

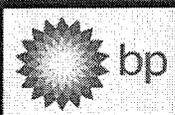
**State Of Louisiana Regulatory Notifications**

**Figure 8-4**

Agency	Phone Number
Emergency Response Commission C/O Office of State Police	(877) 925-6595 (225) 925-6595 (24 hrs, Louisiana one-call emergency number)
Department of Environmental Quality Single Point of Contact	(225) 342-1234 (24 hrs) (225) 925-6595 (Emergency)
Oil Spill Response Coordinator, Louisiana 625 North Fourth St., Suite #800 Baton Rouge, LA 70802	(225) 219-5800
Louisiana Department of Environmental Quality (LDEQ) P.O. Box 4312 Baton Rouge, LA 70821-4312	(225) 219-3953 (225) 342-1234 (24 Hour Hotline) (225) 219-3640 (SPOC)
Louisiana Department of Natural Resources (LDNR)	(225) 342-4500 (Business Hours) (225) 342-5505 (After Hours)
State or Federal Wildlife Management Pass à l'Outre Wildlife Refuge	(337) 373-0032 (New Iberia Office)
Rockefeller Wildlife Refuge	(337) 538-2276
US Fish and Wildlife Service	(800) 344-WILD
Delta Wildlife Refuge	(985) 882-2000
McFadden National Refuge	(409) 971-2909
Sabine National Refuge	(337) 762-3816
Breton Sound National Wildlife Refuge	(985) 882-2000

Title of Document: Regional Oil Spill Response Plan  
 Authority: Dan R. Replogle,  
 GoM EMS Mgmt Representative  
 Scope: GoM EMS  
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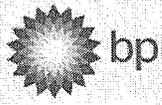
**State Of Louisiana Regulatory Notifications**

**Figure 8-4**

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Louisiana Department of Environmental Quality (LDEQ) P.O. Box 4312 Baton Rouge, LA 70821-4312	(225) 219-3953 (225) 342-1234 (24 Hour Hotline) (225) 219-3640 (SPOC)
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State or Federal Wildlife Management Pass à Loutre Wildlife Refuge	(337) 373-0032 (New Iberia Office)
Rockefeller Wildlife Refuge US Fish and Wildlife Service Delta Wildlife Refuge McFadden National Refuge Sabine National Refuge Breton Sound National Wildlife Refuge	(337) 538-2276 (800) 344-WILD (985) 882-2000 (409) 971-2909 (337) 762-3816 (985) 882-2000

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State Of Louisiana Regulatory Notifications (Cont'd)

Figure 8-4

In the circumstances shown below, call the State Police 24-hour Louisiana Emergency Hazardous Materials hotline. In addition, call the LEPC that has jurisdiction over the facility and the LEPCs for the affected parish. Calls should be made no later than one hour after becoming aware of the emergency.

- When an *emergency condition* exists which could reasonably be expected to endanger the public, cause significant environmental damage, or cause severe property damage. The hotline will inform the Louisiana Department of Environmental Quality (LDEQ).
- When one of the following occurs and the spill or release escapes to water, air, or ground outside the facility boundaries:
  - Ten gallons or more (100 lbs.) of crude oil is spilled.
  - Twenty MCFD or more of sweet natural gas are released.

A release of sour gas occurs with a hydrogen sulfide (H<sub>2</sub>S) component of more than 100 pounds.

- A hazardous substance release meets or exceeds its *Reportable Quantity*.
- Facilities must make follow-up written reports within 5 days after the release occurs to the LEPC with jurisdiction over the facility, and to the:

Emergency Response Commission  
c/o Department of Public Safety and Correction  
Office of State Police  
Transportation and Environmental Safety Section, Mail Slip 21  
P. O. Box 66614  
Baton Rouge, LA 70896

Notify the LDEQ under these conditions:

- When an *emergency condition* exists which could reasonably be expected to endanger the public, cause significant environmental damage, or cause severe property damage. A separate call is not needed; as stated above, the State Police hotline will notify the LDEQ. *Written follow-up to the DEQ is required within seven days. Written reports should be mailed to:*

**LA Department of Environmental Quality  
Attention Surveillance Division – SPOC  
“Unauthorized Discharge Notification Report”  
P. O. Box 4312  
Baton Rouge, LA 70821-4312**



**State Of Louisiana Regulatory Notifications (Cont'd) Figure 8-4**

When one of the following occurs *and* the spill or release is *not totally contained*:

- More than one barrel of crude oil is spilled.
- A release of sweet natural gas exceeds 1 MMCFD.
- A release of sour gas occurs with an H<sub>2</sub>S component of more than 100 pounds.
- A hazardous substance release exceeds its RQ.

Call the LDNR immediately, but no later than two hours after discovery, for any of the following:

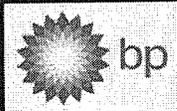
- A DOT gas pipeline release causes injury, death, fire, or damage of more than \$50,000, including the value of lost product, and the cost of cleanup and recovery.
- A DOT oil or condensate pipeline spill exceeds 5 gallons or causes injury, death, fire, or damage of more than \$50,000, including the value of lost product, and the cost of cleanup and recovery.

Verbal reports to the DNR should note that a DOT pipeline was involved.

If a spill impacts or has potential to impact a state or federal wildlife refuge, notify the appropriate refuge staff.

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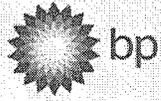
**State Of Louisiana Regulatory Notifications (Cont'd)**

**Figure 8-4**

<b>LA Parish Sheriff's Department</b>	<b>Phone Number</b>
Cameron Parish (Cameron)	(337) 775-5111 (24 hrs)
Vermilion Parish (Abbeville)	(337) 893-0871 (24 hrs)
Iberia Parish (New Iberia)	(337) 369-3714 (24 hrs)
St. Mary Parish (Franklin)	(337) 828-1960 (24 hrs)
Terrebone Parish (Houma)	(985) 876-2500 (24 hrs)
LaFourche Parish (Thibodeaux)	(985) 449-2255 (24 hrs)
Jefferson Parish (Gretna)	(504) 363-5500 (24 hrs)
Plaquemines Parish (Pointe A La Hache)	(504) 564-2525 (24 hrs)
St. Bernard Parish (Chalmette)	(504) 271-2501 (24 hrs)
Orleans Parish (New Orleans)	(504) 822-8000 (24 hrs)

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**State Of Mississippi Regulatory Notifications**

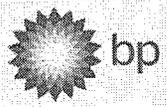
**Figure 8-5**

Agency	Phone Number
Mississippi Emergency Management Agency (MEMA) P.O. Box 4501 Jackson, MS 39296-4501	(601) 933-6362 (24 hrs) (800) 222-6362 (24 hrs)
Mississippi DEQ Bureau of Pollution Control (MDEQ) P.O. Box 10385 Jackson, MS 39289-0385 Oil and Hazardous Coordinator – Eric Deare	(601) 352-9100 (24 hrs) (800) 222-6362 (24 hrs)  (601) 961-5570
Mississippi Department of Marine Resources (MDMR) 1141 Bayview Avenue, Suite 111 Biloxi, MS 39530 Lieutenant Frank Wescovich	(228) 374-5000 (228) 523-4134 (24 hrs) (Marine Patrol)
Mississippi State Oil and Gas Board (MS&GB) 500 Greymont Avenue, Suite E Jackson, MS 39202 Kent Ford	(601) 354-7142 (24 hrs)
When a sheen, slick, or spill is observed or discovered, or a non-permitted chemical release occurs, call the Mississippi state agencies listed in the table.	

Mississippi EMA & Sheriff's Offices	Phone Number
Hancock County EMA Sheriff's Office	(228) 466-8320 (228) 466-6900
Harrison County EMA Sheriff's Office	(228) 865-4002 (228) 896-3000
Jackson County EMA Sheriff's Office	(228) 769-3111 (228) 769-3063
When five barrels or more of crude oil or condensate are spilled, call the appropriate Mississippi CCD agency or sheriff's office immediately.	

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**Regional Oil Spill Response Plan – Gulf of Mexico**

**Section 8  
External  
Notifications**

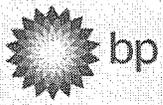
**State Of Alabama Regulatory Notifications**

**Figure 8-6**

Agency	Phone Number
AL Department of Environmental Management (ADEM) Mobile Field Office 2204 Perimeter Road Mobile, AL 36615 Chief of Mobile Branch (John Carlton)	(251) 450-3400 (24 hrs) (251) 242-4378 (24 hrs) (800) 424-8802 (National Response Center)
AL Department of Environmental Management (ADEM) P.O. Box 301463 Montgomery, AL 36130-1463	(800) 843-0699 (24 hrs)
AL Oil and Gas Board (AO&GB) 4173 Commander Drive Mobile, AL 36615	(251) 438-4848 (251) 943-4326 (24 hrs)
AL Oil and Gas Board (AO&GB) Tuscaloosa, AL P.O. Box "O" Tuscaloosa, AL 35486-0004	(205) 349-2852
AL Civil Defense Mobile, AL	(251) 460-8000 (24 hrs)
AL Dept. of Conservation & Natural Resources (ADCNR) State Lands Division 64 North Union Street, Room 464 Montgomery, AL 36130 Nancy Cone	(334) 242-3467
<p>When a sheen, slick, or spill is observed or discovered, or a non-permitted chemical release occurs, call the ADEM immediately. In addition, call the appropriate office of the AO&amp;GB.</p>	

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Regional Oil Spill Response Plan – Gulf of Mexico

**Section 8**  
External  
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**State Of Florida Regulatory Notifications**

**Figure 8-7**

Agency	Phone Number
State Warning Point (24-hour)	(800) 320-0519 or (850) 413-9911 (850) 413-9900 (Non Emergencies)
Florida DEP District Emergency Response Offices (8am – 5pm)	
Tallahassee	(850) 245-2010
Pensacola	(850) 595-8300
Jacksonville	(904) 807-3300 x3246
Orlando	(407) 894-7555
Tampa	(813) 632-7600
Ft. Myers	(239) 332-6975
Ft. Lauderdale	(561) 681-6600
Florida Marine Patrol (24-hour)	(888) 404-3922

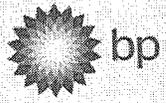
When a sheen, slick, or spill is observed or discovered, or a non-permitted chemical release occurs, call the State Warning Point, Florida Bureau of Emergency Response, and the Florida Marine Patrol.

The following information should be provided upon notification to Florida authorities:

1. Name, address, and telephone number of person reporting
2. Name, address, and telephone number of person responsible for the discharge or release, if known
3. Date and time of the discharge or release
4. Type or name of substance discharged or released
5. Estimated amount of the discharge or release
6. Location or address of discharge or release
7. Source and cause of the discharge or release
8. Size and characteristics of area affected by the discharge or release
9. Containment and cleanup actions taken to date
10. Other persons or agencies contacted

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**Alabama & Florida Local Notifications**

**Figure 8-8**

Contact Information	Phone Number
<b><u>Mobile, AL</u></b>	
Sheriff's Department	(251) 574-2423
Police Department	(251) 208-7211
Fire Department	(251) 208-7351
Port Authority Security Department	(251) 441-7777 (24 hrs)
Emergency Management Agency	(251) 460-8000 (24 hrs)
<b><u>Pensacola, FL</u></b>	
Florida Highway Patrol	(850) 484-5000
Police Department	(850) 435-1900
Fire Department	(850) 436-5200

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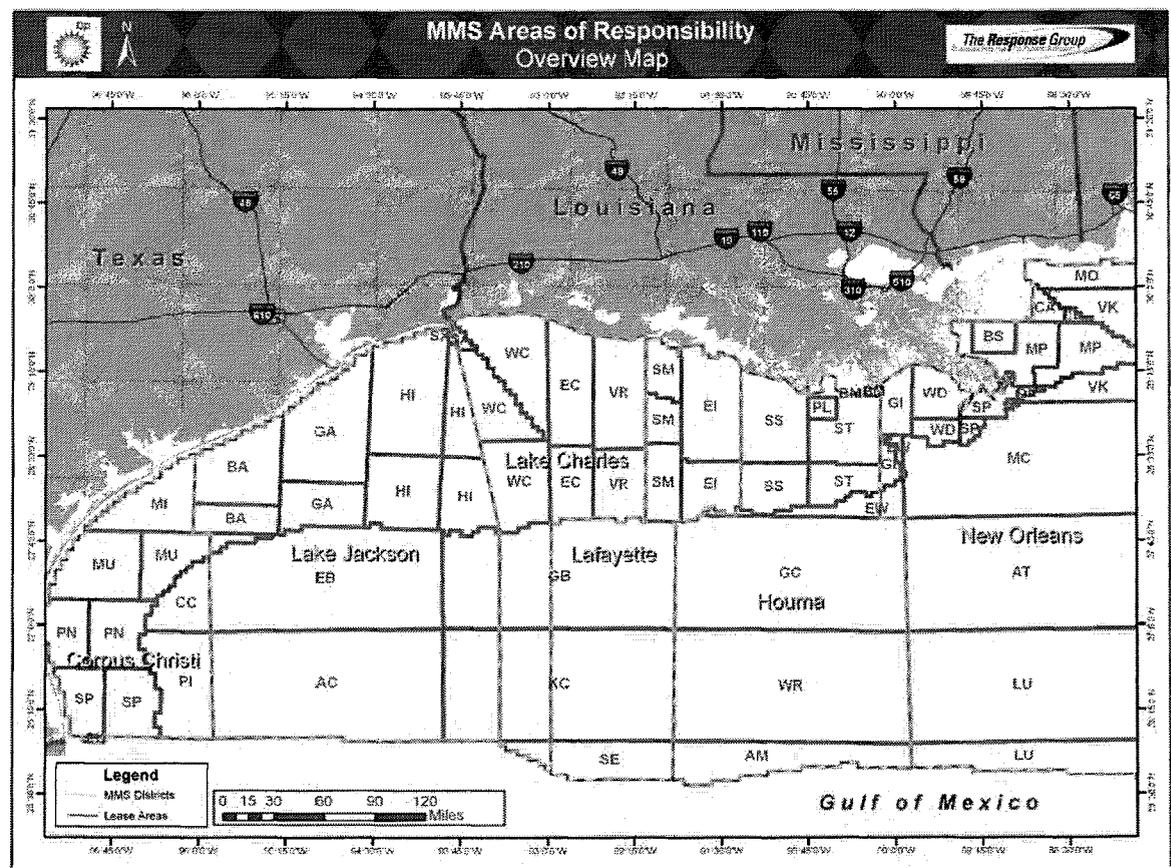


# BP Regional Oil Spill Response Plan – Gulf of Mexico

Section 8  
External  
Notifications

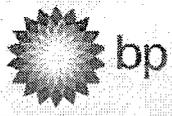
## Minerals Management Service Areas Of Responsibility

## Figure 8-9a



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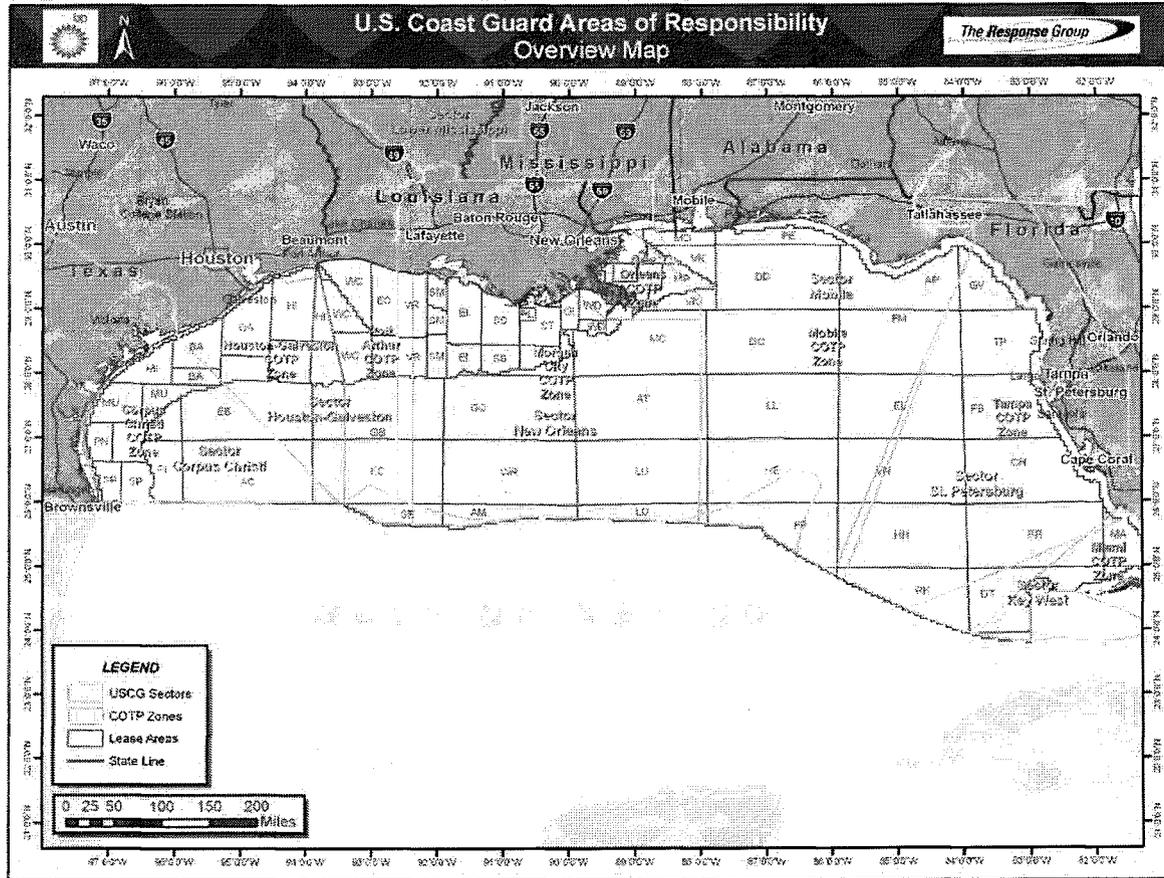


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Regional Oil Spill Response Plan – Gulf of Mexico

Section 8  
External  
Notifications

**United States Coast Guard Areas Of Responsibility**

**Figure 8-9b**

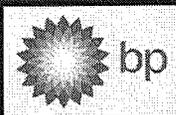


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Regional Oil Spill Response Plan – Gulf of Mexico

Section 9  
Available  
Technical  
Expertise

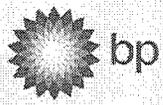
## 9. AVAILABLE TECHNICAL EXPERTISE

The following listing provides the names, telephone numbers, and addresses of key Federal, State, and Local agencies as well as independent contractors that may be consulted for site-specific environmental information in the event of a spill incident.

- A. Texas – **Figure 9-1**
- B. Louisiana – **Figure 9-2**
- C. Mississippi – **Figure 9-3**
- D. Alabama – **Figure 9-4**
- E. Florida – **Figure 9-5**
- F. Gulf Coast – **Figure 9-6**

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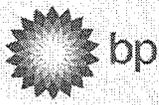
**Available Technical Expertise – Texas**

**Figure 9-1**

Name	Address	Telephone
Texas Marine Mammal Stranding Network	5001 Ave. U, Suite #105C Galveston, TX 78741	(800) 9MAMMAL*
Texas Parks & Wildlife Wildlife Rescue & Rehab Dave Buzan Kills & Spills Team	4200 Smith School Road Building D Austin, TX 78741	(512) 389-4848* (800) 299-4099 (Pg)
<b>Trajectories/Sensitivities</b>		
The Response Group	13231 Champion Forest, Suite #310 Houston, TX 77069	(281) 880-5000 (Off) (713) 906-9866* (C) (281) 861-6880 (F)
<b>Wildlife Rehab &amp; Education</b>		
US Fish & Wildlife Service Wildlife Rescue & Rehab John Huffman – Coastal Program Coord.	17629 El Camino Real Suite 211 Houston, TX 77058	(281) 286-8282 (Off) (281) 282-9344* (Fax)
Wildlife Rehab and Education Sharon Schmalz Michele Johnson	Houston, TX	(281) 332-8319 (H) (281) 731-8826 (C) (713) 279-1417 (Pg)
Texas General Land Office		(800) 998-4456
US Fish & Wildlife Service Eco System Corpus Christi State University		(361) 994-9005
East Matagorda Bay South Clara Lee – Env. Contaminant Specialist		(361) 994-9005 ext 247
Houston Audubon Society	Houston, TX	(713) 932-1639 (713) 932-1392*
Institute of Marine Life Sciences Texas A&M University Dr. Wursid		(409) 740-4413
Marine Mammal Research Pgrm Texas A&M University	Galveston, TX	(409) 740-4413 (409) 740-4421
NOAA National Maritime Fishery Service-Sea Turtles Sibyl Bodamer – Permitted Ind.	Galveston, TX Houston, TX	(409) 766-3500 (281) 379-7961*
<b>Environmental Assessments</b>		
ENTRIX	Houston, TX	(713) 666-6223 (Off)

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**Available Technical Expertise – Texas (continued)**

**Figure 9-1**

Name	Address	Telephone
<b>United States Coast Guard</b>		
MSU Port Arthur	Port Arthur, TX	(409) 723-6500 (409) 719-5000*
Sector Houston-Galveston	Houston, TX	(713) 671-5100*
Sector Corpus Christi	Corpus Christi, TX	(361) 939-6393* (361) 939-6349* (361) 939-6240 (F)
<b>Wildlife Management Areas &amp; Refuges**</b>		
<b>(1)</b> Lower Rio Grande Valley NWR	Alamo, TX	(956) 784-7500
<b>(2)</b> Bentsen SP	Mission, TX	(956) 585-1107
<b>(3)</b> Laguna Atascosa NWR	Rio Hondo, TX	(956) 748-3607
<b>(4)</b> Padre Island National Seashore National Park Service (at PINS)	Corpus Christi, TX	(361) 949-7275* (361) 949-8173
<b>(5)</b> Mustang Island State Park	Port Aransas, TX	(361) 749-5246
<b>(6)</b> Goose Island State Park	Rockport, TX	(361) 729-2858
<b>(7)</b> Aransas Wildlife Refuge Tom Stehn – Biologist	Austwell, TX	(361) 286-3533 (361) 286-3559 ext. 221
<b>(9)</b> Welder Flats WMA	Bay City, TX	(979) 244-7697
<b>(10)</b> Big Boggy NWR	Angleton, TX	(979) 849-5118 (979) 964-3639
<b>(11)</b> San Bernard NWR	Angleton, TX	(929) 849-7771 (979) 964-3639
<b>(12)</b> Peach Point WMA	Freeport, TX	(979) 244-7697
<b>(13)</b> Brazoria NWR	Angleton, TX	(979) 233-5338 (979) 922-1037
<b>(14)</b> Galveston Island SP	Galveston, TX	(409) 737-1222
<b>(15)</b> Moody NWR	Anahuac, TX	(409) 267-3337
<b>(16)</b> Anahuac NWR	Anahuac, TX	(409) 267-3337
<b>(17)</b> McFaddin NWR	Sabine Pass, TX	(409) 971-2909 (409) 736-2371
<b>(18)</b> Sea Rim State Park	Sabine Pass, TX	(409) 971-2559
<b>(19)</b> Texas Point NWR	Sabine Pass, TX	(409) 971-2909
<b>(20)</b> Flower Garden Banks National Marine Sanctuary	Bryan, TX	(409) 621-5151 O (409) 621 1316 F

\*\* See reference numbers for WMA, NWR, SP locations on Texas area map

\* Indicates 24 hour number

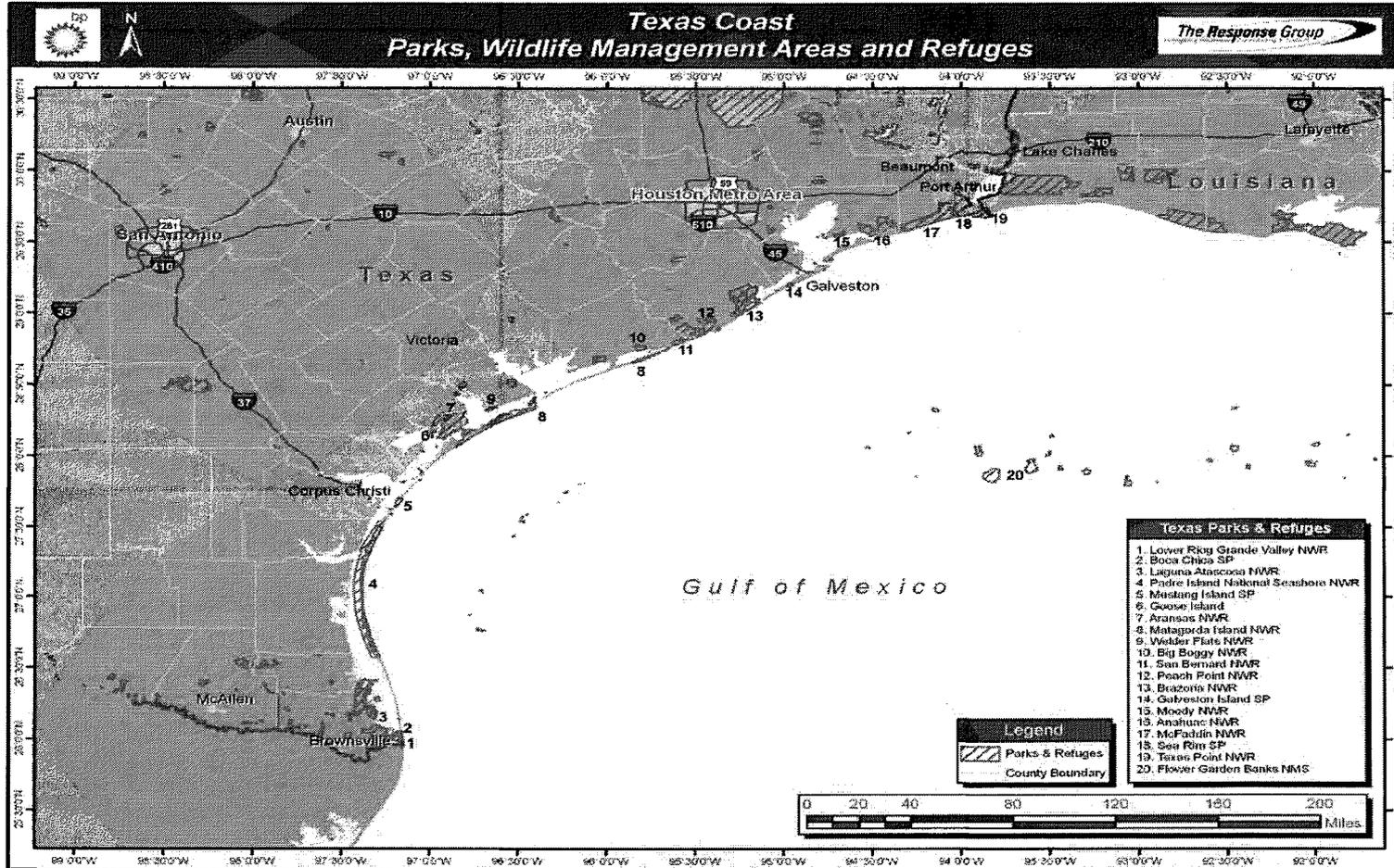
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**Available Technical Expertise – Louisiana**

**Figure 9-2**

Name	Address	Telephone
Dept of Wildlife and Fisheries Jim Hanifen – Oil Spill Coordinator	2000 Quail Drive Baton Rouge, LA	(225) 765-2800 (800) 442-2511 (24hr)
LA. Dept of Environmental Quality (Water Resources)	7290 Bluebonnet Baton Rouge, LA	(225) 342-1234*
LOSCO – Roland Guidry	Baton Rouge, LA	(225) 219-5800*
US Fish & Wildlife Service Ecological Services Warren Lorenty – Field Response Coordinator Buddy Goatcher – Field Response Coordinator Russel Watson – Alternate Gerald Bodin – Alternate	825 Kaliste Saloom, Bldg II Lafayette, LA	(337) 291-3100  (337) 291-3126 (337) 280-1157 (after hrs) (337) 291-3125 (337) 886-0893 (after hrs) (337) 291-3116 (337) 988-6311 (after hrs) (337) 291-3118
<b>Minerals Management Services</b>		
New Orleans District Tim Lannigan Main Switchboard Alex Alvarado	New Orleans, LA	(504) 423-2505 (Office) (504) 423-5340* (504) 736-2544 (504) 736-2861 (504) 736-2547
Louisiana State Police	Baton Rouge, LA	(225) 925-6424*
United States Coast Guard MSO New Orleans Search & Rescue Team	New Orleans, LA New Orleans, LA	(504) 589-6196 (504) 846-5923* (504) 589-6225
<b>Weather Service</b>		
Alert Weather Service	Lafayette, LA	(337) 233-5565
A.H. Glenn & Assoc.	New Orleans, LA	(504) 241-2222
Ed Roy LTD.	Lafayette, LA	(337) 233-3816
<b>Environmental Assessments</b>		
Coastal Environments, Inc.	Baton, Rouge, LA	(225) 383-7455
LA Marine Mammal Stranding Network		(800) 442-2511
Marine Mammal Stranding Network	Baton Rouge, LA	(225) 765-2821
<b>Oil Analysis</b>		
Analysis Laboratories, Inc.	Metairie, LA	(504) 889-0710 (Off)
SPL	Baton, Rouge, LA	(225) 765-2821

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**Available Technical Expertise – Louisiana (Cont'd)**

