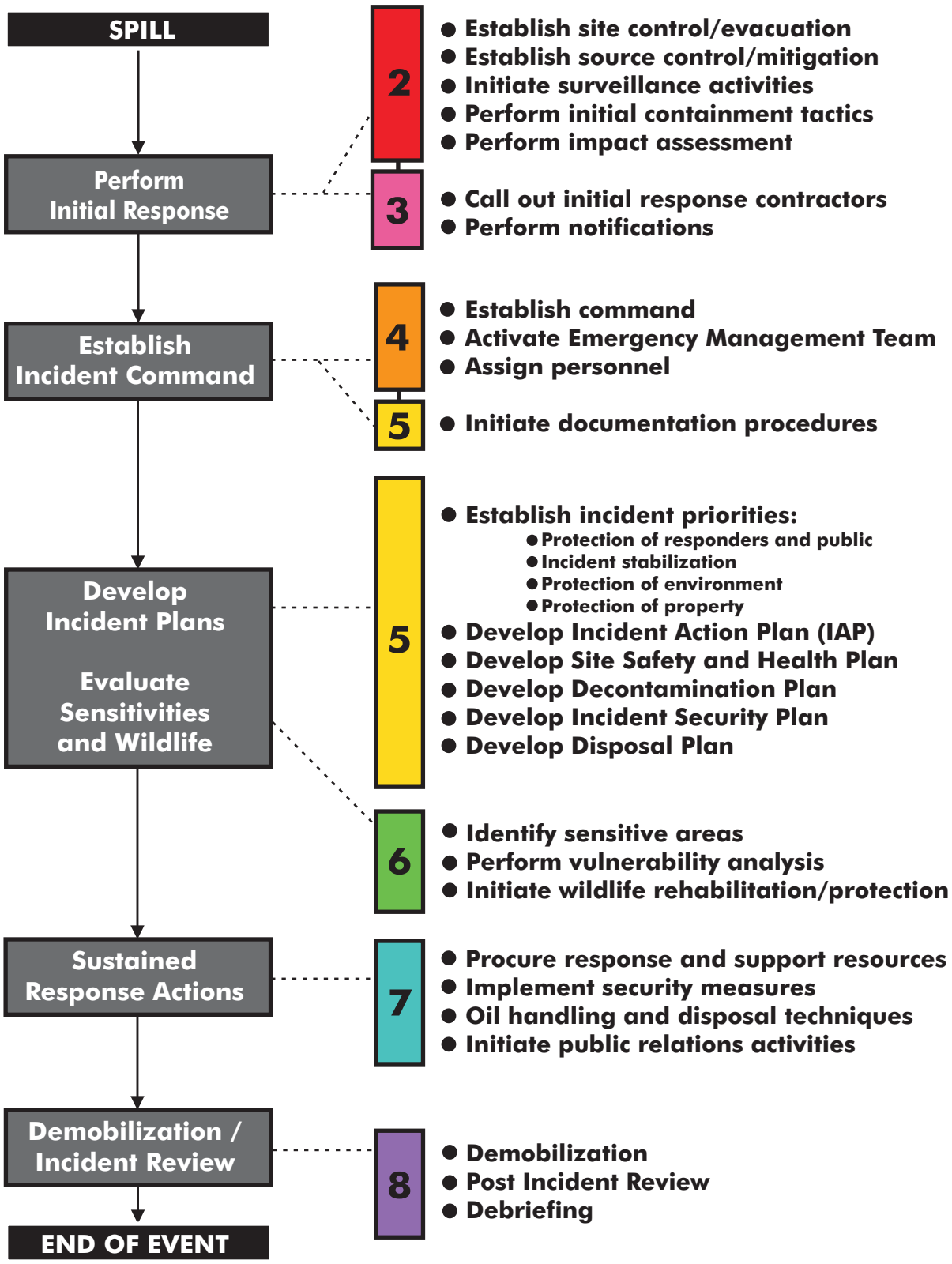
U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety Administration**

1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

The following Oil Spill Response Plan has been submitted to the Department of Transportation (DOT) Pipeline Hazardous Materials Safety Administration (PHMSA) in HyperText Markup Language (HTML) format, and has since been converted to Portable Document Format (PDF) form. Any hyperlink included in the PDF file is NOT functional, and materials referenced in the links have been attached as an addendum at the end of the document.

Response Procedures Flow Chart



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10/4/2011	ERAP | Emergency Response Action Plan (ERAP) | 5.0 Plot Plans / Tank Table | Figure 5-3 - Tank Table	
10/11/2011	EPA USCG PHMSA FRP/SPCC | 7 - Sustained Response Actions | 7.1 Response Resources | 7.1.1 Facility Response Equipment	
10/11/2011	ERAP | Emergency Response Action Plan (ERAP) | 4.0 Resources | Figure 4-2 - Facility Equipment	
10/11/2011	EPA USCG PHMSA FRP/SPCC | 7 - Sustained Response Actions | 7.1 Response Resources | 7.1.1 Facility Response Equipment	
10/11/2011	ERAP | Emergency Response Action Plan (ERAP) | 4.0 Resources | Figure 4-2 - Facility Equipment	
10/11/2011	EPA USCG PHMSA FRP/SPCC | 7 - Sustained Response Actions | 7.1 Response Resources | 7.1.1 Facility Response Equipment	
10/11/2011	ERAP | Emergency Response Action Plan (ERAP) | 4.0 Resources | Figure 4-2 - Facility Equipment	
10/31/2011	EPA USCG PHMSA FRP/SPCC | 3 - Notifications / Telephone Numbers | 3.1 Emergency Information and Notification Procedures | Figure 3.1-6 - External Notifications and Telephone Numbers | External Notifications	
10/31/2011	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-5 - External Notifications and Telephone Numbers	
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11/1/2011	EPA USCG PHMSA FRP/SPCC | 1 - Introduction | Figure 1-2 - Information Summary | Information Summary	
11/1/2011	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-4 - SPCC Plan | SPCC Facility Information	
11/1/2011	EPA USCG PHMSA FRP/SPCC | E - Cross-References | Figure E-7 - EPA Response Plan Cover Sheet	
11/1/2011	EPA USCG PHMSA FRP/SPCC | 3 - Notifications / Telephone Numbers | 3.1 Emergency Information and Notification Procedures | Figure 3.1-6 - External Notifications and Telephone Numbers | External Notifications	
11/1/2011	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-5 - External Notifications and Telephone Numbers	
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3/6/2012	EPA USCG PHMSA FRP/SPCC | 1 - Introduction | 1.3 Agency Submittal / Approval Letters	

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5/31/2012	EPA USCG PHMSA FRP/SPCC | 3 - Notifications / Telephone Numbers | 3.1 Emergency Information and Notification Procedures | Figure 3.1-5 - Internal Notifications and Telephone Numbers | Facility Response Team	
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8/3/2012	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-5 - External Notifications and Telephone Numbers	
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8/30/2012	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-10 - Containment Calculation	
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11/6/2012	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-4 - Internal Notifications and Telephone Numbers	
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11/27/2012	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-3 - Record of Reviews	
5/3/2013	EPA USCG PHMSA FRP/SPCC | 3 - Notifications / Telephone Numbers | 3.1 Emergency Information and Notification Procedures | Figure 3.1-5 - Internal Notifications and Telephone Numbers | Facility Response Team	
5/3/2013	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-4 - Internal Notifications and Telephone Numbers	
7/11/2013	EPA USCG PHMSA FRP/SPCC | 3 - Notifications / Telephone Numbers | 3.1 Emergency Information and Notification Procedures | Figure 3.1-5 - Internal Notifications and Telephone Numbers | Emergency Response Personnel and Business Unit Notifications	
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7/11/2013	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-4 - Internal Notifications and Telephone Numbers	
9/10/2013	Updated FEMA ICS forms.	Appendix G
3/13/2014	EPA USCG PHMSA FRP/SPCC | 2 - Initial Response Actions | 2.1 Spill Response | Figure 2.1-1 - Spill Response Action Checklist	
3/13/2014	EPA USCG PHMSA FRP/SPCC | 2 - Initial Response Actions | 2.1 Spill Response | Figure 2.1-1 - Spill Response Action Checklist	
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3/17/2014	ERAP | Emergency Response Action Plan (ERAP) | 2.0 Response Steps | 2.2 Evacuation	
3/17/2014	EPA USCG PHMSA FRP/SPCC | 2 - Initial Response Actions | 2.2 Evacuation	
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4/17/2014	EPA USCG PHMSA FRP/SPCC | 6 - Sensitive Areas / Response Tactics | 6.6 Endangered and Threatened Species By State	
4/17/2014	ERAP | Emergency Response Action Plan (ERAP) | 6.0 Endangered and Threatened Species by State	
4/17/2014	EPA USCG PHMSA FRP/SPCC | 6 - Sensitive Areas /	

	Response Tactics | 6.6 Endangered and Threatened Species By State	
4/17/2014	ERAP | Emergency Response Action Plan (ERAP) | 6.0 Endangered and Threatened Species by State	
4/17/2014	EPA USCG PHMSA FRP/SPCC | 6 - Sensitive Areas / Response Tactics | 6.6 Endangered and Threatened Species By State	
4/17/2014	ERAP | Emergency Response Action Plan (ERAP) | 6.0 Endangered and Threatened Species by State	
4/17/2014	EPA USCG PHMSA FRP/SPCC | 6 - Sensitive Areas / Response Tactics | 6.6 Endangered and Threatened Species By State	
4/17/2014	ERAP | Emergency Response Action Plan (ERAP) | 6.0 Endangered and Threatened Species by State	
4/17/2014	EPA USCG PHMSA FRP/SPCC | 6 - Sensitive Areas / Response Tactics | 6.6 Endangered and Threatened Species By State	
4/17/2014	ERAP | Emergency Response Action Plan (ERAP) | 6.0 Endangered and Threatened Species by State	
4/17/2014	EPA USCG PHMSA FRP/SPCC | 6 - Sensitive Areas / Response Tactics | 6.6 Endangered and Threatened Species By State	
4/17/2014	ERAP | Emergency Response Action Plan (ERAP) | 6.0 Endangered and Threatened Species by State	

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4/17/2014	ERAP | Emergency Response Action Plan (ERAP) | 6.0 Endangered and Threatened Species by State	
4/17/2014	EPA USCG PHMSA FRP/SPCC | 6 - Sensitive Areas / Response Tactics | 6.6 Endangered and Threatened Species By State	
4/17/2014	ERAP | Emergency Response Action Plan (ERAP) | 6.0 Endangered and Threatened Species by State	
4/17/2014	EPA USCG PHMSA FRP/SPCC | 6 - Sensitive Areas / Response Tactics | 6.6 Endangered and Threatened Species By State	

4/17/2014	ERAP | Emergency Response Action Plan (ERAP) | 6.0 Endangered and Threatened Species by State	
4/17/2014	EPA USCG PHMSA FRP/SPCC | 6 - Sensitive Areas / Response Tactics | 6.6 Endangered and Threatened Species By State	
4/17/2014	ERAP | Emergency Response Action Plan (ERAP) | 6.0 Endangered and Threatened Species by State	
4/17/2014	EPA USCG PHMSA FRP/SPCC | 6 - Sensitive Areas / Response Tactics | 6.6 Endangered and Threatened Species By State	
4/17/2014	ERAP | Emergency Response Action Plan (ERAP) | 6.0 Endangered and Threatened Species by State	
4/17/2014	EPA USCG PHMSA FRP/SPCC | 6 - Sensitive Areas / Response Tactics | 6.6 Endangered and Threatened Species By State	
4/17/2014	ERAP | Emergency Response Action Plan (ERAP) | 6.0 Endangered and Threatened Species by State	

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4/17/2014	ERAP | Emergency Response Action Plan (ERAP) | 6.0 Endangered and Threatened Species by State	
4/17/2014	EPA USCG PHMSA FRP/SPCC | 6 - Sensitive Areas / Response Tactics | 6.6 Endangered and Threatened Species By State	
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4/17/2014	EPA USCG PHMSA FRP/SPCC | 6 - Sensitive Areas / Response Tactics | 6.6 Endangered and Threatened Species By State	
4/17/2014	ERAP | Emergency Response Action Plan (ERAP) | 6.0 Endangered and Threatened Species by State	
4/17/2014	EPA USCG PHMSA FRP/SPCC | G - Additional Information	
4/17/2014	EPA USCG PHMSA FRP/SPCC | G - Additional Information	
4/17/2014	EPA USCG PHMSA FRP/SPCC | G - Additional Information	
4/17/2014	EPA USCG PHMSA FRP/SPCC | G - Additional	

	Information	

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DATE OF CHANGE	DESCRIPTION OF CHANGE	PAGE NUMBER
4/24/2014	EPA USCG PHMSA FRP/SPCC | 3 - Notifications / Telephone Numbers | 3.1 Emergency Information and Notification Procedures | Figure 3.1-6 - External Notifications and Telephone Numbers | External Notifications	
4/24/2014	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-5 - External Notifications and Telephone Numbers	
4/29/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-10 - Containment Calculation	
6/24/2014	EPA USCG PHMSA FRP/SPCC | G - Additional Information	
6/24/2014	EPA USCG PHMSA FRP/SPCC | G - Additional Information	
6/25/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-1 - Professional Engineer Certification |	
6/25/2014	EPA USCG PHMSA FRP/SPCC | 1 - Introduction | Figure 1-2 - Information Summary | Information Summary	
6/25/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-4 - SPCC Plan | SPCC Facility Information	
6/25/2014	EPA USCG PHMSA FRP/SPCC | E - Cross-References | Figure E-7 - EPA Response Plan Cover Sheet	
6/25/2014	EPA USCG PHMSA FRP/SPCC | 6 - Sensitive Areas / Response Tactics | 6.7 Vulnerability Analysis (Detailed)	
6/25/2014	ERAP | Emergency Response Action Plan (ERAP) | 7.0 Vulnerablity Analysis (Detailed)	
6/25/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-5 - Tank Tables	

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6/25/2014	ERAP | Emergency Response Action Plan (ERAP) | 5.0 Plot Plans / Tank Table | Figure 5-3 - Tank Table	
6/26/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-4 - SPCC Plan | SPCC Regulations	
6/26/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-4 - SPCC Plan | SPCC Regulations	
6/26/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-6 - Addendum	
6/26/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-7 - Drainage Diagram	
6/26/2014	ERAP | Emergency Response Action Plan (ERAP) | 5.0 Plot Plans / Tank Table | Figure 5-1 - Drainage Diagram	
6/26/2014	EPA USCG PHMSA FRP/SPCC | 1 - Introduction | Figure 1-5 - Facility Site Plan	
6/26/2014	ERAP | Emergency Response Action Plan (ERAP) | 5.0 Plot Plans / Tank Table | Figure 5-4 Site Diagram	
6/26/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-10 - Containment Calculation	
6/26/2014	EPA USCG PHMSA FRP/SPCC | D - Hazard Evaluation and Risk Analysis | D.4 Planning Distance Calculations | Figure D.4-1 - Planning Distance Calculations	
6/26/2014	EPA USCG PHMSA FRP/SPCC | D - Hazard Evaluation and Risk Analysis | D.5 Discharge Scenarios | D.5.1 Small and Medium Discharge Scenarios | D.5.1 Worst Case Discharge Scenarios	
6/26/2014	EPA USCG PHMSA FRP/SPCC | D - Hazard Evaluation and Risk Analysis | D.5 Discharge Scenarios | D.5.1 Small and Medium Discharge Scenarios | D.5.1 Worst Case Discharge Response Resource	

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6/26/2014	EPA USCG PHMSA FRP/SPCC | D - Hazard Evaluation and Risk Analysis | D.6 Planning Volume Calculations	
6/26/2014	EPA USCG PHMSA FRP/SPCC | D - Hazard Evaluation and Risk Analysis | D.6 Planning Volume Calculations	
6/26/2014	EPA USCG PHMSA FRP/SPCC | D - Hazard Evaluation and Risk Analysis | D.7 Spill Volume Calculations | D.7.1 USCG Portion of Facility	
6/26/2014	EPA USCG PHMSA FRP/SPCC | D - Hazard Evaluation	

	and Risk Analysis | D.7 Spill Volume Calculations | D.7.2 EPA Portion of the Facility (non-transportation related)	
6/26/2014	EPA USCG PHMSA FRP/SPCC | D - Hazard Evaluation and Risk Analysis | D.7 Spill Volume Calculations | D.7.3 DOT/PHMSA Portion of Pipeline/Facility	
6/27/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-1 - Professional Engineer Certification	
6/27/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-1 - Professional Engineer Certification	
7/2/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-2 - Management Approval and Review	
7/2/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-15 - Reportable Spill History	
7/2/2014	EPA USCG PHMSA FRP/SPCC | 3 - Notifications / Telephone Numbers | 3.1 Emergency Information and Notification Procedures | Figure 3.1-5 - Internal Notifications and Telephone Numbers | Emergency Response Personnel and Business Unit Notifications	
7/2/2014	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-4 - Internal Notifications and Telephone Numbers	
7/2/2014	EPA USCG PHMSA FRP/SPCC | 1 - Introduction | 1.3 Certification of Adequate Resources	

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DATE OF CHANGE	DESCRIPTION OF CHANGE	PAGE NUMBER
7/7/2014	EPA USCG PHMSA FRP/SPCC | 3 - Notifications / Telephone Numbers | 3.1 Emergency Information and Notification Procedures | Figure 3.1-6 - External Notifications and Telephone Numbers | External Notifications	
7/7/2014	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-5 - External Notifications and Telephone Numbers	
7/7/2014	EPA USCG PHMSA FRP/SPCC | 3 - Notifications / Telephone Numbers | 3.1 Emergency Information and Notification Procedures | Figure 3.1-6 - External Notifications and Telephone Numbers | External Notifications	
7/7/2014	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-5 - External Notifications and	

	Telephone Numbers	
7/7/2014	EPA USCG PHMSA FRP/SPCC | 3 - Notifications / Telephone Numbers | 3.1 Emergency Information and Notification Procedures | Figure 3.1-6 - External Notifications and Telephone Numbers | External Notifications	
7/7/2014	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-5 - External Notifications and Telephone Numbers	
7/8/2014	EPA USCG PHMSA FRP/SPCC | 1 - Introduction | Figure 1-1 - Distribution List	
7/8/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-5 - Tank Tables	
7/8/2014	ERAP | Emergency Response Action Plan (ERAP) | 5.0 Plot Plans / Tank Table | Figure 5-3 - Tank Table	
7/8/2014	EPA USCG PHMSA FRP/SPCC | 1 - Introduction | 1.4 Agency Submittal / Approval Letters	
7/8/2014	EPA USCG PHMSA FRP/SPCC | 1 - Introduction | Figure 1-2 - Information Summary | Information Summary	
7/8/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-4 - SPCC Plan | SPCC Facility Information	

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DATE OF CHANGE	DESCRIPTION OF CHANGE	PAGE NUMBER
7/8/2014	EPA USCG PHMSA FRP/SPCC | E - Cross-References | Figure E-7 - EPA Response Plan Cover Sheet	
7/9/2014	EPA USCG PHMSA FRP/SPCC | 3 - Notifications / Telephone Numbers | 3.1 Emergency Information and Notification Procedures | Figure 3.1-6 - External Notifications and Telephone Numbers | USCG Classified OSROÂ´s / Non-Classified OSROÂ´s	
7/9/2014	EPA USCG PHMSA FRP/SPCC | 7 - Sustained Response Actions | 7.1 Response Resources | Figure 7.1-1 - Regional Company and Response Contractor’s Equipment List / Response Time	
7/9/2014	EPA USCG PHMSA FRP/SPCC | B - Contractor Response Equipment | B.1 Cooperatives and Contractors | B.1.1 OSRO Classification	
7/9/2014	EPA USCG PHMSA FRP/SPCC | B - Contractor Response Equipment | B.1 Cooperatives and Contractors | Figure B.1-1 - Evidence of Contracts and Equipment Lists	

7/9/2014	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-5 - External Notifications and Telephone Numbers	
7/9/2014	ERAP | Emergency Response Action Plan (ERAP) | 4.0 Resources | Figure 4-3 - Regional Company and Response Contractorâ€™s Equipment List / Response Time	
7/9/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-10 - Containment Calculation	
7/9/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-10 - Containment Calculation	
7/9/2014	EPA USCG PHMSA FRP/SPCC | E - Cross-References | Figure E-7 - EPA Response Plan Cover Sheet | Applicability of Substantial Harm Criteria	
7/9/2014	EPA USCG PHMSA FRP/SPCC | 1 - Introduction | 1.4 Agency Submittal / Approval Letters	
7/9/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-5 - Tank Tables	

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7/9/2014	ERAP | Emergency Response Action Plan (ERAP) | 5.0 Plot Plans / Tank Table | Figure 5-3 - Tank Table	
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7/9/2014	ERAP | Emergency Response Action Plan (ERAP) | 5.0 Plot Plans / Tank Table | Figure 5-3 - Tank Table	
7/9/2014	EPA USCG PHMSA FRP/SPCC | 1 - Introduction | Figure 1-2 - Information Summary | Information Summary	
7/9/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-4 - SPCC Plan | SPCC Facility Information	
7/9/2014	EPA USCG PHMSA FRP/SPCC | E - Cross-References | Figure E-7 - EPA Response Plan Cover Sheet	
7/9/2014	EPA USCG PHMSA FRP/SPCC | 1 - Introduction | Figure 1-2 - Information Summary | Information Summary	
7/9/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-4 - SPCC Plan | SPCC Facility Information	
7/9/2014	EPA USCG PHMSA FRP/SPCC | E - Cross-References | Figure E-7 - EPA Response Plan Cover Sheet	
7/9/2014	EPA USCG PHMSA FRP/SPCC | 3 - Notifications / Telephone Numbers | 3.1 Emergency Information and	

	Notification Procedures | Figure 3.1-5 - Internal Notifications and Telephone Numbers | Facility Response Team	
7/9/2014	ERAP | Emergency Response Action Plan (ERAP) | 3.0 Notifications | Figure 3-4 - Internal Notifications and Telephone Numbers	
7/9/2014	EPA USCG PHMSA FRP/SPCC | 3 - Notifications / Telephone Numbers | 3.1 Emergency Information and Notification Procedures | Figure 3.1-5 - Internal Notifications and Telephone Numbers | Facility Response Team	

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7/9/2014	EPA USCG PHMSA FRP/SPCC | 1 - Introduction | Figure 1-2 - Information Summary | Information Summary	
7/9/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-4 - SPCC Plan | SPCC Facility Information	
7/9/2014	EPA USCG PHMSA FRP/SPCC | E - Cross-References | Figure E-7 - EPA Response Plan Cover Sheet	
7/9/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-15 - Reportable Spill History	
7/9/2014	EPA USCG PHMSA FRP/SPCC | D - Hazard Evaluation and Risk Analysis | D.8 Product Characteristics and Hazards | Figure D.8-1 - Summary of Commodity Characteristics	
7/9/2014	EPA USCG PHMSA FRP/SPCC | D - Hazard Evaluation and Risk Analysis | D.8 Product Characteristics and Hazards | Figure D.8-1 - Summary of Commodity Characteristics	
8/12/2014	EPA USCG PHMSA FRP/SPCC | D - Hazard Evaluation and Risk Analysis | D.7 Spill Volume Calculations | D.7.3 DOT/PHMSA Portion of Pipeline/Facility	
8/12/2014	EPA USCG PHMSA FRP/SPCC | C - SPCC Plans | Figure C-15 - Reportable Spill History	
8/20/2014	EPA USCG PHMSA FRP/SPCC | E - Cross-References | Figure E-7 - EPA Response Plan Cover Sheet | Applicability of Substantial Harm Criteria	
8/21/2014	EPA USCG PHMSA FRP/SPCC | D - Hazard Evaluation and Risk Analysis | D.8 Product Characteristics and Hazards	

| Figure D.8-1 - Summary of Commodity Characteristics |

SECTION 1 Last Revised: July 2014

INTRODUCTION

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Figure 1-1 - Distribution List

Figure 1-2 - **St. James Terminal** Information Summary

Figure 1-3 - **Facility** Area Map

Figure 1-4 - Facility Photograph

Figure 1-5 - Facility Site Plan

Figure 1-6 - Pipeline System Overview Map

1.1 Purpose / Scope of Plan

1.2 Plan Review and Update Procedure

1.3 Certification of Adequate Resources

1.4 Agency Submittal / Approval Letters

FIGURE 1-1 - DISTRIBUTION LIST

PLAN HOLDER	ADDRESS	NUMBER OF COPIES			
		PAPER	DISTRIBUTION DATE	ELECTRONIC	DISTRIBUTION DATE
Terminal Manager - St. James Terminal	7167 Koch Road St. James, LA 70086	2	7/10/2014	0	
Lesley Toke HSE Specialist	6531 Evergreen Avenue Jacksonville, FL 32208	1	7/10/2014	0	
U.S. Coast Guard - Sector New Orleans - Attn: FRP Coordinator	200 Hendee Street New Orleans, LA 70114	1	7/10/2014	1	7/10/2014
Mr Donald Smith - U.S. Environmental Protection Agency Region VI	1445 Ross Avenue, Suite 1200 Dallas, TX 75202	0		1	7/10/2014
Mr Bob Mayweather - Louisiana DEQ - Environmental Assistance Division	P.O. Box 4313 Baton Rouge, LA 70821-4313	1	7/10/2014	0	
Mr David Lehman Environmental Planning Officer (202) 366-4031	Office of Pipeline Safety Department of Transportation Room E22-210 1200 New Jersey Avenue, SE Washington, D.C. 20590-0001	0		2	7/10/2014
Mr Eric Deroche St. James Parish Emergency Preparedness	P. O. Box 106 Convent, Louisiana 70723	0		1	7/10/2014
St. James Parish	5800 LA Hwy. 44 Convent, Louisiana	0		1	7/10/2014

Sheriff's Office - Attn: St James Parish Sherrif	70723				
Vacherie Volunteer Fire Department - Attn: Fire Chief	2422 Louisiana 18 Vacherie, Louisiana 70090	0		1	7/10/2014
St. Elizabeth Hospital - Attn: Disaster Preparedness Coordinator	2647 South St. Elizabeth Boulevard Gonzales, Louisiana 70737	0		1	7/10/2014

FIGURE 1-2 - ST. JAMES TERMINAL INFORMATION SUMMARY

Owner:	NuStar Logistics, L.P. 19003 IH-10 West San Antonio, TX 78257 (210) 918-2000
Operator:	NuStar Logistics, L.P. 19003 IH-10 West San Antonio, TX 78257 (210) 918-2000
Facility Name:	St. James Terminal
Facility Address:	7167 Koch Road St. James, LA 70086
Facility Latitude/Longitude:	(b) (7)(F), (b) (3) [redacted]
Facility Telephone/Fax:	(225) 746-2110 / (225) 265-2116
Facility EPA FRP #:	FRP-06-LA-00104
Facility PHMSA FRP #:	NST1
Facility USCG FRP #:	NWF040

FIGURE 1-2 - ST. JAMES TERMINAL INFORMATION SUMMARY

Description of Facility:	The facility has 37 ASTs of which, 32 are in are in crude oil service. The others store diesel fuel or are out of service. (b) (7)(F), (b) (3) [redacted] The Terminal receives crude oil via barge/vessel, railcar, tank truck, and pipeline. Crude oil is shipped from the

	Terminal via barge/vessel and pipeline.
Size, Type, and Number of Vessels the Facility Can Transfer Oil to or from Simultaneously:	DOCK #1: 320' long, four (4) 50,000 bbl barges. DOCK #2: 850' long, one (1) 110,000 dwt vessel. DOCK #5: 950' long, one (1) 160,000 dwt vessel.

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FIGURE 1-2 - ST. JAMES TERMINAL INFORMATION SUMMARY, CONTINUED

Qualified Individuals: (Refer to APPENDIX A, FIGURE A.2-3 for QI Training Records)	**Facility**		
	Name and Contact Information	**Work Address**	**Home Address**
	Mike Northcutt Terminal Manager QI (225) 746-2119 (Office) (b) (6) [redacted] (Mobile)	7167 Koch Road St. James, LA 70086	,
	Dwayne Lamari Operations Alternate QI 225-746-2110 (Office) (b) (6) [redacted] (Mobile) NA (Pager)	7167 Koch Road St. James , Louisiana 70086	,
	Business Unit		
	Name and Contact Information	**Work Address**	**Home Address**

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FIGURE 1-2 - ST. JAMES TERMINAL INFORMATION SUMMARY, CONTINUED

Line Sections/ Products Handled: (Refer to Product Characteristic and Hazards, FIGURE D.9-1)	SECTION			PRODUCTS	
	NuStar to LOCAP 30" (2.1 miles)			Crude Oil	
	NuStar to CAPLINE 40" (2.2 miles)			Crude Oil	
	NuStar to Ship Shoal 24"/30" (0.24 miles)			Crude Oil	
	Rail Spur to NuStar 12" - (6.5 miles)			Crude Oil	
	Ship Shoal to NuStar 8" Displacement Line (1.9 miles)			Crude Oil	
	48" Locap line (1.5 miles)			Crude Oil	
	NuStar 20" line to ExxonMobil header (1.2 miles)			Crude Oil	
Facility Data: (For date and type of substantial	**Location (Address and County)**	**Hours of Operations/ Manning**	**Throughput**	**Date of Startup**	**Wellhead Protection Area**

expansion, see Description of Facility and Tank Table in APPENDIX C)	7167 Koch Road St. James, St. James Parish, LA 70086	The St. James Terminal is in operation 24 hours a day, seven days per week, and 52 weeks per year. Daily, there are two shifts, with two men per shift.	Maximum 130 million barrels a year, 400,000 barrels a day. Average 60 milliion barrels per year and 185,000 barrels per day.	1967	No
	Current Operations				
	NACIS 493190 / SIC 4226				
Description of Zone:	The pipeline carries refined oil (including Diesel Fuel, Crude Oil) in the areas shown in **FIGURE 1-3** and **FIGURE 1-4**				
Response Zone Consists of the Following Counties:	St. James Parish				
Alignment Maps (Piping, Plan Profiles):	Maintained at: St. James Terminal Main Office				
Worst Case Discharge:	(b) (7)(F), (b) (3) [redacted]				
Statement of Significant and Substantial Harm:	The response zone for this system contain pipelines greater than 6 5/8 inches. However, they are not longer than ten miles. Therefore, in accordance with 49 CFR 194.103(c), the response zone described in this Plan will not be treated as if expected to cause "significant and substantial harm." These lines are not eligible for exceptions under 49 CFR 194.101(b), therefore, they can be expected to cause â €œsubstantial harmâ€.				
Spill Detection and Mitigation Procedures:	Refer to **SECTION 2.1.1**, **APPENDIX D.2.1** and **APPENDIX D.3**.				
Date Prepared:	July 2014				

The information contained in this Plan is intended to be used as guidelines for the spill responder. Actual circumstances will vary and will dictate the procedures to be followed, some of which may not be included in this manual.

Note: For further information on the Qualified Individuals' training and qualifications, refer to **SECTION 4.5** and **APPENDIX A.2** in this Plan.

FIGURE 1-3 - FACILITY AREA MAP

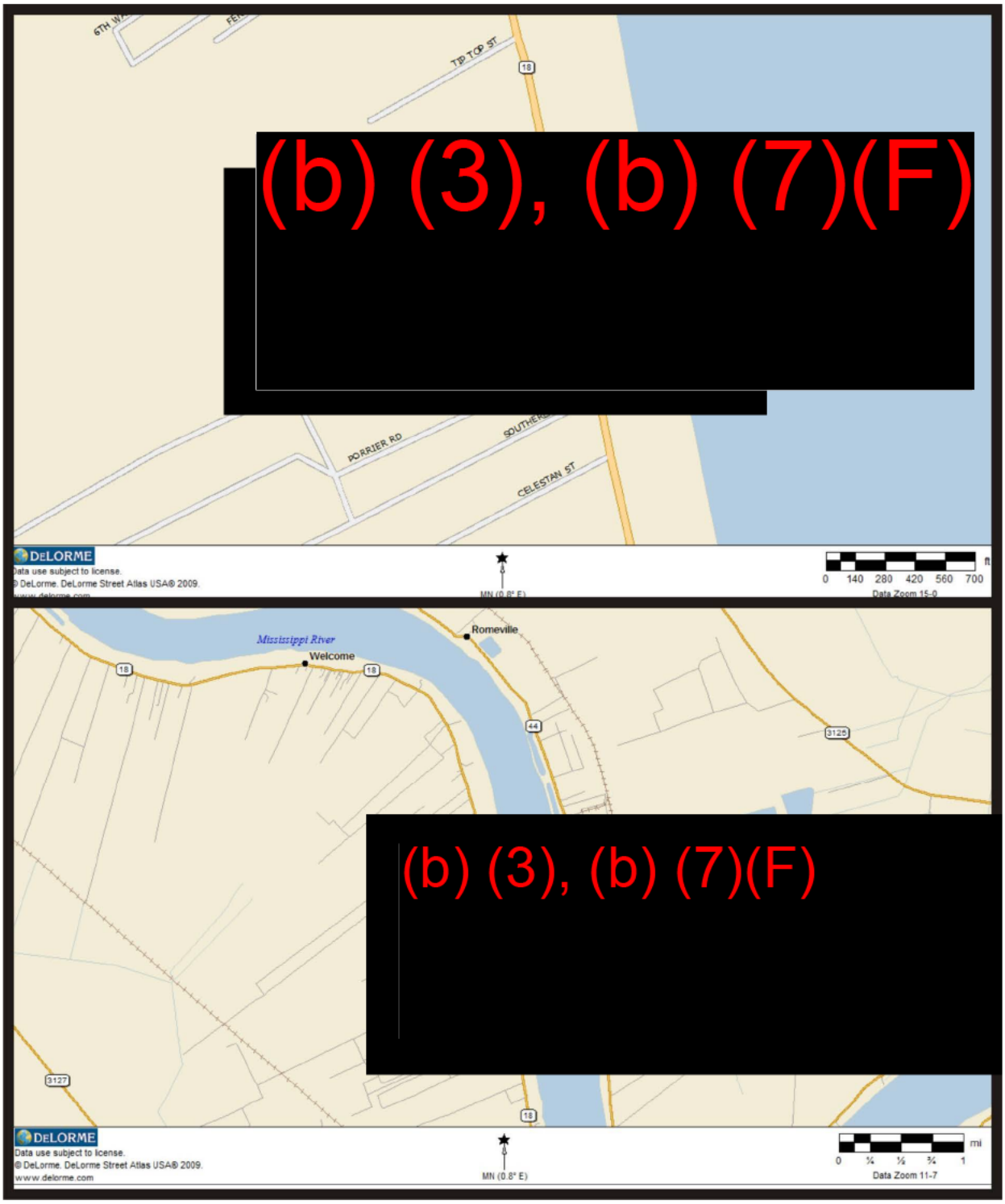

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FIGURE 1-4 - FACILITY PHOTOGRAPH

(b) (7)(F), (b) (3)

[redacted]

FIGURE 1-5 - FACILITY SITE PLAN

Click here to view - Facility Site Plan

FIGURE 1-6 - PIPELINE SYSTEM OVERVIEW MAP

Click here to view - St. James Pipeline System Overview Map

1.1 PURPOSE / SCOPE OF PLAN

The purpose of this Emergency Response Plan (Plan) is to provide guidelines to quickly, safely, and effectively respond to a spill. The Facility is owned and operated by NuStar Logistics, L.P. , herein referred to as "Company."

This Plan is intended to satisfy the requirements of the Oil Pollution Act of 1990 (OPA 90), and has been prepared in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and applicable Area Contingency Plans (ACP), EPA Region VI Regional Contingency Plan. Specifically, this Plan is intended to satisfy:

- U.S. Environmental Protection Agency (EPA) requirements for an OPA 90 Plan (40 CFR 112.20)
- U.S. Environmental Protection Agency (EPA) requirements for a Spill Prevention

Control and Countermeasures (SPCC) Plan (40 CFR 112.7)

- U.S. Coast Guard (USCG) requirements for an OPA 90 Plan (33 CFR 154.1035)
- U.S. Environmental Protection Agency (EPA) requirements for a Resource Conservation and Recovery Act (RCRA) Plan (40 CFR 265.50 through 265.56))
- Pipeline and Hazardous Materials Safety Administration (PHMSA), U.S. Department of Transportation requirements for an OPA 90 Plan (49 CFR 194)
- Occupational Safety and Health Administration (OSHA) requirements for emergency response plans (EAP and ERP) (29 CFR 1910)

1.2 PLAN REVIEW AND UPDATE PROCEDURE

In accordance with 40 CFR 112.20 and 49 CFR Part 194.121, this Plan will be reviewed annually and modified to address new or different operating conditions or information included in the Plan. Upon review of the response plan for each five-year period, the plan will be submitted to PHMSA prior to 5 years from the last approval date. Company internal policy states that the Plan including contact information will be reviewed at least annually and modified as appropriate. In the event the Company experiences a Worst Case Discharge, the effectiveness of the plan will be evaluated and updated as necessary. If a new or different operating condition or information would substantially affect the implementation of the Plan, the Company will modify the Plan to address such a change and, within 30 days of making such a change, submit the change to PHMSA. EPA must receive the change within 60 days.

The U.S. Coast Guard (USCG) requires that plan changes be submitted in a timely manner. The plan review must occur within one (1) month of the anniversary date of the USCG approval letter. If no changes are required, the facility shall submit a letter to the USCG stating "No Changes Required."

Examples of changes in operating conditions that would cause a significant change to the Plan include:

CONDITIONS REQUIRING REVISIONS AND SUBMISSIONS	EPA	PHMSA	USCG	RCRA
Relocation or replacement of the transportation system in a way that substantially affects the information included in the Plan, such as a change to the Worst Case Discharge volume.	x	x		
A change in the Facility's configuration that materially alters the information included in the Plan.	x		x	
A change in the type of oil handled, stored, or transferred that materially alters the required response resources.	x	x	x	
A change in key personnel (Qualified Individuals).	x	x		x
Material change in capabilities of the Oil Spill Removal Organization(s) (OSROs) that provide equipment and personnel.	x	x		x
Material change in the Facility's spill prevention and				

response equipment or emergency response procedures.	x		x	x
Any other changes that materially affect the implementation of the Plan.	x	x	x	x
A change in the NCP or ACP that has significant impact on the equipment appropriate for response activities.		x		
A change in the name of the Oil Spill Removal Organization (OSRO).		x	x	
A change in the Facility's operating area that includes ports or geographic area.			x	
Applicable regulations are required.				x
The Plan fails in an emergency.				x

HSE Department will coordinate with Terminal Manger to support the plan review and update procedures.

The most current version of the plan is always the electronic copy. Revisions to the site-specific information are made through the password protected maintenance interface. The date at the beginning of each Section indicates the last date that Section was revised. Any revisions made after that date need to be reprinted and inserted in to the paper copy of the plan.

1.3 CERTIFICATION OF ADEQUATE RESOURCES

CERTIFICATION
Pursuant to the Clean Water Act Section 311(j)(5)(F)

NuStar Logistics, L.P.

The NuStar Logistics, L.P. , hereby certify to the Pipeline and Hazardous Materials Safety Administration (PHMSA) of the Department of Transportation that they have obtained, through contract or other approved means, the necessary private personnel and equipment to respond, to the maximum extent practicable, to a worst case discharge or a substantial threat of such a discharge.

Jean Zeringue
VP GM Operations

1.4 AGENCY SUBMITTAL / APPROVAL LETTERS

Click here to view July 2014 submittal letters and proof of delivery

SECTION 2 Last Revised: March 2014

INITIAL RESPONSE ACTIONS

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2.1 Spill Response

Figure 2.1-1 - Spill Response Action Checklist

2.1.1 Spill Detection and Mitigation Procedures

Figure 2.1-2 - Spill Mitigation Procedures

2.1.2 Spill Surveillance Guidelines

Figure 2.1-3 - Spill Surveillance Checklist

2.1.3 Spill Volume Estimating

Figure 2.1-4 - Spill Estimation Factors

2.1.4 Estimating Spill Trajectories

2.1.5 Initial Containment Actions

2.1.6 Safety Considerations

2.2 Evacuation

2.3 Tornado

2.4 Flood

2.5 Medical

2.6 Bomb Threat

2.7 **Fire and/or Explosion**

2.8 Vapor Cloud

2.1 SPILL RESPONSE

FIGURE 2.1-1 - SPILL RESPONSE ACTION CHECKLIST

RESPONSE ACTION	
First Person to Discover Spill	
Immediately notify Terminal Management. Take appropriate action to protect life and ensure safety of personnel. Contact the appropriate local emergency responders or request the office to do so.	☐
(b) (3), (b) (7)(F) [redacted] (b) (3), (b) (7)(F) (b) (3), (b) (7)(F) [redacted]	☐
Secure the scene. Isolate the area and assure the safety of people and the environment. Keep people away from the scene and outside the safety perimeter.	☐
Terminal Management	
Assume role of Incident Commander until relieved by upper Management (if applicable).	☐
Conduct preliminary assessment of health and safety hazards.	☐
Evacuate nonessential personnel, notify emergency response agencies to provide security, and evacuate surrounding area (if necessary).	☐
Call out Emergency Management Team and primary spill response contractors, as needed (**FIGURE 3.1-6**).	☐
Notify the Terminal Management and provide an incident briefing. Evaluate the need for activating the Regional Response Team (RRT).	☐
Notify the Regional General Manager and Regional HSE Manager.	☐
If safe to do so, direct facility responders to shut down potential ignition sources in the vicinity of the spill, including motors, electrical pumps, electrical power, flairs, etc. Keep drivers away from truck rack if spill occurs there.	☐
If safe to do so, direct facility responders to shut down and control the source of the spill. Be aware of potential hazards associated with product and ensure that lower explosive limits (LELs) are within safe levels before sending personnel into the spill area.	☐
If safe to do so, direct facility responders to stabilize and contain the situation. This may include construction of minor earthen berms and/or sorbent boom and pads.	☐
For low flash oil (<100ºF), consider applying foam over the oil, using water spray to reduce vapors, grounding all equipment handling the oil, and using non-sparking tools.	☐
If there is a potential to impact shorelines, consider lining shoreline with sorbent or diversion boom to reduce impact.	☐
Notify Local Emergency Responders. Obtain the information necessary to complete the Leak Accident Report Form (**FIGURE 3.1-2**).	☐
Make local notifications: • LEPC • Police • Fire • Sheriff	☐

HSE Regional Manager	
Make appropriate notifications: • National Response Center (800) 424-8802 • External regulatory notifications (**FIGURE 3.1-6**)	☐

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FIGURE 2.1-1 - SPILL / RELEASE RESPONSE ACTION CHECKLIST, CONTINUED

RESPONSE ACTION, CONTINUED	
Emergency Management Team	
Activate all or a portion of Emergency Management Team (EMT) (as necessary). HSE Department will maintain contact with notified regulatory agencies.	☐
Mobilize spill response contractors (if necessary). It is much better to demobilize equipment and personnel if not needed than to delay contacting them if they are needed.	☐
Document all response actions taken, including notifications, agency/media meetings, equipment and personnel mobilization and deployment, and area impacted. (Refer to **SECTION 5** for documentation.)	☐
Water-based Spills: Initiate spill tracking and surveillance operations. Determine extent of pollution via surveillance aircraft or vehicle. Estimate volume of spill utilizing information in **SECTION 2.1.3**. Send photographer / videographer, if safe. Use of dispersants requires Federal or State approval.	☐
Land-based Spills: Initiate spill tracking and surveillance, if applicable.	☐
SECONDARY RESPONSE ACTIONS (Refer to EMT job descriptions in **SECTION 4.6**)	
FACILITY-SPECIFIC RESPONSE CONSIDERATIONS (Refer to **SECTION 6** for maps, tactical plans, and sensitivity information.)	

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FIGURE 2.1-1 - SPILL / RELEASE RESPONSE ACTION CHECKLIST, CONTINUED

SITE SPECIFIC ACTIONS	
DOCUMENT ALL ACTIONS TAKEN	
First Priority	
Account for all personnel and visitors.	☐
Identify and assess fire/safety hazards.	☐
Second Priority	
Secure spill source, if possible.	☐
Assure all required notifications are conducted.	☐

Secure all drainage leading from Facility.	☐
Third Priority	
Facility drainage and secondary containment will be adequate to contain a spill of small or medium size, preventing it from reaching St. James Canal. Once the spill has been contained, resources are present at the facility to recover spilled product, safety conditions permitting.	☐
If unable to contain spill to facility property, refer to SECTION 6.8 of the FRP or SECTION 9.0 of the ERAP for location of booming strategy.	☐
Once deployment of response equipment has been completed, initiate recovery of product.	☐
Upon arrival of EMT, assure all information is accurate and complete prior to being released.	☐
Assure proper documentation has been completed from initial discovery of spill to finish; reference **SECTION 5**.	☐

2.1.1 Spill Detection and Mitigation Procedures

See **APPENDIX D.5** for spill detection protocols.

Each spill mitigation situation is unique and must be treated according to the circumstance present. In every situation, however, personnel safety must be assessed as the first priority. The potential for ignition and/or toxic exposure must be promptly evaluated. Spill mitigation procedures are listed in FIGURE 2.1-2. Discharge volume calculations are provided in **APPENDIX D.**

FIGURE 2.1-2 - SPILL MITIGATION PROCEDURES

TYPE	MITIGATION PROCEDURE
Failure of Transfer Equipment	1. Personnel safety is the first priority. Evacuate nonessential personnel or personnel at high risk. 2. Terminate transfer operations and close block valves. 3. Drain product into containment areas (if possible). 4. Eliminate sources of vapor cloud ignition by shutting down all engines and motors.
Tank Overfill/Failure	1. Personnel safety is the first priority. Evacuate nonessential personnel or personnel at high risk. 2. Shut down or divert source of incoming flow to tank. 3. Shut down source of vapor cloud ignition by shutting down all engines and motors. 4. Ensure that dike discharge valves are closed. 5. Transfer fluid to another tank with adequate storage capacity (if possible). 6. Monitor diked containment area for leaks and potential capacity limitations. 7. Begin transferring spilled product to another tank as soon as possible.

Piping Rupture/Leak (under pressure and no pressure)	1. Personnel safety is the first priority. Evacuate nonessential personnel or personnel at high risk. 2. Shut down pumps. Close the closest block valves on each side of the rupture. 3. Drain the line back into contained areas (if possible). Alert nearby personnel of potential safety hazards. 4. Shut down source of vapor cloud ignition by shutting down all engines and motors. 5. If piping is leaking and under pressure, relieve pressure by draining into a containment area or back to a tank (if possible). Then repair line according to established procedures.
Fire/Explosion	1. Personnel safety is the first priority. Evacuate nonessential personnel or personnel at risk of injury. 2. Notify local fire and police departments. 3. Attempt to extinguish fire if it is in incipient (early) stage and **if it can be done safely**. 4. Shut down transfer or pumping operation. Attempt to divert or stop flow of product to the hazardous area (if it can be done safely). 5. Eliminate sources of vapor cloud ignition by shutting down all engines and motors. 6. Control fire before taking steps to contain spill. Also refer to fire/explosion response procedures in **SECTION 2.7**.
Manifold Failure	1. Personnel safety is the first priority. Evacuate nonessential personnel or personnel at high risk. 2. Terminate transfer operations immediately. 3. Isolate the damaged area by closing block valves on both sides of the leak/rupture. 4. Shut down source of vapor cloud ignition by shutting down all engines and motors. 5. Drain fluids back into containment areas (if possible).

2.1.2 Spill Surveillance Guidelines

- Surveillance of an oil spill should begin as soon as possible following discovery to enable response personnel to assess spill size, movement, and potential impact locations.
- All surveillance should be done upwind of the spill.
- Dispatch observers to crossings downstream or downgradient to determine the spill's maximum reach.
- Clouds, shadows, sediment, floating organic matter, submerged sand banks, or wind-induced patterns on the water may resemble an oil slick if viewed from a distance.
- Sorbent pads may be used to detect oil on water.
- Use surface vessels to confirm the presence of any suspected oil slicks (if safe to do

so); consider directing the vessels and photographing the vessels from the air, the latter to show their position and size relative to the slick.

- It is difficult to adequately observe oil on the water surface from a boat, dock, or shoreline.
- Spill surveillance is best accomplished through the use of helicopters or small planes; helicopters are preferred due to their superior visibility and maneuverability.
- If fixed-wing planes are to be used, high-wing types provide better visibility than low-wing types.
- All observations should be documented in writing and with photographs and/or videotapes.
- Describe the approximate dimensions of the oil slick based on available reference points (i.e., vessel, shoreline features, facilities); use the aircraft or vessel to traverse the length and width of the slick while timing each pass; calculate the approximate size and area of the slick by multiplying speed and time.
- Record aerial observations on detailed maps, such as topographic maps.
- In the event of reduced visibility, such as dense fog or cloud cover, boats may have to be used to patrol the area and to document the location and movements of the spill; however, this method may not be safe if the spill involves a highly flammable product.
- Surveillance also is required during spill response operations to gauge the effectiveness of response operations; to assist in locating skimmers; and to assess the spill's size, movement, and impact.
- A Spill Surveillance Checklist is provided in **FIGURE 2.1-3**.

FIGURE 2.1-3 - SPILL SURVEILLANCE CHECKLIST

Record your observations of spilled oil either in a notebook or directly on a chart of the area under observation. This checklist is an aid for organizing your observations.

General Information	
Date:	Tidal or river stage (flood, ebb, slack, low water):
Time:	On-scene weather (wind, sea state, visibility):
Incident name:	Platform (helicopter, fixed-wing aircraft, boat, shore):
Observerâ€™s name:	Flight path/trackline:
Observer's affiliation:	Altitude where observation taken:
Location of source (if known):	Areas not observed (i.e., foggy locations, restricted air or land spaces, shallow water areas):
Oil Observations	

Slick location(s):	Color and appearance (i.e., rainbow, dull or silver sheen, black or brown in color or mousse):
Slick dimensions:	Percent coverage:
Orientation of slick(s):	Is oil recoverable (Y/N)?:
Distribution of oil (i.e., windrows, streamers, pancakes or patches):	

Considerations
• During surveillance, travel beyond known impacted areas to check for additional oil spill sites. • Include the name and phone number of the person making the observations. • Clearly describe the locations where oil is observed and the areas where no oil has been seen.
Other Observations
Response Operations
Equipment deployment (general locations where equipment is working and whether the work is done in the heaviest concentration of oil):
Boom deployment (general locations of boom, whether the boom contains oil, and whether the oil entrains under the boom):

FIGURE 2.1-3 - SPILL SURVEILLANCE CHECKLIST, CONTINUED

Record your observations of spilled oil either in a notebook or directly on a chart of the area under observation. This checklist is an aid for organizing your observations.

Environmental Observations
Locations of convergence lines, terrain, and sediment plumes:
Locations of debris and other features that could be mistaken for oil:

Wildlife present in area (locations and approximate numbers):
Spill Sketch

2.1.3 Spill Volume Estimating

Early in a spill response, estimation of spill volume is required in order to:

- Report to agencies.
- Determine liquid recovery requirements.
- Determine personnel and equipment requirements.
- Estimate disposal and interim storage requirements.

Some rapid methods to estimate spill size are:

- Transfer operations: Multiply the pumping rate by the elapsed time that the leak was in

progress, plus the drainage volume of the line between the two closest valves or isolation points (volume loss = pump rate [bbls/min] x elapsed time [min] + line contents [bbl]).

- Tank overfills: Elapsed time multiplied by the pumping rate.
- Visual assessment of the surface area and thickness (**FIGURE 2.1-4**); the method may yield unreliable results because:
    - Interpretation of sheen color varies with different observers.
    - Appearance of a slick varies depending upon amount of available sunlight, sea-state, and viewing angle.
    - Different products may behave differently, depending upon their properties.

FIGURE 2.1-4 - SPILL ESTIMATION FACTORS

OIL THICKNESS ESTIMATIONS				
Standard Form	**Approx. Film Thickness**		**Approx. Quantity of Oil in Film**	
	inches	**mm**	**gallons/mile^2**	**liters/km^2**
Barely Visible	0.0000015	0.00004	25	44
Silvery	0.000003	0.00008	50	88
Slightly colored	0.000006	0.00015	100	179
Brightly colored	0.000012	0.0003	200	351
Dull	0.00004	0.001	666	1,167
Dark	0.00008	0.002	1,332	2,237
Thickness of light oils: 0.0010 inches to 0.00010 inches				
Thickness of heavy oils: 0.10 inches to 0.010 inches				

NOAA, 09/2000

2.1.4 Estimating Spill Trajectories

In some cases, oil spill trajectories should be estimated in order to predict direction and speed of the slick movement. Trajectory calculations provide an estimate of where oil slicks may impact shorelines and other sensitive areas, and also provide an estimate of the most effective location in which to mobilize spill response resources for protection, containment, and recovery.

Oil spill trajectories can be estimated using vector addition or with computer programs. Hand calculations typically utilize the following assumptions:

- Oil moves at approximately the same direction and speed as the water currents, unless the winds are strong.
- Wind speed can be multiplied by 0.034 to determine the effect of winds on speed and direction of spill movement.

- The combined effects of winds and currents can be added to estimate spill movement speed and direction.

More sophisticated predictions can be obtained from computer programs. Oil spill trajectory services can be obtained from:

- National Oceanic and Atmospheric Administration (NOAA) through the Federal On-Scene Commander (FOSC)
- Private consulting firms

2.1.5 Initial Containment Actions

Initial containment actions will focus on utilizing containment on-site in the most effective manner to:

- Prevent the oil from impacting water, thereby reducing the surface area and the shoreline to be cleaned.
- Concentrate the oil (when safe to do so), making physical recovery more efficient.
- Limit the environmental impact to the immediate spill area.

Selection of the appropriate location and method will depend upon:

- Length of time spill occurs before being noticed,
- Amount of spill,
- Area of coverage,
- Environmental factors such as wind speed and direction, and
- Oil's characteristics.

2.1.6 Safety Considerations

- Containment actions should not be conducted during inclement weather or unsafe conditions, such as high winds, fast currents, or unstable terrain.
- Eliminate all ignition sources.
- Avoid contact with the spilled product.
- Use respiratory protection (if trained to do so).
- Ensure that the area remains secure to air/boat/vehicular traffic.

2.2 EVACUATION

EVACUATION CHECKLIST	
TASK	
Request assistance from off-site response organizations; convey Command Post's location. Notify appropriate agencies (if appropriate).	☐
Assemble personnel at predetermined safe location: upwind/up gradient of release (assembly area).	☐
Account for Company and contractor personnel.	☐
Assess casualties (number/type/location).	☐
Determine probable location of missing personnel.	☐
Secure site, establish re-entry point and check-in/check-out procedures.	☐
Develop list of known hazards (confined spaces, electrical hazards, physical hazards, vapors, oxygen deficiency, fire/explosion, etc.).	☐
Monitor situation (weather, vapors, product migration) for significant changes.	☐
Assist in developing a Rescue Plan, if necessary.	☐

2.2 EVACUATION, CONTINUED

EVACUATION FACTORS	
FACTOR	**DESCRIPTION**
Stored material location	• Located in oil storage area • Identified in facility Plot Plan (**APPENDIX C**)
Spilled material hazards	• Hazard is fire/explosion
Water currents, tides, or wave conditions	• The velocity of the Mississippi River is typically 2.6 feet per second.
Evacuation routes	• Routes are summarized on Evacuation Plan Diagram (**APPENDIX C**) • Criteria for determining safest evacuation routes from facility may include: wind direction, potential exposure to toxins and carcinogens, intense heat, potential for explosion/fire, and blockage of planned route by fire, debris, or released liquid
Alternate evacuation routes	• Alternate routes may exist; refer to Evacuation Plan Diagram (**APPENDIX C**)
Injured personnel transportation	• Emergency vehicles can be mobilized to the facility (**FIGURE 3.1-6**)

Alarm/Notification system location	• Employees first learning of a potential emergency situation shall inform the QI by radio, telephone, or in person. The facility radios have an "all channel" function and the QI will inform employees and contractors of the emergency with instructions via radio on the "all channel" function. At least one person working in a crew must have a radio on their person at all times and is responsible for communicating emergency information to their associated parties. The St. James Parish LEPC has an outdoor warning system for the surrounding community and a community telephone notification system in the event the surrounding area must be evacuated.
Community evacuation plans	• Company may request local police, county sheriff, and/or state police assistance (**FIGURE 3.1-6**). Community evacuations are the responsibility of these agencies.
Spill flow direction	• Most releases that breach secondary containment will flow west off the Terminal property via one of four drainage ditches and will enter the St. James Canal. • Identified in Facility Drainage Diagram (**APPENDIX C**)

2.2 EVACUATION, CONTINUED

EVACUATION FACTORS	
FACTOR	**DESCRIPTION**
Prevailing wind direction and speed	• Prevailing winds typically are from the east-southeast. Average wind speeds in the area are 4.6 to 7 miles per hour. • Because wind direction varies with weather conditions, consideration for evacuation routing will depend in part on wind direction
Emergency personnel/response equipment arrival route	• Emergency response personnel and response equipment will arrive through the main gate of the facility. • Directions to nearest medical facility provided below

2.2 EVACUATION, CONTINUED

EVACUATION FACTORS	
FACTOR	**DESCRIPTION**
Centralized check-in area	• The primary assembly point is in the parking lot in front of the main gate entrance. The secondary assembly point is at the truck

	rack near Hwy 18. In the event of an emergency, the assembly point will be evaluated based on wind conditions. If the primary assembly point is inaccessible due to wind conditions, the secondary assembly point will be utilized or another assembly point selected and communicated by the QI if wind direction is still a factor. • Supervisor or designee is responsible for head count
Mitigation Command Center location	• Initial Command Center located at The mitigation command center will be set up in the Terminal Main Office. In the event of a Terminal evacuation, mobile trailers supplied by the Oil Spill Response Organization (OSRO) and placed upwind of the release will be utilized as a temporary mitigation command center. • Mobile Command Posts may be established as necessary
Facility Shelter Location	• Main Office • Not a safe harbor from fires, explosions, vapor clouds, or other significant emergencies; however, may be used for temporary shelter from inclement weather
Directions to nearest medical facility	Directions to Riverview Medical Center in Gonzales, Louisiana. : • • Turn left onto Highway 18. • Travel northwest approximately 7.5 miles. Then turn left onto Frontage Street. • From Frontage Street, turn right onto Highway 70 East and proceed for 8 miles. • From Highway 70 East, turn right onto Highway 22. Merge left onto Interstate 10 West. • Take the Highway 30 exit (Exit 177) towards St. Gabriel/Gonzales. Merge onto Highway 30 East. • Riverview Medical Center is located at 1125 West Highway 30 in Gonzales, Louisiana.

2.3 TORNADO

TORNADO CHECKLIST	
TASK	
Monitor news media reports (**FIGURE 3.1-6**). • Tornado watch means conditions are favorable for tornadoes. • Tornado warning means a tornado has been sighted.	☐

When a tornado warning is issued, immediately notify all personnel on-site. Notify off-site personnel of the situation (Control Center or Regional Management).	☐
Take shelter: • Go to an interior room on the lowest floor. • Get under a sturdy piece of furniture or solid structure. • Use your arms to protect head and neck.	☐
Have location personnel report to the designated area.	☐
Account for all personnel on duty.	☐
Look for funnel formations on the ground or in the clouds; listen for a roar that sounds like a jet aircraft or rail traffic.	☐
If the facility is damaged by the tornado, notify Management.	☐
Go to the scene of the incident to evaluate the situation. • Be aware of broken glass and downed power lines. • Assess the area for damaged equipment or product releases. • Check for injuries. • Use caution entering a damaged building.	☐
Update Supervisory Personnel/Management.	☐
Conduct post-emergency evaluation and report.	☐

2.4 FLOOD

FLOOD CHECKLIST	
TASK	
Perform continuous monitoring of the situation by listening to radio and/or television reports (**FIGURE 3.1-6**). • Flash flood watch means flooding is possible. • Flash flood warning means flooding is occurring or is imminent.	☐
Update Supervisory Personnel when flooding is imminent.	☐
Establish an evacuation plan (**SECTION 2.2**).	☐
Take preliminary actions to secure the facility before flooding and mandatory evacuation.	☐
Consider having sandbags brought to sites that could be affected by the flooding.	☐
Consider obtaining portable pumps and hoses from local suppliers or from other	☐

petroleum service locations in the area.	
Remove product from underground storage tanks (i.e., sumps and separators, if applicable) and replace with water to prevent them from floating out of the ground.	☐
If additional new product is available fill each tank to the minimum level necessary to prevent buoyancy in the event of flooding (Rule of thumb is 30% of the safe fill height). If additional product is not available, transfer appropriate product among tanks to prevent buoyance. If minimum levels cannot be reached through product transfer, add water bottoms.	☐
Plug all rack drains and facility drains connected to the sump.	☐
Empty all dikes of water.	☐
Ensure that tank roof drains are working properly.	☐
Anchor all bulk additive tanks, fuel barrels, empty drums, and propane tanks (if applicable).	☐
Notify Supervisory Personnel/Management that the facility will be closed. Customer should be notified.	☐
Back up computer files.	☐
Remove assets such as files, computers, spare parts, and vehicles.	☐
Shut off high voltage power and natural gas lines.	☐
Close all valves on product and additive storage tanks.	☐
Before evacuation, know where all the employees will be residing and obtain phone numbers so they can be contacted if additional emergencies occur.	☐

2.4 FLOOD, CONTINUED

FLOOD CHECKLIST	
TASK	
Conduct a post-emergency evacuation and report.	☐
Maintain hazards awareness: • Structural damage; • Equipment damage and product releases; • Downed power lines; • Leaking natural gas, water, and sewer lines; • Poisonous snakes and other wildlife sheltering in structures, vehicles, and furniture; and • Avoid direct contact with flood water, mud, and animal carcasses.	☐

2.5 MEDICAL

MEDICAL CHECKLIST	
TASK	
Summon Emergency Medical Services (EMS) to the scene (**FIGURE 3.1-6**).	☐
Do not move the patient unless a situation (such as a fire) threatens the patient's life.	☐
If trained, provide appropriate first aid for both injury and shock until the EMS arrives at the scene.	☐
As the situation warrants, try to stop the bleeding and keep the patient breathing until the EMS arrives at the scene.	☐
The rescuer's role includes: • Removing the patient from any situation threatening patient's life or the lives of rescuers. • Correcting life-threatening problems and immobilizing injured parts before transporting the patient. • Transporting the patient in a way that minimizes further damage to injured parts. • Administering essential life support while the patient is being transported. • Observing and protecting the patient until medical staff can take over. • Administering care as indicated or instructed.	☐
Notify Supervisory Personnel and/or Regional Management.	☐
Notify victim's immediate family.	☐
Complete follow-up and written reporting, as the situation demands.	☐

2.6 BOMB THREAT

(b) (7)(F), (b) (3)

[redacted]

(b) (7)(F), (b) (3)

[redacted]

(b) (7)(F), (b) (3)

[redacted]

2.7 FIRE AND/OR EXPLOSION

Your first consideration is always the safety of people in the immediate area, including your own.

The first responder's initial objective is site management.

FIRE AND/OR EXPLOSION CHECKLIST	
TASK	
At a manned facility	
Evaluate the situation; approach cautiously from upwind; do not rush in.	☐
Notify the local police and fire departments (Dial 911).	☐
Sound the facility alarm and push the red emergency shutdown switch (if equipped).	
Notify Qualified Individual and Operations Control (if applicable).	☐
Appropriately trained personnel may attempt to extinguish the fire if it is in the incipient (early) stage and **if it can be done safely**.	☐
In the event the fire is too large for an individual to fight alone, the individual sounding the alarm or making the phone call should stand by at a safe distance to	☐

direct the fire department to the scene of the fire and keep personnel and vehicles from entering the danger area.	
Alert all Facility areas of the exact location and extent of the fire.	☐
Instruct all drivers to discontinue loading, disconnect loading arms, and tell all drivers present to stand by the trucks (if safe to do so) and wait for instructions to remove same to safe area.	☐
Shut off all pumps.	
If the fire/explosion is a result of a pipe rupture, isolate product release by closing valves.	☐
If product is being received from pipelines, notify the appropriate pipeline personnel of the fire and request that the pipeline be shut down. The tank which is receiving product from the pipeline must not be closed until assurance is received that the pipeline is shut down, unless that tank is on fire.	
After confirmation has been received that pipelines have been shut down, close the pipeline header valves.	☐
Undertake basic site control: • Make an assessment of hazards. • Isolate the area. • Keep people away from the scene and outside the safety perimeter. • Establish safety zones and escape routes.	☐
Respond to the fire: • Establish a Command Post and lines of communication. • Maintain site control. • Establish Incident Command/Unified Command as necessary (**SECTION 4.4**).	☐
Call in additional resources if on-scene personnel and equipment are inadequate to handle the emergency.	☐
Conduct a post-emergency evaluation and report.	☐

2.7 FIRE AND/OR EXPLOSION, CONTINUED

Your first consideration is always the safety of people in the immediate area, including your own.

