Direction toward, Degrees): _____

(Speed): _____Knots

Visibility: _____ Nautical Miles

Ceiling:_____ Feet

Sea State (Wave height):_____ Feet

DISPERSANT SPRAY OPERATION

Dispersant Spray Contractor

Name: _____

Address:

*Street:*_____

*City:*_____

*State:*_____ *Zip Code:*_____

Telephone: (__ __ __) __ __ __ - __ __ __ __

Dispersant: Name:_____

Quantity Available:_____

Platform: Aircraft Type: _____

Multi-Engine ( ) or Single-Engine ( )

Boat Type: _____

Other: _____

Dispersant Load Capability (Gal): _____

Time to First Drop on the oil (Hours): _____

Initially proposed staging area:_____

NSE EAP Minimum Criteria Checklist

	Y	N	N/A	NSE EAP Minimum Criteria
1.				**Dispersability:** Available technical information or experience suggests that the spilled product is dispersible and will still be dispersible in the time frame of anticipated application of dispersants
2.				**NCP Listed Dispersant:** The dispersant to be used is listed on the current NCP Product Schedule and is considered appropriate for the existing environmental and physical conditions.
3.				**Inadequacy of other options:** Mechanical response equipment alone is not deemed adequate (either availability or timeliness) to protect potential resources at risk.
4a. 4b.				**Dispersant Availability and timeliness:** Enough dispersant and application equipment has been confirmed to be available a) to make a significant impact on the spilled product, and b) to be deployable within the proposed time frame.
5.				**Weather Conditions:** Weather and sea conditions are conducive to dispersant application by the chosen system or platform. (Generally, for **aerial application**: wind ≤ 25kts, visibility ≥ 3nm, and ceiling ≥ 1000'. Generally for **boat application**, a sea state that will allow the vessel to be used to conduct an effective and safe spray operation.)
6.				**PPE:** Personal protective equipment for personnel on-site will conform to the appropriate dispersant's MSDS and safe industry practice.
7a. 7b. 7c.				**General Adequacy of Dispersant Spray System and Personnel Competency:** In addition to any other requirements of the RRT6 NSE EAP, the general criteria for evaluating the suitability for use of any dispersant system should be the ability of the party or parties that are requesting approval to demonstrate to the satisfaction of the FOSC, the following: a) That the application system has been i. Specifically designed for its intended purpose, or ii. If not specifically designed for dispersant use, has been used previously and was deemed to be effective and appropriate, and will be used again in a similar manner, or iii. By some other specific means documentation or experience reasonably deemed to be effective and appropriate under the circumstances. b) That the design and operation of the application system can reasonably be expected to apply the chemical dispersant in a manner consistent with the dispersant manufacturers' recommendation, especially with regard to dosage rates, and concentrations. c) That the operation will be supervised or coordinated by personnel that have experience, knowledge, specific training, and/or recognized competence with chemical dispersants and the type of system to be used.
8a. 8b.				**Aerial Application Operational and Technical Issues:** In the case of Aerial Application of dispersants: a) The FOSC must ensure that the RP's dispersant operation provides for a dispersant controller who is over the spray zone(s) in separate aircraft from the dispersant aircraft. The controller must be qualified and be able to direct the dispersant aircraft in carrying out the near shore dispersant operation inclusive of avoiding the spraying of birds), marine mammals and turtles that may be in the area. b) Aircraft spray systems must be capable of producing dispersant droplet sizes that provide for optimal dispersant effectiveness (generally 250-500 μm, but follow manufacturer and ASTM guidance).

	Y	N	N/A	NSE EAP Minimum Criteria, continued
9.				**Boat Application Operational Technical Issues:** If the system involves spray arms or booms that extend out over the edge of a boat and have fan type nozzles that spray a fixed pattern of dispersant, the dispersant operator has confirmed that application will comply with the following ASTM standards as appropriate: a) **ASTM F 1413-92** "Standard Guide for Oil Spill Dispersant Application Equipment: Boom and Nozzle Systems b) **ASTM F 1460-93** Standard Practice for Calibrating Oil Spill Dispersant Application Equipment Boom and Nozzle Systems c) **ASTM F 1737-96** Standard Guide for Use of Oil Spill Dispersant Application Equipment during Spill Response: Boom and Nozzle Systems.
10.				**Fire Monitor Operational and Technical Issues:** If the system involves the use of a fire monitor and or fire nozzle to apply the dispersants from a boat, the dispersant operator has confirmed that application will comply with the following: a) A straight and narrow "firestream" flow of dispersant directly into the oil is to be avoided. At such a time as applicable ASTM standards are finalized, they should be complied with appropriately relative to the process and potential dispersant application described herein. b) The specific fire monitor system(s) intended for use must have been specifically designed for dispersant application and/or must have been specifically calibrated via field trial for dispersant use.
11.				**SMART Deployment:** The FOSC must activate the Special Monitoring of Applied Response Technologies (SMART) Program monitoring team. Every attempt should be made to implement the on-water monitoring component of the SMART monitoring protocols in every dispersant application. At a minimum, Tier 1 (visual) monitoring must occur during any dispersant operations approved. Tier 2 or Tier 3 sampling may be required for reapplications.
12.				**SMART Controller/Observer:** The SMART controller/observer must be flying over the response zone to visually assess effectiveness of the dispersant applications, and to look out for marine animals.
13.				**DOI / DOC Representative:** When possible DOI/DOC will provide a specialist in aerial surveying of marine mammals/turtles and pelagic/migratory birds who will accompany the SMART controller/observer.
15.				**ESA and EFH Consultations:** RRT representatives of DOI and DOC were notified and, if listed species and/or critical habitat are present in the area, or could be present, emergency consultation has been initiated. FWS and NMFS representatives have provided recommendations to avoid and/or minimize impacts to listed species and/or critical habitat, advised the FOSC whether incidental take related to response actions is anticipated, and, if so, advised the FOSC to document incidental take for use in formal consultation post-response. Both the FOSC and FWS/NMFS representatives maintain records of oral and written communications

RRT NSE EAP Decision Checklist (use additional pages if needed)

1. **Aquatic RAR:** What are the specific aquatic resources deemed to be at risk from the non-chemically dispersed spilled product? _____

2. **Terrestrial RAR**: What are the specific terrestrial resources deemed to be at risk from the shoreline impact of the non-chemically dispersed spilled product? _____

3. **Time to RAR Impact:** What is the estimated time of impact to the resources identified in 1 & 2 above? _____

   (The NOAA SSC should be contacted for trajectory and environmental fate analysis.)

4. **Leading Edge Location:** What is the estimated location of the leading edge of the spill at the proposed time of the first dispersant application? (Lat/Long, proximity to shore _____

   (Coordinate with the NOAA SSC, the RP, or other information sources to estimate the location of the leading edge of the spill at the proposed time of the first application of dispersants.)

5. **Environmental Benefit /Trade Offs**: Does it appear that dispersants can be applied at this location in a manner that will likely achieve the desired environmental benefit for the identified RARs? Are there any specifically known resources in the area targeted for dispersant use that might be negatively impacted by application of chemical dispersants? (Y/N) _____. If yes, what are the known resources, and is the negative impact to these resources anticipated to be great enough to offset the benefit to the resources identified in 1 & 2 above? _____
   Are there ways to avoid or minimize adverse affects to known resources (e.g., observers watching for marine wildlife). If so, list. _____

6. **Shoreline Avoidance:** Given an assessment of the following items for this case, what is the proposed minimum allowable proximity to the shoreline of the dispersant platform while spraying?: _____

   Factors to be considered (including, but not necessarily limited to the following)
   - Wind speed and direction
   - Accuracy of spray
   - Shoreline use or resources at risk from overspray
   - Type and geometry of shoreline
   - Anticipated proximity of oil to shoreline

7. **Minimum Criteria** Will all applicable **NSE EAP Minimum Criteria Checklist** items be appropriately addressed by the time dispersants will be applied? _____(Y / N) If not, for which items and why are there exceptions required? _____
   Specify the outcome of the informal ESA and EFH consultation and resultant recommendations: _____

8. **RRT6 DECISION**: Nearshore dispersant use for this specific case is
   - ☐ Approved
   - ☐ Not approved
   - ☐ Approved as per the information provided herein and under the following stipulations: _____

   RRT6 Approval Signatures:

   _____ _____ _____

   _____ _____ _____

Appendix E

Aerial and Vessel Dispersant Health and Safety Procedures and Equipment

This appendix provides detailed information on selected health and safety areas that should be part of the Health and Safety Plan described in Section 1-5. This section is not designed to be Health and Safety Plan template. The Health and Safety Plan should follow the Plan Holder's format and should be incorporated into the Incident's Health and Safety Plan.

E.1 Spray and Spotter Aircraft Safety Procedures and Setbacks

To ensure that dispersant spray drift does not impact personnel onboard vessels or offshore platforms or affect wildlife, the following procedures should be adopted:

- Prior to applying dispersants, the spotter aircraft should make a safety pass over the spill site to ensure the area is free of wildlife, vessels, platforms and obstructions.
    - o Setbacks from vessels, platforms and wildlife should be a minimum of 1,000 ft. Greater setback distances may be instituted based on the specifics of the spill and at the direction of the Unified Command.

      Note: The 1,000 ft setback is based upon analysis of spray drift using U.S. government/industry software, AgDrift, which shows that when applying dispersants into the wind the dispersant falls in a maximum swath width of 500 ft. Thus, a 1,000 ft setback provides a safety factor of approximately 4 to prevent anyone from being exposed to dispersant.
    - o A second pass over the spill site should be made to take photographs of the area and to document it is clear for spraying and the oil slick prior to dispersant application.
- Contact vessels and platforms in the area and advise where and when dispersants will be applied.
- Send message to staging airport, "Area clear, preparing to spray," and announce commence spraying to vessels, platforms and aircraft in the vicinity.
- The spotter aircraft will then act as air controller for the on-scene aerial dispersant operations by coordinating the activities of aircraft in the operating areas, including spray aircraft, monitoring aircraft, surveillance/observation aircraft, video/media aircraft, etc. to ensure the safety of the operations.