**Figure 9-2**

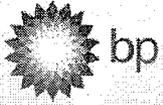
Name	Address	Telephone
<b>Wildlife Management Areas &amp; Refuges**</b>		
(1) Cameron Prairie NWR	Bell City, LA	(337) 598-2216
(2) Lacassine NWR	Lake Arthur, LA	(337) 774-5923
(3) Rockefeller SWR	Grand Chenier, LA	(337) 538-2276
(4) Marsh Island WMA	New Iberia, LA	(337) 373-0032
(5) Atchafalaya Delta WMA	New Iberia, LA	(985) 882-2000
(6) Isle Dernieres – USGS Wetlands Research Center	Terrebonne, LA	(337) 266-8550
(7) Point e AuChien WMA	Montigut, LA	(985) 594-5494
(8) Wisner WMA	Baton Rouge, LA	(225) 765-2811
(9) Biloxi WMA	Baton Rouge, LA	(225) 765-2360
(10) Pearl River WMA	Baton Rouge, LA	(985) 646-6440
Louisiana SWM	New Iberia, LA	(337) 373-0032

\*\* See reference numbers for WMA, NWR, SP locations on Louisiana area map

\* Indicates 24 hour number

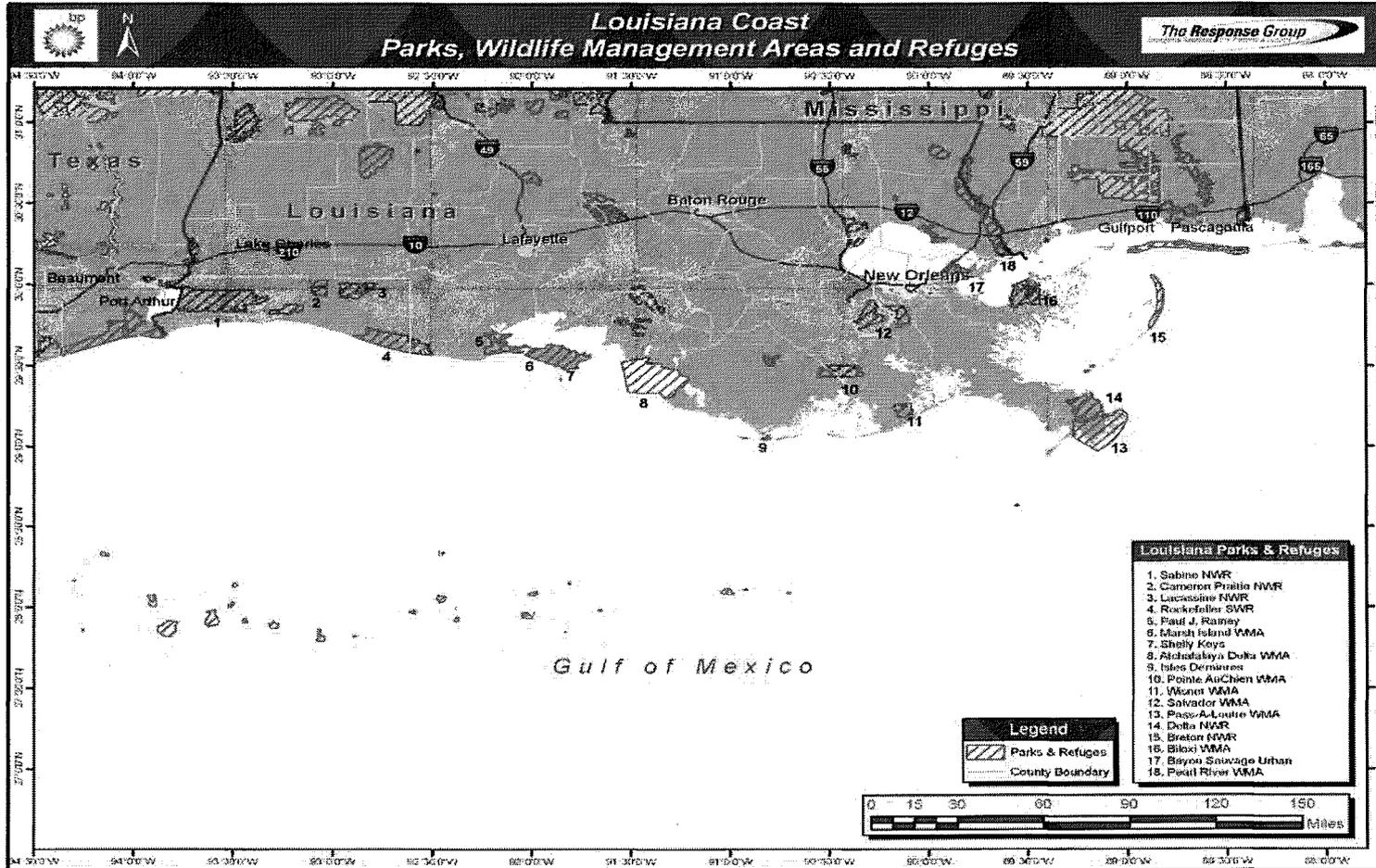
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**Available Technical Expertise – Mississippi**

**Figure 9-3**

Name	Address	Telephone
<i>Wildlife Management Areas &amp; Refuges**</i>		
(1) Buccaneer	Waveland, MS	(228) 467-3822
(2) Gulf Island National Seashore	Ocean Springs, MS	(228) 875-9057
(3) Mississippi Sandhill Crane NWR	Gautier, MS	(228) 497-6322
(4) Shepard State Park	Gautier, MS	(228) 497-2244
(5) Grand Bay NWR	Moss Point, MS	(228) 475-0765
Management Agency		(800) 222-6362*

\*\* See reference numbers for WMA, NWR, SP locations on MS / AL area map

\* Indicates 24 hour number

**Available Technical Expertise – Alabama**

**Figure 9-4**

Name	Address	Telephone
Alabama Dept. of Conservation Marine Resources Division	21055 Mildred Casey Dr Gulf Shores, AL	(251) 968-7576
Alabama Oil & Gas Board Headquarters Office Douglas Hall – So. AL Geologist	420 Hackberry Lane Tuscaloosa, AL	(205) 349-2852
Mobile Office Ralph Hellmich – Chief Geologist	4173 Commanders Drive Mobile, AL	(251) 438-4848 (251) 943-4326*
US Fish & Wildlife Service Ecological Services	1208 B Main St. Daphne, AL	(251) 441-5181
(6) Bon Secour NWR	Gulf Shores, AL	(251) 540-7720
Gulf State Park	Gulf Shores, AL	(251) 948-7275
Alabama Dept. of Environmental Management		(251) 450-3400
Alabama Emergency Management Agency		(800) 843-0699*

\*\* See reference numbers for WMA, NWR, SP locations on MS / AL area map

\* Indicates 24 hour number

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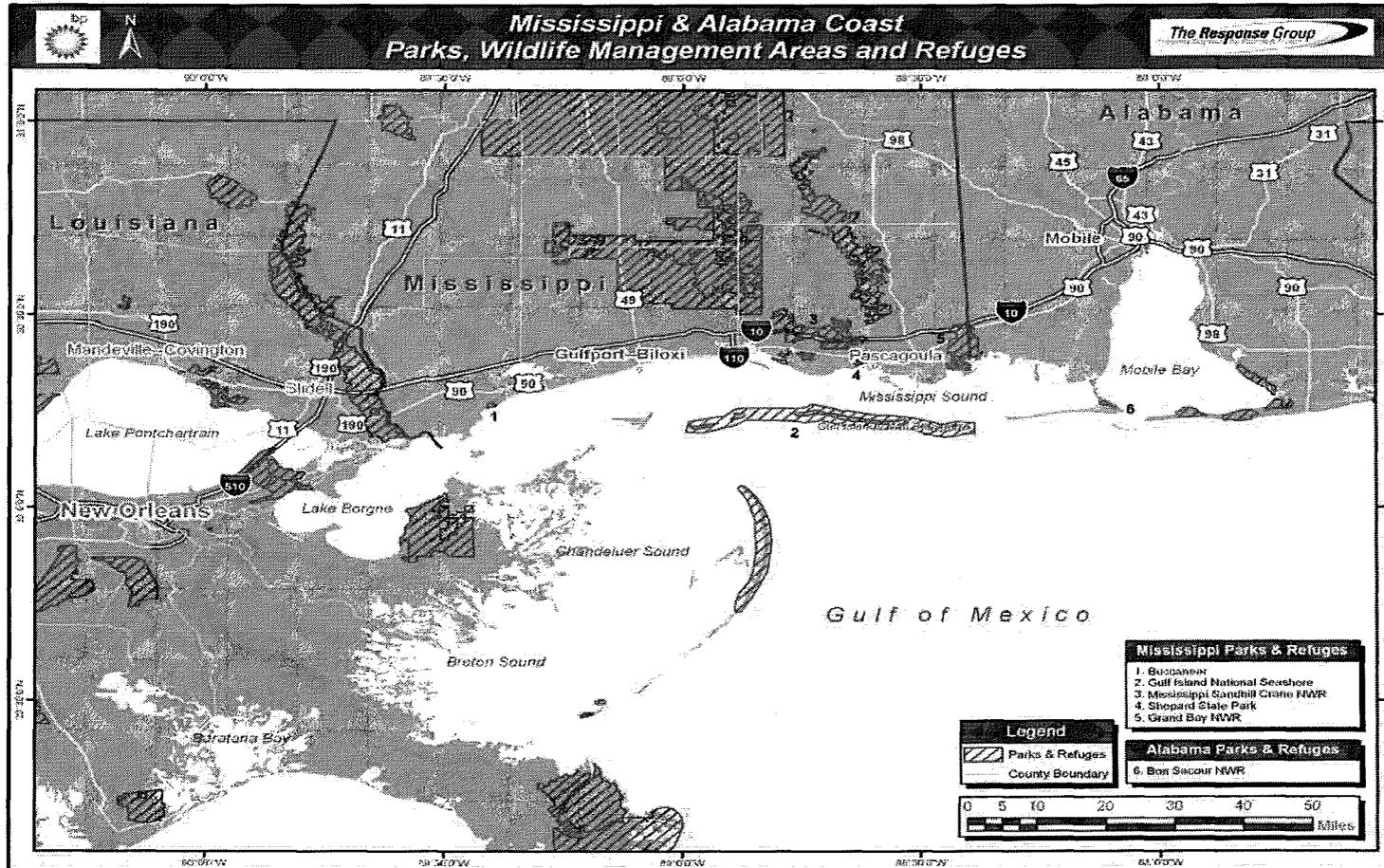
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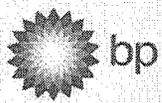
**Available Technical Expertise – Florida**

**Figure 9-5**

Name	Address	Telephone
Big Lagoon State Recreation Area	12301 Gulf Beach Hwy Pensacola, FL	(850) 492-1595
Florida Dept of Environmental Protection (Bureau of Emergency Response)	3900 Commonwealth Blvd. Tallahassee, FL 32399	(850) 245-2010*
<b>Florida Fish &amp; Wildlife Conservation Commission (FWCC)</b>		
Southwest Florida	3900 Drane Field Road Lakeland, FL	(863) 648-3200*
North Central Florida	Route 7, Box 440 Lake City, FL	(888) 404-3922*
<b>National Park Service</b>		
Gulf Island National Seashore Dispatch	Gulf Breeze, FL	(850) 916-3010*
Escambia County Sheriff Dept.		(850) 436-9630*
<b>US Fish &amp; Wildlife Service</b>		
Ecological Services John Hemming – Contaminate Assessment Specialist	1612 June Ave. Panama City, FL	(850) 769-0552 (850) 215-1435*
<b>Mammal Stranding Services</b>		
Marine Mammal Stranding Network NMFS SE Fisheries Science Center		(305) 862-2850
Florida State Warning Point		(800) 320-0519* (850) 413-9911*
<b>United States Coast Guard</b>		
Detached Duty Office	Panama City, FL	(850) 233-0366
<b>Wildlife Management Areas &amp; Refuges**</b>		
(1) Gulf Island National Seashore	Gulf Breeze, FL	(850) 934-2600
(2) Saint Vincent NWR, Apalachicola Bay Aquatic Preserve & Apalachicola River & Bay National Estuarine	479 Market St. Apalachicola, FL	(850) 653-8808
(3) Saint Marks NWR	1255 Lighthouse Road St. Marks, FL	(850) 925-6121
(4) Lower Suwannee NWR	16450 NW 31 <sup>st</sup> Place Chiefland, FL	(352) 493-0238

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**Available Technical Expertise – Florida**

**Figure 9-5**

Name	Address	Telephone
<i>Wildlife Management Areas &amp; Refuges (cont.)</i>		
(5) Cedar Keys NWR	16450 NW 31 <sup>st</sup> Place Chiefland, FL	(352) 493-0238
(6) Chassahowitski NWR	1502 SE Kings Bay Drive Crystal River, FL	(352) 563-2088
(7) Egmont Key NWR	Crystal River, FL	(352) 563-2088
(8) Pine Island NWR	Sanibel, FL	(239) 472-1100
(9) J.N. "Ding" Darling Wilderness	Sanibel, FL	(239) 472-1100
(10) Matlacha Pass NWR	Sanibel, FL	(239) 472-1100
(11) Ten Thousand Island NWR	Naples, FL	(239) 353-8442
(12) Majory Stoneman Douglas Wilderness	Homestead, FL	(305) 242-7700
(13) Great White Heron NWR	Big Pine Key, FL	(305) 872-0774
(14) National Key Deer Refuge	Big Pine Key, FL	(305) 872-2239
(15) Key West NWR	Big Pine Key, FL	(305) 872-0774
(16) Dry Tortugas National Park	Key West, FL	(305) 242-7700
(17) Crocodile Lake NWR	Key Largo, FL	(305) 451-4223
(18) Biscayne National Park	Homestead, FL	(305) 230-1144
Saint Andrew State Recreation Area & State Park Aquatic Preserve	7255 Hwy 90 East Milton, FL	(850) 233-5140
Crystal River NWR	1502 SE Kings Bay Drive Crystal River, FL	(352) 563-2088
Saint Martins Marsh Aquatic Preserve	3266 N. Sailboat Ave Crystal River, FL	(352) 563-0450
Steinhatchee WMA	Route 7, Box 440 Lake City, FL	(904) 758-0525
Fort Pickens State Aquatic Preserve	7255 Hwy 90 E Milton, FL	(850) 983-5359
Alligator Harbor Aquatic Preserve	350 Carroll St. Eastpoint, FL	(850) 670-4783
Saint Joseph Bay Aquatic Preserve	350 Carroll St. Eastpoint, FL	(850) 670-4783
Saint Joseph Peninsula State Park	8899 Cape San Blas Road Port St. Joe, FL	(850) 227-1327
Aucilla WMA	Route 7, Box 440 Lake City, FL	(904) 758-0525
Gulf Hammock WMA	Route 7, Box 440 Lake City, FL	(904) 758-0525

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**Available Technical Expertise – Florida (continued)**

**Figure 9-5**

Name	Address	Telephone
<i>Wildlife Management Areas &amp; Refuges (cont.)</i>		
Tide Swamp WMA	Route 7, Box 440 Lake City, FL	(904) 758-0525
Big Bend Seagrasses Aquatic Preserve	3266 N. Sailboat Ave. Crystal River, FL	(352) 563-0450
Point Washington WMA	3911 Hwy 2321 Panama City, FL	(850) 265-3676

\*\* See reference numbers for WMA, NWR, SP locations on Florida area map

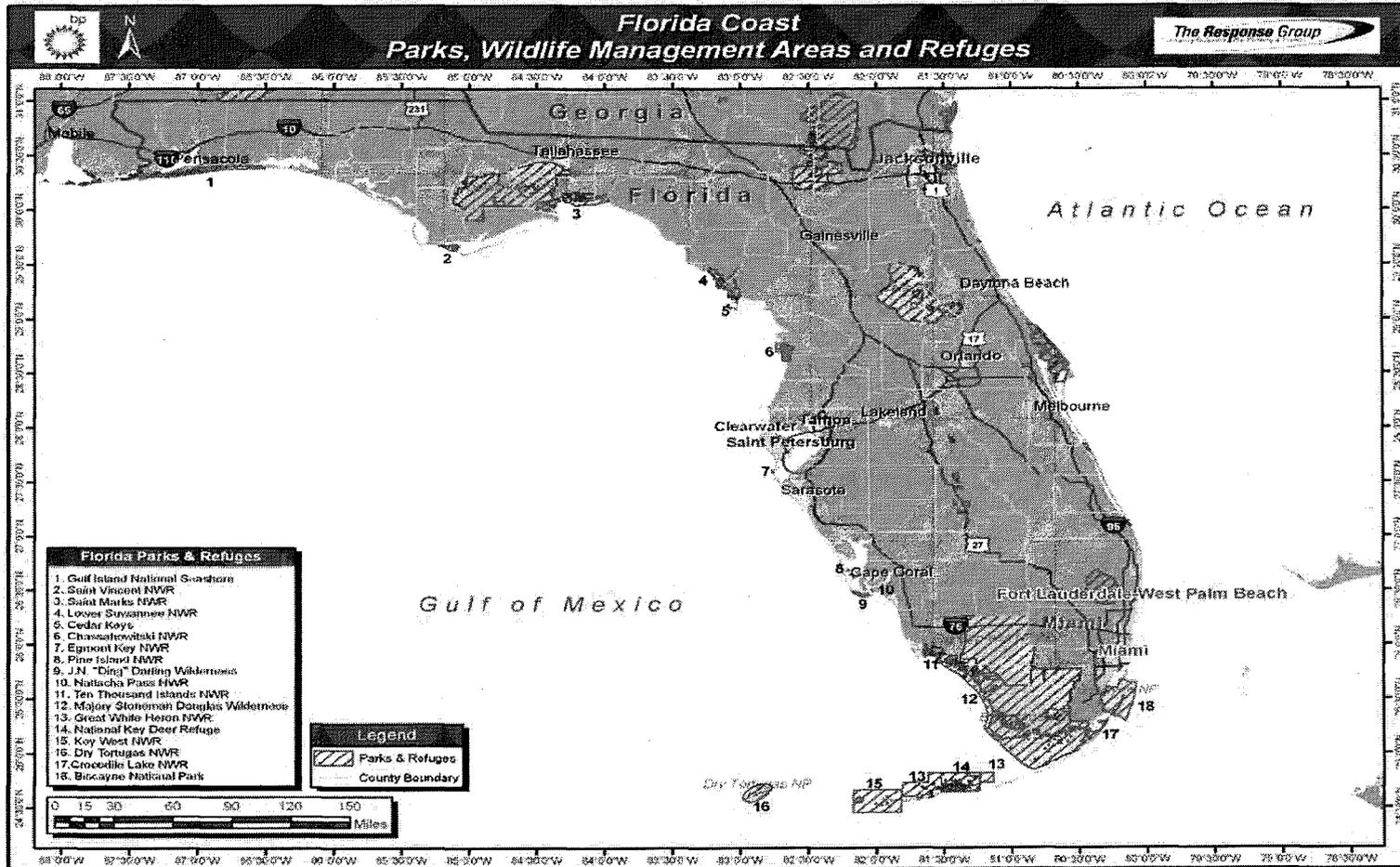
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**AVAILABLE TECHNICAL EXPERTISE – GULF COAST**

**Figure 9-6**

NAME	ADDRESS	TELEPHONE
International Bird Rescue & Research Center Jay Holcomb – Executive Dir Home Mobile James Lewis – Admin Mgr.	4369 Cordelia Road Fairfield, CA	(707) 207-0380*  (707) 429-4052 (707) 249-4870*
National Park Service	Atlanta, GA	(404) 562-3123
NOAA Marine Mammal Stranding Network – SE Region Hotline		(877) 433-8299
Tri – State Bird Rescue Oil Spill Alert - Dr. Heidi Stout  Oil Spill Alert – Sarah Tegtmeier	110 Possum Hollow Road Newark, DE	(302) 737-7241 (302) 218-7371* Cell (800) 710-0696* Pager (302) 363-5086* Cell (800) 710-0695* Pager
<b>US Dept of The Interior</b>		
Office of Env. Policy & Compliance Gregory Hogue – Regional Environmental Officer	75 Spring St., Suite 345 Atlanta, GA	(404) 331-4524 (404) 939-8454* Home (404) 909-0537* Cell
Office of Environmental Policy & Compliance Steve Spencer - Regional Environmental Officer	PO Box 26567 (MC-9) Albuquerque, NM	(505) 563-3572 (505) 249-2462*
<b>US Fish &amp; Wildlife Service</b>		
Region IV Ecological Services Diane Beeman – Spill Response Coordinator	1875 Century Blvd. Ste 200 Atlanta, GA	(404) 679-7140 (404) 679-7094 (404) 895-7093* Pager

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## 10. SPILL ASSESSMENT & VOLUME ESTIMATION

### A. Locating a Spill

In the event of a significant release of oil, an accurate estimation of the spill's total volume along with the spill location and movement is essential in providing preliminary data to plan and initiate cleanup operations. Generating the estimation as soon as possible will aid in determining:

•	Equipment and personnel required;
•	Potential threat to shorelines and/or sensitive areas as well as ecological impact; and
•	Requirements for storage and disposal of recovered materials.

As part of the initial response, BP will initiate a systematic search with aircraft, primarily helicopters, to locate a spill and determine the coordinates of the release. In the event weather prohibits use of aircraft, (both fixed wing and rotor) field boats may be utilized to conduct search operations.

Aircraft will also be utilized to photograph the spill on a daily basis, or more frequently if required, for operational purposes. The over flight information will assist with estimating the spill size and movement based upon existing reference points (i.e., oil rigs, islands, familiar shoreline features, etc.)

### B. Determining the Size and Volume of a Spill

When a spill has been verified and located, the priority issue will be to estimate and report the volume and measurements of the spill as soon as possible. Spill measurements will primarily be estimated by using coordinates, pictures, drawings, and other information received from helicopter or fixed wing over flights.

Oil spill volume estimations may be determined by direct measurements or by calculations based upon visual assessment of the color of the slick and information related to length and width that can be calculated on existing charts. The appearance of oil on water varies with the oil's type and thickness as well as ambient light conditions. Oil slick thicknesses greater than approximately 0.25 mm cannot be determined by appearance alone.



Direct measurements are the preferred method for determining the volume of a spill. Measurements can be obtained by:

•	Gauging the tank or container to determine volume lost
•	Measuring pressure lost over time
•	Determining the pump or spill rate (GPM) and elapsed time

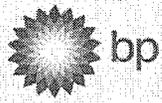
Visual assessment for determining the volume of oil based on slick information begins with understanding the terminology listed below:

•	Sheen – oil visible on the water as a silvery <u>sheen</u> or with <u>tints of rainbow colors</u> . This is the smallest thickness of oil.
•	Dark colors – visible with dark colors (i.e., <u>yellowish brown</u> , <u>light brown</u> ) with a <u>trace of rainbow color</u> but is not black or dark brown.
•	Black/Dark Brown – fresh oil after initial spreading will have a <u>black</u> or very <u>dark brown</u> color. This is the largest thickness of non emulsified oil.
•	Mousse – water-in-oil emulsion which is often <u>orange</u> to <u>rust colored</u> . It is thick and viscous and may contain 30% oil.

Several natural weathering processes occur which diminish the severity of the spill depending upon the composition of the oil. Natural weathering processes include the following:

•	Dispersion
•	Dissolution
•	Emulsification
•	Evaporation

Factors listed in **Figure 10-1 & 10-2** will be used to estimate the volume of oil in a spill unless an accurate amount is known by other means. Estimated spill volumes should be rounded off to avoid the misconception of a precise determination.



**C. Predicting Spill Movement**

Real time oil spill trajectory models predict the movement of spilled oil on water as well as identifying potential shoreline impact areas and other environmentally and ecologically sensitive areas.

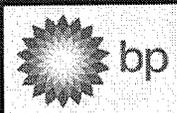
The Response Group, Inc. in Houston, TX, is the primary resource providing BP with predictions of both the movement of oil on water and potential impact areas. The Response Group is available on a 24 hour/day basis at (281) 880-5000 (Office) or (713) 906-9866 (Cellular). The Response Group relies on a number of sources that provide real time data in conjunction with condition variables in order to track and predict spill movement throughout the duration of an incident. Trajectory model results will be transferred to BP personnel via fax or by modem directly into BP's computer system. Weather forecasts, buoy data, and National Weather Bureau satellite imagery may be collected from internet services or by contacting the National Weather Service as listed below:

•	Gulf of Mexico website: <a href="http://www.nws.noaa.gov/om/marine/zone/gulf/gulfmz.htm">http://www.nws.noaa.gov/om/marine/zone/gulf/gulfmz.htm</a> Slidell, LA (504) 589-2808
•	Houston/Galveston, TX Area (281) 337-5074
•	Brownsville, TX (956) 504-1432 Austin/San Antonio, TX (830) 606-3617
•	Miami, FL (305) 229-4550

The National Oceanic and Atmospheric Administration (NOAA) is another available resource that can provide oil trajectories. GNOME (General NOAA Operational Modeling Environment) is the oil spill trajectory model used by OR&R Emergency Response Division (ERD) responders during an oil spill. ERD trajectory modelers use GNOME in Diagnostic Mode to set up custom scenarios quickly. In Standard Mode, anyone can use GNOME (with a Location File) to:

- Predict how wind, currents, and other processes might move and spread oil spilled on the water.
- Learn how predicted oil trajectories are affected by inexactness ("uncertainty") in current and wind observations and forecasts.
- See how spilled oil is predicted to change chemically and physically ("weather") during the time that it remains on the water surface.

For more information, contact Charlie Henry, the NOAA Scientific Support Coordinator for Texas, Louisiana, Mississippi, Alabama and the Florida Panhandle at (504) 589-4414.



**BP**

**Regional Oil Spill Response Plan – Gulf of Mexico**

**Section 10**  
Spill Assessment  
& Volume  
Estimation

Trajectory models can be run with predicted weather information used as input over a several hour period. The Response Group offers the following services from the office and remote locations:

- ✓ Oilmap Trajectory Modeling program
- ✓ General NOAA Oil Modeling Environment
- ✓ Scripps/MMS Oceanographic Data
- ✓ Scripps SEA Current Information
- ✓ MMS Buoy Information
- ✓ NOAA Ship Drift Information
- ✓ Overflight GPS Positioning Data
- ✓ ETA's to Shoreline
- ✓ Offshore Response Plans
- ✓ Biological Resources in the path of the slick

BP personnel can initiate the trajectory mapping process by submitting a trajectory request form, **Figure 10-3**, as soon as the following information is available:

- wind speed & direction
- current speed & direction
- sea state
- spill volume
- continuous or instantaneous release
- type of oil (API gravity)
- latitude & longitude (spill site)
- duration of spill
- direction of spill movement
- date & time of incident
- air & water temperature
- source of spill
- high tide & low tide

Trajectory model results may be updated periodically depending upon revised surveillance information and the latest weather updates.

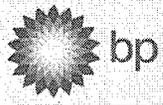
#### **D. Monitoring and Tracking the Spill Movement**

Surveillance of the spill movement throughout the incident is essential to bringing response operations to a successful conclusion. BP will maintain the overflight and trajectory modeling programs to monitor and predict the movement of oil until spill response operations are completed.

Surveillance operations can be continued both day and night, and in inclement weather, through the use of infrared sensing cameras capable of detecting oil on water. Information from the infrared cameras can be downloaded to a computer and printed out on a chart and/or recorded on videotape.

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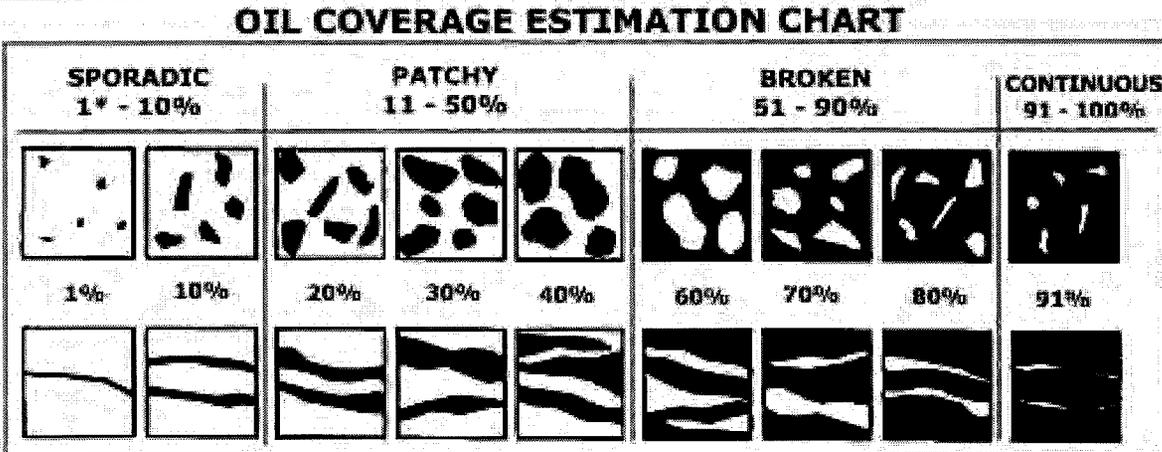
Oil Thickness Estimations				
Standard Term	Approx. Film Thickness		Approx. Quantity of Oil in Film	
	Inches	Mm		
Barely Visible	0.0000015	0.00004	25 gals/mile <sup>2</sup>	44 liters/km <sup>2</sup>
Silvery	0.000003	0.00008	50 gals/mile <sup>2</sup>	88 liters/km <sup>2</sup>
Slight Color	0.000006	0.00015	100 gals/mile <sup>2</sup>	176 liters/km <sup>2</sup>
Bright Color	0.000012	0.0003	200 gals/mile <sup>2</sup>	351 liters/km <sup>2</sup>
Dull	0.00004	0.001	666 gals/mile <sup>2</sup>	1,168 liters/km <sup>2</sup>
Dark	0.00008	0.002	1,332 gals/mile <sup>2</sup>	2,237 liters/km <sup>2</sup>

Thickness of light oils: 0.0010 inches to 0.00010 inches.  
Thickness of heavy oils: 0.10 inches to 0.010 inches.