The first responder's initial objective is site management.

FIRE AND/OR EXPLOSION CHECKLIST, CONTINUED
TASK

At an unmanned facility	
Handle the call.	☐
Notify the local police and fire departments.	☐
Notify Qualified Individual and Operations Control.	☐
Go to the incident scene to evaluate the situation; approach cautiously from upwind; do not rush in.	☐
Undertake basic site control: • Make an assessment of hazards. • Isolate the area. • Keep people away from the scene and outside the safety perimeter. • Establish safety zones and escape routes.	☐
If roads or railroads are in the affected area, assist the sheriff or local emergency officials with halting traffic.	☐
Update the next level manager.	☐
If the fire/explosion is a result of a pipe rupture, isolate the product release by closing valves.	☐
Respond to the fire: • Establish a Command Post and lines of communication. • Maintain site control. • Establish Incident Command/Unified Command as necessary (**SECTION 4.4**).	☐
Call in additional resources if on-scene personnel and equipment are inadequate to handle the emergency.	☐
Conduct a post-emergency evaluation and report.	☐

2.8 VAPOR CLOUD

VAPOR CLOUD CHECKLIST	
TASK	
The person who discovers the vapor cloud will notify the facility management on duty and vacate the area.	☐
Remember: the only proper action in the presence of a vapor cloud is to get away from it. Do not shut off electrical equipment.	☐
All personnel will report to the evacuation muster point for roll call and further instructions.	☐
After all personnel have been accounted for, the Terminal Management, the Facility Supervisor, or a Facility Operator will initiate the following actions as	

deemed necessary: • Shut down pipeline. • Evacuate adjacent property. • Only the fire department will be permitted to enter the Facility.	☐
Contact the appropriate agencies and potentially affected neighbors (refer to **FIGURE 3.1-6**).	☐

SECTION 3 Last Revised: July 2014

NOTIFICATIONS / TELEPHONE NUMBERS

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3.1 Emergency Information and Notification Procedures

Figure 3.1-1 - Emergency Notification Flow Chart

Figure 3.1-2 - First Report of Incident

Figure 3.1-3 - Leak Accident Report Form

Figure 3.1-4 - Form 4004 - Release Notification Data Sheet

Figure 3.1-5 - Internal Notifications and Telephone Numbers

Figure 3.1-6 - External Notifications and Telephone Numbers

3.1 EMERGENCY INFORMATION AND NOTIFICATION PROCEDURES

The notification sequence for a spill is as follows:

- Facility Manager will identify and control the source of a spill, if safe to do so, then will notify the Qualified Individual.
- The Qualified Individual will conduct notifications as illustrated in the Notification Flow Chart (**FIGURE 3.1-1**).

The priority of actions and response procedures will depend upon actual circumstances and will be determined by the Incident Commander.

This section also contains the following:

- FIGURE 3.1-2 provides a First Report of Incident. This form is utilized for initial notification.
- FIGURE 3.1-3 provides a Leak Accident Report Form. This form is utilized for pipeline summary of documentation.
- FIGURE 3.1-4 provides a Release Notification Data Sheet. This form is utilized for notification summary and documentation.

The Company has attempted to make the following arrangements, as appropriate for the type of hazardous waste handled at the terminal and the potential need for the services of these organizations:

- Familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes;
- Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority;
- Agreements with State emergency response teams, emergency response contractors, and equipment suppliers; and
- Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

FIGURE 3.1-1 - EMERGENCY NOTIFICATION FLOW CHART

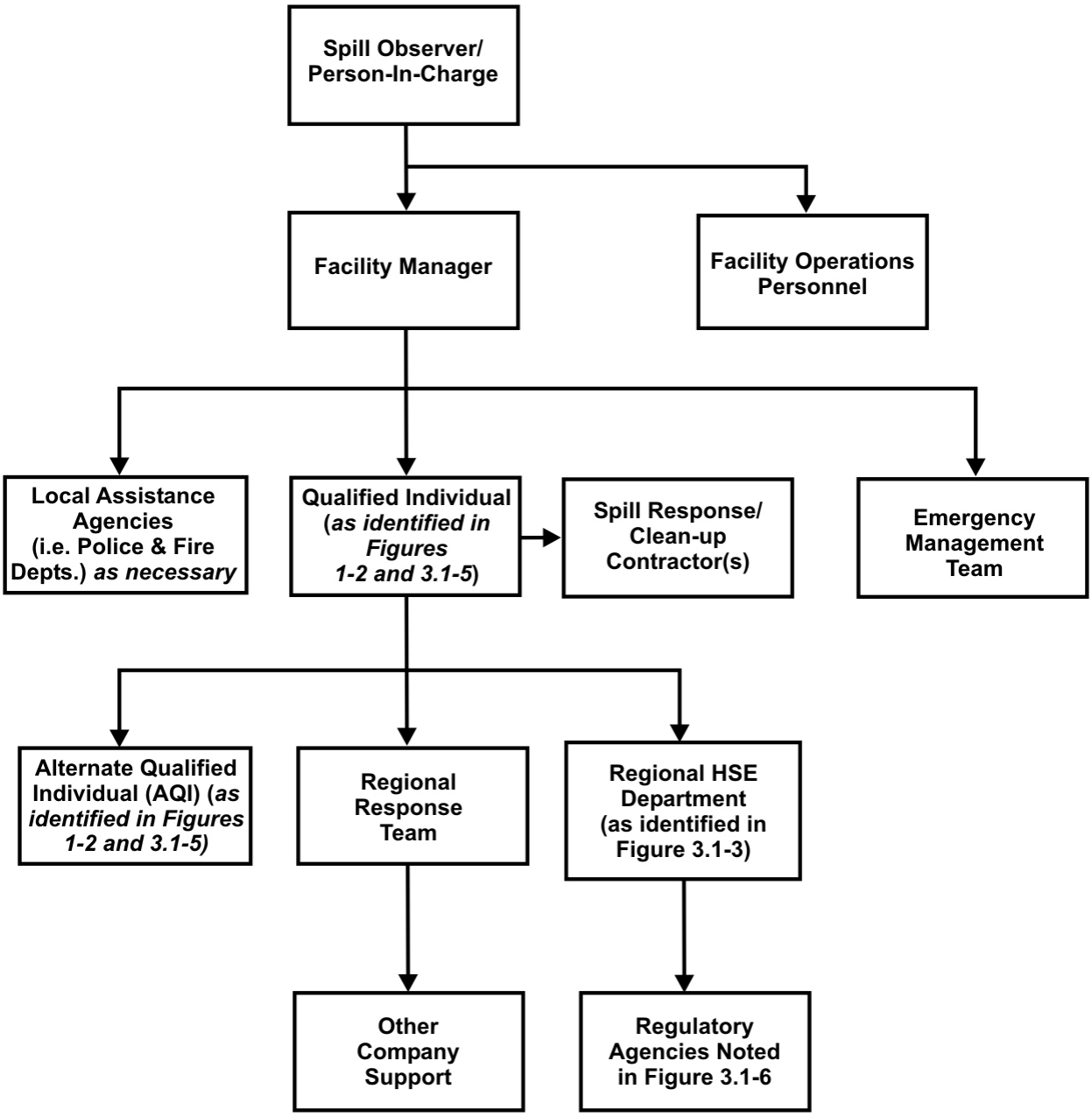

FIGURE 3.1-2 - FIRST REPORT OF INCIDENT

Original to File; Copies To: Terminal Mgr or Ops Mgr & LP HSE Group

I. Location: _____	Time: _____	Date: _____	
II. INCIDENT TYPE:			
A. Safety			**B. Environmental**
☐ Non-injury	☐ Property/Equipment Damage		☐ Spill
☐ Fire	☐ Other ____		☐ Air Upset
☐ Injury	☐ First Aid	☐ Off-site Treatment	☐ Discharge Event
☐ Near Miss	☐ Employee	☐ Contractor	☐ Other

For Safety and Environmental Departments Use Only

☐ Recordable Injury ☐ Chemical Exposure ☐ Recordable Illness ☐ Reportable to Agency
☐ PSM/RMP ☐ Other

Signature _____ **Date** _____

III. INJURED EMPLOYEE / CONTRACTOR

Name: _____ Social Security: _____

Occupation: _____ Department / Company: _____

Nature of work related injury:

_____

_____

Supervisor's Name:

_____

IV. DESCRIPTION OF INCIDENT: (Use additional sheet(s) if necessary)

Date: _____ Time: _____ Location: _____

Tank Capacity: _____

_____

_____

_____

_____

V. IMMEDIATE ACTION(s) TAKEN : (Use additional sheet(s) if necessary)

_____

_____

_____

VI. Incident Investigation Required ☐ Yes ☐ No

VII. Name of person preparing this report: _____

(Please print)

Signature: _____ Date: _____ Time: _____

Supervisor: _____ Date: _____

FIGURE 3.1-3 - LEAK ACCIDENT REPORT FORM

PL SYSTEM: _____

PL SEGMENT: _____

PRODUCTS ☐ CRUDE ☐

DISTRIBUTION:

REPORT INFORMATION:

Original - PIPELINE SAFETY ☐	
NOTE - Copy to the following as needed:	
MGR - ☐	SUP - ☐
ENG - ☐	ROW - ☐
ENV - ☐	☐

RECORDS RETENTION - Permanent
REPORT FREQUENCY - As Required
DUE DATES - Within 5 Days 1 day

PART A - TIME & LOCATION OF LEAK OR ACCIDENT

1. DATE (Month, Day, Year)	2. HOUR ☐ AM	3. LOCATION (State, County, City)
	☐ PM	

4. PHYSICAL LOCATION (Direction to site, reference highways & towns)
_____

SECTION _____ BLOCK or TOWNSHIP _____ SURVEY or RANGE _____

PART B - ORIGIN OF LIQUID OR VAPOR RELEASE

1. PART OF CARRIER'S SYSTEM INVOLVED:

LINE PIPE ☐ PUMPING STATION ☐ TANK FARM ☐ OTHER (Specify) ☐

2. ITEM INVOLVED:

LINE PIPE ☐ GIRTH WELD ☐ LONGITUDINAL WELD ☐ PUMP ☐ OTHER (Specify) ☐

TANK ☐ WELDED FITTING ☐ BOLTED FITTING ☐ VALVE ☐ OTHER (Specify) ☐

PART C - CAUSE OF LEAK ACCIDENT

CORROSION ☐ FAILED WELD ☐ FAILED PIPE ☐ INCORRECT OPERATION BY OPERATING PERSONNEL ☐

OUTSIDE FORCE DAMAGE ☐ MALFUNCTION OF CONTROL OR RELIEF EQUIP. ☐ OTHER (Specify) ☐

PART D - INJURY OR DEATH

NUMBER OF PERSONS INJURED		NUMBER OF PERSONS KILLED	
CARRIER EMPLOYEES	NON-EMPLOYEES	CARRIER EMPLOYEES	NON-EMPLOYEES

PART E - ESTIMATED DAMAGES & COSTS

1. DAMAGE TO OPERATOR	2. LAND DAMAGE	3. CLEAN-UP COST	4. PRODUCT COST

5. ITEMS DAMAGED (Specify):

PART F - COMMODITY SPILLED OR RELEASED

1. NAME OF COMMODITY SPILLED OR RELEASED:	2. CLASSIFICATION: ☐ Crude Oil ☐ Gas Oil	3. TOTAL LOSS BBLS (_) RECOVERED BBLS NET LOSS BBLS	4. WAS THERE A FIRE? YES NO	5. WAS THERE AN EXPLOSION?

	☐ MVL ☐ Non-MVL		☐ ☐	YES ☐ NO ☐

PART G - OCCURRED IN LINE PIPE (Answer sections G, H, or I ONLY if it specifically applies to the leak or accident)

1. NOMINAL DIAMETER in.	2. WALL THICKNESS in.	3. SPECIFICATION & GRADE:	4. YEAR OF INSTALLATION Before 1970 (Specify Yr.): ☐ After 1970 (Specify Yr.) ☐	5. TYPE OF JOINT: Weld ☐ Flanged ☐ Threaded ☐ Coupled ☐ Other ☐ _____

6. CONFIGURATION AT POINT OF ACCIDENT: Straight ☐ Sag ☐ Overbend ☐ Sidebend ☐	7. PIPE WAS: Coated ☐ Not Coated ☐	8. PIPE WAS: Above Ground ☐ Below Ground ☐

FIGURE 3.1-3 - LEAK ACCIDENT REPORT FORM, CONTINUED

PART G - OCCURRED IN LINE PIPE (Answer sections G, H, or I ONLY if it specifically applies to the leak or accident), Continued

9. COVER (if below ground) in.	10. MAXIMUM OPERATING PRESSURE: psig	11. PRESSURE AT TIME & LOCATION OF ACCIDENT psig	12. SYSTEM PRESSURE TEST YES ☐ NO ☐

13. TEST MEDIUM USED; (If item 12, is Yes) Water ☐ Petroleum ☐ Air ☐	14. DURATION OF TEST hrs.	15. MAXIMUM TEST PRESSURE psig	16. DATE OF LATEST TEST

PART H - CAUSED BY CORROSION

1. LOCATION OF CORROSION EXTERNAL ☐ INTERNAL ☐	2. FACILITY COATED: YES ☐ NO ☐	3. FACILITY UNDER CATHODIC PROTECTION? YES ☐ NO ☐	4. TYPE OF CORROSION: GALVANIC ☐ OTHER ☐

PART I - CAUSED BY OUTSIDE FORCES

1. ☐ DAMAGE BY OPERATOR ☐ DAMAGE BY NATURAL FORCES ☐ EARTHQUAKE	☐ DAMAGE BY OPERATOR'S CONTRACTOR ☐ Washout ☐ Flood ☐ OTHER (Specify)_____	☐ Subsidence ☐ Landslide	☐ DAMAGE BY OTHERS (Name) _____ ☐ Frostheave

2. DID EXCAVATOR CALL? YES ☐ NO ☐	3. WAS PIPELINE TEMPORARILY MARKED FOR EXCAVATOR? YES ☐ NO ☐	4. DISTANCE TO NEAREST LINE MARKER: feet

1. DETAILS OF INCIDENT: (Complete description of Cause, Response, Repairs, Affected Area & Land Damages.)
Use back for any additional information

PERSON COMPLETING THIS REPORT (Name):	DATE:

NRC # = 800-424-8802

INITIAL NOTIFICATION OF NRC MUST NOT BE DELAYED PENDING COLLECTION OF ALL INFORMATION.

FIGURE 3.1-4 - FORM 4004 - RELEASE NOTIFICATION DATA SHEET

Incident Date:		Incident Time:	
Reporters Name:		Reporter's Company:	
		Reporter's Position:	
Reporters Address:		City / State:	
Reporters Phone:		Zip:	
Name of Person who notified the reporter of the incident:			
It is not necessary to wait for all information before calling NRC. National Response Center 1-800-424-8802			
Were Materials Discharged (please circle one)	Yes	No	
Calling for Responsible Party (please circle one)	Yes	No	
Incident Description			
Facility Name:		Facility Address or driving directions:	
Organization Type:		Facility Latitude/Longitude:	
Responsible Party: (Name of company)		Owner's Address:	2330 Loop 1604 West San Antonio, Texas 78248
Facility Contact Name & Title:		Facility Contact Phone No's	Office
			Cell
			Other
Were Materials Discharged? Y____ N ____		Confidential? Y____ N ____	
Meeting Federal Obligations to Report? Y ___ N __		Date Called: _____	
Incident Description			
Location of Spill:		Source or cause of discharge:	
Material Released:		CHRIS Code:	
Total Quantity Released:		Was surface water impacted by the spill? (yes or no)	
Total Quantity Recovered:		Total quantity into the water:	
Net Loss:		Tank Number (above/below) involved or pipe diameter:	

Container Type (AST/UST):	Tank Capacity (gallons):		
Facility Oil Storage Capacity	Units of Measure:		
Nearest City:	County:	State:	ZIP
Distance from City (in miles):	Direction from City:	Section:	
Township:	Range:	Borough:	
Weather conditions at time of incident (wind, rain, snow, temperature, etc.):			
Was there a fire or explosion involved?	Number of Injuries:	Extent of Injuries if known:	
Number of Deaths:	Numbers Evacuated (if any):		
Was there any damage:	Yes / No / Unknown (please circle one)		
	Estimate Dollars of Damage:	Description:	
More Information about Medium:			
Additional Information not recorded elsewhere in the report:			

Response Actions	
Actions taken to correct, control, or mitigate the incident:	

Notifications

Group or Agency	Persons Notified	Date & Time Notified	Notify By:	Incident No.
NRC				
State Agency				
LEPC - County				
HSE Group:				
Other:				

Original: 10/20/2003 Revised: 3/6/07, 6/14/2007, 2/25/2009, 4/1/2009, 12/17/2012

FIGURE 3.1-5 - INTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS

Note: Notification Forms can only be printed from the Section File (not available in the Forms Navigator)

*24-Hour Number

FACILITY RESPONSE TEAM		
NAME/TITLE	**PHONE NUMBER**	**RESPONSE TIME (hours)**
Mike Northcutt Terminal Manager **Qualified Individual**	(225) 746-2119 (Office) (b) (6) [redacted] *(Mobile)	1
Dwayne Lamari Operations **Qualified Individual**	225-746-2110 (Office) (b) (6) [redacted] *(Mobile) NA (Pager)	.75

Mike Rock Lead HSE Specialist	225-746-2104 (Office) (b) (6) [redacted] (Home) *(Mobile) NA (Pager)	.25
Jean Zeringue General Manager of the Gulf Coast	(225) 746-2105 (Office) (b) (6) [redacted] (Home) *(Mobile)	0.75

Refer to **APPENDIX A**, **Figure A.2-3** for personnel training records

FIGURE 3.1-5 - INTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS, CONTINUED

Note: Notification Forms can only be printed from the Section File (not available in the Forms Navigator)

*24-Hour Number

EMERGENCY RESPONSE PERSONNEL AND BUSINESS UNIT NOTIFICATIONS						
NAME/TITLE	**PHONE NUMBER**	**RESPONSE TIME (hours)**	**ICS POSITION**	**RESPONSE TRAINING TYPE[1]**		
				1	**2**	**3**
Mike Rock Lead HSE Specialist	225-746-2104 (Office) (b) (6) [redacted] (Home) (b) (6) [redacted] *(Mobile) NA (Pager)	.25	Safety Officer	x	x	x
Jean Zeringue General Manager of the Gulf Coast	(225) 746-2105 (Office) (b) (6) [redacted] (Home) (b) (6) [redacted] *(Mobile)	0.75	Alternate Incident Commander	x	x	x
Brad Barron President & CEO	(210) 918-2106 (Office) (b) (6) [redacted] *(Mobile)	6				
Mary Rose Brown EVP Administration Corporate Communications	(210) 918-2314 (Office) (b) (6) [redacted] *(Mobile)	6	Information Officer, Alternate Public Information Officer			
Ron Walton	(210) 918-2258 (Office)					

VP, Risk Management	(b) (6) [redacted] *(Mobile)	6	Risk Management	x	x	x
Bob Hill Lead HSSE Specialist	(832) 536-3207 (Office) (b) (6) [redacted] (Home) (b) (6) [redacted] *(Mobile)	6	Safety Officer	x	x	x

EMERGENCY RESPONSE TRAINING TYPE[1]

There are three different types of training described below including HAZWOPER, OPA, and Qualified Individual/Incident Command Training. An "x" has been placed in the applicable columns (type 1, 2, or 3) in the table above for the type of training completed by each individual.

TYPE[1]	DESCRIPTION
1	29 CFR 1910.120 HAZWOPER
2	OPA (Training Reference for Oil Spill Response) All Facility Personnel, SMT, QI Components
3	Qualified Individual/Incident Command Training

Note: Refer to **APPENDIX A** for training dates.

FIGURE 3.1-5 - INTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS, CONTINUED

Note: Notification Forms can only be printed from the Section File (not available in the Forms Navigator)

*24-Hour Number

EMERGENCY RESPONSE CONTRACTORS

NAME/TITLE	PHONE NUMBER	RESPONSE TIME (hours)	RESPONSIBILITY DURING RESPONSE ACTION	RESPONSE TRAINING TYPE[1]		
				1	2	3
Environmental Safety & Health Consulting Services	(877) 437-2634* (888) 422-3622* (985) 851-5350	1				

EMERGENCY RESPONSE TRAINING TYPE[1]

There are three different types of training described below including HAZWOPER, OPA, and Qualified Individual/Incident Command Training. An "x" has been placed in the applicable columns (type 1, 2, or 3) in the table above for the type of training completed by each individual.

TYPE[1]	DESCRIPTION

1	29 CFR 1910.120 HAZWOPER
2	OPA (Training Reference for Oil Spill Response) All Facility Personnel, SMT, QI Components
3	Qualified Individual/Incident Command Training

Note: Refer to **APPENDIX A** for training dates.

FIGURE 3.1-6 - EXTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS

Note: Notification Forms can only be printed from the Section File (not available in the Forms Navigator)

*24-Hour Number

AFFILIATION	PHONE NUMBER	TIME CONTACTED
Initial		
St. James Parish Emergency Response	911	
La. State Police	225-925-6595	
National Response Center (PHMSA Only) Within 2 hrs for a reportable pipeline incident or as required by State law. Whichever is sooner.	(800) 424-8802* (202) 267-2675* (202) 267-1322 Fax	
Recommended		
NONE		
Industrial Emergency Services-Motiva	225-562-6244	
Federal Agencies		
OPS Regional Office	(713) 750-1746	
OSHA Regional Office, Baton Rouge, LA	(225) 298-5458	
U.S. Environmental Protection Agency - Region VI (6SF-RO)	(866) 372-7745*, (214) 665-6444* Emergencies (800) 887-6063 Toll Free Main line (214) 665-2200 Main line (214) 665-8365 Region 6 FOSC	
U.S. Coast Guard - Marine Safety Office, New Orleans, LA	(504) 365-2200 Primary Emergency Number (504) 365-2370 Facility Inspection Number	

	(225) 298-5400 MSO Baton Rouge (985) 851-1692 MSO Houma	
State Agencies		
Louisana Wildlife and Fisheries	(225) 765-2800	
Louisiana Department of Environmental Quality	(888) 763-5424 225-342-1234 (24 hr)	
Louisiana State Emergency Fusion Center	(225) 925-4192	
Louisiana State Fire Marshal	(800) 256-5452	
Louisiana State Police	(225) 925-6595 (877) 925-6595 HazMat Hotline	
Louisiana State Police Troop "C"	985-857-3680 911	
Local Agencies		
Ascension Parish LEPC	(225) 621-8300 911	

FIGURE 3.1-6 - EXTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS , CONTINUED

Note: Notification Forms can only be printed from the Section File (not available in the Forms Navigator)

*24-Hour Number

AFFILIATION	PHONE NUMBER	TIME CONTACTED
Recommended		
Local Agencies		
Local Water Supply SystemVacherie Water PlantSt. James Water Department	(225) 265-6010 (m-f days) 225-562-2364 (Sheriff dispatcher 24 hr)	
St. James Parish LEPC	(225) 562-2265 911	
Emergency Medical Services		
Local Ambulance	911*	

Law Enforcement		
Sheriff Department (St. James, Convent)	(225) 562-2200 Day (225) 562-2364 911	
Sheriff Department (St. James, Vacherie)	(225) 562-2510 911	
Fire Departments		
Donaldsonville Fire Department	(225) 621-8300 #1 911	
Thibodeaux Fire Department	(225) 446-5021 911	
Vacherie Fire Department	(225) 265-3333 911	
Hospitals		
Riverview Hospital (St. Elizabeth Hosp)	(225) 647-5000 911	
Law Enforcement		
Sheriff Department (St. James, Vacherie	(225) 562-2501	
USCG Classified OSRO's		
Environmental Safety & Health Consulting Services Houma, LA	(877) 437-2634* (888) 422-3622* (985) 851-5350	
Non-Classified OSRO's		
Conestoga-Rovers & Associates, Inc.	(866) 812-9565* (713) 734-3090 Houston (972) 331-8500 Dallas (918) 828-2424 Tulsa (405) 359-1145 Oklahoma City	
Neighboring Facilities		
Capline System (Marathon - Operator)	control center (419) 421-4138 local facility (225) 265-1138	
Ergon	(225) 265-8020	
Exxon Mobil Pipeline	(985) 537-4803	

FIGURE 3.1-6 - EXTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS , CONTINUED

Note: Notification Forms can only be printed from the Section File (not available in the Forms Navigator)

*24-Hour Number

AFFILIATION	PHONE NUMBER	TIME CONTACTED
Recommended		
Neighboring Facilities		
Locap, Inc.	(225) 265-8355	
Plains All American	(225) 265-2345	
Sugarland Terminal	(225) 265-4712	
Radio Stations		
KXOR	(504) 446-5604	
Service Providers		
Garner Environmental (New Orleans, LA)	(800) 424-1716* (2810-930-1200	
OMI Solutions (Belle Chasse, LA)	(800) 645-6671* (504) 394-6110	
PSC (New Orleans, LA)	(888) 631-9652* (337) 233-4889	
Television Stations		
Channel 2 (Baton Rouge)	(225) 336-2338	
Channel 4 (New Orleans)	(504) 529-4444	
Weather		
National Weather Service	(225) 649-0429	

SECTION 4 Last Revised: May 2008

RESPONSE TEAM ORGANIZATION

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4.1 Description

4.2 Activation Procedures

4.3 Team Member Response Times

4.4 Incident Command System / Unified Command

4.5 Qualified Individual (QI)

Figure 4.5-1 - Emergency Management Team (EMT) Activation Procedure

Figure 4.5-2 - Emergency Management Team (EMT) Organization Chart

4.6 Emergency Management Team (EMT) Job Descriptions and Guidelines

4.1 DESCRIPTION

The Company has developed its emergency response organization around the Incident Command System (ICS), which provides the structure for effective management of response resources. The Emergency Management Team (EMT) has been created and organized to plan for and manage oil spills and other emergencies.

The Company utilizes a Regional Response Team (RRT) to staff ICS positions during emergencies that exceed the capabilities of the on-site Emergency Management Team. The RRT provides enhanced assimilation with the Unified Command System during significant emergencies. Personnel from the RRT are trained to address Planning, Logistics, Administration/Finance, Information, and Liaison roles.

Job descriptions for each EMT member are provided in **SECTION 4.6**. The EMT will train by participating in exercises as noted in **APPENDIX A**. Refer to **FIGURE 3.1-1** for notification procedures.

4.2 ACTIVATION PROCEDURES

Following initial notification the IC may be able to respond without assistance from the EMT. If the situation requires more resources, additional personnel or management support may be requested from the EMT. The EMT activation procedure is provided in FIGURE 4.5-1.

In the case of a larger emergency, the RRT would be activated by the QI requesting additional resources through the General Manager. The General Manager would activate the RRT to the incident. Depending on the size of the event, the General Manager may request activation of the Corporate Emergency Response Plan (CERP). Activation of the CERP will initiate assistance from corporate personnel to provide additional resources, as needed.

4.3 TEAM MEMBER RESPONSE TIMES

See **FIGURE 3.1-5** for each team member's response time "EPA Facilities only".

4.4 INCIDENT COMMAND SYSTEM / UNIFIED COMMAND

The Incident Command System (ICS) will be used by the Company EMT for spill response. The EMT organization chart is provided in FIGURE 4.5-2. The organization can be expanded or contracted as necessary. If an OSRO or other contractor is used to staff ICS positions for the Spill Management Team, the commitment will be specified in writing.

The Unified Command System (UCS) is the accepted method of organizing key spill management entities within the Incident Command System. The primary entities include:

- Federal On-Scene Coordinator (FOSC)
- State On-Scene Coordinator (SOSC)
- Company Incident Commander

These three people share decision-making authority within the Incident Command System and are each responsible for coordinating other federal, state, and company personnel to form an effective integrated Emergency Management Team. Refer to **SECTION 4.6** for detailed checklists of the EMT roles and responsibilities as well as organizational interfaces with external parties.

4.5 QUALIFIED INDIVIDUAL (QI)

The Qualified Individual (QI) is an English-speaking representative, available on a 24-hour basis, and trained in the responsibilities outlined in this section. The QI has the following responsibilities and authorities as required by the Oil Pollution Act of 1990 (OPA 90):

- The Qualified Individual (QI) is granted full authority to implement the Facility Response Plan (FRP).
- Activate internal alarm and hazard communication systems to notify all appropriate personnel.
- Notify all response personnel and contractors (as needed).
- Identify the character, exact source, amount, and extent of the release and other necessary items needed for notifications.
- Notify and provide information to appropriate federal, state, and local authorities.
- Assess the interaction of the spilled substance with water and/or other substances stored at the facility and notify on-scene response personnel of assessment.
- Assess possible hazards to human health and the environment.
- Assess and implement prompt removal actions.
- Coordinate rescue and response actions.
- Access Company funds to initiate cleanup activities.
- Direct cleanup activities until properly relieved of the responsibility or the incident is terminated.

For further information on Qualified Individualâ€™s training, refer to **APPENDIX A**. Phone numbers for Qualified Individuals are provided in **FIGURES 1-2** and **3.1-5**.

FIGURE 4.5-1 - EMERGENCY MANAGEMENT TEAM (EMT) AND REGIONAL RESPONSE TEAM (RRT) ACTIVATION PROCEDURE

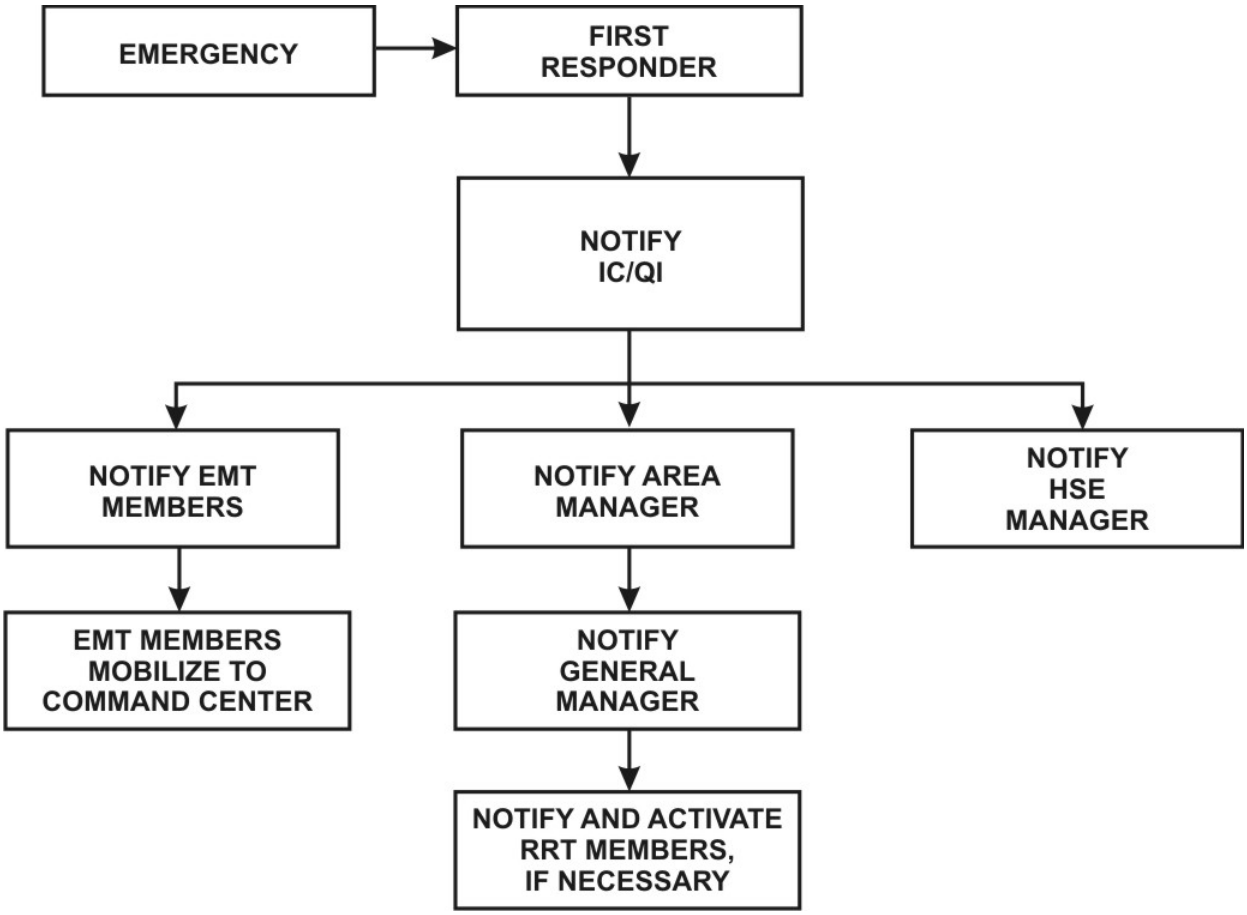
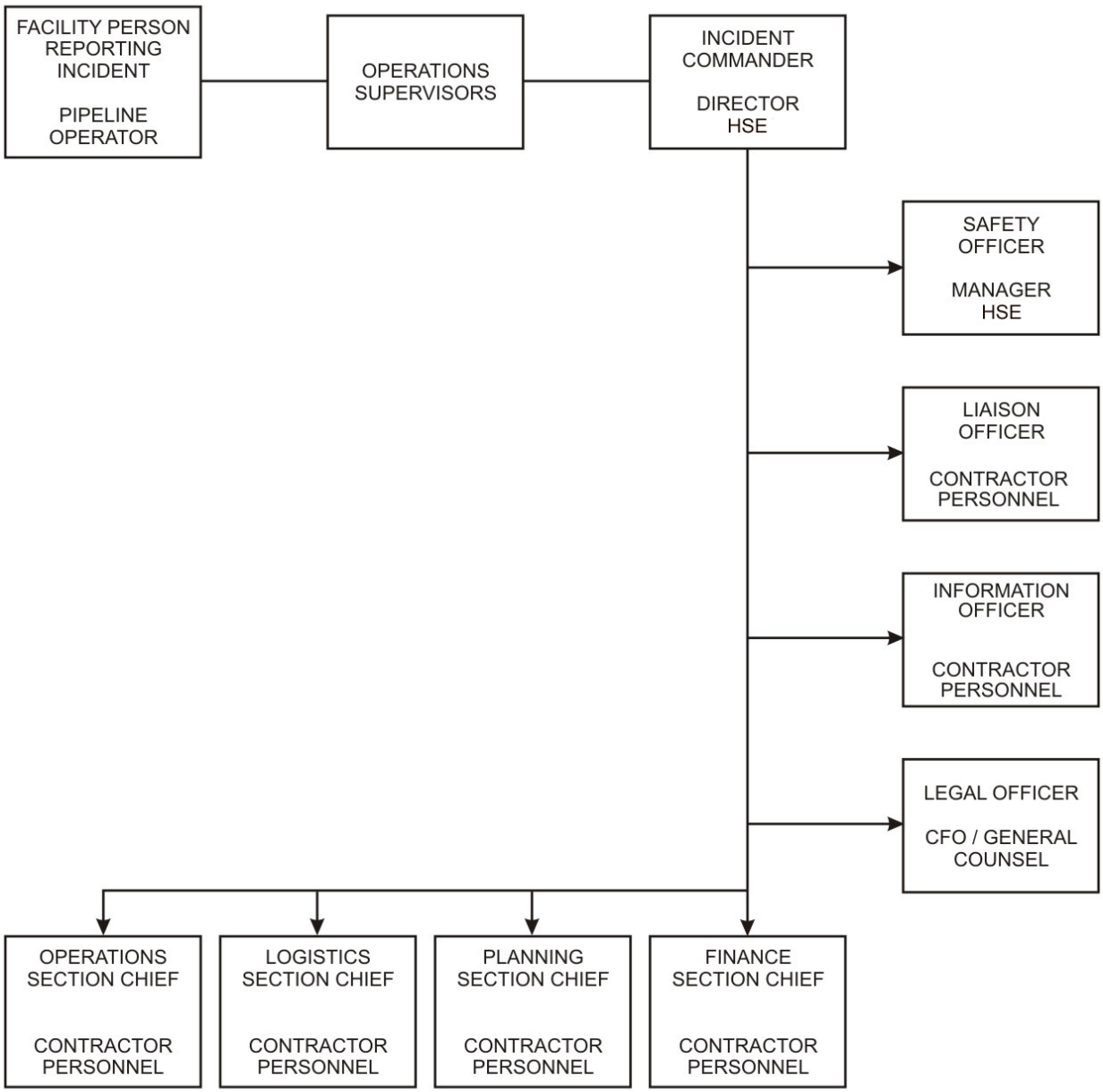


FIGURE 4.5-2 - EMERGENCY MANAGEMENT TEAM (EMT) ORGANIZATION CHART

(Click here for larger view)



4.6 EMERGENCY MANAGEMENT TEAM (EMT) JOB DESCRIPTIONS AND GUIDELINES

The following job descriptions and guidelines are intended to be used as a tool to assist EMT members in their particular positions within the Incident Command System (ICS):

- Incident Commander
- Safety Officer
- Operations Chief
- Planning Chief
- Logistics Chief
- Finance Chief

- Information Officer
- Liaison Officer

INCIDENT COMMANDER

The Incident Commander (IC) manages all activities related to an emergency response and acts as Qualified Individual (QI). As such, the Incident Commander needs to be familiar with the contents of the Facility Response Plan (FRP), Oil Spill Response Plan (OSRP), Emergency Response Action Plan (ERAP), and the Spill Prevention Control and Countermeasure Plan (SPCC). The Incident Commander (IC) must also be familiar with the operation of the Incident Command System (ICS) and the Unified Command Structure (UCS).

The primary goal of this system is to establish and maintain control of the emergency response. If the emergency involves a multi-jurisdictional response (Federal and State), the Unified Command Structure (UCS) should be established. **Realize that the Federal On-Scene Coordinator (FOSC) does have the authority to override the Incident Commander and assume control of the response**. Every effort should be made to establish a collaborative relationship to manage the incident site with the appropriate responding agencies.

As soon as possible but not later than one (1) week following an incident, the Incident Commander shall conduct a critique of the response and follow-up of action items. Participants shall include Operations Control personnel, Company supervisors, and employees and outside agencies involved in the response. An Incident Debriefing Form is provided in **SECTION 8.3**.

Responsibilities:

- ☐ Maintain Activity Log.
- ☐ Establish Incident Command/Unified Command Post.
- ☐ Activate necessary section(s) of the Incident Command System (ICS) to deal with the emergency. Fill out the appropriate section(s) of the Incident Command organization chart and post it at the Incident Command Center.
- ☐ Develop goals and objectives for response.
- ☐ Work with Safety Officer and Planning Section Chief to develop a Site Safety Plan (SSP).
- ☐ Approve, authorize, and distribute Incident Action Plan (IAP) and SSP.
- ☐ Conduct planning meetings and briefings with the section chiefs.
- ☐ As Qualified Individual coordinate actions with Federal On-Scene Coordinator (FOSC) and State On-Scene Coordinator (SOSC).
- ☐ In a multi-jurisdictional response, ensure that all agencies are represented in the ICS.
- ☐ Coordinate and approve media information releases with the FOSC, SOSC, and Public Information Officer (PIO).
- ☐ Keep management informed of developments and progress.
- ☐ Authorize demobilization of resources as they are no longer needed.
- ☐ Complete Standard Incident Debriefing Form (**FIGURE 8.3-1**).

SAFETY OFFICER

The Safety Officer is responsible for assessing and monitoring hazardous and unsafe situations at the emergency response site(s). The Safety Officer must develop measures that assure the safety of the public and response personnel. This involves maintaining an awareness of active and developing situations, ensuring the preparation and implementation of the Site Safety Plan (SSP) and assessing safety issues related to the Incident Action Plans (IAP).

Responsibilities:

- ☐ Maintain Activity Log.
- ☐ Obtain briefing from Incident Commander (IC).
- ☐ Develop, implement, and disseminate SSP with IC and section chiefs.
- ☐ Participate in planning meetings and briefings.
- ☐ Establish safety staff if necessary.
- ☐ Identify emergency contact numbers. Fill out emergency contact chart and post in the Incident Command Center.
- ☐ Conduct safety briefings with all emergency responders.
- ☐ Investigate accidents that have occurred during emergency response.
- ☐ Ensure proper hazard zones are established.
- ☐ Ensure all emergency responders have appropriate level of training.
- ☐ Ensure proper Personal Protective Equipment (PPE) is available and used.
- ☐ Advise Security/Medical Group Leader concerning PPE requirements.
- ☐ Ensure emergency alarms/warning systems are in place as needed.
- ☐ Participate in Post Incident Review (**SECTION 8.3**).

OPERATIONS CHIEF

The Operations Chief is responsible for the management of all operations applicable to the field response and site restoration activities. Operations directs field activities based on the Incident Action Plan (IAP) and Site Safety Plan (SSP).

Responsibilities:

- ☐ Maintain Activity Log.
- ☐ Obtain briefing from Incident Commander (IC).
- ☐ Participate in Incident Command planning meetings and briefings.
- ☐ Conduct planning meetings and briefings for Operations Section.
- ☐ Develop operations portion of IAP.
- ☐ Supervise the implementation of the IAP.

- ☐ Make or approve expedient changes to the IAP.
- ☐ Request resources needed to implement IAP.
- ☐ Approve list of resources to be released.
- ☐ Ensure safe tactical operations.
- ☐ Establish a staging area for personnel and equipment.
- ☐ Confirm first responder actions.
- ☐ Confirm the completion of rescue/evacuation and administering of first aid.
- ☐ Confirm site perimeters have been established.
- ☐ Coordinate activities of public safety responders, contractors, and mutual assistance organizations.
- ☐ Participate in Post Incident Review (**SECTION 8.3**).

PLANNING CHIEF

The Planning Chief is responsible for collecting, evaluating, and disseminating information related to the current and future events of the response effort. The Planning Chief must understand the current situation; predict the future course of events; predict future needs; develop response and cleanup strategies; and review the incident once complete.

The Planning Chief must coordinate activities with the Incident Commander (IC) and other Chiefs to ensure that current and future needs are appropriately handled.

Responsibilities:

- ☐ Maintain Activity Log.
- ☐ Obtain briefing from the IC.
- ☐ Establish and maintain communication with IC and other Section Chiefs.
- ☐ Advise IC on any significant changes of incident status.
- ☐ Conduct planning meetings and briefings for Planning section.
- ☐ Coordinate and provide input to the preparation of the Incident Action Plan (IAP).
- ☐ Participate in Incident Command planning meetings and briefings.
- ☐ In a multi-jurisdictional response, ensure that all agencies are represented in the Planning Section.
- ☐ Coordinate future needs for the emergency response.
- ☐ Determine response personnel needs.
- ☐ Determine personnel needs and request personnel for Planning section.
- ☐ Assign technical specialists (archaeologists, historians, biologists, etc.) where needed.
- ☐ Collect and analyze information on the situation.
- ☐ Assemble information on alternative response and cleanup strategies.
- ☐ Ensure situation status unit has a current organization chart of the Incident

Command Organization.

- ☐ Provide periodic spill movement/migration prediction.
- ☐ Participate in Post Incident Review (**SECTION 8.3**).

LOGISTICS CHIEF

The Logistics Chief is responsible for procuring facilities, services, and material in support of the emergency response effort.

Responsibilities:

- ☐ Maintain Activity Log.
- ☐ Obtain briefing from the Incident Commander (IC).
- ☐ Participate in Incident Command planning meetings and briefings.
- ☐ Conduct planning meetings and briefings for Logistics section.
- ☐ Participate in the preparation of the Incident Action Plan (IAP).
- ☐ Identify service and support requirements for planned operations.
- ☐ Identify sources of supply for identified and potential needs.
- ☐ Advise IC on current service and support requirements.
- ☐ Procure needed materials, equipment and services from sources by means consistent with the timing requirements of the IAP and Operations.
- ☐ Ensure all purchases are documented.
- ☐ Participate in Post Incident Review (**SECTION 8.3**).

FINANCE CHIEF

The Finance Chief is responsible for accounting, legal, right-of-way and risk management functions that support the emergency response effort. In this role, the primary responsibility is supporting the Command Staff and Logistics Section matters pertaining to expenses during and following the emergency response.

Responsibilities:

- ☐ Maintain Activity Log.
- ☐ Obtain briefing from Incident Commander (IC).
- ☐ Participate in Incident Command planning meetings and briefings.
- ☐ Conduct planning meetings and briefings for Finance section.
- ☐ Participate in preparation of the Incident Action Plan (IAP).
- ☐ Participate in planning meetings.
- ☐ Participate in Unified Command System (UCS) as incident warrants.

- ☐ Request assistance of corporate accounting, legal, right-of-way or risk management as needed.
- ☐ Assist with contracting administration.
- ☐ Participate in Post Incident Review (**SECTION 8.3**).

INFORMATION OFFICER

The Information Officer (IO) provides critical contact between the media/public and the emergency responders. The IO is responsible for developing and releasing information about the incident to the news media, incident personnel, appropriate agencies and public. When the response is multi-jurisdictional (involves the federal and state agencies), the IO must coordinate gathering and releasing information with these agencies.

The IO needs to communicate that the Company is conducting an effective response to the emergency. The IO is responsible for communicating the needs and concerns of the public to the Incident Commander (IC).

Responsibilities:

- ☐ Maintain Activity Log.
- ☐ Obtain briefing from IC.
- ☐ Participate in all planning meetings and briefings.
- ☐ Obtain outside information that may be useful to incident planning.
- ☐ Develop goals and objectives regarding public information.
- ☐ Arrange for necessary workspace, materials, telephones and staffing for Public Information Center (PIC).
- ☐ Establish a PIC, ensuring all appropriate agencies participate.
- ☐ Provide a single point of media contact for the IC.
- ☐ Coordinate media access to the response site as approved by the IC.
- ☐ Obtain approval for release of information from the IC.
- ☐ Arrange for meetings between media and emergency responders.
- ☐ Maintain list of all media present.
- ☐ Participate in Post Incident Review (**SECTION 8.3**)

LIAISON OFFICER

If a Unified Command Structure is not established, a Liaison Officer is appointed as the point of contact for personnel assigned to the incident from assisting or cooperating agencies.

Responsibilities:

- ☐ Maintain Activity Log.

- ☐ Obtain briefing from Incident Commander (IC).
- ☐ Participate in planning meetings and briefings.
- ☐ Identify and maintain communications link with agency representatives, assisting, and coordinating agencies.
- ☐ Identify current or potential inter-organizational issues and advise IC as appropriate.
- ☐ Coordinate with Legal Group Leader and Public Information Officer (PIO) regarding information and documents released to government agencies.
- ☐ Participate in Post Incident Review (**SECTION 8.3**).

SECTION 5 Last Revised: May 2008

INCIDENT PLANNING

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5.1 Documentation Procedures

5.2 Incident Action Plan Process and Meetings

Figure 5.2-1 Operational Period Planning Cycle

5.2.1 Incident Occurs / Notifications

5.2.2 Initial Response and Assessment

5.2.3 Unified Command Objectives Meeting

5.2.4 Tactics Meeting

5.2.5 Planning Meeting

5.2.6 Incident Action Plan (IAP) Preparation and Approval

5.2.7 Operations Briefing

5.2.8 Assess Progress

5.2.9 Initial Unified Command Meeting

5.2.10 Command Staff Meeting

5.2.11 Command and General Staff Breakfast / Supper

5.2.12 Business Management Meeting

5.2.13 Agency Representative Meeting

5.2.14 News Briefing

SECTION 5
INCIDENT PLANNING, CONTINUED

5.3 ICS Forms

5.3.1 Incident Briefing ICS 201-OS

5.3.2 Incident Action Plan (IAP) Cover Sheet

5.3.3 Incident Objectives ICS 202-OS

5.3.4 Organization Assignment List ICS 203-OS

5.3.5 Assignment List ICS 204-OS

5.3.6 Communications Plan ICS 205-OS

5.3.7 Medical Plan ICS 206-OS

5.3.8 Incident Status Summary ICS 209-OS

5.3.9 Unit Log ICS 214-OS

5.3.10 Individual Log ICS 214a-OS

5.3.11 Operational Planning Worksheet ICS 215-OS

5.4 Site Safety and Health Plan

5.5 Decontamination Plan

5.6 Disposal Plan

5.7 Incident Security Plan

5.8 Demobilization Plan

5.1 DOCUMENTATION PROCEDURES

Documentation of a spill response provides a historical record, keeps management informed, serves as a legal instrument, and is a means to account for the cleanup costs.

Documentation should begin immediately upon spill notification and continue until termination of all operations. Documentation should include the following:

- Spill origin and characteristics,
- Sampling surveys,
- Photographic surveys,
- Climatological data,
- Labor and equipment accounting, and
- Copies of all logs, contracts, contacts, and plans prepared for the incident.

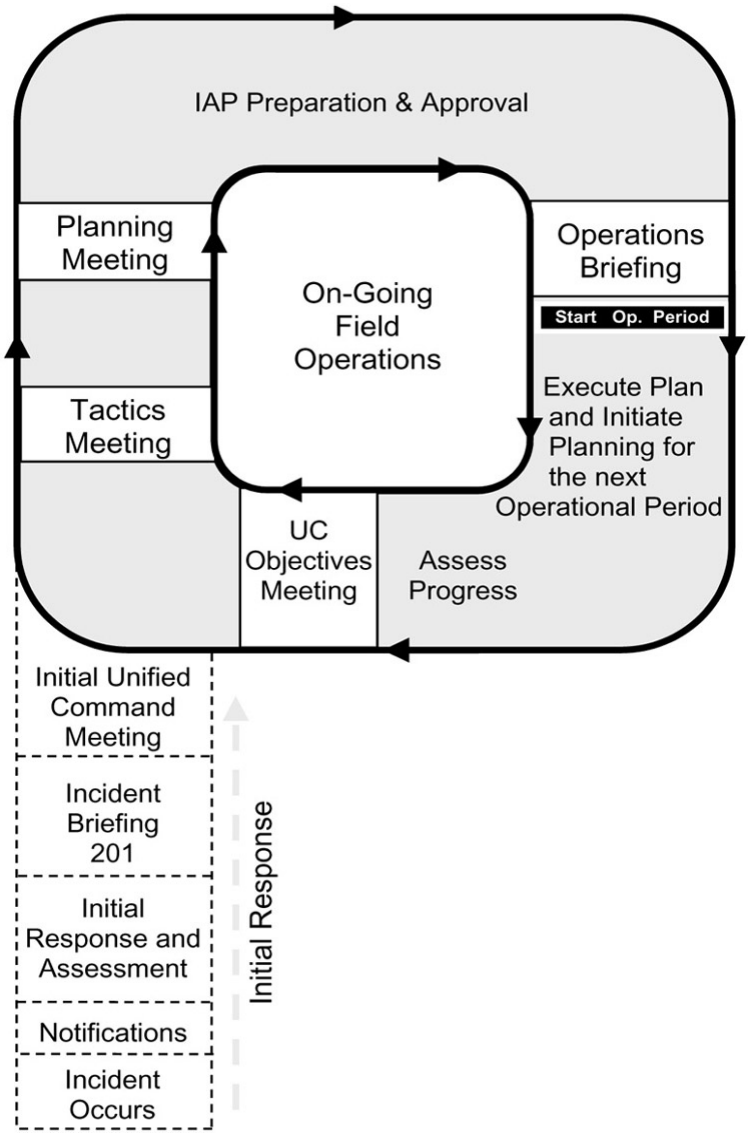
5.2 INCIDENT ACTION PLAN PROCESS AND MEETINGS

The period of INITIAL RESPONSE AND ASSESSMENT occurs in all incidents. Short-term responses (small in scope and/or duration, e.g., few resources working one operational period) often can be coordinated using only ICS 201 Briefings.

Longer-term, more complex responses, will likely require a dedicated Planning Section Chief (PSC) who must arrange for transition into the OPERATIONAL PERIOD PLANNING CYCLE. Certain meetings, briefings, and information-gathering during the Cycle lead to the Incident Action Plan (IAP) that guides operations of the next operational period. Only the meetings and events directly relevant to assembling the IAP are described. The IC/UC specifies the operational periods (e.g., 12-hour shifts, sunrise to sunset, 24-hour shifts etc.).

The SPECIAL PURPOSE meetings are most applicable to larger incidents requiring an OPERATIONAL PERIOD PLANNING CYCLE, but may have utility during INITIAL RESPONSE AND ASSESSMENT. The UNIFIED COMMAND MEETING and other special purpose meetings are briefly noted.

FIGURE 5.2-1 OPERATIONAL PERIOD PLANNING CYCLE



5.2.1 Incident Occurs / Notifications

When an incident occurs, notifications will be made to the appropriate Federal, State, and Local agencies and the initial assessment and response actions will begin.

5.2.2 Initial Response and Assessment

INCIDENT BRIEFING (ICS 201)

During the transfer of command process, an ICS 201 formatted briefing provides the incoming IC/UC with basic information regarding the incident situation and the resources allotted to the incident. Most importantly, it is the de facto Incident Action Plan (IAP) for the initial response and remains in force and continues to develop until the response ends or the Planning Section generates the incident's first IAP. It also is suitable for briefing individuals newly assigned to Command and General Staff, as well as needed assessment briefings for the staff.

When: New IC/UC; staff briefing, as required
Briefer: Current IC/UC
Attendees: Prospective IC/UC; Command, and General Staff, as required

Agenda: Using ICS 201 as an outline, included:

1. Situation (note territory, exposures, safety concerns, etc.; use map/charts).
2. Objectives and priorities.
3. Strategies and tactics.
4. Current organization.
5. Resource assignments.
6. Resources enroute and/or ordered.
7. Facilities established.

OPERATIONAL PERIOD PLANNING CYCLE
(Events most related to assembling IAP)

5.2.3 Unified Command Objectives Meeting

The IC/UC will review/identify and prioritize objectives for the next operational period for the ICS 202 form. Objectives from the previous operational period are reviewed and any new objectives are identified.

When: Prior to Tactics Meeting
Facilitator: UC Member
Attendees: UC Members; Command and General Staff, as appropriate
Agenda:

1. Review/identify objectives for the next operational period (clearly stated and attainable with the resources available, yet flexible enough to allow Operations Section Chief to choose tactics).
2. Review any open agenda items from initial/previous meetings.

5.2.4 Tactics Meeting

This 30-45 minute meeting creates the blueprint for tactical deployment during the next operational period. In preparation for the Tactics Meeting, the Planning Section Chief and Operations Section Chief review the current IAP and situation status information, as provided through the Situation Unit, to assess work progress against IAP objectives. The Operations Section Chief/Planning Section Chief will jointly develop primary and alternate strategies to meet objectives for consideration at the next Planning Meeting.

When: Prior to Planning Meeting
Facilitator: Planning Section Chief
Attendees: Planning Section Chief, Operations Section Chief, Logistics Section Chief, Resources Unit Leader, Situation Unit Leader, and Environmental Unit Leader
Agenda:

1. Review the objectives for the next operational period.
2. Develop strategies (primary and alternatives).
3. Prepare a draft of ICS 215 to identify resources that should be ordered through Logistics.

5.2.5 Planning Meeting

This meeting defines incident objectives, strategies, and tactics and identifies resource needs

for the next operational period. Depending on incident complexity, this meeting should last no longer than 45 minutes. This meeting fine-tunes objectives and priorities, identifies and solves problems, and defines work assignments and responsibilities on a completed ICS Form 215 (Operations Planning Worksheet). Meeting preparations include conducting a Tactics Meeting. Displays in the meeting room should include Objectives (ICS 202) for the next operational period, large sketch maps or charts clearly dated and timed, poster-size Operational Planning Worksheet (ICS 215), current resource inventory prepared by Resources Unit, and current situation status displays prepared by Situation Unit. After the meeting, the ICS 215 is used by the Logistics Section Chief to prepare the off-incident tactical and logistical resource orders, and used by Planning Section Chief to develop IAP assignment lists.

When: After the Tactics Meeting
Facilitator: Planning Section Chief
Attendees: Determined by IC/UC, generally IC/UC, Command Staff, General Staff, Air Operations Section Chief, Resources Unit Leader, Situation Unit Leader, Environmental Unit Leader, and Technical Specialists, as required
Agenda:

5.2.5 Planning Meeting, Continued

1. State incident objectives and policy issues. IC/UC
2. Briefing of situation, critical and sensitive areas, weather/sea forecast, resource status/availability. Planning Section Chief with Situation Unit Leader, Resources Unit Leader
3. State primary and alternative strategies to meet objectives. Operations Section Chief with Planning Section Chief, Logistics Section Chief
4. Designate Branch, Division, Group boundaries and functions, as appropriate; use maps and ICS 215. Operations Section Chief
5. Specify tactics for each Division, note limitations. Operations Section Chief, Situation Unit Leader assist
6. Specify resources needed by Divisions/Groups. Operations Section Chief, with Planning Section Chief, Logistics Section Chief
7. Specify operations facilities and reporting locations (plot on map). Operations Section Chief, Logistics Section Chief assist
8. Develop resources, support, and overhead order(s). Planning Section Chief, Logistics Section Chief
9. Consider support issues and agree on plans: communications, traffic, safety, medical, etc. Logistics Section Chief, Planning Section Chief assist
10. Assisting or cooperating agency and stakeholder group considerations regarding Incident Action Plan. Liaison Officer
11. Safety considerations regarding Incident Action Plan. Safety Officer
12. News media/public considerations regarding Incident Action Plan. Information Officer
13. Finalize, approve Incident Action Plan for next operational period. IC/UC

5.2.6 Incident Action Plan (IAP) Preparation and Approval

Immediately following the Planning Meeting, the attendees prepare their assignments for the IAP to meet the Planning Section Chief deadline for assembling the IAP components. The deadline will be early enough to permit timely IC/UC approval, and duplication of sufficient copies for the Operations Briefing and for overheads.

When: Immediately following Planning Meeting, Planning Section Chief assigns deadline

Facilitator: Planning Section Chief

Common Components:		Responsible to Prepare
1.	Incident Objectives (ICS 202)	[Resources Unit Leader]
2.	Organization List (ICS 203)	[Resources Unit Leader]
3.	Assignment List (ICS 204)	[Resources Unit Leader/Planning Section Chief]
4.	Communications Plan (ICS 205)	[Communications Unit Leader]
5.	Medical Plan (ICS 205)	[Medical Unit Leader]
6.	Incident Map	[Situation Unit Leader]

Optional Components (use as pertinent):

Optional Components (use as pertinent):		Responsible to Prepare
1.	Air Operations Summary (ICS 220)	[Air Operations Branch Director]
2.	Traffic Plan	[Ground Support Unit Leader]
3.	Demobilization Plan	[Demobilization Unit Leader]

5.2.7 Operations Briefing

This less-than-30-minute meeting conveys the IAP for the oncoming shift to the response organization. After this meeting, off-going field supervisors should be interviewed by their reliefs and by Operations Section Chief in order to further confirm or adjust the course of the new shift's IAP. Shifts in tactics may be made by the operations section supervisors. Similarly, a supervisor may reallocate resources within a division or group to adapt to changing conditions.

When: About an hour prior to each shift
Facilitator: Planning Section Chief
Attendees: IC/UC, Command Staff, General Staff, Branch Directors, Division/Group Supervisors, Task Force/Strike Team Leaders (if possible), Unit Leaders, others as appropriate.

Agenda:		Responsible to Present
1.	Review of IC/UC Objectives, changes to IAP.	[Planning Section Chief]
2.	Current response actions and last shift's accomplishments.	[Operations Section Chief]
3.	Weather and sea conditions forecast.	[Situation Unit Leader]
4.	Division/Group and air operations assignment.	[Operations Section Chief]
5.	Trajectory analysis.	[Situation Unit Leader]
6.	Transport, communications, supply updates.	[Logistics Section Chief]
7.	Safety message.	[Safety Officer]
8.	Financial report.	[Finance/Administration Section Chief]

9.	News Media report.	[Information Officer]
10.	Assisting/cooperating organization/agency reports of concern.	[Liaison Officer]
11.	Incident Action Plan endorsement and motivational remarks.	[IC/UC]

5.2.8 Assess Progress

The Operations and Planning Sections will review the incident response progress and make recommendations to the IC/UC in preparation for reviewing/identifying objectives for the next operational period. This feedback/information is gathered from various sources, including Field Observers, responder debriefs, stakeholders, etc.

SPECIAL PURPOSE MEETINGS

5.2.9 Initial Unified Command Meeting

Provides UC officials with an opportunity to discuss and concur on important issues prior to joint incident action planning. The meeting should be brief, and important points documented. Prior to the meeting, parties should review and prepare to address the agenda items. Planning Meeting participants will use the results of this meeting to guide the response efforts.

5.2.9 Initial Unified Command Meeting, Continued

When: When UC is formed, prior to the first operational period Planning Meeting
Facilitator: UC member
Attendees: Only ICs who will comprise UC
Agenda:

1. Identify jurisdictional priorities and objectives.
2. Present jurisdictional limitations, concerns, restrictions.
3. Develop collective set of incident objectives.
4. Establish and agree on acceptable priorities.
5. Adopt an overall strategy to accomplish objectives.
6. Agree on basic organizational structure and size.
7. Designate the best-qualified and acceptable Operations Section Chief.
8. Agree on General Staff personnel designations and planning, logistical, and finance agreements and procedures.
9. Agree on resource ordering procedures.
10. Agree on cost-sharing procedures.
11. Agree on informational matters.
12. Designate a Unified Command spokesperson.

5.2.10 Command Staff Meeting

Coordinate Command Staff functions, responsibilities and objectives. It is scheduled as necessary by the IC/UC. Command Staff (IC/UC, Safety Officer, Liaison Officer, Information Officer) attend.

5.2.11 Command and General Staff Breakfast / Supper

An opportunity for the Command (IC/UC, Safety Officer, Liaison Officer, Information Officer) and General Staff (Operations Section Chief, Planning Section Chief, Logistics Section Chief, Finance/Administration Section Chief) to gather under informal and relaxing conditions to share and update each other on developing issues.

5.2.12 Business Management Meeting

This under-30-minute meeting is for participants to develop and update the operating plan for finance and logistics support. The agenda could include: finance requirements and criteria imposed by contributing organizations, business operating plan for resource procurement and incident funding, cost analysis and financial summary data. Attendees include: Finance/Administration Section Chief, Cost Unit Leader, Logistics Section Chief, Supply Unit Leader, Demobilization Unit Leader. It is generally conducted before the PLANNING MEETING.

5.2.13 Agency Representative Meeting

To update agency representatives and ensure that they can support IAP. Conducted by Liaison Officer, attended by Agency Representatives. Most appropriately held after the PLANNING MEETING in order to announce plans for next operational period, yet allow for changes should the plan's expectations be unattainable by an agency.

5.2.14 News Briefing

To brief the news media and public on the most current and accurate incident facts. Set up by the Information Officer, moderated by an appropriate representative, and featuring selected spokespersons. Spokespersons should be prepared by the Information Officer to address anticipated issues. The briefing should be well planned, organized, and scheduled to meet the media’s needs.

5.3 ICS FORMS

All ICS Forms are available electronically via this Plan's Forms Navigator.

- INCIDENT BRIEFING FORM - ICS 201 (Initial Report Only)

  For use by the Command Staff to gather information on the Emergency Management Teamâ€™s (EMT) efforts to implement applicable response plans. It is prepared by the initial Incident Commander (IC) for providing documentation of the initial response.

- INCIDENT ACTION PLAN

  For use by the Planning Section to plan each dayâ€™s response actions. This plan consists of the portions identified on the IAP cover page and must be approved by the Incident Commander, Federal On-Scene Coordinator (FOSC), and State On-Scene Coordinator (SOSC).