E.2 Staging Airport Dispersant Transfer Operations

- Personal protective equipment includes the following:
    - o Rubber steel toed/shank shoes or boots with textured soles.
    - o Rubber gloves (as needed); option: leather gloves (if no contact with dispersant).
    - o Full face shields are recommended and should be worn over safety goggles.
    - o Hard hats as required by safety officer. These may not be needed near aircraft.

- Tyvek® suits may be used; however, in hot climates these may not be used due to heat exhaustion and dehydration concerns.
- Cloth coveralls or work clothes may be worn by personnel not exposed to liquid splashing.
- Eye wash and portable shower should be provided near the dispersant transfer area.
- Hearing protection should be worn in noisy areas.
- For loading dispersant onto C-130s, BT-67, DC4s and DC3s, all engines on the side where the dispersant loading will occur shall be shut down. Loading shall be done on the side opposite the operating engines, and an aircrew member shall be present to supervise the loading. The aircraft may be approached only when the aircrew member indicates it is safe to proceed towards the aircraft.
- When loading dispersant onto King Air's (BE-90s) both engines must be secured and the propellers must have stopped. The aircraft may be approached only when the aircrew member indicates it is safe to proceed towards the aircraft.

E.3 Vessel Dispersant Application Health and Safety Procedures

- During vessel dispersant spray operations, all personnel should be in the vessel's cabin and not on deck.
- PPE includes:
  - Chemical resistant gloves for dispersant handling
  - Inner vinyl or latex gloves
  - Splash goggles
  - Safety helmet or hard cap
  - Polycoated Tyvek® suit
  - Non-skid safety shoes
  - Air purifying respirator with organic vapor cartridges should be available during dispersant spray operations and these respirators should be worn during application with fire monitors.
- Eye wash bottle should be available onboard the vessel.

E.4 MSDSs for Dispersants

- MSDS for Corexit EC9527A and EC9500A can be obtained at the following web sites:

  EC9500A http://www.nalcoesllc.com/nes/employees/1617.htm

  EC9527A http://www.nalcoesllc.com/nes/employees/1620.htm

- MSDSs for other dispersants on the National Product Schedule should be obtained directly from the manufacturers.

Appendix F

Aerial and Vessel Spray System Testing and Calibration

F.1 Testing and Calibration Requirements

All aerial and vessel spray systems, including fire monitor systems, must meet applicable Coast Guard requirements for testing and calibration equipment, including criteria stated in the American Society of Testing and Materials (ASTM) Standards as required. See 33 CFR Parts 154 and 155. It is prudent to ensure proper testing and calibration of dispersant spray equipment and to have documentation supporting ASTM standard compliance. These tests are used to determine

- Volume Median Droplet size (VMD) and droplet size distribution,
- Spray system swath width,
- Dosages that can be applied, and
- Aircraft application speeds and altitudes to produce acceptable droplet sizes and swath widths.

ASTM standards also require preparing Dosage Charts for various application speeds and dispersant flow rates for both aerial and boat spray systems. Prior to applying dispersants, the flow rates for the spray system will be calibrated to ensure the system produces the dosages that will be used and the spray chart is correct.

A. Frequency of Testing and Calibration.

Prior to commencing dispersant application operations, all aerial and boat spray systems should be checked to ensure Dosage Charts are up-to-date; i.e., flow rate calibration was conducted (ASTM recommend within last 12 months), and spray system testing was conducted (recommended within the last 3-5 years, unless there has been significant changes to the system). There are regulatory requirements to comply with specified ASTM standards. Verification of the proper working and calibration of the system is a sound operational practice.

An example of a Spray/Dosage Chart for an aerial spray system is provided in Figure F-1. A vessel dosage chart would be similar. Dosage Charts should indicate the specific dispersant to which it applies because there can be substantial differences in the dosages at the same boom pressures and application speed due to the difference in dispersant viscosity. If the aircraft operates over a wide range of temperatures, charts reflecting the temperature may be appropriate. Aircraft with flow control units that automatically adjust dosage for ground speed may have not have or use a written spray chart. Other parameters may be used for the Spray Chart such as flow rate, rather than boom pressure.

COREXIT EC9500A

SPRAY CHART
22 Nozzles Spray Configuration

Date: _____

Dosage (gpa)	Application Speed				
	130 kts GS	**140 kts GS**	**150 kts GS**	**160 kts GS**	**170 kts GS**
	40 psi	40 psi	40 psi	40 psi	40 psi
1	**----**	**----**	**----**	**----**	**----**
2	**----**	**----**	**----**	**----**	**----**
3	**----**	**----**	**----**	**----**	**22.5**
4	**23.0**	**26.0**	**28.0**	**30.5**	**33.5**
5	**31.5**	**35.0**	**39.0**	**44.5**	**51.5**
6	**42.5**	**50.0**	**61.5**	**----**	**----**
7	**63.0**	**----**	**----**	**----**	**----**
8	**----**	**----**	**----**	**----**	**----**
9	**----**	**----**	**----**	**----**	**----**
10	**----**	**----**	**----**	**----**	**----**

GS = Speed over the Ground gpa = gallons per acre kts = nautical miles per hour

psi = Pressure in pounds per square inch in the spray boom. Other pressures may be added to the chart to obtain other dosages.

Figure F-1 – Example Aerial Dispersant Application Spray/Dosage Chart

B. ASTM Standards

The following ASTM standards are applicable to dispersant spray systems:

- **Standard Guide for Oil Spill Dispersant Application Equipment: Single-point Spray Systems (F 2465).**

  This guide covers performance criteria, material characteristics and essential features for oil spill dispersant “fire monitor” application systems. It describes testing for swath width, droplet size and distribution as well as charts for application dosages (see paragraph 7 of this ASTM Standard).

- **Standard Guide for Oil Spill Dispersant Application Equipment: Boom and Nozzle Systems (F 1413).**

  This Standard covers design criteria, material characteristics, and essential features for oil spill dispersant “Boom and Nozzle” application systems for vessels and aircraft.

  The standard also describes performance criteria for dosage range, droplet size distribution and determining swath width. Paragraph 6 requires a Dosage Chart for application equipment together with documentation of above parameters.

- **Standard Practice for Calibrating Oil Spill Dispersant Application Equipment Boom and Nozzle Systems (F 1460)**

  This Standard provides uniform procedures for determining and reporting the dosage rate of oil spill dispersant application equipment, except for fire monitors. The Standard publishes procedures for operating the system, selecting the test fluid, collecting the test material and measuring the flow to calculate the dosages being applied to develop Dosage Chart.

- **Standard Test Method for Determination of Deposition of Aerially Applied Oil Spill Dispersants (F1738)**

  This standard describes the test method(s) for measuring the deposition of an aerially applied dispersant on the surface of the ground or water. It specifically describes the methods for determining the dosage applied, the Volume Median Diameter (VMD) of the droplets produced, the droplet distribution and the swath width of the spray system.

- **Standard Practice for Reporting visual Observations of Oil on Water (F1779)**

  This Standard covers methods of reporting and recording visual observations from aircraft of oil on water and related activities and phenomena. It also provides nomenclature for the different colors associated with various thicknesses of oil, nomenclature to describe different types of oil slicks, and provides procedures for mapping and reporting oil slicks.

Appendix G

SMART Monitoring Procedures; Aircraft and Vessel Requirements; Observer/Surveillance Charter Aircraft

G.1 SMART Monitoring Procedures

A. The following activities are fundamental for SMART to be able to conduct their operations and to quickly and accurately report their findings.

- Locate aircraft for conducting SMART monitoring at the aerial dispersant staging base.
- Locate a SMART coordinator at each aerial dispersant staging base, if the SMART monitors are not at the dispersant staging base.
- Hold meeting between SMART personnel and spotter and observer pilots so they can discuss SMART and aerial application procedures, any vessel spray operations as well as what to observe and what is a positive indication the dispersants are effective.
    - During flight operations SMART personnel should only communicate with the spotter aircraft through the spotter aircraft pilot and never directly with the spray aircraft. Standard procedure is for the spotter aircraft to coordinate all activities at the spill site and be the only aircraft talking with the spray aircraft.
- SMART surveillance aircraft pilots attend the daily morning dispersant briefing to coordinate
    - Schedule of dispersant, spotter, surveillance and SMART flights
    - Assigned oil slick areas
    - Call signs of spotter/sprayer, SMART and other surveillance aircraft
    - Communication frequencies (primary, secondary and emergency)
    - Spill site entry/exit and holding procedures and locations
    - Altitude separation for sprayer/spotter/SMART and other aircraft
    - Emergency procedures
    - Staging airport departure schedules
    - Spray dosages, setbacks, and other application requirements.
- Consider using fixed wing aircraft instead of helicopter for SMART Tier I observations to provide greater flight time for monitoring and staying on site to determine effectiveness of the dispersant application.
- For SMART Tier II and III, pre-position the SMART vessel offshore in the vicinity of where the oil slicks are located so they can be ready to conduct SMART.
    - Provide a daily start position for the SMART vessel and inform spotter/sprayer and SMART aircraft of this position.
    - Identify aircraft-to-vessel communication frequencies and initial contact procedures.

- Install a dispersant spray system on the vessels conducting Tier II and III monitoring to facilitate acquiring data and provide a spotter aircraft to direct them to viable oil slicks.

- Meet at the end of each day with the Aerial Dispersant Group and the Staging area team(s) to review available SMART data and discuss operations.

- Ensure NOAA SSC approves the SMART observations and data at the end of each day and that a determination is made as to whether the oil remains dispersible and whether dispersant application should be continued.