- Spill Volume Estimation Procedure**
1. Estimate dimensions (length x width) of the spill in miles. Multiply length times width to calculate area covered by oil in square miles
  2. Multiply each area calculated in (1) by the appropriate factor from the thickness estimation table (above) and add the parts together

**Oil Coverage Estimation Chart**

**Figure 10-1**

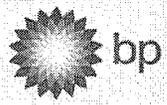


\*TRACE = <1%

\*\* From Office of Response & Restriction, National Ocean Service, National Ocean & Atmospheric Administration

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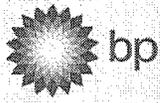
**Oil Volume Estimation Chart**

**Figure 10-2**

<p>1. To establish the area affected by pollution.</p> <ul style="list-style-type: none"> <li>Determine spill size (use aircraft if possible).</li> <li>Draw an imaginary box around the oil.</li> <li>Measure the length and width of the box (5,280 feet = 1 mile).</li> <li>Multiply the length x width = (a) m<sup>2</sup></li> </ul>																																																																										
<p>2.) Extent of Oil Coverage</p> <ul style="list-style-type: none"> <li>Envision the oil pushed together into one part of the box.</li> <li>Estimate % of box containing oil = (b) % coverage.</li> </ul>	<table style="display: inline-table; border-collapse: collapse;"> <tr><td style="padding: 2px;">100</td><td rowspan="5" style="border: none; padding: 0 10px;">= % coverage (b)</td></tr> <tr><td style="padding: 2px;">80</td></tr> <tr><td style="padding: 2px;">60</td></tr> <tr><td style="padding: 2px;">40</td></tr> <tr><td style="padding: 2px;">20</td></tr> </table> <table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>	100	= % coverage (b)	80	60	40	20																																																																			
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<p>3.) Multiply estimated area (a) x estimated coverage (b) = (c) total m<sup>2</sup></p>	<p>___ mi<sup>2</sup> x ___ % coverage = ___ total mi<sup>2</sup></p> <p>(a) (b) (c)</p>																																																																									
<p>4.) Appearance of Oil:</p> <ul style="list-style-type: none"> <li>Estimate the percent of the oil matching each color under appearance. Enter that number in the percentage blank (e.g. 50% dull, 30% brightly colored, 20% slightly colored).</li> <li>Enter total mi<sup>2</sup> (Item c).</li> <li>Multiply % appearance x gal/mi<sup>2</sup> x mi<sup>2</sup> for each appearance.</li> <li>Enter sum for total gallons.</li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="8">ESTIMATION TABLE</th> </tr> <tr> <th>Appearance</th> <th>%</th> <th>x</th> <th>Gal/ mi<sup>2</sup></th> <th>x</th> <th>mi<sup>2</sup> (c)</th> <th>=</th> <th>Gal.</th> </tr> </thead> <tbody> <tr> <td>Barely Visible</td> <td></td> <td>X</td> <td>25</td> <td>X</td> <td></td> <td>=</td> <td></td> </tr> <tr> <td>Silvery</td> <td></td> <td>X</td> <td>50</td> <td>X</td> <td></td> <td>=</td> <td></td> </tr> <tr> <td>Slightly Colored</td> <td></td> <td>X</td> <td>100</td> <td>X</td> <td></td> <td>=</td> <td></td> </tr> <tr> <td>Brightly Colored</td> <td></td> <td>X</td> <td>200</td> <td>X</td> <td></td> <td>=</td> <td></td> </tr> <tr> <td>Dull</td> <td></td> <td>X</td> <td>666</td> <td>X</td> <td></td> <td>=</td> <td></td> </tr> <tr> <td>Dark</td> <td></td> <td>X</td> <td>1332</td> <td>x</td> <td></td> <td>=</td> <td></td> </tr> <tr> <td colspan="7">Total Gallons</td> <td></td> <td></td> </tr> </tbody> </table>	ESTIMATION TABLE								Appearance	%	x	Gal/ mi <sup>2</sup>	x	mi <sup>2</sup> (c)	=	Gal.	Barely Visible		X	25	X		=		Silvery		X	50	X		=		Slightly Colored		X	100	X		=		Brightly Colored		X	200	X		=		Dull		X	666	X		=		Dark		X	1332	x		=		Total Gallons								
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Dark		X	1332	x		=																																																																				
Total Gallons																																																																										
<p>5.) Final Calculation (divide gallons by 42):</p>	<p>___ Total gal/42 = ___ bbls</p>																																																																									

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Section 10  
Spill Assessment  
& Volume  
Estimation

**Spill Trajectory Request Form**

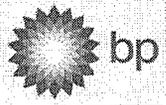
**Figure 10-3**

		SPILL TRAJECTORY REQUEST FORM	
THE RESPONSE GROUP		OFFICE: (281) 880-5000	24-HOUR: (800) 851-3942
FAX: (281) 880-5005		EFAX: (281) 596-6976	EMAIL: trajectory@responsegroupinc.com
ROY BARRETT		MOBILE: (713) 906-9866	HOME: (281) 213-8840
JEFF HILL		MOBILE: (832) 493-3153	HOME: (979) 865-9260
COMPANY INFORMATION	Company Name: _____		
	Company Contact Name: _____		
	Phone #: _____		
	Alternate # (ie: Mobile, Pager): _____		
	Fax #: _____		
Email Address: _____			
SPILL SITE INFORMATION	Source Type (Circle):    Platform/Well    Pipeline    Vessel    Facility		
	Source Name & Location (Name/Area/Block): _____		
	Latitude: _____° _____' _____"		Longitude: _____° _____' _____"
	Date & Time of Incident (mm/dd/yy): ____ / ____ / ____ : ____ (Military)		
	Type of Product (ie: Medium Crude): _____		API Gravity _____
	Estimated Volume of Release: _____ Barrels or Gallons		
Continues Release Rate: _____ bbls/hr      How Long: _____ hrs.			
WEATHER CONDITIONS	Wind Direction (From the): _____		Wind Speed: _____ MPH or Knots
	Current Direction (Toward): _____		Current Speed: _____ MPH or Knots
	Air Temperature: _____° C or F		Water Temperature: _____° C or F
	High Tide: _____		Low Tide: _____
	Weather Forecast: _____		
OVERFLIGHT INFORMATION	Date & Time of Overflight (mm/dd/yy): ____ / ____ / ____ : ____ (Military)		
	Leading Edge Location:		
	Latitude: _____° _____' _____"		Latitude: _____° _____' _____"
	Trailing Edge Location:		
	Latitude: _____° _____' _____"		Latitude: _____° _____' _____"
	Length: _____ Feet / Yards / Miles		Width: _____ Feet / Yards / Miles
	Slick Appearance (Percent & Estimated Length & Width)		
	Barely Visible: _____% L x W: _____		Silvery: _____% L x W: _____
	Slight Color: _____% L x W: _____		Bright Color: _____% L x W: _____
Dull: _____% L x W: _____		Dark: _____% L x W: _____	
THE RESPONSE GROUP    13231 CHAMPION FOREST DRIVE, SUITE 310    HOUSTON, TX 77069			

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## 11. RESOURCE IDENTIFICATION

### A. Tools to Pre-identify Ecological and Environmental Resources at Risk

Pre-identification of existing resources at risk is a tool which greatly improves the chance of success for initial response efforts. Resources at risk may include but are not limited to the following:

- Marine sensitivities
- Beaches
- Waterfowl
- Shoreline resources
- Marshes
- Marinas/Piers
- Populated areas
- Environmental sensitivities

BP has a number of reference materials available including copies of Area Contingency Plans (ACP's), reference maps, MMS/ESI biological and historical data, and documents identifying sensitive shoreline areas along the Gulf Coast shoreline.

#### 1) Contacting Appropriate Resource Agencies

Refer to **Section 9, Available Technical Expertise**, for information concerning contacting resource agencies.

#### 2) Real-Time Trajectory Modeling

BP will activate The Response Group to run trajectory models in the event of an oil spill release in order to determine shoreline areas with the highest probability of being affected. The Response Group has developed shoreline response guides and other environmental sensitivity maps for the entire Gulf of Mexico area. Additionally, environmental sensitivity data from ACPs, US Fish & Wildlife Service, RPI, NOAA, and departments of Environmental Quality/Protection from adjoining states along the Gulf of Mexico will be consulted as necessary. The above data details information concerning Wildlife Management Area's, wildlife refuges, sanctuaries, and state parks including location, contact, and access information.



### 3) MMS Oil Spill Risk Analysis Model (OSRAM)

The Minerals Management Service Oil Spill Risk Analysis Model (OSRAM) simulates oil spill trajectories based upon input of historical data for oceanic winds and currents. The OSRAM estimates the probability of shoreline impact from a spill originating from a known location within a given amount of travel time. Impact areas will be analyzed for varying degrees of environmental and ecological resource risks.

### 4) State Tools Available

- **All Coastal States**
  - **Area Contingency Plans**  
One Gulf Plan
  - **US Fish & Wildlife Maps**
  - **NOAA ESI Coastal Sensitivity Atlas (Maps)**
- **Texas**
  - **Texas General Land Office Maps - TOOLKIT**  
Oil Spill Planning and Response Atlas  
<http://www.glo.state.tx.us/oilspill/>
- **Louisiana**
  - **Louisiana Oil Spill Coordinators Office – Map Atlas**  
Oil Spill Planning and Response Mapping  
<http://atlas.lsu.edu/>
- **Mississippi & Alabama**
  - **Geographic Specific Tactical Response Plan**  
Mississippi Area GSTRP  
Mobile Area GSTRP  
<http://www.uscg.mil/d8/sectmobile/gstrp/mobile/Playbook3NE.pdf>
- **Florida**
  - **Area Contingency Plans**  
Sector St. Petersburg ACP & Geographic Response Plans  
<http://ocean.floridamarine.org/ACP/STPACP/StartHere.html>



## B. Sensitive Area Identification

### 1. Geographical Areas (See Figure 11-1 for Land Contact Areas)

The following shoreline and near shore geographical areas are generally areas of concern and require consideration for response actions dependent upon weather conditions and other variables:

- Offshore open water areas
- Barrier islands
- Tidal inlets
- Sheltered shorelines
- Exposed shorelines
- Saltwater marshes
- Vegetated shorelines (mangrove swamps, sea grass beds, etc.)
- Sand/mud flats
- Sand beaches

Ideally, responding to an oil spill in open water is preferred to prevent oil from reaching sensitive onshore resources. A damage assessment, which is the basis for all subsequent action will be conducted prior to initial response efforts to evaluate damage and will include the following information:

- Type of oil spilled
- Amount of oil spilled
- Degree to which oil covers vegetation
- Season
- Degree of oil weathering before impact
- Degree to which oil penetrates the sediment surface

### 2. Sensitive Habitats and Species

Environmental Sensitivity Index (ESI) maps identify habitats and assign a priority classification based on the physical and biological character of the different coastal types, which in turn controls the persistence of oil, severity of impact, and ease of cleanup.

Information related to the various shoreline types along with the rankings for the highest priority habitats is shown in **Figure 11-2**. Information derived from databases compiled from case histories of fish, wildlife, and human-use resources considered the most sensitive to oil spills is presented in **Figure 11-3**.



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Regional Oil Spill Response Plan – Gulf of Mexico

Section 11  
Resource  
Identification

The protection of waterfowl and wildlife during the course of an oil release is an essential element in every spill response operation. Federal and state natural resource trustees will be notified in the event that a wildlife habitat may be affected by a spill event. Information concerning methods to protect waterfowl and wildlife is shown in **Figure 13-2**.

For fish and wildlife resources, the emphasis is on habitats where:

- Large numbers of animals are concentrated in small areas, such as bays where waterfowl concentrate during migration or over wintering
- Animals come ashore for birthing, resting, or molting, such as marine mammal haul outs and pupping areas
- Early life stages are present in somewhat restricted areas or in shallow water, such as anadromous fish streams and turtle nesting beaches
- Habitats are very important to specific life stages or migration patterns such as foraging or over wintering
- Specific areas are known to be vital sources for seed or propagation
- The species are on Federal or state threatened or endangered lists
- A significant percentage of the population is likely to be exposed to oil.

Human-use resources of concern are listed as the final elements in **Figure 11-3**. Areas of economic importance, like waterfront hotels, should also be considered when establishing resource protection priorities. Human-use resources are most sensitive when:

- Archaeological and cultural sites are located in the intertidal zones
- Oiling can result in significant commercial losses through fouling, tainting, or avoidance because of public perception of a problem
- The resource is unique, such as a historical site
- Oiling can result in human health concerns, such as tainting of water intakes and/or subsistence fisheries

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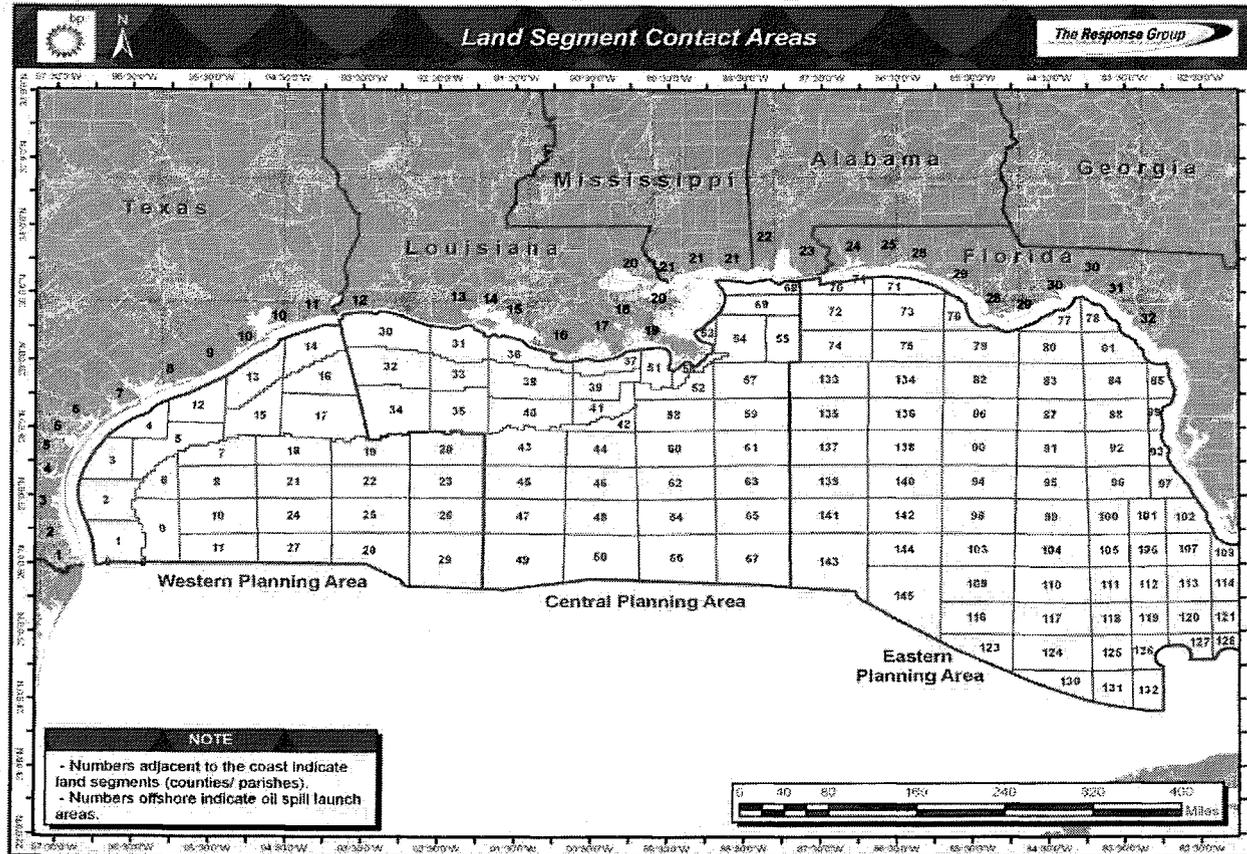


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Regional Oil Spill Response Plan – Gulf of Mexico

Section 11  
Resource  
Identification

**Land Segment Contact Areas and Offshore Launch Block Cross Reference Map**

**Figure 11-1**



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**ESI Shoreline Habitat Rankings**

**Figure 11-2**

Ranked from least (ESI-1) to most (ESI-10) sensitive	
ESI No.	Shoreline Type
1	Exposed rocky cliffs
	Exposed vertical seawalls made of concrete, woods, or metal
2	Exposed wave-cut platforms in bedrock
	Scarps in clay with associated wave-cut platforms
	Exposed bluffs in unconsolidated sediments with associated wave-cut platforms
3	Fine-grained sand beaches
4	Coarse-grained sand beaches
5	Mixed sand and gravel beaches
	Mixed sand and shell beaches
6	Gravel beaches
	Riprap
7	Exposed tidal flats
8	Sheltered vertical rocky shores
	Sheltered bedrock ledges
	Sheltered rubble slopes
	Sheltered solid man-made structures (bulkheads, etc.)
9	Sheltered tidal flats
	Sheltered low banks
10	Salt-water marshes
	Fresh-water marshes (herbaceous vegetation)
	Fresh-water swamps (woody vegetation)
	Mangroves

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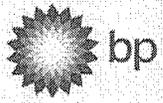
**Sensitive Biological & Human-Use Resources**

**Figure 11-3**

Resource Category	Sub-Category	Comments
<i>Habitats</i>	<i>Shoreline type</i>	<i>ESI or other geomorphological class</i>
	Submerged aquatic vegetation	All types of subtidal grass beds
	Kelp beds	
	Coral reefs	
Worm beds		
<b><i>Fish &amp; Wildlife Resources</i></b>		
Marine Mammals	Whales	Seasonal use areas; migration routes
	Dolphins	Populated concentration areas
	Sea Lions	Haul outs
	Seals	Haul outs
	Sea Otters	Population concentration areas
	Manatees	Population concentration areas
	Walruses	Haul outs
Terrestrial Mammals	Water-associated species (e.g., Otter, Beaver Mink)	Concentrate areas
	Endangered Species	Important habitats as identified by resource agency
Birds	Waterfowl	Nesting/concentration areas; Wintering/migration areas
	Seabirds	Rookeries; wintering concentration areas
	Shorebirds	Nesting sites; migration stopover sites; wintering concentration areas
	Gulls/Terns	Nesting sites
	Raptor	Nest sites; important forage areas
	Other migratory species	Nest sites; important stopover sites; wintering concentration areas; important habitats, as identified by resource agency
Fish	Anadromous fish	Spawning streams
	Beach spawners	Spawning beaches
	Nursery areas	Areas for all near shore species; Areas of unique concentrations

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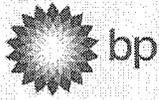
**Sensitive Biological & Human-Use Resources (continued)**

**Figure 11-3**

Resource Category	Sub-Category	Comments
Fish	Endangered species	Import habitats, as identified by resource agency
Shellfish	Mollusk	Seed beds; leased/abundant beds
Crustaceans	Shrimp	Nursery areas
	Crabs	Nursery areas; high concentration sites
	Lobster	Nursery areas; high concentration sites
Reptiles/Amphibians	Water-associated species (e.g., sea turtles, alligators)	Nursery areas: high concentration sites
Plants	Endangered species	Important habitats, as identified by resource agency
<b>Human-Use Resources</b>		
Recreation	Beaches	High-use recreational beaches
	Marinas	
	Boat ramps	
	Diving areas	
	Boating/fishing	High-use recreational areas
	State parks	
Management Areas	Marine sanctuaries & national parks	
	Wildlife refuges	
	Preserves/reserves	Areas of biological concern
Resource	Subsistence	Designated subsistence harvest sites
Extraction	Commercial fisheries	Concentration areas
	Water intakes	Industrial; drinking water; irrigation
	Aquaculture sites	Water intakes/pens/ponds
	Other resource extraction sites(e.g., log storage)	
Cultural	Archaeological sites	
	Native lands	Culturally important sites/reservations
	Historical sites	Water-associated sites

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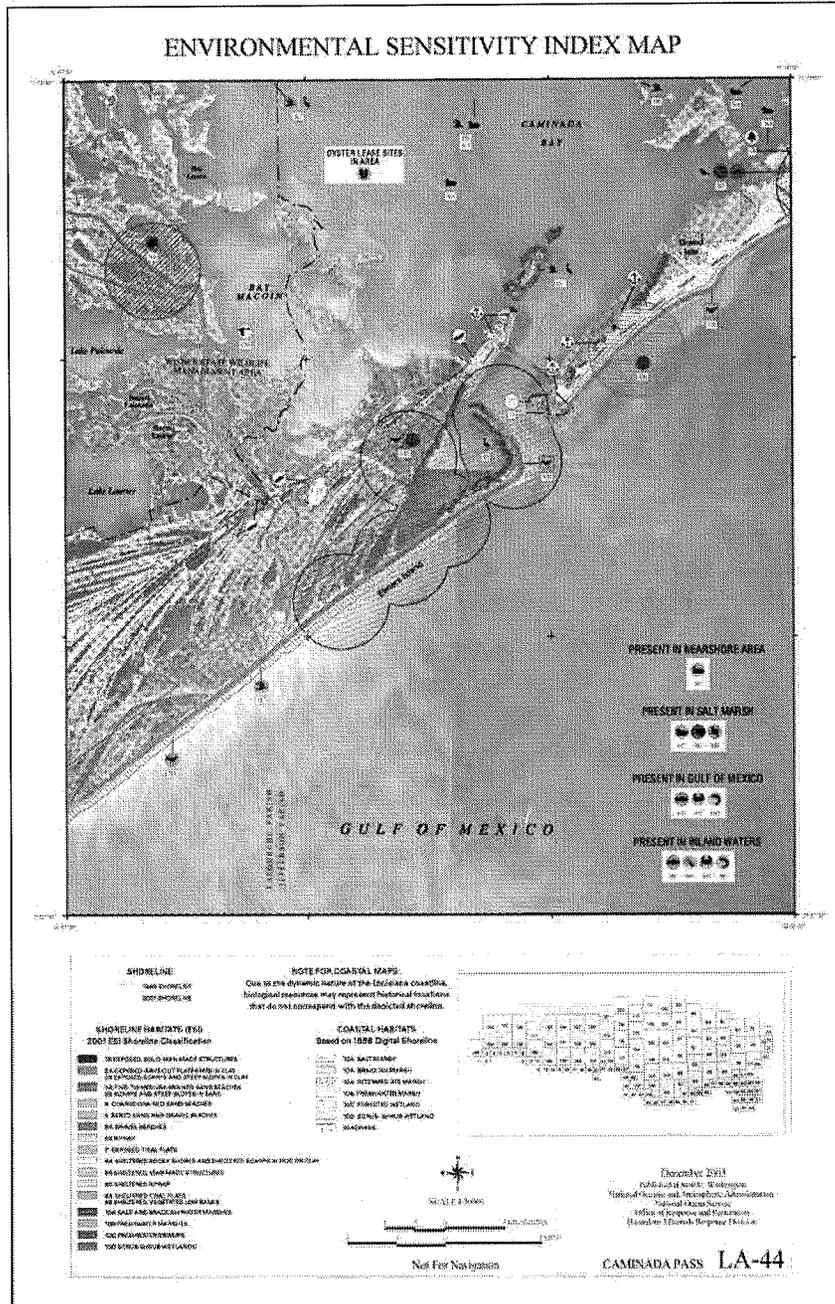


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Section 11  
Resource  
Identification

Example ESI Map / Data

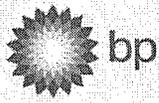
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## 12. STRATEGIC RESPONSE PLANNING

### A. Management by Objectives – Determining Priorities & Strategies

Incident objectives are statements of guidance developed by the Incident Commander/Unified Command to provide the necessary direction to Operations & Planning to determine the appropriate strategies and the tactical direction of resources. They are based on realistic assumptions and expectations of what can be accomplished when all allocated resources have been effectively deployed. Incident objectives must be achievable and measurable, yet flexible enough to allow for strategic and tactical alternatives. For information concerning the development of goals, objectives, and strategies refer to **Figure 12-1**.

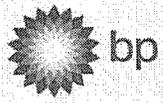
Incident strategies involve the general plan or direction selected to accomplish incident objectives.
Incident tactics relate to deploying and directing resources during an incident to accomplish the desired objective.
Unified Command objectives consider the plan of action in priority order.
Planning and Operations strategies describe how to plan for the accomplishment of the objectives.
Operations tactics describes how to use resources during each operational period to implement strategies.

### B. Typical Objectives and Response Strategies/Tactics

It is essential to establish incident objectives and strategies as soon as possible in order to mitigate spill consequences. Examples of typical response objectives and strategies may be reviewed in **Figure 12-2**.

### C. ICS Planning Cycle

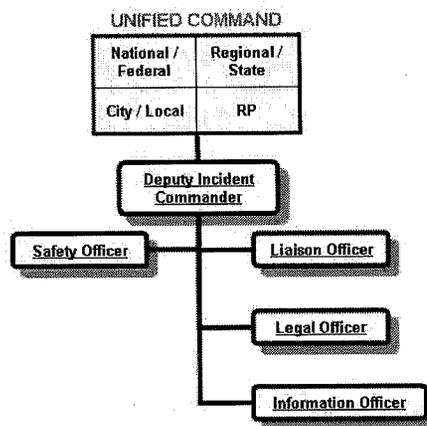
The Incident Commander is responsible for setting the operational period as well as scheduling various meetings and shift schedules. It should be noted that short term responses may be coordinated by using ICS 201 Forms. The Planning Cycle Matrix presented in **Figure 12-3** illustrates a typical planning cycle time period from setting objectives to IAP approval.



**D. Best Response Concept**

Best Response depends on the best efforts of the three components of the National Response System.

1. **Companies** - those responsible for producing, handling, storing, and transporting oil and hazardous materials, and for arranging for mitigation of an accidental discharge or release;
2. **Contractors** - those who carry out response and cleanup in the event of a discharge or release; and
3. **Government** - those Federal, state, and local agencies with oversight responsibility for the safe handling of oil and hazardous materials and for ensuring protection of the public and the environment in the event of a discharge or release.



- Unified Command (UC) Representatives must be able to:**
- ✓ Agree on common incident objectives and priorities;
  - ✓ Have the capability to sustain a 24-hour/7-day/week commitment to the incident;
  - ✓ Have the authority to commit agency or company resources to the incident;
  - ✓ Have the authority to spend agency or company funds;
  - ✓ Agree on an incident response organization;
  - ✓ Agree on the appropriate Command and General Staff position assignments to ensure clear direction for on-scene tactical resources;
  - ✓ Commit to speak with "one voice" through the IO or JIC, if established;
  - ✓ Agree on logistical support procedures; and
  - ✓ Agree on cost-sharing procedures, as appropriate
- It is important to note that participation in a UC occurs without any agency abdicating authority, responsibility or accountability.

Best Response protects our national interests. Each component must act responsibly, effectively, and cooperatively to accomplish the shared goal of minimizing the consequences of pollution incidents. Finally, Best Response demands that a response community build an ability to measure its own capability to achieve success. To do this kind of self-assessment the community must be able to recognize success.

Figure 12-3c illustrates the relationship between the planning cycle and concepts of best response.

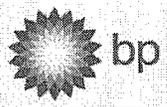


**Response Strategy Matrix**

**Figure 12-1**

The checklist and matrix below will assist in developing goals, objectives, and strategies.

Step	Action																						
1	Use the matrix below to assist in developing objectives and priorities. Priorities are situation dependent and influenced by many factors. Safety of life is always the highest priority. Concerns may or may not be present. Concerns should be considered in every incident.																						
	<table border="1"> <thead> <tr> <th align="center">Concerns</th> <th align="center">Issues</th> <th align="center">Criteria to Meet</th> </tr> </thead> <tbody> <tr> <td rowspan="4">People/Public</td> <td>General safety exposure</td> <td rowspan="14">Overall objectives must be:  <b>Attainable</b> <b>Measurable</b> <b>Flexible</b>  Operational objectives must be:  <b>Specific</b> <b>Measurable</b> <b>Assignable</b> <b>Reasonable</b> <b>Time Specific</b></td> </tr> <tr> <td>Personal Protective Equipment</td> </tr> <tr> <td>Slips, trips, falls, drowning</td> </tr> <tr> <td>Reaction/Perception</td> </tr> <tr> <td rowspan="3">Environment</td> <td>Sensitive Areas</td> </tr> <tr> <td>Special interests</td> </tr> <tr> <td>Resources at risk</td> </tr> <tr> <td rowspan="4">Property</td> <td>Fire</td> </tr> <tr> <td>Contamination</td> </tr> <tr> <td>Flooding</td> </tr> <tr> <td>Source Control</td> </tr> <tr> <td rowspan="3">Economic</td> <td>Industry</td> </tr> <tr> <td>Tourism</td> </tr> <tr> <td>Stakeholders</td> </tr> </tbody> </table>	Concerns	Issues	Criteria to Meet	People/Public	General safety exposure	Overall objectives must be:  <b>Attainable</b> <b>Measurable</b> <b>Flexible</b>  Operational objectives must be:  <b>Specific</b> <b>Measurable</b> <b>Assignable</b> <b>Reasonable</b> <b>Time Specific</b>	Personal Protective Equipment	Slips, trips, falls, drowning	Reaction/Perception	Environment	Sensitive Areas	Special interests	Resources at risk	Property	Fire	Contamination	Flooding	Source Control	Economic	Industry	Tourism	Stakeholders
	Concerns	Issues	Criteria to Meet																				
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		Reaction/Perception																					
	Environment	Sensitive Areas																					
		Special interests																					
		Resources at risk																					
	Property	Fire																					
		Contamination																					
		Flooding																					
		Source Control																					
Economic	Industry																						
	Tourism																						
	Stakeholders																						
2	Provide guidance to Command and general staff on goals, objectives and strategies																						
3	Develop the general objectives for the IAP																						
4	Approve and authorize implementation of the IAP for each operational period.																						
5	Approve the internal and external information dissemination strategy developed by the Information Officer (IO).  <i>Examples: web pages, emails to media/other agencies/supervisors/ stakeholders</i>  Note: The IC should emphasize the role that the IO plays in keeping the members of the response organization informed as well as the press and stakeholders.																						