  In addition, these Incident Command System (ICS) forms may be found on the U.S. Coast Guard web page: http://www.uscg.mil/pacarea/pm/icsforms/ics.htm

  - **INCIDENT ACTION PLAN (IAP) COVER SHEET**

    For use in presenting initial information, signature approval, and table of contents

of forms contained in the IAP.

- INCIDENT OBJECTIVES - ICS 202

  Describes the basic incident strategy, control objectives, and provides weather, tide and current information, and safety considerations for use during the next operational period.

- **ORGANIZATION ASSIGNMENT LIST - ICS 203**

  Provides ICS personnel with information on the units that are currently activated and the names of personnel staffing each position/unit.

- ASSIGNMENT LIST - ICS 204

  Submits assignments at the level of Division and Groups.

- COMMUNICATIONS PLAN - 205

  Is used to provide, in location, information on all radio frequency assignments down to Division/Group level for each operation period.

- MEDICAL PLAN - ICS 206

  Provides information in incident medical aid stations, transportation services, hospitals, and medical emergency procedures.

5.3 ICS FORMS, CONTINUED

All ICS Forms are available electronically via the Forms Navigator.

- **INCIDENT STATUS SUMMARY - ICS 209**

  Used to inform personnel about the status of response efforts. It is not included in the IAP.

- **UNIT LOG - ICS 214**

  Used to log activities for an entire unit.

- **INDIVIDUAL LOG - ICS 214a**

  Used to log activities for an individual.

5.3.1 Incident Briefing ICS 201-OS

1. Incident Name	2. Prepared By: (name)	INCIDENT BRIEFING

	Date: Time:	ICS 201-OS

3. Map/Sketch

(Include maps drawn here or attached, showing the total area of operations, the incident site/area, overflight results, trajectories, impacted shorelines or other graphics depicting situational and response status)

INCIDENT BRIEFING	March, 2000	ICS 201-OS (pg 1 of 4)

5.3.1 Incident Briefing ICS 201-OS, Continued

1. Incident Name	2. Prepared By: (name) Date: Time:	INCIDENT BRIEFING ICS 201-OS

4. Initial Incident Objectives

5. Summary of Current Actions

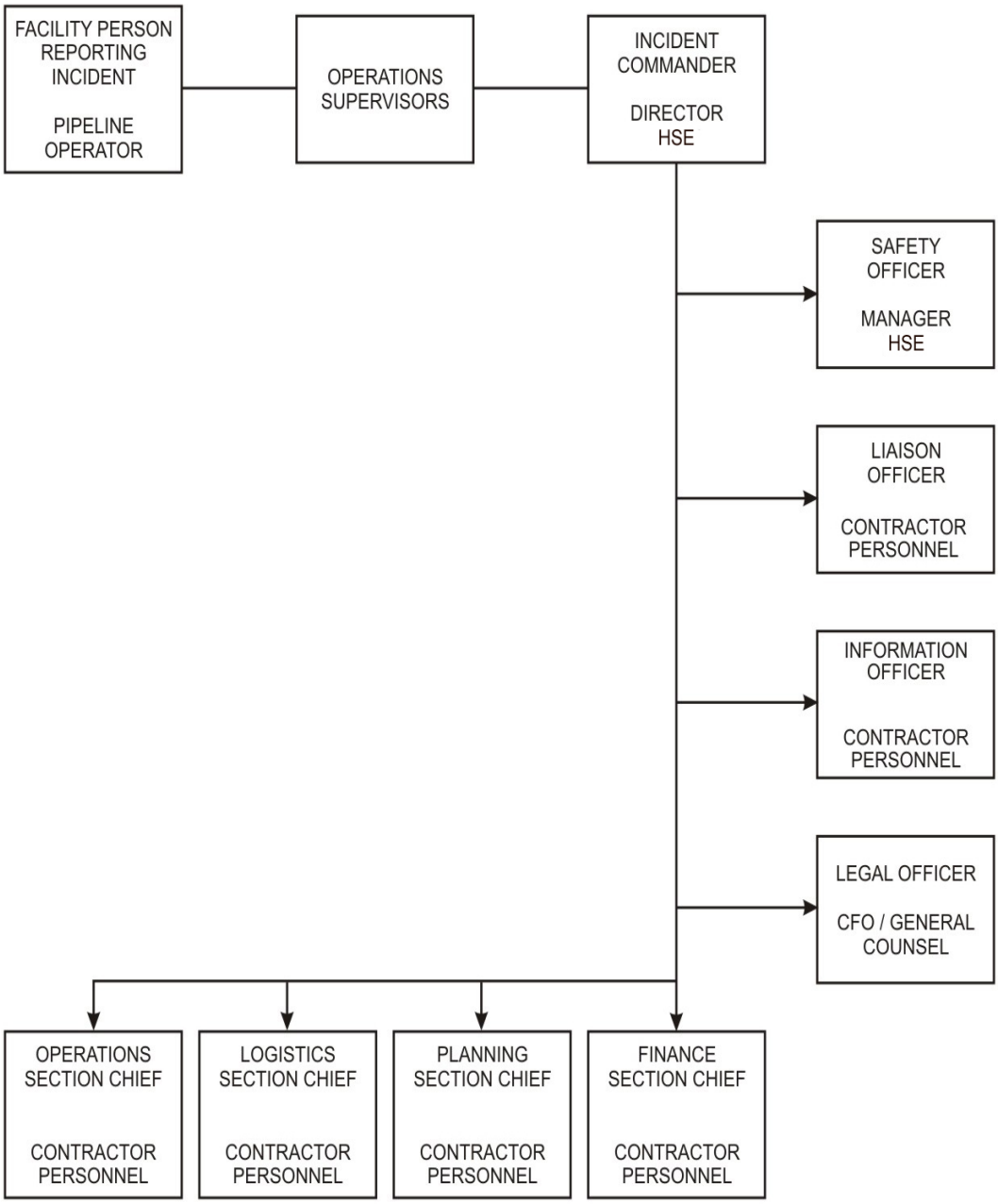
Time	Action/Note

INCIDENT BRIEFING	March, 2000	ICS 201-OS (pg 2 of 4)

5.3.1 Incident Briefing ICS 201-OS, Continued

1. Incident Name	2. Prepared By: (name) Date: Time:	INCIDENT BRIEFING ICS 201-OS

6. Current Organization



INCIDENT BRIEFING	March, 2000	ICS 201-OS (pg 3 of 4)

5.3.1 Incident Briefing ICS 201-OS, Continued

1. Incident Name	2. Prepared By: (name) Date: Time:	INCIDENT BRIEFING ICS 201-OS

7. Resources Summary

Resources Needed	Time Ordered	Resource Identifier	ETA	On Scene? (X)	Notes: (Location/Assignment/Status)

INCIDENT BRIEFING	March, 2000	ICS 201-OS (pg 4 of 4)

5.3.2 Incident Action Plan (IAP) Cover Sheet

1. Incident Name	2. Operational Period to be covered by IAP (Date/Time)		IAP COVER SHEET
	From:	To:	

3. Approved by:
FOSC
SOSC
IC

INCIDENT ACTION PLAN

The items checked below are included in this Incident Action Plan:

- ☐ ICS 202-OS (Incident Objectives)
- ☐ ICS 203-OS (Organization Assignment List)
- ☐ ICS 204-OS (Assignment List)
- ☐ ICS 205-OS (Communications Plan)
- ☐ ICS 206-OS (Medical Plan)
- ☐ ICS 209-OS (Incident Status Summary)
- ☐ ICS 214-OS (Unit Log)
- ☐ ICS 214a-OS (Individual Log)
- ☐
- ☐

4. Prepared By: (Planning Section Chief)	**Date/Time:**

5.3.3 Incident Objectives ICS 202-OS

1. Incident Name	2. Operational Period (Date/Time) From: To:	INCIDENT OBJECTIVES ICS 202-OS
3. Overall Incident Objective(s)		
4. Objectives for Specified Operational Period		
5. Safety Message for Specified Operational Period Approved Site Safety Plan Located at:		
6. Weather: See Attached Weather Sheet		
7. Tides/Currents: See Attached Tide/Current Data		
8. Time of Sunrise:	**Time of Sunset:**	
9. Attachments (check if attached) ☐ Organization List (ICS 203-OS) ☐ Assignment List (ICS 204-OS) ☐ Communications Plan (ICS 205-OS) ☐ Medical Plan (ICS 206-OS) ☐ Weather		

10. Prepared By: (Planning Section Chief)	**Date/Time:**

INCIDENT OBJECTIVES	March, 2000	ICS 202-OS

5.3.4 Organization Assignment List ICS 203-OS

1. Incident Name	2. Operational Period (Date/Time) From: To:	ORGANIZATION ASSIGNMENT LIST ICS 203-OS

3. Incident Commander and Staff

	Primary	Deputy
Federal:		
State:		
IC:		

Safety Officer :

Information Officer:

Liaison Officer:

4. Agency Representatives

Agency	Name

5. Planning Section

Chief

Deputy

Resources Unit

Situation Unit

Environmental Unit

Documentation Unit

Demobilization Unit

Technical Specialists

6. Logistics Section

Chief

Deputy

Time Unit

Procurement Unit

Compensation Unit

Cost Unit

a. Support Branch

Director

Supply Unit

7. Operations Section

Chief

Deputy

a. Branch I - Division/Groups

Branch Director

Deputy

Division / Group

Division / Group

Division / Group

Division / Group

Division / Group

b. Branch II - Division/Groups

Branch Director

Deputy

Division / Group

Division / Group

Division / Group

Division / Group

Division / Group

c. Branch III - Division/Groups

Branch Director

Deputy

Division / Group

Division / Group

Division / Group

Division / Group

Division / Group

d. Air Operations Branch

Air Operations Br. Dir.

Air Tactical Supervisor

Air Support Supervisor

Helicopter Coordinator

Fixed-wing Coordinator

8. Finance Section

Facilities Unit		Chief	
Transportation Unit		Deputy	
Vessel Support Unit		Time Unit	
Ground Support Unit		Procurement Unit	
b. Service Branch		Compensation Unit	
Director		Cost Unit	
Communications Unit			
Medical Unit			
Food Unit			

9. Prepared by: (Resources Unit)	Date/Time	
ORGANIZATION ASSIGNMENT LIST	March, 2000	ICS 203-OS

5.3.5 Assignment List ICS 204-OS

1. Incident Name	2. Operational Period (Date/Time) From: To:	ASSIGNMENT LIST ICS 204-OS
3. Branch	4. Division/Group	

5. Operations Personnel	**Name**	**Affiliation**	**Contact # (s)**
Operations Section Chief:			
Branch Director:			
Division/Croup Supervisor:			

6. Resources Assigned This Period	â€œXâ€ indicates 204a attachment with special instructions			
Strike Team/Task Force/ Resource Identifier	**Leader**	**Contact Info. #**	**# of Persons**	**Notes/Remarks**

7. Assignments

8. Special Instruction for Division/Group

9. Communications (radio and/or phone contact numbers needed for this assignment)			
Name/Function	**Radio: Freq./System/ Channel**	**Phone**	**Pager**
Emergency Communications			
Medical	Evacuation	Other	
10. Prepared By (Resources Unit Leader)	Date/Time	**11. Approved By** (Planning Section Chief)	Date/Time
ASSIGNMENT LIST	June, 2000		ICS 204-OS

5.3.6 Communications Plan ICS 205-OS

1. Incident Name	2. Operational Period (Date/Time) From: To:	COMMUNICATIONS PLAN ICS 205-OS

3. Basic Radio Channel Use

SYSTEM/CACHE	CHANNEL	FUNCTION	FREQUENCY	ASSIGNMENT	REMARKS

4. Prepared By (Communications Unit)	Date/Time

COMMUNICATIONS PLAN	March, 2000	ICS 205-OS

5.3.7 Medical Plan ICS 206-OS

1. Incident Name	2. Operational Period (Date/Time) From: To:	MEDICAL PLAN ICS 206-OS

3. Medical Aid Stations

Name	Location	Contact #	Paramedics On Site (Y/N)

4. Transportation

Ambulance Service	Address	Contact #	Paramedics On Board (Y/N)

5. Hospitals

Hospital Name	Address	Contact #	Travel Time		Burn Ctr?	Heli-Pad?
			Air	Ground		

6. Special Medical Emergency Procedures

7. Prepared By (Medical Unit Leader)	Date/Time	8. Reviewed By (Safety Officer)	Date/Time

MEDICAL PLAN March, 2000 ICS 206-OS

5.3.8 Incident Status Summary ICS 209-OS

1. Incident Name	2. Period Covered By Report From: To:	Time of Report	INCIDENT STATUS SUMMARY ICS 209-OS

3. Spill Status (Estimated, in Barrels)		[OPS/EUL/SSC]	
Source Status:	Remaining Potential (bbl):		
	Rate of Spillage (bbl/hr):		
Secured	☐	Unsecured	☐

	Since Last Report	Total
Volume Spilled		
Mass Balance/Oil Budget		
Recovered Oil		
Evaporation		
Natural Dispersion		
Chemical Dispersion		
Burned		
Floating, Contained		
Floating, Uncontained		
Onshore		
Total Spilled Oil Accounted For:		

4. Waste Management (Estimated)			**[OPS/Disposal]**
	Recovered	Stored	Disposed
Oil (bbl)			
Oily Liquids (bbl)			
Liquids (bbl)			

7. Safety Status	[Safety Officer]
Since Last Report	Total
Responder Injury	
Public Injury	

8. Equipment Resources			[RUL]	
Description	Ordered	Available / Staged	Assigned	Out of Service
Spill Resp. Vsls				
Fishing Vessels				
Tugs				
Barges				
Other Vessels				
Skimmers				
Boom (ft.)				
Sbnt/Snr Bm. (ft.)				
Vacuum Trucks				
Helicopters				
Fixed Wing				

Oily Solids (tons)			
Solids (tons)			

5. Shoreline Impacts (Estimated, in miles) [PSC/EUL/SSC]

Degree of Oiling	Affected	Cleaned	To Be Cleaned
Light			
Medium			
Heavy			
Total			

6. Wildlife Impacts [OPS/Wildlife Br.]

Numbers in ( ) indicate subtotal that are threatened / endangered species.					Died in Facility	
	Captured	Cleaned	Released	DOA	Euth.	Other
Birds						
Mammals						
Reptiles						
Fish						
Total						

9. Personnel Resources [RUL]

Description	People in Cmd. Post	People in the Field	Total People On Scene
Federal			
State			
Local			
RP			
Contract Personnel			
Volunteers			
Total Response Personnel From All Organizations:			

10. Special Notes

11. Prepared By (Situation Unit Leader)	Date/Time

INCIDENT STATUS SUMMARY March, 2000 ICS 209-OS

5.3.9 Unit Log ICS 214-OS

1. Incident Name	2. Operational Period (Date / Time) From: To:	UNIT LOG ICS 214-OS
3. Unit Name	4. Unit Leader (Name and ICS Position)	

5. Personnel Assigned

Name	ICS Position	Home Base

6. Activity Log (Continue on Reverse)	
Time	Major Events

7. Prepared by:	Date / Time

UNIT LOG	June 2000	ICS 214-OS

5.3.9 Unit Log ICS 214-OS, Continued

1. Incident Name	2. Operational Period (Date / Time) From: To:	UNIT LOG(Cont) ICS 214-OS
3. Unit Name	4. Unit Leader (Name and ICS Position)	

5. Personnel Assigned		
Name	ICS Position	Home Base

6. Activity Log (Continue on Reverse)	
Time	Major Events

7. Prepared by:	Date / Time

UNIT LOG	June 2000	ICS 214-OS

5.3.10 Individual Log ICS 214a-OS

1. Incident Name	2. Operational Period (Date / Time) From: To:	INDIVIDUAL LOG **ICS 214a-OS**

3. Individual Name	**4. ICS Section**	**5. Assignment / Location**

6. Activity Log	Page	of

TIME	MAJOR EVENTS

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

INDIVIDUAL LOG	June 2000	ICS 214a-OS

5.3.11 Operational Planning Worksheet ICS 215-OS

1. Incident Name	2. Operational Period: (Date / Time) From: To:	OPERATIONAL PLANNING WORKSHEET ICS 215-OS

3. Division / Group or Location	4. Work Assignments	5. Resource / Equipment					6. Notes / Remarks	7. Reporting Location	8. Requested Arrival Time	9. "X" here if 204a Needed
		Resource								
		Req.								☐
		Have								
		Need								
		Req.								☐
		Have								
		Need								
		Req.								☐
		Have								
		Need								
		Req.								☐
		Have								
		Need								
		Req.								☐
		Have								
		Need								
		Req.								☐
		Have								

		Need								
		Req.								
		Have								☐
		Need								
		Req.								
		Have								☐
		Need								
		Req.								
		Have								☐
		Need								
		Req.								
		Have								☐
		Need								
		Req.								
		Have								☐
		Need								
10. Total Resources Required							13. Prepared by:			
11. Total Resources On Hand							Date:		Time:	
12. Total Resources Needed										
OPERATIONAL PLANNING WORKSHEET							June 2000			ICS 215-OS

5.4 SITE SAFETY AND HEALTH PLAN

PLAN REVIEW:		
Incident Safety Officer:		
APPROVALS:		
Incident Commander:		
Operations Officer:		
Haz Mat Division Officer:		
PLAN PREPARED:	DATE:	TIME:
Incident Location:		
Incident Number:		
HAZARDOUS SITUATION:	(Known or suspected; contaminated media; type storage container; type occupancy; obvious leaks, spills, or	

	breaches; physical damage)
RESPONDING AGENCIES:	
Agency:	Name:
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

All government and contractor personnel who enter the exclusion zones or use air purifying respirators must be enrolled in a medical monitoring program.

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

GENERAL SAFETY RULES AND EQUIPMENT:

1. There will be no eating, drinking, or smoking in the exclusion zone or the contamination reduction zone.

2. All personnel must pass through the contamination reduction zone to enter or exit the exclusion zone (hot zone).

3. At a minimum, Decontamination Team members must be in one (1) level of protection lower than that of the entry teams.

4. All decontamination equipment and systems must be in place before an entry can be made.

5. Entry team will consist of a minimum of two members with the same number of personnel assigned to a backup team. All entry personnel will adhere to the buddy system.

6. At the end of the incident, or directly after a possible exposure, each entry team member will take a full body shower and launder any personal clothing used at the scene.

7. All breathing air shall be certified as Grade D or better.

8. Where practical, all tools shall be of the nonsparking type.

9. Fire equipment shall be on hand when the situation warrants such support. At a minimum, fire extinguishers shall be available on scene.

10. Since incident evacuation may be necessary if an explosion, fire, or other event occurs; an individual shall be assigned to sound, alert, and notify the responsible command personnel and public officials (if required). The evacuation signal shall be four short blasts on an air horn every 30 seconds until all personnel are known to be evacuated.

11. An adequately stocked Emergency Medical Services (EMS) Unit shall be on-site at all times.

12. The location and telephone number of the nearest medical facility shall be posted and known to all personnel.

GENERAL SAFETY BRIEFING:

Before any incident actions are taken, a briefing from the Command Staff will be accomplished with all personnel present. Personnel will sign a log sheet, attesting to being present at the briefing. Topics discussed should include, but not limited to known and suspected hazards along with the operation's goals and objectives.

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

EMERGENCY ACTION CONDITIONS:

Code Green All conditions are normal and incident work may continue.

Code Red All or specific work activities must cease at once due to one of the following:

- Indications of emissions from the incident such as CGI readings of 25% or greater, less than 19.5% oxygen, or one Mr/Hr of ionizing radiation are present.
- Current or projected meteorological data indicates that a probable impact on working conditions could occur.
- If background readings obtained during cessation of activities worsen, reassessment of the findings should be confirmed; actions to lower levels of

contaminant or contingencies for further incident monitoring must take place.

- If this condition exists, incident personnel will immediately notify command staff.

Officials making evacuation/public health decisions will address the need for a public health advisory to potentially affected areas. This is because incident control methods may or may not reduce the source of contamination or threat to the general public.

If needed, a temporary sheltering or evacuation plan should be considered until levels of contamination are reduced or contained to levels deemed safe by all responsible authorities. Confirmation of these levels will be done by generally approved monitoring methods agreed to by the authorities in charge.

Sheltering/Evacuation Plan:
Ordered By:

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

LIST OF ACCESS AUTHORIZED PERSONNEL (Outside Agencies):
SPECIALIZED TASK ASSIGNMENTS:
LEVELS OF PROTECTION SELECTED:

Initial Site Survey:	A	B	C	D
Entry Team:	A	B	C	D
Backup Team:	A	B	C	D
Decon Team:	A	B	C	D

Level A - To be selected when the greatest level of skin, respiratory, and eye protection is required.

Level B - The highest level of respiratory protection is necessary but a lesser level of skin protection is needed.

Level C - The concentration(s) and type(s) of airborne substance(s) is known and the criteria for using air purifying respirators are met.

Level D - A work uniform affording minimal protection: used for nuisance contamination only.

SKETCH OR ATTACH PLOT PLAN HERE:

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

RESPONSE SAFETY CHECK-OFF SHEET

TYPE OF RESPONSE:	
Highway	Industrial
Railway	Marine
Residential	Other
Specify:	
TYPE OF SAFETY PLAN:	
Federal	State
Local	Other
Specify:	
SUSPECTED CHEMICAL(S) INVOLVED:	
1.	2.
3.	4.
5.	6.
7.	8.
9.	10.

INITIAL LEVEL OF PROTECTION: (If level D you must justify)			
A	B	C	D
INITIAL MEDICAL SCREENING COMPLETE: ☐ Yes ☐ No			
If no, justify:			
In the event of fire or explosion:			
In the event of potential or actual ionizing radiation exposure:			

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

In the event migration and contamination beyond the boundaries of the incident:
EMERGENCY SERVICES:
Emergency medical facility:
Ambulance service:
Poison Control Center:
Chemical manufacturerâ€™s representative:

EMERGENCY PROCEDURES (in the event of personnel exposure):
EMERGENCY PROCEDURES (in the event of personnel injury):
HAZARD ASSESSMENT:
Attach Hazardous Materials Safety Data Sheets (MSDS), or other reference materials, for chemicals involved to this document.
MONITORING PROCEDURES:
Monitoring the incident to identify concentration of contaminants in all media. List the instruments to be used and what areas to be monitored.
Hot Zone (Excursion Zone)
Warm Zone (Contamination Reduction Zone)
Cold Zone (Support Zone)

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

MEDICAL MONITORING: (Procedures to be used to monitor personnel for evidence of personal exposure.)
PERSONNEL POTENTIALLY EXPOSED TO HAZARDOUS MATERIALS:

NAME	POSITION	DATE/TIME

DECONTAMINATION PROCEDURES:
(Contaminated personnel, surfaces, materials, instruments, other equipment.)

DECONTAMINATION SOLUTIONS USED:

DISPOSAL PROCEDURES:

Authorized By:

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

POST RESPONSE:

Level of protection used:

A B C D

Rationale:

EQUIPMENT DECONTAMINATION:

	Clothing	SCBA/Resp.	Monitoring
Disposed:			
Cleaned:			
No Action:			

Specify:

TOTAL APPROXIMATE TIME IN HOT ZONE:	Days	Hours
DATE PREPARED:	PREPARED BY:	
Reviewed By:		
Assistance in preparing this safety plan can be obtained from Haz Mat personnel.		

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

HEALTH AND SAFETY / RESPONSE PLAN

APPLIES TO SITE:					
DATE:					
PRODUCTS:					(ATTACH MSDS)
SITE CHARACTERIZATION		☐ Marine vessel	☐ Pipeline	☐ Storage facility	
		☐ Truck/Rail car	☐ Other		
Water	☐ Shoreline	☐ Wetlands	☐ Other		
	☐ Rocky	☐ Sandy	☐ Muddy	☐ Other	
	☐ River	☐ Creek	☐ Canal	☐ Bay	☐ Ocean
Land	☐ Mountains	☐ Hills	☐ Brushland	☐ Forest	☐ Grassland
	☐ Other				
Use	☐ Public	☐ Government	☐ Residential	☐ Commercial	
	☐ Recreational	☐ Industrial	☐ Farmland	☐ Other	
Weather	☐ Temp _____Â°F	☐ Wind/Dir. _____ mph		☐ Rain	
	☐ Snow	☐ Ice		☐ Other	
Pathways for Dispersion		☐ Air	☐ Water	☐ Land	☐ Other
Site Hazards					
☐ Chemical hazards		☐ Boats			
☐ Slips, trips, falls		☐ Helicopters			
☐ Heat stress		☐ Noise			
☐ Cold stress		☐ Pumps, hoses			
☐ Weather		☐ Steam, hot water			
☐ Drowning		☐ Fire/Explosion			
☐ Heavy equipment		☐ Poor visibility			
☐ Drum handling		☐ Motor vehicles			
☐ Wildlife/plants		☐ Confined spaces (see attachment/appendix)			
☐ Hand/power tools		☐ Ionizing radiation			
☐ Lifting		☐ Other			

Air Monitoring			
% LEL	% O_2	PPM Benzene	PPM H_2S
☐ Other (specify)			

☐ See attachment - Monitoring Results/Methods

CONTROL MEASURES:
Engineering Controls

☐ Source of release secured ☐ Valve(s) closed ☐ Facility shut down
☐ Site secured
☐ Other

Personal Protective Equipment (PPE) HAZWOPER Coordination with OSRO

☐ PVC suits ☐ PE/TYVEK suits ☐ Respirator
☐ Site secured ☐ PVC gloves ☐ Other
☐ Other ☐ Hard hats ☐ Eye protection

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

HEALTH AND SAFETY / RESPONSE PLAN

CONTROL MEASURES (cont'd):
Decontamination

☐ Stations established (see site map)

Sanitation

☐ Facilities provided per OSHA 1910.120(n)

Illumination

☐ Facilities provided per OSHA 1910.120(m)

Medical Surveillance

☐ Facilities provided per OSHA 1910.120(f)

WORK PLAN: (buddy system must be used.)

☐ Booming ☐ Skimmers ☐ Vac. trucks ☐ Pumping ☐ Excavation
☐ Heavy equipment ☐ Sorbent pads ☐ Patching ☐ Hot work ☐ Shoring
☐ Appropriate permits issued
☐ Other (describe):

TRAINING (HAZWOPER training program):

☐ Verified site workers trained per OSHA 1910.120

ORGANIZATION (See Incident Command System chart.):

EMERGENCY PLAN (See site map and Daily Medical Plan - ICS 206.):

SITE SECURITY:

- ☐ Pre-entry briefing
- ☐ Security level Low Medium High
- ☐ Other topics

DATE/TIME/PLAN COMPLETED: By:

5.4 SITE SAFETY AND HEALTH PLAN, CONTINUED

SITE DIAGRAM

GENERAL DIAGRAM INSTRUCTIONS

1. Site Diagram should include the following (label the items drawn with corresponding letter):

   A. Sketch with major feature locations (buildings, drainage paths, roads, etc.)
   B. Hazardous substance location
   C. Work zones (exclusion, contamination reduction, support)
   D. Command center and decontamination area
   E. Access and access restrictions
   F. Routes of entry
   G. Wind direction
   H. Emergency evacuation routes
   I. Assembly points
   J. First aid locations
   K. Communication system

5.5 DECONTAMINATION PLAN

Incident Name:	Location:
Effective Date of Plan:	Effective Time Period of Plan:
Spill Location:	Plan Prepared By:

- Work Zones:

  - Support (cold) zone
  - Contamination reduction (warm) zone
  - Exclusion (hot) zone

  These zones are identified by signs, barrier tape or other means. Decontamination is performed in the contamination reduction zone. When responders exit the exclusion zone they must be decontaminated.

  Crews are available to assist in decontamination procedures as needed. The crews must wear appropriate personal protective equipment (PPE), and are responsible for packaging and labeling of contaminated PPE.

- Decontamination Stations:

  Decontamination is performed within the contamination reduction zone, which is appropriately lined to prevent the spread of contaminants. Dikes are installed under the lining to contain runoff.

5.5 DECONTAMINATION PLAN, CONTINUED

Procedures for these stations are as follows:

MAXIMUM MEASURES FOR DECONTAMINATION		
STATION 1	Segregated equipment drop	Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, a cool down station may be set up within this area.
STATION 2	Boot cover and glove wash	Scrub outer boot cover and gloves with decontamination solution or detergent and water.
STATION 3	Boot cover and glove rinse	Rinse off decontamination solution from Station 2 using copious amounts of water.
STATION 4	Tape removal	Remove tape around boots and gloves and deposit in container with plastic liner.
STATION 5	Boot cover removal	Remove boot covers and deposit in containers with plastic liner.
STATION 6	Outer glove removal	Remove outer gloves and deposit in container with plastic liner.
STATION 7	Suit and boot wash	Wash splash suit, gloves, and safety boots. Scrub with long-handled scrub brush and decontamination solution.
STATION 8	Suit, boot, and glove rinse	Rinse off decontamination solution using water. Repeat as many times as necessary.
STATION 9	Canister or mask change	If worker leaves exclusion zone to change canister or this is the last step in the decontamination procedure; worker’s canister is exchanged, new outer gloves and boot covers are donned, joints are taped, and the worker returns to duty.
STATION 10	Safety boot removal	Remove safety boots and deposit in container with plastic liner.
STATION 11	Splash suit removal	With assistance of helper, remove splash suit. Deposit in container with plastic liner.
STATION 12	Inner glove wash	Wash inner gloves with decontamination solution.
STATION 13	Inner glove rinse	Rinse inner gloves with water.
STATION 14	Face piece removal	Remove face piece. Deposit in container with plastic liner. Avoid touching face with fingers.
STATION 15	Inner glove removal	Remove inner gloves and deposit in lined container.
STATION 16	Inner clothing removal	Remove clothing soaked with perspiration and place in lined container. Do not wear inner clothing off-site since there is a possibility that small amounts of contamination might have been transferred in removing the protective suit.

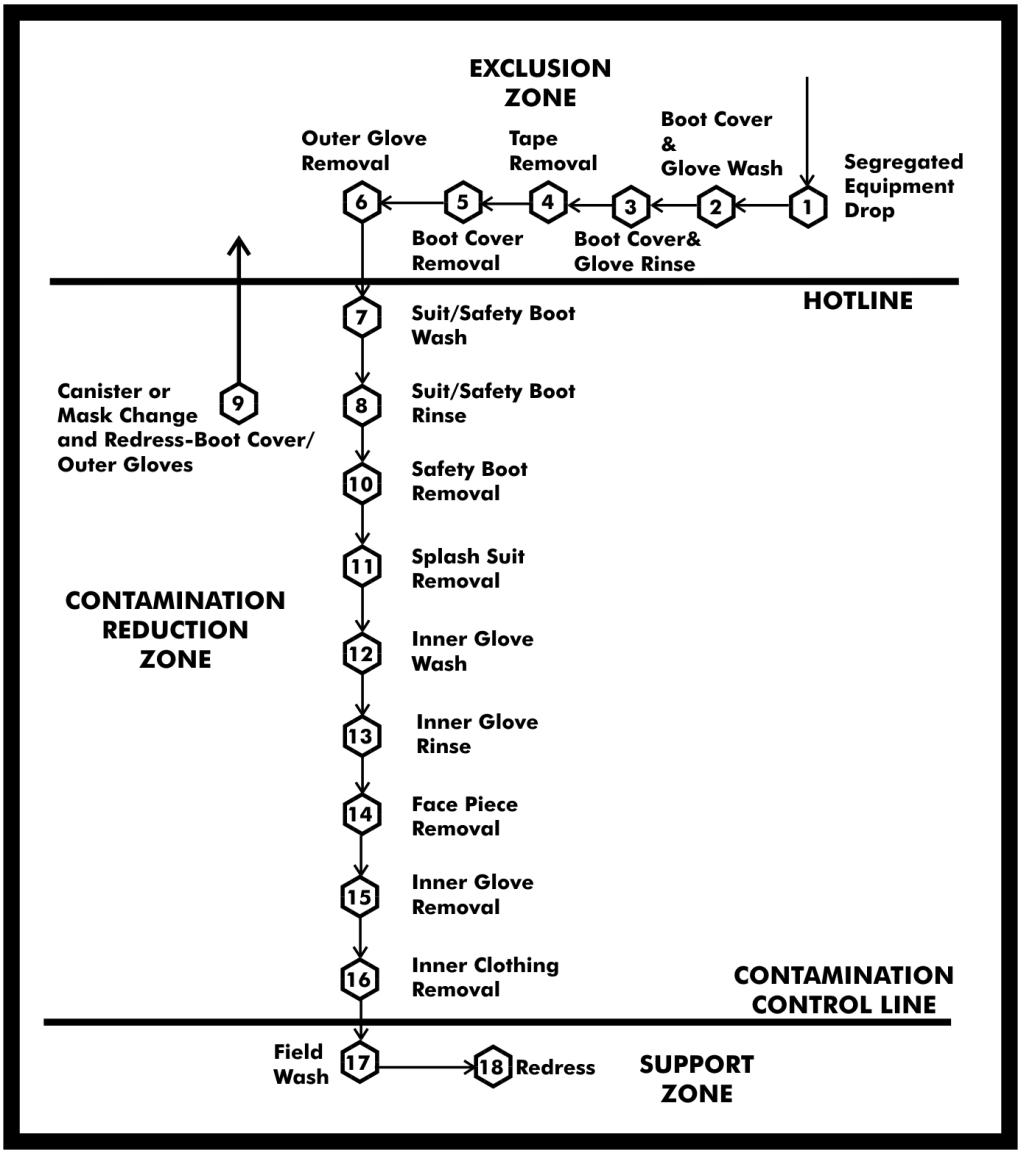
5.5 DECONTAMINATION PLAN, CONTINUED

Procedures for these stations are as follows:

MAXIMUM MEASURES FOR DECONTAMINATION, CONTINUED		
STATION 17	Field wash	Shower if highly toxic, skin-corrosive or skin-absorbable materials are known or suspected to be present. Wash hands and face if shower is not available.
STATION 18	Re-dress	Put on clean clothes.

5.5 DECONTAMINATION PLAN, CONTINUED

DECONTAMINATION PROCEDURES, MAXIMUM DECONTAMINATION LAYOUT

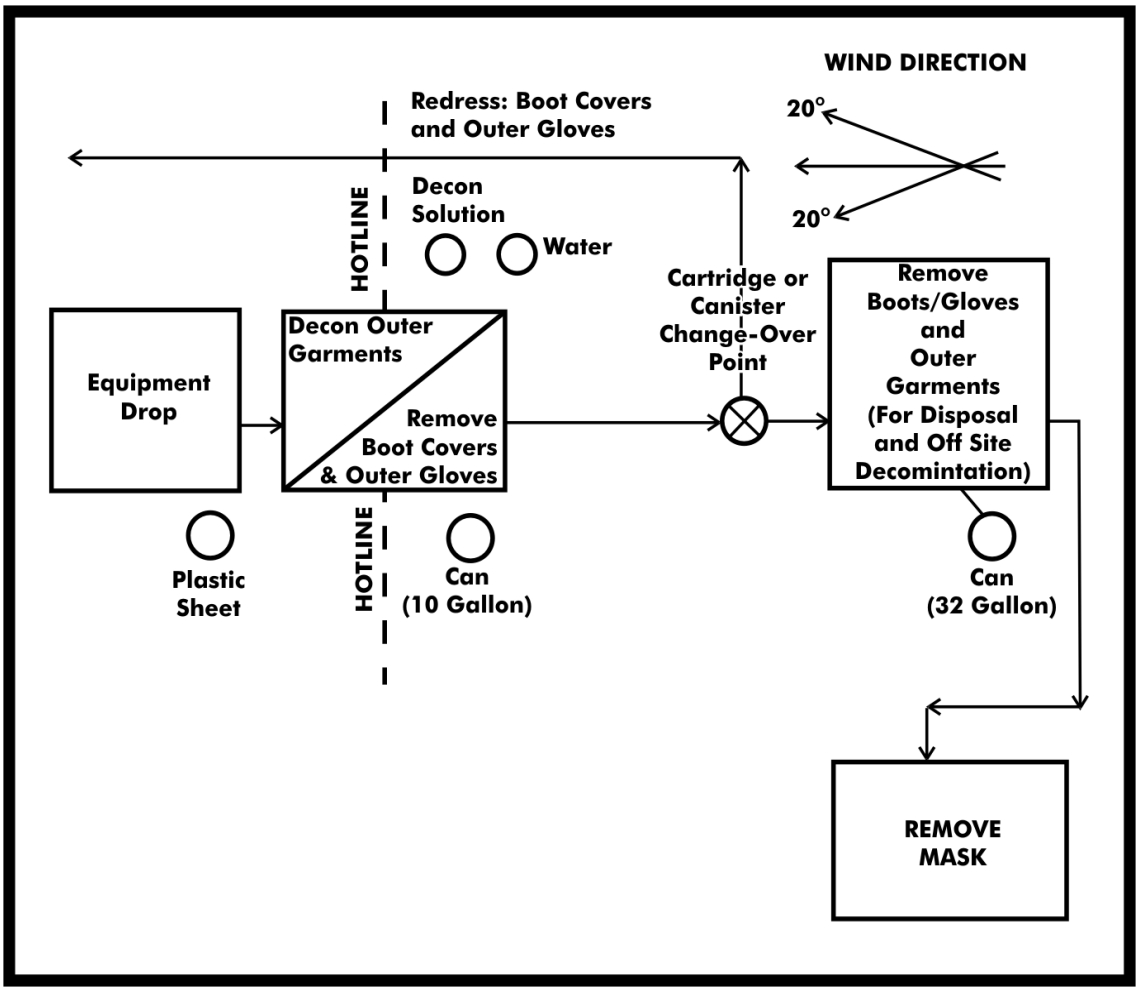


5.5 DECONTAMINATION PLAN, CONTINUED

MINIMUM MEASURES FOR DECONTAMINATION		
STATION 1	Equipment drop	Deposit equipment used on site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, a cool down station may be set up within this area.
STATION 2	Outer garment, boots and gloves wash and rinse	Scrub outer boots, outer gloves, and splash suit with decontamination solution or detergent and water. Rinse off using copious amounts of water.
STATION 3	Outer boot and glove removal	Remove outer boots and gloves. Deposit in container with plastic liner.
STATION 4	Canister or mask change	If worker leaves exclusion zone to change canister (or mask) or this is the last step in the decontamination procedures; worker's canister is exchanged, new outer gloves and boot covers are donned, joints are taped, the worker returns to duty.
STATION 5	Boot, gloves, and outer garment removal	Boots, chemical-resistant splash suit, inner gloves removed and deposited in separate containers lined with plastic.
STATION 6	Face piece removal	Face piece is removed. Avoid touching face with fingers. Face piece deposited on plastic sheet.
STATION 7	Field wash	Hands and face are thoroughly washed. Shower as soon as possible.

5.5 DECONTAMINATION PLAN, CONTINUED

DECONTAMINATION PROCEDURES, MINIMUM DECONTAMINATION LAYOUT



5.6 DISPOSAL PLAN

Date:	Location:
Source of release:	
Amount of release:	
Incident name:	
State On-Scene Coordinator:	
Federal On-Scene Coordinator:	
Time required for temporary storage:	
Proposed storage method:	

Disposal priorities:

Sample date:	Sample ID:
Analysis required (type):	
Laboratory performing analysis:	

Disposal options:

	Available	Likely	Possible	Unlikely

Landfill:				
In-situ/ bio-remediation:				
In-situ burn:				
Pit burning:				
Hydrocyclone:				
Off-site incineration:				
Reclaim:				
Recycle:				

Resources required for disposal options:

General information:

Generator name:	U.S. EPA ID#:
Waste properties:	Waste name:
U.S. EPA waste code:	State waste code:
EPA hazardous waste:	
Waste storage and transportation:	
Proposed storage method:	
Proposed transportation method:	

5.6 DISPOSAL PLAN, CONTINUED

Permits required for storage:
Permits required for transportation:
Estimated storage capacity:
Number and type of storage required:
Local storage available for temporary storage of recovered oil:

PPE required for waste handling:

Waste coordinator:	Date:

Resources required for disposal options:

Incident name:	
Sample number:	Date sent:
Source of sample:	
Date sample data received:	
Waste hazardous:	Non-hazardous:
Permits/variances requested:	
Approval received on waste profile:	
Date disposal can begin:	
Disposal facilities:	
Profile number:	
Storage contractors:	
Waste transporters:	
PPE designated and agrees with Site Safety and Health Plan:	

5.6 DISPOSAL PLAN, CONTINUED

Additional information:
Waste coordinator:

5.7 INCIDENT SECURITY PLAN

(b) (7)(F), (b) (3)

[redacted]

5.7 INCIDENT SECURITY PLAN, CONTINUED

(b) (7)(F), (b) (3)

[redacted]

5.8 DEMOBILIZATION PLAN

Incident name:	**Location:**
Effective date of plan:	**Effective time period of plan:**
Spill location:	**Plan prepared by:**

Demobilization procedures:

- Operations Section will determine which resources are ready for release from a specific collection site.

- The Planning Section will provide guidance on release priorities and demobilization recommendations.
- Information maintained by the Planning Section will be utilized to assist in the prioritization.
- Each incident will require a Decontamination Area.
- Decontaminated equipment will be returned to appropriate staging area for release or re-deployment.
- Transports for equipment will be required if remote from staging area.
- The Planning Section will document all demobilization and decontamination activities.
- Equipment designated for re-assignment will be mobilized to the appropriate staging area.
- The Supervisor will ensure a log is maintained documenting that proper decontamination procedures are performed for each piece of equipment.
- The Operations Section will ensure that redeployed personnel receive proper rest prior to returning to duty.
- The Planning Section Chief will monitor personnel redeployment activities to ensure number of hours worked is within acceptable guidelines.
- The Operations Section Chief must approve the Demobilization Plan before decontamination, release, or redeployment of any resources.

SECTION 6 Last Revised: June 2014

SENSITIVE AREAS / RESPONSE TACTICS

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6.1 Area Description

6.2 Spill Containment / Recovery

Figure 6.2-1 - Response Tactics for Various Shorelines

6.3 Sensitive Area Protection

Figure 6.3-1 - Sensitive Area Protection Implementation Sequence

Figure 6.3-2 - Summary of Shoreline and Terrestrial Cleanup Techniques

6.4 Alternative Response Strategies

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Figure 6.4-1 - Alternate Strategies Checklist

Figure 6.4-2 - Decision Guide for the Federal Bioremediation Approval Process

6.5 Wildlife Protection and Rehabilitation

6.6 Endangered and Threatened Species By State

6.7 Vulnerability Analysis (Detailed)

6.8 Tactical Overview Map

6.9 Tactical Plan Index

6.10 Tactical Plans

6.11 Sensitivity Maps

6.1 AREA DESCRIPTION

Site specific maps and response tactics are included in **SECTION 6.8** and **SECTION 6.10**. Description of shoreline types and specific shoreline protection and cleanup techniques are presented in **FIGURE 6.2-1 and FIGURE 6.3-2.** The strategies and response examples are guidelines and must be evaluated during the response to ensure that the selected response methods are appropriate for the situation.

6.2 SPILL CONTAINMENT / RECOVERY

Containment and recovery refer to techniques that can be employed to contain and recover terrestrial and aquatic petroleum spills.

Terrestrial spills typically result from pipeline or tank leaks. The Company is equipped with secondary containment systems for areas with non-pressurized storage tanks. Spills occurring within the secondary containment area or along pipeline and piping areas should be contained at or near their source to minimize the size of the cleanup area and quantity of soil affected.

Containment is most effective when conducted near the source of the spill, where the oil has not spread over a large area and the contained oil is of sufficient thickness to allow effective recovery and/or cleanup. The feasibility of effectively implementing containment and recovery techniques is generally dependent upon the size of the spill, available logistical resources, implementation time, and environmental conditions or nature of the terrain in the spill area.

For terrestrial spills, trenches and earthen berms or other dams are most often used to contain oil migration on the ground surface. Recovery of free oil is best achieved by using pumps, vacuum sources, and/or sorbents.

Spills that reach water spread faster than those on land. They also have greater potential to contaminate water supplies, to affect wildlife and populated areas, and to impact manmade structures and human activities. Responses on water should therefore emphasize stopping the spill, containing the oil near its source, and protecting sensitive areas before they are impacted.

Sorbents are used to remove minor on-water spills. For larger spills, booming is used to protect sensitive areas and to position oil so it can be removed with skimmers or vacuum trucks.

Due to entrainment, booming is not effective when the water moves faster than one knot or waves exceed 1.5 feet in height. Angling a boom will minimize entrainment. Using multiple, parallel booms will also improve recovery in adverse conditions. A summary of booming techniques is provided on the following page.

Containment/Diversion Berming	• Berms are constructed ahead of advancing surface spills to contain spill or divert spill to a containment area. • May cause disturbance of soils and some increased soil penetration.
Blocking/Flow-	• Construct dam in drainage course/stream bed to block and

Through Dams	contain flow of spill. Cover with plastic sheeting. If water is flowing, install inclined pipes during dam construction to pass water underneath dam. • May increase soil penetration.
Culvert Blocking	• Block culvert with plywood, sandbags, sediments, etc., to prevent oil from entering culvert.
Interception Trench	• Excavate ahead of advancing surface spill to contain spill and prevent further advancement; cover bottom and gradients with plastic. • May cause disturbance of soils and increased soil penetration.
Containment Booming	• Boom is deployed around free oil. • Boom may be anchored or left to move with the oil.
Diversion Booming	• Boom is deployed at an angle to the approaching oil. • Oil is diverted to a less sensitive area. • Diverted oil may cause heavy oil contamination to the shoreline downwind and down current. • Anchor points may cause minor disturbance to the environment.
Exclusion Booming	• Boom is placed around a sensitive area or across an inlet, a river mouth, a creek mouth, or a small bay. • Approaching oil is contained or deflected (diverted) by the boom. • Anchor points may cause minor disturbance to the environment.

Sorbent Booming	• Used only on quiet water with minor oil contamination. • Boom is anchored along a shoreline or used in a manner described

above.

- May use boom made of sorbent material or may pack sorbent material between multiple booms placed parallel to each other.

Other cleanup methods include natural recovery, manual removal/scraping, low-pressure flushing, warm water washing, and burning. Berms and dams are also used in shallow waterways to protect areas.

Cleanup methods are provided in the appropriate Area Contingency Plan (ACP), NOAA's "Shoreline Assessment Manual," and NOAA's "Options for Minimizing Environmental Impacts of Freshwater Spill Response." (See http://www.response.restoration.noaa.gov for the latter two.)

FIGURE 6.2-1 - RESPONSE TACTICS FOR VARIOUS SHORELINES

TYPES	DESCRIPTION	PREDICTED OIL IMPACT	RECOMMENDED CLEANUP ACTIVITY

Developed/ Unforested land	• This class includes towns, cities, farms, pastures, fields, reclaimed wetlands, and other altered areas
	• Organisms and algae may be common in riprap structures and on pilings
		• Oil would percolate easily between the gravel and boulders of riprap structures
		• Oil would coat the intertidal areas of solid structures
		• Biota would be damaged or killed under heavy accumulations
			• May require high pressure spraying:
			  • To remove oil
			  • To prepare substrate for recolonization of barnacle and oyster communities
			  • For aesthetic reasons

Freshwater Flat	• Mud or organic deposits located along the shore or in shallow portions of nontidal freshwater lakes and ponds • They are exposed to low wave and current energy • They are often areas of heavy bird use	• Oil is expected to be deposited along the shoreline • Penetration of spilled oil into the water-saturated sediments of the flat will not occur • When sediments are contaminated, oil may persist for years	• These areas require high priority for protection against oil contamination • Cleanup of freshwater flats is nearly impossible because of soft substrate • Cleanup is usually not even considered because of the likelihood of mixing oil deeper into the sediments during the cleanup effort • Passive efforts, such as sorbent boom can be used to retain oil

			as it is naturally removed

Fresh Marsh	• Found along freshwater ponds and lakes
	• These marshes have various types of vegetative cover, including floating aquatic mats, vascular submerged vegetation, needle and broad-leaved deciduous scrubs and shrubs, and broad-leaved evergreen scrubs and shrubs
	• Birds and mammals extensively use fresh marshes for feeding and breeding purposes
		• Small amounts of oil will contaminate the outer marsh fringe only; natural removal by wave action can occur within months
		• Large spills will cover more area and may persist for decades
		• Oil, particularly the heavy fuel oils, tends to adhere readily to marsh grasses
			• Marshes require the highest priority for shoreline protection
			• Natural recovery is recommended when:
			  • A small extent of marsh is affected
			  • A small amount of oil impacts the marsh fringe
			• The preferred cleanup method is a combination of low-pressure flushing, sorption, and vacuum pumping performed from boats
			• Any cleanup activities should be supervised closely to avoid excessive disturbances of the marsh surface or roots
			• Oil wrack and other debris may be removed by hand

Swamp	• Swamps are freshwater wetlands having varying water depths with vegetation types ranging from shrubs and scrubs to poorly drained forested wetlands. Major vegetative types include: scrubs, shrubs, evergreen trees, and hardwood forested woodlands • Birds and mammals use swamps during	• Even small amounts of spilled oil can spread through the swamp • Large spills will cover more area and may persist for decades since water-flushing rates are low • Oil, particularly the heavy fuel oils, will adhere to swamp vegetation • Unlike mangroves, the roots of swamp forest trees are not exposed; thus, little damage to trees is expected. Any	• No cleanup recommended under light conditions • Under moderate to heavy accumulations, to prevent chronic oil pollution of surrounding areas placement of sorbent along fringe swamp forest (to absorb oil as it is slowly released) may be effective under close scientific supervision • Proper strategic boom placement may be highly effective in trapping large quantities of oil, thus

	feeding and breeding activities	underbrush vegetation, however, would be severely impacted	reducing oil impact to interior swamp forests • Oil trapped by boom can be reclaimed through the use of skimmers and vacuums

FIGURE 6.2-1 - RESPONSE TACTICS FOR VARIOUS SHORELINES, CONTINUED

TYPES	DESCRIPTION	PREDICTED OIL IMPACT	RECOMMENDED CLEANUP ACTIVITY
Open water	• Have ocean like waves and currents • Weather changes effect on-water conditions • River mouths present problems • Thermal stratification occurs	• Most organisms are mobile enough to move out of the spill area • Aquatic birds are vulnerable to oiling • Human usage (such as transportation, water intakes, and recreational activities) may be restricted	• Booming, skimming, vacuuming, and natural recovery are the preferred cleanup methods • Should not use sorbents, containment booming, skimming, and vacuuming on gasoline spills • Cleanup options include physical herding, sorbents, and debris/vegetation removal
Large rivers	• May have varying salinities, meandering channels, and high flow rates • May include manmade structures (such as dams and locks) • Water levels vary seasonally • Floods generate high suspended sediment and debris loads	• Fish and migratory birds are of great concern • Under flood conditions, may impact highly sensitive areas in floodplains • Human usage may be high • When sediments are contaminated, oil may persist for years	• Booming, skimming, and vacuuming are the preferred cleanup methods • Should not use sorbents, containment booming, skimming, and vacuuming on gasoline spills • Cleanup options include natural recovery, physical herding, sorbents, and debris/vegetation removal
Small lakes and ponds	• Water surface can be choppy • Water levels can fluctuate widely	• Wildlife and socioeconomic areas likely to be impacted	• Booming, skimming, vacuuming, and sorbents are the preferred cleanup

	• May completely freeze in winter • Bottom sediments near the shore can be soft and muddy • Surrounding area may include wet meadows and marshes	• Wind will control the oil's distribution	methods • Should not use containment booming, vacuuming, sorbents, and skimming on gasoline spills • Cleanup options include physical herding, sorbents, and debris/vegetation removal
Small rivers and streams	• Wide range of water bodies - fast flowing streams to slow moving bayous with low muddy banks and fringed with vegetation • May include waterfalls, rapids, log jams, mid-channel bars, and islands • Weathering rates may be slower because spreading and evaporation are restricted	• Usually contaminate both banks and the water column, exposing a large number of biota to being oiled • Water intakes for drinking water, irrigation, and industrial use likely to be impacted	• Booming, skimming, vacuuming, sorbents, barriers, and berms are the preferred cleanup methods • Should not use containment booming, sorbents, vacuuming, and skimming on gasoline spills • Cleanup options include physical herding, natural recovery, debris removal, vegetation removal, and in-situ burn

6.3 SENSITIVE AREA PROTECTION

Protection refers to the implementation of techniques or methods to prevent oil from making contact with a shoreline or aquatic area that is determined to be sensitive for environmental, economic, cultural, or human use reasons. Implementation of sensitive area protection techniques must consider a number of factors such as sensitive features, priorities for areas to be protected, and potential degree of impact. In the event a product spill reaches a major area waterway, it may be necessary to protect downstream sensitive areas if it appears that local containment and recovery efforts will not be sufficient to control the entire spill. Major waterways and specific sensitive areas located downstream of the Facility are provided in SECTION 6.8.

FIGURE 6.3-1 - SENSITIVE AREA PROTECTION IMPLEMENTATION SEQUENCE

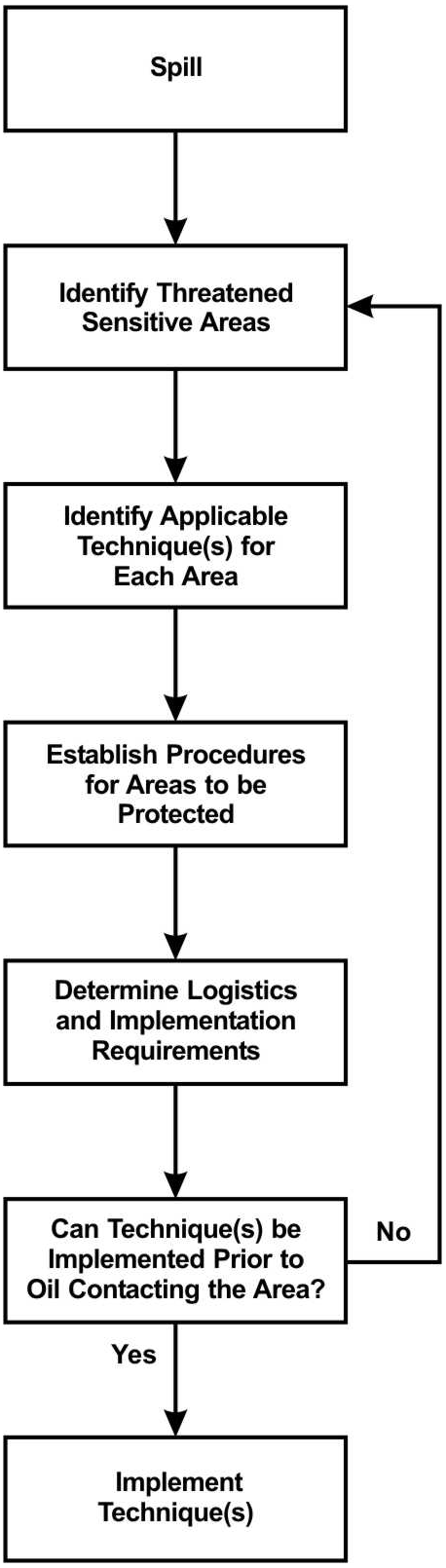


FIGURE 6.3-2 - SUMMARY OF SHORELINE AND TERRESTRIAL CLEANUP TECHNIQUES

TECHNIQUE	DESCRIPTION	RECOMMENDED EQUIPMENT	APPLICABILITY	POTENTIAL ENVIRONMENTAL

				EFFECTS
Removal				
1. Manual Removal	Hand tool (scrapers, wire brushes, shovels, cutting tools, wheel barrows, etc.) are used to scrape oil off surfaces or recover oiled sediments, vegetation, or debris where oil conditions are light or sporadic and/or access is limited.	Equipment misc. hand tools Personnel 10-20 workers	• Can be used on all habitat types • Light to moderate oiling conditions for stranded oil or heavy oils that have formed semi-solid to solid masses • In areas where roosting or birthing animals cannot or should not be disturbed	• Sediment disturbance and erosion potential
2. Mechanical Removal	Mechanical earthmoving equipment is used to remove oiled sediments and debris from heavily impacted areas with suitable access.	Equipment motor grader, backhoe, dump truck elevating scrapers Personnel 2-4 workers plus equipment operators	• On land, wherever surface sediments are accessible to heavy equipment • Large amounts of oiled materials	• Removes upper 2 to 12 inches of sediments
3. Sorbent Use	Sorbents are applied manually to oil accumulations, coatings, sheens, etc. to remove and recover the oil.	Equipment misc. hand tools misc. sorbents Personnel 2-10 workers	• Can be used on all habitat types • Free-floating oil close to shore or stranded on shore, secondary treatment method after gross oil removal • Sensitive areas where access is	• Sediment disturbance and erosion potential • Trampling of vegetation and organisms • Foot traffic can work oil deeper into soft sediments

			restricted	
4. Vacuum / Pumps / Skimmers	Pumps, vacuum trucks, skimmers are used to remove oil accumulations from land or relatively thick floating layers from the water.	Equipment 1-2 50- to 100-bbl vacuum trucks w/ hoses 1-2 nozzle screens or skimmer heads Personnel 2-6 workers plus truck operators	• Can be used on all habitat types • Stranded oil on the substrate • Shoreline access points	• Typically does not remove all oil • Can remove some surface organisms, sediments, and vegetation
Washing				
5. Flooding	High volumes of water at low pressure are used to flood the oiled area to float oil off and out of sediments and back into the water or to a containment area where it can be recovered.Â Frequently used with flushing.	Equipment 1-5 100- to 200-gpm pumping systems 1 100-ft perforated header hose per system 1-2 200-ft containment booms per system 1 oil recovery device per system Personnel 6-8 workers per system	• All shoreline types except steep intertidal areas • Heavily oiled areas where the oil is still fluid and adheres loosely to the substrate • Where oil has penetrated into gravel sediments • Used with other washing techniques	• Can impact clean downgradient areas • Can displace some surface organisms if present • Sediments transported into water can affect water quality

FIGURE 6.3-2 - SUMMARY OF SHORELINE AND TERRESTRIAL CLEANUP TECHNIQUES, CONTINUED

TECHNIQUE	DESCRIPTION	RECOMMENDED EQUIPMENT	APPLICABILITY	POTENTIAL ENVIRONMENTAL EFFECTS
Washing, Continued				
6. Flushing	Water streams at low to moderate pressure, and possibly elevated temperatures, are used to remove	Equipment 1-5 50- to 100-gpm/ 100-psi pumping systems with manifold 1-4 100-ft hoses	• Substrates, riprap, and solid man-made structures • Oil stranded	• Can impact clean downgradient areas • Will displace many surface

	oil from surface or near-surface sediments through agitation and direct contact.Â Oil is flushed back into the water or a collection point for subsequent recovery.Â May also be used to flush out oil trapped by shoreline or aquatic vegetation.	and nozzles per system 1-2 200-ft containment booms per system 1 oil recovery device per system Personnel 8-10 workers per system	onshore • Floating oil on shallow intertidal areas	organisms if present • Sediments transported into water can affect water quality • Hot water can be lethal to many organisms • Can increase oil penetration depth
7. Spot (High Pressure Washing)	High pressure water streams are used to remove oil coatings from hard surfaces in small areas where flushing is ineffective.Â Oil is directed back into water or collection point for subsequent recovery.	Equipment 1-5 1,200- to 4,000-psi units with hose and spray wand 1-2 100-ft containment booms per unit 1 oil recovery device per unit Personnel 2-4 workers per unit	• Bedrock, man-made structures, and gravel substrates • When low-pressure flushing is not effective • Directed water jet can remove oil from hard to reach sites	• Will remove most organisms if present • Can damage surface being cleaned • Can affect clean downgradient or nearby areas
In Situ				
8. Passive Collection	Sorbent/snare booms or other sorbent materials are anchored at the waterline adjacent to heavily oiled areas to contain and recover oil as it leaches from the sediments.	Equipment 1,000-2,000 ft sorbent/snare boom 200-400 stakes or anchor systems Personnel 4-10 workers	• All shoreline types • Calm wave action • Slow removal process	• Significant amounts of oil can remain on the shoreline for extended periods of time
9. Sediment Tilling	Mechanical equipment or hand tools are used to till lightly to moderately oiled surface	Equipment 1 tractor fitted with tines, dicer, ripper blades, etc., or 1-4 rototillers or 1 set of hand tools Personnel	• Any sedimentary substrate that can support heavy equipment • Sand and	• Significant amounts of oil can remain on the shoreline for extended periods of time • Disturbs surface

	sediments to maximize natural degradation processes.	2-10 workers	gravel beaches with subsurface oil • Where sediment is stained or lightly oiled • Were oil is stranded above normal high waterline	sediments and organisms

FIGURE 6.3-2 - SUMMARY OF SHORELINE AND TERRESTRIAL CLEANUP TECHNIQUES, CONTINUED

TECHNIQUE	DESCRIPTION	RECOMMENDED EQUIPMENT	APPLICABILITY	POTENTIAL ENVIRONMENTAL EFFECTS
In Situ, Continued				
10. In Situ Bioremediation	Fertilizer is applied to lightly to moderately oiled areas to enhance microbial growth and subsequent biodegradation of oil.	Equipment 1-2 fertilizer applicators 1 tilling device if required Personnel 2-4 workers	• Any shoreline habitat type where nutrients are deficient • Moderate to heavily oiled substrates • After other techniques have been used to remove free product on lightly oiled shorelines • Where other techniques are destructive or ineffective	• Significant amounts of oil can remain on the shoreline for extended periods of time • Can disturb surface sediments and organisms
11. Log/DebrisÂ Â Burning	Oiled logs, driftwood, vegetation, and debris are	Equipment 1 set of fire control equipment 2-4 fans	• On most habitats except dry muddy	• Heat may impact local near-surface organisms

	burned to minimize material handling and disposal requirements.Â Material should be stacked in tall piles and fans used to ensure a hot, clean burn.	1 supply of combustion promoter Personnel 2-4 workers	substrates where heat may impact the biological productivity of the habitat • Where heavily oiled items are difficult or impossible to move • Many potential applications on ice	• Substantial smoke may be generated • Heat may impact adjacent vegetation
12. Natural Recovery	No action is taken and oil is allowed to degrade naturally.	None required	• All habitat types • When natural removal rates are fast • Degree of oiling is light • Access is severely restricted or dangerous to cleanup crews • When cleanup actions will do more harm than natural removal	• Oil may persist for significant periods of time • Remobilized oil or sheens may impact other areas • Higher probability of impacting wildlife

FIGURE 6.3-2 - SUMMARY OF SHORELINE AND TERRESTRIAL CLEANUP TECHNIQUES, CONTINUED

TECHNIQUE	DESCRIPTION	RECOMMENDED EQUIPMENT	APPLICABILITY	POTENTIAL ENVIRONMENTAL EFFECTS
In Situ, Continued				
13. Dispersants	Dispersants are used to reduce	Dispersants Boat or aircraft	• Water bodies with	• Use in shallow water could

(All facility personnel who might be involved in an oil spill response have been informed that detergents or other surfactants are prohibited from being used on an oil spill in the water, and that dispersants can only be used with the approval of the Regional Response Team, the interagency group composed of federal and state agency representatives that coordinates oil spill responses; and Dispersants are not authorized for use in EPA Region V)	the oil/water interfacial tension thereby decreasing the energy needed for the slick to break into small particles and mix into the water column. Specially formulated products containing surface-active agents are sprayed from aircraft or boats onto the slick.		sufficient depth and volume for mixing and dilution • When the impact of the floating oil has been determined to be greater than the impact of dispersed oil on the water-column community	affect benthic resources • May adversely impact organisms in the upper 30 feet of the water column • Some water-surface and shoreline impacts could occur
1 - Per 1000 feet of shoreline or oiled area				

Cleanup methods are provided in the appropriate Area Contingency Plan (ACP), NOAA's "Shoreline Assessment Manual," and NOAA's "Options for Minimizing Environmental Impacts of Freshwater Spill Response." (See http://response.restoration.noaa.gov for the latter two.)