G.2 SMART Platform Descriptions

RRTs may require a SMART observer monitor dispersant operations and may further require wildlife observers. SMART monitors will require their own aircraft and vessels to conduct monitoring that are separate from spray and spotter aircraft. These assets should be immediately ordered by the Plan Holder upon activation of dispersant assets. In some cases the Dispersant OSRO may be able to provide an asset from their resources or from one of their contractors. If the Dispersant OSRO cannot provide the aircraft or vessels, then arrangements through the Logistics Section should be made. One other possibility is that the Coast Guard, or in some cases the State, may be able to provide suitable aircraft. SMART monitoring aircraft and its operations have to comply with Plan Holder's Aviation Safety standards.

A. The following sections describe the platform requirements for the aircraft and vessel assets needed to conduct Tiers I, II and III monitoring and also apply for observation aircraft. Aircraft, depending on gross weight, must meet applicable FAA rules regarding survival equipment for over water operations (e.g., a life raft, life preserver for each occupant, signaling devices and a survival kit). See 14 CFR Part 91.205(b)(12) and 91.509. The following checklist provides criteria for selecting aircraft for offshore operations.

(1) SMART Tier 1 <u>Aircraft</u> Requirement Checklist

____ 2 pilots per aircraft

____ Equipped for offshore operations: life raft, PFDs, signaling device

____ Twin engine preferred, or to meet Plan Holder's requirements

____ Travel offshore to spill site or 200 nm, whichever is shorter

____ Flight time of approximately 4 hours

____ Ability to fly 200 nm offshore

____ Intercom on aircraft – *Required single passenger position. Best if available for all passenger seats.*

____ TCAS / ACAS (Airborne Collision Avoidance System) – *Recommended, but not regulatory required*

____ Pulse Lites – *Optional*

____ *OAS Certification**

* The Department of Interior agencies may require that their personnel only fly on Office of Aircraft Services (OAS) carded/certified aircraft. These are aircraft that have been audited by OAS and are authorized to provide aircraft services to the Department of Interior. The USCG may require that aircraft provided for SMART Tier I operations be OAS carded/certified.

(2) SMART Tier II and III <u>Vessel</u> Requirement Checklist

____ Oceangoing vessel 150 ft or more in length

____ Capable of staying offshore for at least 5-7 days

____ Berthing for 6 people

____ Deck space for 5 to 10 dispersant totes (footprint 4' x 4' per tote)

____ Ability to have dispersant neat boom spray system installed (preferably as far forward on the vessel as possible)

____ Deck space (~2,000 sqft total) to setup fluorometers and for storage of totes

____ Cruising speed of at least 10 knots

____ Aviation radios for communications with spotter aircraft (Base station & portables)

____ Crane (4,000 pounds) for hoisting material onto vessel and operating monitoring equipment

____ Satellite communication and internet connectivity would be an asset

____ Commercial ice maker or refrigeration unit for cooling and storing samples

An example of how the monitoring and observation aircraft can be listed is provided in Appendix B, "Aerial and Vessel Dispersant Application Response Contact Phone Book."

Appendix H

Daily Aerial/Vessel Dispersant Application Plan (for Next Day Operations)

The Daily Aerial/Vessel Dispersant Application Plan (DADAP) is a multi-page form used to plan and provide the necessary information for conducting surface spray operations. It is prepared by the Aerial/Vessel Dispersant Group for obtaining and documenting approval from the appropriate government officials to apply dispersant. It also provides the critical aspects of the day's operation such as the dosages to be applied, the aircraft flight schedule, estimated amounts of dispersant that will be applied, safety setbacks, communication frequencies, monitoring to be conducted, etc. which are usually needed for the government approval. The DADAP may be included as part of the Incident Action Plan or may be referred to as a separate detailed plan for surface dispersant application. At the end of the operational day the schedule of flights and amounts of dispersant applied are updated to show the spray and reconnaissance sorties actually conducted. The updated DADAP may be included in the Aerial Dispersant Group Summary Report, Figure I-16 or submitted separately to the Planning Section to document what was accomplished.

The DADAP should also be prepared to the extent possible for the initial day of operation and used in conjunction with the RRT forms to gain initial approval to apply dispersants as it will answer many of the questions for approving dispersant application and will record what was accomplished during the first day of operations.

The DADAP is usually composed of 7 pages as described below. An example of each page is provided to better show the content and format of this document.

- Page 1 – FOSC/RRT authorization/signature page approving dispersant operations
- Page 2 – General Response Plan – information on communications, safety setbacks, dosages to be applied, weather, aircraft involved in operations, etc.
- Page 3 – Flight schedule for each aircraft during the operational day
- Page 4 – Activity Schedule and Briefing Agenda
- Page 5 – Maps of Spill Site and Staging Airport
- Page 6 – Dispersant Stockpile Logistics Plan
- Page 7 – Dispersant Monitoring Plan

Page 1: FOSC / RRT Dispersant Authorization Page

DAILY AERIAL/VESSEL DISPERSANT APPLICATION PLAN (DADAP)

Incident Name: _____

Date: _____

As the Federal On-Scene Coordinator, I hereby confirm that all requirements for the use of dispersants, including those set forth in pre-authorization plans in the applicable Regional Contingency Plan and/or Area Contingency Plan, have been met, and that the responsible party and its contractors are authorized and requested to apply _____ dispersant in response to this oil spill incident. Such dispersant application shall occur under my direction, control and supervision, as summarized in the attached daily Aerial/Vessel Dispersant Application Plan.

Signature FOSC: **Date:**

Name FOSC:

RRT AUTHORIZATION STATEMENT

(insert in place of the pre-authorization statement above for RRT approval)

As the Federal On-Scene Coordinator, I hereby confirm that all requirements for the use of dispersants have been met. This includes any requirements set forth in the National Contingency Plan, the Regional Contingency Plan and/or the Area Contingency Plan. I also confirm that the United States Environmental Protection Agency (EPA) and all other necessary federal and/or state agencies have approved the use of dispersants in response to this incident. I therefore authorize and request that the responsible party and its contractors apply _____ dispersant in response to this oil spill incident. Such dispersant application shall occur under my direction, control and supervision, as summarized in the attached Daily Aerial/Vessel Dispersant Application Plan.

Signature FOSC:	**Date:**	
Print Name:		
Signature USCG RRT Representative:	**Date:**	
Print Name:		
Signature EPA RRT Representative:	**Date:**	
Print Name:		
Signature State RRT Representative:	**Date:**	
Print Name:		

Page 2: Dispersant Response Information

DAILY AERIAL/VESSEL DISPERSANT APPLICATION PLAN (DADAP)							
Date:		**Time:**		**Staging Airport:**		**Airport ID:**	
Dispersant Staging Airport Supervisor (Name & Phone #):							
SPILL SITE INFORMATION							
SPILL LOCATION:	**Latitude:**	**N**	**Longitude:**	**W**	**Size:**		
GEOGRAPHICAL REFERENCE							
SPILL SITE WX:	**WIND:**	**CLG:**	**VIS:**	**SUNRISE:**	**SUNSET:**		
	(Attach Weather Report for weather at the spill site and at the staging airport)						
DOSAGE	**5 gpa**	**ADD'L INST:**					
COMMS	**PRIMARY VHF:**	**122.85 MHz**	**SECONDARY VHF:**	**122.92 MHz**	**EMERGENCY VHF:**	**121.5 MHz**	
	SATELLITE PHONE: All aircraft contact shall be through the Dispersant Staging Airport Supervisor.						
	MARINE RADIO: Channel 16 then switch to Channel _____						

AIRCRAFT INFORMATION:						
Type	**Tail #**	**Call Sign**	**Airport ETA**	**Purpose & Altitude**	**PIC/Crew**	**Passengers**
BE-90				**Spray: 75 ft Spotter: 1000-1500 ft**	**PIC:**	
C-130				**Spray: 75 ft**	**PIC:**	
BT-67				**Spray: 50 ft**	**PIC:**	
DC-3				**Spray: 50 ft**	**PIC:**	
DC-4				**Spray: 50 ft**	**PIC:**	
DC-6				**Spray: 50 ft**	**PIC:**	
Aero Cmd				**Spotter: 1000–1500 ft**	**PIC:**	
……..				**SMART A/C: > 1500 ft**	**PIC:**	

VESSEL INFORMATION:				
Name	**Port**	**Purpose**	**Captain**	**Other**
M/V ……				

Page 3: FLIGHT/VESSEL SCHEDULE

FLIGHT/VESSEL SCHEDULE DATE: _____										
FLT/ VOY #	TAIL # M/V Name	PURPOSE	DISPERSANT		FUEL LOAD (Hrs:Min)	FLT/VOY TIME Est/Actual	DPT TIME Est/Actual	ENTRY ETA Est/Actual	EXIT ETA Est/Actual	RTRN ETA Est/Actual
			Type	Gallons						
1	BE-90	Spotter	N/A	N/A						
2	C-130	Spray	Corexit 9500							
3	…..	SMART	N/A	N/A						
4	DC-6	Spray	Corexit 9500							
5	DC-4	Spray	Corexit 9500							
6	Aero Cmd	Spotter	N/A	N/A						
	M/V …	Spray	Corexit 9500							
		TOTAL								

Page 4: Activity Schedule, Staging Base Briefings and Staging Base Information

DAILY ACTIVITY SCHEDULE AT STAGING BASE	**Date:**	**Dispersant Group Staging Base Supervisor:**
Time	**Activity**	
	Report to Airfield / Port	
	Pilot and Support Team/Captain and crew daily operational briefing (mandatory)	
	Commence Flight Operations or Vessel Operations	
	Terminate Flight Operations or Vessel Operations	
	Pilot and Support Team/Captain and crew daily debriefing on operations	
DAILY OPERATIONAL BRIEFING AGENDA		
Safety:		
Weather:		
Communications:		
Dosage:		
Approach Info:		
Oil Spill Location and Description:		
Operational Procedure Changes:		
Review Flight Schedule:		
Fixed Base Operator (FBO)		
Contact Name:		Business Hours:
Contact Phone:		After Hours Phone Number:
DESIGNATED DISPERSANT LOADING AREA		
Locations:		
Contractor Name:		
Contractor Phone:		