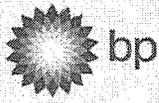
**Response Objectives & Strategies**

**Figure 12-2**

<b>Strategic Objective VS Tactical Objective</b>	
<b>INCIDENT OBJECTIVES</b> – Statements of guidance and direction necessary for the selection of appropriate strategies, and the tactical direction of resources. Incident objectives are based on realistic expectations of what can be accomplished when all allocated resources have been effectively deployed. Incident objectives must be achievable and measurable, yet flexible enough to allow for strategic and tactical alternatives.	
<b>STRATEGIES</b> – The general plan or direction selected to accomplish incident objectives.	
<b>TACTICS</b> – Deploying and directing resources during an incident to accomplish the desired objective.	
<b>OBJECTIVES (Unified Command)</b> = What you plan to do in priority order.	
<b>STRATEGIES (Planning &amp; Operations)</b> = How you plan to accomplish objectives.	
<b>TACTICS (Operations)</b> = How you use resources during each operational period to implement strategies.	
Objectives (Strategic) What you plan to do in priority order	Strategies (Tactical) How do you plan to accomplish objectives
1. Ensure the Safety of Citizens & Response Personnel	<ul style="list-style-type: none"> <li>• Identify hazard(s) of released material</li> <li>• Establish site control (hot zone, warm zone, cold zone and security)</li> <li>• Consider evacuations as needed</li> <li>• Setup first aid/triage stations</li> <li>• Establish vessel and/or aircraft restrictions</li> <li>• Monitor air in impacted areas</li> <li>• Setup decontamination stations</li> <li>• Develop site safety and health plan for response personnel</li> <li>• Ensure safety briefings are conducted</li> </ul>
2. Control the Source	<ul style="list-style-type: none"> <li>• Complete emergency shutdown</li> <li>• Conduct firefighting</li> <li>• Initiate temporary repairs</li> <li>• Transfer and/or lighter product</li> <li>• Conduct salvage operations as necessary</li> </ul>

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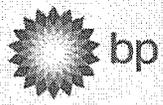
**Response Objectives & Strategies (continued)**

**Figure 12-2**

Objectives (Strategic) What you plan to do in priority order	Strategies (Tactical) How do you plan to accomplish objectives
3. Manage Coordinated Response Efforts	<ul style="list-style-type: none"> <li>• Complete or confirm notifications</li> <li>• Establish a unified command organization and facilities (command post, etc)</li> <li>• Ensure local &amp; tribal officials are included in response organization</li> <li>• Initiate emergency response Incident Action Plan (IAP)</li> <li>• Ensure mobilization and tracking of response resources</li> <li>• Account for personnel and equipment</li> <li>• Complete documentation</li> <li>• Evaluate planned response objectives vs. actual response (debrief)</li> </ul>
4. Maximize Protection of Environmentally Sensitive Areas	<ul style="list-style-type: none"> <li>• Implement pre-designated response strategies</li> <li>• Identify resources at risk in impacted and potential impacted areas</li> <li>• Track pollutant movement &amp; develop trajectories/plume modeling</li> <li>• Develop/implement appropriate protection tactics</li> <li>• Prioritize sensitive areas to be protected</li> </ul>
5. Contain and Recover Spilled Material	<ul style="list-style-type: none"> <li>• Deploy oil containment boom at the spill source</li> <li>• Deploy containment boom at appropriate collection areas</li> <li>• Conduct open water skimming with vessels</li> <li>• Evaluate time-sensitive response strategies ( i.e., dispersants, <i>in-situ</i> burning)</li> <li>• Develop disposal plan</li> </ul>
6. Recover and Rehabilitate Injured Wildlife	<ul style="list-style-type: none"> <li>• Establish oiled wildlife reporting hotline</li> <li>• Conduct injured wildlife search and rescue operations</li> <li>• Notify wildlife agencies and accredited wildlife rescue services</li> <li>• Setup primary care unit for injured wildlife</li> <li>• Operate wildlife rehabilitation center</li> <li>• Initiate citizen volunteer effort for oiled bird rehabilitation</li> </ul>
7. Remove Oil from Impacted Areas	<ul style="list-style-type: none"> <li>• Conduct appropriate shoreline cleanup efforts</li> <li>• Clean oiled structures (piers, docks, etc.)</li> <li>• Clean oiled vessels</li> </ul>
8. Minimize Economic Impacts	<ul style="list-style-type: none"> <li>• Consider tourism, vessel movements and local economic impacts throughout response</li> <li>• Protect public and private assets as resources permit</li> <li>• Establish damage claims process</li> </ul>

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**Response Objectives & Strategies (continued)**

**Figure 12-2**

Objectives (Strategic) What you plan to do in priority order	Strategies (Tactical) How do you plan to accomplish objectives
9. Keep Stakeholders Informed of Response Activities	<ul style="list-style-type: none"> <li>• Provide forum to obtain stakeholder input and concerns</li> <li>• Provide stakeholders with details of response actions</li> <li>• Identify stakeholder concerns and issues and address as practical</li> <li>• Provide elected officials details of response actions</li> </ul>
10. Keep the Public Informed of Response Activities	<ul style="list-style-type: none"> <li>• Provide timely safety announcements</li> <li>• Establish a Joint Information Center (JIC)</li> <li>• Conduct regular news briefings</li> <li>• Manage news media access to spill response activities</li> <li>• Conduct public meetings as appropriate</li> </ul>
11. Minimize Business Interruption	<ul style="list-style-type: none"> <li>• Identify business interruption and potential business interruption issues</li> <li>• Notification of joint venture partners</li> <li>• Assist with internal/external investigations</li> </ul>

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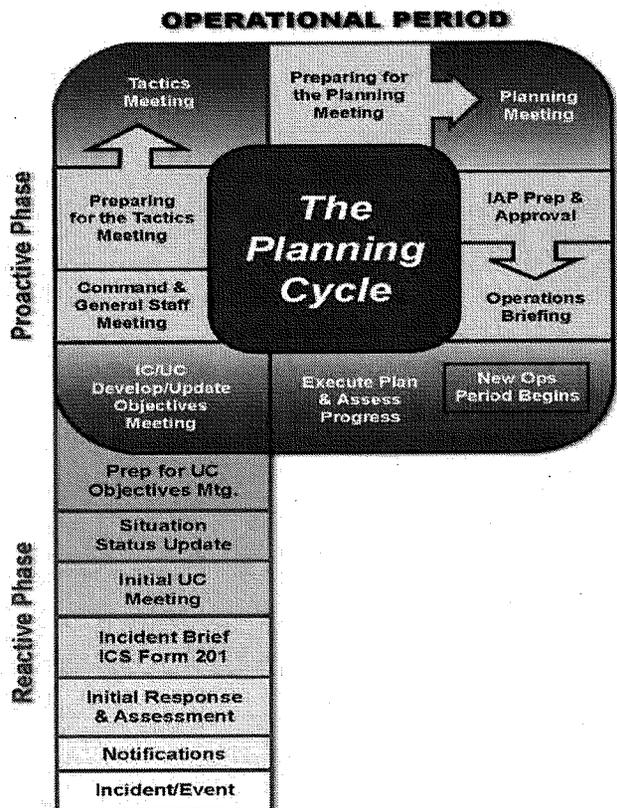
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**Planning Cycle Matrix – Planning “P”** **Figure 12-3a**

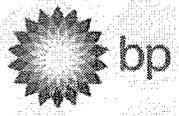
This Incident Action Plan (IAP) development process should follow the planning cycle below and the ICS 201 briefing forms will serve as the first IAP. The Planning Section Chief is responsible for ensuring the IC understands the planning cycle and the time needed to produce the IAP. The IC/UC must set objectives early in the planning cycle during the IC/UC Objectives Meeting in order for the IAP process to be successful. The meeting schedule for the first cycle may vary significantly based on incident complexity and length of operational period.

1. **Incident Brief ICS Form 201** – Documentation of the initial response using ICS 201 forms.
2. **Initial Unified Command Meeting** - Provides UC officials with an opportunity to discuss and concur on important issues prior to the Command and General Staff Meeting.
3. **IC/UC Objectives Meeting** - The UC will identify/review and prioritize incident objectives.
4. **Command & General Staff Meeting** - IC/UC will present their decisions and management direction (Objectives) to the Command and General Staff Members.
5. **Tactics Meeting** – Operations & Planning will outline work assignments (tactics) and required resources to accomplish objectives using ICS 215.
6. **Planning Meeting** - This meeting provides an overview of the tactical plan to achieve commands current direction, priorities and objectives to the Unified Command.
7. **IAP Approval Meeting** – Meeting to permit timely IC/UC review and approval of the Incident Action Plan.
8. **Operations Briefing** - Briefing to present the IAP to the Operations Section oncoming shift supervisors for implementation in the field.



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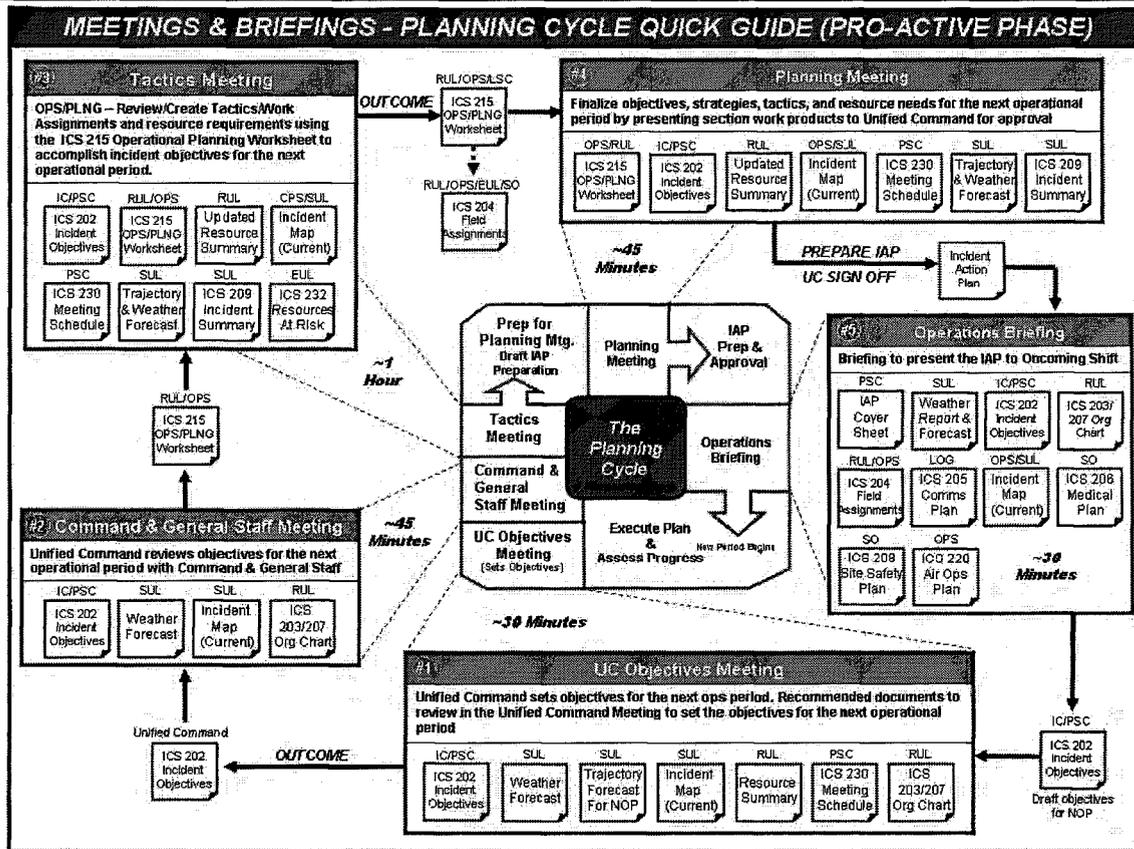
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Strategic  
Response  
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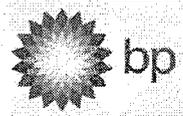
Planning Cycle Matrix – Planning Cycle

Figure 12-3b



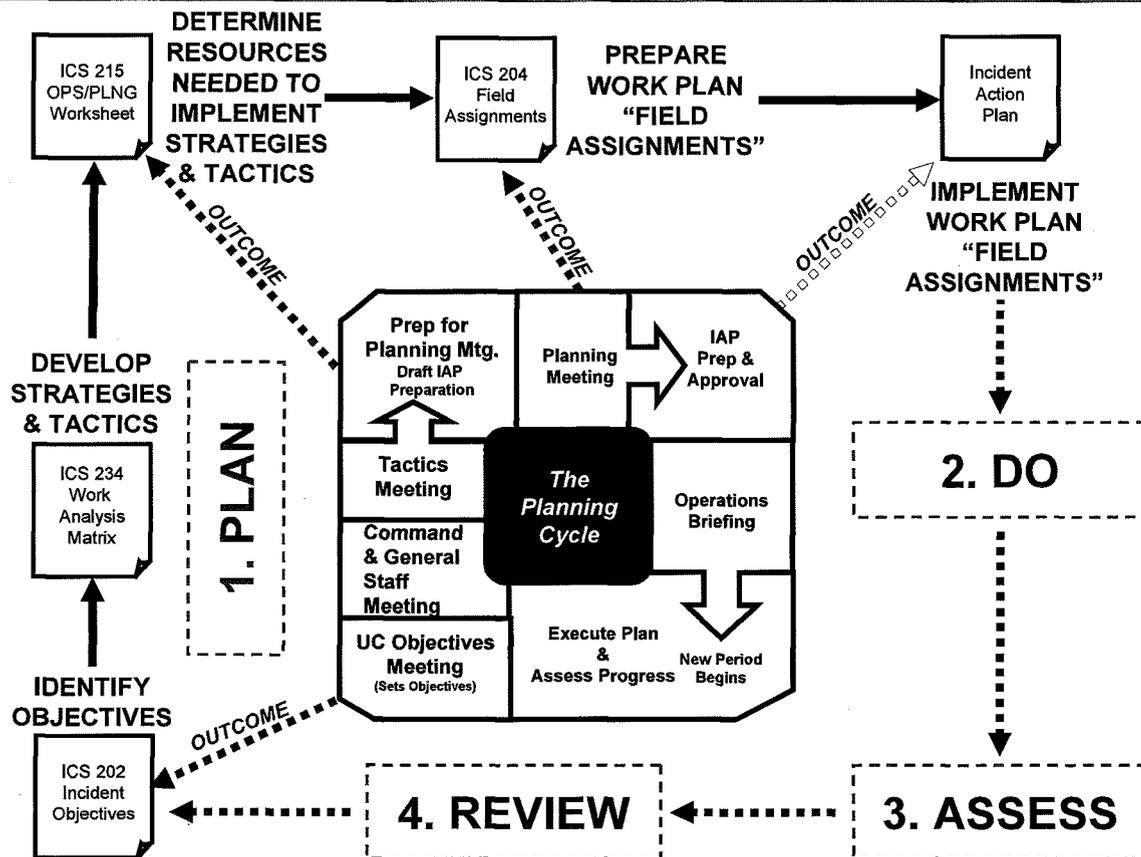
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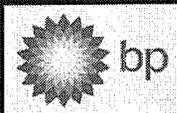
Planning Cycle Matrix – Best Response/Planning Cycle Integration

Figure 12-3c



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### 13. RESOURCE PROTECTION METHODS

The waters of the Gulf of Mexico are ecologically rich and are used for recreation, fishing, bird migration, wildlife refuge, state parks, etc. Conversely, the same waters contain highly industrialized areas, oil transfer facilities, water intakes, and oil and chemical transfers by barge and deep-draft vessels. Plants, marine life, and animals that inhabit this environment are in a delicate state of balance under natural conditions. The introduction of oil into the environment may disrupt this balance. Therefore, it is vital to protect environmentally sensitive areas from the harmful effects of an oil release. Many of the organisms living in the Gulf have a limited ability to cope with changes in their environment. Therefore, it is important to keep spills contained in open water and minimize shoreline exposure to the extent possible.

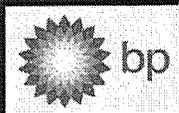
The focus of response efforts will be to protect human life and health, sensitive environmental and ecological areas, and economic entities. Recommended practical steps to take toward achieving these efforts are:

•	Stop further pollution at the source
•	Contain the pollutant discharge released
•	Remove the product

#### A. Shoreline Protection Methods – Offshore/ Nearshore/Shoreline

In the event that open water techniques do not recover or remove all of the oil, plans will be developed by the Operations & Planning sections to implement shoreline protection strategies. These strategies will be used to protect marine and shoreline resources and areas of special environmental or economical importance as identified in the ACP and the Shoreline Response Guides developed by The Response Group. Offshore/Shoreline protection methods are detailed in Figure 13-1 & 13-2.

If shoreline/nearshore areas are to be impacted, it might be viable to take advantage of natural collection areas. These are areas where a released substance will accumulate with limited assistance from human intervention. Some such areas might include (but are not limited to): sand bars, land cuts, solid piers and debris piles. Generally, if these areas are accessible to removal equipment, they provide a convenient and economical location for recovery.



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Regional Oil Spill Response Plan – Gulf of Mexico

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## **B. Waterfowl and Wildlife Protection**

Anytime oil is spilled on water, methods to protect waterfowl and wildlife will be considered. Although these methods may be used in open waters, a considerable amount of effort will be spent providing waterfowl and wildlife protection in their living habitats along shorelines and natural nesting areas. Some of the methods that will be considered for waterfowl and wildlife protection are detailed in **Figure 13-3**.

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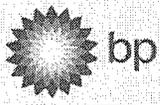
**Offshore/Shoreline Protection Methods**

**Figure 13-1**

Method	Applicability	Limitations
<b>Protection/Exclusion Booming</b>	Used to exclude the spill from impacting a sensitive resource. Various techniques may be used depending on the conditions at the time of the incident.	Can be successful in excluding all types of oil in water sea states of 0-3 feet. Used in all sizes of spills.
<b>Containment Booming ("V", "J", "U", &amp; Teardrop)</b>	Used to contain or trap oil to prevent further spreading. Various techniques may be used depending on the conditions at the time of the incident.	Can be successful in containing all types of oil in water sea states of 0-3 feet. Used in all sizes of spills.
<b>Diversion Booming</b>	Boom deployed at an angle to approaching slick to divert oil from entering waterways, canals, water intakes or other environmental sensitive areas.	Wave heights less than 1ft. protects shoreline resources (i.e., tidal inlets, salt marshes, sand/mudflats, et c.). Used in all sizes of spills.
<b>Sorbent Booming &amp; Padding</b>	Used to protect sensitive areas or collect oil in calm water. Also used in conjunction with hard boom at recovery or natural collection sites to prevent sheen and recover oil. Can also be used to contain & recover oil in shallow tidal and marsh areas (passive recovery).	Used mainly in calm waters. Can absorb all types of oil.
<b>Chemical Dispersion</b>	Application of chemical to disperse oil from surface into suspension in the water column. May be applied by airplane or boat. Requires regulatory agency approval.	Limited by weather conditions, thickness and volatility of oil. Must be conducted within first several hours of spill.
<b>Mechanical Diversion</b>	Pumps can be used to spray water at spills to direct oil to desired areas for collection or away from areas to be protected.	Used mainly in calm waters on small spills. Can be used on all types of oils.
<b>Mechanical Recovery</b>	Oil spill I.D. boats and skimming systems with various containment booming methods. Shallow water vessels and skimming systems used to recover oil collected by various containment booming methods.	Can be successful in removing all types of oil from water in sea states of 0-3. Used in all sizes of spills.

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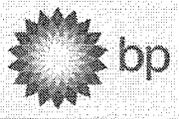
**Offshore/Shoreline Protection Methods (continued)**

**Figure 13-1**

<b>Method</b>	<b>Applicability</b>	<b>Limitations</b>
<i><b>In-Situ Burning</b></i>	Burning oil to prevent spreading	Limited by weather conditions, thickness and volatility of oil. Must be conducted within first several hours of spill.
<i><b>Natural Dispersion</b></i>	Allow natural elements (i.e., wave action, evaporation, etc.) to remove oil from water.	No limitations. Used in circumstances of small and large spills that pose no threat to sensitive areas.

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Section 13  
Resource  
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Methods

**Protection Methods Versus Physical Setting**

**Figure 13-2**

<b>Physical Resources</b>	<b>Oil Recovery</b>		<b>Floating Barriers</b>					<b>Solid Barriers</b>					<b>Other</b>			
	<b>Open-Water Skimming</b>	<b>Netting</b>	<b>Shallow water Boom</b>	<b>Inland Boom</b>	<b>Harbor Boom</b>	<b>Open-Water Boom</b>	<b>Sorbent Boom</b>	<b>Earthen Barrier</b>	<b>Underflow Dam</b>	<b>Overflow Dam</b>	<b>Trench</b>	<b>Flowgate</b>	<b>Locks</b>	<b>Air/Water Streams</b>	<b>Bubble Barriers</b>	<b>Improvised Barrier</b>
<b>Open-Water</b>	V	C	-	-	C	V	-	-	-	-	-	-	-	-	-	-
<b>Open Exposed Shoreline</b>	V	C	-	-	C	V	-	C	-	-	C	-	-	-	-	-
<b>Sheltered Shoreline</b>	C	C	C	V	C	C	-	V	-	-	C	V	-	C	C	C
<b>Rivers and Banks</b>	C	-	V	V	C	-	-	C	-	-	C	-	C	-	-	C
<b>Entrances</b>	V	C	-	C	V	V	-	-	-	-	C	-	-	-	-	-
<b>Salt Water Marshes and Creek Mouths</b>	-	-	V	C	-	-	C	V	C	C	C	C	-	-	-	V
<b>Freshwater Marshes and Swamps</b>	-	-	V	C	-	-	C	C	C	-	C	-	-	-	-	C
<b>Tidal Inlets</b>	C	-	V	C	C	-	-	C	-	-	-	-	-	-	-	-
<b>Intermittent Creeks</b>	-	-	V	C	-	-	C	V	C	C	C	C	-	-	-	V
<b>Streams</b>	-	-	V	C	-	-	C	C	C	C	C	-	-	-	-	C
<b>Vegetated Shorelines</b>	-	-	C	V	C	-	C	-	-	-	-	-	-	-	-	-

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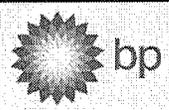
**Protection Methods Versus Physical Setting (continued)**

**Figure 13-2**

<b>Physical Resources</b>	<b>Oil Recovery</b>		<b>Floating Barriers</b>					<b>Solid Barriers</b>					<b>Other</b>			
	<b>Open-Water Skimming</b>	<b>Netting</b>	<b>Shallow water Boom</b>	<b>Inland Boom</b>	<b>Harbor Boom</b>	<b>Open-Water Boom</b>	<b>Sorbent Boom</b>	<b>Earthen Barrier</b>	<b>Underflow Dam</b>	<b>Overflow Dam</b>	<b>Trench</b>	<b>Flowgate</b>	<b>Locks</b>	<b>Air/Water Streams</b>	<b>Bubble Barriers</b>	<b>Improvised Barrier</b>
V = Viable Method C = Conditional Method - = Not Applicable																
<b>Sand/Mud Flats</b>	C	-	V	C	C	-	C	C	-	-	-	-	-	-	-	C
<b>Submerged Habitats and Resources</b>	C	-	C	C	C	C	-	-	-	-	-	-	-	-	-	C

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**Protection-Methods for Waterfowl And Wildlife**

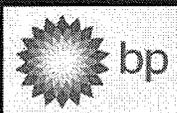
**Figure 13-3**

<b>Method</b>	<b>Applicability</b>	<b>Limitations</b>
<b>Noise Devices (propane cannons, guns, alarms, horns, etc.)</b>	Devices used to provide noise to keep birds away from impact areas may be used onboard boats or at shorelines	Long term use reduces results. Birds/wildlife may become acclimated to sound; not practical in nesting areas.
<b>Vehicles and Boats</b>	Noise from motors and horns may keep birds and wildlife away from impact areas.	Limited use in shoreline areas; not practical in nesting areas.
<b>Over flights</b>	Noise from airplanes and helicopters may keep birds and wildlife away from impact areas.	Limited by weather conditions; not practical in nesting areas.
<b>Fencing and Netting</b>	Fencing and netting may be placed around impact areas to keep nestlings from entering.	Limited to areas accessible for fencing and netting
<b>Remove Sea Turtle Nests</b>	Remove nests from impact areas within 2 days	Element of time is essential
<b>Notify spill response personnel in boats to watch for manatees</b>	Conduct safety meeting to discuss safety issues concerning wildlife including manatees	Poor light & inclement weather conditions
<b>Helium filled balloons stationary figures</b>	Place balloons & figures in impact areas	
<b>Play recorded sounds of alarmed birds</b>	Play recorded sounds of alarmed birds in impact areas	

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## **14. MOBILIZATION AND DEPLOYMENT METHODS**

### **A. Overview**

BP puts emphasis on a rapid response to releases of all sizes through a coordinated effort by company Spill Management Team members, government agencies, OSRO's, and other associated support services. Pre-planned response objectives and strategies have been developed and are used in training to ensure an effective and timely response to an oil spill of any magnitude.

### **B. General Response Strategy**

Upon notification of a major oil release from a BP facility or operation in the Gulf of Mexico, BP response personnel will make the initial notifications to all involved government agencies, OSRO's, and associated support services.

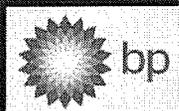
BP has a contract in effect with National Response Corporation (NRC) and Marine Spill Response Corporation (MSRC) as well as other OSRO's, to ensure availability of personnel, services, and equipment on a 24 hour per day basis. The OSRO's can provide personnel, equipment, and materials in sufficient quantities and recovery capacity to respond effectively to oil spills from the facilities and leases covered by this plan, including the worst case discharge scenarios. The list of Oil Spill Removal Organizations (OSRO's) may be reviewed in **Figure 7-7**. NRC has oil spill response equipment located throughout the Gulf Coast area. Much of the equipment is in road-ready condition and available to be transported on short notice to the nearest predetermined staging areas(s). The "road-ready condition" ensures the shortest possible response times for transporting equipment to the staging areas. Major equipment locations for NRC can be found in **Figure 14-1**.

Response times for NRC Vessel of Opportunity Skimming Systems (VOSS) from various locations in their area of coverage are illustrated in the following maps and schedules. The response times used to calculate the ETA of the skimming vessels include the following criteria:

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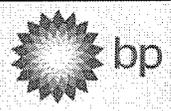


<ul style="list-style-type: none"> <li>•</li> </ul>	<p><b>Procurement Time</b> Time required after “Authorization to Proceed” is received to assemble response equipment and operation personnel, load the needed/ requested equipment, and prepare to get underway toward the spill event.</p> <p>A two (2) hour procurement time has been factored in to the travel for the land based VOSS packages. A four (4) hour procurement of Supplemental Offshore Vessels and Portable Storage Tanks will be achieved during the land transport of the VOSS units. This is seldom a limiting factor in the actual response.</p>
<ul style="list-style-type: none"> <li>•</li> </ul>	<p><b>Load-out Time</b> The time required to transfer the response equipment to a Supplemental Offshore Vessel of opportunity for carriage to the spill site.</p> <p>A two (2) hour load-out time must be added to the tables as the time needed to transfer VOSS packages and Storage Tanks to the Supplemental Offshore Vessels.</p>
<ul style="list-style-type: none"> <li>•</li> </ul>	<p><b>Travel Time</b> This is the over-the-road time calculated according to the Planning standards mandated by OPA-90. It includes an average speed of 35 miles per hour in a straight line over the road. Water based travel is calculated using 8 knots for barges and 12 knots for vessels.</p>

The maps illustrated in **Figure 14-2** indicate travel distances from various staging areas in increments of 6 and 12 hours. **Figure 14-3** details estimated travel times between equipment locations and staging areas (For both land and water travel).

**C. Transportation of Personnel, Equipment and Resources**

The mobilization and deployment of personnel, equipment, and materials to predetermined staging areas in an expedient manner is essential to the success of the spill response operation. In the event of a substantial oil release into Gulf waters, BP, in cooperation with state police officials, will establish “protected” land routes in an effort to minimize traffic congestion during the movement of personnel, equipment, and materials to staging areas. “Protected” land routes may also be considered for transporting accumulated waste (i.e., oil debris, sorbents, etc.) from collection areas to designated waste management, treatment, and/or disposal sites.