6.4 ALTERNATIVE RESPONSE STRATEGIES

6.4.1 Dispersants

While physical removal is the most common method for eliminating spilled oil from the environment, mechanical removal may be limited by equipment capability, weather, sea conditions, and spill magnitude. An alternative strategy for reducing impacts from oil spills is to disperse the oil into the water by breaking it into small droplets and suspending them in the

water. This process occurs naturally very slowly but can be accelerated by the application of a dispersant.

A dispersant is an agent (surfactant) which reduces the surface tension of the oil and water and allows them to mix more readily. In the presence of sufficient mixing energy supplied by waves, wind, or manmade turbulence, the oil can remain suspended in the water column resisting resurfacing and recoalescing. Dispersants may be effective in area where environmental or logistical considerations do not allow the deployment of cleanup equipment and personnel, and may reduce the overall level of effort and manpower requirement and personnel necessary for responding to major spills.

The Company will not use dispersants without the concurrence of the FOSC. Dispersants will not be used without concurrence of the EPA and the state with jurisdiction over the affected waters. Refer to the NCP for dispersant use policies and procedures.

6.4.2 Bioremediation

Bioremediation is the process of stimulating the growth and activity of microorganisms such as bacteria and fungi that naturally feed on hydrocarbons. It is conducted as a means of accelerating the natural biodegradation rates of stranded or floating oil. Biodegradation is a natural process by which the above microorganism, in the presence of nutrients an oxygen, chemically breakdown hydrocarbons and other substances and produce by-products including carbon dioxide, water, biomass, and partially oxidized products.

Biodegradation, together with physical processes such as evaporation and dispersion, are the primary natural mechanisms for the removal of hydrocarbons (oil spills) from the environment. This process generally occurs at a very low rate but can often be enhanced by the application of nutrients such as nitrogen, phosphorus, potassium, and others.

There are, however, instances on open seas or shorelines where standard recovery or cleanup techniques are not practical or will result in significant environmental or physical impacts. In these cases, bioremediation may be a viable response option and should be considered for use. **FIGURE 6.4-2** provides a federal decision guide for bioremediation consideration.

6.4.3 In-Situ Burn

In-Situ burning has been successfully used as a viable technique for mitigating oil spills off shore and in a marsh type environment. This is especially true of areas that have mostly grassy vegetation with little or no woody vegetation. In a grassy marshland environment, an In-Situ burn may produce less long-term damage to the environment than traditional mechanical cleanup methods.

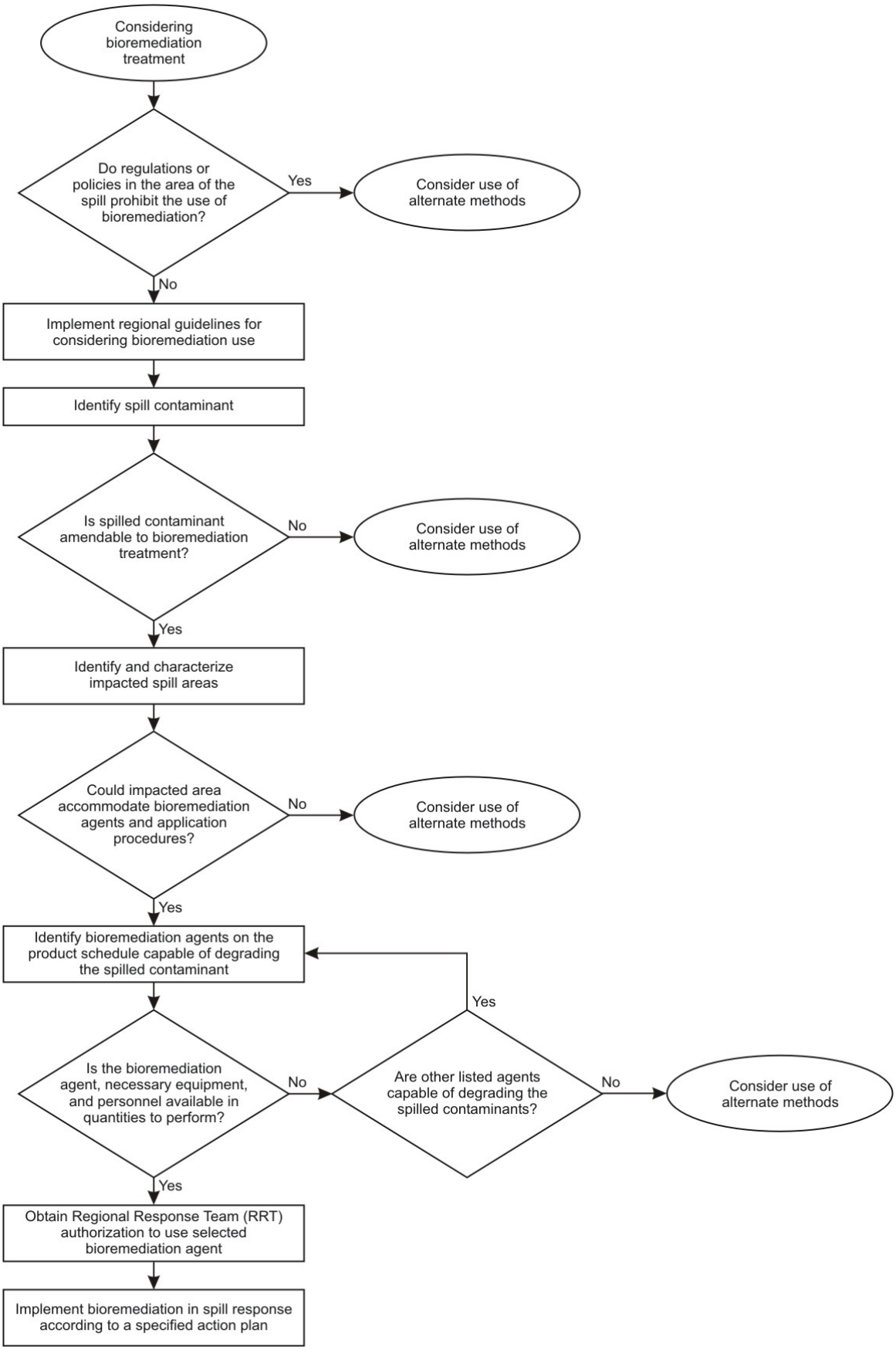
The Company will not use In-Situ Burn without the concurrence of the FOSC.

FIGURE 6.4-1 - ALTERNATE STRATEGIES CHECKLIST

Evaluate Alternate Strategies (oil spills only)	**Initials**	**Date & Time Started**	**Date & Time Completed**
No response			
In-situ burning			

Flood and flush			
Bioremediation/nutrient application			
Dispersants/surfactants			
Gelling/solidifying agents			
Sorbents			
Mechanical recovery			

FIGURE 6.4-2 - DECISION GUIDE FOR THE FEDERAL BIOREMEDIATION APPROVAL PROCESS



6.5 WILDLIFE PROTECTION AND REHABILITATION

- The Company will support wildlife protection and rehabilitation efforts during the response, and assist in these efforts in alignment with local, state, and federal authorities and certified contractors.

- Company personnel will not attempt to rescue or clean affected wildlife, because such actions may cause harm to the individuals or may place the animals at further risk.

- Federal and state agencies responsible for wildlife capture and rehabilitation will typically coordinate capturing and rehabilitating oiled wildlife; a list of these agencies is included in **FIGURE 3.1-6**.

- Wildlife rehabilitation specialists may be utilized to assist in capturing and rehabilitating oiled animals as well as deterring unaffected animals away from the spill site.

6.6 ENDANGERED AND THREATENED SPECIES BY STATE

COMMON NAME	SCIENTIFIC NAME	HABITAT	STATUS	STATE
See list in Appendix G				Louisiana

E - Endangered
T - Threatened

6.7 VULNERABILITY ANALYSIS (DETAILED)

VULNERABILITY ANALYSIS (DETAILED)
Water Intakes:
(b) (7)(F), (b) (3) [redacted]
Schools:
[redacted]
Medical Facilities:
No medical facilities are located within the planning distance of a projected release.
Residential Areas:

Residences are located adjacent to the Terminal and could be impacted by a release at the crude oil truck unloading dock, terminal, and pipelines. Numerous other residential areas are located along the spill path and may potentially be impacted by a discharge from the Terminal to the Mississippi River

6.7 VULNERABILITY ANALYSIS (DETAILED), CONTINUED

VULNERABILITY ANALYSIS (DETAILED)
Businesses:
The area surrounding the Terminal contains several industrial facilities. Numerous other businesses are located along the banks of the Mississippi River and may potentially be impacted by a discharge from the Terminal.
Wetlands or Other Sensitive Environments:
Wetlands are located south and west of the Terminal. A release that enters the St. James Canal, Bayou Citamon, or Bayou Chevreuil would impact the Barstaria Basin, a swamp and fresh marsh area. There are also wetland areas along the Mississippi River that could be impacted by a release from the docks to the river.
Fish and Wildlife:
Several endangered species could be impacted by a release from the Terminal.
Lakes and Streams:
The Terminal is located in a naturally low area. A worst-case discharge of crude oil would likely flow to one of the drainage ditches running east to west across the Terminal. Once in the drainage ditch, the spill would flow into the St. James Canal, to the Bayou Citamon, and then possibly to Bayou Chevreuil. A spill on the dock would enter the Mississippi River.

6.7 VULNERABILITY ANALYSIS (DETAILED), CONTINUED

VULNERABILITY ANALYSIS (DETAILED)
Endangered Flora and Fauna:
Several endangered species could be impacted by a release from the Terminal. See SECTION 6.5 for a list of endangered and threatened species by state.
Recreational Areas:
St Michaels Church Historical District is located southeast of the Terminal and may be impacted by a discharge to the Mississippi River. Montz Park, located farther downstream along the east back of the river, may also be impacted by a release from the Terminal.
Transportation Routes (Air, Water, Land):
Louisiana State Highway 18 is immediately east of the Terminal. The Union Pacific Railroad enters Terminal property west of the Terminal, at the railcar loading area. Various other

transportation routes would also likely be impacted by a release from the Terminal due to the interruption of traffic flow during spill response efforts.
Utilities:

(b) (3), (b) (7)(F)

Other Applicable Areas:
Numerous other areas of economic importance, such as libraries, fire departments, and cemeteries, are located within a half mile radius of the Mississippi River banks and may also potentially be impacted by a release from the Terminal.

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6.8 TACTICAL OVERVIEW MAP

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6.9 TACTICAL PLAN INDEX

SITE #	SITE NAME

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6.10 TACTICAL PLANS

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6.11 SENSITIVITY MAPS

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SECTION 7 Last Revised: July 2014

SUSTAINED RESPONSE ACTIONS

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7.1 Response Resources

7.1.1 Facility Response Equipment

Figure 7.1-1 - Regional Company and Response Contractor's Equipment List / Response Time

7.1.2 Response Equipment Inspection and Maintenance

7.1.3 Contracts, Contractor Equipment, and Labor

7.1.4 Command Post

Figure 7.1-2 - Command Post Checklist

7.1.5 Staging Area

7.1.6 Communications Plan

Figure 7.1-3 - Communications Checklist

7.2 Public Affairs

Figure 7.2-1 - Incident Fact Sheet

7.3 Site Security Measures

Figure 7.3-1 - Site Security Checklist

Figure 7.3-2 - Facility Security

7.4 Waste Management

Figure 7.4-1 - Waste Management Flow Chart

Figure 7.4-2 - General Waste Containment and Disposal Checklist

SECTION 7
SUSTAINED RESPONSE ACTIONS, CONTINUED

7.4.1 Waste Storage

Figure 7.4-3 - Temporary Storage Methods

7.4.2 Waste Transfer

7.4.3 Waste Disposal

Figure 7.4-4 - Facility-Specific Disposal Locations

7.1.1 Facility Response Equipment

SORBENTS					
TYPE/YEAR	QUANTITY	ABSORPTION CAPACITY (gal)	STORAGE LOCATION	OPERATIONAL STATUS	
Absorbent Pads	40 bundles	880	Maintenance Shop	Operational	
Absorbent Boom	400 Feet	960	Maintenance Shop	Operational	
Absorbent Pads (Spill Kit)	1 bundle	22	Barge Dock # 1	Operational	
Absorbent Pads (Spill Kit)	1 bundle	22	Tanker Dock # 2	Operational	
Absorbent Pads (Spill Kit)	1 bundle	22	Tanker Dock # 5	Operational	
Absorbent Pads (Spill Kit)	2 bundles	44	Crude Oil Truck Station	Operational	
Absorbent Pads (Spill Kit)	1 bundle	22	Drum Storage Area	Operational	
Absorbent Boom (Spill Kit)	20 foot	48	Drum Storage Area	Operational	
Absorbent Boom (Spill Kit)	20 foot	48	Barge Dock # 1	Operational	
Absorbent Boom (Spill Kit)	20 foot	48	Tanker Dock # 2	Operational	
Absorbent Boom (Spill Kit)	20 foot	48	Tanker Dock # 5	Operational	
Absorbent Boom (Spill Kit)	20 foot	48	Crude Oil Truck Station	Operational	
Absorbent Pads (Spill Kit)	3	44	Rail Spur Unload Area	Operational	
COMMUNICATIONS EQUIPMENT					
TYPE/YEAR	QUANTITY	STORAGE LOCATION/NUMBER	OPERATIONAL STATUS		
Telephones	13	Throughout Terminal	Operational		

Cellular Telephones	7	Throughout Terminal	Operational		
VHF - Marine Radios	2	Dock Area	Operational		
Motorola 2-Way Radios	16	Carried by each Operator	Operational		
FIRE FIGHTING AND PERSONNEL PROTECTIVE EQUIPMENT					
TYPE/YEAR	QUANTITY	STORAGE LOCATION	OPERATIONAL STATUS		
Scott - 60 Minute SCBA	8	Operators Storage Building	Operational		

***Note:** Response equipment is tested and deployed as described in **FIGURE A.1-2** and **FIGURE A.1-4**.

7.1.1 Facility Response Equipment, Continued

FIRE FIGHTING AND PERSONNEL PROTECTIVE EQUIPMENT					
TYPE/YEAR	QUANTITY	STORAGE LOCATION	OPERATIONAL STATUS		
Scott - 10 Minute Escape Packs	2	Operators Storage Building	Operational		
5 minute Escape Pack	2	Control Room	Operational		
10-Minute Escape Pack	2	Docks 1, 2 and 5	Operational		
PPE	N/A	Barge Dock # 1	Operational		
PPE	N/A	Tanker Dock # 2	Operational		
PPE	N/A	Tanker Dock # 5	Operational		
PPE	N/A	Crude Oil Truck Station	Operational		
PPE	N/A	Drum Storage Area	Operational		
OTHER					
TYPE/YEAR	QUANTITY	STORAGE LOCATION	OPERATIONAL STATUS		
Plastic Bags	4	Barge Dock # 1	Operational		

Plastic Bags	4	Tanker Dock # 2	Operational		
Plastic Bags	4	Tanker Dock # 5	Operational		
Plastic Bags	4	Crude Oil Truck Station	Operational		
Plastic Bags	1 bundle	Drum Storage Area	Operational		

***Note:** Response equipment is tested and deployed as described in **FIGURE A.1-2** and **FIGURE A.1-4**.

FIGURE 7.1-1 - REGIONAL COMPANY AND RESPONSE CONTRACTOR'S EQUIPMENT LIST / RESPONSE TIME

* USCG Classified OSRO for facility

COMPANY/CONTRACTOR	EQUIPMENT	RESPONSE TIME
*Environmental Safety & Health Consulting Services Houma, LA	Full Response Capability	1 hours
Conestoga-Rovers & Associates, Inc. Houston, TX	Full Response Capability	12 hours

*Note: Response times are based on 35 mph for land (five knots for water) and take into account traffic, weather, and other environmental conditions that could restrict response efforts.

7.1.2 Response Equipment Inspection and Maintenance

Company response equipment is tested and inspected as noted below. The Manager of Operations is responsible for ensuring that the following response equipment and testing procedures are implemented. These consist of:

Containment boom During semiannual boom deployment exercises, boom will be inspected for signs of structural deficiencies. If tears in fabric or rotting is observed, boom will be repaired or replaced. In addition, end connectors will be inspected for evidence of corrosion. If severe corrosion is detected, equipment will be repaired or replaced.

Miscellaneous equipment Other response equipment identified in this Plan will be inventoried and tested on a semiannual basis to ensure that the stated quantities are in inventory and in proper working order. The

equipment inspection and deployment exercises are recorded and maintained at the facility and retained for a period of five years. Exercise requirements are listed in **APPENDIX A.1**. A Spill/Exercise Documentation form is in **FIGURE A.1-3**. **FIGURE A.1-4** provides a log for response equipment testing and deployment drills.

7.1.3 Contractors, Contractor Equipment, and Labor

- The Company's primary response contractors' names and phone numbers, as well as other companies who can provide spill response services are provided in **FIGURE 3.1-6**.
- The Company has ensured by contract the availability of private personnel and equipment necessary to respond, to the maximum extent practicable, to the worst case discharge or the substantial threat of such discharge.
- Contractors without USCG classification deploy and inspect boom to meet PREP guidelines. Company requires that these exercises are completed annually.
- **APPENDIX B** contains evidence of contracts for the Company's primary response contractors and equipment lists of contractors without USCG classification.

7.1.4 Command Post

In the event of a major spill or other emergency, both a Company off-site EMT Command Center and a Command Post (located close to but at a safe distance back from the incident scene) may be established. For a minor emergency, only a Command Post may be established. Refer to **FIGURE 7.1-2** for guidelines in establishing a Command Post.

FIGURE 7.1-2 - COMMAND POST CHECKLIST

COMMAND POST CHECKLIST	INITIALS	DATE/TIME STARTED	DATE/TIME COMPLETED
Ensure adequate space for size of staff.			
Ensure 24-hour accessibility.			
Ensure personal hygiene facilities.			
Ensure suitability of existing communications resources (phone/fax/radio).			
Ensure suitability of private conference and briefing rooms.			
Identify Command Post security requirements, safe location.			
Notify other parties of Command Post location; provide maps/driving directions.			
Determine staging areas and incident base locations.			
Identify future need to move, upgrade facilities.			

Command Posts for this facility are located at "list location":Inside the Terminal Main Office

7.1.5 Staging Area

According to the incident type and magnitude, numerous staging areas may be required to support containment and cleanup operations. The staging area should be located in the cold zone inside the delineated isolation perimeter.

In selecting a suitable staging area, the following criteria should be considered:

- Accessibility to impacted areas;
- Proximity to secure parking, airports, docks, pier, or boat launches; and
- Accessibility to large trucks and trailers which may be used to transfer equipment.

In addition, the staging area should:

- Be in a large open area in order to provide storage for equipment and not interfere with equipment loading and offloading operations.
- Have a dock/pier on site for deploying equipment.
- Have moorage available for vessels to aid the loading/offloading of personnel.

Staging areas for this facility are located at "list location": Terminal parking lot behind the Maintenance Shop

7.1.6 Communications Plan

Company owned communications equipment and quantities commonly used to address response communications are listed below:

There are 13 telephones located throughout the terminal, 7 cellular telephones throughout the terminal, 2 VHF - Marine Radios located in the Dock Area, and 16 Motorola 2-Way Radios carried by each Operator.

Additional communications equipment (satellite phones, VHF portable radios with chargers and accessories, command post with UHF, VHF, single sideband, marine, aeronautical, telephone, and hard-line capability) may be provided by the Company or leased from a communications company in the area. Communications with government agencies, state police, and contractors can be conducted on portable radios. Refer to **FIGURE 7.1-3** for guidelines to setup communications.

The Communications Plan, written at the time of an incident, will identify telephone numbers and radio frequencies used by responders. This may also involve activation of multiple types of communications equipment and coordination among multiple responding agencies and contractors.

FIGURE 7.1-3 - COMMUNICATIONS CHECKLIST

		DATE/TIME	DATE/TIME

COMMUNICATIONS CHECKLIST	INITIALS	STARTED	COMPLETED
Develop a Communications Plan.			
Ensure adequate phone lines per staff element - contact local provider.			
Ensure adequate fax lines - contact local provider.			
Evaluate need for internet access.			
Ensure recharging stations for cellular phones.			
VHF radio communications: • Establish frequencies. • Assign call signs. • Distribute radios. • Establish communications schedule.			
Ensure recharging stations for VHF radios.			
Determine need for VHF repeaters.			
Ensure copy machine available.			
Ensure communications resource accountability.			
Ensure responders have capability to communicate with aircraft.			

Note: Actions on this checklist may not be applicable or may be continuous activities.

7.2 PUBLIC AFFAIRS

This section contains guidelines for dealing with the media during an emergency. The Incident Commander will play a key role in providing the initial public assessment and taking the first steps to provide the Company's public response. Information in this section includes:

- Guidelines for dealing with the media
- Incident Fact Sheet (**FIGURE 7.2-1**)

7.2 PUBLIC AFFAIRS, CONTINUED

GUIDELINES FOR DEALING WITH THE MEDIA

- The Terminal or Regional Managers are the most logical person for reporters to seek out for information.
- Reporters will look elsewhere to find out what happened if you do not answer their

questions; however, if you do not have this information or are not prepared to answer a particular question, say so then say when they can expect the answers to their questions (such as one hour).

- It is important to be courteous to all media representatives and to provide a safe place for them to wait until a Company representative can meet them; you may need to provide an initial statement.
- IMPORTANT: Notify Regional Management and/or Corporate Communications for guidance in addressing media inquires.

Provide	• A brief, general description of what happened. • Number of injured or killed, if known. • Steps being taken to handle the emergency.
Don't provide	• Names of deceased or seriously injured employees until the next of kin have been notified. • Speculation about the cause of the emergency. • Any statement implying personal or Company negligence. • Cost estimates of damage.
Other considerations	• Safety considerations should always receive priority in determining access to Company property. • Anticipate likely questions. • There are only six questions that can be asked about any subject: who, what, when, where, why, and how. • Keep answers short and understandable. Don't use industry jargon or acronyms. • Answer only the question that is asked by the reporter. • Give the most important facts first. • Talk to the public's concern about the incident such as whether these were deaths, injuries, any threat to the public, or danger of explosion or fire.

7.2 PUBLIC AFFAIRS, CONTINUED

Other considerations, continued:	• If you don't know the answer to a question, don't be afraid to say "I don't know"; make note of the question and tell the reporter that you will try to get the answer - then do it.

Don't use the phrase "No Comment".

- Don't be defensive.
- There is no such thing as "Talking off the record"; assume that anything and everything you say to a reporter is going to be printed and/or used in the story.
- Avoid "What If?" or speculative questions; these questions should be answered with a restatement of the problem and what is being done to control it.
- Don't speculate about the cause of the incident.
- Don't minimize the situation.

FIGURE 7.2-1 - INCIDENT FACT SHEET

What occurred:
When (time):
Where (location):
What are hazards:
How is the situation being handled:
How many people involved:
Confirmed injuries/fatalities:
Treatment location:
Name of injured (release only after next of kin are notified):
Name of fatalities (release only after next of kin are notified):
What agencies have been notified:
On scene? (yes/no):
Who is in charge:
Has outside help been requested:
Who:
On scene? (yes/no):
Is there danger to the plant:
Is there danger to the community:
What:

Is there an environmental hazard:
What is the environmental hazard:
What is being done to minimize environmental threat:
Is there a need for evacuation:

7.3 SITE SECURITY MEASURES

(b) (7)(F), (b) (3)

[redacted]

(b) (7)(F), (b) (3)

[redacted]

(b) (7)(F), (b) (3)

[redacted]

7.4 WASTE MANAGEMENT

Initial oil handling and disposal needs may be overlooked in the emergency phase of a response, which could result in delays and interruptions of cleanup operations. Initially, waste management concerns should address:

- Equipment capacity,
- Periodic recovery of contained oil, and
- Adequate supply of temporary storage capacity and materials.

The following action items should be conducted during a spill response:

- Development of a Site Safety and Health Plan (**SECTION 5.4**) addressing the proper PPE and waste handling procedures.
- Development of a Disposal Plan (**SECTION 5.6**) in accordance with any federal, state, and/or local regulations. Facility-specific disposal locations for different types of

materials are listed in **FIGURE 7.4.4**.

- Continuous tracking of oil disposition in order to better estimate amount of waste that could be generated over the short and long-term.
- Organization of waste collection, segregation, storage, transportation, and proper disposal.
- Minimization of risk of any additional pollution.
- Regulatory review of applicable Federal, State, and Local laws and ensure compliance, and, if appropriate, obtain permits.
- Documentation of all waste handling and disposal activities.
- Disposal of all waste in a safe and approved manner.

Good hazardous waste management includes:

- Reusing materials when possible.
- Recycling or reclaiming waste.
- Treating waste to reduce hazards or reducing amount of waste generated.

7.4 WASTE MANAGEMENT, CONTINUED

- The management of the wastes generated in cleanup and recovery activities must be conducted with the overall objective of ensuring:
    - Worker safety,
    - Waste minimization,
    - Cost effectiveness, and
    - Minimization of environmental impacts.
- Proper disposal.
- Minimization of present and future environmental liability.

Solid wastes, such as sorbents, PPE, debris, and equipment will typically be transported from the collection site to a designated facility for:

- Storage
- Waste segregation
- Packaging
- Transportation

Once this process is complete, the waste will be shipped off-site to an approved facility for required disposal.

A general flow chart for waste management guidelines is provided in **FIGURE 7.4-1**. An overall checklist for containment and disposal is provided in **FIGURE 7.4-2**.

FIGURE 7.4-1 - WASTE MANAGEMENT FLOW CHART

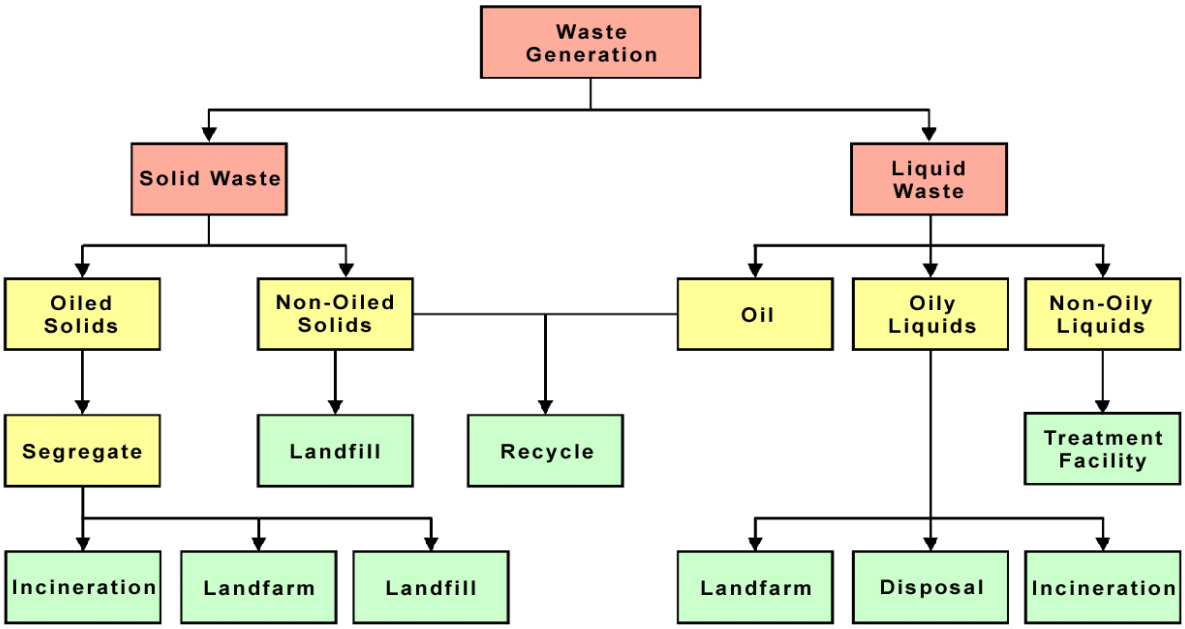

FIGURE 7.4-2 - GENERAL WASTE CONTAINMENT AND DISPOSAL CHECKLIST

CONSIDERATION	YES/NO/NA
Is the material being recovered a waste or reusable product?	
Has all recovered waste been containerized and secured so there is no potential for further leakage while the material is being stored?	
Has each of the discrete waste streams been identified?	
Has a representative sample of each waste stream been collected?	
Has the sample been sent to an approved laboratory for the appropriate analysis, (i.e. hazardous waste determination)?	
Has the appropriate waste classification and waste code number(s) for the individual waste streams been received?	
Has a temporary EPA identification number and generator number(s) been received, if they are not already registered with EPA?	
Have the services of a registered hazardous waste transporter been contracted, if waste is hazardous?	
If the waste is nonhazardous, is the transporter registered?	
Is the waste being taken to an approved disposal site?	
Is the waste hazardous or Class I nonhazardous?	
If the waste is hazardous or Class I nonhazardous, is a manifest being used?	
Is the manifest properly completed?	

Are all federal, state, and local laws/regulations being followed?	
Are all necessary permits being obtained?	
Has a Disposal Plan been submitted for approval/review?	
Has PPE and waste-handling procedures been included in the Site Safety and Health Plan to protect the health and safety of waste handling personnel?	

7.4.1 Waste Storage

During an oil spill, the volume of oil that can be recovered depends on the storage capacity available. Typical short-term (temporary) storage methods are provided in FIGURE 7.4-3. If storage containers such as bags or drums are used, the container should be clearly marked and/or color-coded to indicate the type of material or waste contained and/or the ultimate disposal option.

Use of any site for storage is dependent on the approval of local authorities. The following elements affect the choice of a potential storage site:

- Geology
- Soil
- Surface water
- Covered materials
- Climatic factor
- Toxic air emissions
- Access
- Ground water
- Flooding
- Slope
- Capacity
- Land use
- Security
- Public contact

FIGURE 7.4-3 - TEMPORARY STORAGE METHODS

CONTAINMENT	PRODUCT						
	OIL	OIL/WATER	OIL/SOIL	OIL/DEBRIS (Small)	OIL/DEBRIS (Medium)	OIL/DEBRIS (Large)	CAPACITY
Drums	X	X	X				0.2-0.5 yd^3
Bags		X	X	X			1.0-2.0 yd^3
Boxes		X	X	X			1-5 yd^3
Open top rolloff	X	X	X	X	X	X	8-40 yd^3
Roll top rolloff	X	X	X	X	X	X	15-25 yd^3
Vacuum box	X	X					15-25 yd^3
Frac tank	X	X					500-20,000 gal
							200-4,000

Poly tank	X	X					gal
Vacuum truck	X	X	X				2,000-5,000 gal
Tank trailer	X	X					2,000-4,000 gal
Barge	X	X					3,000+ gal
Berm, 4 ft		X	X	X	X	X	1 yd^3
Bladders	X	X					25-1,500 gal

7.4.2 Waste Transfer

In most oil spill response operations, it would be necessary to transfer recovered oil and oil debris from one point to another several times before the oil and oily debris are ultimately disposed of at a state approved disposal site. Depending on the location of response operations, any or all of the following transfer operations may occur:

- Directly into the storage tank of a vacuum device.
- Directly in to impermeable bags that, in turn, are placed in impermeable containers.
- From a vacuum device storage tank to a truck.
- From containers to trucks.
- From trucks to lined pits.
- From lined pits to incinerators and/or landfills.
- From a tank truck to a processing system (i.e., oil/water separator).
- From a processing system to a recovery system and/or incinerator.
- From a skimming vessel or flexible bladder to a barge.
- From a barge to a tank truck.
- Directly into the storage tank on a dredge.
- From portable or vessel mounted skimmers into flexible bladder tanks, the storage tanks of the skimming vessel itself, or a barge.

There are four general classes of transfer systems that could be employed to effect oily waste transfer operations. The following is a brief description of the four transfer systems:

Pumps
Rotary pumps, such as centrifugal pumps, may be used when transferring large volumes of oil, but they may not be appropriate for pumping mixtures of oil and water. The extreme shearing action of centrifugal pumps tends to emulsify oil and water, thereby increasing the viscosity of the mixture and causing low, inefficient transfer rates.

The resultant emulsion would also be more difficult to separate into oil and water fractions. Lobe or "positive displacement" pumps work well on heavy, viscous oils, and do not emulsify the oil/water mixture. Double-acting piston and double acting diaphragm pumps are reciprocating pumps that may also be used to pump oily wastes.

7.4.2 Waste Transfer, Continued

Vacuum Systems
Vacuum systems, such as air conveyors, vacuum trucks and portable vacuum units, may be used to transfer viscous oils and debris but they usually pick up a very high water/oil ratio.

Belt / Screw Conveyors
Conveyor may be used to transfer oily wastes containing a large amount of debris. These systems can transfer weathered debris laden oil either horizontally or vertically for short distances but are bulky and difficult to operate.

Wheeled Vehicles
Wheeled vehicles may be used to transfer liquid waste of oily debris to storage or disposal sites. These vehicles are readily available but have a limited rate (i.e., 100 bbls) and require good site access.

7.4.3 Waste Disposal

In order to obtain the best overall Incident Disposal Plan, a combination of methods should be used. There is no template or combination of methods that can be used in every spill situation. Each incident should be reviewed carefully to ensure an appropriate combination of disposal techniques are employed.

The following is a brief description of some disposal techniques available for recovered oil and oily debris.

Recycling
Recycling involves processing discarded materials for another use.

Incineration
This technique entails the destruction of the recovered oil by high temperature thermal oxidation reactions. There are licensed incineration facilities as well as portable incinerators that may be brought to a spill site. Incineration may require the approval of the local Air Pollution Control Authority.

In-Situ Burning / Open Burning
Burning techniques entail igniting oil or oiled debris allowing it to burn under ambient conditions. These disposal techniques are subject to restrictions and permit requirements established by federal, state, and local laws. Permission for in-situ burning may be difficult to obtain when the burn takes place near populated areas.

As a general rule, in-situ burning would be appropriate only when atmospheric conditions will allow the smoke to rise several hundred feet and rapidly dissipate. Smoke from burning oil will normally rise until its temperature drops to equal the ambient temperature. Afterwards, it will travel in a horizontal direction under the influence of prevailing winds.

Landfill Disposal

This technique entails burying the recovered oil in a approved landfill in accordance with regulatory procedures. Landfill disposal of free liquids is prohibited by federal law in the United States.

FIGURE 7.4-4 - FACILITY-SPECIFIC DISPOSAL LOCATIONS

MATERIAL	DISPOSAL FACILITY	LOCATION
Recovered Product	Industrial Cleanup Inc. Environmental Safety & Health Consulting Services	Garyville, LA (800) 436-0883 Houma, LA (877) 437-2634
Contaminated Soil	Industrial Cleanup Inc. Environmental Safety & Health Consulting Services	Garyville, LA (800) 436-0883 Houma, LA (877) 437-2634
Contaminated Equipment	Industrial Cleanup Inc. Environmental Safety & Health Consulting Services	Garyville, LA (800) 436-0883 Houma, LA (877) 437-2634
Personnel Protective Equipment	Industrial Cleanup Inc. Environmental Safety & Health Consulting Services	Garyville, LA (800) 436-0883 Houma, LA (877) 437-2634
Decontamination Solutions	Industrial Cleanup Inc. Environmental Safety & Health Consulting Services	Garyville, LA (800) 436-0883 Houma, LA (877) 437-2634
Adsorbents and Spent Chemicals	Industrial Cleanup Inc. Environmental Safety & Health Consulting Services	Garyville, LA (800) 436-0883 Houma, LA (877) 437-2634

SECTION 8 Last Revised: May 2008

DEMOBILIZATION / POST-INCIDENT REVIEW

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8.1 Terminating the Response

8.2 Demobilization

Figure 8.2-1 - Demobilization Checklist

8.3 Post-Incident Review

Figure 8.3-1 - Standard Incident Debriefing Form

8.3.1 Final Spill Cleanup Report

8.1 TERMINATING THE RESPONSE

- A team of federal, state, and Company personnel must certify that each area is clean before halting cleanup operations.
- Demobilize equipment and personnel at the first opportunity in order to reduce cost.
- Consider which resources should be demobilized first; for example, berthing expenses can be saved by demobilizing out-of-area contractors before local ones.
- Equipment may need both maintenance and decontamination before being demobilized.
- All facilities (staging area, Command Post, etc.) should be returned to their pre-spill condition before terminating operations.
- Determine what documentation should be maintained, where, and for how long.
- Contract personnel may be more susceptible to "suffering" injuries as they approach termination.
- Some activities will continue after the cleanup ends; examples include incident debriefing, bioremediation, NRDA studies, claims, and legal actions.
- Consider expressing gratitude to the community, police department, fire department, and emergency crews for their work during the response.

8.2 DEMOBILIZATION

The Company can reduce costs considerably by developing a Demobilization Plan (**SECTION 5.8**). Therefore, emphasis must be placed on establishing efficient demobilization procedures. A Demobilization Checklist is provided in **FIGURE 8.2-1**.

FIGURE 8.2-1 - DEMOBILIZATION CHECKLIST

DEMOBILIZATION CHECKLIST	INITIALS	DATE/TIME STARTED	DATE/TIME COMPLETED
Assign personnel to identify surplus resources and probable release times.			
Establish demobilization priorities.			
Develop decontamination procedures.			
Initiate equipment repair and maintenance.			
Develop a Disposal Plan.			
Identify shipping needs.			
Identify personnel travel needs.			
Develop impact assessment and statements.			
Obtain concurrence of Planning and Operations Group Leaders before release of			

personnel or equipment.			

8.3 POST-INCIDENT REVIEW

All Facility personnel involved in the incident shall be debriefed (by the Company) within two weeks after termination of operations. A Standard Incident Debriefing Form is provided in **FIGURE 8.3-1**. The primary purpose of the post-incident review is to identify actual or potential deficiencies in the Plan and determine the changes required to correct the deficiencies. The post-incident review also is intended to identify which response procedures, equipment, and techniques were effective and which were not and the reason(s) why. This type of information is very helpful in the development of a functional Plan by eliminating or modifying those response procedures that are less effective and emphasizing those that are highly effective. This process should also be used for evaluating training drills or exercises. Key agency personnel that were involved in the response will be invited to attend the post-incident review.

Debriefs with participating agencies and organizations may be appropriate if unified command has been established during a spill and are required when significant Plan updates are identified or significant lessons can be recorded and implemented.

FIGURE 8.3-1 - STANDARD INCIDENT DEBRIEFING FORM

Name of incident:
Date:
PERSONNEL DEBRIEFED
Name:
Normal duty:
Summary of duties performed during incident (list date, time, and location):
Positive aspects of the response:

Aspects of the response which could be improved:
Name:
Title:
Signature:

8.3.1 Final Spill Cleanup Report

A final, comprehensive report shall be prepared by the Incident Commander or designee and forwarded to the Administrator within 90 days after completion of spill cleanup activities for internal use. It should be written in the narrative form and include the information listed below (as appropriate):

- Name, address, and telephone number of the owner or operator.
- Name, address, and telephone number of the Facility.
- Time, location, and date of discharge.
- Type of material discharged.
- Quantity discharged (indicate volume, color, length and width of slick, and rate of release, if continuous).
- Source of spill (tank, flowline, etc.) in which the oil was originally contained, path of discharge, and impact area.
- Detailed description of what actually caused the discharge and actions taken to control or stop the discharge.
- Estimated quantity and disposition of recovered material that resulted from the incident.
- Description of actual or potential hazards to human health or the environment.
- Steps taken to clean up the spilled oil along with dates and times steps were taken.
- The equipment used to remove the spilled oil, dates, and number of hours equipment was used.

- The number of persons employed in the removal of oil from each location, including their identity, employer, and the number of hours worked at that location.
- The extent of injuries, if any.
- Actions by the Company or contractors to mitigate damage to the environment.
- Measures taken by the Company or contractors to prevent future spills.
- The federal and state agencies to which the Company or contractors reported the discharge; show the agency, its location, the date and time of notification, and the official contacted.
- Description of the effectiveness of equipment and cleanup techniques and recommendations for improvement.
- The names, addresses, and titles of people who played a major role in responding to the event.
- A section identifying problems and deficiencies noted during the response event; a follow-up section should include recommended procedure modifications to make a future response more effective and efficient.

8.3.1 Final Spill Cleanup Report, Continued

- All other relative information.
- A final signature as follows:

The above information is true to the best of my knowledge and belief:

Name:
Title:
Signature:
Date:

St. James Terminal

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APPENDICES

A. **TRAINING / EXERCISES**

B. **CONTRACTOR RESPONSE EQUIPMENT**

C. SPCC PLANS

D. **HAZARD EVALUATION AND RISK ANALYSIS**

E. **CROSS-REFERENCES**

F. **ACRONYMS AND DEFINITIONS**

G. **ADDITIONAL INFORMATION**

APPENDIX A Last Revised: May 2008

TRAINING / EXERCISES

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A.1 Drill/Exercise Requirements and Schedules

Figure A.1-1 - PREP Response Plan Core Components

Figure A.1-2 - Drill/Exercise Requirements

Figure A.1-3 - Spill / Drill / Exercise Documentation Form

Figure A.1-4 - EPA Required Response Equipment Testing and Deployment Drill/Exercise Log

Figure A.1-5 - Form 2203 - QI Notification Exercise Form

Figure A.1-6 - Spill Management Team Tabletop

A.2 Training Program

Figure A.2-1 - Training Requirements

Figure A.2-2 - PREP Training Program Matrix

Figure A.2-3 - Personnel Response Training Log

A.1 DRILL/EXERCISE REQUIREMENTS AND SCHEDULES

- The Company participates in the National Preparedness for Response Exercise Program (PREP).
- During each triennial cycle, all components of the Plan (**FIGURE A.1-1**) must be drilled/exercised at least once.
- The HSE Managers or designee, is responsible for the following aspects:
    - Scheduling,
    - Maintaining records,
    - Implementing,
    - Evaluation of the Company's training and drill/exercise program, and
    - Post-drill/exercise evaluation improvements.
- FIGURE A.1-2 provides descriptions of drill/exercise requirements, FIGURE A.1-3 provides a Spill/Drill/Exercise Documentation form or a corresponding Company form may be used, and **FIGURE A.1-4** provides a log for response equipment testing and deployment drill/exercise.

FIGURE A.1-1 - PREP RESPONSE PLAN CORE COMPONENTS

CORE COMPONENTS	DESCRIPTION
1. Notifications	Test the notifications procedures identified in the Area Contingency Plan (ACP) and the Spill Response Plan.
2. Staff mobilization	Demonstrate the ability to assemble the spill response organization identified in the ACP and the Spill Response Plan.
3. Ability to operate within the response management system described in the Plan: • Unified Command • Response management system	Demonstrate the ability of the spill response organization to work within a unified command. Demonstrate the ability of the response organization to operate within the framework of the response management system identified in their respective plans.
4. Source control	Demonstrate the ability of the spill response organization to control and stop the discharge at the source.
5. Assessment	Demonstrate the ability of the spill response organization to provide initial assessment of the discharge and provide continuing assessments of the effectiveness of the tactical operations.

6. Containment	Demonstrate the ability of the spill response organization to contain the discharge at the source or in various locations for recovery operations.
7. Recovery	Demonstrate the ability of the spill response organization to recover, mitigate, and remove the discharged product includes mitigation and removal activities.
8. Protection	Demonstrate the ability of the spill response organization to protect the environmentally and economically sensitive areas identified in the ACP and the respective industry response plan.
9. Disposal	Demonstrate the ability of the spill response organization to dispose of the recovered material and contaminated debris.
10. Communications	Demonstrate the ability to establish an effective communications system throughout the scope of the Plan for the spill response organization.
11. Transportation	Demonstrate the ability to establish effective multi-mode transportation both for execution of the discharge and support functions.
12. Personnel support	Demonstrate the ability to provide the necessary logistical support of all personnel associated with response.
13. Equipment maintenance and support	Demonstrate the ability to maintain and support all equipment associated with the response.
14. Procurement	Demonstrate the ability to establish an effective procurement system.
15. Documentation	Demonstrate the ability of the spill response organization to document all operational and support aspects of the response and provide detailed records of decisions and actions taken.

FIGURE A.1-2 - DRILL/EXERCISE REQUIREMENTS

DRILL/EXERCISE TYPE	DRILL/EXERCISE CHARACTERISTICS
Facility/QI notification	• Conducted quarterly. • The facility initiates mock spill notification to QI. • The Qualified Individual documents time/date of notification, name, and phone number of individual contacted. • Document in accordance with form in **FIGURE A.1-3**.
Equipment deployment	• Conducted semiannually. • Response contractors listed in the plan must participate in annual deployment drill/exercise. • A drill/exercise where response equipment is deployed to a specific site and operated in its normal operating medium. • Document in accordance with form in **FIGURE A.1-3**.

EMT tabletop	• Conducted annually. • Tests EMT's response activities/responsibilities. • Documents Plan's effectiveness. • Must drill/exercise worst case discharge scenario once every three years. • Must test all Plan components at least once every three years • Document in accordance with form in **FIGURE A.1-3**.
Unannounced	• Company will either participate in unannounced tabletop drill/exercise or equipment deployment drill/exercise on an annual basis, if selected. • Company may take credit for participation in government-initiated unannounced drill/exercise in lieu of drill required by PREP guidelines. • Plan holders who have participated in a PREP government-initiated unannounced drill/exercise will not be required to participate in another one for at least 36 months from the date of the drill/exercise.
Area	• An industry plan holder that participates in an Area Drill/Exercise would not be required to participate in another Area Drill/Exercise for a minimum of six years.
OTHER DRILL/EXERCISE CONSIDERATIONS	
Drill/Exercise program evaluation procedures	• Company conducts post-drill/exercise meetings to discuss positive items, areas for improvement, and to develop action item checklist to be implemented later.
Records of drills/exercises	• Company will maintain drill/exercise records for five years following completion of each drill/exercise. • Records will be maintained at the terminal via company electronic documentation system. • Company will verify appropriate records are kept for each spill response contractor listed in Plan as required by PREP guidelines (annual equipment deployment drill/exercise, triennial unannounced drill/exercise, etc.).

FIGURE A.1-3 - SPILL / DRILL / EXERCISE DOCUMENTATION FORM

Retain this form for a minimum of five years (Other versions of this form may be used).

1. Date(s) performed:
2. ☐ Drill/Exercise ☐ Actual spill

If drill/exercise: ☐ Announced ☐ Unannounced ☐ Deployment ☐ Notification ☐ Tabletop
If drill/exercise, frequency: ☐ Quarter ☐ 1st ☐ 2nd ☐ 3rd ☐ 4th ☐ Annual
3. Location of drill/exercise/spill:
4. Time started:
5. Description of scenario or spill including volume and content (crude oil, condensate, etc.):
6. Describe how the following objectives were exercised:

Team's knowledge of the Oil Spill Response Plan:		
	Yes	**No**
Was briefing meeting conducted:	☐	☐
Established field Command Post:	☐	☐
Confirmed source was stopped:	☐	☐
Developed Site Safety and Health Plan:	☐	☐
Prepared ICS 201:	☐	☐
Established work zones and perimeter security:	☐	☐
Developed short range tactical plan:	☐	☐
Developed long range tactical plan:	☐	☐
Proper Notifications:		
Qualified Individual (or designee):	☐	☐
Terminal Manager:	☐	☐
Release/Spill Report Form completed:	☐	☐
Notification to agencies completed (attach log):	☐	☐

Transportation/Communication System:		
Established primary/secondary communication system:	☐	☐
Primary: ☐ cellular phone ☐ two way radio ☐ land telephone line		
Secondary: ☐ cellular phone ☐ two way radio ☐ land telephone line		
☐ Other		

FIGURE A.1-3 - SPILL / DRILL / EXERCISE DOCUMENTATION FORM, CONTINUED

Transportation/Communication System, Continued:		
	Yes	**No**
Motor vessel deployed:	☐	☐
Provider name:		
Helicopter/Sea plane deployed:	☐	☐
Call sign:		
Describe function (i.e., transportation, surveillance, dispersant application):		
Ability to access contracted Oil Spill Removal Organizations (OSROs):		
Who contacted - (name of individual and OSRO):		
When contacted:		
Response time projection for deployment:		
Type and amount of containment used:		
Spill material recovered:	☐	☐
Spilled material disposed:	☐	☐
Where?		
Ability to coordinate spill response with on-scene coordinator, state, and applicable agencies:		

Was regulatory on-scene coordinator(s) contacted:	☐	☐
List person and agency represented:		
Ability to access sensitive site and resource information in the Area Contingency Plan (ACP):		
Was pre-impact assessment conducted:	☐	☐
Were pre-impact samples taken:	☐	☐
Were pre-impact photographs taken:	☐	☐
Were NRDA specialists mobilized:	☐	☐
Were deficiencies identified:	☐	☐
If yes, changes implemented:	☐	☐
If no, why were changes not implemented:		

LESSONS LEARNED	PERSON RESPONSIBLE FOR FOLLOW-UP OF CORRECTIVE MEASURES

Name:
Position:
Certifying Signature:

FIGURE A.1-4 - EPA REQUIRED RESPONSE EQUIPMENT TESTING AND DEPLOYMENT DRILL/EXERCISE LOG

(Other versions of this form may be used)

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	
Inspection frequency	
Last deployment drill/exercise date	

Deployment frequency	
OSRO Certification (if applicable)	

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	
Inspection frequency	
Last deployment drill/exercise date	
Deployment frequency	
OSRO Certification (if applicable)	

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	
Inspection frequency	
Last deployment drill/exercise date	
Deployment frequency	
OSRO Certification (if applicable)	

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	
Inspection frequency	
Last deployment drill/exercise date	
Deployment frequency	
OSRO Certification (if applicable)	

FIGURE A.1-5 - FORM 2203 - QI NOTIFICATION EXERCISE FORM

QUARTERLY NOTIFICATION EXERCISE - INTERNAL USE

1. **DATE PERFORMED: _____**

2. **EXERCISE OR ACTUAL RESPONSE? _____**

3. **FACILITY OR PIPELINE EXERCISE: _____**

4. EMERGENCY SCENARIO (or Description of Exercise):
_____
_____
_____

5. NAME OF PERSON NOTIFIED: _____

IS THIS PERSON IDENTIFIED AS THE QUALIFIED INDIVIDUAL OR DESIGNEE?
_____

6. TIME INITIATED: _____

TIME WHICH QUALIFIED INDIVIDUAL OR DESIGNEE RESPONDED_____

7. METHOD USED TO CONTACT:

- ☐ **TELEPHONE**
- ☐ **PAGER**
- ☐ **RADIO**
- ☐ **OTHER:** _____

8. DESCRIPTION OF NOTIFICATION PROCEDURE:

9. IDENTIFY WHICH OF THE 15 CORE COMPONENTS OF YOUR RESPONSE PLAN WERE EXERCISED DURING THIS PARTICULAR EXERCISE: _____

10. EVALUATION:
_____
_____
_____

11. CHANGES TO BE IMPLEMENTED:
_____
_____
_____

12. TIME TABLE FOR IMPLEMENTATION:
_____

CERTIFYING SIGNATURE:
_____

RETAIN THIS FORM FOR A MINIMUM OF 3 YEARS (USCG/RSPA/MMS) OR 5 YEARS (EPA).

IF ADDITIONAL SPACE REQUIRED, USE SEPARATE SHEET.

40 CFR 112 Appendix F Section 1.8.2.1
National Preparedness for Response Exercise Program (PREP) Guidelines

Original: 10/20/2003
Revised: 2/18/2004, 7/17/2006, 3/5/07, 6/18/2007, 7/24/2007, 10/19/2007, 02/11/08, 12/17/12

FIGURE A.1-5 - FORM 2203 - QI NOTIFICATION EXERCISE FORM, CONTINUED

15 RESPONSE PLAN CORE COMPONENTS

During each triennial cycle, all components of a plan holderâ€™s response plan must be exercised at least once. The purpose of this requirement is to ensure that all plan components function adequately for response to an oil spill.

CHECK EACH CORE COMPONENT USED IN EXERCISE.

1. ____ **NOTIFICATIONS:** Test the notifications procedures identified in the Facility Response Plan.

2. ____ **Staff Mobilization:** Demonstrate the ability to assemble the spill response organization identified in the Facility Response Plan.

3. ____ **Ability to operate within the Response Management System described in the plan: (INCIDENT COMMAND SYSTEM).**

4. ____ **Discharge Control:** Demonstrate the ability of the spill response organization to control and stop the discharge at the source.

5. ____ **Assessment:** Demonstrate the ability of the spill response organization to provide an initial assessment of the discharge and provide continuing assessments of the effectiveness of the tactical operations.

6. ____ **Containment:** Demonstrate the ability of the response organization to contain the discharge at the source or in various locations for recovery operations.

7. ____ **Recovery:** Demonstrate the ability of the spill response organization to recover the discharged product.

8. ____ **Protection:** Demonstrate the ability of the spill response organization to protect the environmentally and economically sensitive areas identified in the Area Contingency Plan and the respective industry response plan.

9. ____ **Disposal:** Demonstrate the ability of the spill response organization to dispose of the recovered material and contaminated debris.

10. ____ **Communications:** Demonstrate the ability to establish an effective communications system for the spill response organization.

11. ____ **Transportation:** Demonstrate the ability to provide effective multi-mode

transportation both for execution of the discharge and support functions.

12. ____ **Personnel Support:** Demonstrate the ability to provide the necessary support of all personnel associated with the response.

13. ____ **Equipment Maintenance and Support:** Demonstrate the ability to maintain and support all equipment associated with the response.

14. ____ **Procurement:** Demonstrate the ability to establish an effective procurement system.

15. ____ **Documentation:** Demonstrate the ability of the spill response organization to document all operational and support aspects of the response and provide detailed records of decisions and actions taken.

DATE: _____ CERTIFYING SIGNATURE:
_____

Original: 10/20/2003
Revised: 2/18/2004, 7/17/2006, 3/5/07, 6/18/2007, 7/24/2007, 10/19/2007, 02/11/08, 12/17/12

FIGURE A.1-6 - SPILL MANAGEMENT TEAM TABLETOP

Fulfills Training and Exercise Requirements for:
EPA - 40 CFR §112.21 & Appendix F 1.8.2.2
USCG - 33 CFR §154.1055
DOT - 49 CFR §194.107

Name (PRINTED)**: _____ Date:**
_____

Participant's Facility Location:
_____

Location of Tabletop:
_____

Exercise Initiated By:
_____

INTRODUCTION / OBJECTIVES / GROUND RULES

INTRODUCTION

You will be participating in a tabletop exercise that will allow you to consider NuStar Energy L.P. and their response organizations' abilities to prevent and respond to oil spills.

OBJECTIVES

Overall objectives of this exercise include:

- Enhance the ability to utilize the Integrated Contingency Plan (ICP) to respond and coordinate emergency management.
- Make timely internal and external notifications.
- Learn how to better respond to oil spills.

In addition to the overall objectives, some of the fifteen (15) core components listed in the PREP Guidelines will be addressed to some extent in this tabletop exercise.

The fifteen (15) core components, as listed in the PREP Guidelines, are as follows:

1. Notifications	6. Containment	11. Transportation
2. Staff Mobilization	7. Recovery	12. Personnel Support
3. Ability to Operate Within the Response Management System Described in the Plan	8. Protection	13. Equipment Maintenance and Support
4. Discharge Control	9. Disposal	14. Procurement
5. Assessment	10. Communications	15. Documentation

GROUND RULES AND TIPS FOR PARTICIPANTS

Treat these situations as real and participate. Asking questions and sharing thoughts is strongly encouraged. Issues and procedures arising will be thoroughly discussed.

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FIGURE A.1-6 - SPILL MANAGEMENT TEAM TABLETOP, CONTINUED

SPILL SCENARIO

DATE: _____ **TIME:** _____

QI: _____

WEATHER CONDITIONS:

- ☐ Clear
- ☐ Overcast
- ☐ Light Rain
- ☐ Heavy Rain
- ☐ Thunder Storm
- ☐ Snow
- ☐ Blizzard
- ☐ Fog

Wind Speed: _____

Wind Direction: _____

Humidity: _____

Air Temperature: _____

LOCATION:

_____

_____

PRODUCT AND QUANTITY:

☐ Gasoline	_____ gal./bbl.	☐ Asphalt	_____ gal./bbl.
☐ #2 Fuel Oil	_____ gal./bbl.	☐ Crude Oil	_____ gal./bbl.
☐ Jet Fuel Kerosene	_____ gal./bbl.	☐ Propane	_____ gal./bbl.
☐ Diesel	_____ gal./bbl.	☐ Ammonia	_____ gal./bbl.
☐ #6 Fuel Oil	_____ gal./bbl.	☐ Other	_____ gal./bbl.

EMERGENCY SCENARIO:

_____

_____

_____

_____

_____

_____

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FIGURE A.1-6 - SPILL MANAGEMENT TEAM TABLETOP, CONTINUED

INCIDENT BRIEFING (ICS 201)

1. Incident Name	2. Incident Number	3. Date/Time Initiated Date: Time:
4. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depecting situational status and resource assignment):		

5. Situation Summary and Health and Safety Briefing (for briefings or transfer of command): Recognize potential incident Health and safety Hazards and develop necessary measures (remove hazards, provide protective equipment, warm people of the hazard) to protect responders from those hazards.
6. Prepared By: Name: _____ Position/Title: _____ Signature:

ICS 201, Page 1	Date/Time:

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FIGURE A.1-6 - SPILL MANAGEMENT TEAM TABLETOP, CONTINUED

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:
7. Current and Planned Objectives:		

8. Current and Planned Actions, strategies, and Tactics:	
Time:	Actions:
6. Prepared By: Name: _____ Position/Title: _____ Signature:	
ICS 201, Page 2	Date/Time:

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FIGURE A.1-6 - SPILL MANAGEMENT TEAM TABLETOP, CONTINUED

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:
9. Current Organization (fill in additional organization as appropriate):		

6. Prepared By: Name: _____ Position/Title: _____ Signature:	
ICS 201, Page 3	Date/Time:

INCIDENT BRIEFING (ICS 201)

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FIGURE A.1-6 - SPILL MANAGEMENT TEAM TABLETOP, CONTINUED

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

10. Resources Summary:

Resource	Resource Identifier	Date/Time Ordered	ETA	Arrived	Notes: (location/assignment/status)
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
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				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	

6. Prepared By: Name: _____ Position/Title: _____ Signature:

ICS 201, Page 4	Date/Time:

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FIGURE A.1-6 - SPILL MANAGEMENT TEAM TABLETOP, CONTINUED

TABLETOP DRILL DISCUSSION QUESTIONS

1. **NOTIFICATIONS**
   a. Who is responsible for making notifications?
   b. What internal notifications should be made?
   c. What external notifications should be made?
   d. What information should you have to make external notifications?

2. **INITIAL RESPONSE**
   a. Who is on scene first?
   b. Who is the Incident Commander?
   c. What initial actions should be taken and by who?
   d. Who estimates the size of the spill? How?
   e. Which facility employees are on duty?
   f. What are your primary concerns and objectives?
   g. Where do you log this information?
   h. How will the facility work with the Incident Command?
   i. How quickly can the spill management team respond to the incident?
   j. How quickly can other members of the spill management team respond?

3. **INCIDENT COMMAND SYSTEM**
   a. Where should the Incident Command Post be located?
   b. Fill out the form ICS 201 and the organizational chart.
   c. Who are the Federal and State On-Scene Coordinators?
   d. What are the spill management team's priorities and objectives? How will you meet your priorities and objectives? Develop ICS Form 202.
   e. What is the facilityâ€™s role in managing this incident? What roles do the federal, state, and local governments play?

4. **ENVIRONMENTAL SENSITIVITIES**
   a. What environmentally sensitive areas will this spill affect?
   b. How will these areas be protected?
   c. Are there any threatened or endangered species in the area?
   d. If the material flows into water, are there downstream water concerns?
   e. Are there economic, cultural, or other resources in the path of the spill?

5. **RESOURCES**
   a. Who is responsible for getting resources to the site?
   b. Where can these resources be obtained?
   c. How will the spill management team track these resources?
   d. How will responders be protected?
   e. What are the telecommunications needs?

6. **PLANNING**
   a. How will recovered product be stored, treated, and disposed? How will debris from the cleanup be handled?
   b. What are the public relations and media concerns?
   c. How should the SMT plan for an extended clean-up? Are 24-hour operations necessary?
   d. How will claims be handled?

FIGURE A.1-6 - SPILL MANAGEMENT TEAM TABLETOP, CONTINUED

TABLETOP EXERCISE DEBRIEF FORM

DON'T FEEL LIMITED IN YOUR RESPONSES. IF SOME AREA IS HANDLED PARTICULARLY WELL, IT'S GOOD TO GIVE YOUR TEAM CREDIT! ON THE OTHER HAND, IF SOMETHING OBVIOUSLY COULD BE IMPROVED UPON, YOUR TEAM WILL BENEFIT FROM THE LESSONS LEARNED.

LESSONS LEARNED

Step 1. List the Top three (3) Things That Went Well:

1) _____

_____

2) _____

_____

3) _____

_____

Step 2. List the Top THREE (3) Things That Need Improvement:

	Needs Improvement/ Corrective Measure	Person Responsible for Ensuring Completion of Corrective Measures	Time Table for Improvement Initiation
1)			
2)			
3)			

FIGURE A.1-6 - SPILL MANAGEMENT TEAM TABLETOP, CONTINUED

INTERNAL EXERCISE EVALUATION FORM

1. Date(s) performed:

2. Drill Type: ☐ Exercise ☐ Announced ☐ Unannounced

☐ Actual Event

3. Location of exercise:

4. Time started: Time completed:

5. Time started:

☐ Average Most Probable Discharge ☐ Maximum Most Probable Discharge ☐ Worst Case Discharge

Size of (simulated) spill _____ Bbls./gals.

6. Describe how the following objectives were exercised:

   a. Response Team's knowledge of oil spill response plan:
   _____
   _____

   b. Proper notifications:
   _____
   _____

   c. Communications System
   _____
   _____

   d. Response Team's ability to access contracted OSRO:
   _____
   _____

   e. Response Team's ability to coordinate spill response with OSC, state and applicable agencies:
   _____
   _____

   f. Response Team's ability to access sensitive site information in Area Contingency Plan:
   _____
   _____

7. Identify which of the 15 core components of your response plan were exercised:
   _____

8. Attach description of lesson(s) learned.

   Name (PRINTED): _____

   Certifying Signature: _____ Date: _____

Retain this form for a minimum of 3 years (for USCG/PHMSA/MMS) or 5 years (for EPA).

A.2 TRAINING PROGRAM

FIGURE A.2-1 provides training requirements for spill responders. **FIGURE A.2-2** provides the program matrix. **FIGURE A.2-3** provides a personnel response training log.

FIGURE A.2-1 - TRAINING REQUIREMENTS

TRAINING TYPE	TRAINING CHARACTERISTICS
Training in use of spill response plan	• All field personnel will be trained to properly report/monitor spills. • Plan will be reviewed annually with employees. • The Personnel Response Training Log is located in **FIGURE A.2-3**.
OSHA training requirements	• All Company responders designated in Plan must have 24 hours of initial spill response training. • Laborers having potential for minimal exposure must have 24 hours of initial oil spill response instruction and eight hours of actual field experience. • Responders having potential exposure to hazardous substances at levels exceeding permissible exposure limits must have 40 hours of initial training offsite and 24 hours of actual field experience. • On-site management/supervisors required to receive same training as equipment operators/general laborers plus eight hours of specialized hazardous waste management training. • Managers/employees require eight hours of annual refresher training.
Spill management team personnel training	• See recommended PREP Training Matrix (FIGURE A.2-2).
Training for casual laborers or volunteers	• Company will not use casual laborers/volunteers for operations requiring HAZWOPER training.
Wildlife	• Only trained personnel approved by USFWS and appropriate state agency will be used to treat oiled wildlife.
Training documentation and record maintenance	• Training activity records will be retained for five years for all personnel following completion of training. • Company will retain training records indefinitely for individuals assigned specific duties in the Plan. • Training records will be maintained at the Corporate Headquarters.