REPORTING REQUIREMENTS AND PROCEDURES*							
Spray Tracking							
Photographic and Videos							
Observation Logs							

*	***Aircraft and vessel operators are responsible to maintain and submit electronic logs, written logs, photographs, video and other data to the dispersant staging base manager after each sortie or daily. Information on the amount of dispersant applied, number of passes, dosages, altitude and speeds dispersant applied and the time for starting and stopping dispersant application for each pass.***
TSA/AIRPORT SECURITY REQUIREMENTS	

Page 5: Maps of Spill Site and Staging Airports and Ports

Sketch, diagram or photograph of the oil spill site:

Sketch or diagram of the Staging Airport, Staging Port and Services

Page 6: Dispersant Stockpile Logistics Plan

DISPERSANT STOCKPILE LOGISTICS PLAN To Staging Airport _____							
No.	**Stockpile Location**	**Stockpile Owner**	**Dispersant Name**	**Amount (gallons)**	**Cascade Time to Staging Airport (hours)**	**Estimated Arrive at Staging Airport (Date/Time)**	**Running Total (gallons)**
1							
2							
3							
4							
5							
6							
7							

DISPERSANT STOCKPILE LOGISTICS PLAN To Staging Port _____							
No.	**Stockpile Location**	**Stockpile Owner**	**Dispersant Name**	**Amount (gallons)**	**Cascade Time to Staging Port (hours)**	**Estimated Arrive at Staging Port (date/time)**	**Running Total (gallons)**
1							
2							
3							
4							
5							
6							
7							

Page 7: Dispersant Monitoring Plan

DISPERSANT MONITORING PLAN **Date:** _____		
Incident Name:		
Purpose:	The purpose of this plan is to outline the surface dispersant monitoring process.	
Objectives:	The objective of this plan is to monitor the effectiveness of surface dispersant applications using the SMART protocols. For this response SMART Tiers 1 and Tier ____ monitoring protocols are being activated.	
	Tier 1:	A trained observer, flying over the oil slick and using photographic job aids assesses visually the effectiveness of the dispersant application.
	Tier 2	A sampling team on a vessel uses a fluorometer towed at a 1 meter depth under the oil slick before and after dispersant is applied to determine if there is an increase in hydrocarbons sufficient to show the dispersant is effective. Additionally, measurements are taken where there has been no oil as a background reading and water samples may be obtained.
Schedule and Duration:	**Tier 1** Commencing on _____ a _____ aircraft (tail number____) will be operating out of _____ and will have a USCG SMART observer to be named assigned. SMART observer flights will be coordinated with the Aerial and Vessel Dispersant Group and the aerial staging base manager for safety and to ensure SMART observers are in position for monitoring.	
	Tier 2 (if activated) Commencing on _____ the vessel _____ will be available at the port of _____ for SMART team members to board and commence Tier 2 fluorometry analysis. SMART Tier 2 operations will be coordinated with the Aerial and Vessel Dispersant Group to arrange sampling to ensure the SMART team is in the area where the dispersant application is taking place. Additionally, a vessel boom dispersant spray system may be installed and dispersant stockpiles provided so that the SMART team members may initiate their own application and monitoring operations. Water Sampling: If water samples are taken, as determined by the SMART team, they will be collected, retained and analyzed according to standard sampling procedures. Samples should be obtained from a depth of 1 meter before and after dispersant application along a transect of the fluorometry measurements.	
Aerial Wildlife Observations	The _____ aircraft (tail number _____) operating from _____ staging airport will commence operations on _____ with _____ of _____ as the observer. The wildlife observers performing aerial observations will be certified personnel from the USCG, _____ or _____. The observers will notify the dispersant team should they observe wildlife that must be avoided. Wildlife observers and wildlife aircraft pilots will attend the morning briefing at the staging airport and will coordinate their operations with the Aerial and Vessel Dispersant Group and the dispersant staging airport manager where they are based.	

Appendix I

Aerial and Vessel Dispersant Operations and Management Forms

I.1 Introduction

The following is a list and description of the standard forms that are used for managing and recording aerial and vessel dispersant operations. This is followed by an example of the form. The forms may be changed and used as needed for a specific spill response.

Daily documentation of all aspects of the surface dispersant operations is essential for managing and directing operations. Such documentation may be useful in responding to claims of liability or natural resource damages. It is critical to have records showing

- Spray system compliance with ASTM testing standards for droplet size, droplet distribution, swath width and dosage;
- Spray system calibration to produce dispersant dosages approved for application;
- Flight track of each spray, spotter, surveillance and observer flight contracted; and
- Spray pass data including aircraft and pilots, location, date/time, application speed, dosage, dispersant product and swath width recorded every second of the spray flight.

To obtain the flight tracking and spray pass data, it is necessary that each spray, spotter, reconnaissance and observer aircraft contracted to respond is equipped with Sky Connect and Satloc systems or their equivalent. Without this equipment, flights and spray passes will not be accurately recorded. Vessels should also be equipped with GPS devices and personnel to record their spray operations.

Records should be kept of all major decisions, meetings, directives, instructions, dispersant stockpiles, equipment, and personnel, etc.

I.2 Aerial and Vessel Dispersant Forms and Descriptions

A. RRT 6 Dispersant Pre-authorization Initial Call Checklist

Each RRT has slightly different forms to gather information on which to make a decision to authorize the use of dispersants. As an example the RRT 6 form for gathering dispersant information is provided in Appendix D. Some of the operational information must be provided by the Responsible Party and should be provided as soon as possible, usually within the first 2 hours of the response. The form and information requirements may change depending on whether the FOSC or the RRT must approve the dispersant use.

B. Daily Aerial/Vessel Dispersant Application Plan (DADAP) for Next Day Operations

Due to the importance of the DADAP an explanation of its purpose and use and examples of the multi-page form are provided separately in Appendix H.

C. Mission Tasking Forms

The Mission Tasking Form is designed to give each aircraft a check list of the operations they are to perform for each sortie. This form shown below is completed by the staging airport manager and the pilots. Some boxes have an "x" as they should be done for every sortie.

MISSION TASKING FORM

(Aircraft Tale #) MISSION TASKING

The following is a list of items that the aircrew can be requested to complete during a flight.

Instructions: Before commencing each sortie the staging airport manager should fill out the form by checking the first box of each item to request the mission objective for that particular flight ☒ ☐.

For items that will not be done a line should be drawn through the boxes to clearly indicate they should not be completed ~~☐ ☐~~. For the flight the aircrew will check the second box as each item is completed ☒ ☒.

DATE: _____ SORTIE # _____

REQUESTED BY: _____

PHONE: _____

TASKING GIVEN TO: _____

CALL SIGN: _____

BRIEFING BEFORE ENGINE START

— Aircraft in Passenger Configuration (Circle One):
YES or NO

— Dispersant (Circle One)
COREXIT 9500, COREXIT 9527 FINASOL OSR52

— Dosage _____ Gallons per Acre (GPA)

— ETA at Spill Site: _____ local time

— List of conditions set by FOSC for Dispersant Deployment:
_____
_____

— FOSC Approval to Spray Received (Circle One)
YES or NO

— The pilots will calculate the fuel and dispersant load and the information will be provided to the Staging Airport Supv.

— Fuel on Board (gallons) _____

— Fuel on Board (hours) _____

— Dispersant Payload (gallons) _____

— W&B Checked (initials) _____

BEFORE TAKEOFF

☐ ☐ Complete SatLoc or other recording procedures

AFTER TAKEOFF

☒ ☐ Send message, "Enroute, (time) to Spill Site"

☒ ☐ Verify SatLoc or other equipment is setup properly.

☒ ☐ Marine Radio – turn on & do a radio check

☐ ☐ Call Staging Supervisor via Sat Phone every 30 min.

☐ ☐ **OBSERVER/RECON MISSION – OVER SPILL**

☐ ☐ Send message, "Observing / Reconnaissance"

☐ ☐ Record – Wind: _____ @ _____ Knots

☐ ☐ Record – Ceiling: _____ Feet

☐ ☐ Record – Visibility: _____ nm

☐ ☐ Record – Wave Height _____ Feet

☐ ☐ Record – Wave Direction: _____

☐ ☐ Create Polygon of slick with SatLoc

☐ ☐ Outline slick on marine chart (use Garmin cursor for Lat/Long coordinates, note oil thickness (color) current and wind direction.

☐ ☐ Safety over flight (obstructions and animals)

☐ ☐ Take belly cam video through center of slick

☐ ☐ Determine coordinates for center of slick

☐ ☐ Take cockpit pictures through center of slick

☐ ☐ Take perimeter video of slick

☐ ☐ Call for updated info or new instructions

☐ ☐ Send message, "Enroute, (time) to staging airport."