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Transportation resources will include trucking, marine vessels, and aircraft (fixed wing and rotor). Trucking types may include vacuum trucks, flatbeds, pickups, semi-tractor trailers, etc. Aircraft will include airplanes, helicopters and se a planes. Marine vessels will include I.D. boats, tug boats, utility vessels, sh allow water bar ges, c rew boats, johnboats, et c. A co mplete l isting o f transportation resources can be found in **Appendix F** to support land, air, and water transportation support during an emergency.

**D. Staging Area List**

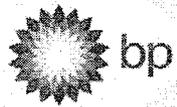
In the event of a spill in Gulf waters, BP and the primary OSROs will identify one or more onshore staging ar eas based on sp ill l ocation and di rection o f sp ill m ovement. Staging ar eas m ay b e moved to alternate l ocations during the course of the response as conditions change (i.e., wind, current, etc.). Ideally, staging areas will have a dequate parking, access to water (boat ramps, cranes, etc.), lighting, telephones, potable water, restrooms and building(s), as well as having a short route to the spill area(s).

BP has pre-identified staging areas along the Gulf Coast to expedite the process of identifying staging areas during an incident response. For a complete list, see **Figure 14-5**.

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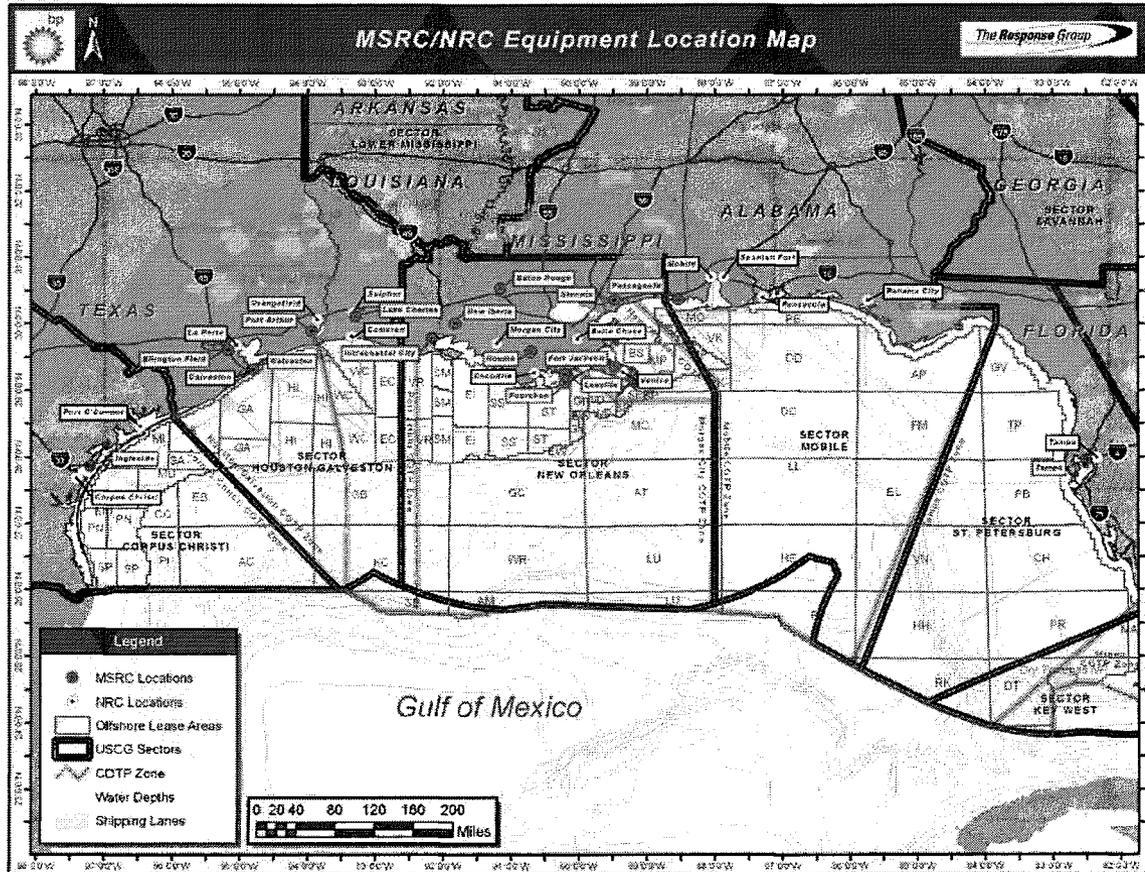


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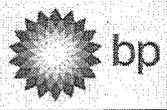
**MSRC / NRC Equipment Location Map**

**Figure 14-1**



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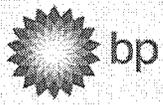
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**Pre-Staged Equipment & Gulf Coast Staging Area Transit Times Cross-Reference (Water) Figure 14-2**

Equipment Pre-Staged Location	Gulf Coast Staging Areas (With transit time in hours)									
	Aransas Pass, TX	Port O'Connor, TX	Freeport, TX	Galveston, TX	Sabine Pass, TX	Cameron, LA	Morgan City, LA	Grand Isle, LA	Venice, LA	Theodore, AL
Corpus Christi, TX	1	7	6	7	8	10	13	15	16	19.5
La Porte, TX	7	2	4	3	4	5	8.5	11	12	14
Orangefield, TX	9	4	5.5	4	2.5	3	7	9	10	12
Sulphur, LA	12	7.5	8	7	5.5	4.5	4	6	7	9
Morgan City, LA	13.5	9	10	10	7	6	2	5	6	7
O'Fallon, MO	26	21	23	22	21	20	20	20	21	19
Ellisville, MO	26	21	22.5	22	20.5	20	20	20.5	20.5	18
Memphis, TN	31	26.5	27	26	24	23	20	18	17	14.5
Belle Chasse, LA	15	11	11.5	10	8	7.5	4	3	3.5	5.5
Spanish Fort, AL	19	14	15	14	12	11.5	8	6.5	6	2
Paducah, KY	25	20	21.5	20.5	19	18	17	18	17.5	15
Pensacola, FL	20	16	16	15	13	12.5	9	7	6.5	3
Panama City, FL	22	18	18.5	17.5	16	15	11	9	8	6
Tampa, FL	27.5	24	24.5	23.5	22	21	17.5	15	14	13
Jacksonville, FL	29.5	25.5	26	24	23	22	19	17	16	13.5
Savannah, GA	30.5	26	27	26	24	23	20	18	17	14
Fort Lauderdale, FL	45.5	44	41	40	36.5	35.5	31	31.5	30.5	24
Houma, LA	10	9	10	9.5	7.5	7	3	4.5	5	5.5
Lake Charles, LA	9	7	6	5	4	4	5	8	8	8
Galveston, TX	7	6.5	3.5	2	4.5	7	8.5	8.5	9	9

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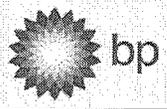
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**Pre-Staged Equipment & Gulf Coast Staging Area Transit Times Cross-Reference (Land) Figure 14-3**

Equipment Pre- Staged Location	Aransas Pass, TX	Port O'Connor, TX	Freeport, TX	Galveston, TX	Sabine Pass, TX	Cameron, LA	Morgan City, LA	Grand Isle, LA	Venice, LA	Theodore, AL
	Gulf Coast Staging Areas (With transit time in hours)									
Corpus Christi, TX	1 (21 mi)	3 (97.4 mi)	6 (178 mi)	8 (250 mi)	10 (306 mi)	11 (342 mi)	16 (493 mi)	20 (597 mi)	21 (630 mi)	22 (662 mi)
La Porte, TX	7 (222 mi)	6 (173 mi)	2 (62.6 mi)	1 (37.7 mi)	1 (85.4)	4 (121 mi)	9 (272 mi)	12.5 (376 mi)	14 (409 mi)	15 (442 mi)
Orangefield, TX	10 (311 mi)	9 (261 mi)	6 (171 mi)	5 (143 mi)	1 (32.1 mi)	2 (67.9 mi)	6 (185 mi)	10 (289 mi)	11 (322 mi)	12 (355 mi)
Sulphur, LA	11 (335 mi)	9.5 (286 mi)	6.5 (196 mi)	6 (168 mi)	2 (64.4 mi)	1.5 (47.8 mi)	5 (154 mi)	9 (258 mi)	10 (291 mi)	11 (324 mi)
Morgan City, LA	16 (487 mi)	14.5 (437 mi)	11.5 (347 mi)	11 (319 mi)	7 (216 mi)	5 (157 mi)	0 (105 mi)	3.5 (151 mi)	5 (151 mi)	7 (212 mi)
O'Fallon, MO	37 (1,115 mi)	34.5 (1,033 mi)	34.5 (944 mi)	31 (931 mi)	29 (884 mi)	28 (853 mi)	25 (753 mi)	26 (777 mi)	26 (774 mi)	23.5 (705 mi)
Ellisville, MO	37 (1,098 mi)	34 (1,015 mi)	31 (927 mi)	30 (913 mi)	29 (866 mi)	28 (836 mi)	24.5 (735 mi)	25.5 (760 mi)	25 (756 mi)	23 (687 mi)
Memphis, TN	28 (851 mi)	27 (801 mi)	24 (711 mi)	23 (683 mi)	19 (580 mi)	18 (549 mi)	15 (449 mi)	16 (473 mi)	16 (470 mi)	13.5 (401 mi)
Belle Chasse, LA	19 (559 mi)	17 (509 mi)	14 (419 mi)	13 (391 mi)	10 (288 mi)	8.5 (257 mi)	1 (94.5 mi)	4 (119 mi)	2 (65.1 mi)	5 (142 mi)
Spanish Fort, AL	23 (678 mi)	21 (629 mi)	18 (539 mi)	17 (510 mi)	13.5 (407 mi)	12.5 (377 mi)	8 (234 mi)	9 (258 mi)	8 (229 mi)	1 (23.8 mi)
Paducah, KY	36 (1,069 mi)	30 (905 mi)	27 (815 mi)	29 (884 mi)	26 (781 mi)	25 (750 mi)	22 (650 mi)	22.5 (674 mi)	22.5 (671 mi)	20 (593 mi)
Pensacola, FL	24 (726 mi)	22.5 (677 mi)	19.5 (586 mi)	19 (558 mi)	15 (455 mi)	14 (425 mi)	9 (282 mi)	10 (306 mi)	9.5 (277 mi)	2.5 (71.6 mi)
Panama City, FL	28.5 (853 mi)	27 (804 mi)	24 (714 mi)	23 (686 mi)	19 (582 mi)	18 (552 mi)	14 (409 mi)	14.5 (433 mi)	13.5 (404 mi)	7 (199 mi)
Tampa, FL	35 (1,182 mi)	38 (1,133 mi)	35 (1,042 mi)	34 (1,014 mi)	30 (911 mi)	29 (881 mi)	25 (738 mi)	25.5 (762 mi)	25 (733 mi)	18 (528 mi)
Jacksonville, FL	36 (1,071 mi)	34 (1,022 mi)	31 (932 mi)	30 (904 mi)	27 (800 mi)	26 (770 mi)	21 (627 mi)	22 (651 mi)	21 (622 mi)	14 (417 mi)
Savannah, GA	40 (1,207 mi)	39 (1,158 mi)	36 (1,068 mi)	35 (1,040 mi)	31 (936 mi)	30 (906 mi)	25.5 (763 mi)	26 (787 mi)	25 (758 mi)	18.5 (553 mi)
Fort Lauderdale, FL	45.5 (1,366 mi)	44 (1,317 mi)	41 (1,226 mi)	40 (1,198 mi)	36.5 (1,095 mi)	35.5 (1,065 mi)	31 (922 mi)	31.5 (946 mi)	30.5 (917 mi)	24 (712 mi)
Ingleside, TX	1 (5 mi)	3 (82.5 mi)	5.5 (164 mi)	8 (244 mi)	10 (300 mi)	11 (336 mi)	16 (487 mi)	19 (591 mi)	20.8 (624 mi)	22 (657 mi)
Galveston, TX	7 (241 mi)	4.75 (166 mi)	1.5 (46 mi)	0	2.75 (92 mi)	3.75 (128 mi)	8 (279 mi)	11 (385 mi)	12 (417 mi)	13 (450 mi)
Port Arthur, TX	10 (292 mi)	8 (242 mi)	5 (152 mi)	4 (124 mi)	1 (14.4 mi)	2 (50.3 mi)	7 (200 mi)	10 (304 mi)	11 (337 mi)	12 (370 mi)
Lake Charles, LA	9.75 (340 mi)	9 (314 mi)	5.75 (203 mi)	4.75 (163 mi)	2 (69 mi)	1.5 (53 mi)	4 (143 mi)	7 (248 mi)	8 (280 mi)	9 (314 mi)

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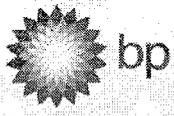
**Pre-Staged Equipment & Gulf Coast Staging Area Transit Times Cross-Reference (Land) (continued) Figure 14-3**

Equipment Pre-Staged Location	Aransas Pass, TX	Port O'Connor, TX	Freeport, TX	Galveston, TX	Sabine Pass, TX	Cameron, LA	Morgan City, LA	Grand Isle, LA	Venice, LA	Theodore, AL
	Gulf Coast Staging Areas (With transit time in hours)									
Baton Rouge, LA	16 (469 mi)	14 (419 mi)	11 (329 mi)	10 (301 mi)	7 (198 mi)	5.5 (167 mi)	2 (62.9 mi)	5.5 (159 mi)	5 (156 mi)	6 (188 mi)
Pascagoula, MS	21 (638 mi)	20 (588 mi)	17 (498 mi)	16 (470 mi)	12 (367 mi)	11 (336 mi)	6.5 (193 mi)	7 (218 mi)	6 (189 mi)	1 (26.9 mi)
Houma, LA	14.75 (517 mi)	14 (494 mi)	10.75 (379 mi)	10 (354 mi)	7 (245 mi)	6.25 (221 mi)	1 (35 mi)	2 (72 mi)	3.5 (124 mi)	5.25 (185 mi)

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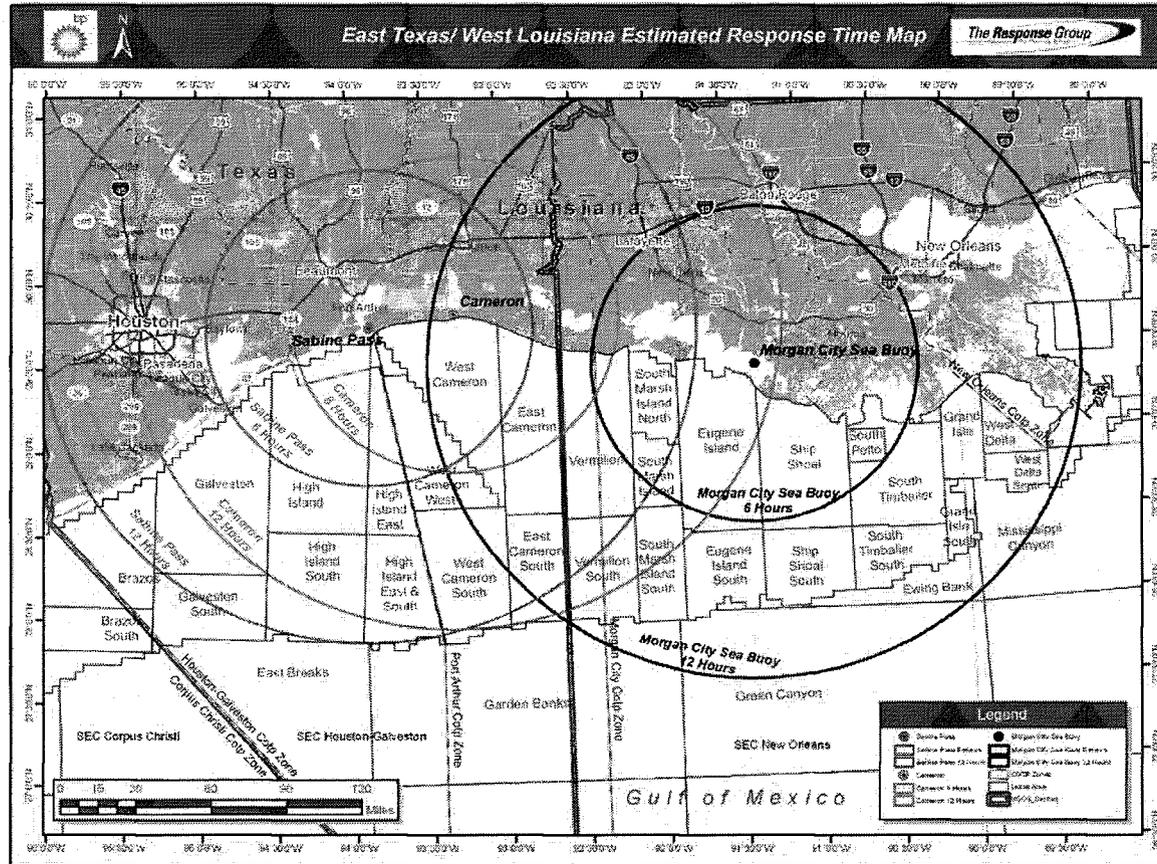


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East Texas/West La Estimated Response Time Map

Figure 14-4



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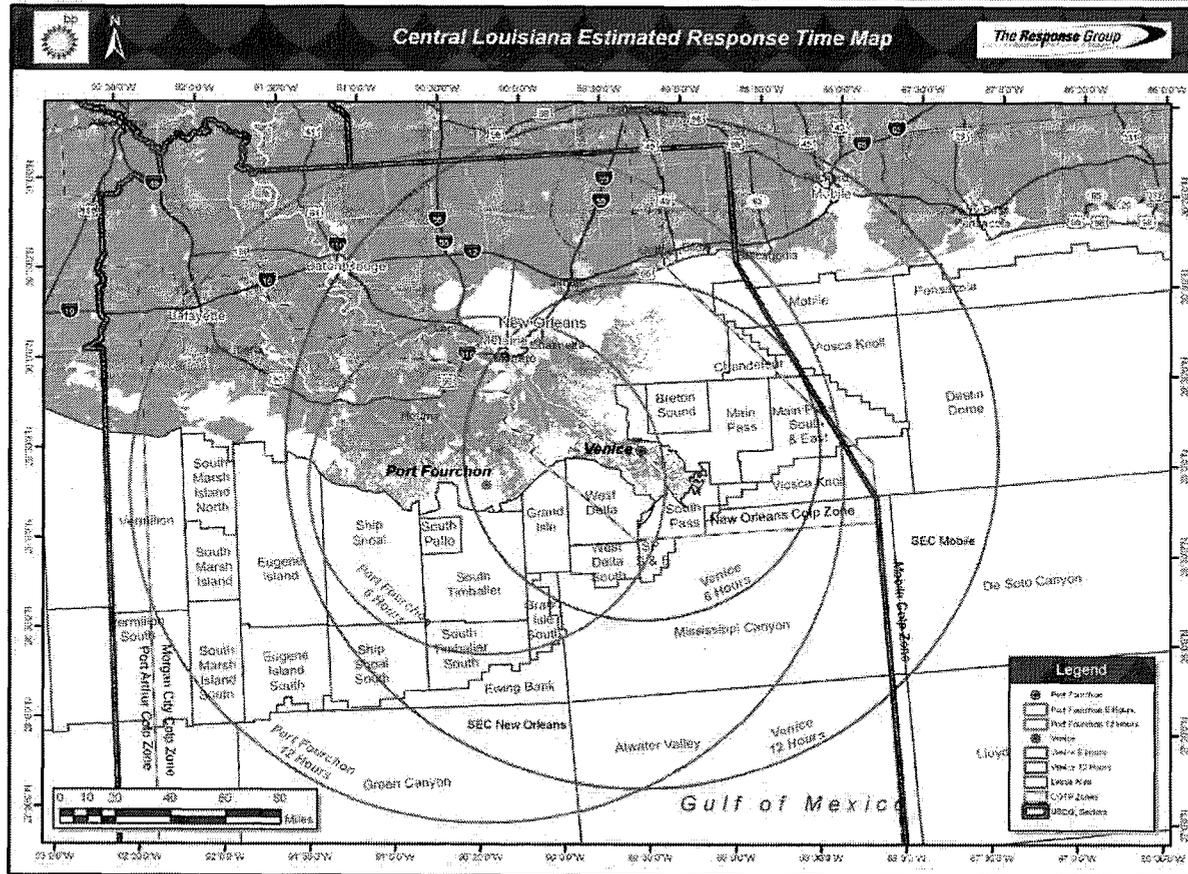
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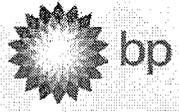
Central Louisiana Estimated Response Time Map

Figure 14-4



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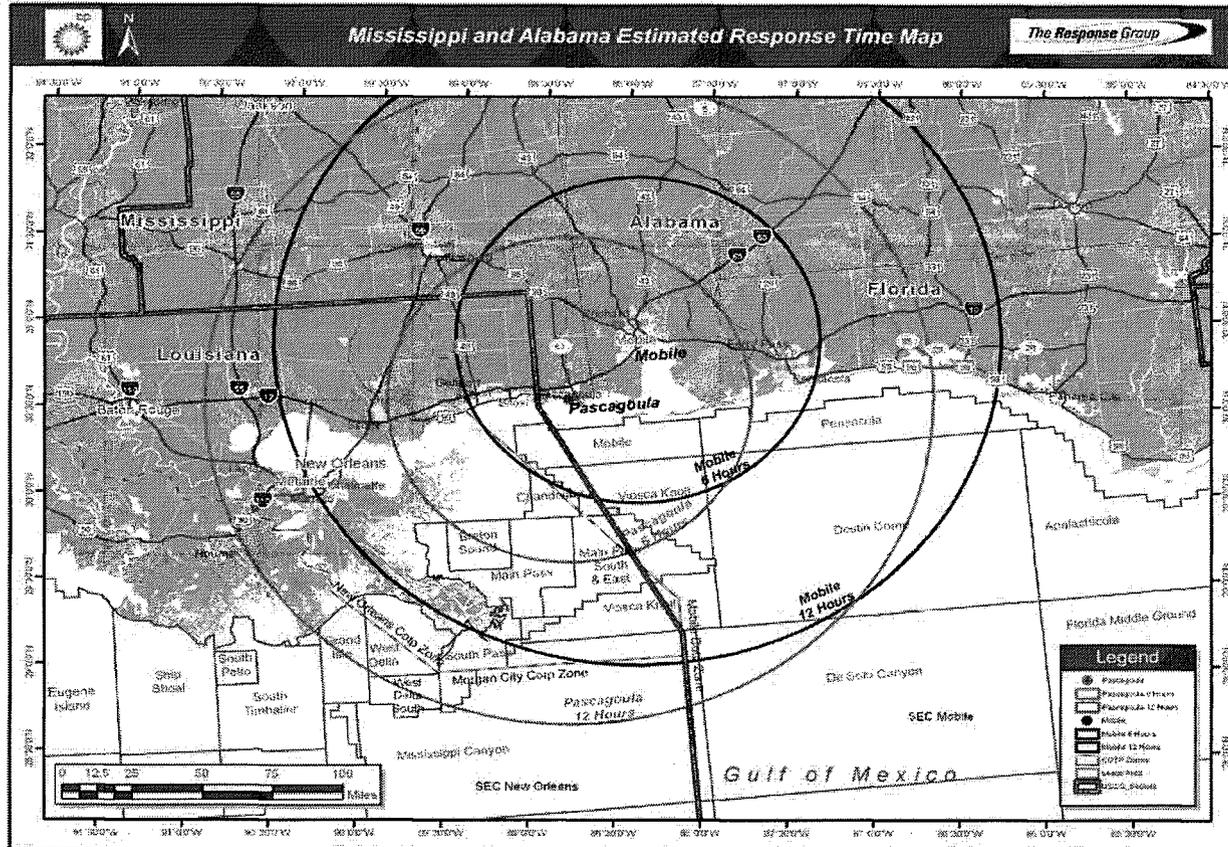


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Mississippi & Alabama Estimated Response Time Map

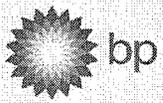
Figure 14-4



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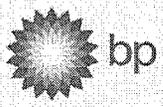
**Pre-Identified Staging Areas – Louisiana**

**Figure 14-5**

LOCATION	COMPANY NAME	PHONE	CRANE	TRAILER
Abbeville	AMBAR	337-893-5267	Yes	Yes
Amelia	ASCO	985-631-0621	Yes	Yes
Berwick	Baroid Drilling Fluids	985-385-1010	Yes	Yes
	Berry Brothers	985-384-8770	Yes	Yes
	Berwick Supply	985-384-5073	No	No
	L & L Oil Company, Inc.	985-385-6202	Yes	Yes
	M-I Drilling Fluids	985-385-2660	Yes	Yes
	Spirit Star	985-384-8894	Yes	Access
Cameron	AMBAR	337-775-5995	Yes	Yes
	Baker Hughes	337-775-5125	Yes	Yes
	Baroid Drilling Fluids	337-775-5512	Yes	Yes
	Halliburton Services, Inc.	337-775-5872	Access	Yes
	M-I Drilling Fluids	337-775-5311	Yes	Yes
	Midstream Fuel Service	337-775-5226	Yes	No
Chenier	Crain Brothers	337-538-2411	Yes	No
Dulac	Baker Hughes	985-563-4537	Yes	Yes
	M-I Drilling Fluids	985-563-4413	Yes	Yes
Fourchon	Newpark Environmental	985-396-2755	Yes	Yes
	ASCO	985-396-2737	Yes	No
	Martin Terminal, Inc.	985-396-2701	Yes	Yes
	ASCO	985-396-2711	Yes	Yes
	Baroid Drilling Fluids	985-396-2681	Yes	Yes
Golden Meadow	M-I Drilling Fluids	985-396-2851	Yes	Yes
Grand Isle	MSRC Clean Gulf	985-580-0924	Yes	Yes
Intracoastal City	AMBAR	337-893-7120	Yes	No
	Baker Hughes	337-893-2772	Yes	Yes
	Baroid Drilling Fluids	337-893-3536	Yes	Yes
	Broussard Brothers, Inc.	337-893-5303	Yes	Yes
	ASCO	337-893-6084	Yes	Yes
	M-I Drilling Fluids	337-893-5852	Yes	Yes
Lafayette	M-I Drilling Fluids	337-233-1714	Yes	Yes
New Orleans	Avondale Shipyard	504-436-2121	Yes	Yes
Venice	Baker Hughes	985-534-2379	Yes	Yes
	Halliburton Services, Inc.	985-534-2386	Yes	Yes
	M-I Drilling	985-534-7422	Yes	Yes

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**Pre-Identified Staging Areas – Texas**

**Figure 14-5**

LOCATION	COMPANY NAME	PHONE	CRANE	TRAILER
Aransas Pass	Halliburton Services, Inc.	361-758-0273	Access	Yes
Corpus Christi	Halliburton Services Inc.	361-888-8153	Access	Yes
Freeport	Baker Hughes	979-244-4180	Yes	Yes
	Offshore Oil Services	979-233-1851	Yes	Yes
	Midstream Fuel Service	979-233-0176	Yes	Yes
Galveston	AMBAR	409-744-7109	Yes	Yes
	Halliburton Services, Inc.	409-740-0866	No	No
	Midstream Fuel Service	409-744-7159	Yes	Yes
	Midstream Fuel Service	409-744-7126	Yes	No
	Midstream Fuel Service	409-744-3282	Yes	Yes
Harbor Island	Baker Hughes	361-758-0296	Yes	Yes
Port Aransas	Midstream Fuel Service	361-758-0296	Yes	Yes
Port O'Connor	Midstream Fuel Service	361-983-2631	Yes	Yes
Sabine Pass	Sabine Offshore Services	409-971-2377	Yes	No
	Midstream Fuel Service	409-971-2144	Access	Yes

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## 15. OIL AND DEBRIS REMOVAL PROCEDURES

### A. Offshore Procedures

Containment and removal of oil and oiled debris during the course of an oil spill response is essential in mitigating the impact, and subsequent liability, of the release.

Offshore removal procedures are dependent upon the location of the incident, response time, weather conditions, volume spilled, and other variables. Responding to an oil spill in open water is preferred so as to prevent product from reaching sensitive shoreline resources.

Offshore cleanup procedures, and the associated limitations of each, are listed in **Figure 15-1**.

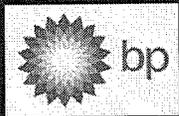
If oiled debris is present at offshore locations, the material may be placed on a vessel or barge in a manner that will not allow seepage. The debris will be transferred to an appropriate location, segregated by types (i.e., sorbent material, trash, sand, vegetation, etc.), and placed into designated roll-off boxes or alternate containers lined with impervious material (i.e., pre-cut polyethylene sheet liners) to prevent additional contamination. The roll-off boxes will be manifested and transported to designated disposal sites in accordance with applicable regulation.

BP has standing contracts with multiple Oil Spill Response Organizations who maintain dedicated offshore response vessels in the Gulf of Mexico area to mitigate offshore spills. These vessels have permanently assigned crew members and can generally respond in two hours or less. The vessels in question maintain the necessary spill containment and recovery equipment to respond effectively to spills as requested. Vessels are also equipped with communications and/or tracking systems that allow for continuous contact and location status updates. For a complete listing of spill response equipment see **Appendix E**.