FIGURE A.2-2 - PREP TRAINING PROGRAM MATRIX

TRAINING ELEMENT	QUALIFIED INDIVIDUAL (QI)	EMERGENCY MANAGEMENT TEAM (EMT)	FACILITY PERSONNEL
Captain of the Port (COTP) Zones or Environmental Protection Agency (EPA) Regions in which the facility is located	x	x	x
Notification procedures and requirements for facility owners or operators, internal response organizations, federal and state agencies, and contracted oil spill removal organizations (OSROs) and the information required for those organizations	x	x	x
Communication system used for the notifications	x	x	x
Information on the products stored, used, or transferred by the facility, including familiarity with the material safety data sheets (MSDS), special handling procedures, health and safety hazards, spill and fire fighting procedures	x	x	x
Procedures the facility personnel may use to mitigate or prevent any discharge or a substantial threat of a discharge of oil resulting from facility operational activities associated with internal or external cargo transfers, storage, or use	x		
Facility personnel responsibilities and procedures for use of facility equipment which may be available to mitigate or prevent an oil discharge	x	x	x
Operational capabilities of the contracted OSROs to respond small, medium, and large discharges	x	x	x
Responsibilities and authority of the Qualified Individual (QI) as described in the Spill Response Plan and Company response organization	x	x	x
The organization structure that will be used to manage the response actions including: • Command and control • Public information • Safety • Liaison with government agencies • Spill response operations • Planning • Logistics support	x	x	x

• Finance			
The responsibilities and duties of each Emergency Management Team (EMT) within the organization structure	x	x	
The drill and exercise program to meet federal and state regulations as required under Oil Pollution Act of 1990 (OPA 90)	x	x	x
The role of the QI in the post discharge review of the Plan to evaluate and validate its effectiveness	x		
The Area Contingency Plan (ACP) for the area in which the facility is located	x	x	x
The National Contingency Plan (NCP)	x	x	x
Roles and responsibilities of federal and state agencies in pollution response	x	x	x

FIGURE A.2-2 - PREP TRAINING PROGRAM MATRIX, CONTINUED

TRAINING ELEMENT	QUALIFIED INDIVIDUAL (QI)	EMERGENCY MANAGEMENT TEAM (EMT)	FACILITY PERSONNEL
Available response resources identified in the Plan	x	x	
Contracting and ordering procedures to acquire OSRO resources identified in the Plan	x	x	
OSHA requirements for worker health and safety (29 CFR 1910.120)	x	x	x
Incident Command System/Unified Command System	x	x	
Public affairs	x	x	
Crisis management	x	x	
Procedures for obtaining approval for dispersant use or in-situ burning of the spill	x		
Oil spill trajectory analyses	x		
Sensitive biological areas	x	x	
This training procedure as described in the Plan for members of the EMT		x	
Procedures for the post discharge review of the plan to evaluate and validate its effectiveness		x	

Basic information on spill operations and oil spill cleanup technology including: • Oil containment • Oil recovery methods and devices • Equipment limitations and uses • Shoreline cleanup and protection • Spill trajectory analysis • Use of dispersants, in-situ burning, bioremediation • Waste storage and disposal considerations		x	
Hazard recognition and evaluation		x	
Site safety and security procedures		x	
Personnel management, as applicable to designated job responsibilities		x	
Procedures for directing the deployment and use of spill response equipment, as applicable to designated job responsibilities		x	x
Specific procedures to shut down effected operations			x
Procedures to follow in the event of discharge, potential discharge, or emergency involving the following equipment or scenarios: • Tank overfill • Tank rupture • Piping or pipeline rupture • Piping or pipeline leak, both under pressure or not under pressure, if applicable • Explosion or fire • Equipment failure • Failure of secondary containment system			x
QI's name and how to contact him or her			x

FIGURE A.2-3 - PERSONNEL RESPONSE TRAINING LOG

Training records are maintained at the terminal office (Other versions of this form may be used).

NAME	RESPONSE TRAINING/DATE AND NUMBER OF HOURS	PREVENTION TRAINING/DATE AND NUMBER OF HOURS

*Qualified Individual

APPENDIX B Last Revised: July 2014

CONTRACTOR RESPONSE EQUIPMENT

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B.1 Cooperatives and Contractors

B.1.1 OSRO Classification

Figure B.1-1 - Evidence of Contracts and Equipment Lists

B.1 COOPERATIVES AND CONTRACTORS

The Company has contracted with additional Oil Spill Removal Organizations (OSROs) to provide personnel and equipment in the event of a spill. The classification, response capabilities, and equipment are described below.

B.1.1 OSRO Classification

The OSRO classification process was developed by the U.S. Coast Guard (USCG) to provide guidelines to enable USCG and plan preparers to evaluate an OSROâ€™s potential to respond to oil spills. Plan holders that utilize USCG classified OSRO services are not required to list response resources in their plans.

The following is a listing of the USCG classified OSROs that may respond to incidents for areas listed in this Plan. For a detailed listing of USCG classified OSROs and other contractors by terminal, refer to **FIGURE 3.1-6** and **FIGURE 7.1-1**.

COMPANY / CONTRACTOR / TERM	APPLICABLE COTP ZONE (S)	USCG CLASSIFICATIONS								RESPONSE TIME
			Facilities				Vessels			
			MM	W1	W2	W3	MM	W1	W2	W3	
Environmental Safety & Health Consulting Services 1730 Coteau Rd Houma LA 70364 Term of contract: To	New Orleans	River/Canal	✓	✓	✓	✓	✓	✓	✓	✓	1 hours
		Inland	✓	✓	✓	✓	✓	✓	✓	✓	
		Open Ocean									
		Offshore									
		Nearshore									
		Great Lakes									

The following contractors are retained by the Company, but are not USCG classified OSROs within this Area:

- Conestoga-Rovers & Associates, Inc.
  6320 Rothway, Suite 100
  Houston,TX
  77040
  Response Time:12 hours
  Term of contract:
  To

FIGURE 7.1-1 provides both OSRO and non-OSRO summarized equipment lists and response times.

FIGURE B.1-1 provides evidence of contracts with OSROs and equipment lists for contractors

without USCG classification.

FIGURE B.1-1 - EVIDENCE OF CONTRACTS AND EQUIPMENT LISTS

- **Conestoga-Rovers & Associates, Inc., Houston,TX**
- **Environmental Safety & Health Consulting Services, Houma,LA**
- **Environmental Safety & Health Consulting Services - Cascade Equipment List**

APPENDIX C
SPCC PLANS

Last Revised: August 2014

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Figure C-1 - Professional Engineer Certification

Figure C-2 - Management Approval and Review

Figure C-3 - Record of Reviews

Figure C-4 - SPCC Plan

Figure C-5 - Tank Tables

Figure C-6 - Addendum

Figure C-7 - Drainage Diagram

Figure C-8 - Evacuation Diagram

Figure C-9 - Piping Diagram

Figure C-10 - Containment Calculation

Figure C-11 - Discharge Prevention Meeting Log

Figure C-12 - Inspection Procedures

Figure C-13 - Annual Inspection Record

Figure C-14 - Secondary Containment Drainage Log

Figure C-15 - Reportable Spill History

Figure C-16 - Containment and Drainage Planning

FIGURE C-1 - PROFESSIONAL ENGINEER CERTIFICATION

40 CFR, Part 112.3(d) Professional Engineer Certification
Being familiar with the provisions of 40 CFR, Part 112, I attest to the following: • I am familiar with the requirements of this part. • I or my agent has visited and examined the Facility.

- The Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of this part.
- Procedures for required inspections and testing have been established.
- The Plan is adequate for the Facility.

Printed Name of Registered Professional Engineer:	Alexander Baron Sheffield
Signature of Registered Professional Engineer:	Alexander Baron Sheffield
Date:	6/25/2014
Registration No.:	25165, Louisiana

Seal:

FIGURE C-2 - MANAGEMENT APPROVAL AND REVIEW

I hereby approve the contents of the Facility's Spill Prevention, Control, and Countermeasure Plan (SPCC Plan) and have the authority to commit the necessary resources to implement the SPCC Plan, as set forth in this document, in accordance with the federal requirements of 40 CFR Part 112.			
Name:	Jean Zeringue	**Signature:**	

Title:	VP GM Operations	**Date:**	7/2/2014

FIGURE C-3 - RECORD OF REVIEWS

RECORD OF REVIEWS					
Date of Review[1]		**Will Plan Need Amendment?[2]**	**Reviewer's Name[3]**	**Reason for Amendment[4]**	**Date of Amendment (or N/A)**
Full	**Partial**	**Yes / No**			
5/19/2014		Yes	Alexander Baron Sheffield	Updates to tank inventory, storage, and containment area volumes; Updates to Vulnerability Assessment to include release to Mississippi River.	6/25/2014
11/27/2012		Yes	Robert B. Hill III	Change in Jean Zeringe title in notifications section 3 and removal of Kyle Oppliger as GM of the Region	11/27/2012

[1] A full review of the plan must be performed at least once every five years.

[2] The SPCC plan must be amended when there is a change in the facility design, construction, operation, or maintenance that materially affects its potential for a discharge. Examples include, but are not limited to: commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacement, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or revision of standard operation or maintenance procedures. An amendment made must be prepared within six months of the change, and implemented as soon as possible, but not later than six months following preparation of the amendment.

[3] Reviewer's name indicates that he/she has completed review and evaluation of the SPCC plan for St. James Terminal on the date indicated and will or will not amend the plan as a result, as indicated.

[4] Briefly describe reasons for plan amendment. These may include one or more of the reasons in footnote 2, above, administrative changes such as updates to names or phone numbers, regulatory changes, or changes in Company policies.

FIGURE C-4 - SPCC PLAN

FACILITY INFORMATION			
Name of Facility:	St. James Terminal	**Type of Facility:**	Onshore/Non-Production
Location of	7167 Koch Road	**Name & Address of**	NuStar Logistics, L.P.

Facility:	St. James, LA 70086	**Owner or Operator:**	19003 IH-10 West San Antonio, TX 78257
Latitude/ Longitude:	(b) (7)(F), (b) (3) [redacted]	**Designated Personnel Accountable for Oil Spill Prevention at the Facility:**	MikeNorthcutt
Personnel Accountable for Training at the Facility:	Mike Northcutt		
General Facility Description:	The facility has 37 ASTs of which, 32 are in are in crude oil service. The others store diesel fuel or are out of service. (b) (7)(F), (b) (3) [redacted] The Terminal receives crude oil via barge/vessel, railcar, tank truck, and pipeline. Crude oil is shipped from the Terminal via barge/vessel and pipeline.		

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.7
(a) GENERAL REQUIREMENTS
(1) Include a discussion of your facilities conformance with the requirements listed in this part
• The specific requirements are detailed in bulleted responses below.
(2) Comply with all applicable requirement listed in this part. Your Plan may deviate from some requirements if you provide additional protection or explanation
• All requirements are addressed below. Where deviations occur, an equivalent environmental protection is described in detail.
(3) Describe in your Plan the physical layout of the facility and include a facility diagram. You must also address in your plan:
• The facility is an Onshore/Non-Production facility; refer to FIGURE C-7 for the facility diagram.
i.The type of oil in each container and its storage capacity
• Refer to FIGURE C-5 for the Tank Table.
ii.Discharge prevention measures
• Entire plan.
iii.Discharge or drainage controls
• Refer to APPENDIX C 40 CFR 112.8 (b).
iv.Countermeasures for discharge
• Refer to SECTION 2.
v.Methods of disposal
• Refer to FIGURE 7.4 Waste Management.
vi.Contact list and phone numbers
• Refer to FIGURE 3.1-5 and FIGURE 3.1-6.
(4) Unless you have submitted a response plan, provide information and procedures to report a discharge
• A Facility Response Plan (FRP) has been submitted to the regional administrator.
(5) Unless you have submitted a response plan, describe procedures you will use when a discharge occurs
• A Facility Response Plan (FRP) has been submitted to the regional administrator.
(b) PREDICTION OF THE DIRECTION, RATE OF FLOW, AND TOTAL

QUANTITY OF OIL WHICH COULD BE DISCHARGED FROM THE FACILITY AS A RESULT OF EACH TYPE OF MAJOR EQUIPMENT FAILURE
• TANKS: Refer to Tank Table, FIGURE C-5, and 40 CFR 112.8(d) for information on direction, rate of flow, and total quantity of oil which could be discharged from tanks.
• TRUCK UNLOADING AREA: The direction of flow would be toward the west. The rate of flow would be variable depending on the component that failed. The truck unloading pump maximum flow rate is 280 gpm. (b) (7)(F), (b) (3) [redacted] Truck unloading procedures involve personnel in attendance throughout the process.
• RAIL SPUR UNLOADING AREA: The direction of flow would be south toward secondary containment. The rate of flow would be variable depending on the component that failed, flow rate, and size of the breach. The WCD would be the loss of a railcar's contents, which is 29,188 gallons. Rail unloading procedures involve personnel in attendance throughout the process.
• PRODUCT TANK PUMPS/PIPING: The direction of flow would be ultimately toward the west. The rate of flow would be variable, depending on the component that failed, the flow rate, and size of the breach. The pipeline maximum pumping rate is approximately 22,400 gpm. The total amount of fluid spilled would be variable, depending on the rate and duration of the release. Refer to the Facility Response Plan for worst case discharge scenarios.
• EOG UNIT TRAIN. The direction of flow would be southwest toward secondary containment. The rate of flow would be variable depending on the component that failed, flow rate, and size of the breach. (b) (7)(F), (b) (3) [redacted] Rail unloading procedures involve personnel in attendance throughout the process.
• NuStar Energy UNIT TRAIN. The direction of flow would be southwest toward secondary containment. The rate of flow would be variable depending on the component that failed, flow rate, and size of the breach. (b) (7)(F), (b) (3) [redacted]. Rail unloading procedures involve personnel in attendance throughout the process.

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.7
(c) PROVIDE APPROPRIATE CONTAINMENT
• TANKS: Refer to Tank Table, FIGURE C-5, and 40 CFR 112.8(b) and (c) for information on containment.
• TRUCK UNLOADING AREA: Releases from the Truck Unloading Area would likely be contained within the bermed area. If the oil were to escape this area, it would flow into the terminal drainage ditch that is equipped with a block valve to contain spilled oil within the terminal. The valve normally is open due to the large rainfall events common to the area; however, upon detection of a spill, the valve would be closed.
• RAIL SPUR UNLOAD AREA: Releases from the rail spur area would be contained in the 202,175 gallon secondary containment structure. (b) (7)(F), (b) (3) [redacted]
• PRODUCT TANK PUMPS: Releases from the Product Tank Pumps and associated piping and appurtenances would flow into the terminal drainage ditch that is equipped with a block valve to contain spilled oil within the terminal. The valve normally is open due to the large rainfall events common to the area; however, upon the detection of a spill, the valve would be closed.
• UNIT TRAIN. Releases from the rail spur area would be contained in the (b) (3), (b) (7)(F) secondary containment structure. (b) (7)(F), (b) (3) [redacted]
(d) CONTINGENCY PLANNING
(1) An oil spill contingency plan following the provisions of part 109 of this chapter

	• This is not applicable because a response plan under 112.20 has been submitted for this facility.
(e) INSPECTIONS, TESTS, AND RECORDS	
	• Monthly inspections are performed which include checklist items covering storage tanks, pumps, pipelines, valves, fittings, fence perimeter and general security.
	• Product handling equipment is inspected for signs of leakage or potential leakage. Spill containment impoundments are inspected to verify for the presence of oil.
	• Terminal personnel perform regular inspections of facility equipment, operations and spill containment areas. Inspections are performed in accordance with written procedures detailed on each inspection sheet.
	• The Company has developed a tank inspection program for all storage tanks in accordance with the API 653 Standard. As tanks become available, clean and gas free, the Company will contract with a certified API 653 inspector to perform a complete thorough inspection of the tank.
	• An API 653 inspection includes performing non-destructive testing of the tank steel to verify corrosion conditions. The API 653 inspection reports are maintained at the office of the terminal manager.
	• When measurements or tank conditions are found to be out of API 653 specifications, the necessary repair work will be completed prior to returning the tank to operational service.
	• Inspection and testing records are made part of this plan, but kept at the office of the terminal manager. All inspection records associated with this SPCC plan will be maintained for a period of three years.
	• The facility manager or his designee will sign the inspections required by this SPCC Plan. Examples of these inspections can be found in this plan.
	• Integrity testing will follow the guidelines listed above and examples of these records documenting the testing can be found in the appendices to this plan.
(f) PERSONNEL TRAINING AND DISCHARGE PREVENTION PROCEDURES	
(1) PERSONNEL TRAINING	
	• Annually the Company will provide update training in the form of on-site meetings with all employees. Employee training will include review and instruction in each of the following categories:
	• The Company has developed an employee-training program that addresses proper operation and maintenance of equipment to prevent the release of oil into navigable waters.

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.7	
(f) PERSONNEL TRAINING AND DISCHARGE PREVENTION PROCEDURES	
(1) PERSONNEL TRAINING	
	• The Company provides initial awareness training to all employees prior to the employee commencing operational duties. The employees are informed of the SPCC Plan, the purpose of the plan, and proper best management practices.
	• The overall purpose of this training program is ensuring that employees are kept informed of current operational procedures, and applicable spill prevention methods.
	• Review of the terminal's SPCC Plan, new revised regulations / laws / instructions, safe handling of hazardous materials, review of product storage and transfer operations, and recognize and identify pollution prevention opportunities.
(2) DESIGNATED PERSON	
	• Refer to Facility Information above for the â€œDesignated Personnel Accountable for Oil Spill Prevention at the Facilityâ€
(3) SPILL PREVENTION BRIEFINGS	
	• In addition to the regular employee training, the Company will schedule annual briefings to assure that employees have current knowledge of spill prevention techniques and

associated equipment.

- The record of these briefings will be documented using the form included with this SPCC Plan.
- Employees are instructed in applicable pollution control laws, rules, and regulations.

(g)Â SECURITY

(b) (7)(F), (b) (3)

[redacted]

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.7

(g)Â SECURITY

(b) (7)(F), (b) (3)

[redacted]

(h)Â FACILITY TANK CAR AND TANK TRUCK LOADING/UNLOADING RACK

(1) TRANSFER AREA DRAINAGE

- The railcar unloading area drains into a 202,175 gallon containment area. This basin provides more than adequate containment for a railcar's maximum capacity (~30,000

	gallons) plus 10% freeboard.
	• There is no tank truck loading/unloading "rack" at this facility. There is a tank truck unloading area on-site, where only two trucks at a time can unload. Tank truck loading is not performed at this area. This area is addressed in Section 112.7(b) and (c) of this SPCC Plan.
(2) INTERLOCKED WARNING LIGHT OR PHYSICAL BARRIER	
	• A sign is posted at each unloading station, both rail and truck, reminding drivers and rail operators to disconnect transfer lines prior to departure.
	• Only authorized truck drivers and railcar operators are allowed to unload product and all have undergone training, including procedures for proper unloading.
(3) TRUCK DRAIN / OUTLET EXAMINATION	
	• Where necessary, outlets are adjusted to prevent leakage while in transit.
	• Prior to departure, the tank truck driver and railcar operator are required to closely examine the lowermost drain and other outlets for leakage.
(i) BRITTLE FRACTURE EVALUATION REQUIREMENTS	
	• The Facility follows a program to inspect all storage tanks according to API 653 standards. The API 653 inspections will include structural steel evaluation.
	• Facility management is aware that in the event modifications are made to storage containers, an evaluation must occur to determine if the structural integrity of the container is sufficient to safely manage the material to be stored and prevent brittle fracture or catastrophic failure.
(j) STATE DISCHARGE PREVENTION REQUIREMENTS	
	• The Louisiana Oil Spill Prevention and Response Act requires spill prevention and response plans.
	• This SPCC Plan was created to satisfy the EPA regulations 40 CFR 112.1-8 and the Louisiana Administrative Code 33:IX Chapter 9. Louisiana regulations require review of the SPCC Plan every five (5) years and some specific amendment requirements stated in LAC 33:IX.905.F.
(k) QUALIFIED OIL-FILLED OPERATIONAL EQUIPMENT	
	• There are seventeen (17) electrical transformers on-site that contain more than 55 gallons of oil. These are identified on Figure C-5, Tank Tables and Figure C-7, Drainage Diagram.
(1) Qualification Criteriaâ€"Reportable Discharge History	
	• All fifteen(15) transformers meet the qualification criteria listed in this section.

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.7	
(k) QUALIFIED OIL-FILLED OPERATIONAL EQUIPMENT	
(2) Alternative Requirements to General Secondary Containment	
	• All fifteen(15) transformers are situated such that if they were to leak oil, the fluid generally would pool in the immediate area. If the oil did escape this area, it would flow into one of the site drainage ditches, which is equipped with a block valve at the site discharge point. Since the outlet valves at the site discharge points normally are open to allow for the typically large rainfall events in this region, we also are utilizing the alternative requirements.
(i) Establish and document the facility procedures for inspections or a monitoring program to detect equipment failure and/or a discharge; and	
	• The listed facility inspections and documentation of inspections includes inspection of transformers. These inspections include inspection for the detection of equipment failure and discovery of leakage.
(ii) Unless you have submitted a response plan under Â§112.20, provide in your Plan the following:	

	Not applicable, a response plan under 112.20 has been submitted.
(A) An oil spill contingency plan following the provisions of part 109 of this chapter.	
	• Not Applicable
(B) A written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.	
	• Not Applicable

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.8	
(a)GENERAL REQUIREMENTS	
	• The specific requirements are detailed in bulleted responses below.
(b)Â FACILITY DRAINAGE	
(1) DRAINAGE FROM DIKED AREAS	
	• All drain valves associated with containment systems will remain closed and securely locked except when discharging. Drainage of containment areas will be performed manually.
	• Prior to discharge, terminal personnel will inspect accumulated storm water, and verify that water is clear and free of oil sheen.
	• Company personnel are directed to not discharge storm water if contamination is found.
(2) DRAIN VALVES	
	• These valves are maintained in a closed position except when discharging. When closed the valves will be locked to prevent unauthorized discharge of the diked areas.
	• All diked areas are visually inspected prior to opening the drain valves.
	• The drain valves are constructed of steel and are manually operated rising-stem gate valves.
(3) FACILITY DRAINAGE SYSTEM FROM UNDIKED AREAS	
	• All storage of oil at this Facility is addressed with secondary containment.
	• This facility has been engineered so that approximately 90% of the oil handling facilities equipment (that is outside of diked areas) will drain into site drainage ditches equipped with block valves at the property line to prevent the escape of oil from the facility.
	• The environmental equivalence is invoked for aboveground and underground piping and its associated appurtenances, flow through process equipment, and tanker trucks outside of the controlled site flow areas.
	• One reason for deviation from designing for these type of systems to flow into ponds, lagoons, or catchment basins is the impracticability of channeling releases from such facilities into a predetermined path. Pipelines and flow through process equipment under line pressure have the potential to release oil in any direction and in varying distances.
	• A tanker truck outside of the unloading rack also has the potential to release oil in many and varied locations throughout the Facility.
	• Another reason for deviation is that pipeline and process equipment under pressure is generally designed with stronger steel than atmospheric storage tanks. The in-plant piping is typically designed as strong or stronger than the pipe that runs cross-country.
	• Tanker trucks, once they are loaded or unloaded and connections are sealed, are far less likely to leak than during unloading. They offer no more risk on-site than on the open road.
	• Equivalent or better environmental protection is achieved by additional training of operations personnel in recognizing and properly reacting to potential release scenarios, primarily in the use of Emergency Shutdown (ESD) systems to minimize release volumes.
	• For the type of facilities addressed here, Company operations personnel and oil spill response contractors (OSRO) personnel's enhanced training and drills in association with the Facility Response Plan (FRP) provides equivalent environmental protection.
(4) DIVERSION SYSTEM	
	• As in the environmental equivalence listed for 40 CFR 112.8(b)(3), the physical facilities that apply here are the same. All oil storage containers are addressed by secondary

	containment as are transfers between modes of transportation.
	• Providing all Facility outfall ditches with a system that would retain oil at the Facility is impractical for potential leaks from the pipeline (and appurtenances) outside containment and the tanker trucks outside of the unloading areas. It is impractical due to the topography of the Terminal and the numerous and varied areas of potential release from these type of facilities to design for 100% site containment.
	• Some of the runoff at this site is sheet flow which would not be captured by the design listed in 40 CFR 112.8(b)(4). Additionally, underground piping releases would certainly not be captured by such design either.
	• Equivalent or better environmental protection is achieved by additional training of operations personnel in recognizing and properly reacting to potential release scenarios, primarily in the use of Emergency Shutdown (ESD) systems to minimize release volumes.

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

	40 CFR, 112.8
(b)Â FACILITY DRAINAGE	
(4) DIVERSION SYSTEM	
	• For the type of facilities addressed here, Company operations personnel and oil spill response contractors (OSRO) personnel's enhanced training and drills in association with the Facility Response Plan (FRP) provides equivalent environmental protection.
(5) TREATED DRAINAGE WATERS	
	• Not Applicable
(c) BULK STORAGE CONTAINERS	
(1) CONTAINER CONSTRUCTION AND MATERIALS	
	• All bulk storage tanks are constructed of welded steel to meet API 650 or 653 standards (relating to oil storage tank construction).
	• Welded steel tanks are considered industry standard for storage of petroleum products.
	• These tanks are operated following API 650 or 653 standards for tanks that store petroleum products.
(2) SECONDARY CONTAINMENT	
	• All bulk storage tanks are provided with secondary containment in the form of earthen dikes.
	• Diked areas are constructed to contain the volume of the largest tank + highest NOAA listed 24-hour rainfall in the last 25 years.
	• According to the latest available geotechnical data from the U.S. Department of Agriculture, Natural Resources Conservation Service, the native soil at the St. James Terminal is a Gr-A â€“ Gramercy silty clay. The hydraulic conductivity (Ksat) value for this soil is 0.00 to 0.06 inches/hour. By extrapolation, in 72 hours this soil would transmit water a maximum distance of 4.3 inches.
	• The products stored within the containments are primarily crude oil and diesel. Both are more viscous (resistant to flow) than water which has a kinematic viscosity of approximately 1 Centistoke (cSt) at 60 degrees Fahrenheit.
	• Given this information, it would be expected for diesel and/or crude oil to flow through the soil at a much slower rated than water so the potential penetration into the soil would be less than the 4.3 inches. Since the dike and containment berms are constructed of this clay native soil and are several feet thick, they are considered to be sufficiently impervious to contain discharged oil.
(3) RAINWATER DRAINAGE	
	• Prior to the release of any such water from the terminal containment areas, the surface of the water is visually inspected to determine if an oil sheen or other indication of oil is present in discernible quantities.
	• All drain valves will remain closed and securely locked except when discharging.
	• The Secondary Containment Drainage Log, FIGURE C-14, is used to record all dike draining events.

	• Inspect accumulated storm water. Verify that water is clear and free of oil sheen. If sheen is observed, proceed to treat water using sorbents and/or diverting to oil/water separator. Do not discharge storm water if contaminated.
	• Should there be any question about the quality of the water present, the Terminal Manager, at his option, will (a) arrange for transport off-site for proper treatment and disposal, (b) allow the water to evaporate (only during warm & dry months), and, if appropriate, take corrective action on the residual petroleum product; or (c) analytically test a representative sample of the water for suspect pollutants to determine if the quality of the water is consistent with the regulatory requirements of the State of Louisiana or other regulatory authorities in effect at the time of release of the water.
(4) BURIED METALLIC STORAGE TANKS	
	• Not Applicable
(5) PARTIALLY BURIED METALLIC STORAGE TANKS	
	• There are no partially buried tanks at this facility.
(6) ABOVEGROUND CONTAINERS	
	• Each aboveground container covered by the SPCC rule is inspected on a regular schedule, and whenever material repairs are made, in accordance with the following industry standards:
	• -American Petroleum Institute (API) Standard 653 for atmospheric storage tanks with a capacity of 50,000 gallons or more. -Steel Tank Institute (STI) Standard SP001 for atmospheric storage tanks with a capacity of less than 50,000 gallons. -API Standard 510 for pressurized storage vessels.
	• An inspection schedule has been established (no later than November 10, 2011) for each above ground storage container identified in the SPCC plan based on the intervals prescribed in the applicable industry standard.

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.8	
(c) BULK STORAGE CONTAINERS	
(6) ABOVEGROUND CONTAINERS	
	• For containers not previously inspected per an above industry standard, an inspection must be performed within 5 years of the SPCC rule revision effective date of November 10, 2011 (per EPA document â€œEPA Guidance for Regional Inspectors, Chapter 7â€). The container inspection schedule is maintained by the Regional Tank Integrity Manager.
	• All tanks and oil-filled electrical equipment are visually inspected monthly to determine their integrity. A monthly terminal inspection is performed to verify the condition of the terminal.
	• The Company has developed a tank inspection program for all storage tanks in accordance with the API 653 Standard, which includes visual and other testing techniques.
(7) INTERNAL HEATING COILS	
	• Not Applicable
(8) FAIL SAFE ENGINEERING	
	• To prevent overfilling of bulk storage tanks, Company personnel will monitor all filling operations using manual gauging techniques and/or level controls monitored by Supervisory Controls And Data Acquisition (SCADA) system.
	• The high and high-high level tank gauges are regularly checked to assure that they are working and, if necessary, properly calibrated, on a monthly frequency
	• All bulk storage tanks, except the diesel fuel tank (which is visually inspected daily), are equipped with radar or mechanical level tank gauges, monitored by SCADA in the Terminal office.
	• The tanks have high and high-high level visual and audible alarms.
(9) FACILITY EFFLUENTS	
	• Prior to the discharge of storm water from the dike field areas, Company personnel visually inspect the effluent.

	Storm water is not discharged if there is a visible sheen.
	• Should there be any question about the quality of the water present, the Terminal Manager, at his option, will (a) arrange for transport off-site for proper treatment and disposal, (b) allow the water to evaporate (only during warm & dry months), and, if appropriate, take corrective action on the residual petroleum product; or (c) analytically test a representative sample of the water for suspect pollutants to determine if the quality of the water is consistent with the regulatory requirements of the State of Louisiana or other regulatory authorities in effect at the time of release of the water.
(10) VISIBLE OIL LEAKS	
	• In the event a visible oil release is identified it will be addressed immediately.
	• All containment dikes are inspected on a monthly basis and prior to actual discharging to prevent the release of oil into navigable waters.
	• Operators will inspect the product transfer areas daily, and promptly correct any operations or facilities that show leakage.
	• Facility equipment including storage tanks shall be inspected daily to verify the integrity of each item.
(11)Â MOBILE/PORTABLE STORAGE CONTAINERS	
	• The drum storage area is a concrete floor and curbed structure adjacent to the maintenance building. The capacity of the curbed area is 755 gallons, which is sufficient for the 55-gallon drums.
(d) FACILITY TRANSFER OPERATIONS, PUMPING, AND FACILITY PROCESSES	
(1) BURIED PIPING INSTALLATIONS	
	• In the event that buried pipe is exposed for maintenance, it will be carefully inspected to identify any corrosion.
	• Corrosion damage noted in a buried pipe inspection will require further assessment for extent of damage and corrective action to stop the damage and repairs to the piping, if required, will be enacted.
	• All underground piping is equipped with a protective coating and included in the impressed current cathodic protection system.
	• Integrity and leak testing of buried piping shall be performed at the time of installation, modification, construction, relocation, or replacement.

FIGURE C-4 - SITE SPECIFIC SPCC PLAN, CONTINUED

40 CFR, 112.8	
(d) FACILITY TRANSFER OPERATIONS, PUMPING, AND FACILITY PROCESSES	
(2) PIPELINE OUT OF SERVICE	
	• Out-of-service piping is labeled as to its origin or shown on secure terminal detail drawings.
	• Any piping considered to be out of service will be disconnected from product transfer equipment and identified as such by the installation of caps and/or blind flanges.
(3) PIPING SUPPORTS	
	• Pipelines are secured on pipe supports to prevent un-necessary movement that might allow the pipe to fall from the support.
	• All piping is configured to allow for expansion, while minimizing abrasion that might cause deterioration of the steel.
	• Pipe supports and associated piping are protected against corrosion by exterior coatings.
	• All pipe supports have been designed and installed using applicable engineering techniques.
(4) ABOVEGROUND VALVES AND PIPELINES	
	• Newly installed, modified, relocated, or replaced underground piping must be integrity and leak tested.
	• Operators will inspect the product transfer areas daily, and correct any operations that show leakage.

	• Oil valves, fittings, and pipes are examined in the course of daily operations for leaks and are periodically monitored during product transfers.
	• Aboveground pipelines, valves, and appurtenances are assessed regularly to verify the general condition of each item.
	• Aboveground valve and pipeline inspections shall involve assessment of the general condition of items, including flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces.
	• Integrity testing will be conducted on buried piping at the time of installation, modification, construction, relocation, or replacement.
	• If a pipeline fails the integrity testing, the Company shall repair or replace the pipe prior to returning the pipeline to service.
(5) VEHICULAR TRAFFIC	
	• Signs have been posted at facilities warning drivers of the presence of aboveground piping.
	• Unloading racks and the driveways that lead to and from the unloading racks have been designed to allow the unobstructed movement of tank trucks through the facility.
	• All drivers are instructed to observe caution where overhead piping may interfere with the movement of tank trucks.
	• The Company has developed procedures for orienting new truck drivers on the use of the unloading area and unloading equipment.

FIGURE C-5 - TANK TABLES

Container/ Source	Failure/Cause	Total Capacity (gal)	Secondary Containment Volume Type (gal)	Tank Type	Year Constructed/ Installed	Quantity Stored (gal)	Direction of Flow/Rate (See Plot Plan)	Product Stored	Inspection Protocol
ABOVEGROUND CONTAINERS - Total: (b) (7)(F),									
25	Overfill / Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]		IFR	1977	(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Crude Oil	API-653
1	Overfill / Rupture / Leakage	[redacted]		EFR	1976	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
2	Overfill / Rupture / Leakage	[redacted]		EFR	1976	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
13	Overfill / Rupture / Leakage	[redacted]		IFR	1977	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
7	Overfill / Rupture / Leakage	[redacted]		IFR	1977	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
413	Overfill / Rupture / Leakage	[redacted]		EFR	1968	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
430	Overfill / Rupture / Leakage	[redacted]		EFR	1968	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
8	Overfill / Rupture / Leakage	[redacted]		IFR	1977	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
28	Overfill / Rupture /	[redacted]		Cone	1978	[redacted]	West Southwest /	Inactive	API-653

	Leakage	(b) (7)(F), (b) (3) [redacted]			(b) (7)(F), (b) (3) [redacted]	Instantaneous		
5	Overfill / Rupture / Leakage	[redacted]	EFR	1977	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
6	Overfill / Rupture / Leakage	[redacted]	EFR	1977	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
463	Overfill / Rupture / Leakage	[redacted]	IFR	1968	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
26	Overfill / Rupture / Leakage	[redacted]	Cone	1978	[redacted]	West Southwest / Instantaneous	Inactive	API-653
27	Overfill / Rupture / Leakage	[redacted]	EFR	1983	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
4	Overfill / Rupture / Leakage	[redacted]	IFR	1977	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653

Containment Type: 1=Earthen Berm and Floor, 2=Concrete Berm and Floor, 3=Earthen Berm and Concrete Floor, 4=Metal Berm and Floor, 5=Portable Containment or Inside Building, 6=Double Walled, 7=Coated Asphalt Materials, 8=Concrete Berm and Earthen, 9=Asphalt, Soil, and Concrete walls and Earthen Floor * Not in Containment Area, ** Curbing and containment system

FIGURE C-5 - TANK TABLES , CONTINUED

Container/ Source	Failure/Cause	Total Capacity (gal)	Secondary Containment Volume Type (gal)	Tank Type	Year Constructed/ Installed	Quantity Stored (gal)	Direction of Flow/Rate (See Plot Plan)	Product Stored	Inspection Protocol
ABOVEGROUND CONTAINERS - Total: (b) (7)(F), [redacted]									
3	Overfill / Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]		IFR	1977	(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Crude Oil	API-653
31D	Overfill / Rupture / Leakage	[redacted]		Double-Walled Horizontal	2001	[redacted]	West Southwest / Instantaneous	Diesel	SP001
9	Overfill / Rupture / Leakage	[redacted]		EFR	2007	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
10	Overfill / Rupture / Leakage	[redacted]		EFR	2007	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
11	Overfill / Rupture / Leakage	[redacted]		EFR	2007	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
12	Overfill / Rupture / Leakage	[redacted]		EFR	2007	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
41	Overfill / Rupture / Leakage	[redacted]		Cone/IFR	2010	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
42	Overfill /	[redacted]		Cone/IFR	2010	[redacted]	West	Crude	API-653

	Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]			(b) (7)(F), (b) (3) [redacted]	Southwest / Instantaneous	Oil	
16	Overfill / Rupture / Leakage	[redacted]	EFR	2011	[redacted]	South Southwest / Instantaneous	Crude Oil	API-653
17	Overfill / Rupture / Leakage	[redacted]	EFR	2011	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
18	Overfill / Rupture / Leakage	[redacted]	EFR	2011	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
14	Overfill / Rupture / Leakage	[redacted]	EFR	2011	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
15	Overfill / Rupture / Leakage	[redacted]	EFR	2011	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
19	Overfill / Rupture / Leakage	[redacted]	EFR	2011	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
20	Overfill / Rupture / Leakage	[redacted]	EFR	2011	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653

Containment Type: 1=Earthen Berm and Floor, 2=Concrete Berm and Floor, 3=Earthen Berm and Concrete Floor, 4=Metal Berm and Floor, 5=Portable Containment or Inside Building, 6=Double Walled, 7=Coated Asphalt Materials, 8=Concrete Berm and Earthen, 9=Asphalt, Soil, and Concrete walls and Earthen Floor * Not in Containment Area, ** Curbing and containment system

FIGURE C-5 - TANK TABLES , CONTINUED

Container/ Source	Failure/Cause	Total Capacity (gal)	Secondary Containment Volume Type (gal)	Tank Type	Year Constructed/ Installed	Quantity Stored (gal)	Direction of Flow/Rate (See Plot Plan)	Product Stored	Inspection Protocol
ABOVEGROUND CONTAINERS - Total: (b) (7)(F),									
22	Overfill / Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]		EFR	2012	(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Crude Oil	API-653
23	Overfill / Rupture / Leakage	[redacted]		EFR	2012	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
24	Overfill / Rupture / Leakage	[redacted]		EFR	2012	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
31	Overfill / Rupture / Leakage	[redacted]		EFR	2012	[redacted]	West Southwest / Instantaneous	Crude Oil	API-653
28D	Overfill / Rupture / Leakage	[redacted]		Double-Walled Horizontal	2011	[redacted]	West Southwest / Instantaneous	#2 Diesel	SP001
New Diesel Tank	Overfill / Rupture / Leakage	[redacted]		Double-Walled Horizontal	2014	[redacted]	West Southwest / Instantaneous	Diesel	SP001

Tank	Overfill / Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]	Double-Walled Horizontal	Unknown	(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Product Overflow Tank	SP001
DRUM STORAGE AREA - Total: (b) [redacted]								
Drum	Leak/Failure	(b) (7)(F), (b) (3) [redacted]	Drums	Unknown	(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Used Oil	None
OIL FILLED ELECTRICAL EQUIPMENT - Total: (b) [redacted]								
T-6A	Overfill / Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]	Pad-Mount	UNK	(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Mineral Oil	None
T-6B	Overfill / Rupture / Leakage	[redacted]	Pad-Mount	UNK	[redacted]	Within diking or to main lift station	Mineral Oil	None
T 9/10	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil	None
T 18	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil	None
T 17-1	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil	None
T 17-2	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil	None
T 19-1	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil	None

Containment Type: 1=Earthen Berm and Floor, 2=Concrete Berm and Floor, 3=Earthen Berm and Concrete Floor, 4=Metal Berm and Floor, 5=Portable Containment or Inside Building, 6=Double Walled, 7=Coated Asphalt Materials, 8=Concrete Berm and Earthen, 9=Asphalt, Soil, and Concrete walls and Earthen Floor * Not in Containment Area, ** Curbing and containment system

FIGURE C-5 - TANK TABLES , CONTINUED

Container/ Source	Failure/Cause	Total Capacity (gal)	Secondary Containment Volume Type (gal)	Tank Type	Year Constructed/ Installed	Quantity Stored (gal)	Direction of Flow/Rate (See Plot Plan)	Product Stored	Inspection Protocol
OIL FILLED ELECTRICAL EQUIPMENT - Total: (b) [redacted]									
T 19-2	Overfill / Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]		Pad-Mount		(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Mineral Oil	None
T 15-C	Overfill / Rupture / Leakage	[redacted]		Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil	None
T 20	Overfill / Rupture / Leakage	[redacted]		Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil	None
T 11	Overfill / Rupture / Leakage	[redacted]		Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil	None

T12	Overfill / Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]	Pad-Mount		(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Mineral Oil	None
T 13	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil	None
T 14	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil	None
T 15-A	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil	None
T 15-B	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil	None
T 11/12	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil	None
Facility Total:	(b) (3), (b) (7)(F) [redacted]							

Containment Type: 1=Earthen Berm and Floor, 2=Concrete Berm and Floor, 3=Earthen Berm and Concrete Floor, 4=Metal Berm and Floor, 5=Portable Containment or Inside Building, 6=Double Walled, 7=Coated Asphalt Materials, 8=Concrete Berm and Earthen, 9=Asphalt, Soil, and Concrete walls and Earthen Floor * Not in Containment Area, ** Curbing and containment system

FIGURE C-6 - ADDENDUM

Certification of this Spill Prevention, Control, and Countermeasure Plan is contingent upon correction of all discrepancies listed in this Addendum. The discrepancies for this facility are:

REGULATION	DISCREPANCY	PLAN OF ACTION	ESTIMATED TIME TO COMPLETE	DATE COMPLETED
40 CFR 112	Containment Dike Areas 2 & 7 currently have insufficient volume to contain the largest tank capacities within those containment areas plus sufficient freeboard.	These areas require minimum additional dike height additions in limited specific areas.	NuStar has scheduled the containment dike enhancements to be performed within the next three weeks.	

FIGURE C-7 - DRAINAGE DIAGRAM

(Click here for Facility Drainage Diagram)

FIGURE C-8 - EVACUATION DIAGRAM

(Click here for Facility Evacuation Diagram)

FIGURE C-9 - PIPING DIAGRAM

(Click here for Facility Piping Diagram)

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Dyke Area 1 "As-Built"/Containment Survey (Tanks 1, 2, & 5-13))

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Area 1 Containment Calc Worksheet)

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Dyke Area 2 "As-Built"/Containment Survey(Tanks 3, 4, & 26))

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Area 2 Containment Calc Worksheet)

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Dyke Area 5 & 6 "As-Built"/Containment Survey (Tanks 413, 430, & 463))

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Area 5 Containment Calc Worksheet)

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Area 6 Containment Calc Worksheet)

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Dyke Area 7 "As-Built"/Containment Survey (Tanks 25 & 27))

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Area 7 Containment Calc Worksheet)

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Dyke Area 8 Containment Survey (Tanks 41 & 42))

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Area 8 Containment Calc Worksheet)

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Dyke Area 9 Containment Calcs (Rail Unload Area))

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Temp Rail loading/unloading area)

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Dyke Area 10 Containment Surveys/Calcs for Dike Area (Tanks 14 -18))

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for Dyke Area 11 Containment Survey/Calcs (Tanks 19-24))

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for 2014 containment survey - calcs for 110% containment)

FIGURE C-10 - CONTAINMENT CALCULATION

(Click here for 2014 containment survey - calcs for 110% containment plus 25 year storm)

FIGURE C-11 - DISCHARGE PREVENTION MEETING LOG

Spill Prevention Briefing

- Company personnel are kept knowledgeable of equipment, safety factors, and operating conditions.
- Annual training sessions are conducted by the Area Supervisor to assure oil handling personnel understand the SPCC Plan for the facility. These documented sessions keep personnel informed of their obligation to prevent pollution incidents and to improve spill control and response techniques.

Note: This form is a sample.

DATE	ATTENDEES

Subject/Issue Identified	Required Action	Implementation Date

FIGURE C-12 - INSPECTION PROCEDURES

INSPECTION PROCEDURE	DATE
A. ROUTINE VISUAL INSPECTION	
• Check tank connections for leaks and localized dead vegetation	
• Inspect drains for accumulation of oil	
• Check tanks for gaps between tank and foundation and damage caused by vegetation roots	
• Check valves and packing for leaks	
• Check drains and sumps for accumulation of oil and proper operation of level controls and pumps	
• Check tank seams for leaks, including drips, puddles, discolored area or localized dead vegetation	
• Check all tank and piping surfaces for signs of external corrosion	
• Check base of tanks for evidence of settling, leaks, including drips, puddles or discolored areas	
• Check piping for bowing between supports, leaks, including drips, puddles,	

discolored area, or localized dead vegetation	
• Check vent system outlets to ensure that they are not obstructed	
• Check secondary containment for discoloration and cracks or holes. Special attention should be given to seams and locations where piping goes through the deck, curbing or dikes. Ensure dike valves are closed and sealed	
• Check secondary containment for permeability, debris, erosion, location/status of pipes, inlets, drainage beneath tanks, and level of precipitation in dike vs. available capacity	
• Check secondary containment for presence of water in diked area. Follow appropriate Company procedures after visual inspection of the water to determine if sheen is present on the water	
• Check all gates to ensure that only the entrances/exits currently in use by authorized personnel are open and unlocked	
B. ANNUAL INSPECTIONS	
• Check facility lighting to ensure all are functioning	
• Check facility fencing for damages that would allow unauthorized entry	
• Inspect sumps for the accumulation of oil	
• Inspect diked/curbed areas for the accumulation of oil	
• Inspect drip pans on lift stations for the accumulation of oil	
• Inspect all tanks for proper operation including gauges, sight glasses, level controls and pressure controls	
• Inspect valves and valve glands for proper operation and ensure complete valve closure (leak proof)	
• Inspect sump for proper operation. Manually gauge sump and pump out if level is high	
• Examine the outside of the tank for signs of corrosion, damaged paint surfaces and signs of leaking	
• Inspect pipelines for signs of leaking or damage	
• Inspect flanges for signs of leaking or damage	
• Inspect joints for signs of leaking or damage	

FIGURE C-12 - INSPECTION PROCEDURES

INSPECTION PROCEDURE	DATE

C. RECORD KEEPING	
• All inspections, except routine, are to be documented on the forms provided in the Appendix and retained at the Facility. Records shall be maintained for a period of five (5) years. The following is a list of documentation forms available in the Appendix:	
• Annual Inspection Record (FIGURE C-13)	

Note: More stringent inspections, as required by Company procedures and documented on other forms, may be used to supplement or replace SPCC inspection records. These documents must be retained for five (5) years.

FIGURE C-13 - ANNUAL INSPECTION RECORD

(Other versions of this form may be used)

YEAR	MONTH	DATE	INITIALS	COMMENTS

FIGURE C-14 - SECONDARY CONTAINMENT DRAINAGE LOG

(Other versions of this form may be used)

DATE	TIME STARTED	TIME ENDED	OPERATOR NAME	SIGNATURE	COMMENTS

SECONDARY CONTAINMENT DRAINAGE PROCEDURES

1. Inspect water inside containment for sheen. Indicate sheen/no sheen in comments.
2. Open valve or start pump.
3. Monitor drainage.
4. Close valve and secure with seal or lock/secure pump.
5. Fill out drainage log and sign.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	5/4/04
List of Discharge Causes:	Packing Malfunction at 20" Valve
Material(s) Discharged:	Crude Oil
Amount of Discharges in Gallons:	1 (gals)
Amount That Reached Navigable Waters (if applicable):	Yes (amount undetermined) ()
Effectiveness and Capacity of Secondary Containment:	Secondary Containment not effective.
Cleanup Actions Taken:	None
Steps Taken to Reduce Possibility of Reoccurrence:	Replaced valve
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	N/A
Enforcement Actions:	USCG Fine
Effectiveness of Monitoring Equipment:	N/A
Spill Detection:	Visual inspection

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	5/13/03
List of Discharge Causes:	Equipment Malfunction (Hydraulic Hose Rupture)
Material(s) Discharged:	Hydraulic Oil

Amount of Discharges in Gallons:	.25 (gals)
Amount That Reached Navigable Waters (if applicable):	Yes (amount undetermined) ()
Effectiveness and Capacity of Secondary Containment:	N/A
Cleanup Actions Taken:	None
Steps Taken to Reduce Possibility of Reoccurrence:	Replaced Hose
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	N/A
Enforcement Actions:	None
Effectiveness of Monitoring Equipment:	N/A
Spill Detection:	Visual Inspection

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	5/30/02
List of Discharge Causes:	Equipment Malfunction (S-10 Valve on 40" line)
Material(s) Discharged:	Crude Oil
Amount of Discharges in Gallons:	84 (gals)
Amount That Reached Navigable Waters (if applicable):	0 (gals)
Effectiveness and Capacity of Secondary Containment:	N/A
Cleanup Actions Taken:	Remove Contaminated Soil
Steps Taken to Reduce Possibility of Reoccurrence:	Valve repair
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	N/A
Enforcement Actions:	None
Effectiveness of Monitoring Equipment:	N/A
Spill Detection:	Visual Inspection

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface

of the water or upon adjoining shorelines.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	1/22/02
List of Discharge Causes:	Internal Corrosion (30" Meter Prover)
Material(s) Discharged:	Crude Oil
Amount of Discharges in Gallons:	210 (gals)
Amount That Reached Navigable Waters (if applicable):	0 (gals)
Effectiveness and Capacity of Secondary Containment:	N/A
Cleanup Actions Taken:	Remove Contaminated Soil
Steps Taken to Reduce Possibility of Reoccurrence:	Replaced fitting
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	N/A
Enforcement Actions:	None
Effectiveness of Monitoring Equipment:	N/A
Spill Detection:	Visual Inspection

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	2/23/01
List of Discharge Causes:	Relief Valve Malfunction (Meter Skid)
Material(s) Discharged:	Crude Oil
Amount of Discharges in Gallons:	63 (gals)
Amount That Reached Navigable Waters (if applicable):	0 (gals)
Effectiveness and Capacity of Secondary Containment:	N/A
Cleanup Actions Taken:	Remove Contaminated Soil
Steps Taken to Reduce Possibility of Reoccurrence:	Replaced Valve
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	N/A

Enforcement Actions:	None
Effectiveness of Monitoring Equipment:	N/A
Spill Detection:	Visual Inspection

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	10/17/2007
List of Discharge Causes:	Water coming off of a work barge
Material(s) Discharged:	Oil
Amount of Discharges in Gallons:	<1 (gals)
Amount That Reached Navigable Waters (if applicable):	<1 (gals)
Effectiveness and Capacity of Secondary Containment:	NA
Cleanup Actions Taken:	Cleaned up with booms
Steps Taken to Reduce Possibility of Reoccurrence:	N/A
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	NA ()
Enforcement Actions:	Release reported to NRC/USCG
Effectiveness of Monitoring Equipment:	N/A
Spill Detection:	Visual-sheen noticed on water

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	01/21/2008
List of Discharge Causes:	Mechanical failure
Material(s) Discharged:	Crude oil
Amount of Discharges in Gallons:	210 (gals)
Amount That Reached Navigable Waters (if applicable):	0 (gals)

Effectiveness and Capacity of Secondary Containment:	NA
Cleanup Actions Taken:	Remove impacted soil and remediate area
Steps Taken to Reduce Possibility of Reoccurrence:	Repair line, continue inspections
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	NA ()
Enforcement Actions:	NA
Effectiveness of Monitoring Equipment:	Effective
Spill Detection:	Visual inspection of pipeline area

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	05/04/2009
List of Discharge Causes:	Mechanical failure - reportable to State only
Material(s) Discharged:	Crude oil
Amount of Discharges in Gallons:	>42 (gals)
Amount That Reached Navigable Waters (if applicable):	o (gals)
Effectiveness and Capacity of Secondary Containment:	NA
Cleanup Actions Taken:	Oil contained with berms and boom. Area cleaned up.
Steps Taken to Reduce Possibility of Reoccurrence:	Repair line
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	NA ()
Enforcement Actions:	NA
Effectiveness of Monitoring Equipment:	Effective
Spill Detection:	Maintenance technician smelled crude oil in the area

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	08/19/2010
List of Discharge Causes:	Mechanical failure
Material(s) Discharged:	Crude oil
Amount of Discharges in Gallons:	Unknown ()
Amount That Reached Navigable Waters (if applicable):	0 (gals)
Effectiveness and Capacity of Secondary Containment:	NA
Cleanup Actions Taken:	Area cleaned up. Pipeline repaired
Steps Taken to Reduce Possibility of Reoccurrence:	Line repaired
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	NA ()
Enforcement Actions:	NA
Effectiveness of Monitoring Equipment:	Effective
Spill Detection:	Visual

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	01/27/2011
List of Discharge Causes:	Spill
Material(s) Discharged:	Diesel cutter stock
Amount of Discharges in Gallons:	30 (gals)
Amount That Reached Navigable Waters (if applicable):	0 (gals)
Effectiveness and Capacity of Secondary Containment:	NA
Cleanup Actions Taken:	Area cleaned up
Steps Taken to Reduce Possibility of Reoccurrence:	Closer inspections of vacuum hoses
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	Unknown ()
Enforcement Actions:	NA
Effectiveness of Monitoring Equipment:	Effective
Spill Detection:	Visual

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	08/27/2011
List of Discharge Causes:	Mechanical failure - reportable to State only
Material(s) Discharged:	Crude oil
Amount of Discharges in Gallons:	3,360 (gals)
Amount That Reached Navigable Waters (if applicable):	0 (gals)
Effectiveness and Capacity of Secondary Containment:	Effective, capacity unknown
Cleanup Actions Taken:	Spill contained within containment
Steps Taken to Reduce Possibility of Reoccurrence:	NA
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	N/A
Enforcement Actions:	Unknown
Effectiveness of Monitoring Equipment:	N/A
Spill Detection:	Visual

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	5/3/2014
List of Discharge Causes:	Equipment Failure at Tank #2 - Reportable to State only
Material(s) Discharged:	Crude Oil
Amount of Discharges in Gallons:	33600 (gals)
Amount That Reached Navigable Waters (if applicable):	0 ()
Effectiveness and Capacity of Secondary Containment:	no breach of secondary containment
Cleanup Actions Taken:	Vac truck and soil exacavation
Steps Taken to Reduce Possibility of Reoccurrence:	Survey exisiting piping at the facility to determine if similar underground coupling installations exisit.

Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	11,314,227 (gals)
Enforcement Actions:	None
Effectiveness of Monitoring Equipment:	Monitoring Stormwater discharge. Plan to conduct pre-confirmation soil sampling in July 2014.
Spill Detection:	Visual

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-15 - REPORTABLE SPILL HISTORY*

Date of Discharge(s):	2/2/2012
List of Discharge Causes:	â€¢Operator error - PIC was trained by NuStar and SGS on PIC certification including arm draining procedures. He acknowledged the training and correct procedure of drain up in investigation. â€¢Sump high level control did not alarm in control room â€“ investigation suspects alarm tag was inadvertently dropped when upgraded HMI software ~6mths ago. Inadequate alarm checkout didnâ€™t verify the drop alarm.
Material(s) Discharged:	Crude Oil
Amount of Discharges in Gallons:	.25 (gals)
Amount That Reached Navigable Waters (if applicable):	.25 (gals)
Effectiveness and Capacity of Secondary Containment:	Containment overfill
Cleanup Actions Taken:	Sheen on water adsorbed
Steps Taken to Reduce Possibility of Reoccurrence:	â€¢Ceased all contract dock PICâ€™s until a formal vetting and validation program is implemented. â€¢All logic and critical tags were checked and verified on all docks and corrects made. â€¢PM06 implemented to include sump level control verification and calibrations. We have PM06 on all other critical alarms and statuses for all other critical alarms, these inadvertently left out. â€¢Stand down being conducted with all operation personnel â€¢Incident bulletin will be produced for sharing lessonâ€™s learned
Total Oil Storage Capacity of Tank(s) or Impoundment(s) From Which Material Discharged:	N/A
Enforcement Actions:	USCG warning letter
Effectiveness of Monitoring Equipment:	â€¢ Sump high level control did not alarm in control room â€“ investigation suspects alarm tag was inadvertently dropped when upgraded HMI software ~6mths ago. Inadequate alarm checkout didnâ€™t verify the drop alarm.

Spill Detection:	Visual

*Reportable spill, as defined in 40 CFR Part 110, is a discharge of oil that violates applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

FIGURE C-16 - CONTAINMENT AND DRAINAGE PLANNING

FACTORS
Available Volume of Containment
Refer to FIGURE C-5
Route(s) of Drainage
Refer to FIGURE C-7
Construction Materials Used in Drainage Troughs
Steel pipe
Type and Number of Valves Separators
6â€ to 12â€ drainage valves located at the stormwater outfalls
Sump Pump Capacities
No sump pumps
Containment Capacity of Weirs and Booms
None
Other Clean Up Materials
Refer to SECTION 7.1.1

APPENDIX D Last Revised: August 2014

HAZARD EVALUATION AND RISK ANALYSIS

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D.1 Facility Hazard Evaluation

D.2 Vulnerability Analysis

D.2.1 Analysis of the Potential for a Spill

D.3 **Inspection and Spill Detection**

Figure D.3-1 - Response Equipment Inspection

D.4 Planning Distance Calculations

Figure D.4-1 - Planning Distance Calculations

D.5 Discharge Scenarios

D.5.1 Small and Medium Discharge Scenarios

D.5.2 Worst Case Discharge (WCD) Scenario Discussion

D.5.3 Description of Factors Affecting Response Efforts

D.6 Planning Volume Calculations

D.7 Spill Volume Calculations

D.7.1 USCG Portion of Facility

D.7.2 EPA Portion of the Facility (non-transportation related)

Figure D.7-1 - Worst Case Discharge (WCD) Calculations (in bbls)

D.7.3 DOT/PHMSA Portion of Pipeline/Facility

D.8 Product Characteristics and Hazards

Figure D.8-1 - Summary of Commodity Characteristics

D.1 FACILITY HAZARD EVALUATION

A list of potential spill sources is identified in **FIGURE C-5**. This figure describes type and volumes of secondary containment areas along with tank manufacturer dates. All liquid storage tanks are visually inspected on a monthly basis. A description of facility operations is included in **FIGURE 1-2**.

D.2 VULNERABILITY ANALYSIS

A vulnerability analysis was performed to address the potential effects of an oil spill within the planning distance of this facility. Refer to **SECTION 6.7** for a detailed list of vulnerabilities. The following features may be impacted by a spill:

Water Intakes	Schools	Medical Facilities	Residential Areas	Businesses	Wetlands or other Sensitive Environments	Fish and Wildlife	Lakes and Streams	Endangered Flora and Fauna	Recreational Areas	Transportation Routes (air, land, water)	Utilities	Other Applicable Areas
x	x		x	x	x	x	x	x	x	x		x

D.2.1 Analysis of the Potential for a Spill

The probability of a spill occurring at this facility is minimal for the following reasons:

- Tanks are constructed in accordance with applicable engineering standards.
- Tank age is reviewed as a potential factor (refer to **FIGURE C-5**).
- Truck loading facilities are equipped with concrete pads with a spill collection drain system which returns spills to the recovery system (if applicable).
- All trucks are monitored during tank unloading procedures (if applicable).
- Non-SCADA product transfers are monitored and only conducted when facilities are manned.
- SCADA product transfers are monitored via pipeline Control Center SCADA (if applicable).
- Facilities are inspected frequently for evidence of corrosion and leaks according to applicable API standards.
- Personnel are trained in procedures to prevent pollution.
- The horizontal range of a spill is dependent upon the topography and distance to the nearest water body described in more detail in **FIGURE D.4-1**.
- Natural disasters are not likely at these facilities; however, these facilities may experience flooding, tornadoes or a lightning strike.
- Company personnel prepare for natural disasters by monitoring weather reports and warnings and taking appropriate safety precautions.
- The potential for a natural disaster is acknowledged, as appropriate, during drills and exercises.

D.3 INSPECTION AND SPILL DETECTION

Note: This table contains database content, therefore references within this table are not active hyperlinks.

D.3 Inspection and Spill Detection
Inspection
In accordance with 40 CFR 112.7 (e)(8), each Facility includes written procedures and records of inspection. The inspection shall include tanks, secondary containment, and response equipment at the Facility. Â Facility self-inspection requires two steps: • Checklist of items to inspect. • Method of recording the actual inspection and its findings; records must be maintained for five years. Facility-specific procedures for transfer and secondary containment inspections are provided in **APPENDIX C**. Response equipment inspection information is provided in **SECTION 7.1.2**. **FIGURE D.3-1** may be used to record equipment inspection information.
Detection
(b) (3), (b) (7)(F) [redacted]
Operating procedures for the automated system

Note: This table contains database content, therefore references within this table are not active hyperlinks.

D.3 Inspection and Spill Detection, Continued
Operating procedures for the automated system

(b) (7)(F), (b) (3)

[redacted]

(b) (7)(F), (b) (3)

[redacted]

Visual detection by Company personnel

Note: This table contains database content, therefore references within this table are not active hyperlinks.

D.3 Inspection and Spill Detection, Continued
Visual detection by Company personnel
Aerial patrol flights will be made on a regular basis for pipelines subject to 49 CFR 194 and 195.Â The intent of the patrol is to observe the area directly over the pipeline right-of-way for leaks, exposed pipes, washes, missing markers and other unusual conditions.Â Construction on either side of the pipeline right-of-way is also monitored. Discharges to the land or surface waters may also be detected by Company personnel during regular operations and inspections. If a leak is detected, the appropriate actions are taken, including, but not limited to: • Notifications as per **SECTION 3**. • A preliminary assessment of the incident area. • If appropriate, initiate initial response actions per **SECTION 2**. **FIGURE 2.1-1** provides a checklist for initial response actions.
Visual detection by the public
Right-of-way marker signs are installed and maintained at road crossing and other noticeable points and provide an Operations Control 24-hour number for reporting emergency situations. Also, Facility signs are installed and maintained on perimeter fencing. The Company also participates in the â€œcall before you digâ€ or â€œOne Callâ€ utility notification services which can be contacted to report a leak and determine the owner/operator of the pipeline.Â If the notification is made to a local office or pump station, the Company representative receiving the call generally will implement the following actions: • Notify the Operations Control Center and regional/designated office (as applicable). • Dispatch Company field personnel to the site to confirm discharge and conduct preliminary assessment. • Notify their immediate area supervisor and provide assessment results.

FIGURE D.3-1 - RESPONSE EQUIPMENT INSPECTION

(Other versions of this form may be used.)

ITEM	QUANTITY	LOCATION	TIME TO ACCESS/RESPOND	CONDITION	DATE USED/TESTED	SHELF LIFE	INSPECTION DATE

Inspector's Signature

D.4 PLANNING DISTANCE CALCULATIONS

To evaluate the potential risk to sensitive resources in the area, should a spill occur, a planning distance was calculated based on the following characteristics of this Facility and vicinity according to 40 CFR 112, Attachment C-III. Factors utilized include distance to the nearest body of moving water/storm sewer/drainage ditch or swale, geology, and topography of the area.

FIGURE D.4-1 provides the planning distance calculation worksheets for this Facility.

FIGURE D.4-1 - PLANNING DISTANCE CALCULATIONS

Intermediate Calculations

∝ = elevation (in feet) = [stream elevation @ facility] - [stream elevation @ receptor (or 20 mile point)]

ß = horizontal distance from facility to receptor (or 20 mile point) in miles

s = average steam slope = ∝/ ß / 5280

r = hydraulic radius (in feet) = average mid channel depth x 0.667

n = Manning's roughness coefficient from Table B

To calculate stream velocity (in ft./sec.), use: $v = 1.5/n \times r^{2/3} \times s^{1/2}$

Calculation of **PLANNING DISTANCE**

d = calculated planning distance (miles)

v = Chezy-Manning based stream velocity (ft./Sec.)

t = spill response time interval (from Table A)

c = 0.68 (sec-mile/hr-ft conversion factor)

d = v x t x c = planning distance equation

Table A	
Substantial Harm Planning Time (hours) Port Areas as Identified in 40 CFR § 112	
Boston, MA	15
New York, NY	15
Delaware Bay and River to Philadelphia	15
St. Croix, VI	15
Pascagoula, MS	15
Mississippi River from Southwest Pass, LA to Baton Rouge, LA	15
Louisiana Offshore Oil Port (LOOP)	15

Table B	
Manning's Roughness Coefficient for Various Natural Stream Types (n)	
Minor Streams (Top width < 100 ft.)	
Clean:	
Straight	.03
Winding	.04
Sluggish (woody, deep pools):	
No trees/brush	.06
Trees and/or brush	.10
Major Streams (Top width > 100 ft.)	
Regular section:	
No boulders/brush	.036
Irregular section:	

Lake Charles, LA	15
Sabine-Natchez River, TX	16
Galveston Bay and Houston Ship Channel	16
Corpus Christi, TX	16
Los Angeles/Long Beach Harbor, CA	16
San Francisco Bay, San Pablo Bay, Carquinez Strait, and Suisun Bay to Antioch, CA	16
Straits of Juan de Fuca from Port Angeles, WA to and including Puget Sound	16
Prince William Sound, AK	16
Others are specified by RA for EPA Region	16
Allow other lakes, rivers canals inland and near shore areas	27

Brush	.06

FIGURE D.4-1 - PLANNING DISTANCE CALCULATIONS, CONTINUED

Site Investigation

The following information is utilized to calculate the planning distance for each facility.