Figure I-1 – Mission Tasking Form

☐ ☐ DISPERSANT SPRAY MISSION

- ☐ ☐ Send message, “Area Clear, Preparing to Spray.”
- ☐ ☐ Contact local vessels and inform them where dispersant will be applied
- ☐ ☐ When area is clean inform local vessels and aircraft that dispersant application is starting
- ☐ ☐ Verify conditions meet FOSC’s approval conditions. (If conditions not met, abort mission and contact _____for instructions.
- ☐ ☐ Record – spray Altitude _____ Ft
- ☐ ☐ Record – Indicated Air speed _____ Kts
- ☐ ☐ Record – Ground Speed _____ Kts
- ☐ ☐ Record – True Wind _____ Kts
- ☐ ☐ Send Msg, “Enroute (time) to staging airport:

☐ ☐ OBSERVER/RECONNAISANCE MISSION – WHEN DISPERSANTS ARE APPLIED

- ☐ ☐ Send Message, “Observing/reconnaissance”
- ☐ ☐ Loiter (<30 min) to note dispersant/slick interaction
- ☐ ☐ Take cockpit photos of dispersant/slick interaction
- ☐ ☐ Tank hand held video of the treated area
- ☐ ☐ Take belly cam video of the treated area
- ☐ ☐ Call _____ to describe dispersant/slick interaction
- ☐ ☐ Send message, “Enroute (time) to staging airport

☐ ☐ SPOTTER/AIR CONTROLLER MISSION

- ☐ ☐ Send message, “Spotting Operations in Progress”
- ☐ ☐ Update, as necessary, the Aircrew Briefing Sheet
  - ☐ ☐ Determine where to apply dispersants
  - ☐ ☐ Determine spray pattern (race track or back/forth
  - ☐ ☐ Determine “A” Start Point
  - ☐ ☐ Determine and record true wind, direction & speed
  - ☐ ☐ Determine the initial spray heading from the Start Point
  - ☐ ☐ Monitor altimeter setting and update other aircraft, if there is a significant change
  - ☐ ☐ Determine holding altitudes over the Entry Point
- ☐ ☐ Inform spray aircraft what the Lat/Long is for the “A” Start Point and the heading
- ☐ ☐ Clean aircraft into the Operational Area and direct them as they spray the oil slick
- ☐ ☐ Send message, “Enroute (time) to staging airport”

- ☐ ☐ Refuel and reload dispersant based on next mission Objectives
- ☐ ☐ Give SatLoc Job and Log files to the _____
- ☐ ☐ Give DVD video to the _____
- ☐ ☐ Give digital photos to the _____
- ☐ ☐ Give spray aircraft Job file and polygon showing oil spill Location and give then the Job file name and number
- ☐ ☐ Obtain a new Mission Tasking from and review with _____
- ☐ ☐ Provide aircraft flight hours and crew utilization time to _____

Figure I-1 – Mission Tasking Form (Continued)

D. Aircrew Briefing Sheet

The Aircrew Briefing Sheet is designed for the pilots to record key information that they will use for the flights during the day. This form is designed to be used on the pilots knee pad so they can easily refer to it. The information provided are call signs, communication frequencies, slick locations, emergency codes and alternate air ports, etc. An example of the Aircrew Briefing Sheet is shown in Figure I-2.

AIRCREW BRIEFING SHEET												
AIRPORT INFORMATION			**SPILL SITE COMMS**			**Gen'l Location (circle one)**			**Dispersant payload (gal):**			
Airport Name:			**Primary Air-Air:**			**NW N NE E Ctr W SW S SE**			**Dosage:**		**# Passes:**	
Airport ID:			**Secondary Air-Air:**			**Evaluation of Dispersant Application:**						
Alt. Airport ID:			**General Advisory:**									
AIRPORT COMMS			**Helicopter Air-Air:**									
ATIS:						**SECOND SPRAY OPERATIN INFORMATION**						
Airport Ground:			**MISCELLANEOUS COMMS**			**Start/"A" Pt (Lat/Long)**			**Ending Pt (Lat/Long)**		**Heading**	
Airport Tower:			**Emergency: 121.5**									
ENROUTE COMMS												
Approach/Departure:						**Spray Aircraft #:**			**Spray On time:**		**Photos?**	
Center:			**BOATS**			**Zone(s):**			**Spray Off time:**		**Y / N**	
COMPANY COMMS			**Air to ship Channel ___ then**			**Gen'l Location (circle one)**			**Dispersant Payload (gal):**			
_____Base:			**Switch to agreed channel**			**NW N NE E Ctr W SW S SE**			**Dosage:**		**# of Passes:**	
						Evaluation of Dispersant Application:						
AIRCRAFT INFORMATION												
Purpose	**Tail #**	**Entry ETA:**	**Purpose**	**Tail #**	**Entry ETA**							
Spotter			**Spray**			**Notes:**					**TERMINOLOGY**	
Spotter			**Spray**								**Turn right/left**	
Spotter			**Spray**								**Stop turn**	
Spotter			**Spray**			**SatLoc Job File #:**		**Lost Comms Procedure**			**Easy right/left**	
SPILL LOCATION		**ENTRY/HOLD POINT**		**EXIT POINT**							**Time out**	
						AIRCRAFT ALTITUDE ASSIGNMENTS					**Proceed Inbound**	
SPILL SITE WEATHER INFORMATION							**Aircraft Tail # or Call Sign**				**10 seconds to go**	
Sunrise:			**Sunset:**				**#:**	**#:**	**#:**	**#:**	**Spray on/off**	
Visibility (nm):			**Altimeter:**			**Altitude**					**Start climb**	
Ceiling:			**Wave height (ft):**			**Altitude**					**Visual Oil**	
Winds:			**Wave Direction:**			**Altitude**					**Blind**	

Figure I-2 – Aircrew Briefing Sheet

E. Aerial Dispersant Group Morning Briefing Minutes

At the start of each day a meeting is held in the command post to review the issues and significant activities that are to be worked. The minutes of this meeting is recorded and forms the basis for the activity and issue section of the Aerial Dispersant Group Summary Report for the day. An example meeting form is shown in Figure I-3.

Aerial Dispersant Group Morning Minutes

- Safety Issues
- Weather
- Flight operations changes
- SMART Operations for the day
- Work focus and priorities to do today
- Other issues/activities of the day

Figure I-3 – Aerial/Vessel Dispersant Group Morning Briefing Minutes

F. Sky Connect Flight Records

Sky Connect is a device installed on the aircraft that provides a web base view of the aircraft location and provides satellite phone and text communications. Additionally Sky Connect records the flight of the aircraft that can be replayed on Google Earth. There are other systems that provide a similar service as Sky Connect and may be used. These systems should provide similar forms. An example is shown in Figure I-4.

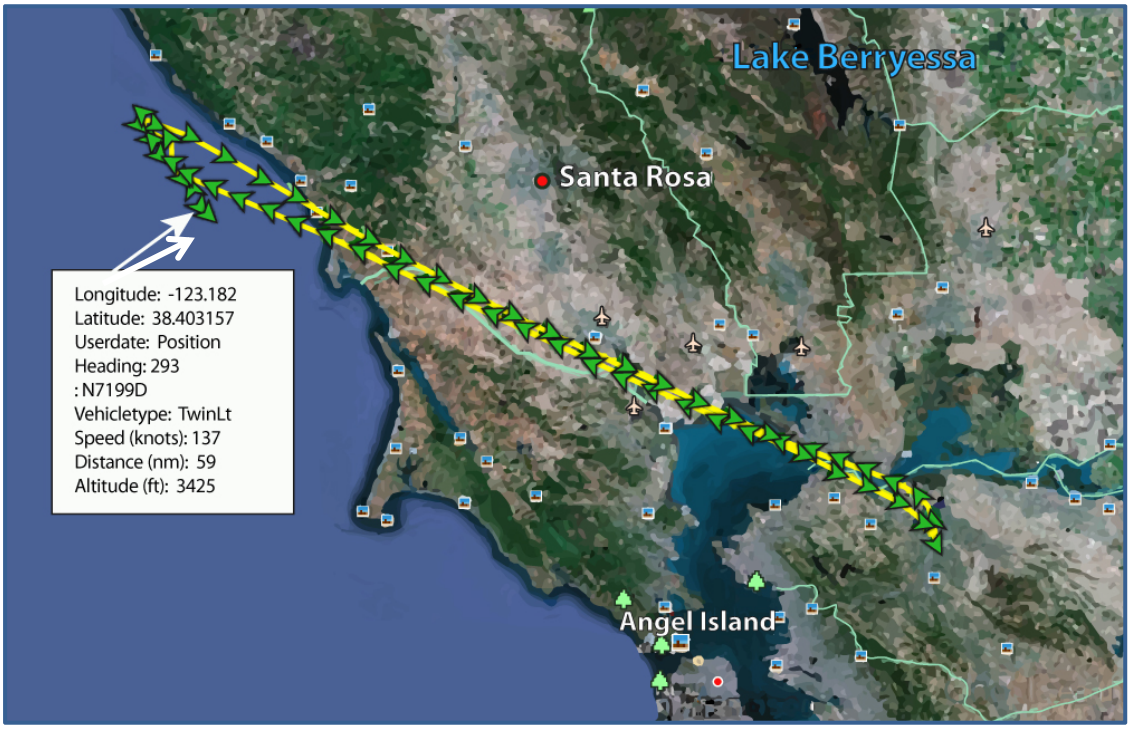


Figure I-4 – Sky Connect Flight Path File

G. SatLoc Files

SatLoc is a flight and spray recording device that is installed in an aircraft or on a vessel and records a variety of data every second of the flight. SatLoc automatically records the data, time, latitude, longitude, application speed and heading for each spray pass. This data can then be downloaded and sent to the command post for review and reporting. SatLoc can also provide a report of the flight and spray passes reporting the area sprayed, dosages applied for each pass, etc. There are other flight recording systems in use. They should provide similar printouts and reports. Examples of SatLoc Files and Reports are in Figures I-5, I-6, and I-7.