### B. Shallow Water Procedures

The recovery and disposal of oily debris during shallow water cleanup operations is essential in preserving sensitive environmental resources and habitats. Response personnel should be trained in all aspects of spill response, including the proper procedures to recover and transport oily debris safely while minimizing damage to surrounding ecosystems. Areas sensitive to foot traffic should have plywood sheets deployed to prevent root damage to plants and vegetation. Oily debris may be collected

via shallow draft boats/barges, light vehicles (where applicable), towable bladders, etc. The debris will be handled in a manner which will prevent seepage to occur and will be segregated by type (i.e., sorbent material, vegetation, soil, etc.). The debris will be transferred into roll-off boxes, hauling trucks, or other suitable containers lined with polyethylene liners and will be manifested and transported to designated disposal sites.



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In the event the above areas are contaminated, a damage assessment will be conducted prior to initial response efforts to evaluate damage and will include the following information:

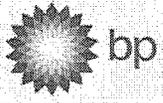
	Type of oil;
	Amount of oil spilled;
	Degree to which oil covers vegetation;
	Season;
	Degree of oil weathering prior to impact; and
	Requirements for storage and disposal of recovered materials.

Shallow water and shoreline cleanup procedures, and associated limitations, are detailed in **Figure 15-2** (Shallow Water Cleanup Procedures).

Marsh cleanup techniques may be reviewed in **Figure 15-3**.

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**Offshore Cleanup Procedures**

**Figure 15-1**

Method	Applicability	Limitations
Mechanical Recovery	Fast response units/I.D. boats and skimming systems with various containment booming methods.	Successful in removing oil in sea states of 0-4. Used in all sizes of spills. Limited by weather conditions.
Containment Booming ("V" booming, "J" booming, teardrop booming, boat booming, dynamic booming.	Contains oil to prevent spreading. Various booming techniques may be utilized dependent upon prevailing conditions.	Successful in containing all types of oil in sea states of 0-4. Used in all sizes of spills. Limited by weather conditions.
Chemical Dispersion	Application of chemical to disperse oil from surface into suspension in the water column. May be applied by airplane or boat.	Limited by weather conditions. Pre-approval areas in water depths of 20 meters or more. Regulatory approval required for depths less than 20 meters.
<i>In-Situ</i> Burning	Burning oil to prevent spreading.	Limited by weather conditions, thickness and volatility of oil. Must be conducted within several hours of spill.
Natural Dispersion	Allow natural elements (i.e., wave action, evaporation, etc.) to remove oil from water.	No limitations. Used in circumstances of small and large spills that pose no threat to sensitive areas.
Diversion Booming	Deployed at an angle to approaching slick to divert oil away from sensitive shoreline resources.	Wave heights less than 1 ft.; protects shoreline resources (i.e., tidal inlets, salt marshes, sand/mud flats, etc.)
Sorbent Booming	Backup boom to absorb entrained oil. Deployed in conjunction with containment boom across approaching oil slick.	Limited by weather conditions. Successful in quiet seas with little wind.

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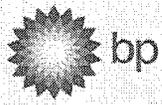
**Shoreline Cleanup Techniques**

**Figure 15-2**

<b>Cleanup Technique</b>	<b>Description &amp; Requirements</b>	<b>Primary Use of Cleanup Technique</b>	<b>Physical and Biological Effect of Use</b>
1. Motor grader/elevating scraper	Motor grader forms windrows for pickup by elevating scraper. Heavy equipment access, good trafficability.	Used primarily on sand and gravel beaches where oil penetration is 0 to 3 cm, and trafficability of beach is good. Can also be used on mudflats.	Removes only upper 3 cm of beach. Natural replenishment of substrate.
2. Elevating scraper	Elevating scraper picks up contaminated material directly off beach. Heavy equipment access, good trafficability.	Used on sand and gravel beaches where oil penetration is 0 to 3 cm. Can also be used on mudflats. Also used to remove tar balls or flat patties from the surface of a beach.	Removes upper 3 to 10 cm of beach. Minor reduction of beach stability. Erosion and beach retreat. Slow restabilization of substrate.
3. Motor grader/front-end loader	Motor grader forms windrows for pickup by front-end loader. Heavy equipment access, good trafficability.	Used on gravel and sand beaches where oil penetration is less than 2 to 3 cm. This method is slower than using a motor grader and elevating scraper but can be used when elevating scrapers are not available. Can also be used on mudflats.	Removes only upper 3 cm of beach. Removes shallow burrowing organisms. Natural replenishment of substrate.
4. Front-end loader-rubber-tired or tracked	Front-end loader picks up materials directly off beach and hauls it to unloading area. Heavy equipment access, fair to good trafficability for rubber-tired loader.	Used on mud, sand or gravel beaches when oil penetration is moderate and oil contamination is light to moderate. Rubber-tired front-end loaders are preferred because they are faster and minimize the disturbance of the surface. Front-end loaders are the preferred choice for removing cobble sediments. If rubber-tired loader cannot operate, tracked loaders are the next choice. Can also be used to remove extensively oil-contaminated vegetation.	Removes 10 to 25 cm of beach. Reduction of beach stability. Erosion and beach retreat. Removes almost all shallow and deep burrowing organisms. Restabilization of the physical environment is slow.

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**Shoreline Cleanup Techniques (Cont'd)**

**Figure 15-2**

Cleanup Technique	Description & Requirements	Primary Use of Cleanup Technique	Physical and Biological Effect of Use
5. Bulldozer/ rubber-tired front-end loader	Bulldozer pushes contaminated substrate into piles for pickup by front-end loader. Heavy equipment access, fair to good trafficability.	Used on coarse sand, gravel or cobble beaches where oil penetration is deep, oil contamination extensive and trafficability of the beach is poor. Can also be used to remove heavily oil contaminated vegetation.	Removes 15 to 50 cm of beach stability. Severe erosion and cliff or beach retreat. Inundation of backshores. Very slow restabilization of substrate.
6. Backhoe	Operates from top of a bank or beach to remove contaminated sediments and loads into trucks. Heavy equipment access, requires stable substrate at top of bank.	Used to remove oil contaminated sediment (primarily mud or silt) on steep bank.	Removes 25 to 50 cm of beach or bank. Severe reduction of beach stability and beach retreat. Restabilization of substrate and organisms is extremely slow.
7. Dragline or clamshell	Operates from top of contaminated area to remove oiled sediments. Heavy equipment access.	Used on sand, gravel or cobble beaches where trafficability is very poor (i.e., tracked equipment cannot operate) and oil contamination is extensive.	Removes 25 to 50 cm of beach. Severe reduction of beach stability. Erosion and beach retreat. Restabilization of substrate and indigenous fauna is extremely slow.
8. High pressure flushing (hydro-blasting)	High pressure water streams remove oil from substrate where it is channeled to recovery area. Light vehicular access, recovery equipment.	Used to remove oil coatings from boulders, rock and man-made structures; preferred method of removing oil from these surfaces.	Can disturb surface of substrate. Oil not recovered may be toxic to organisms. Wildlife agency approval required.
9. Steam cleaning	Steam removes oil from substrate where it is channeled to recovery area. Light vehicular access, recovery equipment and fresh water access.	Used to remove oil coatings from boulders, rocks and man-made structures.	Adds heat (>100°C) to surface. Mortality of organisms due to heat is likely. Oil not recovered may be toxic to organisms.
10. Sand blasting	Sand moving at high velocity removes oil from substrate. Light vehicular access, supply of clean sand.	Used to remove thin accumulations of oil residue from man-made structures.	Adds material to the environment. Potential recontamination, erosion and deeper penetration into substrate. Oil not recovered may be toxic to organisms.

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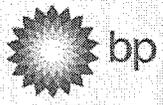
**Shoreline Cleanup Techniques (Cont'd)**

**Figure 15-2**

<b>Cleanup Technique</b>	<b>Description &amp; Requirements</b>	<b>Primary Use of Cleanup Technique</b>	<b>Physical and Biological Effect of Use</b>
11. Manual scraping	Oil is scraped from substrate manually using hand tools. Foot or light vehicular access.	Used to remove oil from lightly contaminated boulders, rocks and man-made structures or heavy oil accumulation when other techniques are not allowed.	Selective removal of material. Labor-intensive activity can disturb sediments. Oil not recovered may be toxic to organisms
12. Sump and pump/vacuum	Oil collects in sump as it moves down the beach and is removed by pump or vacuum truck. Requires recovery equipment.	Used on firm sand or mud beaches in the event of continuing oil contamination where sufficient alongshore currents exist and on streams and rivers in conjunction with diversion booming.	Requires excavation of a sump 60 to 120 cm deep on shoreline. Some oil will probably remain on beach. Oil not recovered may be toxic to organisms.
13. Manual removal of oiled materials	Oiled sediments and debris are removed by hand, shovels, rakes, wheelbarrows, etc. Foot or light vehicular traffic.	Used on mud, sand, gravel and cobble beaches when oil contamination is light or sporadic and oil penetration is slight or on beaches where access for heavy equipment is not available.	Removes 3 cm or less of beach. Selective. Sediments disturbance and erosion potential. Removes and disturbs small and burrowing organisms.
14. Low pressure flushing	Low pressure water spray flushes oil from substrate where it is channeled to recovery points. Light vehicular traffic, recovery equipment.	Used to flush light oils that are not sticky from lightly contaminated mud substrates, cobbles, boulders, rocks, man-made structures and vegetation.	Does not disturb surface to any great extent. Potential for recontamination. Oil not recovered may be toxic to organism's downslope of cleanup.
15. Beach cleaner	Pulled by tractor or self-propelled across beach, picking up tar balls or patties. Light vehicular traffic, recovery equipment.	Used on sand or gravel beaches, lightly contaminated with oil in the form of hard patties or tar balls. Can also remove small quantities of contaminated debris.	Disturbs upper 5 to 10 cm of beach, and shallow burrowing organisms. Wildlife agency approval required.

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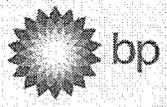
**Shoreline Cleanup Techniques (Cont'd)**

**Figure 15-2**

<b>Cleanup Technique</b>	<b>Description &amp; Requirements</b>	<b>Primary Use of Cleanup Technique</b>	<b>Physical and Biological Effect of Use</b>
16. Manual sorbent application	Sorbents are applied manually to contaminated areas to soak up oil. Disposal containers for sorbents, foot or boat access.	Used to remove pools of light, nonsticky oil from mud, boulders, rocks and manmade structures.	Selective removal of material. Labor intensive activity can disturb sediments. Possible ingestion of sorbents by birds and small animals.
17. Manual cutting	Oiled vegetation is cut by hand, collected and stuffed into bags or containers for disposal. Deploy plywood sheets for foot traffic.	Used on oil contaminated vegetation.	Disturbs sediments because of extensive use of labor; can cause erosion. Foot traffic may cause root damage and slow recovery. Destroys animal habitats.
18. Burning	Upwind end of contaminated area is ignited and allowed to burn to down-wind end. Light vehicular or boat access, fire control equipment.	Used on any substrate or vegetation where sufficient oil has collected to sustain ignition; if oil is a type that will support ignition and air pollution regulations so allow.	Causes heavy air pollution; adds heat to substrate, can cause erosion if root system damaged. Kills surface organisms and residual matter may be toxic. Approval of Air Pollution Agency.
19. Vacuum trucks, vacuum pumps or portable skimmers	Oil collects in sumps behind booms and in natural depressions/ collection points and is removed by vacuum trucks, vacuum pumps or portable skimmers.	Used to pick up oil on shorelines where pools of oil have formed in natural depressions, or in the absence of skimming equipment to recover floating oil from the water surface. Also used on firm sand or mud beaches where longshore current exists and on stream and river in construction with diversion and containment booming.	Some oil may be left on shoreline or in water increasing potential for long-term toxic effects.

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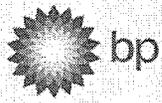
**Shoreline Cleanup Technique (Cont'd)**

**Figure 15-2**

<b>Cleanup Technique</b>	<b>Description &amp; Requirements</b>	<b>Primary Use of Cleanup Technique</b>	<b>Physical and Biological Effect of Use</b>
20. Push contaminated substrate into surf	Bulldozer pushes contaminated substrate into surf zone to accelerate natural cleaning. Heavy equipment access, high energy shoreline.	Used on contaminated cobble and lightly contaminated gravel beaches where removal of sediments may cause erosion of the beach or backshore area.	Disruption of top layer of substrate; leaves some oil in intertidal area. Potential recontamination. Kills most organisms inhabiting the uncontaminated substrate.
21. Breaking up pavement	Tractor fitted with a ripper is operated up and down beach. Heavy equipment access, high energy shoreline.	Used on low amenity cobble, gravel or sand beaches or beaches where substrate removal will cause erosion where thick layers of oil have created a pavement on the beach surface.	Disruption of sediments. Leaves oil on beach. Disturbs shallow and deep burrowing organisms.
22. Disc into substrate	Tractor pulls discing equipment along contaminated area. Heavy equipment access, fair to good trafficability.	Used on nonrecreational sand or gravel beaches that are lightly contaminated.	Leaves oil buried in sand. Disrupts surface layer of substrate. Disturbs shallow burrowing organisms. Possible toxic effects from buried oil.
23. Natural recovery	No action taken. Oil left to degrade naturally. Exposed high energy environment.	Used for oil contamination on high energy beaches (primarily cobble, boulder and rock) where wave action will remove most oil contamination in a short period of time.	Some oil may remain on beach and could contaminate clean areas. Potential toxic effects and smothering by the oil. Potential incorporation of oil into the food web. Potential elimination of habitat if organisms will not settle on residual oil.

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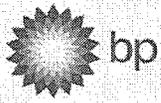
**Shoreline Cleanup Techniques (Cont'd)**

**Figure 15-2**

<b>Cleanup Technique</b>	<b>Description &amp; Requirements</b>	<b>Primary Use of Cleanup Technique</b>	<b>Physical and Biological Effect of Use</b>
24. Oil Mop	Various size units to be used onshore or with shallow draft jon boats in water with little or no current. Boat or light vehicle access.	Used to recover oil from natural or artificial containment.	
25. Removal by Excavation	Contaminated soil is excavated and replaced with clean soil. Heavy excavation equipment access, clean soil.	Used on contaminated soils when drinking water wells are threatened and contaminated does not exceed 20-30 feet.	Severe reduction of substrate/beach stability. Removes all shallow and seep burrowing organisms. Restabilization of the physical and biological environment is extremely slow.
26. Recovery of oil from groundwater	Contaminated oil is pumped out. Heavy equipment access.	Used on contaminated ground water via recovery wells or by trenching.	Oil may remain in substrate and spread during inclement weather conditions.
27. <i>In-Situ</i> Treatment	Contaminated substrate is tilled into the ground or organic fertilizers are applied. Heavy equipment access.	Used on contaminated soils where groundwater is not threatened or has been cleaned.	Leaves oil buried in substrate. Disrupts surface layer of substrate and disturbs shallow burrowing organisms. Possible toxic effects from buried oil.
28. Bio-remediation	Nutrients and/or micro organisms are applied to accelerate the degradation of the oil.	May be used on rocky or sandy beaches, in marshlands or pooled oil.	Formal application for use must be obtained. Not suitable in restricted water bodies.

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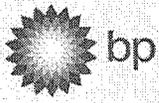
**Marsh Cleanup Techniques**

**Figure 15-3**

Cleanup Technique	Description for Use	Equipment Required	Environmental Impact
Low Pressure Water Flushing	<u>Preferred Method:</u> Use in small channels around clumps of plants and trees and on vegetation along channel banks and the shoreline	Small jon boat and small gasoline-driven pumps; intake and discharge hoses; small floater skimmer; portable storage tank.	Minimal impact if flushing is done from land. Some marsh vegetation may be crushed.
<u>Sorbents:</u> Loose sorbents, pads or rolls	<u>Loose sorbents:</u> Use in small channels or pools with low currents. <u>Pads or Rolls:</u> Use in shallow pools and on shorelines without debris accumulation.	Light curtain boom; empty barrels for storing recovered sorbent. Can also be herded with water spray.	Loose sorbents are difficult to retrieve. Retrieval can crush marsh grasses.
Oil Mop	<u>Preferred Method:</u> Use in small channels or pools with free floating oil. Use upstream from containment boom and along marsh shorelines.	Oil Mop system; portable storage tanks for recovering oil; pulleys.	Minimal impacts.
Vegetation cutting and removal ( <b>Note:</b> Use only when flushing fails to remove oil from plants)	Hand cutting of vegetation in small channels. Mechanical cutting along banks of channels or shoreline.	<u>Hand cutting:</u> Shears, power brush cutters or sickles; mechanical cutting; weed harvester.	Damages marsh surface. Foot traffic damages plants.
Burning (For use on spartina-type (grass-like) marshes only.)	Use in large contaminated areas. Can use if oil will burn. Probably suitable when marsh is on die-back stage.	Portable propane flame throwers or weed burners.	Produces considerable air pollution. Requires local approval by government agencies. Areas not contaminated by oil are subject to damage by fire.
Marsh burning	Use when toxic and persistent oils have deeply contaminated substrata.	Pump contaminated liquids from the marsh, using available materials, dam or divert the flow of water into the marsh area.	<u>Major impact:</u> Destroys much wildlife. Restoration may occur over several years as water returns to the marsh.
Soiled Vegetation Removal	Use when toxic and persistent oils have deeply contaminated substrata.	Dragline, dredge, clamshell, front-end loader, backhoe, bulldozer	<u>Major impact:</u> Destroys marsh areas. Requires complete subsequent restoration.

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## 16. OIL AND DEBRIS DISPOSAL PROCEDURES

### A. Procedures to Store, Transfer and Dispose of Oil and Oil Contaminated Debris

The storage, transfer, and disposal of oil and oiled debris in a manner which meets or exceeds regulatory requirements are essential elements in mitigating the impact and subsequent liability of a spill. The following guidelines will be considered during transfer and storage operations:

<b>1.</b>	<p><b>Storage</b></p> <p>Oil and oily debris is collected offshore and in shallow water areas by mechanical measures (i.e., skimmers, booms, pumps, sorbents, etc.) may be transferred into vessels listed below:</p> <ul style="list-style-type: none"> <li>• Portable tanks on recovery vessels,</li> <li>• Containers (i.e., roll off boxes) on recovery vessels/barges,</li> <li>• Shallow water barges,</li> <li>• Tank trucks,</li> <li>• Towable bladders,</li> <li>• Frac tanks,</li> <li>• Barrels, and/or</li> <li>• Ocean going barges</li> </ul>
<b>2.</b>	<p><b>Transfer</b></p> <p>Oily debris will be segregated by types (i.e., sorbents, vegetation, sand, trash, etc.) and placed on a vessel or barge in a manner that will not allow seepage to occur. Oily debris will be transported in leak proof, sealable containers along with separate containers for recovered oil to temporary storage site(s) onshore that are convenient to the recovery operation.</p>
<b>3.</b>	<p><b>Disposal</b></p> <p>Waste generated during the course of the spill incident will be minimized to the extent possible to reduce associated manpower and expenses. Each waste stream (i.e., recovered oil, oily debris, decontamination wastes, etc.) will be treated separately for waste determination, characterization, and classification. All wastes generated will be managed as required by the BP Waste Management Plan and applicable regulation. Methods for minimizing waste generation include, but are not limited to the following:</p>



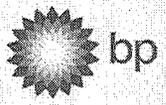
- **Decanting** – Excessive water recovered during recovery operations may be pumped along with the recovered oil to a production platform and run through the separation process. In the event a production process is not available, the oil and water mixture will be allowed to separate and the water decanted directly from the storage container. Decanting is essential to the efficient mechanical recovery process in order to preserve maximum available storage capacity. Approval for decanting will be obtained as required from the FOSC or designated representative by the BP Liaison Officer or designated personnel.
- **Recycling** – Fresh, uncontaminated oil along with oily water may be recycled into an established production process and/or treatment systems associated with terminals, refineries, commercial re-claimers and BP facilities. Accurate records of recovered oil will be maintained and the recordkeeping process will be coordinated through the Unified Command.
- **Debris Removal** – The generation of oily debris may be minimized in the coastal intertidal zone with an accurate trajectory projection, which may allow for the removal of debris from the anticipated impact zone prior to the stranding of the spilled oil.

Criteria for disposal selection include the amount of oil, oiled debris, sorbent material, and disposal options and requirements for the area(s) in question. Disposal options are illustrated in **Figure 16-1**.

Temporary storage for oil, oily water, and debris may be erected at appropriate shore locations that are convenient to the recovery operation. Placement of temporary storage facilities requires the concurrence of the USCG and various State and local entities. The oil, oily water, and contaminated debris will be stored in containers of various types and sizes that are compatible with the waste to be stored. Additionally, oil spill response vessels and associated barges may provide short term on-water storage.

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**B. Oil and Oily Debris Temporary Storage**

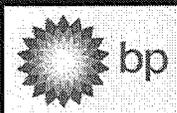
OSRO's such as NRC & MSRC can provide sufficient temporary storage for oil and oily debris for spills of any magnitude in order to prevent an interruption in containment and recovery operations. Temporary storage capacity for marine portable tanks and supplemental offshore vessels from NRC is listed below:

- **Marine Portable Tanks** – See **Figure 16-2** for information concerning storage capacity of available portable tankage.
- **Supplemental Offshore Vessels** – Existing tankage aboard supplemental offshore vessels may be utilized to store recovered materials on a temporary basis prior to transfer ashore. Refer to **Figure 16-3** for information concerning storage capacity for supplemental offshore vessels.

**C. Decanting and Recycling Methods**

Attempts should be made to minimize the amount of waste generated in an oil spill response in order to maximize storage capacity and to control costs. The following waste reduction methods are essential elements in mitigating the impact and subsequent liability of a spill incident:

- **Decanting** – Product and water recovered during the mechanical recovery process will be pumped into storage containers that allow for gravity separation of the oil from the water. The separated water will be transferred into a separate container or stream forward of the recovery pump. Approval for decanting must be obtained from the FOSC or his designated representative by the BP Liaison Officer.
- **Recycling** – Fresh, uncontaminated oil along with oily water may be recycled into established production processes and/or treatment systems associated with terminals, refineries, platforms, commercial reclaimers, recyclers, and BP facilities. Oil and oily wastes will be transported to approved disposal site(s). Sand and beach material may also be separated from oiled materials and returned to the shoreline as a restorative measure.



**D. Disposal Methods, Equipment and Transportation**

The transportation of oil, oily water, and oil led debris to permitted facilities via truck, tank truck, barge, etc. will be conducted in an environmentally safe manner consistent with applicable Federal and state regulations, and BP company policy. Hazardous material will be transported by permitted transporters and recycled or disposed of in permitted facilities.

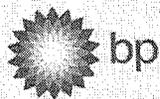
**E. Designated Disposal Sites**

The facility operator or the shore base transportation coordinator must coordinate the disposal of all wastes generated from BP operated and/or contracted facilities. The following is a list of BP approved disposal companies or management contractors for each category of waste:

Organization Name	Site Location	Phone Number
<i><b>Absorbent Materials, Oily Rags, Filters</b></i>		
<b>Omega Waste Management (Primary)</b>	1900 Highway 90 West, Patterson, LA 70392	(985) 399-5100 (888) 419-5100
<b>Seimens (Formerly US Filter Recover Services, Inc.) (Back-up)</b>	697 Highway 167, Opelousas, LA 70570	(800) 960-6377 (337) 826-8001
	4415 E. Greenwood, Baytown, TX 77520	(800) 355-2383
<b>Cintas (Red Rag service only)</b>	625 Elmwood Park Blvd, Harahan, LA 70123	(504) 733-8555
<i><b>Antifreeze (Ethylene Glycol and Triethylene Glycol)</b></i>		
<b>Omega Waste Management (Primary)</b>	1900 Highway 90 West, Patterson, LA 70392	(985) 399-5100 (888) 419-5100
<b>Coastal Chemical</b>	3520 Veterans Memorial Drive, Abbeville, LA 70510	(337) 893-3862

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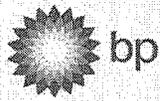
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Organization Name	Site Location	Phone Number
<b>Aviation Fuel</b>		
Seimens (formerly US Filter Recover Services, Inc.)	697 Highway 167, Opelousas, LA 70570	(800) 960-6377 (337) 826-8001
	4415 E. Greenwood, Baytown, TX 77520	(800) 355-2383
<b>Batteries (Lead Acid, NiCad, Lithium)</b>		
Lamp Enviromental Industries (LEI)	46257 Morris Road, Hammond, LA 70401	(800) 309-9908
Excide Technologies	2400 Brooklawn Drive, Baton Rouge, LA 70807	(225) 775-3040
<b>Cooking Oil</b>		
Omega Waste Management (Primary)	1900 Highway 90 West, Patterson, LA 70392	(985) 399-5100 (888) 419-5100
Seimens (formerly US Filter Recover Services, Inc.)	697 Highway 167, Opelousas, LA 70570	(800) 960-6377 (337) 826-8001
	4415 E. Greenwood, Baytown, TX 77520	(800) 355-2383
<b>Crude Oil/Condensate (Volume for Salvage Reclamation)</b>		
PSC Industrial Outsourcing Inc.	9523 Highway 87 East, Jeanerette, LA 70544	(337) 276-5163
<b>Diesel Fuel</b>		
Omega Waste Management (Primary)	1900 Highway 90 West, Patterson, LA 70392	(985) 399-5100 (888) 419-5100
L&L (Formerly ASCO)	485 Jump Basin Road (# 15), Fourchon, LA	(985) 396-2711
<b>E&amp;P Exempt Waste</b>		
CCS Energy Services LLC	24915 Highway 333 Intracoastal City, LA: Site Code 5710 Abbeville, LA 70510	(337) 898-0375
	567 D. Bernard St, Golden Fourchon, LA # 3: Site Code 2918 Meadow, LA 70357	(985) 396-4582
	101 McClellan Road Morgan City, LA: Site Code 5110 Morgan City, LA 70380	(985) 384-7676
	7455 Rangeline Road Theodore, AL Theodore, AL 36582	(251) 443-6324

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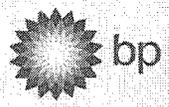
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Organization Name	Site Location	Phone Number
<b><i>E&amp;P Exempt Waste (continued)</i></b>		
<b>Newpark Environmental Services</b>	434 Davis Road	(337) 775-5605
<u>Cameron, LA:</u> Site Code 1205	Cameron, LA 70631	(373) 775-8073
<u>Intracoastal City, LA:</u> Site Code 5703	12334 Offshore Road, Abbeville, LA 70510	(337) 893-3239
<u>Morgan City, LA:</u> Site Code 5102	101 Second Street Morgan City, LA 70381	(985) 384-4460 (985) 384-4461
<u>Fourchon, LA #1:</u> Site Code 2910	145 17th Street Golden Meadow, LA 70357	(985) 396-2804 (985) 396-2805
<u>Fourchon, LA #2:</u> Site Code 2913	228 16th Street Golden Meadow, LA 70357	(985) 396-2755 (985) 396-2756
<u>Ingleside, TX:</u> Permit Code STF001 Transfer Facility	2725 Garrett Road Ingleside, TX 78362	(361) 776-3523 (361) 776-3524
<u>Port Arthur, TX:</u> Permit Code STF001	8300 Pleasure Inlet Port Arthur, TX 77640	(409) 963-3503 (409) 963-3509
<b><i>Electronic Waste (Computer components, Televisions, Faxes, Radios, Copiers, Printers, etc.)</i></b>		
<b>Redemtech</b> (All non-computer related electronic waste, i.e. TV's VCR's, fax machines etc.)	4089 Leap Road Hilliard, OH 43026	800) 743-3499 ext. 2509 or 2561
<b>Getronics</b> (Desktop PC's, laptops, monitors, printers, hubs, switches etc.)	Charlotte, N.C.	(704) 649-4606
<b><i>Filters (Oil, Fuel)</i></b>		
<b>Omega Waste Management</b> (Primary)	1900 Highway 90 West, Patterson, LA 70392	(985) 399-5100 (888) 419-5100
<b>Seimens</b> (formerly US Filter Recover Services, Inc.)	697 Highway 167 Opelousas, LA 70570	(800) 960-6377 (337) 826-8001
	4415 E. Greenwood Baytown, TX 77520	(800) 355-2383
<b><i>Flares and Signal Devices</i></b>		
<b>Clean Harbors – Colfax</b>	3763 Highway 471 Colfax, LA 71417	(318) 627-3443
<b><i>Fluorescent Light Bulbs (including high pressure sodium)</i></b>		
<b>Lamp Enviromental Industries (LEI)</b>	46257 Morris Road Hammond, LA 70401	(800) 309-9908
<b>Safety Kleen</b>	2421 Tyler Street Kenner, LA 70062	(504) 466-5718
	21580 Industrial Road Missouri City, TX 77459	(281) 208-6504
	3820 Bratton Road Corpus Christi, TX 75413	(512) 854-9471