From USGS Quad/Topo Sheets

- Delineate watershed and downgradient receptor streams for runoff/release.
- Determine whether navigable water is within 0.5 miles of the facility (or would be in worst case discharge scenario).

From Facility

- Identify alternate drainage pathways to navigable waters; namely storm drainage system/piping.
- Establish list of soil or other factors effecting transport of oil over land.

From maps, local/state authorities or investigation

- Identify fish/wildlife sensitivities and habitats in downgradient areas along with public drinking water intake locations.
- Determine stream pool elevations at facility and at receptor points or at 20 miles downstream (maximum) for more distant receptors.

- Characterize stream properties for accurate determination of roughness coefficient (n) and average mid-channel depth or hydraulic radius (r).

The total planning distance equals d.

	St. James Terminal - 1. Terminal Property / Farm Land
First receptor	N/A
First receptor location (miles)	N/A
∝ (feet)	N/A
ß (miles)	N/A
s (feet/mile)	N/A
Avg. mid-channel depth (feet)	N/A
r (feet)	N/A
n	N/A
v (feet/second)	2.5
t (hours)	1.467
c (seconds per mile/hours per foot)	0.68
d (total planning distance)	2.5 miles

St. James Terminal D - 11

FIGURE D.4-1 - PLANNING DISTANCE CALCULATIONS, CONTINUED

The total planning distance equals d.

	St. James Terminal - 2. St. James Canal
First receptor	N/A
First receptor location (miles)	N/A
∝ (feet)	N/A
ß (miles)	N/A
s (feet/mile)	N/A
Avg. mid-channel depth (feet)	N/A
r (feet)	N/A
n	N/A
v (feet/second)	0.27
t (hours)	25.5
c (seconds per mile/hours per foot)	0.68
d (total planning distance)	4.6 miles

St. James Terminal D - 12

FIGURE D.4-1 - PLANNING DISTANCE CALCULATIONS, CONTINUED

The total planning distance equals d.

	St. James Terminal - Mississippi River
First receptor	N/A
First receptor location (miles)	N/A
∝ (feet)	N/A
ß (miles)	N/A
s (feet/mile)	N/A
Avg. mid-channel depth (feet)	N/A
r (feet)	N/A
n	N/A
v (feet/second)	3.54
t (hours)	15
c (seconds per mile/hours per foot)	0.68
d (total planning distance)	36.12 miles

FIGURE D.4-1 - PLANNING DISTANCE CALCULATIONS, CONTINUED

If Tidally Influenced

Planning distance calculations are based on the following factors and guidelines in accordance with 40 CFR Part 112 Attachment C-III, 4.2:

- The horizontal range of a potential oil spill is influenced by the wind direction and tidal stage; however, it is expected to spread quickly.
- Tidally influenced waters.
- Persistent and non-persistent product.
- Resulting planning distance is 15 miles persistent oils or 5 miles for non-persistent oils from each Facility down current during ebb tide and to the point of maximum tidal influence or 15 miles persistent oils or 5 miles for non-persistent oils, whichever is less, during flood tide.

D.5 DISCHARGE SCENARIOS

The equipment and personnel to respond to a spill are available from several sources and are provided with the equipment and contractors in **SECTION 7.1.1** and **APPENDIX B.1.1**. The following sections are discussions of these scenarios.

D.5.1 Small and Medium Discharge Scenarios

- The purpose of this section is to identify the sources and sizes of small and medium discharges as defined by OPA 90 regulations.
- Potential spill scenarios may include tank overflow, valve failure, tank failure, pipe failure, hose failure, or pump seal failure; these spills would likely be in contained areas and would be unlikely to travel off-site.
- The Company would respond to these types of incidents in the same manner as a worst case discharge, but at a level appropriate to the incident size; differences in response are described in the worst case scenario discussion described in this Appendix. The Company's response in such an event would in no way obviate the liability of any other responsible parties.
- Resources are identified in **FIGURE 3.1-6**, **SECTION 7.1.1**, and **APPENDIX B.1.1**.
- All resources shall be capable of arriving at the Facility within the applicable response tier requirements (Tier 1 = 12 hours; Tier 2 = 36 hours; Tier 3 = 60 hours).

The following table lists various facility operations and corresponding components which might be the source of a small, medium, and worst case discharge:

FACILITY OPERATIONS AND COMPONENTS	SMALL DISCHARGE (up to 2,100 gallons)	MEDIUM DISCHARGE (2,100 to 36,000 gallons)	WORST CASE DISCHARGE (volume largest tank)
Oil transfer operations	Hose failure	Hose failure	Not applicable
Facility maintenance operations	Leak from periodic maintenance, line not completely drained when opened	Seal failure Overfill	Not applicable
Facility piping	Flange, gasket, threaded connection	Seal failure Overfill	Not applicable
Pumps and sumps	Seal failure Overfill	Seal failure Overfill	Not applicable
Oil storage tanks	Overfill	Overfill	Catastrophic failure of largest tank
Vehicle refueling	Not applicable	Not applicable	Not applicable
Age and condition of facility and components	Flange, gasket, threaded connector	Pipeline failure Seal failure	Catastrophic failure of largest tank

D.5.1 Small and Medium Discharge Scenarios, Continued

The following table describes the Facility-specific small discharge scenario.

SMALL DISCHARGE SCENARIO
A small discharge (less than 2,100 gallons) at this site could result from truck unloading, minor piping leaks at flanges, pump seals, mixer seals, valve bonnets, and vessel loading and

unloading, tank overfill or equipment failure.
SMALL DISCHARGE RESPONSE RESOURCE
Discharges at the truck unloading rack would be controlled by the earthen spill containment system surrounding the rack. Spilled oil and stained soil would be picked up with sorbent or earth moving equipment and placed in drums or covered roll-off boxes for subsequent disposal. Free liquid would be collected with a vacuum truck and discharged into the terminal tanks. Small discharges from the piping system, pump seals, mixer seals, and valve bonnets would be directly removed with sorbent or earth moving equipment and placed in drums for subsequent disposal. Small discharges to the Mississippi River from vessel loading and unloading would be controlled by the deployment of containment boom. Oil recovery would be accomplished with vacuum trucks and sorbent. Should a small discharge occur inside the dike area from a tank overfill, leak, or equipment failure, the oil spill response contractor would be called to collect the accumulated product with vacuum truck(s). Sorbents would be used to pick up the remaining residues. Depending on how much vertical penetration is experienced, some contaminated soil would also be removed by drumming.The Spill Responder would provide the 1000 feet of containment boom within 1 hour. The Spill Responder will also provide 2,100-gallon/day recovery capacity and 4,200 gallon/day storage volume within 2 hours.

Note: Equipment and manpower resources are detailed in **FIGURE 3.1-6**, **SECTION 7.1.1**, and **APPENDIX B.1.1**.

D.5.1 Small and Medium Discharge Scenarios, Continued

The following table describes the Facility-specific medium discharge scenario.

MEDIUM DISCHARGE SCENERIO
A medium discharge (up to 36,000 gallons) could result from the failure of an entire tank truck, from a tank overfill, or mixer failure inside the dike area, or from a pipeline failure in the storage area. A maximum most probable discharge (up to 42,420 gallons) could result from a dock transfer line rupture or tear away of a dock loading arm while offloading a vessel at Dock 2. NVIC 7-92 defines this volume as 1200 bbl or 10% of the worst case discharge, whichever is less.
MEDIUM DISCHARGE RESPONSE RESOURCE
A tank truck spill would be handled in the same way as a small discharge. Similarly, a tank overfill or mixer failure would rely on the oil spill response contractor for the vacuum trucks and earth moving and excavating equipment necessary to remove the spilled product. The secondary containment system would prevent off-site movement of the spill. The majority of the recovered spill would be collected with vacuum trucks. Recovered product may be returned to storage. In the event the oil became too contaminated for reuse, it would be taken off site for treatment and blending with other crude oils. The oil spill response contractor

would provide the appropriate number of emergency response personnel for this response.

In the event of a transfer line or loading arm failure, the terminal would rely on the oil spill response contractor for the oil recovery devices, containment boom and storage capacity. The ORSO will be contacted to provide recovery equipment capable of recovering 18,000 gallons/day and have it on scene within 12 hours. The ORSO will also provide sufficient boom for oil collection, containment, and protection of sensitive areas within 12 hours. The OSRO will also be contacted to provide temporary storage capacity of at least 36,000 gallons using tank trucks and other equipment.

Note: Equipment and manpower resources are detailed in **FIGURE 3.1-6**, **SECTION 7.1.1**, and **APPENDIX B.1.1**.

D.5.2 Worst Case Discharge (WCD) Scenario Discussion

APPENDIX D.7 provides worst case discharge calculations. Discussion of this scenario is as follows:

Upon discovery of a spill, the following procedures would be followed:

1. The First Responder would notify Supervisory Personnel and notifications would be initiated in accordance with **FIGURE 2.1-1**.

2. The Facility Manager would assume the role of Incident Commander until relieved and would initiate response actions and notifications in accordance with **SECTION 2**. If this were a small spill, the local/company personnel may handle all aspects of the response. Among those actions would be to:

    - Conduct safety assessment in accordance with **FIGURE 2.1-1** and evacuate personnel as needed in accordance with **SECTION 2.2**.

    - Direct Facility responders to shut down ignition sources.

    - Direct responders to position resources in accordance with **SECTION 6.10**.

    - Complete spill report form in accordance with **FIGURE 3.1-2**.

    - Ensure regulatory agencies are notified (**FIGURE 3.1-6**).

3. If this were a small or medium spill, the Qualified Individual/Incident Commander may elect for the First Responder to remain the Incident Commander or to activate selected portions of the Emergency Management Team. However, for a large spill, the Qualified Individual would assume the role of Incident Commander and would activate the entire Emergency Management Team in accordance with activation procedures described in **SECTION 4.2**.

4. The Incident Commander would then initiate spill assessment procedures including surveillance operations, trajectory calculations, and spill volume estimating in accordance with **SECTION 2.1.3**. The QI would implement the terminalâ€™s safety and health plan developed under 29 CFR 1910.120 and designed to identify, evaluate, and control safety and health hazards during emergency response operations.

5. The Incident Commander would then utilize checklists in **SECTION 4.6** as a reminder of ICS position responsibilities. The primary focus would be to establish incident priorities and objectives and to brief staff accordingly.

6. The Emergency Management Team would develop the following plans, as appropriate (some of these plans may not be required during a small or medium spill):

   - Site Safety and Health (**SECTION 5.4**)
   - Site Security (**SECTION 5.7**)
   - Incident Action (**SECTION 5.2.6**)
   - Decontamination (**SECTION 5.5**)
   - Disposal (**SECTION 5.6**)
   - Demobilization (**SECTION 5.8**)

7. The response would continue until an appropriate level of cleanup is obtained.

D.5.2 Worst Case Discharge (WCD) Scenario Discussion, Continued

The following table describes the Facility-specific worst case discharge scenario.

WORST CASE Discharge Scenario
(b) (7)(F), (b) (3) [redacted]

Note: Equipment and manpower resources are detailed in **FIGURE 3.1-6**, **SECTION 7.1.1**, and **APPENDIX B.1.1**.

D.5.2 Worst Case Discharge (WCD) Scenario Discussion, Continued

The following table describes the Facility-specific worst case discharge response resource.

WORST CASE Discharge RESPONSE RESOURCE
(b) (7)(F), (b) (3) [redacted]

Note: Equipment and manpower resources are detailed in **FIGURE 3.1-6**, **SECTION 7.1.1**, and **APPENDIX B.1.1**.

D.5.2 Worst Case Discharge (WCD) Scenario Discussion, Continued

WORST CASE Discharge RESPONSE RESOURCE, CONTINUED
(b) (7)(F), (b) (3) [redacted]

D.5.3 Description of Factors Affecting Response Efforts

There are many factors which may affect the ability to respond to an incident. These factors are described in the following table:

FACTORS	CONSIDERATIONS AFFECTING RESPONSE EFFORTS
Size of spill	• Location of spill in relation to identified sensitivities and/or sensitive areas. • Spread and spill movement.
Proximity to down gradient water intakes	• Refer to **SECTION 6.9** for maps showing proximity to down gradient water intakes.
Proximity to fish and wildlife and sensitive environments	• A release could impact fish, wildlife and sensitive environments as described in **SECTION 6.5** and **SECTION 6.6**.
Likelihood that discharge will travel offsite	• A small spill is unlikely to travel off-site. • A medium spill has the potential to travel off-site via adjacent waterways. • A worst case discharge has the greatest potential to travel off-site if secondary containment is breached.
Location of material spilled	• See facility information and drainage located in

	FIGURE 1-2 and **FIGURE C-7**. Facility tankage, piping, and transfer areas are displayed on drawings provided in **FIGURE C-7** and **FIGURE C-9**.
Material discharged	• Typically Diesel Fuel, Crude Oil • Product is considered non-persistent but not volatile.
Weather or aquatic conditions	• The areas have the potential to be affected by tornadoes, flooding, hurricanes, and lightning strikes.
Available remediation equipment	• The Company may have response equipment available. Refer to **SECTION 7.1.1** for applicability. • Resources are available through oil spill response contractors in quantities sufficient to meet applicable planning standards.
Probability of a chain reaction or failures	• Potential for a chain reaction or failure is remotely possible but not anticipated; secondary containment, response contractors and trained personnel minimize the potential of such events.
Direction of spill pathway	• Refer to sensitivity maps in the **SECTION 6.11** • Wind direction and speed combined with currents, will determine spill trajectory.

D.6 PLANNING VOLUME CALCULATIONS

Once the worst case discharge volume has been calculated, response resources must be identified to meet the requirements of 40 CFR 112.20(h). Calculations to determine sufficient amount of response equipment necessary to respond to a worst case discharge is described below. A demonstration of the planning volume calculations is provided below.

D.7 SPILL VOLUME CALCULATIONS

D.7.1 USCG Portion of Facility

The Worst Case Discharge was formulated assuming a release from the Marine Transportation Related portion of the Facility, as directed by 33 CFR 154.1029.

The Worst Case Discharge is based on a catastrophic failure of all piping carrying oil between the marine transfer manifold(s) and the non-transportation related portion(s) of the Facility. For the St. James Terminal, this volume is calculated as noted below. Actual Worst Case Discharge volumes for all facilities are provided in **FIGURE D.7-1**. Oil spill response equipment available to respond to this spill is included in **SECTION 7.1.1**, and **APPENDIX B.1.1**.

(b) (7)(F), (b) (3)

[redacted]

- **Average Most Probable Discharge**

(b) (7)(F), (b) (3)

[redacted]

D.7.2 EPA Portion of the Facility (non-transportation related)

The WCD for the EPA portion of the facility, as defined in 40 CFR 112, Appendix D, Part A, is calculated as:

- For multiple tank facilities with adequate secondary containment, the WCD is calculated as the capacity of the largest single aboveground oil storage tank within an adequate secondary containment area or the combined capacity of a group of aboveground oil storage tanks permanently manifolded together, whichever is greater.

TYPE	DESCRIPTION	PRODUCT	WCD VOLUME (BBLs)
Largest single above ground tank	(b) (3), (b) (7)(F) [redacted]	Crude Oil Â	(b) (7)(F), (b) (3) [redacted]

Because the discharge for the EPA portion of the facility is greater than the USCG definition for a worst case discharge, response resources are planned for the greater of the two volumes.

FIGURE D.7-1 - WORST CASE DISCHARGE (WCD) CALCULATIONS (IN BBLS)

USCG			EPA
WCD	Avg. Most Probable	Max. Most Probable	
(b) (7)(F), (b) (3) [redacted]			

EPA PLANNING VOLUME DATA

STEP	PARAMETER	St. James Terminal
(A)	WCD (bbls)	(b) (7)(F), (b) (3) [redacted]

(B)	Oil group	3
(C)	*Geographic area	Nearshore/Inland
(D1)	Percent lost to natural dissipation	30
(D2)	Percent recovered floating oil	50
(D3)	Percent oil onshore	50
(E1)	On water recovery (bbls)	(b) (3), (b) (7)(F)
(E2)	Shoreline recovery (bbls)	
(F)	Emulsification Factor	2
(G)	On water recovery resource mobilization factor	
(G1)	Tier I	15%
(G2)	Tier II	25%
(G3)	Tier III	40%
Part II	On water recovery capacity (bbls/day)	
	Tier I	(b) (3), (b) (7)(F)
	Tier II	
	Tier III	
Part III	Shoreline cleanup volume (bbls/day)	
Part IV	On water response capacity by operating area (bbls/day)	
(J1)	Tier I	12,500
(J2)	Tier II	25,000
(J3)	Tier III	50,000
Part V	On water amount needed to be identified, but not contracted for in advance	
	Tier I	(b) (3), (b) (7)(F)
	Tier II	
	Tier III	

* R = Rivers and canals
N = Nearshore/Inland

St. James Terminal D - 25

EPA PLANNING VOLUME DATA

STEP	PARAMETER	St. James Terminal
(A)	WCD (bbls)	(b) (7)(F), (b) (3)
(B)	Oil group	

(C)	*Geographic area	Rivers and Canals
(D1)	Percent lost to natural dissipation	20
(D2)	Percent recovered floating oil	15
(D3)	Percent oil onshore	65
(E1)	On water recovery (bbls)	(b) (3), (b) (7)(F) [redacted]
(E2)	Shoreline recovery (bbls)	
(F)	Emulsification Factor	2.0
(G)	On water recovery resource mobilization factor	
(G1)	Tier I	30%
(G2)	Tier II	40%
(G3)	Tier III	60%
Part II	On water recovery capacity (bbls/day)	
	Tier I	(b) (3), (b) (7)(F) [redacted]
	Tier II	
	Tier III	
Part III	Shoreline cleanup volume (bbls/day)	
Part IV	On water response capacity by operating area (bbls/day)	
(J1)	Tier I	12,500
(J2)	Tier II	25,000
(J3)	Tier III	50,000
Part V	On water amount needed to be identified, but not contracted for in advance	
	Tier I	(b) (3), (b) (7)(F) [redacted]
	Tier II	
	Tier III	

* R = Rivers and canals
N = Nearshore/Inland

D.7.3 DOT/PHMSA Portion of Pipeline/Facility

The worst case discharge (WCD) for the DOT portion of the pipeline and/or facility, as defined in 49 CFR 194.105(b), as the largest volume of the following:

1. The pipeline's maximum shut-down response time in hours (based on historic discharge data or in the absence of such data, the operators best estimate), multiplied by the maximum flow rate expressed in barrels per hour (based on the maximum daily capacity of the pipeline), plus the largest drainage volume after shutdown of the line section(s) in the response zone expressed in barrels; or

2. The largest foreseeable discharge for the line section(s) within a response zone, expressed in barrels (cubic meters), based on the maximum historic discharge, if one exists, adjusted for any subsequent corrective or preventative action taken; or

3. If the response zone contains one or more breakout tanks, the capacity of the single largest tank or battery of tanks within a single secondary containment system, adjusted for the capacity or size of the secondary containment system, expressed in barrels.

Under PHMSA's current policy, operators are allowed to reduce the worst case discharge volume derived from 49 CFR 194.105(b)(3) by no more than 75% if an operator is taking certain spill prevention measures for their breakout tanks and presents supporting information in the response plan. An operator can reduce the worst case discharge volume based on breakout tanks in the response zones as follows:

SPILL PREVENTION MEASURES	PERCENT REDUCTION ALLOWED
Secondary containment capacity greater than 100% capacity of tank and designed according to NFPA 30	50%
Tank built, rebuilt, and repaired according to API Std 620/650/653	10%
Automatic high-level alarms/shutdowns designed according to NFPA/API RP 2350	5%
Testing/cathodic protection designed according to API Std 650/651/653	5%
Tertiary containment/drainage/treatment per NFPA 30	5%*
Maximum allowable credit or reduction	75%

* Note: The facilities do not have tertiary containment.

The worst case discharge for each response zone was based on the largest volume of the three criteria given above.

The Company has determined the worst case discharge volume to be a catastrophic line failure of the largest line section with the greatest drainage capacity in each response zone or of the volume of the largest tank in each zone.

D.7.3 DOT/PHMSA Portion of Pipeline/Facility, Continued

The line sections with the highest throughput and largest drainage volume between block valves on pump stations were chosen to calculate the pipeline worst case discharge. Although the entire discharge volume of each line was used for the worst case discharge, in an actual spill event, it would take days to drain the line completely. The line would be sealed early in the response effort.

All of the breakout tanks in the pipeline system are within adequate secondary containment, therefore, the discharge volumes for the largest tank was determined by adjusting the total tank volume downward by 50 per the company guidelines.

Considering the volume of release from a line break compared to that of historic discharge in each zone and to the volumes released from a tank failure, the tank failure was found to represent the worst case scenario.

The maximum historic discharge is not applicable for WCD covered by this plan. Given below are the tank and pipeline WCD calculations for this plan.

These tank volumes are as follows:

LOCATION	VOLUME (BBLS)
Tank 27	(b) (7)(F), (b) (3) [redacted]

D.7.3 DOT/PHMSA Portion of Pipeline/Facility, Continued

The worst case tank volume is calculated as follows:

Largest tank x Credit for containment tank standards = Tank standards credit

The Company has implemented all of the spill prevention measures, listed on the previous page, except tertiary containment. Therefore, the percent reduction allowed for credit equals and the worst case discharge volume is of the total volume.

(b) (7)(F), (b) (3) [redacted]

D.7.3 DOT/PHMSA Portion of Pipeline/Facility, Continued

The worst case discharge for the pipeline segment is calculated at the 48-inch Pipeline.

WCD = [(DT + ST) x MF] + DD

Where:

WCD = worst case discharge (bbl)

DT + ST = maximum detection time + maximum shut down time in adverse weather (generally five minutes except where noted)

MF = maximum flow rate (bph)

DD = drain down volume (bbl) (internal diameter)

(b) (3), (b) (7)(F) [redacted]

D.8 PRODUCT CHARACTERISTICS AND HAZARDS

This Facility may store various types of commodities including but not limited to:

- Crude Oil
- Diesel Fuel

The key chemical and physical characteristics of each of these oils and/or other small quantity products/
chemicals are identified in MSDS. MSDS can be obtained by the facility via the company intranet.

FIGURE D.8-1 describes primary oils handled.

FIGURE D.8-1 - SUMMARY OF COMMODITY CHARACTERISTICS

COMMON NAME	MSDS NAME	HEALTH HAZARD	FLASH POINT	SPECIAL HAZARD	REACTIVITY	HEALTH HAZARD WARNING STATEMENT
Crude Oil	Appropriate product name	2	3	C, H2S	0	May contain benzene, a carcinogen, or hydrogen sulfide, which is harmful if inhaled; flash point varies widely. Skin, nose, throat, lung irritant. May cause more serious skin disorders, irregular heartbeats. Aspiration hazard.
Diesel Fuel	Appropriate Product Name	1	2		0	Long term, repeated exposure may cause skin cancer.
Health Hazard	**4 = Extremely Hazardous** **3 = Hazardous** **2 = Warning** **1 = Slightly Hazardous** **0 = No Unusual Hazard**			**Fire Hazard (Flash Point)**	**4 = Below 73Â° F, 22Â° C** **3 = Below 100Â° F, 37Â° C** **2 = Below 200Â° F, 93Â° C**	

			1 = Above 200Â° F, 93Â° C **0 = Will not burn**
Special Hazard	**A = Asphyxiant** **C = Contains Carcinogen** **W = Reacts with Water** **Y = Radiation Hazard** **COR = Corrosive** **OX = Oxidizer** **H_2S = Hydrogen Sulfide** **P = Contents under Pressure** **T = Hot Material**	**Reactivity Hazard**	**4 = May Detonate at Room Temperature** **3 = May Detonate with Heat or Shock** **2 = Violent Chemical Change with High Temperature and Pressure** **1 = Not Stable if Heated** **0 = Stable**

APPENDIX E Last Revised: August 2014

CROSS-REFERENCES

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Figure E-1 - EPA / FRP Cross-Reference

Figure E-2 - EPA / SPCC Cross-Reference

Figure E-3 - USCG / FRP Cross-Reference

Figure E-4 - EPA / RCRA Cross-Reference

Figure E-5 - DOT / PHMSA Cross-Reference

Figure E-6 - OSHA Cross-Reference

Figure E-7 - EPA Response Plan Cover Sheet

FIGURE E-1 - EPA / FRP CROSS-REFERENCE

EPA FRP REQUIREMENTS	LOCATION
Response Plan Cover Sheet (sec. 2.0)	
General Information (sec. 2.1)	
Facility Name	Figure E-7
Facility Address	Figure E-7
Facility Telephone	Figure E-7
Mailing Address (if different from Facility Address)	Figure E-7
Facility Owner/operator	Figure E-7
Facility Owner & Operator Address (recommended)	Figure E-7
Facility Owner Telephone (recommended)	Figure E-7
Dun and Bradstreet Number	Figure E-7
Longitude (degrees, minutes, seconds)	Figure E-7
Latitude (degrees, minutes, seconds)	Figure E-7
North American Industrial Classification System (NAICS) Code	Figure E-7
Facility Start Up Date (recommended)	Figure E-7
Facility Acres (recommended)	Figure E-7
Name of Protected Waterway or Environmentally Sensitive Area	Figure E-7
Distance to Navigable Water	Figure E-7
Worst Case Discharge Amount	Figure E-7
Maximum Oil Storage Capacity	Figure E-7
Largest AST Capacity (gallons)	Figure E-7
Total Number of ASTs	Figure E-7
Total Number of USTs	Figure E-7
Total UST Storage	Figure E-7
Total Storage of Drums & Transformers that contain Oil	Figure E-7
Number of Surface Impoundments and Total Storage of Surface Impoundments	Figure E-7
Applicability of Substantial Harm Criteria (sec. 2.2)	Figure E-7
Certification (sec. 2.3)	Figure E-7
Model Facility-Specific Response Plan (sec. 1.0)	
Emergency Response Action Plan (ERAP) (sec. 1.1)	
Separate Section of FRP	ERAP
Qualified Individual (QI) Information (sec. 1.2) partial	ERAP - Figure 3-4
Emergency Notification Phone List (sec. 1.3.1) partial	ERAP - Figure 3-4, Figure 3-5
Spill Response Notification Form (sec. 1.3.1) partial	ERAP - Figure 3-1,

	Figure 3-2, Figure 3-3
Response Equipment List and Location (sec. 1.3.2) complete	ERAP - Figure 4-2, Figure 4-3

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Emergency Response Action Plan (ERAP) (sec. 1.1), Continued	
Response Equipment Testing and Deployment (sec. 1.3.3) complete	ERAP - Figure 4-4
Facility Response Team List (sec. 1.3.4) partial	ERAP - Figure 3-4
Evacuation Plan (sec. 1.3.5) condensed	ERAP - Section 2.2
Immediate Actions (sec. 1.7.1) complete	ERAP - Section 2.0
Facility Diagrams (sec. 1.9) complete	ERAP - Section 5.0
Facility Information (sec. 1.2)	
Facility Name (sec. 1.2.1)	Figure 1-2
Street Address	Figure 1-2
City, State, Zip Code	Figure 1-2
County	Figure 1-2
Phone Number	Figure 1-2
Latitude and Longitude (sec. 1.2.2)	Figure 1-2
Wellhead Protection Area (sec. 1.2.3)	Figure 1-2
Owner/Operator (both names included, if different (sec. 1.2.4)	Figure 1-2
Qualified Individual Information (sec. 1.2.5) (name, position, home and work street addresses, phone numbers) and description of specific response training experience	Figure 1-2, Figure A.2-2, Figure A.2-3
Date of Oil Storage Start-up (sec. 1.2.6)	Figure 1-2
Current Operation (sec. 1.2.7)	Figure 1-2
Date and Types of Substantial Expansion (sec. 1.2.8)	Figure 1-2, Figure C-5
SIC and NAICS Codes	Figure 1-2, Figure E-7
Emergency Response Information (sec. 1.3)	
Notification (sec. 1.3.1)	
National Response Center (NRC) phone number	Figure 3.1-6
Qualified Individual (day and evening) phone numbers	Figure 1-2, Figure 3.1-5
Company Response Team (day and evening) phone numbers	Figure 3.1-5
Federal On-Scene Coordinator (FOSC) and/ or Regional Response Center (day and evening) phone numbers	Figure 3.1-6
Local Response Team phone numbers (Fire	Figure 3.1-6

Department/Cooperatives)	
Fire Marshal (day and evening) phone numbers	Figure 3.1-6
State Emergency Response Commission (SERC) (day and evening) phone number	Figure 3.1-6
State Police phone number	Figure 3.1-6
Local Emergency Planning Committee (LEPC) phone number	Figure 3.1-6

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Notification (sec. 1.3.1), Continued	
Local Water Supply System (day and evening) phone numbers	Figure 3.1-6
Weather Report phone number	Figure 3.1-6
Local Television/Radio Station phone number(s) for Evacuation Notification	Figure 3.1-6
Spill Response Contractor(s)	Figure 3.1-6
Hospital phone number	Figure 3.1-6
Wastewater Treatment Facility(s) name and phone number (recommended)	Section 6.11 (ISS)
Factories/Utilities with Water Intakes (recommended)	Section 6.11 (ISS)
Trustees of Sensitive Areas (recommended)	Section 6.11 (ISS)
Spill Response Notification Form	
• Reporter's Name, Position, Phone Number	Figure 3.1-4
• Company Information	Figure 3.1-4
• Were Materials Discharged	Figure 3.1-4
• Meeting Federal Obligations to Report	Figure 3.1-4
• Calling for Responsible Party	Figure 3.1-4
• Time Called	Figure 3.1-4
• Incident Description (source/cause)	Figure 3.1-4
• Date/Time of Incident	Figure 3.1-4
• Incident Address/Location	Figure 3.1-4
• Nearest City/State/County/Zip	Figure 3.1-4

• Distance from City/Units of Measure/Direction from City, Section, Township, Range, Borough	Figure 3.1-4
• Container Type/Tank Oil Storage Capacity/Units of Measure	Figure 3.1-4
• Facility Oil Storage Capacity/Units of Measure	Figure 3.1-4
• Facility Longitude and Latitude	Figure 3.1-4
Response Equipment List (Identify if Facility, OSRO, CO-OP owned by letters O, F, or C) (sec. 1.3.2)	
Skimmers/Pumps (Operational Status, Type/Model/Year, Number or Quantity, Capacity, Daily Effective Recovery Rate, Storage Location)	Section 7.1.1, Figure 7.1-1, Appendix B.1.1, Figure B.1-1
Boom (Containment Boom: Operational Status, Year, Number, Skirt Size. Sorbent Boom: Operational Status, Type/Model/Year, Number, Size (Length))	Section 7.1.1, Figure 7.1-1, Appendix B.1.1, Figure B.1-1
Chemical Countermeasures Agents Stored	Section 7.1.1, Figure 7.1-1, Appendix B.1.1, Figure B.1-1
Sorbents (Type, Year Purchased, Amount, Storage Location)	Section 7.1.1, Figure 7.1-1, Appendix B.1.1, Figure B.1-1

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Response Equipment List (Identify if Facility, OSRO, CO-OP owned by letters O, F, or C) (sec. 1.3.2), Continued	
Hand Tools (Type, Quantity, Storage Location)	Section 7.1.1, Figure 7.1-1, Appendix B.1.1, Figure B.1-1
Communications Equipment (Operational Status, Type, Operational Frequency, Quantity)	Section 7.1.1, Figure 7.1-1, Appendix B.1.1, Figure B.1-1
Fire Fighting and Personnel Protective Equipment	Section 7.1.1, Figure 7.1-1, Appendix B.1.1, Figure B.1-1
Other (e.g., Heavy Equipment, Cranes, Dozers, etc.) (Operational Status, Type, and Year, Quantity, Storage Location)	Section 7.1.1, Figure 7.1-1, Appendix B.1.1, Figure B.1-1
Equipment Location	Section 7.1.1, Figure 7.1-1, Appendix B.1.1, Figure B.1-1

Amount of oil that emergency response equipment can handle and limitations (e.g., launching sites) must be described.	Section 6.11, Section 7.1.1, Figure 7.1-1, Appendix B.1.1, Figure B.1-1
Response Equipment Testing/ Deployment (sec. 1.3.3)	
Last inspection or equipment test date	Figure A.1-4
Inspection frequency	Figure A.1-4
Last deployment drill date	Figure A.1-4
Deployment frequency	Figure A.1-4
OSRO certification (if applicable)	Figure A.1-4
Response Personnel (sec. 1.3.4)	
Emergency Response Personnel Information (Personnel whose duties involve responding to emergencies, including oil discharges, even when they are not present at the site)	Figure 3.1-5
• Name	Figure 3.1-5
• Phone Numbers (work/home, other)	Figure 3.1-5
• Response Time	Figure 3.1-5
• Responsibility	Figure 3.1-5
• Type and Date of Response Training	Figure 3.1-5, Figure A.2-3
Emergency Response Contractor Information	Figure 3.1-5, Figure 3.1-6, Figure 7.1-1, Appendix B
• Name	Figure 3.1-5, Figure 3.1-6, Figure 7.1-1, Appendix B
• Phone Numbers	Figure 3.1-5, Figure 3.1-6
• Response Time	Figure 3.1-5, Appendix B
• Evidence of Contractual Arrangements	Figure B.1-1

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Response Personnel (sec. 1.3.4), Continued	
Facility Response Team Information (Composed of Emergency	Figure 3.1-5

Response Personnel and Emergency Response that will respond immediately)	
• Name	Figure 3.1-5
• Job Function of Emergency Response Personnel	Figure 3.1-5
• Response Time	Figure 3.1-5
• Phone/Pager	Figure 3.1-5
• Name of Emergency Response Contractor (Contractors providing facility response team services may be different than contractors providing oil spill response services)	Figure 3.1-5
• Response Time	Figure 3.1-5
• Phone/Pager	Figure 3.1-5
Evacuation Plans (sec. 1.3.5)	
Facility Evacuation Plan (sec. 1.3.5.1)	Section 2.2
• Location of stored materials	Section 2.2
• Hazard imposed by spilled materials	Section 2.2
• Spill flow direction	Section 2.2
• Prevailing wind directions and speed	Section 2.2
• Water currents, tides, or wave conditions (if applicable)	Section 2.2
• Arrival route of emergency response personnel and response equipment	Section 2.2
• Evacuation routes	Section 2.2
• Alternative routes of evacuation	Section 2.2
• Transportation of injured personnel to nearest medical facility	Section 2.2
• Location of alarm/notification systems	Section 2.2
• Centralized check-in area for roll call	Section 2.2
• Mitigation command center location	Section 2.2

• Location of shelter at facility	Section 2.2
Community Evacuation Plans referenced (sec. 1.3.5.3)	Section 2.2
Evacuation routes shown on diagram	Figure C-8
Qualified Individual's Duties (sec. 1.3.6)	
Description of duties	Section 4.5
• Activate internal alarms and hazard communications systems	Section 4.5
• Notify Response Personnel	Section 4.5
• Identify character, exact source, amount and extent of the release	Section 4.5

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Qualified Individual's Duties (sec. 1.3.6), Continued	
• Notify and provide information to appropriate Federal, State and local authorities	Section 4.5
• Assess interaction of spilled substance with water and/or other substances stored at facility and notify on-scene personnel of assessment	Section 4.5
• Assess possible hazards to human health and environment	Section 4.5
• Assess and implement prompt removal actions	Section 4.5
• Coordinate rescue and response actions	Section 4.5
• Access company funding to initiate cleanup activities	Section 4.5
• Direct cleanup activities	Section 4.5
Consistent with requirements	Section 4.5
Qualified Individual identified with the Facility Information	Figure 1-2
Hazard Evaluation (sec. 1.4)	
Hazard Identification (sec. 1.4.1)	
Tank Above Ground and Below Ground:	Figure C-7
• Tank number(s)	Figure C-7

Substance(s) Stored	Figure C-7
• Quantity(s) Stored	Figure C-7
• Tank Type(s)/Year(s) of Construction	Figure C-7
• Maximum Capacity(s)	Figure C-7
• Failure(s)/Cause(s)	Figure C-7
Surface Impoundments (SI):	Figure C-7
• SI Number(s)	Figure C-7
• Substance(s) Stored	Figure C-7
• Quantity(s) Stored	Figure C-7
• Surface Area(s)/Year(s) of Construction	Figure C-7
• Maximum Capacity(s)	Figure C-7
• Failure(s)/Cause(s)	Figure C-7
Labeled schematic drawing	Figure C-7
Description of transfers (loading and unloading) and volume of material	Figure 1-2
Description of daily operations	Figure 1-2
Secondary containment volumes	Figure 1-2, Figure C-5
Normal daily throughput of the facility	Figure 1-2

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Vulnerability Analysis (sec. 1.4.2)	
Analysis of the potential effects of an oil spill on vulnerable areas. **(Attachment C-III to Appendix C of this part provides a method that owners or operators shall use to determine appropriate distances from the facility to fish and wildlife and sensitive environments. Owners or operators can use a comparable formula that is considered acceptable by the RA. If a comparable formula is used, documentation of the reliability and analytical soundness of the formula must be attached to the Response Plan Cover Sheet).**	Figure D.4-1

Water intakes	Section 6.7, Section 6.11
• Schools	Section 6.7, Section 6.11
• Medical facilities	Section 6.7, Section 6.11
• Residential areas	Section 6.7, Section 6.11
• Business	Section 6.7, Section 6.11
• Wetlands or other environmentally sensitive areas	Section 6.7, Section 6.11
• Fish and wildlife	Section 6.7, Section 6.11
• Lakes and streams	Section 6.7, Section 6.11
• Endangered flora and fauna	Section 6.7, Section 6.11
• Recreational areas	Section 6.7, Section 6.11
• Transportation routes (air, land, and water)	Section 6.7, Section 6.11
• Utilities	Section 6.7, Section 6.11
• Other applicable areas (List below)	Section 6.7, Section 6.11
• Other areas:	Section 6.7, Section 6.11
Analysis of Potential for a Spill (sec. 1.4.3)	
Description of likelihood of release occurring	Appendix D.2.1
• Oil spill history for the life of the facility	Appendix D.2.1, Figure C-15
• Horizontal range of potential spill	Appendix D.2.1, Figure D.4-1
• Vulnerability to natural disaster	Appendix D.2.1
• Other factors, such as tank age	Appendix D.2.1, Figure C-5< td>
• Other factors (e.g., unstable soils, earthquake zones, Karst topography, etc.)	Appendix D.2.1
Facility Reportable Oil Spill History Description (sec. 1.4.4)	
Date of discharge(s)	Figure C-15
List of discharge causes	Figure C-15
Material(s) discharged	Figure C-15

Amount of discharge(s) in gallons	Figure C-15
Amount of discharge that reached navigable waters (if applicable)	Figure C-15
Effectiveness and capacity of secondary containment	Figure C-15

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Facility Reportable Oil Spill History Description (sec. 1.4.4), Continued	
Clean-up actions taken	Figure C-15
Steps taken to reduce possibility of reoccurrence	Figure C-15
Total oil storage capacity of tank(s) or impoundment(s) from which material discharged	Figure C-15
Enforcement actions	Figure C-15
Effectiveness of monitoring equipment	Figure C-15
Description(s) of how each spill was detected	Figure C-15
Discharge Scenarios (sec. 1.5)	
Small and Medium Volume Discharges (sec. 1.5.1)	
Small Volume Discharges (sec. 1.5.1) (Description of small discharges addressing facility operations and components including but not limited to: (sec. 1.5.1.1)	
Loading and unloading operations	Appendix D.5.1
Facility maintenance operation	Appendix D.5.1
Facility piping	Appendix D.5.1
Pumping stations and sumps	Appendix D.5.1
Oil storage tanks	Appendix D.5.1
Vehicle refueling operations	Appendix D.5.1
Age and condition of facility components	Appendix D.5.1
Small volume discharge calculation for a facility	Appendix D.5.1
Facility-specific spill potential analysis	Appendix D.5.1
Average most probable discharge for "complexes"	Appendix D.5.1, Appendix D.7
1,000 feet of boom (1 hour deployment time)	Section 7.1.1, Figure 7.1-1, Appendix B, Appendix D.5.1
Correct amount of boom for complexes	Appendix D.5.1
Oil recovery devices equal to small discharge (2 hour recovery time)	Section 7.1.1, Figure 7.1-1, Appendix B, Appendix D.5.1
Oil storage capacity for recovered material	Section 7.1.1, Figure 7.1-1, Appendix B,

	Appendix D.5.1
Scenarios Affected by the Response Efforts (sec. 1.5.1.2)	
Size of the discharge	Appendix D.5.1, Appendix D.5.3
Proximity to downgradient wells, waterways and drinking water intakes	Appendix D.5.1, Appendix D.5.3, Section 6.7, Section 6.11
Proximity to fish and wildlife and sensitive environments	Appendix D.5.1, Appendix D.5.3, Section 6.7, Section 6.11

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Scenarios Affected by the Response Efforts (sec. 1.5.1.2), Continued	
Likelihood that the discharge will travel off-site (i.e., topography, drainage)	Appendix D.5.1, Appendix D.5.3
Location of the material discharged (i.e., on a concrete pad or directly on the soil)	Appendix D.5.1, Appendix D.5.3
Material discharged	Appendix D.5.1, Appendix D.5.3
Weather or aquatic conditions (i.e., river flow)	Appendix D.5.1, Appendix D.5.3
Available remediation equipment	Appendix D.5.1, Appendix D.5.3
Probability of a chain reaction of failures	Appendix D.5.1, Appendix D.5.3
Direction of discharge pathway	Appendix D.5.1, Appendix D.5.3
Medium Discharges (sec. 1.5.1) (Description of medium discharges scenarios addressing facility operations and components including but not limited to: (sec. 1.5.1.1)	
Loading and unloading operations	Appendix D.5.1
Facility maintenance operation	Appendix D.5.1
Facility piping	Appendix D.5.1
Pumping stations and sumps	Appendix D.5.1
Oil storage location	Appendix D.5.1
Vehicle refueling operations	Appendix D.5.1
Age and condition of facility components	Appendix D.5.1
Medium volume discharge calculation for a facility	Appendix D.5.1
Facility-specific spill potential analysis	Appendix D.5.1

Maximum most probable discharge for complexes	Appendix D.5.1
Oil recovery devices equal to medium discharge	Section 7.1.1, Figure 7.1-1, Appendix B, Appendix D.5.1
Availability of sufficient quantity of boom	Section 7.1.1, Figure 7.1-1, Appendix B, Appendix D.5.1
Oil storage capacity for recovered material	Section 7.1.1, Figure 7.1-1, Appendix B, Appendix D.5.1
Scenarios Affected by the Response Efforts (sec. 1.5.1.2)	
Size of the discharge	Appendix D.5.1, Appendix D.5.3
Proximity to downgradient wells, waterways and drinking water intakes	Appendix D.5.1, Appendix D.5.3, Section 6.7, Section 6.11

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Scenarios Affected by the Response Efforts (sec. 1.5.1.2), Continued	
Proximity to fish and wildlife and sensitive environments	Appendix D.5.1, Appendix D.5.3, Section 6.7, Section 6.11
Likelihood that the discharge will travel off-site (i.e., topography, drainage)	Appendix D.5.1, Appendix D.5.3
Location of the material discharged (i.e., on a concrete pad or directly on the soil)	Appendix D.5.1, Appendix D.5.3
Material discharged	Appendix D.5.1, Appendix D.5.3
Available remediation equipment	Appendix D.5.1, Appendix D.5.3
Probability of a chain reaction of failures	Appendix D.5.1, Appendix D.5.3
Direction of discharge pathway	Appendix D.5.1, Appendix D.5.3
Worst Case Discharge (WCD) (sec. 1.5.2) (see Appendix A) (When planning for the worst case discharge response all of the factors listed in the small and medium discharge section of the response plan shall be addressed)	
Facility Specific Worst Case Discharge Scenario	Appendix D.5.2
Description of worst case discharges scenarios addressing facility operations and components including but not limited to: (sec.	Appendix D.5.2

1.5.1.1)	
• Loading and unloading operations	Appendix D.5.2
• Facility maintenance operation	Appendix D.5.2
• Facility piping	Appendix D.5.2
• Pumping stations and sumps	Appendix D.5.2
• Oil storage location	Appendix D.5.2
• Vehicle refueling operations	Appendix D.5.2
• Age and condition of facility components	Appendix D.5.2
• Correct Worst Case Discharge (WCD) calculation for specific type of facility (Appendix D)	Appendix D.7, Appendix D.5.2
• Correct Worst Case Discharge calculation for complexes	Appendix D.5.2
• Sufficient response resources for WCD (Appendix E)	Figure 3.1-6, Figure 7.1-1, Appendix B, Appendix D.7
• Sources and quantity of equipment for response to WCD	Figure 7.1-1, Appendix B, Appendix D.7
• Oil storage capacity for recovered material	Section 7.1.1, Figure 7.1-1, Section7.4, Figure 7.4-3, Appendix B, Appendix D.7

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Scenarios Affected by the Response Efforts (sec. 1.5.1.2)	
Size of the discharge	Appendix D.5.2, Appendix D.5.3
Proximity to downgradient wells, waterways and drinking water intakes	Appendix D.5.2, Appendix D.5.3, Section 6.7, Section 6.11
Proximity to fish and wildlife and sensitive environments	Appendix D.5.2, Appendix D.5.3, Section 6.7, Section 6.11
Likelihood that the discharge will travel off-site (i.e., topography, drainage)	Appendix D.5.2, Appendix D.5.3

Location of the material discharged (i.e., on a concrete pad or directly on the soil)	Appendix D.5.2, Appendix D.5.3
Material discharged	Appendix D.5.2, Appendix D.5.3
Weather or aquatic conditions (i.e., river flow)	Appendix D.5.2, Appendix D.5.3
Available remediation equipment	Appendix D.5.2, Appendix D.5.3
Probability of a chain reaction of failures	Appendix D.5.2, Appendix D.5.3
Direction of discharge pathway	Appendix D.5.2 (Worst Case Discharge), Appendix D.5.3
Discharge Detection Systems (sec. 1.6)	
Discharge Detection by Personnel (sec. 1.6.1)	
Description of procedures and personnel for spill detection	Appendix D.3
Description of facility inspections	Figure C-11, Appendix D.3
Description of initial response actions	Figure 2-1
Emergency Response Information (referenced)	Figure 3.1-5
Automated Discharge Detection (sec. 1.6.2)	
Description of automatic spill detection equipment, including overfill alarms and secondary containment sensors	Appendix D.3
Description of alarm verification procedures and subsequent actions	Appendix D.3
Plan Implementation (sec. 1.7)	
Response Resources for Small, Medium and Worst Case Discharges (sec. 1.7.1)	
Demonstration of accessibility of proper response personnel and equipment	Appendix B
Description of response actions	Section 2, Appendix D.5.1, Appendix D.5.2
• Emergency plans for spill response	Section 2, Appendix D.5.1, Appendix D.5.2
• Additional response training	Appendix A.2

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Response Resources for Small, Medium and Worst Case Discharges (sec. 1.7.1), Continued	

• Additional contracted help	Appendix B
• Access to additional equipment/ experts	Appendix B
• Ability to implement plan, including training and practice drills	Appendix A
Recommended form detailing Immediate Actions for Small, Medium, and Worst Case spills (sec. 1.7.1.2A) (Stop the Product Flow, Warn Personnel, Shut Off Ignition Sources, Initiate Containment, Notify NRC, Notify OSC, Notify (as appropriate))	Figure 2-1, Appendix D.7
Disposal Plans (sec. 1.7.2)	
Description of procedures for recovering, reusing, decontaminating or disposing of materials	Section 5.6, Section 7.4, Figure 7.4-4
Materials addressed in Disposal Plan **(Recovered product, contaminated soil, contaminated equipment and materials (including drums, tank parts, valves and shovels), personnel protective equipment, decontamination solutions, absorbents, spent chemicals)**	Figure 7.4-4
Plan prepared in accordance with any Federal, State and/or local regulations	Section 5.6, Section 7.4
Plan addresses permits required to transport or dispose of recovered materials	Section 5.6, Figure 7.4-4
Containment and Drainage Planning (sec. 1.7.3)	
Containment and drainage plan available	Figure C-16
• Description of containing/controlling a spill through drainage	Figure C-16
• Containment volume	Figure C-16
• Drainage route from oil storage and transfer areas	Figure C-16
• Construction materials in drainage troughs	Figure C-16
• Type and number of valves separators in drainage system	Figure C-16
• Sump pump capacities	Figure C-16
• Containment capacity of weirs and booms and their location	Figure C-16
• Other clean up materials	Figure C-16

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Self-Inspection, Training, and Meeting Logs (sec. 1.8)	
Facility Self-Inspection (sec. 1.8.1)	
Records of tank inspections with dates (Tank Leaks, Tank Foundations, Tank Piping) contained or cross-referenced in plan or maintained electronically for five years (sec. 1.8.1.1)	Figure C-12
Records of secondary containment inspections with dates (Dike or Berm System, Secondary Containment, Retention and Drainage Ponds) contained or cross-referenced in plan or maintained electronically for five years (sec. 1.8.1.3)	Figure C-12
Response Equipment Inspection (sec. 1.8.1.2)	
Inventory (item and quantity)	Figure D.3-1
Storage location	Figure D.3-1
Accessibility (time to access and respond)	Figure D.3-1
Operational status/condition	Figure D.3-1
Actual use/testing (last test date and frequency of testing)	Maintain On-Site
Shelf life (present age, expected replacement date)	Figure D.3-1
Inspection date	Figure D.3-1
Inspector's signature	Figure D.3-1
Inspection records maintained for 5 years	Figure D.3-1
Response Equipment Inspection Log (Inspector, Date, Comments)	Figure D.3-1
Facility Drills/ Exercises (sec. 1.8.2)	
Description of drill/exercise program based on PREP guidelines or other comparable program	Appendix A.1, Figure A.1-2
• Qualified Individual Notification Drills	Figure A.1-2
• Spill Management Team Tabletop Exercises	Figure A.1-2
• Equipment deployment exercise	Figure A.1-2
• Unannounced exercise	Figure A.1-2
• Area exercise	Figure A.1-2
Description of evaluation procedures for drill program	Figure A.1-2
Qualified Individual Notification Drill Log (sec. 1.8.2.1) (date, company, qualified individual, other contacted, emergency scenario, evaluation)	Figure A.1-5
Spill Management Team Tabletop Drill Log (sec. 1.8.2.2) (date, company, qualified individual, participants, emergency scenario, evaluation, changes to be implemented, time table for implementation)	Figure A.1-6
Response Training (sec. 1.8.3)	

Description of response training program (including topics)	Figure A.2-2
Personnel Response Training Logs (name, response training date/ and number of hours, prevention training date/ and number of hours)	Figure A.2-3
Discharge Prevention Meeting Log (date, attendees)	Figure C-11

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Diagrams (sec. 1.9)	
Site Plan Diagram	
Entire facility to scale	Figure 1-5
Above and below-ground bulk storage tanks	Figure 1-5
Contents and capacities of bulk oil storage tanks	Figure 1-5
Contents and capacities of drum storage areas	Figure 1-5
Contents and capacities of surface impoundments	Figure 1-5
Process buildings	Figure 1-5
Transfer areas	Figure 1-5
Location and capacity of secondary containment systems	Figure 1-5
Location of hazardous materials (structures where hazardous materials are stored or handled, including materials stored and capacity of storage)	Figure 1-5
Location of communication and emergency response equipment	Figure 1-5
Location of electrical equipment that might contain oil	Figure 1-5
If the Facility is a Complex Facility, the interface between EPA and other regulating agencies	Figure 1-5
Site Drainage Plan Diagram	
Major sanitary and storm sewers, manholes, and drains	Figure C-7
Weirs and shut-off valves	Figure C-7
Surface water receiving streams	Figure C-7
Fire fighting water sources	Figure C-7
Other utilities	Figure C-7
Response personnel ingress and egress	Evacuation Diagram "Figure C-8"
Equipment transportation routes	Figure C-7, Evacuation Diagram "Figure C-8"
Direction of spill flow from release points	Figure C-7
Site Evacuation Diagram	

Site plan diagram with evacuation routes	Figure C-8
Location of evacuation regrouping areas	Figure C-8

FIGURE E-1 - EPA / FRP CROSS-REFERENCE, CONTINUED

EPA FRP REQUIREMENTS	LOCATION
Site Security (sec. 1.10)	
Emergency cut-off locations	Figure 7.3-2
Enclosure	Figure 7.3-2
Guards and their duties, day and night	Figure 7.3-2
Lighting	Figure 7.3-2
Valve and pump locks	Figure 7.3-2
Pipeline connection caps	Figure 7.3-2

FIGURE E-2 - EPA / SPCC CROSS-REFERENCE

EPA SPCC REQUIREMENTS (40 CFR 112.7 and 112.8)	LOCATION
112.7 General requirements for Spill Prevention, Control, and Countermeasure Plans	
a. General requirements	
1. Include a discussion of your facility's conformance with the requirements listed in this part	Appendix C
3. Describe in your Plan the physical layout of the facility and include a facility diagram	Figure 1-5, Figure C-4, Figure C-7, Figure C-8
i. The type of oil in each container and its storage capacity	Figure C-5
ii. Discharge prevention measures	Section 2, Figure C-4
iii. Discharge or drainage controls	Figure C-4, Figure C-7
iv. Countermeasures for discharge	Section 2
v. Methods of disposal	Section 7.4
vi. Contact list and phone numbers	Figure 3.1-5, Figure 3.1-6
4. Unless you have submitted a response plan, provide	N/A

information and procedures to report a discharge	
5. Unless you have submitted a response plan, describe procedures you will use when a discharge occurs	N/A
b. Prediction of the direction, rate of flow, and total quantity of oil which could be discharged from the facility as a result of each type of major equipment failure	Figure C-5
c. Provide appropriate containment	Figure C-5
d. If you determine that the installation of any of the structures or pieces of equipment is not practicable, you must clearly explain in your Plan why such measures are not practicable; for bulk storage containers, conduct both periodic integrity testing of the containers and periodic integrity and leak testing of the valves and piping; and, unless you have submitted a response plan under § 112.20, provide in your Plan the following:	Appendix C
1. An oil spill contingency plan following the provisions of part 109 of this chapter	N/A
2. A written commitment of manpower, equipment, and materials	N/A
e. Inspections, tests, and records	Appendix C
f. Personnel, training, and discharge prevention procedures	Appendix C
1. Oil-handling personnel training	Figure C-4, Appendix A.2
2. Person accountable for discharge prevention	Figure C-4
3. Schedule and conduct discharge prevention briefings	Figure C-11

FIGURE E-2 - EPA / SPCC CROSS-REFERENCE, CONTINUED

EPA SPCC REQUIREMENTS (40 CFR 112.7 and 112.8)	LOCATION
112.7 General requirements for Spill Prevention, Control, and Countermeasure Plans, continued	
g. Security (excluding oil production facilities)	Figure C-4
1. Facility fencing	Figure C-4

2. Master flow, drain valves, and other valves remain in closed position	Figure C-4
3. Lock the starter control on each oil pump in “off” position	Figure C-4
4. Securely cap or blank-flange the loading/ unloading connections	Figure C-4
5. Provide facility lighting	Figure C-4
i. Discovery of discharges occurring during hours of darkness	Figure C-4
ii. Prevention of discharges occurring through acts of vandalism	Figure C-4
h. Facility tank car and tank truck loading/ unloading rack (excluding offshore facilities)	Figure C-4
1. Catchment basin, treatment facility, or quick drainage system	Figure C-4
2. Provide vehicular disconnect warning system	Figure C-4
3. Inspect for discharges of the lower most drain	Figure C-4
i. Aboveground container brittle fracture evaluation	Figure C-4
j. Discussion of conformance with the applicable requirements	Figure C-4
112.8 Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities)	
b. Facility drainage	Figure C-4
1. Restrain drainage from diked storage areas except where facility systems are designed to control such discharge	Figure C-4
2. Use valves of manual, open-and-closed design, for the drainage of diked areas	Figure C-4
3. Design facility drainage systems from undiked areas with a potential for a discharge to flow into ponds, lagoons, or catchment basins designed to retain oil or return it to the facility	Figure C-4
4. Equip the final discharge of all ditches inside the facility with a diversion system that would, in the event of an	Figure C-4

uncontrolled discharge, retain oil in the facility	
5. Where drainage waters are treated in more than one treatment unit and such treatment is continuous, and pump transfer is needed, provide two "lift" pumps and permanently install at least one of the pumps	Figure C-4

FIGURE E-2 - EPA / SPCC CROSS-REFERENCE, CONTINUED

EPA SPCC REQUIREMENTS (40 CFR 112.7 and 112.8)	LOCATION
112.8 Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities), continued	
c. Bulk storage containers	Figure C-4
1. Not use a container for the storage of oil unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature	Figure C-4
2. Provide a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation	Figure C-4
3. Not allow drainage of uncontaminated rainwater from the diked area into a storm drain or discharge of an effluent into an open watercourse, lake, or pond, bypassing the facility treatment system unless you:	Figure C-4
i. Normally keep the bypass valve sealed closed	Figure C-4
ii. Inspect the retained rainwater to ensure that its presence will not cause a discharge as described in § 112.1(b)	Figure C-4
iii. Open the bypass valve and reseal it following drainage under responsible supervision; and	Figure C-4
iv. Keep adequate records of such events, for example, any records required under permits issued in accordance with §§ 122.41(j)(2) and 122.41(m)(3) of this chapter	Figure C-4
4. Protect completely buried metallic storage tanks from corrosion	Figure C-4
5. Protect partially buried and bunkered tanks from	Figure C-4

corrosion	
6. Test each aboveground container for integrity on a regular schedule	Figure C-4
7. Control leakage through defective internal heating coils	Figure C-4
8. Engineer or update each container installation in accordance with good engineering practice to avoid discharges. You must provide at least one of the following devices:	Figure C-4
i. High liquid level alarms with an audible or visual signal	Figure C-4
ii. High liquid level pump cutoff devices	Figure C-4
iii. Direct audible or code signal communication between the container gauger and the pumping station	Figure C-4
iv. A fast response system	Figure C-4
v. Regularly test liquid level sensing devices to ensure proper operation	Figure C-4
9. Observe effluent treatment facilities frequently enough to detect possible system upsets that could cause a discharge as described in § 112.1(b)	Figure C-4

FIGURE E-2 - EPA / SPCC CROSS-REFERENCE, CONTINUED

EPA SPCC REQUIREMENTS (40 CFR 112.7 and 112.8)	LOCATION
112.8 Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities), continued	
10. Promptly correct visible discharges which result in a loss of oil from the container	Figure C-4
11. Position or locate mobile or portable oil storage containers to prevent a discharge	Figure C-4
d. Facility transfer operations, pumping, and facility process	Figure C-4
1. Provide protection of buried piping that is installed or replaced on or after August 16, 2002	Figure C-4

2. Cap or blank-flange the terminal connection at the transfer point	Figure C-4
3. Properly design pipe supports to minimize abrasion and corrosion and allow for expansion and contraction	Figure C-4
4. Regularly inspect all aboveground valves, piping, and appurtenances	Figure C-4
5. Warn all vehicles entering the facility to be sure that no vehicle will endanger aboveground piping or other oil transfer operations	Figure C-4

FIGURE E-3 - USCG / FRP CROSS-REFERENCE

USCG OPA 90 REQUIREMENTS (33 CFR 154.1035)	LOCATION IN THIS PLAN
a) Introduction and Plan Content	
1. Facility Name and Location (address, city, county, state, zip, phone number, fax number).	Figure 1-2
2. Facility Directions (including but not limited to maps, landmarks and river mile that could aid a responder and reviewer).	Figure 1-2, Figure 1-3
3. Name, address and procedures for contacting the facility's owner or operator on a 24 hour basis.	Figure 1-2, Figure 3.1-5
4. Table of contents.	Table of Contents
5. Period when submitted plan does not have to conform to the subpart, a cross index, if appropriate.	Figure E-3
6. Record of change(s) to record information on plan updates.	Table of Contents
b) Emergency Response Action Plan	
1. Notification procedures • Prioritized list of facility response personnel. • Federal, State or local agencies, as required • Spill response notification forms to Federal, State, local agencies. Form must state that initial notification must not be delayed by collection of data. • Notification of the National Response Center.	Section 3, Figure 3.1-5, Figure 3.1-6

2. Facility's spill mitigation procedures
• Describe volume and oil groups that would be involved in the following:
  • Average, maximum and worse discharge from the MTR facility.
• Where applicable, the worst case discharge from the non-transportation-related facility.
• Prioritized list of procedures and facility personnel (identified by job title). Procedures must address actions to be taken in the event of a discharge, potential discharge or emergency involving the following equipment and scenarios:
• Transfer equipment
  • Tank overfill or failure
  • Piping rupture, leak both under pressure and not under pressure
  • Explosion or fire
  • Equipment failure
• Listing of equipment and the responsibilities of facility personnel to mitigate an average most probable discharge
	Section 2.1.1, Figure 2.1-2, Appendix D

3. Facility's response activities	
i. Responsibilities of facility personnel to initiate a response and supervise response resources pending arrival of qualified individuals.	Figure 2.1-1
ii. Responsibilities and authority of the qualified individual and alternate as required in § 154.1026.	Section 4.5

FIGURE E-3 - USCG / FRP CROSS-REFERENCE, CONTINUED

USCG OPA 90 REQUIREMENTS (33 CFR 154.1035)	LOCATION IN THIS PLAN
iii. Apply the following organizational structure to manage response actions: • Command and control • Public information • Safety • Liaison with government agencies • Spill operations • Planning • Logistics support • Finance	Section 4.6, Figure 4.5-2

iv. Identify oil spill removal organizations and the spill management teams to be capable of providing the following response resources: • Equipment and supplies to meet § 154.1045, 154.1047, as appropriate • Trained personnel for response to be on hand for the first 7 days of the response • Job descriptions for each spill management team member within the organizational structure in a response action.	Figure 3.1-5, Section 4.6, Section 7.1, Appendix B
v. For mobile facilities in more than one COTP zone, oil spill removal organizations and the spill management teams must be identified from paragraph (3)(iv) and included in each COTP zone.	N/A
4. Fish and wildlife sensitive environments	
i. Identify areas of economic importance and environmental sensitivities as identified in the ACP, which are potentially impacted by a worst case discharge.	Section 6.7
ii. For a worst case discharge the plan must address the following:· • List all sensitive elements identified in ACP that are potentially impacted by a discharge· • Describe all response actions anticipated to protect sensitive elements· • Contain map or chart that depicts each response action anticipated.	Appendix D.5 Section 6, Figure 6.3-1
iii. Identify appropriate equipment and personnel as described in § 154.1028 to protect sensitive elements by one of the following calculations: • Persistent oils and non-petroleum oils discharged into non-tidal waters, the distance from the facility reached in 48 hours at maximum current.	Section 7.1, Appendix B, Appendix D

FIGURE E-3 - USCG / FRP CROSS-REFERENCE, CONTINUED

USCG OPA 90 REQUIREMENTS (33 CFR 154.1035)	LOCATION IN THIS PLAN
• Persistent and non-petroleum oils discharged	Section 7.1, Appendix B,

into tidal waters, 15 miles from the facility down current during ebb tide and to the point of maximum tidal influence or 15 miles, whichever is less, during flood tide. • Non-persistent oils discharged into non-tidal waters, the distance from the facility reached in 24 hours at maximum current. • Non-persistent oils discharged into tidal waters, 5 miles from the facility down current during ebb tide and to the point of maximum tidal influence or 5 miles, whichever is less, during flood tide. • Spill trajectory or model maybe substituted if acceptable to COTP. • Procedures contained in the Environmental Protection's Agency's regulations on oil pollution prevention may be substituted for non-tidal and tidal waters. • COTP may require additional sensitive elements to be protected depending on trajectory.	Appendix D
5. Disposal plan Describe actions and procedures that adhere to Federal, state or local requirements.	Section 5.6, Section 7.4
c) Training and Exercises	
1. Training procedures of the facility owner or operator must meet requirements of § 154.1050.	Appendix A
2. Exercise procedures of the facility owner or operator must meet requirements of § 154.1055.	Appendix A
d) Plan Review and Update Procedures	
Plan review and update procedures of the facility owner or operator must meet requirements of §154.1065 and any post-discharge review of the plan to evaluate and validate its effectiveness.	Section 1.2
e) Appendices	
1. Facility-specific information - principal characteristics	
i. There must be a physical description of the facility including a plan of the facility showing the mooring areas, transfer locations, control stations, locations of safety equipment, and the location and capacities of all piping and storage tanks.	Figure C-7, Figure C-8
ii. Identify sizes, types and number of vessels the facility can transfer oil to or from simultaneously.	Figure 1-2

iii. Identify the first valve(s) on piping separating transportation-related and non-transportation-related areas. If piping serves tank vessels from a manifold it is considered the first valve.	Figure C-9

FIGURE E-3 - USCG / FRP CROSS-REFERENCE, CONTINUED

USCG OPA 90 REQUIREMENTS (33 CFR 154.1035)	LOCATION IN THIS PLAN
iv. The oil(s) and hazardous material handled, stored or transported in bulk must be documented and include the following: • Generic/chemical name • Description of appearance and odor • Hazards involved with handling or discharge • Firefighting procedures and extinguishing agents for oil/hazardous materials	Appendix D.8
2. List of contacts must include primary and alternate personnel, personnel from paragraph (b) (3) (iv), and Federal, state and local officials.	Figure 3.1-5, Figure 3.1-6
3. Equipment list and records must include the following: • List of equipment and facility personnel required to respond to an average most probable discharge, as defined by §154.1020 • List of equipment belonging to an oil spill removal organization as described in §154.1028; unless the organization has been classified by the Coast Guard to equal or exceed the response capability needed by the facility • When it is necessary for the appendix to contain a listing of response equipment, it shall include the following: skimmers; booms; dispersant application; in-situ burning; bioremediation equipment and supplies and other equipment used to apply other chemical agents on the NCP Product Schedule; communications, firefighting and beach cleaning equipment; boats and motors; and heavy equipment • This list must also include specifications for each piece of equipment as follows: 1. type, make, model and year of	Section 7.1, Appendix B

manufacture, 2. for oil recovery devices, the effective daily recovery rate, 3. for containment boom, the overall boom height and type of end connectors, 4. spill scenario in which the equipment will be used, 5. total daily capacity for storage and disposal of recovered daily oil 6. for communication equipment, the type and amount of equipment intended for use during response activities, 7. location of equipment, and 8. date of last inspection.	