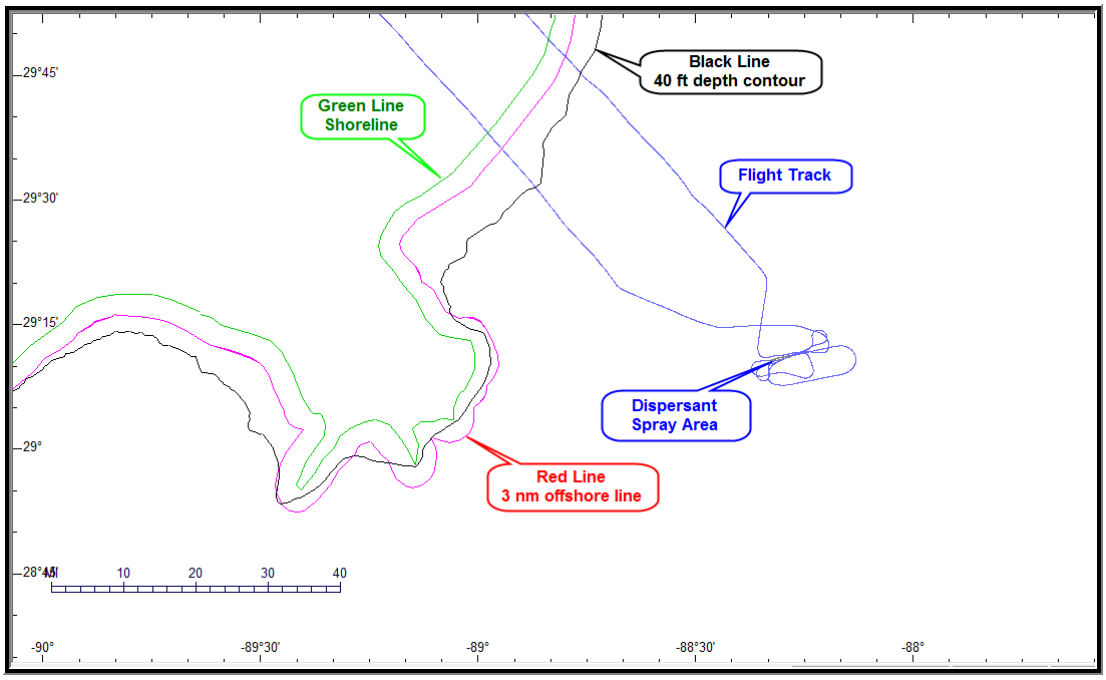


Figure I-5 – SatLoc Sortie Spray Pass Record

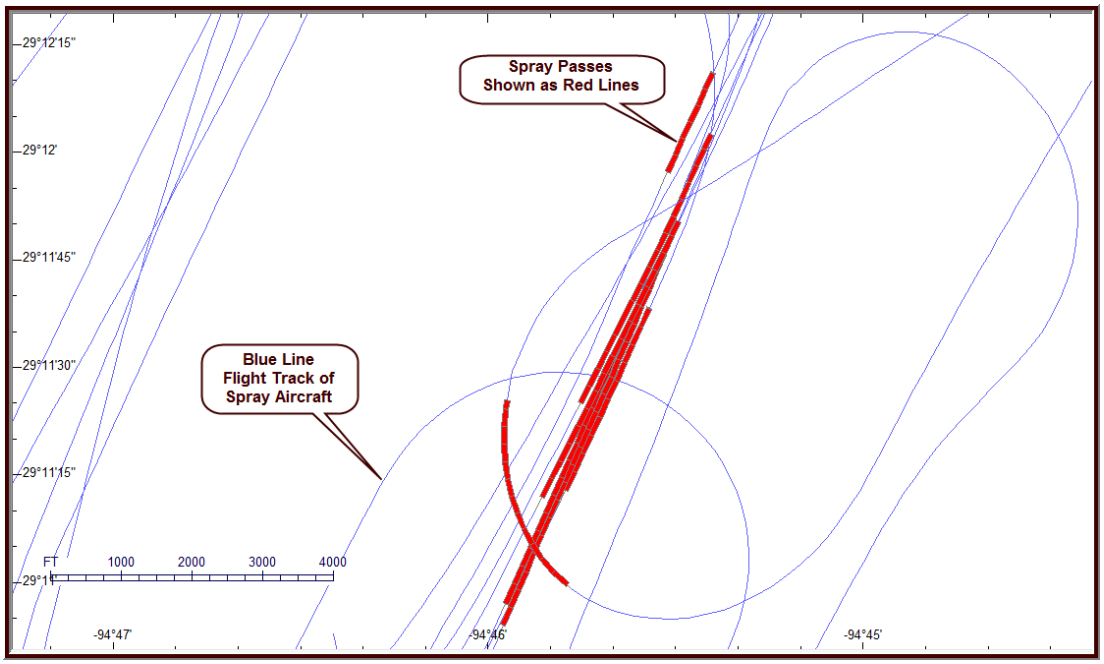


Figure I-6 – SatLoc Spray Track File

SPRAY REPORT (Day Month Year)
SORTIE 4
Company and Aircraft Tail #

LOG FILE SUMMARY

Date: Dy/Mo/Yr Time: 11:44:20.39
Pilot "CA"; Aircraft "tail #"; Job "20"
Log interval = 1.0 seconds; Min log speed = 44.7 MPH
Swath width = 100.0 feet; SV Mask = 5
GMT offset = 5 hours

FLOW CONTROL SETUP RECORD

Date: Dy/Mo/Yr Time: 11:44:20.39
Total Volume = xxx.00 Gallons
Application Rate = 5.0000 Gallons/Acre
Valve_calibration = 13
Meter_calibration = 16.40

SPRAY ACTIVITY

Pass #	Start Time	End Time	Spray Dist Ft	Acres	Ave Gal /Min	Gal /Sw	Gal /Ac	Ave Spd MPH	Ave Hdg Deg
1	12:34:08	12:34:15	1578.9	2.72	122.41	13.77	5.07	159.31	230
2	12:37:53	12:37:58	1157.2	1.99	123.97	10.04	5.04	162.32	228
3	12:41:26	12:41:32	1442.0	2.48	123.49	12.72	5.12	157.93	229
4	12:45:36	12:46:11	8115.3	13.97	122.54	71.03	5.08	159.11	236
5	12:50:12	12:50:33	4870.6	8.39	122.94	43.11	5.14	157.79	232
6	12:50:46	12:51:02	3809.9	6.56	122.57	33.12	5.05	161.02	241
7	12:54:04	12:54:46	9700.4	16.70	116.25	81.03	4.85	158.19	237

LOG SUMMARY

Log Start Time:	Dy/Mo/Yr 11:44:20.39
Log End Time:	Dy/Mo/Yr 13:08:30.44
Total Distance traveled:	237.86 mi
Distance sprayed:	6.31 mi
Area sprayed:	57.32 acres
Amount sprayed:	xxx.00 gallons
Average Application Rate:	4.97 gallons/acre
Average Speed while spraying:	158.78 MPH
Average Spray Rate:	119.58 gallons/minute

Figure I-7 – SatLoc Report

H. Air Surveillance Oil Slick Observation Report

Each aircraft crew should record information about the oil slick they are spraying. The location and shape of the oil slick should be recorded on charts and a description of the color of the slick, the size and shape, etc. should be made. Currently there is no standard report form in use. Figures I-8 and I-9 illustrate report forms that have been used in past spills. ASTM Standard F1779, Standards for Reporting Visual Observations on Water should be followed when making reports.

Oil Spill Observation Checklist

General Information

_____ Information filled out by (name/phone)
_____ Observers Names
_____ Observer's Affiliation
_____ Location of Source (if known)
_____ Percentage coverage
_____ Stage of tide (flood, ebb, slack)
_____ On-scene weather (wind, sea state, visibility)
_____ Platform (fixed wing, helo, boat)
_____ Flight path/track line (from GPS)
_____ Altitude observations made from
_____ Areas no observed (fog, restricted air space)

Oil Observations

_____ Slick location(s)
_____ Slick dimensions (nm)
_____ Orientation of Slick
_____ Distribution of Oil (tar balls (tb), convergence line (cl), no structure (ns), Windrows (rw), streamers (st), patches (pat)
_____ Color and appearance (silver/gray (S), rainbow (R), metallic (M), Transitional (T), Dark black/brown (D), mousse
_____ Is oil recoverable? Black and transitional oil, mousse, heavy metallic slick