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Organization Name	Site Location	Phone Number
<b><i>Freon TF Solvent 113 (used in IR meters)</i></b>		
Environmental Enterprises USA Lab\	58485 Pearl Acres Road Ste D Slidell, LA 70461	(800) 966-2788
<b><i>Grease (Lubricating)</i></b>		
Omega Waste Management (Primary)	1900 Highway 90 West, Patterson, LA 70392	(985) 399-5100 (888) 419-5100
Seimens (formerly US Filter Recover Services, Inc.)	697 Highway 167 Opelousas, LA 70570 4415 E. Greenwood Baytown, TX 77520	(800) 960-6377 (337) 826-8001 (800) 355-2383
<b><i>Hazardous Waste Consultants</i></b>		
Coastal Environmental (Primary)	111 Matrix Loop Lafayette, LA 70507	(337) 264-1112
Omega Waste Management (Primary)	1900 Highway 90 West, Patterson, LA 70392	(985) 399-5100 (888) 419-5100
<b><i>Hexane (IR meters)</i></b>		
Environmental Enterprises USA Lab	58485 Pearl Acres Road Ste D Slidell, LA 70461	(800) 966-2788
<b><i>Industrial Waste (Liquids)</i></b>		
Newpark Environmental Services- Big hill Industrial Waste Liquids Injection Facility	26400 Wilber Road Winnie, TX 77665	(337) 984-4445
CCS Energy Services LLC	7455 Rangeline Road Theodore, AL 36582	(251) 443-6324
<b><i>Industrial Waste (Solids)</i></b>		
River Birch Landfill (Primary)	2000 S. Kenner Road, Avondale, LA 70785	(504) 364-1140 (M)/ 504-436-1288 (O)
Waste Management – Woodside Landfill (Back up)	29340 Woodside Drive Walker, LA 70785	(225) 665-8225
Allied Jefferson Davis Landfill (Back up)	16547 Landfill Road Welsh, LA 70591	(337) 882-1477 (O) (337) 734-4135 (M) (337) 882-6895 (F)
Allied Victoria Landfill (Back up)	4010 Callis Victoria, TX 77901	(800) 274-0649
<b><i>Medical Waste</i></b>		
Stericycle Inc.	28161 Keith Drive Lake Forest, IL 60045	(800) 355-8773 ext. 2016
<b><i>NORM (Naturally Occurring Radioactive Material)</i></b>		
Newpark Environmental Services	26400 Wilber Road Winnie, TX 77665	(337) 984-4445

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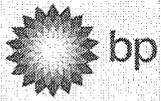
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Organization Name	Site Location	Phone Number
<b><i>NORM Cleaning/Companies Decontamination Facilities</i></b>		
Phillips Services Corp. (PCS)	756 Geraldine Road Gibson, LA	(985) 575-3434
Production Management Inc. (PMI)	9761 Highway 90 East, Morgan City, LA 70380	(985) 631-3837
Trussco	12580 Offshore Road, Abbeville, LA 70510	(337) 893-5392 (337) 893-1005
Major Equipment and Remediation (MER)	9591 Highway 182 Amelia, LA 70340	(985) 385-3132
<b><i>Recycle the Gulf (Recyclable Cardboard, Plastic, Metal)</i></b>		
Tech Oil Products (Supplier for compactor and sorting units)		(800) 737-5533 ext. 300
<b><i>Sanitary Waste</i></b>		
Louisiana Environmental Monitoring (LEM)		(337) 289-5223
<b><i>Scrap Metal</i></b>		
LaRose Scrap (Back up)	1669 Hwy, 24 LaRose, LA 70373	(985) 798-7055
<b><i>Scrap Metal continued</i></b>		
Southern Scrap (Primary)	9724 Purvis Thell Road Abbeville, LA 70510	(337) 898-2970
	400 Dickson Road Houma, LA	
H&H Junk Iron (Primary)	838 Hwy. 182 Houma, LA 70364	(985) 879-1700
	4801 Florida Ave. New Orleans, LA 70117	(504) 942-0359 (504) 942-0340
	3702 Agnes Street Corpus Christi, TX 78405	(361) 888-5825
<b><i>Thread Protectors</i></b>		
Trojan Rental	211 Diesel Drive Scott, LA 70583	(337) 234-0471
Molding Specialists, Inc (MSI)	9901 Meadow Vista Blvd, Houston, TX 77064	(281) 890-4595
<b><i>Tires, used</i></b>		
Colt	1223 Delhomme Ave., Scott, LA 70583	(337) 235-0353

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Procedures**

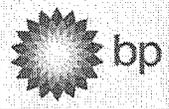
<b>Organization Name</b>	<b>Site Location</b>	<b>Phone Number</b>
<b>Trash</b>		
<b>River Birch Landfill (Primary)</b>	2000 S. Kenner Road, Avondale, LA 70785	(504) 364-1140 (M) 504-436-1288 (O)
<b>Allied Jefferson Davis Landfill (Back up)</b>	16547 Landfill Road Welsh, LA 70591	(337) 882-1477 (O) (337) 734-4135 (M) (337) 882-6895 (F)
<b>Allied Victoria landfill (Back up)</b>	4010 Callis, Victoria TX 77901	(800) 274-0649
<b>Waste Management (Coastal Plains) (Back up)</b>	21000 E. Hwy., 6 Alvin, TX 77511	(281) 388-1708
<b>Newton County Landfill (Back up)</b>	5 miles N. of HWY 12 on Hwy 87 Orange, TX 77630	(409) 746-9919
<b>Trash Transporters</b>		
<b>Solid Waste Disposal, Inc (SWDI)</b>	172 W. 39th Street Larose, LA 70373	(985) 693-4866
<b>Waste Management</b>	143 Hwy., 3199 Raceland, TX 70394	(985) 537-3281 (800) 548-8597
<b>Used Oil</b>		
<b>Omega Waste Management (Primary)</b>	1900 Highway 90 West, Patterson, LA 70392	(985) 399-5100 (888) 419-5100
<b>L&amp;L (Formerly ASCO)</b>	485 Jump Basin Road (# 15), Fourchon, LA	(985) 396-2711
<b>Envirosolutions (Back-up)</b>	11005 e. Interstate Highway 10, Ste A, Mont Belvieu, TX 77580	(877) 664-4645
<b>Vertel (IR meters)</b>		
<b>Environmental Enterprises USA Lab</b>	58485 Pearl Acres Road Ste D Slidell, LA 70461	(800) 966-2788
<b>Water sample Laboratories</b>		
<b>Southern Petroleum Laboratories (SPL)</b>	500 Ambassador Cafferty, Scott, LA 70583	(800) 304-5227
<b>ARS (American Radiation Services)-NORM samples</b>	2609 North River Road, Port Allen, LA 70767	(800) 401-4277

**F. Disposal Regulatory Guidelines**

Oil and oily waste generated during a spill cleanup operation will be segregated and each waste stream will be treated separately for waste determination, characterization, and classification. All wastes generated will be managed as required by the Resource Conservation and Recovery Act (RCRA), and other applicable regulations.

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Hazardous substances will be transported by permitted transporters to approved and permitted disposal facilities and must be properly packaged and labeled prior to transport

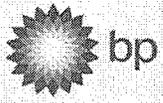
in accordance with 40 CFR 262.30. State licensed hazardous material haulers are required to have a US Environmental Protection Agency ID Number as well as a state transporter ID number. The waste generator must be complete and enclose a uniform hazardous waste manifest with each shipment of waste material. The uniform hazardous waste manifest must be signed by responsible BP personnel and include a statement to the effect that BP is disposing of the material within the framework of a spill response operation in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR § 300).

Applicable regulations for wastes shipped offsite include, but are not limited to, the following:	
•	RCRA regulations listed in 40 CFR § 262-263
•	DOT hazardous materials regulations listed in 40 CFR § 171-178
•	Applicable state regulations; based and/or shore base location

Responsible BP personnel will track and maintain copies of the hazardous waste manifests received from the designated disposal facilities for a minimum of three (3) years in accordance with 40 CFR § 262.40.

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**Disposal Options**

**Figure 16-1**

Waste Stream	Source	Disposal Options
Fresh oil w/ water	Skimmers, vacuum trucks, etc.	Recycle in production process system
Weathered oil w/ water	Skimmers, vacuum trucks, etc.	Refuse as fuel or asphalt, incinerate, solidify or landfill
Water w/ oil	Skimmers, vacuum trucks, etc.	Decant, POTW injection, incineration
Contaminated PPE	Workers	Landfill, incineration
Absorbent material w/ oil	Near shore cleanup	Landfill, incineration
Debris w/ oil	Pre-impact shoreline cleanup	Landfill, incineration, <i>in-situ</i> burning
Oiled debris	Post impact shoreline cleanup	Landfill, incineration, <i>in-situ</i> burning
Soil w/ oil	Beaches, shoreline cleanup	Landfill, bioremediation, <i>in-situ</i> treatment

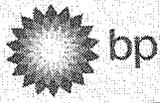
**Marine Portable Tanks**

**Figure 16-2**

Vendor	500 bbls	250 bbls	150 bbls	100 bbls	50 bbls	25 bbls
Diamond Tank Rentals	3	4				100
Magnum Mud	21	25	4	12	2	600
OSCA					1	37
AMBAR						80
Gulfstream Services				5		200
Circulation Tools	7		2		2	65
Eagle Rental Company						7
Allwaste Services			2			165
<b>Subtotal</b>	<b>15500</b>	<b>7250</b>	<b>900</b>	<b>1900</b>	<b>250</b>	<b>31350</b>
<b>Total</b>	<b>57150 Barrels</b>					

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**Supplemental Offshore Vessels**

**Figure 16-3**

Vessel	Location	Draft		Capacity	Type
		Min	Max		
<b>NRC</b>					
NRC Admiral	Galveston, TX	7 ft	9 ft	229 bbls	OSRV
NRC Liberty	Tampa, FL	7 ft	9 ft	322 bbls	OSRV
NRC Defender	Mobile, AL	2.3 ft	10.8 ft	16500 bbls	OSRB
NRC Valiant	Corpus Christi, TX	2 ft	10.5 ft	20892 bbls	OSRB
Seahorse IV	Morgan City, LA		6 ft	100 bbls	ID Boat
Seahorse V	Fourchon, LA		10 ft	100 bbls	ID Boat
Seahorse VI	Fourchon, LA	7 ft	9 ft	101 bbls (bladder)	ID Boat
Celeste Elizabeth	Fourchon, LA		10 ft	416.8 Bbls	ID Boat
*Shallow water barges	Operates in pairs			200 bbls/unit	
<b>MSRC</b>					
Southern Responder	Ingleside, TX			4,000	OSRV
Texas Responder	Galveston, TX			4,000	OSRV
Gulf Coast Responder	Lake Charles, LA			4,000	OSRV
Louisiana Responder	Fort Jackson, LA			4,000	OSRV
Mississippi Responder	Pascagoula, MS			4,000	OSRV
Florida Responder	Miami, FL			4,000	OSRV
<b>Total</b>				<b>44879.6 bbls</b>	
* Shallow water barges – Operates in pairs – 29 pairs (unit) @ 200 bbls/unit					

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## 17. WILDLIFE REHABILITATION PROCEDURES

### A. Overview

Rehabilitation of oiled wildlife is a complex, crisis oriented process that requires an experienced staff with medical, technical, and crisis management skills. Regulatory permits and specialized training for Occupational Health and Safety Administration (OSHA) compliance are also required to conduct a comprehensive oiled wildlife response. Rehabilitation of oiled wildlife focuses primarily on the adverse physiological effects of oil on individual birds and animals. The effects, which are complex, may be counteracted through a cooperative effort of veterinarians, biologists, and rehabilitation specialists with oil spill response experience. The primary objective of wildlife rehabilitation is to care for injured animals and return them to their natural environment.

Wildlife rehabilitation serves two purposes in an efficient oil spill response:

- Provide a humane response to wild animals harmed through man-related activities, and
- Attempts to treat and return affected animals to healthy breeding populations in the wild.

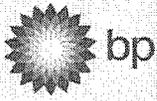
Rehabilitation efforts are particularly important when endangered or threatened species are contaminated.

In general, the effects of oil on birds may be characterized as environmental, external, and/or internal:

- Environmental Effects include, but are not limited to, immediate contamination of food source biomass, reduction in breeding animals and plants that provide future food sources, contamination of nesting habitat, and reduction in reproductive success through contamination and reduced hatchability of eggs or temporary inhibition of ovarian function.

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- External Effects of oil are the most noticeable and the most immediately debilitating. Birds that are most often affected by oil spills include those that remain on the water and those that feed in the water. Oil may contaminate the entire bird or small parts of the bird dependant upon the amount of oil in the water and the bird's natural behavior pattern (i.e., swimming, wading and diving). Oil disrupts the interlocking structure of feathers, which destroys the waterproofing and insulating properties of the plumage. The oiled bird may encounter some or all of the following difficulties due to external effects:
  - 1) Chilling
  - 2) Inability to fly
  - 3) Inability to remain afloat
  - 4) Difficulty obtaining food
  - 5) Difficulty escaping predators
  - 6) Decreased foraging ability
  - 7) Loss of attainable food sources
- Internal Effects are not as apparent, however, they are equally life threatening and include, but are not limited to :
  - 1) Toxic effects on the gastrointestinal tract, pancreas, and liver
  - 2) Ulceration and hemorrhaging within the lining of the gastrointestinal tract
  - 3) Aspiration pneumonia, severe and fatal kidney damage, severe dehydration
  - 4) Immune system is compromised and Aspergillosis disseminates throughout the body and occludes the trachea, heart, liver, and/or kidneys.

**Only trained and certified wildlife specialists will be involved in rehabilitation efforts on behalf of BP.**

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## B. Authorization

Resident birds native to states along the Gulf Coast are the responsibility of the respective state wildlife agencies and rehabilitators must be permitted by the state agency in order to pick up oiled waterfowl. Migratory birds are the responsibility of the U S Fish and Wildlife Service and rehabilitators must be permitted by the federal agency to rescue and transport oiled birds. Birds on the endangered species list are the responsibility of both federal and state wildlife authorities and permits to recover and rehabilitate oiled birds must be received from both agencies prior to collection.

Personnel from Federal and State wildlife services within the ICS/Unified Command will determine the need for wildlife rescue and rehabilitation in addition to providing the authorization to proceed. Federal and State wildlife authorities will act in an advisory capacity during major oil releases and will coordinate with industry counterparts to establish bird cleaning stations and holding pens.

The BP Planning Section Chief (PSC) is responsible for ensuring that wildlife concerns are addressed during a spill incident and will activate one or more permitted professional wildlife services in the event wildlife is threatened. Additionally, the PSC will ensure that the appropriate Federal and State wildlife agencies are notified and kept abreast of wildlife activities.

## C. BP Wildlife Rehabilitation Plan

BP has a wildlife rehabilitation procedure in place to ensure wildlife issues related to a release of oil to the waters of the Gulf of Mexico are properly addressed. The procedure relies on Federal and State wildlife agencies as well as recognized professional wildlife experts to assist and direct wildlife recovery and rehabilitation. The procedures are as follows:

- |   |   |
|---|---|
| • | The BP Planning Section Chief (PSC) will assess the spill incident and determine if a threat to wildlife exists or if wildlife has already been impacted. |
| • | In the event wildlife is not threatened, the PSC will continue to monitor the spill.  |



- |   |  |
|---|--|
| • | The PSC will alert a professional wildlife service and place them on standby and also alert appropriate Federal and State wildlife personnel.  |
| • | In the event the spill threatens or has already impacted wildlife, the PSC will call for the mobilization of one or more professional wildlife services for cleaning and rehabilitation. |
| • | The PSC will contact and inform the US Fish & Wildlife Service and appropriate State wildlife agencies of the situation.   |
| • | The PSC will coordinate wildlife rehabilitation efforts with BP ICS Operations and Logistics Sections.   |

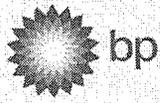
**D. Agency/Contractor Notifications**

Wildlife Services Notification – The primary professional wildlife services that may be utilized by BP during a spill incident are listed in **Figure 17-2**.

Federal and State Wildlife Agency Notifications – The Federal and State wildlife agencies that may be contacted by BP personnel during an oil spill incident are listed in **Figure 17-3**. Note: Other wildlife experts in the private sector or at universities can be found in **Section 9**, Available Technical Expertise.

**E. Equipment/Supplies Necessary to Operate a Rehabilitation Center**

- |   |                               |
|---|-------------------------------|
| Facility requirements vary significantly dependent upon the specific needs of various spill scenarios as well as the following factors: |                               |
| •   | Anticipated number of animals |
| •   | Types and numbers of species  |
| •   | Age of wildlife contaminated  |
| •   | Type of containment           |
| •   | Season/weather                |
| •   | Location of spill             |

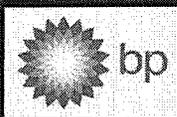


A suitable facility must have a large open space that can easily be reconfigured to accommodate the changing needs of the wildlife rehabilitation process. Contracted wildlife specialists and/or agency representatives should be consulted regarding facility requirements for optimum rehabilitation. The following are equipment and facility considerations:

Equipment/facility considerations for wildlife rehabilitation activities. Consult with wildlife specialists to determine specific requirements.	
•	Hot and Cold Water Capacity
•	Electric and Lighting
•	HAVC Systems
•	Communications
•	Required Supplies Needed

**Figure 17-1** lists some general conditions that can result from contamination of wildlife from spilled oil. Additionally, the minimum facility requirements for rehabilitating 100-150 oiled animals are illustrated in **Figure 17-4**. This information is presented for reference to assist with the assessment and initial determination of resource requirements. **Only trained and certified wildlife specialists will be involved in rehabilitation efforts on behalf of BP.**

Each wildlife rehabilitation facility must have a Site Safety Plan in place prior to start-up. The Site Safety Plan must include checklists for measures to avoid physical, chemical, and biological hazards, safe animal handling procedures, and other emergency procedures and contact numbers.



**Clinical Findings Associated With Oil Contamination**

**Figure 17-1**

**Oiled birds can present any and all of the following physical and clinical signs:**

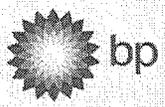
–	Oil, moderate to severe, on feathers and skin
–	Irritation, thickening, cracking and/or bleeding of skin
–	Hypothermia (reduced body temperature)
–	Hyperthermia (increased body temperature)
–	Inflammation of conjunctiva and corneal surface of the eyes
–	Oil in mouth, nares, vent
–	Feather loss
–	Acute respiratory distress
–	Tarry black (bloody/oiled) or green (bile stained) droppings
–	Sternal recumbency (inability to stand)
–	Ataxia (weakness/uncoordinated)
–	Tremors, seizures or other signs of CNS/neuromuscular toxins
–	Shock

**Further examination and diagnostic testing can reveal:**

–	Dehydration
–	Anemia
–	Reduced kidney function
–	Pulmonary edema
–	Electrolyte imbalance
–	Acidosis
–	Fungal/bacterial/viral infections
–	Capture myopathy
–	Other capture-related injuries

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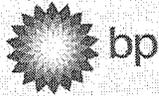
**Primary Professional Wildlife Service**

**Figure 17-2**

Service	Contact	Contact Numbers
Wildlife Rehab & Education, Inc. 951 Power St League City, TX 77573 <a href="http://www.wranded.org">www.wranded.org</a>	Sharon Schmalz	(281) 332-8319 (H) (713) 279-1417 (Pg)
Texas General Land Office La Porte, TX	Patrick Lynch	(361) 825-3004 (281) 470-6597
International Bird Rescue Research Center 4369 Cordelia Road Fairfield, CA 94585 <a href="http://www.ibrrc.org">www.ibrrc.org</a> <a href="mailto:jay@ibrrc.org">jay@ibrrc.org</a>	Jay Holcomb	(707) 207-0380 (24hr) (707) 207-0380 x102 (707) 429-4052 (H)
Louisiana Marine Mammal Stranding Network	(Administered by LA Dept of Wildlife & Fisheries)	(504) 934-5337 (Pg)
LA Dept of Wildlife & Fisheries		(800) 442-2511 (24hr)
Florida Fish & Wildlife Conservation Commission		(239) 332-6966
Texas Marine Mammal Stranding Network Galveston, TX <a href="http://www.gulfbase.org/organization/view.php?oid=tmmsn">www.gulfbase.org/organization/view.php?oid=tmmsn</a> <a href="mailto:dcowan@utmb.edu">dcowan@utmb.edu</a>		(800) 962-6625 (409) 942-7034 (Pg)
Tri-State Bird Rescue & Research, Inc. 110 Possum Hollow Rd. Newark, DE 19711 <a href="http://www.tristatebird.org">www.tristatebird.org</a> <a href="mailto:Oilprograms@tristatebird.org">Oilprograms@tristatebird.org</a>	Heidi Stout	(302) 737-9543

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**Federal & State Wildlife Agency Notifications**

**Figure 17-3**

No.	Agency	Contact	Contact Numbers
<b>US Fish &amp; Wildlife Region II</b>			
1	Region II Office Albuquerque, NM	Stephen Robertson	(505) 248-6669 (Day) (505) 286-1810 (H)
2	Texas Field Office East Matagorda Bay – North Houston, TX	John Huffman	(281) 286-8282 (Off) (281) 282-9344 (Fax)
3	Texas Field Office East Matagorda Bay – South Corpus Christi, TX	Clair Lee	(361) 994-9005 (Off) (361) 224-3432 (Pg)
<b>US Fish &amp; Wildlife Region IV</b>			
1	Region IV Office Atlanta, GA	Diane Beeman	(404) 679-7094 (Off) (404) 895-7093 (C)
2	Louisiana Field Office Lafayette, LA	Buddy Goatcher	(337) 291-3100 (Off) (337) 280-1157 (C)
3	Alabama/Miss Field Office Daphne, AL	Warren Lorentz	(251) 441-5181 (Off)
4	Florida Field Office Panama City, FL	Dr. John Hemming	(850) 769-0552 (Off) (850) 215-1435 (H)
<b>State Fish &amp; Wildlife Agencies</b>			
1	Texas Parks and Wildlife Austin, TX	Dave Buzan	(512) 912-7013 (Off) (512) 389-4848 (24hr)
2	LA Dept Wildlife & Fisheries Baton Rouge, LA	Jim Hanifen	(225) 765-2379 (Off) (225) 765-2441 (24hr) (225) 765-2935 (Direct)
3	Alabama Resources Division Dauphin Island, AL	Steve Heath	(251) 861-2882 (Off) (251) 968-7576
4	Mississippi Emergency Management Agency Jackson, MS	MS State Warning Point	(601) 352-9100 (Non-Emergency) (800) 222-6362 (24hr)
<b>Flower Garden Bank National Marine Sanctuary</b>			
1	NOAA Galveston, TX		(409) 621-5151 (Off)

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**Wildlife Rehabilitation Center Space Requirements**

**Figure 17-4**

Space/Area	Square Footage
Front desk/admissions	250
Logistics Office	200
Kitchen/food storage	250
Husbandry area (Large central room)	1200
Supplies/storage	250
Wildlife cleaning area	750
Medical treatment/exam	200
Pathology/Lab/Cold storage	100
Isolation ward	200
Volunteer/Worker restroom	150
Bathrooms/Decon/Changing	200
Outside pool areas 10'x15'x2' Per 15 birds + access and maintenance space	3300
Non-hazardous & Hazardous (medical & oil) waste	
Indoor	50
Outdoor	400
Outside area for oily waste water	300
Loading dock/parking for 50 (opposite side of bldg from outside cages)	5000
<b>Total interior sq ft</b>	<b>3800 ft<sup>2</sup></b>
<b>Total exterior sq ft</b>	<b>9000 ft<sup>2</sup></b>
<b>Total square feet</b>	<b>12800 ft<sup>2</sup></b>

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## 18. DISPERSANT USE PLAN

### A. Overview

Dispersants are chemicals used to remove floating oil from the water surface and disperse it into the water column in order to reduce impact to sensitive shoreline habitats and animals that are present on the water surface. Specially formulated products containing surface-active agents are sprayed onto the slicks by aircraft or boat and are applied undiluted or mixed with water. The dispersants reduce the oil/water surface tension and decrease the energy needed for the slick to break into small particles and mix into the water column. Some turbulence is needed to mix the dispersant into the oil and the treated oil into the water. The Dispersant Use Decision Tree (**Figure 18-1**) may be used to determine if dispersant operations are the optimum countermeasure during cleanup operations.

Dispersant use is strictly regulated and has very specific policies and procedures associated with it. Dispersant application requires approval of the Regional Response Team (RRT) through the Federal On-Scene Coordinator (FOSC). However, some areas in the Gulf of Mexico are designated as “pre-approved” for dispersant application. These areas require RRT notification from the FOSC. Additionally, the FOSC must approve any dispersant application by the Responsible Party.

### B. Dispersants Inventory

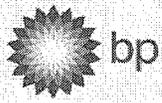
Sufficient inventories of dispersants available to BP are detailed in **Figure 18-2**. Acquisition of dispersant and application vehicles is guaranteed through contracts and/or agreements with OSRO's and supply companies. For contract agreements, please see **Appendix D**.

### C. Toxicity Data

Region VI pre-approval guidelines include performance of a bioassessment of potential impacts resulting from dispersant use in the Gulf of Mexico. Species present at the water surface and/or in the upper water column are most at risk of being directly impacted in a negative manner by dispersant application. The following table summarizes these types of resources:

Title of Document: Regional Oil Spill Response Plan  
Authority: Dan R. Repogle,  
GoM EMS Mgmt Representative  
Scope: GoM EMS  
Issue Date: 12/01/00  
Revision Date: 06/30/09  
Next Review Date: 06/30/11

UPS-US-SW-GOM-HSE-DOC-00177-2  
Custodian: Earnest Bush,  
Environmental Coordinator  
Document Administrator: Kristy McNease,  
GoM HSSE Document Mgmt Administrator  
Issuing Dept.: GOM SPU  
Control Tier: Tier 2 - GoM Region  
Section 18, Page 1 of 41 Pages  
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ORGANISM TYPE	REPRESENTATIVE SPECIES	RISK FACTOR
Free-swimming shellfish	Brown Shrimp	Commercial species, planktonic eggs/larvae, during migration concentrate near surface at night
	White Shrimp	Commercial species, planktonic larvae, juveniles occur near water surface during offshore migration
Water column-spawning fish	Gulf Menhaden	Large commercial fishery, potential to affect planktonic eggs/larvae
Diving duck	Lesser Scaup	Recreationally managed, aggregate in large rafts floating on water surface, present over 10 miles from shore.

Toxicity values presented in the following summary represent the results of a bioassay used to determine dispersant toxicity to the species listed below (LC 50 test). The LC 50 value is the Lethal Concentration (LC in ppm) causing 50 percent mortality over a given period of time (i.e. 48-hour). The following is a summary for the dispersant COREXIT 9500/9527.

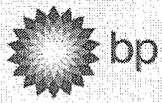
SPECIES	LC50 – COREXIT 9500	LC50 – COREXIT 9527
Menidia beryllina (inland silverside)	25.2 ppm @ 96-hrs	14.57 ppm @ 96-hrs
Fundulus heteroclitus (mummichog)	140 ppm @ 96-hrs	100 ppm @ 96-hrs
Artemia salina (brine shrimp)	21 ppm @ 48-hrs	50 ppm @ 48-hrs
Mysidopsis bahia (mysid shrimp)	32.23 ppm @ 48-hrs	24.14 ppm @ 48-hrs

A Material Safety Data Sheet for Corexit 9500 may be found in **Figure 18-9**. An MSDS for Corexit 9527 may be found in **Figure 18-10**.

**D. Dispersant Effectiveness**

Open water with sufficient depth and volume for mixing and dilution are the preferred conditions for dispersant application. Weathering of oil decreases the effectiveness of dispersants, therefore, initial application should be completed as soon as possible. Dispersants should be considered when the impact of floating oil on sensitive shoreline habitats is greater than the risk of mixing oil into the water column.

In the case of increased contact with an expanding slick after treatment, it should be noted that treated slicks may increase in size initially (10-17 hours) as the interfacial tension at the oil surface is reduced. However, by 18 hours post-treatment, the treated slick is broken up and becomes smaller in area. The net effect of dispersant application is



ORGANISM TYPE	REPRESENTATIVE SPECIES	RISK FACTOR
Free-swimming shellfish	Brown Shrimp	Commercial species, planktonic eggs/larvae, during migration concentrate near surface at night
	White Shrimp	Commercial species, planktonic larvae, juveniles occur near water surface during offshore migration
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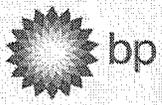
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a reduction in the amount of oil on the water surface. Below are results of an effectiveness assessment of Corexit 9500 & 9527 conducted by the U.S. Environmental Protection Agency.

**SWIRLING FLASK DISPERSANT EFFECTIVENESS TEST WITH SOUTH LOUISIANA (S/L) AND PRUDHOE BAY (P/B) CRUDE OIL**

**VENDOR LAB REPORT**

OIL	COREXIT 9500	COREXIT 9527
Prudhoe Bay Crude	45.3 %	37.4%
South Louisiana Crude	54.7%	63.4%
Average of Prudhoe Bay and South Louisiana Crudes	50.0%	50.4 %

**U.S. EPA OFFICE OF RESEARCH AND DEVELOPMENT REPORT**

OIL	COREXIT 9500	COREXIT 9527
Prudhoe Bay Crude	49.4	51%
South Louisiana Crude	45.4	31%
Average of Prudhoe Bay and South Louisiana Crudes	47.4	41%

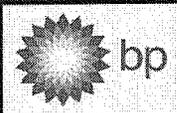
**E. Application Equipment**

The following table lists providers of dispersant application equipment in the Gulf Coast area. Each of these organizations is either an approved BP OSRO (See **Figure 7-7**) or is a primary provider of MSRC & NRC, BP's primary equipment providers.