FIGURE E-3 - USCG / FRP CROSS-REFERENCE, CONTINUED

USCG OPA 90 REQUIREMENTS (33 CFR 154.1035)	LOCATION IN THIS PLAN
4. Communications plan must describe the primary and alternate method of communication during discharges, including communications at the facility and at remote locations.	Section 7.1.6
5. Site specific safety and health plan must describe the safety and health plan to be implemente This appendix may reference another existing plan requiring under 29 CFR 1910.120	Section 5.4
6. List of acronyms and definitions must include all definitions that are critical to understanding the response plan.	Appendix F

FIGURE E-4 - EPA / RCRA CROSS-REFERENCE

EPA / RCRA REQUIREMENTS (40 CFR PART 265.50 - 265.56)		LOCATION
§ 265.50	**Applicability**	
	The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as 265.1 provides otherwise.	Section 1.1
§ 265.51	Purpose and Implementation of Contingency Plan	
a	Each owner or operator must have a contingency plan for his facility. The contingency plan must be designed to minimize hazards to human health or the environment	Section 1.1

	from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.	
b	The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents that could threaten human health or the environment.	Section 1.1
§ 265.52	Content of Contingency Plan	
a	The contingency plan must describe the actions facility personnel must take to comply with 265.51 and 265.56 in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.	Section 2
b	If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasure (SPCC) Plan in accordance with Part 112 of this chapter, or Part 1510 of Chapter V, or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this part.	Section 7.4
c	The plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, pursuant to 265.37.	Section 3.1
d	The plan must list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see 265.55), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates.	Figure 1-2
e	The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.	Section 7.1

FIGURE E-4 - EPA / RCRA CROSS-REFERENCE, CONTINUED

EPA / RCRA REQUIREMENTS (40 CFR PART 265.50 - 265.56)		LOCATION
§ 265.52	Content of Contingency Plan, Continued	

f	The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).	Section 2.2, Section 5, Figure C-8
§ 265.53	Copies of Contingency Plan	
	A copy of the contingency plan and all revisions to the plan must be:	-----
a	Maintained at the facility, and	Figure 1-1, Section 1.2, Section 1.3
b	Submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services.	Figure 1-1, Section 1.2, Section 1.3
§ 265.54	Amendment of Contingency Plan	
	The contingency plan must be reviewed, and immediately amended, if necessary, whenever:	-----
a	Applicable regulations are revised;	Section 1.2
b	The plan fails in an emergency;	Section 1.2
c	The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;	Section 1.2
d	The list of emergency coordinators changes; or	Section 1.2
e	The list of emergency equipment changes.	Section 1.2
§ 265.55	Emergency Coordinator	
	At all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan. *[Comment: The emergency coordinator's responsibilities are more fully spelled out in 265.56. Applicable responsibilities for the emergency coordinator vary, depending on factors such as type and variety of waste(s) handled by the facility, and type and*	Figure 1-2, Figure 3.1-5, Section 4.5, Appendix A

	complexity of the facility].	

FIGURE E-4 - EPA / RCRA CROSS-REFERENCE, CONTINUED

EPA / RCRA REQUIREMENTS (40 CFR PART 265.50 - 265.56)		LOCATION
§ 265.56	Emergency Procedures	
a	Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) must immediately:	-----
a(1)	Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and	Section 4.5
a(2)	Notify appropriate State or local agencies with designated response roles if their help is needed.	Section 4.5
b	Whenever there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and a real extent of any released materials. He may do this by observation or review of facility records or manifests and, if necessary, by chemical analysis.	Section 4.5
c	Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-offs from water or chemical agents used to control fire and heat-induced explosions).	Section 4.5
d	If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside of the facility, he must report his findings as follows:	Section 4.5
d(1)	**If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and**	Section 4.5
d(2)	He must immediately notify either the government official designated as the on-scene coordinator for that geographical area (in the applicable regional contingency plan under Part 1510 of this Title), or the	Section 4.5; Figure 3.1-6

	National Response Center (using their 24-hour toll free number 800/424-8802). The report must include:	
d(2)(i)	Name and telephone number of reporter:	Figure 3.1-4
d(2)(ii)	Name and address of facility;	Figure 3.1-4
d(2)(iii)	Time and type of incident (e.g., release, fire);	Figure 3.1-4
d(2)(iv)	Name and quantity of material(s) involved, to the extent known;	Figure 3.1-4
d(2)(v)	The extent of injuries, if any; and	Figure 3.1-4
d(2)(vi)	The possible hazards to human health, or the environment, outside the facility.	Figure 3.1-4

FIGURE E-4 - EPA / RCRA CROSS-REFERENCE, CONTINUED

EPA / RCRA REQUIREMENTS (40 CFR PART 265.50 - 265.56)		LOCATION
§ 265.56	**Emergency Procedures (Cont'd)**	
e	During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.	Section 2; Figure 2.1-1
f	If the facility stops operations in response to a fire, explosion or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes or other equipment, wherever this is appropriate.	Section 2; Figure 2.1-1
g	Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility. *[Comment: Unless the owner or operator can demonstrate, in accordance with § 261.3(c) or (d) of this chapter, that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Parts 262, 263, and 265 of this chapter].*	Section 7.4; Section 5.6
h	The emergency coordinator must ensure that, in the affected areas(s) of the facility:	-----
h(1)	No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and	Section 7.4; Section 5.6

h(2)	All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.	Section 5.5
i	The owner or operator must notify the Regional Administrator, and appropriate State and local authorities, that the facility is in compliance with paragraph (h) of this section before operations are resumed in the affected area(s) of the facility.	Figure 3.1-6
j	The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, he must submit a written report on the incident to the Regional Administrator. The report must include:	Section 8.3
j(1)	Name, address, and telephone number of the owner or operator;	Section 8.3
j(2)	Name, address, and telephone number of the facility;	Section 8.3
j(3)	Date, time, and type of incident (e.g., fire, explosion);	Section 8.3

FIGURE E-4 - EPA / RCRA CROSS-REFERENCE, CONTINUED

EPA / RCRA REQUIREMENTS (40 CFR PART 265.50 - 265.56)		LOCATION
§ 265.56	**Emergency Procedures (Cont'd)**	
j(4)	Name and quantity of material(s) involved;	Section 8.3
j(5)	The extent of injuries, if any;	Section 8.3
j(6)	An assessment of actual or potential hazards to human health or the environment, where this is applicable; and	Section 8.3
j(7)	Estimated quantity and disposition of recovered material that resulted from the incident.	Section 8.3

FIGURE E-5 - DOT / PHMSA CROSS-REFERENCE

OPA 90 REQUIREMENTS (49 CFR 194)	LOCATION
Information Summary	
• For the core plan:	
• Name and address of operator	Figure 1-2
• For each Response Zone which contains one or more line sections that meet the criteria for determining significant and substantial harm (§194.103), listing and description of Response Zones, including county(s) and state(s)	Figure 1-2

• For each Response Zone appendix:	
• Information summary for core plan	Figure 1-2
• QI names and telephone numbers, available on 24-hr basis	Figure 1-2
• Description of Response Zone, including county(s) and state(s) in which a worst case discharge could cause substantial harm to the environment	Figure 1-2
• List of line sections contained in Response Zone, identified by milepost or survey station or other operator designation	Figure 1-2
• Basis for operator's determination of significant and substantial harm	Figure 1-2
• The type of oil and volume of the worst case discharge	Figure 1-2, Appendix C.4
• Certification that the operator has obtained, through contract or other approved means, the necessary private personnel and equipment to respond, to the maximum extent practicable, to a worst case discharge or threat of such discharge	Section 1.3, Appendix B
Notification Procedures	
• Notification requirements that apply in each area of operation of pipelines covered by the plan, including applicable state or local requirements	Figure 3.1-5
• Checklist of notifications the operator or Qualified Individual is required to make under the response plan, listed in the order of priority	Figure 3.1-5
• Name of persons (individuals or organizations) to be notified of discharge, indicating whether notification is to be performed by operating personnel or other personnel	Figure 3.1-1, Figure 3.1-5, Figure 3.1-6
• Procedures for notifying Qualified Individuals	Figure 3.1-1, Section 4.5, Figure 4.5-1
• Primary and secondary communication methods by which notifications can be made	Section 7.1.6

FIGURE E-5 - DOT / PHMSA CROSS-REFERENCE, CONTINUED

OPA 90 REQUIREMENTS (49 CFR 194)	LOCATION
Notification Procedures, Continued	

• Information to be provided in the initial and each follow-up notification, including the following:
  • Name of pipeline
  • Time of discharge
  • Location of discharge
  • Name of oil recovered
  • Reason for discharge (e.g. material failure, excavation damage, corrosion)
  • Estimated volume of oil discharged
  • Weather conditions on scene
  • Actions taken or planned by persons on scene
	Figure 3.1-4

Spill Detection and On-Scene Spill Mitigation Procedures	
• Methods of initial discharge detection	Section 2.1.1, Appendix D.2.1, Appendix D.3
• Procedures, listed in order of priority, that personnel are required to follow in responding to a pipeline emergency to mitigate or prevent any discharge from the pipeline	Section 2

• List of equipment that may be needed in response activities based on land and navigable waters including:
  • Transfer hoses and pumps
  • Portable pumps and ancillary equipment
  • Facilities available to transport and receive oil from a leaking pipeline
	Section 7.1.1, Figure 7.1-1, Figure 7.4-4, Appendix B

• Identification of the availability, location, and contact phone numbers to obtain equipment for response activities on a 24-hour basis	Figure 3.1-5, Figure 3.1-6, Appendix B
• Identification of personnel and their location, telephone numbers, and responsibilities for use of equipment in response activities on a 24-hour basis	Figure 3.1-5, Figure 3.1-6, Appendix B
Response Activities	
• Responsibilities of, and actions to be taken by, operating personnel to initiate and supervise response actions pending the arrival of the Qualified Individual or other response resources identified in the response plan	Section 2, Section 4.6
• Qualified Individual's responsibilities and authority, including notification of the response resources identified in the response plan	Section 4.5

• Procedures for coordinating the actions of the operator or Qualified Individual with the action of the OSC responsible for monitoring or directing those actions	Section 4.4, Figure 4.5-2
• Oil spill response organizations (OSRO) available through contract or other approved means, to respond to a worst case discharge to the maximum extent practicable	Appendix B

FIGURE E-5 - DOT / PHMSA CROSS-REFERENCE, CONTINUED

OPA 90 REQUIREMENTS (49 CFR 194)	LOCATION
Response Activities, Continued	

• For each organization identified under paragraph (d), a listing of:
  • Equipment and supplies available
  • Trained personnel necessary to continue operation of the equipment and staff the oil spill removal organization for the first seven days of the response
	Appendix B

List of Contacts	
• List of persons the Plan requires the operator to contact	Figure 3.1-5, Figure 3.1-6
• Qualified individuals for the operator's areas of operation	Figure 1-2, Figure 3.1-4
• Applicable insurance representatives or surveyors for the operator's areas of operation	Figure 3.1-6
• Persons or organizations to notify for activation of response resources	Figure 3.1-5
Training Procedures	
• Description of training procedures and programs of the operations	Appendix A.2
Drill Procedures	
• Announced and unannounced drills	Figure A.1-2

• Types of drills and their frequencies; for example:
  • Manned pipeline emergency procedures and qualified individual notification drills conducted quarterly
  • Drills involving emergency actions by assigned operating or maintenance personnel and notification of qualified
	Figure A.1-2

individual on pipeline facilities which are normally unmanned, conducted quarterly • Shore-based spill management team (SMT) tabletop drills conducted yearly • Oil spill removal organization field equipment deployment drills conducted yearly • A drill that exercises entire response plan for each Response Zone, would be conducted at least once every three years	
Response Plan review and update procedures	
• Procedures to meet §194.121	Section 1.2
• Procedures to review plan after a worst case discharge and to evaluate and record the plan's effectiveness	Section 1.2, Section 8.3
Response zone appendices	
Each response zone appendix would provide the following information:	
• Name and telephone number of the qualified individual	Figure 1-2, Figure 3.1-5
• Notification procedures	Section 3
• Spill detection and mitigation procedures	Appendix D.2.1, Appendix D.3

FIGURE E-5 - DOT / PHMSA CROSS-REFERENCE, CONTINUED

OPA 90 REQUIREMENTS (49 CFR 194)	LOCATION
Response zone appendices, Continued	
• Name, address, and telephone number of oil spill response organization	Figure 3.1-5, Appendix B
• Response activities and response resources including: • Equipment and supplies necessary to meet §194.115 • Trained personnel necessary to sustain operation of the equipment and to staff the oil spill response organization and spill management team for the first seven days of the response	Appendix A, Appendix B, Section 7.1.1, Figure 7.1-1
• Names and telephone numbers of federal, state, and local agencies which the operator expects to assume pollution response responsibilities	Figure 3.1-6
• Worst case discharge volume	Appendix D.7

• Method used to determine the worst case discharge volume, with calculations	Appendix D.7

• A map that clearly shows:
  • Location of worst case discharge
  • Distance between each line section in the Response Zone:
  • Each potentially affected public drinking water intake, lake, river, and stream within a radius of five miles of the line section
  • Each potentially affected environmentally sensitive area within a radius of one mile of the line section
	Figure 1-6, Section 6.11

• Piping diagram and plan-profile drawing of each line section; may be kept separate from the response plan if the location is identified	Figure 1-2

• For every oil transported by each pipeline in the response zone, emergency response data that:
  • Include name, description, physical and chemical characteristics, health and safety hazards, and initial spill-handling and firefighting methods
  • Meet 29 CFR 1910.1200 or 49 CFR 172.602
	Appendix D.8

FIGURE E-6 - OSHA CROSS-REFERENCE

EAP REQUIREMENTS (29 CFR 1910.38 [a] [2])	LOCATION
• Emergency escape procedures and emergency escape route assignments	Figure C-8, Section 2.2
• Procedures to be followed by employees who remain to operate critical plant operations before they evacuate	N/A
• Procedures to account for all employees after emergency evacuation has been completed	Section 2
• Rescue and medical duties for those employees who are to perform them	Section 2
• The preferred means of reporting fires and other emergencies	Section 2, Figure 3.1-6
• Names of regular job titles of persons or departments who can	Figure 3.1-5, Section

be contacted for further information or explanation of duties under the plan	4.6

ERP REQUIREMENTS (29 CFR 1910.120 [l] [2])	LOCATION
• Pre-emergency planning	Appendix C, Appendix D
• Personnel roles, lines of authority, and communication	Section 4, Section 7.1.6
• Emergency recognition and prevention	Section 2, Appendix C, Appendix D
• Safe distances and places of refuge	Section 2
• Site security and control	Section 5.7, Section 7.3
• Decontamination procedures which are not covered by the site safety and health plan	Section 5.4, Section 5.5
• Emergency medical treatment and first aid	Section 2
• Emergency alerting and response procedures	Section 2, Section 3
• Critique of response and follow-up	Section 8.3
• PPE and emergency equipment	Section 7.1

FIGURE E-7 - EPA RESPONSE PLAN COVER SHEET

Owner/ operator of facility:	NuStar Logistics, L.P.
Owner / operator address / Phone (street address or route):	19003 IH-10 West San Antonio, TX 78257 (210) 918-5566 (Fax) (210) 918-2000 (Phone)
Facility name:	St. James Terminal
Facility address (street address or route):	7167 Koch Road
City, state, and U.S. zip code	St. James, LA 70086
Facility mailing address:	As above
Facility phone number.:	(225) 746-2110
Latitude:	(b) (7)(F), (b) (3) [redacted]
Longitude:	
Facility Acres:	
Facility Start Up Date:	1967

Dun & Bradstreet number:	006944334
Largest above ground oil storage tank capacity (gallons):	(b) (7)(F), [redacted]
Number of above ground oil storage tanks:	37 (including additive tanks)
North American Industrial Classification System (NAICS):	493190
Maximum oil storage capacity (gallons):	(b) (7)(F), (b) (3) [redacted]
Worst case oil discharge amount (gallons.):	
Name of Protected Waterway or Environmentally Sensitive Area:	1. Terminal Property / Farm Land;2. St. James Canal;Mississippi River
Number of Underground Storage Tanks:	0
Total Underground Storage Tanks (gallons):	0
Total Storage of Drums (gallons):	550
Total Storage of Transformers that Contain Oil (gallons):	5,726
Number of Surface Impoundments:	0
Total Storage of Surface Inmpoundments (gallons):	0
Facility distance to navigable water; mark the appropriate line.	
0-1/4 ☑ 1/4-1/2 mile ☐ 1/2 - 1 mile ☐ > 1 mile ☐	

FIGURE E-7 - EPA RESPONSE PLAN COVER SHEET CONTINUED

APPLICABILITY OF SUBSTANTIAL HARM CRITERIA
Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?
YES ☑ NO ☐
Does the facility have a total oil storage capacity greater than or equal to one million gallons and, within any storage area, does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation?
YES ☐ NO ☑
Does the facility have a total oil storage capacity greater than or equal to one million gallons and is the facility located at a distance (as calculated using the appropriate formula in or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?
YES ☑ NO ☐
Does the facility have a total oil storage capacity greater than or equal to one million gallons and is the facility located at a distance (using the appropriate formula in or a comparable formula) such that a discharge from the facility would shut down a drinking water intake?
YES ☑ NO ☐

Does the facility have a total oil storage capacity greater than or equal to one million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last five years?
YES ☐ NO ☑

CERTIFICATION	
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and that based on my inquiry of those individuals responsible for obtaining information, I believe that the submitted information is true, accurate, and complete.	
Signature:	Date: 7/9/2014
Name: Jean Zeringue	Title: Sr. Area Terminal Manager

APPENDIX F Last Revised: May 2008

ACRONYMS AND DEFINITIONS

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F.1 Acronyms

F.2 Definitions

F.1 ACRONYMS

ACP	Area Contingency Plan
AFFF	Aqueous Film Forming Foam
ASTM	American Society of Testing Materials
BBL	Barrel(s)
BLM	Bureau of Land Management (USDOI)
BPD	Barrels Per Day
BPH	Barrels Per Hour
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act of 1980, as amended
CFR	Code of Federal Regulations
CO_2	Carbon Dioxide
COTP	Captain of the Port (USCG)
CRZ	Contamination Reduction Zone
CWA	Clean Water Act of 1977 (Federal)
EAP	Emergency Action Plan
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ERAP	Emergency Response Action Plan
ERP	Emergency Response Plan
ERT	Emergency Response Team
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FOSC	Federal On-Scene Coordinator
FRP	Facility Response Plan
FRT	Facility Response Team
FWPCA	Federal Water Pollution Control Act of 1972
GIS	Geographic Information System
GPM	Gallons Per Minute
HAZMAT	Hazardous Materials
HMIS	Hazardous Material Information System
IAP	Incident Action Plan
IC	Incident Commander
ICS	Incident Command System

JIC	Joint Information Center

F.1 ACRONYMS, CONTINUED

LEL	Lower Explosive Limit
LEPC	Local Emergency Planning Committee
LEPD	Local Emergency Planning District
LNG	Liquid Natural Gas
LPG	Liquefied Petroleum Gas
MSDS	Material Safety Data Sheets
MTR	Marine Transportation Related
N/A	Not Applicable
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NIIMS	National Interagency Incident Management System
NM	Nautical Miles
NOAA	National Oceanic and Atmospheric Administration
NRC	National Response Center
NRDA	National Resource Damage Assessment
NRT	National Response Team
OBA	Oxygen Breathing Apparatus
OPA 90	Oil Pollution Act of 1990
OSC	On-Scene Coordinator/Commander
OSHA	Occupational Safety and Health Administration (USDL)
PHMSA	Pipeline and Hazardous Materials Safety Administration (DOT)
PPE	Personal Protective Equipment
PREP	(National) Preparedness for Response Exercise Program
QI	Qualified Individual
RCRA	Resource Conservation and Recovery Act of 1976
RQ	Reportable Quantity
SARA	Superfund Amendments and Reauthorization Act
SCADA	Supervisory Control and Data Acquisition (System)
SCBA	Self Contained Breathing Apparatus
SDWA	Safe Drinking Water Act of 1986
SERC	State Emergency Response Commission
SETS	Safety Environment and Training Services
SI	Surface Impoundment

SIC	Standard Industrial Classification (Code)
EMT	Emergency Management Team
SOSC	State On-Scene Coordinator

F.1 ACRONYMS, CONTINUED

SPCC	Spill Prevention, Control, and Countermeasures (Plan)
SSC	Scientific Support Coordinator (NOAA)
UCS	Unified Command System
UEL	Upper Explosive Limit
USACOE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDOD	U.S. Department of Defense
USDL	U.S. Department of Labor
USDOE	U.S. Department of Energy
USDOI	U.S. Department of the Interior
USDOJ	U.S. Department of Justice
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service (USDOI)
USGS	U.S. Geological Survey (USDOI)

F.2 DEFINITIONS

Adverse Weather
The weather conditions that will be considered when identifying response systems and equipment in a response plan for the applicable operating environment. Factors to consider include significant wave height, ice, temperature, weather-related visibility, and currents with the Captain of the Port (COTP) zone in which the systems or equipment are intended to function.

Aqueous Film Forming Foam
A fluoro-carbon surfactant that acts as an effective vapor securing agent due to its effect on the surface tension of the water. Its physical properties enable it to float and spread across surfaces of a hydrocarbon fuel with more density than protein foam.

Average Most Probable Discharge **(USCG)**
A discharge of the lesser of 50 barrels (2100 gallons) or one percent of the volume of the worst case discharge.

Barrel
Measure of space occupied by 42 U. S. gallons at 60 degrees Fahrenheit.

Bleve
A boiling liquid-expanding vapor explosion; failure of a liquefied flammable gas container caused by fire exposure. Pronounced "blevey."

Boilover
Occurs when the heat from a fire in a tank travels down to the bottom of the tank causing water that is already there to boil and push part of the tank's contents over the side.

Carbon Dioxide
A heavy, colorless, odorless, asphyxiating gas, that does not normally support combustion. It is one and one-half times heavier than air and when directed at the base of a fire its action is to dilute the fuel vapors to a lean mixture to extinguish the fire.

Class A Fire
A fire involving common combustible materials which can be extinguished by the use of water or water solutions. Materials in this category include wood and wood-based materials, cloth, paper, rubber and certain plastics.

Class B Fire
A fire involving flammable or combustible liquids, flammable gases, greases and similar products. Extinguishment is accomplished by cutting off the supply of oxygen to the fire or by preventing flammable vapors from being given off.

Class C Fire
A fire involving energized electrical equipment, conductors or appliances. Nonconducting extinguishing agents must be used for the protection of firefighters.

Class D Fire
A fire involving combustible metals, for example, sodium, potassium, magnesium, titanium and aluminum. Extinguishment is accomplished through the use of heat-absorbing extinguishing agents such as certain dry powders that do not react with the burning metals.

F.2 DEFINITIONS, CONTINUED

Cold (Support) Zone
An area free of contaminants so that Personal Protection Equipment (PPE) is not required for personnel working in this area. Command functions and supporting operations are carried out here.

Command Post
A site located at a safe distance from the spill site where response decisions are made, equipment and manpower deployed, and communications handled. The Incident Commander and the On-Scene Coordinators may direct the on-scene response from this location.

Communication Equipment
Equipment that will be utilized during response operations to maintain communication between employees, contractors, federal/state/local agencies.

Containment Boom
A flotation/freeboard device, made with a skirt/curtain, longitudinal strength member, and ballast unit/weight designed to entrap and contain the product for recovery.

Contamination Reduction Zone
Same as the warm zone, a buffer between the hot and cold zones. Decontamination activities take place there. Equipment needed to support the primary response operation may be staged in the warm zone.

Contingency Plan
A document used by: (1) federal, state, and local agencies to guide planning and response

procedures regarding spill of oil, hazardous substances, or other emergencies; (2) a document used by industry as a response plan to spills of oil, hazardous substances, or other emergencies occurring upon their vessels or at their facilities.

Contract or Other Approved Means
Includes:

- A written contractual agreement with a response contractor. The agreement should identify and ensure the availability of the specified personnel and equipment described under U.S.C.G. Regulations within stipulated response times in the specified geographic areas

- Certification by the facility owner or operator that the specified personnel and equipment described under USCG Regulations are owned, operated, or under the direct control of the facility owner or operator, and are available within stipulated times in the specified geographic areas

- Active membership in a local or regional oil spill removal organization that has identified specified personnel and equipment described under USCG Regulations that are available to respond to a discharge within stipulated times in the specified geographic areas

- A document which:

    - Identifies the personnel, equipment, services, capable of being provided by the response contractor within stipulated response times in specified geographic areas
    - Sets out the parties' acknowledgment that the response contractor intends to commit the resources in the event of a response
    - Permits the Coast Guard to verify the availability of the response resources identified through tests, inspections, drills
    - Is incorporated by reference in the Response Plan

- For a facility that could reasonably be expected to cause substantial harm to the environment, with the consent of the response contractor or oil spill removal organization, the identification of a response contractor or oil spill removal organization with specified equipment and personnel which are available within stipulated response times in specific geographic areas.

F.2 DEFINITIONS, CONTINUED

Demand Breathing Apparatus
A type of self-contained breathing apparatus that provides air or oxygen from a supply carried by the user.

Dispersants
Those chemical agents that emulsify, disperse, or solublize oil into the water column or promote the surface spreading of oil slicks to facilitate dispersal of the oil into the water column.

Diversion Boom
A flotation/freeboard device, made with a skirt/curtain, longitudinal strength member, and

ballast unit/weight designed to deflect or divert the product towards a pick up point, or away from certain areas.

Environmentally Sensitive Areas
Streams and water bodies, aquifer recharge zones, springs, wetlands, agricultural areas, bird rookeries, endangered or threatened species (flora and fauna) habitat, wildlife preserves or conservation areas, parks, beaches, dunes, or any other area protected or managed for its natural resource value.

Exclusion Zone
Same as hot zone, the area where a hazard exists. This is the hazardous location on site, therefore entry requires personal protective equipment (PPE). It must be big enough for both mitigation activities and protection of personnel in the warm zone should an explosion, fire, change of wind direction, or an unexpected release occur during response activities.

Explosive Range
Flammable range; the range of the mixture of air and flammable gas or flammable vapor of liquids that must be present in the proper proportions for the mixture to be ignited. The range has upper and lower limits; any mixture above the upper explosive limit or below the lower explosive limit will not burn.

Facility
Any pipeline, structure, equipment, or device used for handling oil including, but not limited to, underground and aboveground storage tanks, impoundments, mobile or portable drilling or workover rigs, barge mounted drilling or workover rigs, and portable fueling facilities located offshore or on or adjacent to coastal waters or any place where a discharge of oil from the facility could enter coastal waters or threaten to enter the coastal waters.

Federal Fund
The oil spill liability trust fund established under OPA.

First Responders, First Response Agency
A public health or safety agency (i.e., fire service or police department) charged with responding to a spill during the emergency phase and alleviating immediate danger to human life, health, safety, or property.

Flashover
The ignition of combustibles in an area heated by convection, radiation, or a combination of the two. The action may be a sudden ignition in a particular location followed by rapid spread or a "flash" of the entire area.

F.2 DEFINITIONS, CONTINUED

Flash Point
The temperature at which a liquid fuel gives off sufficient vapor to form an ignitable mixture near its surface.

Foam
A blanket of bubbles that extinguishes fire mainly by smothering. The blanket prevents flammable vapors from leaving the surface of the fire and prevents oxygen from reaching the fuel. The water in the foam also has a cooling effect.

Hazardous Material
Any nonradioactive solid, liquid, or gaseous substance which, when uncontrolled, may be harmful to humans, animals, or the environment. Including but not limited to substances otherwise defined as hazardous wastes, dangerous wastes, extremely hazardous wastes, oil, or pollutants.

Hazardous Substance
Any substance designed as such by the Administrator of EPA pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act; regulated pursuant to Section 311 of the Federal Water Pollution Control Act.

Hazardous Waste
Any solid waste identified or listed as a hazardous waste by the Administrator of the EPA pursuant to the federal Solid Waste Disposal Act, as amended by the Resources Conservation and Recovery Act (RCRA), 42 U.S.C., Section 6901, et seq as amended. The EPA Administrator has identified the characteristics of hazardous wastes and listed certain wastes as hazardous in Title 40 of the Code of Federal Regulations, Part 261, Subparts C and D respectively.

Higher Volume Port Area
Ports of:

- Boston, MA
- New York, NY
- Delaware Bay and River to Philadelphia, PA
- St. Croix, VI
- Pascagoula, MS
- Mississippi River from Southwest Pass, LA to Baton Rouge, LA
- Louisiana Offshore Oil Port (LOOP), LA
- Lake Charles, LA
- Sabine-Nachez River, TX
- Galveston Bay and Houston Ship Channel, TX
- Corpus Christi, TX
- Los Angeles/Long Beach Harbor, CA
- San Francisco Bay, San Pablo Bay, Carquinez Strait, Suisun Bay to Antioch, CA
- Straits of Juan de Fuca and Puget Sound, WA
- Prince William Sound, AK

Hot (Exclusion) Zone
The area where a hazard exists. This is the hazardous location on site, therefore entry requires personal protective equipment (PPE). It must be big enough for both mitigation activities and protection of personnel in the warm zone should an explosion, fire, change of wind direction, or an unexpected release occur during response activities.

F.2 DEFINITIONS, CONTINUED

Hyperthermia
A dangerously high fever that can damage nerve centers. This condition can result from exposure to excessive heat over an extended period of time.

Ignition Temperature
The lowest temperature at which a fuel will burn without continued application of an ignition

source.

Incident Commander (IC)
The one individual in charge at any given time of an incident. The Incident Commander will be responsible for establishing a unified command with all on-scene coordinators.

Incident Command System
A method by which the response to an extraordinary event, including a spill, is categorized into functional components and responsibility for each component assigned to the appropriate individual or agency.

Interim Storage Site
A site used to temporarily store recovered oil or oily waste until the recovered oil or oily waste is disposed of at a permanent disposal site. Interim storage sites include trucks, barges, and other vehicles, used to store waste until the transport begins.

Lead Agency
The government agency that assumes the lead for directing the spill response.

Lead Federal Agency
The agency which coordinates the federal response to incidents on navigable waters. The lead Federal agencies are:

- **U. S. Coast Guard (USCG):** Oil and chemically hazardous materials incidents on navigable waters
- **Environmental Protection Agency (EPA):** Oil and chemically hazardous materials incidents on most inland waters and in the inland zone

Lead State Agency
The agency which coordinates state support to Federal and/or Local governments or assumes the lead in the absence of a Federal spill response.

Lower Flammable Limit
Minimum flammable concentration of a particular gas in the air.

Marine Transportation-Related Facility (MTR Facility)
An onshore facility, including piping and any structure used to transfer oil to or from a vessel, subject to regulation under 33 CFR Part 154 and any deepwater port subject to regulation under 33 CFR Part 150.

Maximum Extent Practicable
The planning values derived from the planning criteria used to evaluate the response resources described in the response plan to provide the on-water recovery capability and the shoreline protection and cleanup capability to conduct response activities for a worst case discharge from a facility in adverse weather.

Maximum Most Probable Discharge (USCG)
A discharge of the lesser of 2,500 barrels or ten percent of the volume of a worst case discharge.

F.2 DEFINITIONS, CONTINUED

Medium Discharge **(EPA)**
Same as maximum most probable discharge.

National Contingency Plan
The plan prepared under the Federal Water Pollution Control Act (33 United States Code '1321 et seq) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 United State Code '9601 et seq), as revised from time to time.

Nearshore Area
The area extending seaward 12 miles from the boundary lines defined in 46 CFR Part 7, except in the Gulf of Mexico. In the Gulf of Mexico, it means the area extending seaward 12 miles from the line of demarcation (COLREG) lines) defined in '80.740 - 80.850 of Title 33 of the CFR.

Non-Persistent or Group I Oil
A petroleum-based oil that, at the time of shipment, consists of hydrocarbon fractions:

- At least 50% of which by volume, distill at a temperature of 340EC (645EF)
- At least 95% of which volume, distill at a temperature of 370EC (700EF)

Non-Petroleum Oil
Oil of any kind that is not petroleum-based. It includes, but is not limited to, animal and vegetable oils.

Offshore Area
The area beyond 12 nautical miles measured from the boundary lines defined in 46 CFR Part 7 extending seaward to 50 nautical miles, except in the Gulf of Mexico. In the Gulf of Mexico it is the area beyond 12 nautical miles of the line of demarcation (COLREG lines) defined in '80-740 - 80.850 of Title 33 of the CFR extending seaward to 50 nautical miles.

Oil or Oils
Naturally occurring liquid hydrocarbons at atmospheric temperature and pressure coming from the earth, including condensate and natural gasoline, and any fractionation thereof, including, but not limited to, crude oil, petroleum gasoline, fuel oil, diesel oil, oil sludge, oil refuse, and oil mixed with wastes other than dredged spoil. Oil does not include any substance listed in Table 302.4 of 40 CFR Part 302 adopted August 14, 1989, under Section 101(14) of the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by P.L. 99-499.

Oil Spill Removal Organization (OSRO)
An entity that provides oil spill response resources, and includes any for profit or not-for-profit contractor, cooperative, or in-house response resources that have been established in a geographic area to provide required response resources.

Operating Area
The rivers and canals, inland, nearshore, Great Lakes, or offshore geographic location(s) in which a facility is handling, storing, or transporting oil.

Operating Environment
Rivers and canals, inland, Great Lakes, or ocean. These terms are used to define the conditions in which response equipment is designed to function.

Overhaul
A procedure following a fire whereby the area is examined for hidden fire and fire extension

and the fire area is cleaned up.

F.2 DEFINITIONS, CONTINUED

Owner or Operator
Any person, individual, partnership, corporation, association, governmental unit, or public or private organization of any character.

PPE - Level A
Offers the highest level of respiratory, skin, eye and mucous membrane protection. Intended for IDLH or near IDLH conditions. Level A consists of the following:

- Positive pressure self contained breathing apparatus (SCBA)
- Fully encapsulated chemical resistant unit
- Inner and outer chemical resistant gloves
- Chemical resistant boots with steel toe and shank
- Hard hat
- Other accessories as required

PPE - Level B
Offers the highest degree of respiratory protection, but a lesser level of skin and eye protection. Level B is the minimum level recommended on initial site entries until the hazards have been further identified and defined by monitoring sampling, and other methods. Level B protection may be used where confined space entry conditions exist and existing gases or vapors are not harmful to the skin. Level B consists of the following:

- Positive pressure self contained breathing apparatus (SCBA)
- Chemical resistant clothing appropriate for hazard
- Inner and outer chemical resistant gloves
- Chemical resistant boots with steel toe and shank
- Hard hat
- Other accessories as required

PPE - Level C
May be used when the type of airborne substance is known, its concentration has been measured, and criteria for using air-purifying respirators have been met. Also, skin and eye exposure is unlikely. Level C consists of the following:

- Full-face, air purifying respirator appropriate for contaminant
- Chemical, fire and/or heat resistant clothing appropriate for hazard
- Inner and outer chemical resistant gloves
- Chemical resistant boots with steel toe and shank
- Hard hat
- Other accessories as required

PPE - Level D
Standard minimum level of protection required during routine operations or incidents with no known hazards. Level D consists of the following:

- Flame retardant clothing
- Safety glasses
- Leather boots or shoes

Hard hat
- Fire fighting protective clothing

F.2 DEFINITIONS, CONTINUED

Persistent Oil
A petroleum-based oil that does not meet the distillation criteria for a non-persistent oil. For the purposes of this Appendix, persistent oils are further classified based on specific gravity as follows:

- Group II - specific gravity less than .85
- Group III - specific gravity between .85 and less than .95
- Group IV - specific gravity .95 to and including 1.0
- Group V - specific gravity greater than 1.0

Primary Response Contractor(s)
An individual, company, or cooperative that has contracted directly with the plan holder to provide equipment and/or personnel for the containment or cleanup of spilled oil.

Qualified Individual(s)
An English-speaking representative(s) of the facility identified in the plan, located in the United States, available on a 24-hour basis, familiar with implementation of the facility response plan, and trained in his or her responsibilities under the plan. This person must have full written authority to implement the facility's response plan. This includes:

- Activating and engaging in contracting with identified oil spill removal organization(s)
- Acting as a liaison with the predesignated of Federal On-Scene Coordinator (FOCS)
- Obligating, either directly or through prearranged contracts, funds required to carry out all necessary or directed response activities

Regional Response Team
The Federal Response Organization (consisting of representatives from selected Federal and State agencies) which acts as a regional body responsible for planning and preparedness before an oil spill occurs and providing advice to the FOSC in the event of a major or substantial spill.

Reid Vapor Pressure Method
Method used by the American Society of Testing Materials to test vapor pressure. It is a measure of the volatility, or tendency to vaporize, of a liquid.

Responsible Party
Any person, owner/operator, or facility that has control over an oil or hazardous substance immediately before entry of the oil or hazardous substance into the atmosphere or in or upon the water, surface, or subsurface land of the state.

Rivers and Canals
A body of water confined within the inland area that has a projected depth of 12 feet or less, including the Intracoastal Waterway and other waterways artificially created for navigation.

F.2 DEFINITIONS, CONTINUED

Skimmers
Mechanical devices used to skim the surface of the water and recover floating oil. Skimmers fall into four basic categories (suction heads, floating weirs, oleophilic surface units, and hydrodynamic devices) which vary in efficiency depending on the type of oil and size of spill.

Slopover
An event that occurs when water is introduced into a tank of very hot liquid, causing the liquid to froth and spatter.

Small Discharge (EPA)
Same as average most probable discharge.

Sorbents
Materials ranging from natural products to synthetic polymeric foams placed in confined areas to soak up small quantities of oil. Sorbents are very effective in protecting walkways, boat decks, working areas, and previously uncontaminated or cleaned areas.

Emergency Management Team
The personnel identified to staff the organizational structure identified in a response plan to manage response plan implementation.

Spontaneous Ignition
A fire that occurs without a flame, spark, hot surface, or other outside source of ignition.

Staging Areas
Designated areas near the spill site accessible for gathering and deploying equipment and/or personnel.

State Emergency Response Commission (SERC)
A group of officials appointed by the Governor to implement the provisions of Title III of the Federal Superfund Amendments and Reauthorization Act of 1986 (SARA). The SERC approves the State Oil and Hazardous Substance Discharge Prevention and Contingency Plan and Local Emergency Response Plans.

Static Electricity
Charges of electricity accumulated on opposing and usually moving surfaces having negative and positive charges, respectively. A hazard exists where the static potential is sufficient to discharge a spark in the presence of flammable vapors or combustible dusts.

Support Zone
Same as cold zone, an area free of contaminants so that personal protection equipment (PPE) is not required for personnel working in this area. Command functions and supporting operations are carried out here.

Tornado Warning
A tornado has been sighted.

Tornado Watch
Conditions are favorable for tornados to form.

F.2 DEFINITIONS, CONTINUED

Unified Command
The method by which local, state, and federal agencies will work with the Incident Commander to:

- Determine their roles and responsibilities for a given incident
- Determine their overall objectives for management of an incident
- Select a strategy to achieve agreed upon objectives
- Deploy resources to achieve agreed-upon objectives

Warm (Contamination Reduction) Zone
A buffer between the hot and cold zones. Decontamination activities take place there. Equipment needed to support the primary response operation may be staged in the warm zone.

Waste
Oil or contaminated soil, debris, and other substances removed from coastal waters and adjacent waters, shorelines, estuaries, tidal flats, beaches, or marshes in response to an unauthorized discharge. Waste means any solid, liquid, or other material intended to be disposed of or discarded and generated as a result of an unauthorized discharge of oil. Waste does not include substances intended to be recycled if they are in fact recycled within 90 days of their generation or if they are brought to a recycling facility within that time.

Wildlife Rescue
Efforts made in conjunction with federal and state agencies to retrieve, clean, and rehabilitate birds and wildlife affected by an oil spill.

APPENDIX G Last Revised: June 2014

ADDITIONAL INFORMATION

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- ICS Form 201
- ICS Form 202
- ICS Form 203
- ICS Form 204
- ICS Form 204a
- ICS Form 205
- ICS Form 205a
- ICS Form 206
- ICS Form 207
- ICS Form 208
- ICS Form 209
- ICS Form 210
- ICS Form 211
- ICS Form 211e
- ICS Form 211p
- ICS Form 213
- ICS Form 214
- ICS Form 214a
- ICS Form 215
- ICS Form 215a
- ICS Form 216
- ICS Form 217
- ICS Form 218
- ICS Form 219s

- ICS Form 220
- ICS Form 221
- ICS Form 225
- ICS Form 231
- ICS Form 230
- ICS Form 232
- IAP Cover Pg
- FEMA ICS Forms Index
- Federal threatened endagered species
- State threatened endangered species

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EMERGENCY RESPONSE ACTION PLAN

Last Revised: July 2014

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1.0 INTRODUCTION

1.1 Purpose / Scope of Plan

This St. James Terminal Emergency Response Action Plan (ERAP) provides guidelines to assist in managing an emergency. The primary goal of this Plan is to provide tools to enable an efficient, coordinated, and effective response to emergencies.

The ERAP is not meant to replace common sense or actions not specifically described herein. Responders should continually evaluate the effectiveness of actions called for in this Plan and make the appropriate adjustments based on past experience and training.

This ERAP contains tactical response plans that identify site-specific potential response strategies. Response strategies, equipment and manpower requirements, and site conditions are based on conditions that were present during site assessments. Actual conditions at the time of a response may vary significantly and may necessitate the need for a different strategy and/or equipment requirements. The strategies and equipment lists contained in this plan should be used as guidelines only.

This document is intended to satisfy the requirements of 29 CFR 1910.38(a)(2) and 1910.120(l)(2) (OSHA Emergency Response Plan and Emergency Action Plan) and 40 CFR

Part 112.20 (EPA Emergency Response Action Plan). Cross-references for these regulations are located in **APPENDIX E** of the Spill Response Plan.

1.2 Plan Review and Updating Procedures

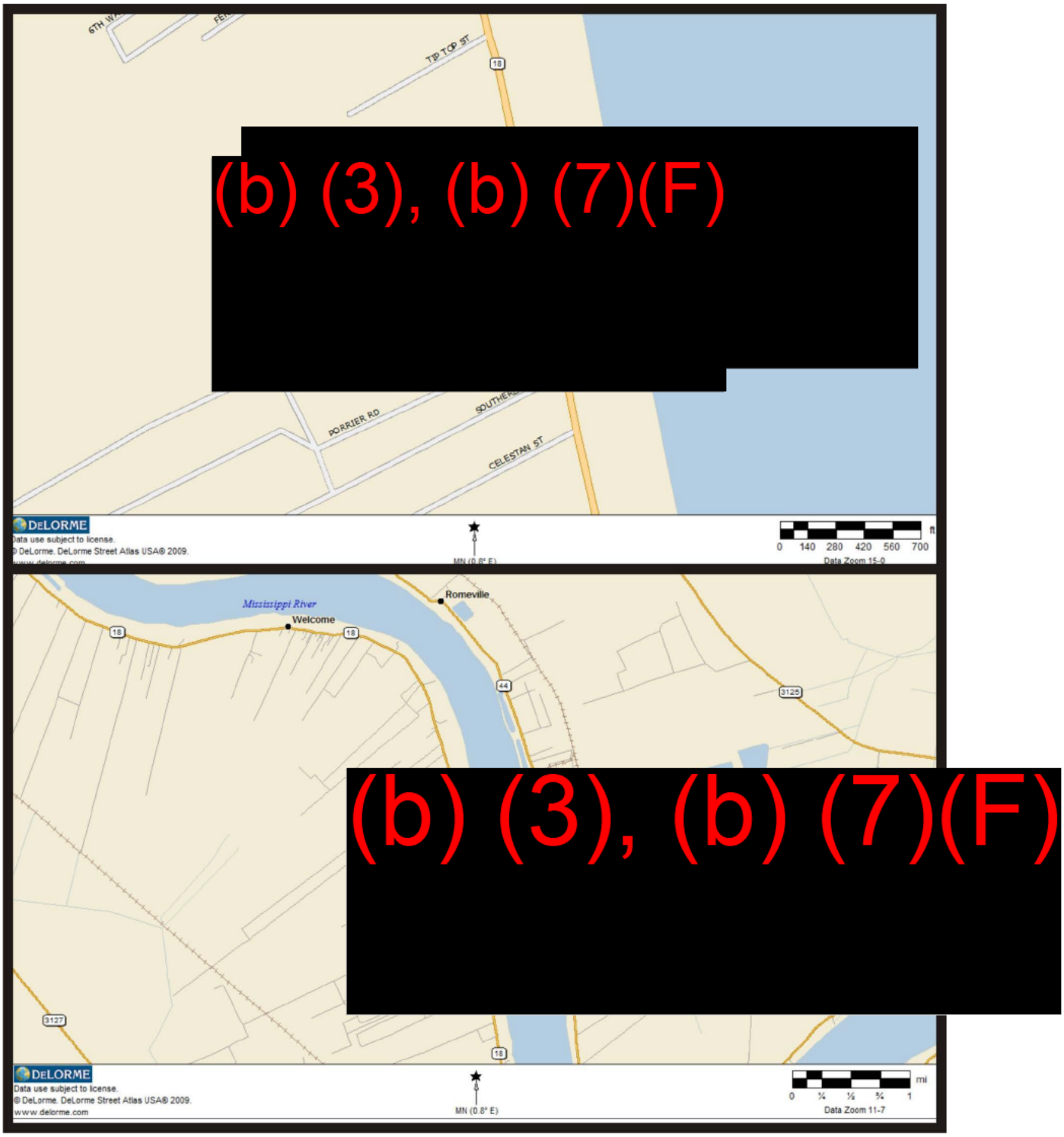
The ERAP will be reviewed and modified as appropriate to address new information.

Plan revisions will be numbered sequentially and entered on the Record of Changes Form. The change numbers, date, and description of change will also be entered on the form. These changes are then to be distributed to all plan holders on the Distribution List.

1.3 Facility Description

The facility has 37 ASTs of which, 32 are in are in crude oil service. The others store diesel fuel or are out of service. (b) (7)(F), (b) (3) [redacted] The Terminal receives crude oil via barge/vessel, railcar, tank truck, and pipeline. Crude oil is shipped from the Terminal via barge/vessel and pipeline.

FIGURE 1-1 - FACILITY AREA MAP



2.0 RESPONSE STEPS

2.1 SPILL / RELEASE RESPONSE

RESPONSE ACTION	
First Person to Discover Spill	
Immediately notify Supervisory Personnel. Take appropriate action to protect life and ensure safety of personnel. Contact the appropriate local emergency responders or	☐

request the office to do so.	
Immediately shut down terminal operations (if applicable). Remotely controlled motor operated valves should be closed as soon as a leak is detected. Manual operated valves should be closed if safe to do so.	☐
Secure the scene. Isolate the area and assure the safety of people and the environment. Keep people away from the scene and outside the safety perimeter.	☐
Supervisory Personnel	
Assume role of Incident Commander until relieved by upper Management (if applicable).	☐
Conduct preliminary assessment of health and safety hazards.	☐
Evacuate nonessential personnel, notify emergency response agencies to provide security, and evacuate surrounding area (if necessary).	☐
Call out spill response contractors (**FIGURE 3-5**).	☐
If safe to do so, direct facility responders to shut down potential ignition sources in the vicinity of the spill, including motors, electrical pumps, electrical power, flairs, etc. Keep drivers away from truck rack if spill occurs there.	☐
If safe to do so, direct facility responders to shut down and control the source of the spill. Be aware of potential hazards associated with product and ensure that lower explosive limits (LELs) are within safe levels before sending personnel into the spill area.	☐
If safe to do so, direct facility responders to stabilize and contain the situation. This may include construction of minor earthen berms and/or sorbent boom and pads.	☐
For low flash oil (<100ºF), consider applying foam over the oil, using water spray to reduce vapors, grounding all equipment handling the oil, and using non-sparking tools.	☐
If there is a potential to impact shorelines, consider lining shoreline with sorbent or diversion boom to reduce impact.	☐
Notify Local Emergency Responders. Obtain the information necessary to complete the Leak Accident Report Form (**FIGURE 3-2**).	☐
Make local notifications: • LEPC • Police • Fire • Sheriff	☐
HSE Regional Manager	
Make appropriate notifications: • National Response Center (800) 424-8802 • External regulatory notifications (**FIGURE 3-5**)	☐

2.1 SPILL/RELEASE RESPONSE, CONTINUED

RESPONSE ACTION

On-Scene Coordinator	
Activate all or a portion of Emergency Management Team (EMT) (as necessary). HSE Department will maintain contact with notified regulatory agencies.	☐
Ensure the EMT has mobilized spill response contractors (if necessary). It is much better to demobilize equipment and personnel if not needed than to delay contacting them if they are needed.	☐
Document all response actions taken, including notifications, agency/media meetings, equipment and personnel mobilization and deployment, and area impacted. (Refer to **SECTION 5** in the Spill Response Plan for documentation.)	☐
Water-based Spills: Initiate spill tracking and surveillance operations. Determine extent of pollution via surveillance aircraft or vehicle. Estimate volume of spill utilizing information in **SECTION 2.1.3** in the Spill Response Plan. Send photographer / videographer, if safe. Use of dispersants requires Federal or State approval.	☐
Land-based Spills: Initiate spill tracking and surveillance, if applicable.	☐
SECONDARY RESPONSE ACTIONS (Refer to EMT job descriptions in **SECTION 4.6** in the Spill Response Plan)	
FACILITY-SPECIFIC RESPONSE CONSIDERATIONS (Refer to **SECTIONS 6.0** through **SECTION 11.0** for maps, tactical plans, and sensitivity information).	

SITE-SPECIFIC ACTIONS	
DOCUMENT ALL ACTIONS TAKEN	
First Priority	
Account for all personnel and visitors.	☐
Identify and assess fire/safety hazards.	☐
Second Priority	
Secure spill source, if possible.	☐
Assure all required notifications are conducted.	☐
Secure all drainage leading from facility.	☐
Third Priority	
Facility drainage and secondary containment will be adequate to contain a spill of small or medium size, preventing it from reaching St. James Canal. Once the spill has been contained, resources are present at the facility to recover spilled product, safety conditions permitting.	☐
If unable to contain spill to facility property, refer to SECTION 6.8 of the FRP or SECTION 9.0 of the ERAP for location of booming strategy.	☐
Once deployment of response equipment has been completed, initiate recovery of product.	☐
Upon arrival of EMT, assure all information is accurate and complete prior to being released.	☐
Assure proper documentation has been completed from initial discovery of spill to finish; reference **SECTION 5** in the Spill Response Plan.	☐

2.2 EVACUATION

EVACUATION CHECKLIST	
TASK	
Request assistance from off-site response organizations; convey Command Post's location. Notify appropriate agencies (if appropriate).	☐
Assemble personnel at predetermined safe location: upwind/up gradient of release (assembly area).	☐
Account for Company and contractor personnel.	☐
Assess casualties (number/type/location).	☐
Determine probable location of missing personnel.	☐
Secure site, establish re-entry point and check-in/check-out procedures.	☐
Develop list of known hazards (confined spaces, electrical hazards, physical hazards, vapors, oxygen deficiency, fire/explosion, etc.).	☐
Monitor situation (weather, vapors, product migration) for significant changes.	☐
Assist in developing a Rescue Plan, if necessary.	☐

2.2 EVACUATION, CONTINUED

EVACUATION FACTORS	
FACTOR	**DESCRIPTION**
Stored material location	• Located in oil storage area • Identified in facility Plot Plan (**FIGURE 5-4**)
Spilled material hazards	• Hazard is fire/explosion
Water currents, tides or wave conditions	• The velocity of the Mississippi River is typically 2.6 feet per second.
Evacuation routes	• Routes are summarized on Evacuation Plan Diagram (**FIGURE 5-2** • Criteria for determining safest evacuation routes from facility may include: wind direction, potential exposure to toxins and carcinogens, intense heat, potential for explosion/fire, and blockage of planned route by fire, debris, or released liquid
Alternate evacuation routes	• Alternate routes may exist; refer to Evacuation Plan Diagram (**FIGURE 5-2**)
Injured personnel	• Emergency services can be mobilized to the facility (**FIGURE**

transportation	**5-2**
Alarm/Notification system location	• Employees first learning of a potential emergency situation shall inform the QI by radio, telephone, or in person. The facility radios have an "all channel" function and the QI will inform employees and contractors of the emergency with instructions via radio on the "all channel" function. At least one person working in a crew must have a radio on their person at all times and is responsible for communicating emergency information to their associated parties. The St. James Parish LEPC has an outdoor warning system for the surrounding community and a community telephone notification system in the event the surrounding area must be evacuated.
Community evacuation plans	• Company may request local police, county sheriff and/or state police assistance (**FIGURE 3-5**). Community evacuations are the responsibility of these agencies.
Spill flow direction	• Most releases that breach secondary containment will flow west off the Terminal property via one of four drainage ditches and will enter the St. James Canal. • Identified in facility drainage diagram (**FIGURE 5-1**)

2.2 EVACUATION, CONTINUED

EVACUATION FACTORS	
FACTOR	**DESCRIPTION**
Prevailing wind direction and speed	• Prevailing winds typically are from the east-southeast. Average wind speeds in the area are 4.6 to 7 miles per hour. • Because wind direction varies with weather conditions, consideration for evacuation routing will depend in part on wind direction
Emergency personnel/response equipment arrival route	• Emergency response personnel and response equipment will arrive through the main gate of the facility. • Directions to nearest medical facility provided below

2.2 EVACUATION, CONTINUED

EVACUATION FACTORS	
FACTOR	**DESCRIPTION**

Centralized check-in area	• The primary assembly point is in the parking lot in front of the main gate entrance. The secondary assembly point is at the truck rack near Hwy 18. In the event of an emergency, the assembly point will be evaluated based on wind conditions. If the primary assembly point is inaccessible due to wind conditions, the secondary assembly point will be utilized or another assembly point selected and communicated by the QI if wind direction is still a factor. • Supervisor is responsible for head count
Mitigation Command Center location	• Initial Command Center located at The mitigation command center will be set up in the Terminal Main Office. In the event of a Terminal evacuation, mobile trailers supplied by the Oil Spill Response Organization (OSRO) and placed upwind of the release will be utilized as a temporary mitigation command center. • Mobile Command Posts may be established as necessary
Facility Shelter Location	• Main Office • Not a safe harbor from fires, explosions, vapor clouds, or other significant emergencies; however, may be used for temporary shelter from inclement weather
Directions to nearest medical facility	Directions to Riverview Medical Center in Gonzales, Louisiana. : • • Turn left onto Highway 18. • Travel northwest approximately 7.5 miles. Then turn left onto Frontage Street. • From Frontage Street, turn right onto Highway 70 East and proceed for 8 miles. • From Highway 70 East, turn right onto Highway 22. Merge left onto Interstate 10 West. • Take the Highway 30 exit (Exit 177) towards St. Gabriel/Gonzales. Merge onto Highway 30 East. • Riverview Medical Center is located at 1125 West Highway 30 in Gonzales, Louisiana.

2.3 TORNADO

TORNADO CHECKLIST	
TASK	
Monitor news media reports (**FIGURE 3-5**). • Tornado watch means conditions are favorable for tornadoes.	☐

• Tornado warning means a tornado has been sighted.	
When a tornado warning is issued, immediately notify all personnel on-site. Notify off site personnel of the situation (Control Center or Regional Management).	☐
Take shelter: • Go to an interior room on the lowest floor. • Get under a sturdy piece of furniture or solid structure. • Use your arms to protect head and neck.	☐
Have location personnel report to the designated area.	☐
Account for all personnel on duty.	☐
Look for funnel formations on the ground or in the clouds; listen for a roar that sounds like a jet aircraft or rail traffic.	☐
If the facility is damaged by the tornado, notify Management.	☐
Go to the scene of the incident to evaluate the situation. • Be aware of broken glass and downed power lines. • Assess the area for damaged equipment or product releases. • Check for injuries. • Use caution entering a damaged building.	☐
Update Supervisory Personnel/Management.	☐
Perform Initial Response Actions functions as stated in **SECTION 2.1**.	☐
Conduct post-emergency evaluation and report.	☐

2.4 FLOOD

FLOOD CHECKLIST	
TASK	
Perform continuous monitoring of the situation by listening to radio and/or television reports (**FIGURE 3-5**). • Flash flood watch means flooding is possible. • Flash flood warning means flooding is occurring or is imminent.	☐
Update Supervisory Personnel when flooding is imminent.	☐
Establish an evacuation plan (**SECTION 2.2**).	☐
Take preliminary actions to secure the facility before flooding and mandatory	☐

evacuation.	
Consider having sandbags brought to sites that could be affected by the flooding.	☐
Consider obtaining portable pumps and hoses from local suppliers or from other petroleum service locations in the area.	☐
Remove product from underground storage tanks (i.e., sumps and separators, if applicable) and replace with water to prevent them from floating out of the ground.	☐
If additional new product is available fill each tank to the minimum level necessary to prevent buoyancy in the event of flooding (Rule of thumb is 30% of the safe fill height). If additional product is not available, transfer appropriate product among tanks to prevent buoyance. If minimum levels cannot be reached through product transfer, add water bottoms.	☐
Plug all rack drains and facility drains connected to the sump.	☐
Empty all dikes of water.	☐
Ensure that tank roof drains are working properly.	☐
Anchor all bulk additive tanks, fuel barrels, empty drums, and propane tanks (if applicable).	☐
Notify Supervisory Personnel/Management that the facility will be closed. Customer should be notified.	☐
Back up computer files.	☐
Remove assets such as files, computers, spare parts, and vehicles.	☐
Shut off high voltage power and natural gas lines.	☐
Close all valves on product and additive storage tanks.	☐
Before evacuation, know where all the employees will be residing and obtain phone numbers so they can be contacted if additional emergencies occur.	☐

2.4 FLOOD, CONTINUED

FLOOD CHECKLIST	
TASK	
Conduct a post-emergency evacuation and report.	☐
Maintain hazards awareness: • Structural damage; • Equipment damage and product release; • Downed power lines; • Leaking natural gas, water, and sewer lines; • Poisonous snakes and other wildlife sheltering in structures, vehicles, and furniture; and • Avoid direct contact with flood water, mud, and animal carcasses.	☐

2.5 MEDICAL

MEDICAL CHECKLIST	
TASK	
Summon Emergency Medical Services (EMS) to the scene (**FIGURE 3-5**).	☐
Do not move the patient unless a situation (such as a fire) threatens patient's life.	☐
If trained, provide appropriate first aid for both injury and shock until the EMS arrives at the scene.	☐
As the situation warrants, try to stop the bleeding and keep the patient breathing until the EMS arrives at the scene.	☐
The rescuer's role includes: • Removing the patient from any situation threatening patient's life or the lives of rescuers. • Correcting life-threatening problems and immobilizing injured parts before transporting the patient. • Transporting the patient in a way that minimizes further damage to injured parts. • Administering essential life support while the patient is being transported. • Observing and protecting the patient until medical staff can take over. • Administering care as indicated or instructed.	☐
Notify Supervisory Personnel and/or Regional Management.	☐
Notify victim's immediate family.	☐
Complete follow-up and written reporting, as the situation demands.	☐

2.6 BOMB THREAT

(b) (7)(F), (b) (3)

[redacted]

(b) (7)(F), (b) (3)

(b) (7)(F), (b) (3)

[redacted]

2.7 FIRE AND/OR EXPLOSION

Your first consideration is always the safety of people in the immediate area, including your own.

The first responder's initial objective is site management.

FIRE AND/OR EXPLOSION CHECKLIST	
TASK	
At a manned facility	
Evaluate the situation; approach cautiously from upwind; do not rush in.	☐
Notify the local police and fire departments (Dial 911).	☐
Sound the facility alarm and push the red emergency shutdown switch (if equipped).	
Notify Qualified Individual and Operations Control (if applicable).	☐
Appropriately trained personnel may attempt to extinguish the fire if it is in the	

incipient (early) stage and **if it can be done safely**.	☐
In the event the fire is too large for an individual to fight alone, the individual sounding the alarm or making the phone call should stand by at a safe distance to direct the fire department to the scene of the fire and keep personnel and vehicles from entering the danger area.	☐
Alert all Facility areas of the exact location and extent of the fire.	☐
Instruct all drivers to discontinue loading, disconnect loading arms, and tell all drivers present to stand by the trucks (if safe to do so) and wait for instruction to remove same to safe area.	☐
Shut off all pumps.	☐
If the fire/explosion is a result of a pipe rupture, isolate product release by closing valves.	☐
If product is being received from pipelines, notify the appropriate pipeline personnel of the fire and request that the pipeline be shut down. The tank which is receiving product from the pipeline must not be closed until assurance is received that the pipeline is shut down, unless that tank is on fire.	☐
After confirmation has been received that pipelines have been shut down, close the pipeline header valves.	☐
Undertake basic site control: • Make an assessment of hazards. • Isolate the area. • Keep people away from the scene and outside the safety perimeter. • Establish safety zones and escape routes.	☐
Respond to the fire: • Establish a Command Post and lines of communication. • Maintain site control. • Establish Incident Command/Unified Command as necessary (**SECTION 4.4**) in the Spill Response Plan.	☐
Call in additional resources if on-scene personnel and equipment are inadequate to handle the emergency.	☐
Conduct a post-emergency evaluation and report.	☐

2.7 FIRE AND/OR EXPLOSION, CONTINUED

Your first consideration is always the safety of people in the immediate area, including your own.