Figure I-8 – Air Surveillance Oil Slick Observation Report

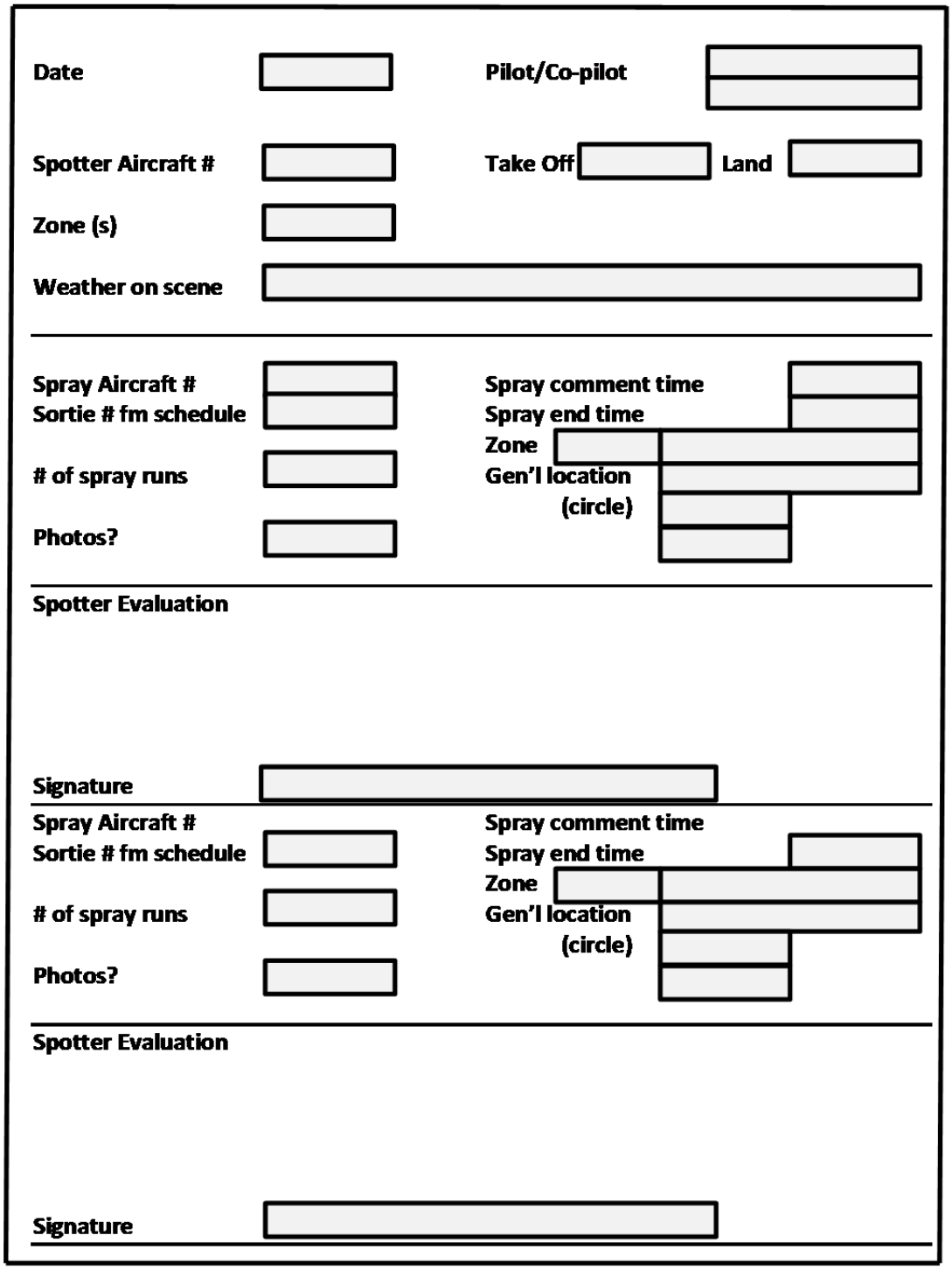


Figure I-9 – Aerial Dispersant Operations Spotter Debrief Form

I. Photographs and Video from Sorties

Visually recording the oil slicks that are being sprayed and recording the results of the spraying are essential for the Unified Command and government representatives to understand what is being seen and accomplished in the field. All of the visual data should be annotated with data and time stamps and latitude and longitude and those taking the data should provide comments on what is being recorded. An example of a photo log is provided in Figure I-10.

PHOTOGRAPH LOG Case: _____

Photo #: 1	**DATE/TIME:**	**TAKEN BY:**	**ALT**
POSITION:		**PHOTO DOCUMENTATION:**	
COMMENTS:			

Photo # 2, 3, …. Same as above for Photo #1

Figure I-10 – Example of a Photograph Log

J. Aerial Dispersant Operations Plan

The Aerial Dispersant Operations Plan provides the staging airports and the pilots the operational information needed for dispersant application. This information includes assignment of operational areas to types of aircraft, safety setbacks from vessels, platforms and wildlife, application dosages, SMART operational support, TFR and communications changes, etc. An example of the Plan is shown in Figure I-11.

AERIAL DISPERSANT OPERATIONS PLAN

Mission targeting start of the day : _____

The following zones are assigned for early morning surveillance and initial spray targets.

Communicate dispersible oil as soon as possible in assigned zones.

Spotter, provide a photo(s), if possible with your reports.

Stennis: Primary zones AN, AC. Secondary zones AD, AO, AY, R, S (Red indicators on map)

Houma ASI: Primary zones AB & Z Secondary zones AK, AW, AV (Blue indicators on map)

Houma AT-802: Primary zones AB and Z Secondary zones Y, AL, AA, Q (Limited to within 40 nm from the shorelines. Green indicators on map)

Maintain **3 nm** boundary separation, if unable to coordinate air-to-air with other spotter.

a. No aerial dispersant spraying within the greater of ____ offshore or water depths less than ___ meters

b. No dispersant spraying within ____ of the spill source at surface: _____ Lat _____ Long
+ No aerial dispersant spraying within ___ of vessels, platforms, and ____ from marine mammals.

c. SMART and Scientific Support Missions may spray within _____ of SMART/SSM vessel; positive ID required.

d. Target black and brown oil. This is the freshest/most dispersible oil. Dosage is 5 gallons per acre.. Do not target Red/Reddish emulsified oil, sheens or rainbow oil slicks.

e. Spotter aircraft remain on site to visually assess effects on dispersed area and document with photographs. Complete spotter debrief form and turn in to base operations on a daily bases.

f. Report takeoff and landing times to assigned coordinators as they occur.

Notes: Changes to previous orders are underlined.

1. Required Equipment: Functioning spray tracking units (GPS, SatLoc), if not working, do not fly.
2. Restrictions to aerial dispersant spraying: As stated above.
3. Aircraft Communications:
   a. Primary air-to-air communication frequency in TFR West of 89° W is 135.65 and 132.6 in the source area.
   — Secondary is 123.45 all zones
   b. Discreet IFF codes are permanently assigned to each aircraft must be used to enter TFR. This removes need to file DVFR flight plans.
   It is absolutely essential that each flight each day calls Tyndall to advise them prior to takeoff (850-282-0928)
   c. Advise SMART 1 prior to spray aircraft departure.
   d. Primary surface to air frequency is 122.9 Secondary is 123.45

ANCILLARY OPERATIONS:

1. SMART Team: will be working on defined and approved sites. Details to be developed with spotter findings.
2. In Situ Burning: the burn box is depicted on the operational chart. However, **note the burn box location is subject to change**. We will coordinate with the burn group in the morning and advise if any location adjustment has been made.
3. Skimmers: Normal operations are to be conducted with 2 nm separation for spray application.

Figure I-11 – Aerial Dispersant Operations Plan Example

K. Spray Pass Maps

These maps show the location of where each spray pass was made during the operational day. Supporting the maps is a data base of spray passes which records the aircraft, pilots, date, time and latitude and longitude of each pass, the amount and type of dispersant applied, the swath width of the spray pass and the altitude and application speed. A copy of a map is provided in Figure I-12. This information is invaluable in investigating reports of the over-spraying of boats, platforms and wildlife.

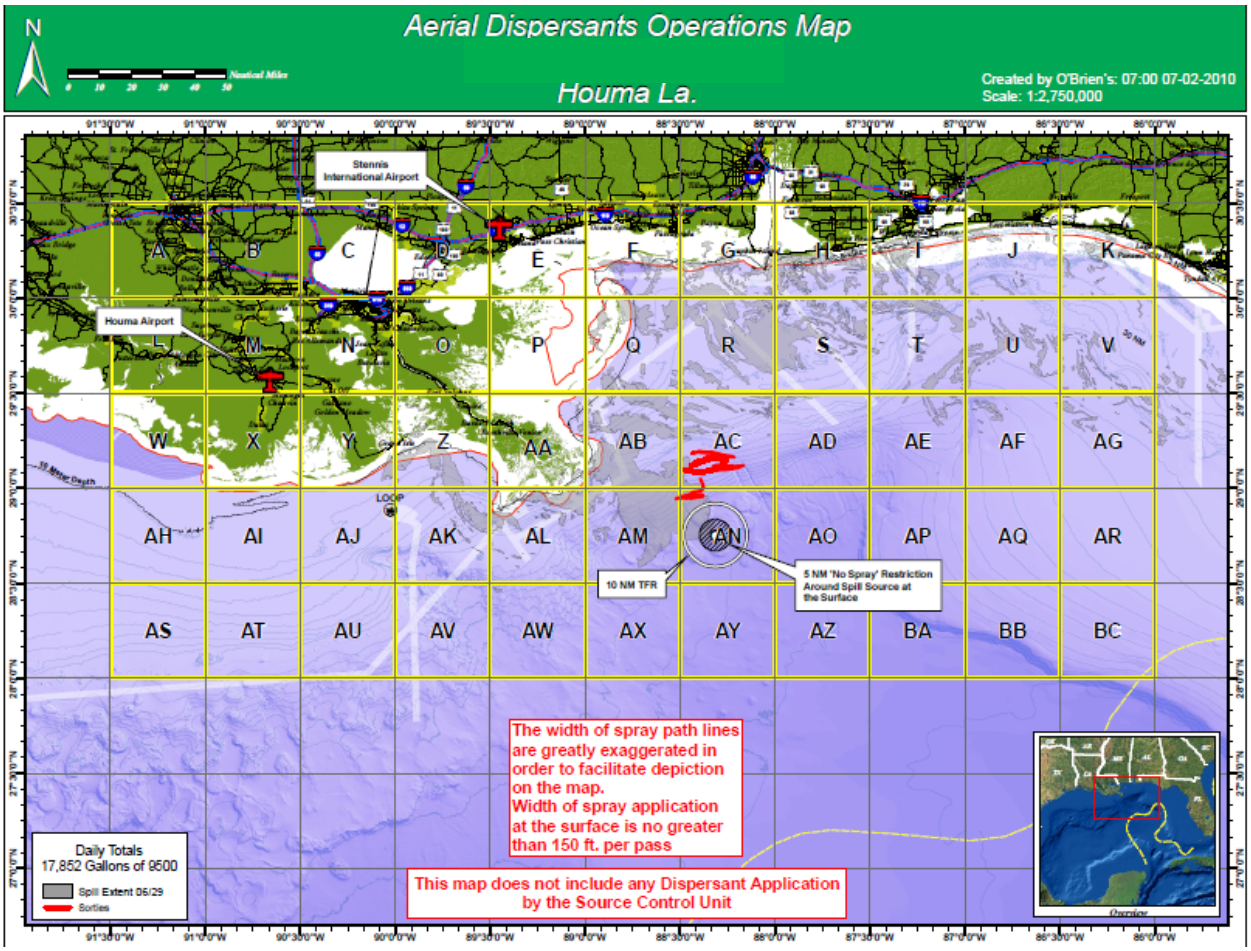


Figure I-12 – Spray Pass Maps

L. SMART QA/QC Form and Monitoring Results,

Dispersant Application Observation Reporting Form, Photograph Log, and Sample Monitoring ICS 214-CG. SMART QA/QC form is used to document the review of SMART observations, photographs and fluorometry data by technical experts and the final confirmation of the results as to whether the dispersant operations continues to be effective by the NOAA SSC. Examples of the forms are provided in Figures I-13, I-14, and I-15.