#	Equipment	Quantity/ Type	Location	Contractor	Phone No.
1	Aircraft Spraying	(2) DC-3	Houma, LA	ASI	985-851-6391
		BE 90 King Air	Stennis, MS	MSRC	800-645-7745
		C-130A	Coolidge, AZ	MSRC	800-645-7745
		C-130 with ADDS Pack	Port Everglade, FL	CCA	954-983-9880
2	Dispersant Spotter Aircraft	Aero Commander	Houma, LA	ASI	985-851-6391
		BE 90 King Air	Stennis, MS	MSRC	800-645-7745
3	Dispersant Skid System	(1) Purpose built response vessel	Houma, LA	CGA	888-242-2007
4	Vessel Spraying	(2) 110' Crew Boat	Fourchon, LA	Ampol	800-482-6765
5	Helicopter Dispersant Application System	(1) Helo Pack	Fourchon, LA	Ampol	800-482-6765
	Dispersant skid mounted units	Crew Boat	Eureka, CA Morgan City, LA Cape May, NJ St. Croix, V.I.	NRC	(800) 899-4672

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 Next Review Date: 06/30/11

UPS-US-SW-GOM-HSE-DOC-00177-2  
 Custodian: Earnest Bush,  
 Environmental Coordinator  
 Document Administrator: Kristy McNease,  
 GoM HSSE Document Mgmt Administrator  
 Issuing Dept.: GOM SPU  
 Control Tier: Tier 2 - GoM Region  
 Section 18, Page 3 of 41 Pages  
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## F. Application Methods

There are two primary methods of applying dispersants to an oil spill. These methods involve the use of airplanes and helicopters for aerial application and the use of boats for on-water application. Below is a discussion of each application and information on the rates of application.

- **Aerial Dispersant Application**

Aerial application is one of the methods pre-approved by the Regional Response Team (RRT). This method involves the application of dispersants from an airplane, and typically involves the use of a DC-3 or C-130 which is directed by a spotter plane. The DC-3 and C-130 have payload capacities of 1000 and 3500-5000 gallons respectively. Aerial application can be hindered by poor weather (rain, fog, rough seas, etc.). Aerial application is allowed to take place only during daylight hours, and involves the use of undiluted dispersant. As a general rule, application rates are within a range of 3 to 7 gallons per acre.

- **Marine Dispersant Application**

The second method of dispersant application is from workboats using hand held equipment or mounted spray booms. Use of a portable fire pump or fixed fire fighting system from the workboat is recommended.

The system should operate between 40 and 80 psi, and should deliver seawater and dispersant at a rate sufficient to maintain a spray pattern capable of reaching the oil before being carried away by wind or turbulence. The ideal dispersant/sea water mixture is 3 to 10 percent dispersant. The concentration of dispersant should be calculated based on pump capacity, boom swath width, vessel speed, and estimated volume of oil to be treated over a specified area. A treatment rate of 5 gallons per acre is typical for marine applications. Approval for marine application is generally more difficult due to the additional agencies that must be consulted for approval.

## G. Conditions for Use

The objective of the Regional Response Team (RRT VI and RRT IV) FOSC Dispersant Pre-Approval Guidelines and Checklist is to provide for a meaningful, environmentally safe, and effective dispersant operation. **Figure 18-5** provides a flowchart identifying considerations of the Federal On-Scene Coordinator for approving dispersant use. Additionally, a checklist of decision/implementation elements for dispersant use can be found in **Figure 18-7**.



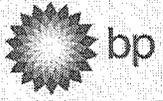
### Description of Pre-Authorization Area

Three zones have been established to delineate locations and conditions under which dispersant application operations may take place in waters of Region IV and VI. They are as follows:

- **Green Zone:** Pre-authorization for dispersant application. The Green Zone is defined as any offshore waters within Region IV and VI in which all of the following conditions apply:
  - 1) The waters are not classified within a “yellow” or “red” zone;
  - 2) The waters are **at least three miles from any shoreline** and falling outside of any state’s jurisdiction; and
  - 3) **The water is at least ten meters deep.**
- **Yellow Zone:** Waters requiring case-by-case approval. The Yellow Zone is defined as any waters within Region IV and VI which have not been designated as a “Red” zone and in which ANY of the following conditions apply:
  - 1) The waters fall under state or federal management jurisdiction. This includes any waters designated as marine reserves, National Marine Sanctuaries, National or State Wildlife Refugees or proposed or designated critical habitats;
  - 2) The waters are within three miles of a shoreline and/or fall under state jurisdiction;
  - 3) The waters are less than ten meters deep; and
  - 4) The waters are in mangrove or coastal wetland ecosystems or directly over coral reefs which are less than ten meters of water. Coastal wetlands include submerged algal and sea grass beds.
- **Red Zone:** Exclusion zones – The Red Zone includes areas designated by the Region IV and VI Response Team in which dispersant use is prohibited. No dispersant application operations will be conducted in the Red Zone unless:
  - 1) Dispersant application is necessary to prevent or mitigate a risk to human health and safety, and/or
  - 2) An emergency modification of this LOA is made on an incident-specific basis.

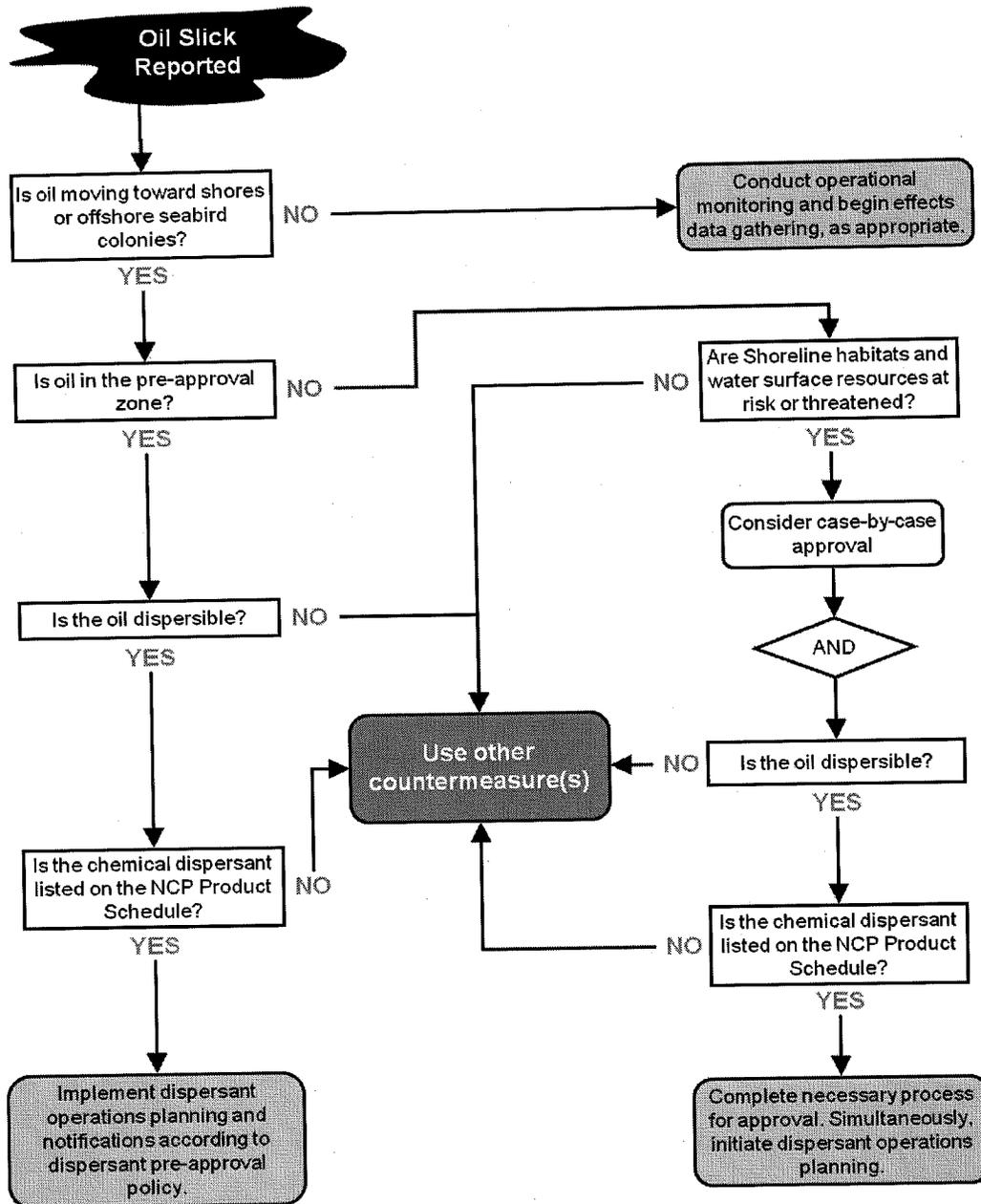
### H. Approval Procedures and Forms

The dispersant pre-approval process is designed to provide an expedited format for the usage of dispersants during an oil spill incident of any magnitude. In addition to following through with the checklists and guidelines discussed previously, **Figures 18-4**, the party requesting permission to apply dispersants will have to complete and submit the RRT Application for Pre-Approval (**Figure 18-8**) as well as initially provide the information required by the Dispersant Pre-Approval Initial Call Checklist (**Figure 18-3**).



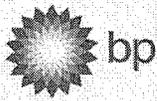
**Dispersion Use Decision Tree**

**Figure 18-1**



Title of Document: Regional Oil Spill Response Plan  
 Authority: Dan R. Replogle,  
 GoM EMS Mgmt Representative  
 Scope: GoM EMS  
 Issue Date: 12/01/00  
 Revision Date: 06/30/09  
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UPS-US-SW-GOM-HSE-DOC-00177-2  
 Custodian: Earnest Bush,  
 Environmental Coordinator  
 Document Administrator: Kristy McNease,  
 GoM HSSE Document Mgmt Administrator  
 Issuing Dept.: GOM SPU  
 Control Tier: Tier 2 - GoM Region  
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**BP**  
Regional Oil Spill Response Plan – Gulf of Mexico

Section 18  
Dispersant Use  
Plan

**Dispersant Inventory – Gulf Coast**

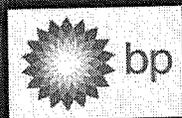
**Figure 18-2**

<i>Dispersant Stockpiles by Location (Updated 03/2009)</i>			
<b>Supplier &amp; Phone</b>	<b>Location of Dispersants</b>	<b>Type</b>	<b>Quantity in Gallons</b>
Airborne Support, Inc. (ASI) 985-851-6391	Houma, LA	Corexit 9527	3,355
MSRC (800) OIL-SPIL	Slaughter Beach, DE - DBRC Site	Corexit 9527	330
	Chesapeake City, MD - MSRC Site	Corexit 9527	9,130
	Portland, ME - OSRV	Corexit 9527	330
	Perth Amboy, NJ - OSRV	Corexit 9527	330
	Chesapeake City, MD - OSRV	Corexit 9527	330
	Virginia Beach, VA - OSRV	Corexit 9527	330
	San Juan, PR - MSRC Site	Corexit 9527	900
	Kiln, MS - Stennis Airport	Corexit 9527	22,260
	Kiln, MS - Stennis Airport	Corexit 9500	3,960
	Miami, FL - OSRV	Corexit 9527	800
	Pascagoula, MS - OSRV	Corexit 9527	800
	Fort Jackson, LA - OSRV	Corexit 9527	800
	Lake Charles, LA - OSRV	Corexit 9527	800
	Galveston, TX - OSRV	Corexit 9527	800
	Corpus Christi - OSRV	Corexit 9527	330
	Galveston, TX - MSRC Site	Corexit 9500	18,980
	Coolidge, AZ - Coolidge Airport	Corexit 9527	3,300
	Long Beach, CA - Tesoro Terminal	Corexit 9500	10,890
	Terminal Island, CA - OSRV	Corexit 9527	600
	Richmond, CA - MSRC Warehouse	Corexit 9527	11,500
	Richmond, CA - OSRV	Corexit 9527	605
Everett, WA - Everett Warehouse	Corexit 9527	6,495	
Ferndale, WA - CP Refinery	Corexit 9527	6,430	
Port Angeles, WA - OSRV	Corexit 9527	605	
Astoria, OR - OSRV	Corexit 9527	605	
Honolulu, HI - OSRV	Corexit 9527	605	
NRC National Response Corp. John Hielscher 631-224-9141 ext. 142	Morgan City, LA	COREXIT 9527	1,320
	Morgan City, LA	SPC 1000	220
	Morgan City, LA	BIO Disperse	1,045
	Toa Baja, PR	COREXIT 9527	5,005
	St. Croix, VI	COREXT 9527	1,650
ONDEO Nalco	Sugarland, TX	Corexit 9500	11,000
Clean Caribbean & Americas	Ft. Lauderdale, FL	Corexit 9500	30,360
OSR / EARL +44 (0)20 7724 0102	Southampton, UK	Corexit 9500	5,283
	Bahrain, MENAS Base	Corexit 9500 (1 week activation)	3,963
	Singapore, SG	Corexit 9500 (1 week activation)	8,440
<b>TOTAL QUANTITY (GALLONS)</b>			<b>174,486</b>

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 Issuing Dept.: GOM SPU  
 Control Tier: Tier 2 - GoM Region  
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**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): \_\_\_\_\_

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**FOSC Dispersant Use Checklist**

**Figure 18-4**

(Items on the far left of this checklist are keyed to letter and numbers on the top of the boxes in the FOSC Dispersant Use Flowchart and apply to offshore pre-approval only. INFORMATION AVAILABLE IN THE DISPERSANT PRE-APPROVAL INITIAL CALL CHECKLIST AND THE TABLE ON THE OTHER SHEET ARE NECESSARY TO COMPLETE THIS CHECKLIST.)

**OIL SPILLED**

- A. FOSC completes and evaluates DISPERSANT PRE-APPROVAL INITIAL CALL CHECKLIST.
- B. Ask spiller if dispersant spray operation is on alert pending completion of pre-approval use evaluation from FOSC.

**[1] DEPLOY SMART**

- A. Immediately deploy USCG Strike Team SMART Team to the spill site if dispersant use is likely. 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 in accordance with this Dispersant Pre-Approval Guidelines and Checklist.
- B. Immediately notify DOI/DOC survey specialist contact identified in Appendix A if dispersant use is likely.
- C. Deploy mechanical and/or *in-situ* burn operations, weather allowing.

**[2] PRE-APPROVED DISPERSANT OPERATIONS ACTIVATION EVALUATION**

- 1. Do you expect the use of dispersants in this case to provide an environmental benefit? The NOAA SSC should be contacted for trajectory and environmental fate analysis.

YES	<input type="checkbox"/>	⇒	GO TO SECTION 2 BELOW
NO	<input type="checkbox"/>	⇒	GO TO SECTION 11 BELOW

- 2. Plot the position of the spill on the appropriate nautical chart, draw a circle about the spill source with a 10 nautical mile radius as a worst-case scenario for surface movement. Hash mark any area within the circle that is in waters less than 10 meters deep or 3 nautical miles from shore. What is left is considered the dispersant operational area. Is the dispersant operational area to be in offshore water that is no less than 10 meters deep and at least 3 nautical miles from the nearest shoreline?

YES	<input type="checkbox"/>	⇒	GO TO SECTION 3 BELOW
NO	<input type="checkbox"/>	⇒	GO TO SECTION 9 BELOW

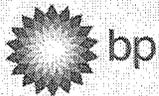
- 3. Was a contractual relationship with a dispersant spray contractor established prior to the spill?

YES	<input type="checkbox"/>	⇒	GO TO SECTION 4 BELOW
NO	<input type="checkbox"/>	⇒	GO TO SECTION 9 BELOW

**4. Dispersant Platform**

Consider the amount of oil spilled, the location of the operational area, volume of available dispersants to be used and the timeframe in which the required equipment can be on-scene, what is the most effective application platform? More than one platform type may be considered.

If Aerial ⇒	GO TO SECTION 5 BELOW
If Boat ⇒	GO TO SECTION 6 BELOW
If Other ⇒	GO TO SECTION 7 BELOW



**FOSC Dispersant Use Checklist (continued)**

**Figure 18-4**

5. Aerial Application Operational Conditions

[A] If on-scene weather was available from spiller on initial telephone contact, use the information to complete this section and assume for planning purposes that it will remain the same during the timeframe in which this decision is operating. At the earliest opportunity, contact the SSC for detailed weather but do not delay this decision process for the SSC weather input (Note: All dispersant operations are carried out during daylight hours only).

Winds less than or equal to 25 knots, and  
Visibility greater than or equal to 3 nautical miles, and  
Ceiling greater than or equal to 1,000 feet?

YES	<input type="checkbox"/>	⇒	GO TO SECTION 8 BELOW
NO	<input type="checkbox"/>	⇒	GO TO [B] IN THIS SECTION BELOW

[B] Notify the spiller's representative that the dispersant use decision has been delayed until the weather improves and the Dispersant Spray Operation is to be placed on standby status.

GO TO [C] IN THIS SECTION BELOW

[C] Consult with RRT 6 members. Contact the USCG co-chair at USCG District 8, EPA, DOI, DOC and Louisiana and/or Texas RRT representatives to notify them that dispersants are being considered but delayed due to weather. When the weather is beginning to improve:

BEGIN AGAIN IN SECTION 2 ABOVE

6. Boat Application Operational Conditions

[A] If on-scene weather was available from the spiller on initial contact, use the information to complete this section and assume for planning purposes that it will remain the same during the timeframe in which this decision is operating. At the earliest opportunity, contact the SSC for detailed weather, but do not delay this decision process for SSC weather input (Note: All dispersant operations are carried out during daylight hours only).

Wave height such that the boats to be used for the dispersant application can conduct an effective and safe spray operation?

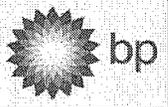
YES	<input type="checkbox"/>	⇒	GO TO SECTION 8 BELOW
NO	<input type="checkbox"/>	⇒	GO TO [B] IN THIS SECTION BELOW

[B] Notify the spiller's representative that the dispersant use decision has been delayed until the sea state improves and the Dispersant Spray Operation is to be placed on standby status.

GO TO [C] IN THIS SECTION BELOW

[C] Consult with RRT 6 members. Contact the USCG co-chair at USCG District 8, EPA, DOI, DOC and Louisiana and/or Texas RRT representatives to notify them that dispersants are being considered but delayed due to sea state. When the sea state is beginning to improve:

BEGIN AGAIN IN SECTION 2 ABOVE



**FOSC Dispersant Use Checklist (Cont'd)**

**Figure 18-4**

7. Immediately consult with the Scientific Support Coordinator (SSC) to evaluate potential alternatives to the Aircraft and Boat Platforms.

[A] After a briefing on the spill response situation from the FOSC, does the SSC recommend aerial application of dispersants?

YES	<input type="checkbox"/>	⇒	GO TO SECTION 5 ABOVE
NO	<input type="checkbox"/>	⇒	GO TO [B] IN THIS SECTION BELOW

[B] After a briefing on the spill response situation from the FOSC, does the SSC recommend boat application of dispersants?

YES	<input type="checkbox"/>	⇒	GO TO SECTION 6 ABOVE
NO	<input type="checkbox"/>	⇒	GO TO [C] IN THIS SECTION BELOW

[C] After a briefing on the spill response situation from the FOSC, does the SSC recommend an alternative platform?

YES	<input type="checkbox"/>	⇒	DEVELOP A PLAN AND GO TO SECTION 8 BELOW
NO	<input type="checkbox"/>	⇒	GO TO SECTION 11 BELOW

8. Is the dispersant to be used listed on the NCP Product Schedule and considered appropriate for existing environmental and physical conditions?

YES	<input type="checkbox"/>	⇒	GO TO SECTION 10 BELOW
NO	<input type="checkbox"/>	⇒	GO TO SECTION 9 BELOW

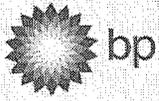
9. **GO NO FURTHER IN THIS FOSC DISPERSANT USE CHECKLIST.** The request for dispersant use does not qualify under the guidelines for pre-approval use of dispersants in Region 6. Contact your SSC and begin the dispersant use approval process as specified in the RRT 6 Regional Contingency Plan Subpart H Authorization (Authorization for Use of Dispersants in Non-Life Threatening Situations)

10. Dispersability

Refer to the Dispersant Pre-Approval Initial Call Checklist

Does the available technical information suggest that dispersion is likely given the spilled oil, anticipated oil weathering and selected dispersant? Use the FOSC Dispersant Use Oil Table and any technical sources such as the SSC to make this assessment.

YES	<input type="checkbox"/>	⇒	GO TO SECTION 12 BELOW
NO	<input type="checkbox"/>	⇒	GO TO SECTION 11 BELOW



**FOSC Dispersant Use Checklist (Cont'd)**

**Figure 18-4**

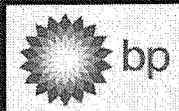
11. **GO NO FURTHER IN THIS FOSC DISPERSANT USE CHECKLIST.** In this case dispersant use is either inappropriate for this response or will probably not be considered to be effective relative to the effort required.

Concentrate your efforts on Mechanical and/or *in-situ* burn operations.

Note: You may want to consider dispersant pre-approval use at a later time if the field situation changes (i.e., becomes a continuous spill or has a new instantaneous release.) In such an event, make sure the Initial Call Checklist has been updated and return to the start of this checklist (OIL SPILLED ON PAGE 6.)

12. **INITIATE APPLICATION OF DISPERSANTS WITHIN THESE RRT GUIDES.**

- ◆ Water depth  $\geq$  10 meters and no less than 3 nautical miles from nearest shoreline.
- ◆ The SMART controller/observer should be over the spray site before the start of the operation. If possible, a DOI/DOC-approved marine mammal/turtle and pelagic/migratory birds survey specialist will accompany the SMART observer, but the operation will not be delayed for that individual (see Appendix A for contact information).  
Note: The purpose of SMART monitoring is to confirm best professional advice related to the potential success of dispersant use. Given the uncertainty involved relating to physical and environmental condition, oil weathering and dispersant and oil interaction, we must rely on positive feedback from the monitors to continue dispersant application.
- ◆ Personal protective equipment for personnel on-site will conform to the appropriate dispersant's MSDS.
- ◆ If dispersant platform is an aircraft, spray aircraft will maintain a minimum 1000 foot horizontal separation from rafting flocks of birds. Caution will be taken to avoid spraying over marine mammals and marine turtles.
- ◆ If dispersant platform is a boat:
  - ◆ If the system involves spray arms or booms that extend out over the edge of the boat and have fan type nozzles that spray a fixed pattern of dispersant, the following ASTM standards apply:
    - ◆ **ASTM F 1413-92** Standard Guide for Oil Spill Dispersant Application Equipment: Boom and Nozzle Systems.
    - ◆ **ASTM F 1460-93** Standard Practice for Calibrating Oil Spill Dispersant Application Equipment Boom and Nozzle Systems.
    - ◆ **ASTM F 1737-96** Standard Guide for Use of Oil Spill Dispersant Application Equipment during Spill Response: Boom and Nozzle Systems.
  - ◆ If the system involves the use of a fire monitor and/or fire nozzle to apply the dispersants, a straight and narrow "firestream" flow of dispersant directly into the oil is to be avoided. At this time (May 2000), there are no applicable ASTM standards for these types of systems.
- ◆ If an alternate dispersant platform is used, the Operation Plan should include dispersant application guidelines.
- ◆ The FOSC is to notify the RRT as soon as practicable after the approval is given to the RP.



**FOSC Dispersant Use Checklist (Cont'd)**

**Figure 18-4**

GO TO SECTION 13 BELOW

13. The RRT (EPA, DOI, DOC and the State of Louisiana and/or the State of Texas) must be kept informed on the status of the dispersant application throughout the operation. Provided the dispersant application is successful and operational results are positive, no RRT approval will be required for additional sorties and passes.

GO TO SECTION 14 BELOW

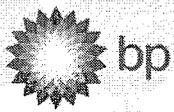
14. At the completion of the dispersant operation, send the following to the RRT representatives:
1. This completed Checklist
  2. The Dispersant Pre-Approval Initial Call Checklist
  3. A one page summary of the operation to date
  4. Other information as necessary

Provide the RRT post-application information-results within 24 hours of the dispersant application. Formal convening of the RRT, however, is not necessary.

Follow-up operation by insuring that flight logs and SMART team logs are secured should RRT members request additional documentation

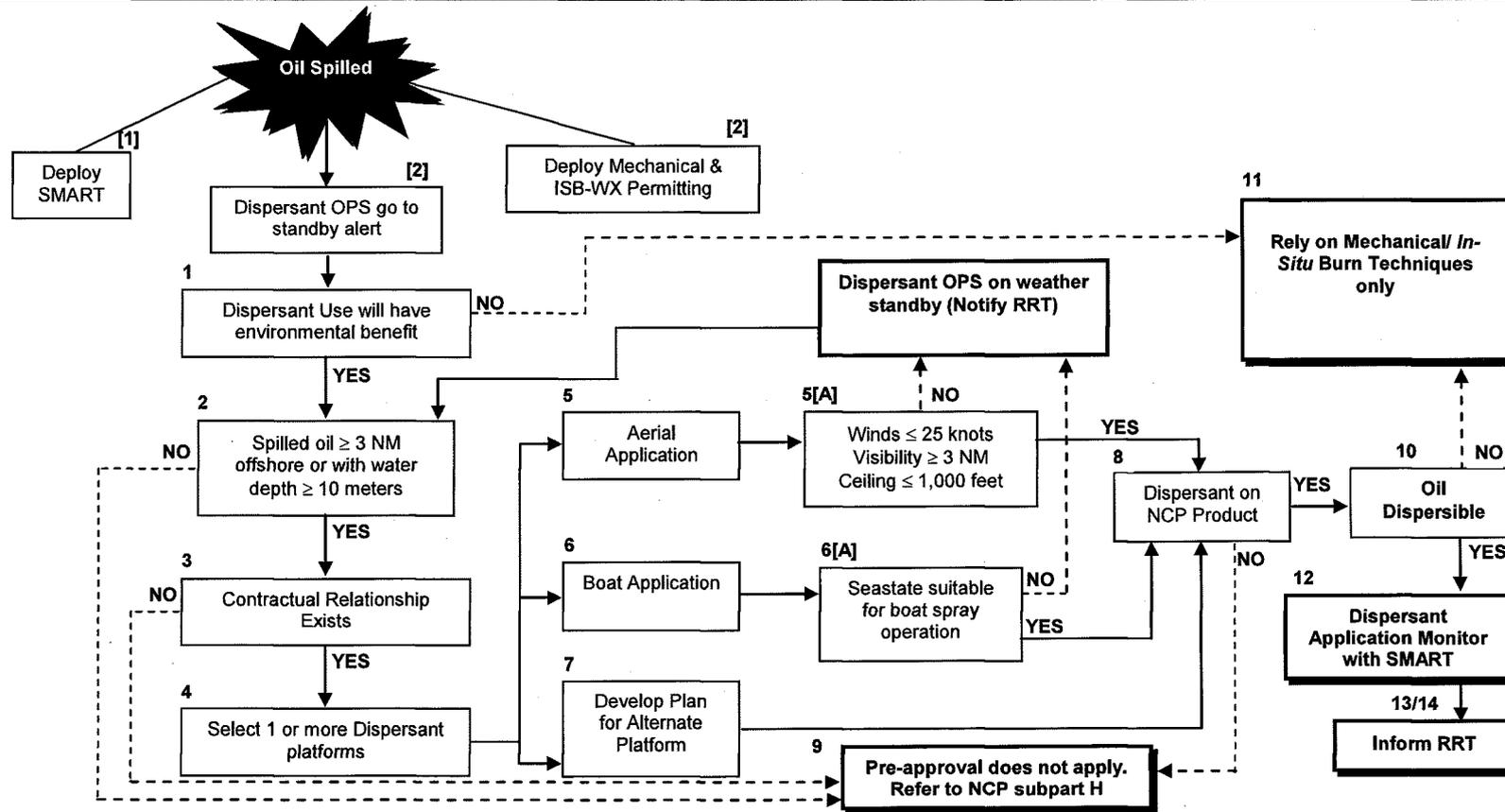
Title of Document: Regional Oil Spill Response Plan  
Authority: Dan R. Reptogle,  
GoM EMS Mgmt Representative  
Scope: GoM EMS  
Issue Date: 12/01/00  
Revision Date: 06/30/09  
Next Review Date: 06/30/11

UPS-US-SW-GOM-HSE-DOC-00177-2  
Custodian: Earnest Bush,  
Environmental Coordinator  
Document Administrator: Kristy McNease,  
GoM HSSE Document Mgmt Administrator  
Issuing Dept.: GOM SPU  
Control Tier: Tier 2 - GoM Region  
Section 18, Page 14 of 41 Pages  
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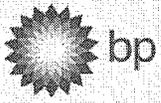
FOSC Dispersant Use Flowchart

Figure 18-5



Title of Document: Regional Oil Spill Response Plan  
 Authority: Dan R. Replogle,  
 GoM EMS Mgmt Representative  
 Scope: GoM EMS  
 Issue Date: 12/01/00  
 Revision Date: 06/30/09  
 Next Review Date: 06/30/11

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 Custodian: Earnest Bush,  
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 Document Administrator: Kristy McNease,  
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**FOSC Dispersant Use Oil Table**

**Figure 18-6**

General Dispersibility Relative to API Gravity and Pour Point

Probability difficult or impossible to disperse	Medium weight material. Fairly persistent. Probably difficult to disperse if water temperature is below pour point of material.	Lightweight material. Relatively non-persistent. Probably difficult to disperse if water temperature is below pour point of material.	No need to disperse. Very light weight material. Oil will dissipate rapidly.
	Medium weight material. Fairly persistent. Easily dispersed if treated properly.	Lightweight material. Relatively non-persistent. Easily dispersed.	
<b>API Gravity</b>	<b>17</b> .953	<b>34.5</b> .852	<b>45</b> .802

This table provides general guidance only. Note that specific dispersant formulations are designed to treat heavier, more viscous oils. Consult manufacturer recommendations prior to application and recommendations from monitoring team for continued use.

Title of Document: Regional Oil Spill Response Plan  
 Authority: Dan R. Replogle,  
 GoM EMS Mgmt Representative  
 Scope: GoM EMS  
 Issue Date: 12/01/00  
 Revision Date: 06/30/09  
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