SMART QA/QC Form and Monitoring Results

Spill Incident Name: _____

Command Post: _____

SMART Tier 1 data consists of observations summarized in an Activity Log (Unit Log ICS 214-CG) and pre- and post-application photographs and associated photo log of dispersant spray operations. This form documents the results of a preliminary quality assessment review of these documents.

SMART Air Team # _____ Date: _____

Operational Period _____ to _____

Data Review (Check the documents that were reviewed)

____ Unit Log – ICS 214-CG

____ Photographs (How many reviewed? _____)

____ Photo Log

____ Dispersant Observation Reporting Form 30

Assessment (Check appropriate box(s))

____ Concur with SMART observer findings (reasonableness of findings)

____ Issues of note from data review. Briefly describe.

_____

____ Dispersant is effective based on review of Activity Log, photographs, and photo log.

____ Results inconclusive with respect to dispersant effectiveness

____ Other. Briefly describe _____

_____

Reviewed by Dispersant Assessment Group Member (Print name, sign, and date)

Name: _____ Signature: _____ Date: _____

Reviewed by NOAA SSC (Print name, sign and date)

Name: _____ Signature: _____ Date: _____

Figure I-13 – SMART QA/QC Form and Monitoring Results

Dispersant Application Observation Reporting Form

Observers: _____

Date: _____

State time: _____ End Time: _____

Aircraft: _____ Location: Lat: _____ Long: _____

Rank	Standard Phrase	Description	Time	Time	Time
1	No obvious dispersion	Dispersant being washed off the black oil as white, watery solution leaving oil on surface. Quantity of oil on sea surface not altered by dispersant.			
2	Show or partial dispersion	Some surface activity (oil appearance altered). Spreading out of oil. Droplets of oil seen rapidly rising back to seas surface, but overall quantity appear to be similar to that before dispersant spraying.			
3	Rapid dispersion	Oil rapidly disappearing from surface. Light brown plume of dispersed oil visible in water under the oil and drifting away from it. Oil in some areas being dispersed to leave only sheen on sea surface, but in other areas still some oil present.			

Time of observations should be recorded from initial application or arrival on scene and then approximately 15 minutes apart until observations area ceased. (Modified from the UK 2003 dispersant Sea Trials Observation Recording Form)

Figure I-14 – Dispersant Application Observation Reporting Form

1. Incident Name	2. Operational Period (Date/Time)	UNIT LOG ICS 214-CG
3. Unit Name/Designators SMART Group	4. Unit Leader (Name and ICS Position)	

5. Personnel Assigned

NAME	ICS POSITION	HOME BASE
	SMART Group – Tier I Aerial Observer	

6. Activity Log (Continue on Reverse)

TIME	MAJOR EVENTS
0829	Depart Houma Airport en route to SMART Operation occurring at Lat _____ Long _____
0930	Arrive on scene. Current weather conditions: sea state ___ ft, cloud coverage ___% with _____. M/V _____ in addition to 01 spotter aircraft (tail #) and 01 sprayer aircraft (tail #) on scene. Targeted area is two parallel streamers of reddish/brown oil approximately __ mi x __ ft and approximately ___ ft apart. Some emulsified patches exist on the southern end of the steamers.
0940	Vessel spotted in the vicinity of the targeted spray zone (approximately 2 mil away). Enroute to retrieve vessel information. Vessel identified as M/V ____. Attempted to hail vessel to advise of proximity of spray operations. Vessel did not respond. Location: _____ N _____ W and is transiting at approximately __ knots in a southern direction.
1015	Spray operations commenced on the most western of the two streamers by M/V _____.
1018	Station time expired. Enroute to _____ to refuel.
1055	Arrive _____.
1141	Depart _____to return to _____ N _____ W.
1219	Arrive on scene _____ N _____ W, approximately 4 miles north of original spray location due to streamer movement. Vessels and aircraft have departed. Cloud coverage now at ____%, visibility reduced. Two parallel streamers still present. The western most streamer, which was treated with dispersant, appears to have broken up slightly and no longer resembles a solid streamer. Clean water is present between fringes of reddish/brown oil.
1232	En route to _____.
1330	Arrive _____.

7. Prepared by: **Date/Time:**

Figure I-15 – Example Monitoring ICS 214-CG

M. ICS Forms

The following is the list of standard ICS forms that are prepared for each operational period. These forms are not provided here since they are reproduced in many other publications available to the SMT.

i. ICS 202

ii. ICS 203

iii. ICS 204

iv. ICS 207

v. ICS 209 or Resource Summary

vi. ICS 214

vii. ICS 215

viii. ICS 220

N. Aerial and Vessel Dispersant Group Summary Report

The purpose of the Aerial Dispersant Group Summary Report is to provide a comprehensive overview of all aspects of the dispersant operations accomplished during day and provide statistics on the amount of dispersant applied from the start of the spill. Information provided covers the number of sorties flown, amount of dispersant applied an estimate of the amount of oil dispersed, stockpiles available, located of each spray pass, operational instructions and issues and activities that took place. An example is provided in Figure I-16.

This report provides the Unified Command and government representatives with the substantive information they need to manage the spill and brief their leadership.

Aerial Dispersants Group – Summary Report

Date: _____

This report presents a snapshot of the aerial dispersant applications conducted on this date and summarizes the associated support activities. Aerial application of dispersants are being conducted under the direction of Unified Command and are targeted on dispersible oil to minimize surface oil slicks impacting the environmentally sensitive shoreline ecosystem.

Dispersant Aerial Spray Summary:

1. Total Amount of Dispersant Applied on Month Day, 2010 (gallons):	
2. Total Sorties on _____:	
3. Total Amount of Dispersant Applied to date (gallons):	
4. Total Sorties to date:	
5. Total Area Covered by Dispersant Applications to date (mi2):	
6. Total Dispersant Stockpiles on the ground as of _____ 1200 PM (gallons):	
7. Dispersant Stockpile Expected Arrival as of _____ – 1200 PM (gallons):	
— 8. Estimated Total Dispersant as of _____– 1200 PM (gallons):	
9. Projected Days Operational at maximum rate of _____ gal/day (days): The _____ gpd is the daily capacity for the current aerial spray assets and is modified according to daily operation requirements and direction of the UC	

Dispersant Stockpile Supply and Use Projections

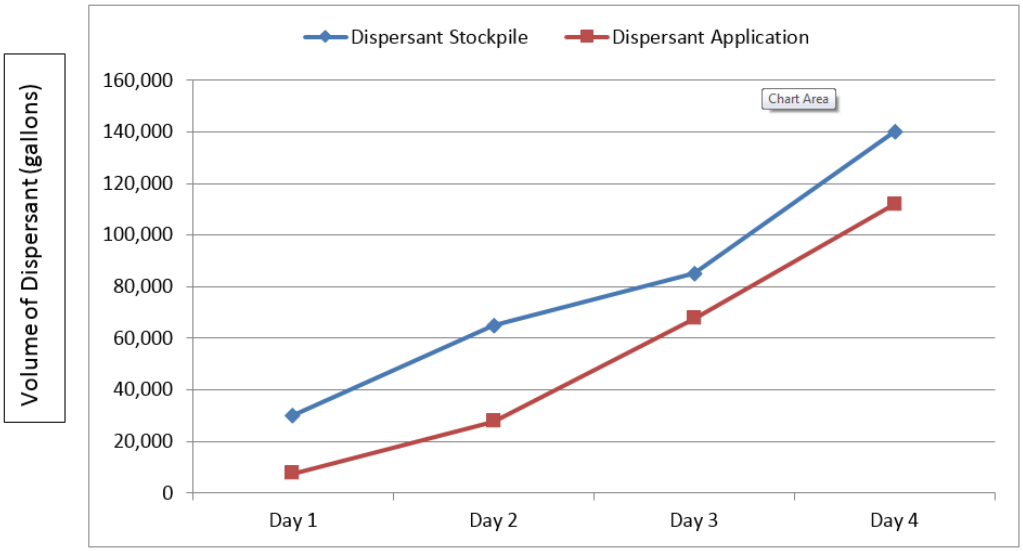


Figure I-16 – Aerial Dispersant Group Summary Report

Asset Summary On Scene	
Spray Aircraft:	
C-130	
BT-67	
Spray Vessels	
M/V _____	
Total Spray Aircraft	
Total Spray Vessels	
Spotter Aircraft:	
King Air	
Aztec	
Total Spotters:	
PRIORITY Spray Assets Identified ***	
Spray Aircraft:	LEAD TIME
Spray Vessel:	
*** NOTE: These assets will not be activated until sufficient stockpile of dispersants are available for their use. Estimate that dispersant operations will need approximately _____ gallons per day of dispersant for these air craft spray systems	
Additional Spray Assets Identified	

Dispersant Key Activities and Issues

Daily Aerial Dispersant Operational Plan and Briefing

Map of Spray Passes Conducted During Operational Day

Dispersant Statistics Applied by Day						
Date	**Dispersant Type (gallons)**		**Daily Totals**	**# Sorties**	**Acres Covered** (5 gal/acre application rate)	**Square Miles covered**
	9500	**9527**				

Dispersant Spray Assets

Aircraft Information						
Type	Owner/ Operator	Tail #	Payload (gal)	Airport/ Status	Purpose & Altitude	Comments
Spotters						
Recon						
Sprayers						

Aerial Dispersant Application Plan (Actual Flights conducted)

Figure I-16 – Aerial Dispersant Group Summary Report (Continued)

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