The first responder's initial objective is site management.

FIRE AND/OR EXPLOSION CHECKLIST, CONTINUED	
TASK	
At an unmanned facility	
Handle the call.	☐
Notify the local police and fire departments.	☐
Notify Qualified Individual and Operations Control.	☐
Go to the incident scene to evaluate the situation; approach cautiously from upwind; do not rush in.	☐
Undertake basic site control: • Make an assessment of hazards. • Isolate the area. • Keep people away from the scene and outside the safety perimeter. • Establish safety zones and escape routes.	☐
If roads or railroads are in the affected area, assist the sheriff or local emergency officials with halting traffic.	☐
Update the next level manager.	☐
If the fire/explosion is a result of a pipe rupture, isolate the product release by closing valves.	☐
Respond to the fire: • Establish a Command Post and lines of communication. • Maintain site control. • Establish Incident Command/Unified Command as necessary, refer to **SECTION 4.4** in the Spill Response Plan.	☐
Call in additional resources if on-scene personnel and equipment are inadequate to handle the emergency.	☐
Conduct a post-emergency evaluation and report.	☐

2.8 VAPOR CLOUD

VAPOR CLOUD CHECKLIST	
TASK	
The person who discovers the vapor cloud will notify the facility management on duty and vacate the area.	☐
Remember: the only proper action in the presence of a vapor cloud is to get away from it. Do not shut off electrical equipment.	☐

All personnel will report to the evacuation muster point for roll call and further instructions.	☐
After all personnel have been accounted for, the Facility Management, the Facility Supervisor or a Facility Operator will initiate the following actions as deemed necessary: • Shut down pipeline. • Evacuation of adjacent property. • Only the fire department will be permitted to enter the Facility.	☐
Contact the appropriate agencies and potentially affected neighbors (refer to **FIGURE 3-5**).	☐

3.0 NOTIFICATIONS

FIGURE 3-1 - FIRST REPORT OF INCIDENT

Original to File; Copies To: Terminal Mgr or Ops Mgr & LP HSE Group

I. Location: _____ Time: _____ Date: _____

II. INCIDENT TYPE:

A. Safety			**B. Environmental**
☐ Non-injury	☐ Property/Equipment Damage		☐ Spill
☐ Fire	☐ Other ____		☐ Air Upset
☐ Injury	☐ First Aid	☐ Off-site Treatment	☐ Discharge Event
☐ Near Miss	☐ Employee	☐ Contractor	☐ Other

For Safety and Environmental Departments Use Only

☐ Recordable Injury ☐ Chemical Exposure ☐ Recordable Illness ☐ Reportable to Agency
☐ PSM/RMP ☐ Other

Signature _____ **Date** _____

III. INJURED EMPLOYEE / CONTRACTOR

Name: _____ Social Security: _____
Occupation: _____ Department / Company: _____
Nature of work related injury:
_____
_____
Supervisor's Name:
_____

IV. DESCRIPTION OF INCIDENT: (Use additional sheet(s) if necessary)

Date: _____ Time: _____ Location: _____

_____
_____
_____
_____

V. IMMEDIATE ACTION(s) TAKEN : (Use additional sheet(s) if necessary)

_____
_____
_____

VI. Incident Investigation Required ☐ Yes ☐ No

VII. Name of person preparing this report: _____
(Please print)

Signature: _____ Date: _____ Time: _____

Supervisor: _____ Date: _____

FIGURE 3-2 - LEAK ACCIDENT REPORT FORM

PL SYSTEM: _____
PL SEGMENT: _____
PRODUCTS ☐ CRUDE ☐

DISTRIBUTION:

Original - PIPELINE SAFETY ☐	
NOTE - Copy to the following as needed:	
MGR - ☐	SUP - ☐
ENG - C. Jewell ☐	ROW - D. HICKEY ☐
ENV - ☐	☐

REPORT INFORMATION:

RECORDS RETENTION - Permanent
REPORT FREQUENCY - As Required
DUE DATES - Within 5 Days 1 day

PART A - TIME & LOCATION OF LEAK OR ACCIDENT

1. DATE (Month, Day, Year)	2. HOUR ☐ AM	3. LOCATION (State, County, City)
	☐ PM	

4. PHYSICAL LOCATION (Direction to site, reference highways and towns)
_____
SECTION _____ BLOCK or TOWNSHIP _____ SURVEY or RANGE _____

PART B - ORIGIN OF LIQUID OR VAPOR RELEASE

1. PART OF CARRIER'S SYSTEM

INVOLVED:

LINE PIPE ☐ PUMPING STATION ☐ TANK FARM ☐ OTHER (Specify) ☐

2. ITEM INVOLVED:

LINE PIPE ☐ GIRTH WELD ☐ LONGITUDINAL WELD ☐ PUMP ☐ OTHER (Specify) ☐

TANK ☐ WELDED FITTING ☐ BOLTED FITTING ☐ VALVE ☐ OTHER (Specify) ☐

PART C - CAUSE OF LEAK ACCIDENT

CORROSION ☐ FAILED WELD ☐ FAILED PIPE ☐ INCORRECT OPERATION BY OPERATING PERSONNEL ☐

OUTSIDE FORCE DAMAGE ☐ MALFUNCTION OF CONTROL OR RELIEF EQUIP. ☐ OTHER (Specify) ☐

PART D - INJURY OR DEATH

NUMBER OF PERSONS INJURED		NUMBER OF PERSONS KILLED	
CARRIER EMPLOYEES	NON-EMPLOYEES	CARRIER EMPLOYEES	NON-EMPLOYEES

PART E - ESTIMATED DAMAGES & COSTS

1. DAMAGE TO OPERATOR	2. LAND DAMAGE	3. CLEAN-UP COST	4. PRODUCT COST

5. ITEMS DAMAGED (Specify):

PART F - COMMODITY SPILLED OR RELEASED

1. NAME OF COMMODITY SPILLED OR RELEASED:	2. CLASSIFICATION:	3. TOTAL LOSS RECOVERED NET LOSS	4. WAS THERE A FIRE?	5. WAS THERE AN EXPLOSION?
	☐ Crude Oil ☐ Gas Oil ☐ MVL ☐ Non-MVL	BBLS (_) BBLS BBLS	YES ☐ NO ☐	YES ☐ NO ☐

PART G - OCCURRED IN LINE PIPE (Answer sections G, H, or I ONLY if it specifically applies to the leak or accident)

1. NOMINAL DIAMETER in.	2. WALL THICKNESS in.	3. SPECIFICATION & GRADE:	4. YEAR OF INSTALLATION	5. TYPE OF JOINT:
			Before 1970 (Specify Yr.): ☐ After 1970 (Specify Yr.) ☐	Weld ☐ Flanged ☐ Threaded ☐ Coupled ☐ Other ☐ _____

6. CONFIGURATION AT POINT OF ACCIDENT:	7. PIPE WAS:	8. PIPE WAS:
Straight ☐ Sag ☐ Overbend ☐ Sidebend ☐	Coated ☐ Not Coated ☐	Above Ground ☐ Below Ground ☐

FIGURE 3-2 - LEAK ACCIDENT REPORT FORM, CONTINUED

PART G - OCCURRED IN LINE PIPE (Answer sections G, H, or I ONLY if it specifically applies to the leak or accident), Continued

9. COVER (if below ground) in.	10. MAXIMUM OPERATING PRESSURE: psig	11. PRESSURE AT TIME & LOCATION OF ACCIDENT psig	12. SYSTEM PRESSURE TEST YES ☐ NO ☐

13. TEST MEDIUM USED; (If item 12, is Yes) Water ☐ Petroleum ☐ Air ☐	14. DURATION OF TEST hrs.	15. MAXIMUM TEST PRESSURE psig	16. DATE OF LATEST TEST

PART H - CAUSED BY CORROSION

1. LOCATION OF CORROSION EXTERNAL ☐ INTERNAL ☐	2. FACILITY COATED: YES ☐ NO ☐	3. FACILITY UNDER CATHODIC PROTECTION? YES ☐ NO ☐	4. TYPE OF CORROSION: GALVANIC ☐ OTHER ☐

PART I - CAUSED BY OUTSIDE FORCES

1. ☐ DAMAGE BY OPERATOR ☐ DAMAGE BY NATURAL FORCES ☐ EARTHQUAKE	☐ DAMAGE BY OPERATOR'S CONTRACTOR ☐ Washout ☐ Flood ☐ OTHER (Specify)_____	☐ Subsidence ☐ Landslide	☐ DAMAGE BY OTHERS (Name) _____ ☐ Frostheave

2. DID EXCAVATOR CALL? YES ☐ NO ☐	3. WAS PIPELINE TEMPORARILY MARKED FOR EXCAVATOR? YES ☐ NO ☐	4. DISTANCE TO NEAREST LINE MARKER: feet

1. DETAILS OF INCIDENT: (Complete description of Cause, Response, Repairs, Affected Area & Land Damages.)
Use back for any additional information

PERSON COMPLETING THIS REPORT (Name):	DATE:

NRC # = 800-424-8802

INITIAL NOTIFICATION OF NRC MUST NOT BE DELAYED PENDING COLLECTION OF ALL INFORMATION.

FIGURE 3-3 - FORM 4004 - RELEASE NOTIFICATION DATA SHEET

Incident Date:		Incident Time:	
Reporters Name:		Reporter’s Company:	
		Reporter's Position:	
Reporters Address:		City / State:	
Reporters Phone:		Zip:	
Name of Person who notified the reporter of			

the incident:	

It is not necessary to wait for all information before calling NRC. National Response Center 1-800-424-8802

Were Materials Discharged (please circle one)	Yes	No
Calling for Responsible Party (please circle one)	Yes	No

Incident Description

Facility Name:		Facility Address or driving directions:		
Organization Type:		Facility Latitude/Longitude:		
Responsible Party: (Name of company)		Owner's Address:		2330 Loop 1604 West San Antonio, Texas 78248
Facility Contact Name & Title:		Facility Contact Phone No's	Office	
			Cell	
			Other	
Were Materials Discharged? Y____ N ____		Confidential? Y____ N ____		
Meeting Federal Obligations to Report? Y ___ N __		Date Called: _____		

Incident Description

Location of Spill:	Source or cause of discharge:		
Material Released:	CHRIS Code:		
Total Quantity Released:	Was surface water impacted by the spill? (yes or no)		
Total Quantity Recovered:	Total quantity into the water:		
Net Loss:	Tank Number (above/below) involved or pipe diameter:		
Container Type (AST/UST):	Tank Capacity (gallons):		
Facility Oil Storage Capacity	Units of Measure:		
Nearest City:	County:	State:	ZIP
Distance from City (in miles):	Direction from City:	Section:	
Township:	Range:	Borough:	
Weather conditions at time of incident (wind, rain, snow, temperature, etc.):			

Was there a fire or explosion involved?	Number of Injuries:	Extent of Injuries if known:
Number of Deaths:	Numbers Evacuated (if any):	
Was there any damage:	Yes / No / Unknown (please circle one)	
	Estimate Dollars of Damage:	Medium Affected:
Description:		
More Information about Medium:		
Additional Information not recorded elsewhere in the report:		

Response Actions

Actions taken to correct, control, or mitigate the incident:	

Notifications				
Group or Agency	**Persons Notified**	**Date & Time Notified**	**Notify By:**	**Incident No.**
NRC				
State Agency				
LEPC - County				
HSE Group:				
Other:				

Original: 10/20/2003 Revised: 3/6/07, 6/14/2007, 2/25/2009, 4/1/2009, 12/17/2012

FIGURE 3-4 - INTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS

*24-Hour Number

FACILITY RESPONSE TEAM		
NAME/TITLE	**PHONE NUMBER**	**RESPONSE TIME (hours)**
Mike Northcutt Terminal Manager **Qualified Individual**	(225) 746-2119 (Office) (b) (6) [redacted] *(Mobile)	1
Dwayne Lamari Operations **Qualified Individual**	225-746-2110 (Office) (b) (6) [redacted] *(Mobile) NA (Pager)	.75
Mike Rock Lead HSE Specialist	225-746-2104 (Office) (b) (6) [redacted] (Home) (Mobile) NA (Pager)	.25
Jean Zeringue General Manager of the Gulf Coast	(225) 746-2105 (Office) (b) (6) [redacted] (Home) (Mobile)	0.75

Refer to **FIGURE A.2-3** in the Spill Response Plan for personnel training records

FIGURE 3-4 - INTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS, CONTINUED

*24-Hour Number

EMERGENCY RESPONSE PERSONNEL AND BUSINESS UNIT NOTIFICATIONS				
				RESPONSE

NAME/TITLE	PHONE NUMBER	RESPONSE TIME (hours)	ICS POSITION	TRAINING TYPE[1]		
				1	2	3
Mike Rock Lead HSE Specialist Â	225-746-2104 (Office) (b) (6) [redacted] (Home) (b) (6) [redacted] *(Mobile) NA (Pager)	.25	Safety Officer	x	x	x
Jean Zeringue General Manager of the Gulf Coast Â	(225) 746-2105 (Office) (b) (6) [redacted] (Home) (b) (6) [redacted] *(Mobile)	0.75	Alternate Incident Commander	x	x	x

EMERGENCY RESPONSE TRAINING TYPE	
TYPE	DESCRIPTION
1	29 CFR 1910.120 HAZWOPER
2	OPA (Training Reference for Oil Spill Response) All Facility Personnel, SMT, QI Components
3	Qualified Individual/Incident Command Training

Note: Refer to **APPENDIX A** in the Spill Response Plan for training dates.

FIGURE 3-4 - INTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS, CONTINUED

*24-Hour Number

EMERGENCY RESPONSE PERSONNEL AND BUSINESS UNIT NOTIFICATIONS						
NAME/TITLE	PHONE NUMBER	RESPONSE TIME (hours)	ICS POSITION	RESPONSE TRAINING TYPE[1]		
				1	2	3
Brad Barron President & CEO Â	(210) 918-2106 (Office) (b) (6) [redacted]	6				

	*(Mobile)					
Mary Rose Brown EVP Administration Corporate Communications Â	(210) 918-2314 (Office) (b) (6) [redacted] *(Mobile)	6	Information Officer, Alternate Public Information Officer			

EMERGENCY RESPONSE TRAINING TYPE	
TYPE	**DESCRIPTION**
1	29 CFR 1910.120 HAZWOPER
2	OPA (Training Reference for Oil Spill Response) All Facility Personnel, SMT, QI Components
3	Qualified Individual/Incident Command Training

Note: Refer to **APPENDIX A** in the Spill Response Plan for training dates.

FIGURE 3-4 - INTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS, CONTINUED

*24-Hour Number

EMERGENCY RESPONSE PERSONNEL AND BUSINESS UNIT NOTIFICATIONS						
NAME/TITLE	**PHONE NUMBER**	**RESPONSE TIME (hours)**	**ICS POSITION**	**RESPONSE TRAINING TYPE[1]**		
				1	**2**	**3**
Ron Walton VP, Risk Management Â	(210) 918-2258 (Office) (b) (6) [redacted] *(Mobile)	6	Risk Management	x	x	x
Bob Hill Lead HSSE Specialist Â	(832) 536-3207 (Office) (b) (6) [redacted] (Home) (b) (6) [redacted] *(Mobile)	6	Safety Officer	x	x	x

EMERGENCY RESPONSE TRAINING TYPE	
TYPE	**DESCRIPTION**
1	29 CFR 1910.120 HAZWOPER

2	OPA (Training Reference for Oil Spill Response) All Facility Personnel, SMT, QI Components
3	Qualified Individual/Incident Command Training

Note: Refer to **APPENDIX A** in the Spill Response Plan for training dates.

FIGURE 3-4 - INTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS, CONTINUED

*24-Hour Number

EMERGENCY RESPONSE CONTRACTORS						
NAME/TITLE	PHONE NUMBER	RESPONSE TIME (hours)	RESPONSIBILITY DURING RESPONSE ACTION	RESPONSE TRAINING TYPE[1]		
				1	2	3
Environmental Safety & Health Consulting Services	(877) 437-2634* (888) 422-3622* (985) 851-5350	1				

EMERGENCY RESPONSE TRAINING TYPE	
TYPE	DESCRIPTION
1	29 CFR 1910.120 HAZWOPER
2	OPA (Training Reference for Oil Spill Response) All Facility Personnel, SMT, QI Components
3	Qualified Individual/Incident Command Training

Note: Refer to **APPENDIX A** in the Spill Response Plan for training dates.

FIGURE 3-5 - EXTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS

*24-Hour Number

AFFILIATION	PHONE NUMBER	TIME CONTACTED
Initial		
St. James Parish Emergency Response	911	
La. State Police	225-925-6595	
National Response Center (PHMSA Only) Within 2 hrs for a reportable pipeline incident or as required by State law. Whichever is sooner.	(800) 424-8802* (202) 267-2675* (202) 267-1322 Fax	
Recommended		

NONE		
Industrial Emergency Services-Motiva	225-562-6244	
Federal Agencies		
OPS Regional Office	(713) 750-1746	
OSHA Regional Office, Baton Rouge, LA	(225) 298-5458	
U.S. Environmental Protection Agency - Region VI (6SF-RO)	(866) 372-7745*, (214) 665-6444* Emergencies (800) 887-6063 Toll Free Main line (214) 665-2200 Main line (214) 665-8365 Region 6 FOSC	
U.S. Coast Guard - Marine Safety Office, New Orleans, LA	(504) 365-2200 Primary Emergency Number (504) 365-2370 Facility Inspection Number (225) 298-5400 MSO Baton Rouge (985) 851-1692 MSO Houma	
State Agencies		
Louisana Wildlife and Fisheries	(225) 765-2800	
Louisiana Department of Environmental Quality	(888) 763-5424 225-342-1234 (24 hr)	
Louisiana State Emergency Fusion Center	(225) 925-4192	
Louisiana State Fire Marshal	(800) 256-5452	
Louisiana State Police	(225) 925-6595 (877) 925-6595 HazMat Hotline	
Louisiana State Police Troop "C"	985-857-3680 911	
Local Agencies		
Ascension Parish LEPC	(225) 621-8300 911	

FIGURE 3-5 - EXTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS

*24-Hour Number

AFFILIATION	PHONE NUMBER	TIME CONTACTED
Recommended, Continued		
Local Agencies		
Local Water Supply SystemVacherie Water PlantSt. James Water Department	(225) 265-6010 (m-f days) 225-562-2364 (Sheriff dispatcher 24 hr)	
St. James Parish LEPC	(225) 562-2265 911	
Emergency Medical Services		
Local Ambulance	911*	
Law Enforcement		
Sheriff Department (St. James, Convent)	(225) 562-2200 Day (225) 562-2364 911	
Sheriff Department (St. James, Vacherie)	(225) 562-2510 911	
Fire Departments		
Donaldsonville Fire Department	(225) 621-8300 #1 911	
Thibodeaux Fire Department	(225) 446-5021 911	
Vacherie Fire Department	(225) 265-3333 911	
Hospitals		
Riverview Hospital (St. Elizabeth Hosp)	(225) 647-5000 911	
Law Enforcement		
Sheriff Department (St. James, Vacherie	(225) 562-2501	
USCG Classified OSRO's		
Environmental Safety & Health	(877) 437-2634*	

Consulting Services Houma, LA	(888) 422-3622* (985) 851-5350	
Non-Classified OSRO's		
Conestoga-Rovers & Associates, Inc.	(866) 812-9565* (713) 734-3090 Houston (972) 331-8500 Dallas (918) 828-2424 Tulsa (405) 359-1145 Oklahoma City	
Neighboring Facilities		
Capline System (Marathon - Operator)	control center (419) 421-4138 local facility (225) 265-1138	
Ergon	(225) 265-8020	
Exxon Mobil Pipeline	(985) 537-4803	

FIGURE 3-5 - EXTERNAL NOTIFICATIONS AND TELEPHONE NUMBERS

*24-Hour Number

AFFILIATION	PHONE NUMBER	TIME CONTACTED
Recommended, Continued		
Neighboring Facilities		
Locap, Inc.	(225) 265-8355	
Plains All American	(225) 265-2345	
Sugarland Terminal	(225) 265-4712	
Radio Stations		
KXOR	(504) 446-5604	
Service Providers		
Garner Environmental (New Orleans, LA)	(800) 424-1716* (2810-930-1200	
OMI Solutions (Belle Chasse, LA)	(800) 645-6671* (504) 394-6110	
PSC (New Orleans, LA)	(888) 631-9652*	

	(337) 233-4889	
Television Stations		
Channel 2 (Baton Rouge)	(225) 336-2338	
Channel 4 (New Orleans)	(504) 529-4444	
Weather		
National Weather Service	(225) 649-0429	

4.0 RESOURCES

FIGURE 4-1 - EMERGENCY MANAGEMENT TEAM (EMT) ORGANIZATION CHART*

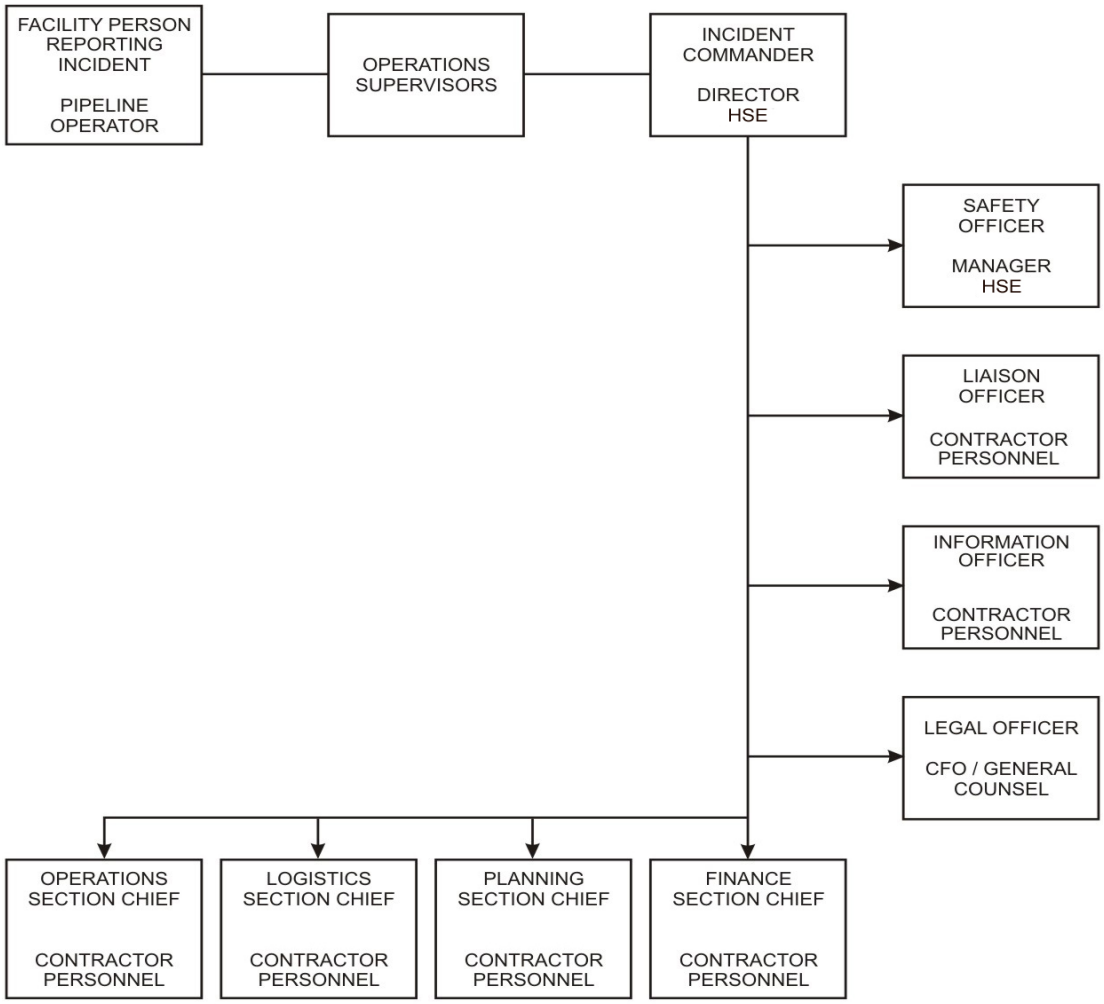


FIGURE 4-2 - FACILITY EQUIPMENT*

SORBENTS					
TYPE/YEAR	QUANTITY	ABSORPTION CAPACITY (gal)	STORAGE LOCATION	OPERATIONAL STATUS	
Absorbent Pads	40 bundles	880	Maintenance Shop	Operational	
Absorbent Boom	400 Feet	960	Maintenance Shop	Operational	
Absorbent Pads (Spill Kit)	1 bundle	22	Barge Dock # 1	Operational	
Absorbent Pads (Spill Kit)	1 bundle	22	Tanker Dock # 2	Operational	
Absorbent Pads (Spill Kit)	1 bundle	22	Tanker Dock # 5	Operational	
Absorbent Pads (Spill Kit)	2 bundles	44	Crude Oil Truck Station	Operational	
Absorbent Pads (Spill Kit)	1 bundle	22	Drum Storage Area	Operational	
Absorbent Boom (Spill Kit)	20 foot	48	Drum Storage Area	Operational	
Absorbent Boom (Spill Kit)	20 foot	48	Barge Dock # 1	Operational	
Absorbent Boom (Spill Kit)	20 foot	48	Tanker Dock # 2	Operational	
Absorbent Boom (Spill Kit)	20 foot	48	Tanker Dock # 5	Operational	
Absorbent Boom (Spill Kit)	20 foot	48	Crude Oil Truck Station	Operational	
Absorbent Pads (Spill Kit)	3	44	Rail Spur Unload Area	Operational	
COMMUNICATIONS EQUIPMENT					
TYPE/YEAR	QUANTITY	STORAGE LOCATION/NUMBER	OPERATIONAL STATUS		

Telephones	13	Throughout Terminal	Operational		

***Note:** Response equipment is tested and deployed as described in **APPENDIX A** of the Spill Response Plan.

FIGURE 4-2 - FACILITY EQUIPMENT*

COMMUNICATIONS EQUIPMENT					
TYPE/YEAR	QUANTITY	STORAGE LOCATION/NUMBER	OPERATIONAL STATUS		
Cellular Telephones	7	Throughout Terminal	Operational		
VHF - Marine Radios	2	Dock Area	Operational		
Motorola 2-Way Radios	16	Carried by each Operator	Operational		
FIRE FIGHTING AND PERSONNEL PROTECTIVE EQUIPMENT					
TYPE/YEAR	QUANTITY	STORAGE LOCATION	OPERATIONAL STATUS		
Scott - 60 Minute SCBA	8	Operators Storage Building	Operational		
Scott - 10 Minute Escape Packs	2	Operators Storage Building	Operational		
5 minute Escape Pack	2	Control Room	Operational		
10-Minute Escape Pack	2	Docks 1, 2 and 5	Operational		
PPE	N/A	Barge Dock # 1	Operational		
PPE	N/A	Tanker Dock # 2	Operational		
PPE	N/A	Tanker Dock # 5	Operational		
PPE	N/A	Crude Oil Truck Station	Operational		
PPE	N/A	Drum Storage Area	Operational		
OTHER					
TYPE/YEAR	QUANTITY	STORAGE LOCATION	OPERATIONAL STATUS		
Plastic Bags	4	Barge Dock # 1	Operational		
Plastic Bags	4	Tanker Dock # 2	Operational		

***Note:** Response equipment is tested and deployed as described in **APPENDIX A** of the Spill

Response Plan.

FIGURE 4-2 - FACILITY EQUIPMENT*

OTHER					
TYPE/YEAR	QUANTITY	STORAGE LOCATION	OPERATIONAL STATUS		
Plastic Bags	4	Tanker Dock # 5	Operational		
Plastic Bags	4	Crude Oil Truck Station	Operational		
Plastic Bags	1 bundle	Drum Storage Area	Operational		

***Note:** Response equipment is tested and deployed as described in **APPENDIX A** of the Spill Response Plan.

FIGURE 4-3 - REGIONAL COMPANY AND RESPONSE CONTRACTOR'S EQUIPMENT LIST / RESPONSE TIME

*USCG Classified OSRO for facility

COMPANY/CONTRACTOR	EQUIPMENT	RESPONSE TIME
*Environmental Safety & Health Consulting Services Houma, LA	Full Response Capability	1 hours
Conestoga-Rovers & Associates, Inc. Houston, TX	Full Response Capability	12 hours

Note: Response equipment is tested and deployed as described in **APPENDIX A** of the Spill Response Plan.

FIGURE 4-4 - EPA REQUIRED RESPONSE EQUIPMENT TESTING AND DEPLOYMENT DRILL/EXERCISE LOG

(Other versions of this form may be used)

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	

Inspection frequency	
Last deployment drill/exercise date	
Deployment frequency	
OSRO Certification (if applicable)	

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	
Inspection frequency	
Last deployment drill/exercise date	
Deployment frequency	
OSRO Certification (if applicable)	

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	
Inspection frequency	
Last deployment drill/exercise date	
Deployment frequency	
OSRO Certification (if applicable)	

Item:	Date of Last Update:
ACTIVITY	**INFORMATION**
Last inspection or response equipment test date	
Inspection frequency	
Last deployment drill/exercise date	
Deployment frequency	
OSRO Certification (if applicable)	

5.0 PLOT PLANS / TANK TABLE

FIGURE 5-1 - DRAINAGE DIAGRAM

(Click here for Facility Drainage Diagram)

FIGURE 5-2 - EVACUATION DIAGRAM

(Click here for Facility Evacuation Diagram)

FIGURE 5-3 - TANK TABLE

Container/ Source	Major Type of Failure	Total Capacity (gal)	Secondary Containment Volume Type (gal)	Tank Type	Year Constructed/ Installed	Quantity Stored (gal)	Direction of Flow/Rate (See Plot Plan)	Product Stored
ABOVEGROUND CONTAINERS - Total: (b) (7)(F), (b) (3)								
25	Overfill / Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]		IFR	1977	(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Crude Oil
1	Overfill / Rupture / Leakage	[redacted]		EFR	1976	[redacted]	West Southwest / Instantaneous	Crude Oil
2	Overfill / Rupture / Leakage	[redacted]		EFR	1976	[redacted]	West Southwest / Instantaneous	Crude Oil
13	Overfill / Rupture / Leakage	[redacted]		IFR	1977	[redacted]	West Southwest / Instantaneous	Crude Oil
7	Overfill / Rupture / Leakage	[redacted]		IFR	1977	[redacted]	West Southwest / Instantaneous	Crude Oil
413	Overfill / Rupture / Leakage	[redacted]		EFR	1968	[redacted]	West Southwest / Instantaneous	Crude Oil
430	Overfill / Rupture / Leakage	[redacted]		EFR	1968	[redacted]	West Southwest / Instantaneous	Crude Oil

8	Overfill / Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]	IFR	1977	(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Crude Oil
28	Overfill / Rupture / Leakage	[redacted]	Cone	1978	[redacted]	West Southwest / Instantaneous	Inactive
5	Overfill / Rupture / Leakage	[redacted]	EFR	1977	[redacted]	West Southwest / Instantaneous	Crude Oil
6	Overfill / Rupture / Leakage	[redacted]	EFR	1977	[redacted]	West Southwest / Instantaneous	Crude Oil
463	Overfill / Rupture / Leakage	[redacted]	IFR	1968	[redacted]	West Southwest / Instantaneous	Crude Oil
26	Overfill / Rupture / Leakage	[redacted]	Cone	1978	[redacted]	West Southwest / Instantaneous	Inactive
27	Overfill / Rupture / Leakage	[redacted]	EFR	1983	[redacted]	West Southwest / Instantaneous	Crude Oil
4	Overfill / Rupture / Leakage	[redacted]	IFR	1977	[redacted]	West Southwest / Instantaneous	Crude Oil

Containment Type: 1=Earthen Berm and Floor, 2=Concrete Berm and Floor, 3=Earthen Berm and Concrete Floor, 4=Metal Berm and Floor, 5=Portable Containment or Inside Building, 6=Double Walled, 7=Coated Asphalt Materials, * Not in Containment Area, ** Curbing and containment system

Tank / Roof Type: C=Cylinder, CR=Cone Roof, DW=Double Wall, EFR=External Floating Roof, FG=Fiberglass, GD=Geodesic Dome, H=Horizontal, HSM=Horizontal Skid Mounted, IF=Internal Floater, OOS=Out of Service, OT=Open Top, R=Riveted, S=Steel, SM=Skid Mounted, V=Vertical, W=Welded

FIGURE 5-3 - TANK TABLE , CONTINUED

Container/ Source	Major Type of Failure	Total Capacity (gal)	Secondary Containment Volume Type (gal)	Tank Type	Year Constructed/ Installed	Quantity Stored (gal)	Direction of Flow/Rate (See Plot Plan)	Product Stored
ABOVEGROUND CONTAINERS - Total: (b) (7)(F), (b)								
3	Overfill / Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]	[redacted]	IFR	1977	(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Crude Oil
31D	Overfill / Rupture / Leakage	[redacted]	[redacted]	Double-Walled Horizontal	2001	[redacted]	West Southwest / Instantaneous	Diesel
9	Overfill / Rupture / Leakage	[redacted]	[redacted]	EFR	2007	[redacted]	West Southwest / Instantaneous	Crude Oil
10	Overfill / Rupture / Leakage	[redacted]	[redacted]	EFR	2007	[redacted]	West Southwest / Instantaneous	Crude Oil
11	Overfill / Rupture / Leakage	[redacted]	[redacted]	EFR	2007	[redacted]	West Southwest / Instantaneous	Crude Oil
12	Overfill / Rupture / Leakage	[redacted]	[redacted]	EFR	2007	[redacted]	West Southwest / Instantaneous	Crude Oil
41	Overfill / Rupture / Leakage	[redacted]	[redacted]	Cone/IFR	2010	[redacted]	West Southwest / Instantaneous	Crude Oil
42	Overfill / Rupture / Leakage	[redacted]	[redacted]	Cone/IFR	2010	[redacted]	West Southwest / Instantaneous	Crude Oil
16	Overfill / Rupture / Leakage	[redacted]	[redacted]	EFR	2011	[redacted]	South Southwest / Instantaneous	Crude Oil

17	Overfill / Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]	EFR	2011	(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Crude Oil
18	Overfill / Rupture / Leakage	[redacted]	EFR	2011	[redacted]	West Southwest / Instantaneous	Crude Oil
14	Overfill / Rupture / Leakage	[redacted]	EFR	2011	[redacted]	West Southwest / Instantaneous	Crude Oil
15	Overfill / Rupture / Leakage	[redacted]	EFR	2011	[redacted]	West Southwest / Instantaneous	Crude Oil
19	Overfill / Rupture / Leakage	[redacted]	EFR	2011	[redacted]	West Southwest / Instantaneous	Crude Oil
20	Overfill / Rupture / Leakage	[redacted]	EFR	2011	[redacted]	West Southwest / Instantaneous	Crude Oil

Containment Type: 1=Earthen Berm and Floor, 2=Concrete Berm and Floor, 3=Earthen Berm and Concrete Floor, 4=Metal Berm and Floor, 5=Portable Containment or Inside Building, 6=Double Walled, 7=Coated Asphalt Materials, * Not in Containment Area, ** Curbing and containment system

Tank / Roof Type: C=Cylinder, CR=Cone Roof, DW=Double Wall, EFR=External Floating Roof, FG=Fiberglass, GD=Geodesic Dome, H=Horizontal, HSM=Horizontal Skid Mounted, IF=Internal Floater, OOS=Out of Service, OT=Open Top, R=Riveted, S=Steel, SM=Skid Mounted, V=Vertical, W=Welded

FIGURE 5-3 - TANK TABLE , CONTINUED

Container/ Source	Major Type of Failure	Total Capacity (gal)	Secondary Containment Volume Type (gal)	Tank Type	Year Constructed/ Installed	Quantity Stored (gal)	Direction of Flow/Rate (See Plot Plan)	Product Stored
ABOVEGROUND CONTAINERS - Total: (b) (7)(F), (b) (3) [redacted]								
22	Overfill / Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]		EFR	2012	(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Crude Oil
23	Overfill /	[redacted]		EFR	2012	[redacted]	West	Crude

	Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]			(b) (7)(F), (b) (3) [redacted]	Southwest / Instantaneous	Oil
24	Overfill / Rupture / Leakage	[redacted]	EFR	2012	[redacted]	West Southwest / Instantaneous	Crude Oil
31	Overfill / Rupture / Leakage	[redacted]	EFR	2012	[redacted]	West Southwest / Instantaneous	Crude Oil
28D	Overfill / Rupture / Leakage	[redacted]	Double-Walled Horizontal	2011	[redacted]	West Southwest / Instantaneous	#2 Diesel
New Diesel Tank	Overfill / Rupture / Leakage	[redacted]	Double-Walled Horizontal	2014	[redacted]	West Southwest / Instantaneous	Diesel
Tank	Overfill / Rupture / Leakage	[redacted]	Double-Walled Horizontal	Unknown	[redacted]	West Southwest / Instantaneous	Product Overflow Tank
DRUM STORAGE AREA - Total: (b) [redacted]							
Drum	Leak/Failure	(b) (7)(F), (b) (3) [redacted]	Drums	Unknown	(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Used Oil
OIL FILLED ELECTRICAL EQUIPMENT - Total: (b) (7)(F) [redacted]							
T-6A	Overfill / Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]	Pad-Mount	UNK	(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Mineral Oil
T-6B	Overfill / Rupture / Leakage	[redacted]	Pad-Mount	UNK	[redacted]	Within diking or to main lift station	Mineral Oil
T 9/10	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil
T 18	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil
T 17-1	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil
T 17-2	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil
T 19-1	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil

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Tank / Roof Type: C=Cylinder, CR=Cone Roof, DW=Double Wall, EFR=External Floating Roof, FG=Fiberglass, GD=Geodesic Dome, H=Horizontal, HSM=Horizontal Skid Mounted, IF=Internal Floater, OOS=Out of Service,

OT=Open Top, R=Riveted, S=Steel, SM=Skid Mounted, V=Vertical, W=Welded

FIGURE 5-3 - TANK TABLE , CONTINUED

Container/ Source	Major Type of Failure	Total Capacity (gal)	Secondary Containment Volume Type (gal)	Tank Type	Year Constructed/ Installed	Quantity Stored (gal)	Direction of Flow/Rate (See Plot Plan)	Product Stored
OIL FILLED ELECTRICAL EQUIPMENT - Total: (b) (7)								
T 19-2	Overfill / Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]		Pad-Mount		(b) (7)(F), (b) (3) [redacted]	West Southwest / Instantaneous	Mineral Oil
T 15-C	Overfill / Rupture / Leakage	[redacted]		Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil
T 20	Overfill / Rupture / Leakage	[redacted]		Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil
T 11	Overfill / Rupture / Leakage	[redacted]		Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil
T12	Overfill / Rupture / Leakage	[redacted]		Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil
T 13	Overfill / Rupture / Leakage	[redacted]		Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil
T 14	Overfill / Rupture / Leakage	[redacted]		Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil
T 15-A	Overfill / Rupture / Leakage	[redacted]		Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil
T 15-B	Overfill	[redacted]		Pad-		[redacted]	West	Mineral

	/ Rupture / Leakage	(b) (7)(F), (b) (3) [redacted]	Mount		(b) (7)(F), (b) (3) [redacted]	Southwest / Instantaneous	Oil
T 11/12	Overfill / Rupture / Leakage	[redacted]	Pad-Mount		[redacted]	West Southwest / Instantaneous	Mineral Oil
Facility Total:	(b) (7)(F), (b) (3) [redacted]						

Containment Type: 1=Earthen Berm and Floor, 2=Concrete Berm and Floor, 3=Earthen Berm and Concrete Floor, 4=Metal Berm and Floor, 5=Portable Containment or Inside Building, 6=Double Walled, 7=Coated Asphalt Materials, * Not in Containment Area, ** Curbing and containment system

Tank / Roof Type: C=Cylinder, CR=Cone Roof, DW=Double Wall, EFR=External Floating Roof, FG=Fiberglass, GD=Geodesic Dome, H=Horizontal, HSM=Horizontal Skid Mounted, IF=Internal Floater, OOS=Out of Service, OT=Open Top, R=Riveted, S=Steel, SM=Skid Mounted, V=Vertical, W=Welded

FIGURE 5-4 SITE DIAGRAM

(Click here for Facility Site Plan)

6.0 ENDANGERED AND THREATENED SPECIES BY STATE

ENDANGERED AND THREATENED SPECIES BY STATE

COMMON NAME	SCIENTIFIC NAME	HABITAT	STATUS	STATE
See list in Appendix G				Louisiana

7.0 VULNERABILITY ANALYSIS (DETAILED)

VULNERABILITY ANALYSIS (DETAILED)
Water Intakes:
(b) (7)(F), (b) (3) [redacted]
Schools:
(b) (3), (b) (7)(F) [redacted]

(b) (3), (b) (7)(F)

Medical Facilities:
(b) (3), (b) (7)(F)

Residential Areas:
Residences are located adjacent to the Terminal and could be impacted by a release at the crude oil truck unloading dock, terminal, and pipelines. Numerous other residential areas are located along the spill path and may potentially be impacted by a discharge from the Terminal to the Mississippi River

7.0 VULNERABILITY ANALYSIS (DETAILED), CONTINUED

VULNERABILITY ANALYSIS (DETAILED)
Businesses:
The area surrounding the Terminal contains several industrial facilities. Numerous other businesses are located along the banks of the Mississippi River and may potentially be impacted by a discharge from the Terminal.
Wetlands or Other Sensitive Environments:
Wetlands are located south and west of the Terminal. A release that enters the St. James Canal, Bayou Citamon, or Bayou Chevreuil would impact the Barstaria Basin, a swamp and fresh marsh area. There are also wetland areas along the Mississippi River that could be impacted by a release from the docks to the river.

7.0 VULNERABILITY ANALYSIS (DETAILED), CONTINUED

VULNERABILITY ANALYSIS (DETAILED)
Fish and Wildlife:
Several endangered species could be impacted by a release from the Terminal.
Lakes and Streams:
The Terminal is located in a naturally low area. A worst-case discharge of crude oil would likely flow to one of the drainage ditches running east to west across the Terminal. Once in the drainage ditch, the spill would flow into the St. James Canal, to the Bayou Citamon, and then possibly to Bayou Chevreuil. A spill on the dock would enter the Mississippi River.

7.0 VULNERABILITY ANALYSIS (DETAILED), CONTINUED

VULNERABILITY ANALYSIS (DETAILED)
Endangered Flora and Fauna:
Several endangered species could be impacted by a release from the Terminal. See SECTION 6.5 for a list of endangered and threatened species by state.
Recreational Areas:
St Michaels Church Historical District is located southeast of the Terminal and may be impacted by a discharge to the Mississippi River. Montz Park, located farther downstream along the east back of the river, may also be impacted by a release from the Terminal.

7.0 VULNERABILITY ANALYSIS (DETAILED), CONTINUED

VULNERABILITY ANALYSIS (DETAILED)
Transportation Routes (Air, Water, Land):
Louisiana State Highway 18 is immediately east of the Terminal. The Union Pacific Railroad enters Terminal property west of the Terminal, at the railcar loading area. Various other transportation routes would also likely be impacted by a release from the Terminal due to the interruption of traffic flow during spill response efforts.
Utilities:
(b) (3), (b) (7)(F)
Other Applicable Areas:
Numerous other areas of economic importance, such as libraries, fire departments, and cemeteries, are located within a half mile radius of the Mississippi River banks and may also potentially be impacted by a release from the Terminal.

8.0 TACTICAL OVERVIEW MAP

9.0 TACTICAL PLAN INDEX

SITE #	SITE NAME

10.0 TACTICAL PLANS

Click here for Tactical Plan

11.0 SENSITIVITY MAPS

Click here for Index

11.0 SENSITIVITY MAPS

Click here for Intro

11.0 SENSITIVITY MAPS

Click here for Legend

11.0 SENSITIVITY MAPS

Click here for 109

11.0 SENSITIVITY MAPS

Click here for 114

11.0 SENSITIVITY MAPS

Click here for 108

11.0 SENSITIVITY MAPS

Click here for Vulnerability Analysis

11.0 SENSITIVITY MAPS

Click here for Sensitivity Map 1

11.0 SENSITIVITY MAPS

Click here for Sensitivity Map 2

11.0 SENSITIVITY MAPS

Click here for Sensitivity Map 3

11.0 SENSITIVITY MAPS

Click here for Sensitivity Map 4

11.0 SENSITIVITY MAPS

Click here for Sensitivity Map Index

LINK FILES

(b) (3), (b) (7)(F)

[redacted]

ASSIGNMENT LIST ATTACHMENT

PAGE OF

1. Incident Name:	2. Operational Period (Date / Time) From: To:	ASSIGNMENT LIST ATTACHMENT ICS 204a-OS
3. Branch	4. Division / Group	
5. Strike Team / Task Force / Resource Identifier	6. Leader	7. Assignment Location

8. Work Assignment Special Instructions (if any) (Ops)

9. Special Equipment / Supplies Needed for Assignment (if any) (Ops)

10. Special Environmental Considerations (if any) (P.S.C.)

11. Special Site Specific Safety Considerations (if any) (S.O.)

Approved Site Safety Plan Located At:

12. Other Attachments (as needed)

- ☐ Map
- ☐ Weather Forecast
- ☐ Shoreline Cleanup Assessment Team Report
- ☐ Tides
- ☐
- ☐

13. Prepared By: (Resources Unit Leader) **Date / Time**

1. Incident Name	2. Operational Period (Date / Time) From: To:	3. Check-in Location ☐ Command Post ☐ Other ☐ Staging Area _____ _____	**CHECK-IN LIST (Equipment)** **ICS 211e-OS**

Equipment Check-in Information					**9. Initial Incident Check-In?**	**10. Time**	
4. Equipment Description	**5. Equipment Identifier**	**6. Supplier/Owner**	**7. Assignment**	**8. Contact Information**	(X)	In	Out
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11. Prepared by:	**Date / Time**	**12. Date / Time Sent to Resources Unit**

1. Incident Name	2. Operational Period (Date / Time) From: To:	3. Check-in Location ☐ Command Post ☐ Other ☐ Staging Area _____ _____	**CHECK-IN LIST (Personnel)** **ICS 211p-OS**

Personnel Check-in Information				**8. Initial Incident Check-In?**	**9. Time**	
4. Name	**5. Company/Agency**	**6. ICS Section / Assignment / Quals.**	**7. Contact Information**	(X)	In	Out
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10. Prepared by:	**Date / Time**	**11. Date / Time Sent to Resources Unit**

1. Incident Name	2. Operational Period (Date/Time) From: To:	INDIVIDUAL LOG ICS 214a-OS

3. Individual Name	4. ICS Section	5. Assignment/Location

6. Activity Log	Page of

Time	Major Events

7. Prepared by:	Date/Time

RADIO REQUIREMENTS WORKSHEET	1. INCIDENT NAME	2. DATE	3. TIME
4. BRANCH	5. AGENCY	6. OPERATIONAL PERIOD	7. TACTICAL FREQUENCY

8. DIVISION/GROUP AGENCY	DIVISION/ GROUP AGENCY	DIVISION/ GROUP AGENCY	DIVISION/ GROUP AGENCY

9. AGENCY	ID NO.	RADIO RQMTS	AGENCY	ID NO.	RADIO RQMTS	AGENCY	ID NO.	RADIO RQMTS	AGENCY	ID NO.	RADIO RQMTS

216 ICS 3-82	PAGE	10. PREPARED BY (COMMUNICATIONS UNIT)

1. INCIDENT NAME	2. DATE	3. OPERATIONAL PERIOD (DATE/TIME)	RADIO FREQUENCY ASSIGNMENT WORKSHEET ICS 217
4. INCIDENT ORGANIZATION			

5. RADIO DATA	SOURCE	FUNCTION	CH#	FREQUENCY	TOTAL BY REQ.
INCIDENT COMMANDER					
SAFETY OFFICER					
OPERATIONS SECTION CHIEF					
AIR OPERATIONS					
AIR TACTICAL SUPERVISOR					
PLANNING SECTION CHIEF					
GROUND SUPPORT UNIT					
BASE UNIT					
COM CENTER					
BRANCH					
DIVISION					
DIVISION					
BRANCH					
DIVISION					
DIVISION					
BRANCH					
DIVISION					
DIVISION					
6. Agency					

ICS 217	Page	Prepared By:

1. Incident Name	2. Operational Period (Date/Time) From: To:	DAILY MEETING SCHEDULE ICS 230-OS

3. Meeting Schedule (Commonly-held meetings are included)

Date/Time	Meeting Name	Purpose	Attendees	Location
	Tactics Meeting	Develop primary and alternate Strategies to meet Incident Objectives for the next operational period.	PSC, OPS, LSC, EUL, RUL & SUL	
	Planning Meeting	Review status and finalize strategies and assignments to meet incident objectives for the next operational period.	Determined by the IC / UC	
	Operations Briefing	Present IAP and assignments to the Supe rvisors/Leaders for the next operational period.	IC / US, Command Staff, General Staff, Branch Directors, Div. Sups., Task Force / Strike Team Leaders and Unit Leaders	
	Unified Command Objectives Meeting	Review/identify objectives for the next operational period.	Unified Command members	

4. Prepared By: (Situation Unit Leader) **Date/Time:**

1. Incident Name	2. Meeting Date/Time	MEETING SUMMARY ICS 231-OS
3. Meeting Name		
4. Meeting Location		
5. Facilitator		
6. Attendees		
7. Notes (with summary of decisions and action items)		
8. Prepared by:	Date/Time	

RESOURCES AT RISK

PAGE OF

1. Incident Name:	2. Operational Period Time (Date / Time) From: To:	RESOURCES AT RISK ICS 232-OS

3. Environmentally-Sensitive Areas and Wildlife Issues

Site #	Priority	Site Name and/or Physical Location	Site Issues

Narrative:

4. Archaeo-cultural and Socio-economic Issues

Site #	Priority	Site Name and/or Physical Location	Site Issues

Narrative:

5. Prepared By (Environmental Unit Leader: Date / Time

INCIDENT STATUS SUMMARY (ICS 209)

***1. Incident Name:**			**2. Incident Number:**	
***3. Report Version** (check one box on left)**:** ☐ Initial ☐ Update ☐ Final Rpt # (if used):	***4. Incident Commander(s) & Agency or Organization:**		**5. Incident Management Organization:**	***6. Incident Start Date/Time:** Date: _____ Time: _____ Time Zone: _____
7. Current Incident Size or Area Involved (use unit label – e.g., "sq mi," "city block")**:**	**8. Percent (%) Contained** **Completed**	***9. Incident Definition:**	**10. Incident Complexity Level:**	***11. For Time Period:** From Date/Time: _____ To Date/Time: _____

Approval & Routing Information

***12. Prepared By:** Print Name: _____ ICS Position: _____ Date/Time Prepared: _____	***13. Date/Time Submitted** **Time Zone:**
***14. Approved By:** Print Name: _____ ICS Position: _____ Signature: _____	***15. Primary Location, Organization, or Agency Sent To:**

Incident Location Information

***16. State:**	***17. County/Parish/Borough:**	***18. City:**
19. Unit or Other:	***20. Incident Jurisdiction:**	**21. Incident Location Ownership** (if different than jurisdiction)**:**
22. Longitude (indicate format)**:** **Latitude** (indicate format)**:**	**23. US National Grid Reference:**	**24. Legal Description** (township, section, range)**:**
***25. Short Location or Area Description** (list all affected areas or a reference point)**:**		**26. UTM Coordinates:**
27. Note any electronic geospatial data included or attached (indicate data format, content, and collection time information and labels)**:**		

Incident Summary

***28. Significant Events for the Time Period Reported** (summarize significant progress made, evacuations, incident growth, etc.)**:**
29. Primary Materials or Hazards Involved (hazardous chemicals, fuel types, infectious agents, radiation, etc.)**:**

30. Damage Assessment Information (summarize damage and/or restriction of use or availability to residential or commercial property, natural resources, critical infrastructure and key resources, etc.)**:**

A. Structural Summary	B. # Threatened (72 hrs)	C. # Damaged	D. # Destroyed
E. Single Residences			
F. Nonresidential Commercial Property			
Other Minor Structures			
Other			

** Required when applicable.*

INCIDENT STATUS SUMMARY (ICS 209)

***1. Incident Name:**	**2. Incident Number:**

Additional Incident Decision Support Information

***31. Public Status Summary:**	A. # This Reporting Period	B. Total # to Date	***32. Responder Status Summary:**	A. # This Reporting Period	B. Total # to Date
C. Indicate Number of Civilians (Public) Below:			*C. Indicate Number of Responders Below:*		
D. Fatalities			D. Fatalities		
E. With Injuries/Illness			E. With Injuries/Illness		
F. Trapped/In Need of Rescue			F. Trapped/In Need of Rescue		
G. Missing *(note if estimated)*			G. Missing		
H. Evacuated *(note if estimated)*			H. Sheltering in Place		
I. Sheltering in Place *(note if estimated)*			I. Have Received Immunizations		
J. In Temporary Shelters *(note if est.)*			J. Require Immunizations		
K. Have Received Mass Immunizations			K. In Quarantine		
L. Require Immunizations *(note if est.)*					
M. In Quarantine					
N. Total # Civilians (Public) Affected:			*N. Total # Responders Affected:*		

33. Life, Safety, and Health Status/Threat Remarks:

***34. Life, Safety, and Health Threat Management:**	A. Check if Active
A. No Likely Threat	☐
B. Potential Future Threat	☐
C. Mass Notifications in Progress	☐
D. Mass Notifications Completed	☐
E. No Evacuation(s) Imminent	☐
F. Planning for Evacuation	☐
G. Planning for Shelter-in-Place	☐
H. Evacuation(s) in Progress	☐
I. Shelter-in-Place in Progress	☐
J. Repopulation in Progress	☐
K. Mass Immunization in Progress	☐
L. Mass Immunization Complete	☐
M. Quarantine in Progress	☐
N. Area Restriction in Effect	☐
	☐
	☐
	☐
	☐

35. Weather Concerns (synopsis of current and predicted weather; discuss related factors that may cause concern)**:**

36. Projected Incident Activity, Potential, Movement, Escalation, or Spread and influencing factors during the next operational period and in 12-, 24-, 48-, and 72-hour timeframes:

12 hours:

24 hours:

48 hours:

72 hours:

Anticipated after 72 hours:

37. Strategic Objectives (define planned end-state for incident)**:**

** Required when applicable.*

INCIDENT STATUS SUMMARY (ICS 209)

***1. Incident Name:**	**2. Incident Number:**

Additional Incident Decision Support Information *(continued)*

38. Current Incident Threat Summary and Risk Information in 12-, 24-, 48-, and 72-hour timeframes and beyond. Summarize primary incident threats to life, property, communities and community stability, residences, health care facilities, other critical infrastructure and key resources, commercial facilities, natural and environmental resources, cultural resources, and continuity of operations and/or business. Identify corresponding incident-related potential economic or cascading impacts.

12 hours:

24 hours:

48 hours:

72 hours:

Anticipated after 72 hours:

39. Critical Resource Needs in 12-, 24-, 48-, and 72-hour timeframes and beyond to meet critical incident objectives. List resource category, kind, and/or type, and amount needed, in priority order:

12 hours:

24 hours:

48 hours:

72 hours:

Anticipated after 72 hours:

40. Strategic Discussion: Explain the relation of overall strategy, constraints, and current available information to:

1) critical resource needs identified above,
2) the Incident Action Plan and management objectives and targets,
3) anticipated results.

Explain major problems and concerns such as operational challenges, incident management problems, and social, political, economic, or environmental concerns or impacts.

41. Planned Actions for Next Operational Period:

42. Projected Final Incident Size/Area (use unit label – e.g., “sq mi”)**:**

43. Anticipated Incident Management Completion Date:

44. Projected Significant Resource Demobilization Start Date:

45. Estimated Incident Costs to Date:

46. Projected Final Incident Cost Estimate:

47. Remarks (or continuation of any blocks above – list block number in notation)**:**

 ** Required when applicable.*

INCIDENT STATUS SUMMARY (ICS 209)

1. Incident Name:	**2. Incident Number:**

Incident Resource Commitment Summary

48. Agency or Organization:	**49. Resources** (summarize resources by category, kind, and/or type; show # of resources on top ½ of box, show # of personnel associated with resource on bottom ½ of box)**:**															**50. Additional Personnel** not assigned to a resource**:**	**51. Total Personnel** (includes those associated with resources – e.g., aircraft or engines – *and* individual overhead)**:**
52. Total Resources																	

53. Additional Cooperating and Assisting Organizations Not Listed Above:

ICS 209, Page of	** Required when applicable.*

ICS 209
Incident Status Summary

Purpose. The ICS 209 is used for reporting information on significant incidents. It is not intended for every incident, as most incidents are of short duration and do not require scarce resources, significant mutual aid, or additional support and attention. **T**he ICS 209 contains basic information elements needed to support decisionmaking at all levels above the incident to support the incident. Decisionmakers may include the agency having jurisdiction, but also all multiagency coordination system (MACS) elements and parties, such as cooperating and assisting agencies/organizations, dispatch centers, emergency operations centers, administrators, elected officials, and local, tribal, county, State, and Federal agencies. Once ICS 209 information has been submitted from the incident, decisionmakers and others at all incident support and coordination points may transmit and share the information (based on its sensitivity and appropriateness) for access and use at local, regional, State, and national levels as it is needed to facilitate support.

Accurate and timely completion of the ICS 209 is necessary to identify appropriate resource needs, determine allocation of limited resources when multiple incidents occur, and secure additional capability when there are limited resources due to constraints of time, distance, or other factors. The information included on the ICS 209 influences the priority of the incident, and thus its share of available resources and incident support.

The ICS 209 is designed to provide a “snapshot in time” to effectively move incident decision support information where it is needed. It should contain the most accurate and up-to-date information available at the time it is prepared. However, readers of the ICS 209 may have access to more up-to-date or real-time information in reference to certain information elements on the ICS 209. Coordination among communications and information management elements within ICS and among MACS should delineate authoritative sources for more up-to-date and/or real-time information when ICS 209 information becomes outdated in a quickly evolving incident.

Reporting Requirements. The ICS 209 is intended to be used when an incident reaches a certain threshold where it becomes significant enough to merit special attention, require additional resource support needs, or cause media attention, increased public safety threat, etc. Agencies or organizations may set reporting requirements and, therefore, ICS 209s should be completed according to each jurisdiction or discipline’s policies, mobilization guide, or preparedness plans. It is recommended that consistent ICS 209 reporting parameters be adopted and used by jurisdictions or disciplines for consistency over time, documentation, efficiency, trend monitoring, incident tracking, etc.

For example, an agency or MAC (Multiagency Coordination) Group may require the submission of an initial ICS 209 when a new incident has reached a certain predesignated level of significance, such as when a given number of resources are committed to the incident, when a new incident is not completed within a certain timeframe, or when impacts/threats to life and safety reach a given level.

Typically, ICS 209 forms are completed either once daily or for each operational period – in addition to the initial submission. Jurisdictional or organizational guidance may indicate frequency of ICS 209 submission for particular definitions of incidents or for all incidents. This specific guidance may help determine submission timelines when operational periods are extremely short (e.g., 2 hours) and it is not necessary to submit new ICS 209 forms for all operational periods.

Any plans or guidelines should also indicate parameters for when it is appropriate to stop submitting ICS 209s for an incident, based upon incident activity and support levels.

Preparation. When an Incident Management Organization (such as an Incident Management Team) is in place, the Situation Unit Leader or Planning Section Chief prepares the ICS 209 at the incident. On other incidents, the ICS 209 may be completed by a dispatcher in the local communications center, or by another staff person or manager. This form should be completed at the incident or at the closest level to the incident.

The ICS 209 should be completed with the best possible, currently available, and verifiable information at the time it is completed and signed.

This form is designed to serve incidents impacting specific geographic areas that can easily be defined. It also has the flexibility for use on ubiquitous events, or those events that cover extremely large areas and that may involve many jurisdictions and ICS organizations. For these incidents, it will be useful to clarify on the form exactly which portion of the larger incident the ICS 209 is meant to address. For example, a particular ICS 209 submitted during a statewide outbreak of mumps may be relevant only to mumps-related activities in Story County, Iowa. This can be indicated in both the incident name, Block 1, and in the Incident Location Information section in Blocks 16–26.

While most of the "Incident Location Information" in Blocks 16–26 is optional, the more information that can be submitted, the better. Submission of multiple location indicators increases accuracy, improves interoperability, and increases information sharing between disparate systems. Preparers should be certain to follow accepted protocols or standards when entering location information, and clearly label all location information. As with other ICS 209 data, geospatial information may be widely shared and utilized, so accuracy is essential.

If electronic data is submitted with the ICS 209, do not attach or send extremely large data files. Incident geospatial data that is distributed with the ICS 209 should be in simple incident geospatial basics, such as the incident perimeter, point of origin, etc. Data file sizes should be small enough to be easily transmitted through dial-up connections or other limited communications capabilities when ICS 209 information is transmitted electronically. Any attached data should be clearly labeled as to format content and collection time, and should follow existing naming conventions and standards.

Distribution. ICS 209 information is meant to be completed at the level as close to the incident as possible, preferably at the incident. Once the ICS 209 has been submitted outside the incident to a dispatch center or MACS element, it may subsequently be transmitted to various incident supports and coordination entities based on the support needs and the decisions made within the MACS in which the incident occurs.

Coordination with public information system elements and investigative/intelligence information organizations at the incident and within MACS is essential to protect information security and to ensure optimal information sharing and coordination. There may be times in which particular ICS 209s contain sensitive information that should not be released to the public (such as information regarding active investigations, fatalities, etc.). When this occurs, the ICS 209 (or relevant sections of it) should be labeled appropriately, and care should be taken in distributing the information within MACS.

All completed and signed original ICS 209 forms MUST be given to the incident's Documentation Unit and/or maintained as part of the official incident record.

Notes:

- To promote flexibility, only a limited number of ICS 209 blocks are typically required, and most of those are required only when applicable.
- Most fields are optional, to allow responders to use the form as best fits their needs and protocols for information collection.
- For the purposes of the ICS 209, responders are those personnel who are assigned to an incident or who are a part of the response community as defined by NIMS. This may include critical infrastructure owners and operators, nongovernmental and nonprofit organizational personnel, and contract employees (such as caterers), depending on local/jurisdictional/discipline practices.
- For additional flexibility only pages 1–3 are numbered, for two reasons:
  - Possible submission of additional pages for the Remarks Section (Block 47), and
  - Possible submission of additional copies of the fourth/last page (the "Incident Resource Commitment Summary") to provide a more detailed resource summary.

Block Number	Block Title	Instructions
*1	**Incident Name**	**REQUIRED BLOCK.** • Enter the full name assigned to the incident. • Check spelling of the full incident name. • For an incident that is a Complex, use the word "Complex" at the end of the incident name. • If the name changes, explain comments in Remarks, Block 47. • Do not use the same incident name for different incidents in the same calendar year.

Block Number	Block Title	Instructions
2	**Incident Number**	• Enter the appropriate number based on current guidance. The incident number may vary by jurisdiction and discipline. • Examples include: ○ A computer-aided dispatch (CAD) number. ○ An accounting number. ○ A county number. ○ A disaster declaration number. ○ A combination of the State, unit/agency ID, and a dispatch system number. ○ A mission number. ○ Any other unique number assigned to the incident and derived by means other than those above. • Make sure the number entered is correct. • Do not use the same incident number for two different incidents in the same calendar year. • Incident numbers associated with host jurisdictions or agencies and incident numbers assigned by agencies represented in Unified Command should be listed, or indicated in Remarks, Block 47.
*3	**Report Version** (check one box on left)	**REQUIRED BLOCK.** • This indicates the current version of the ICS 209 form being submitted. • If only one ICS 209 will be submitted, check BOTH "Initial" and "Final" (or check only "Final").
	☐ Initial	Check "Initial" if this is the first ICS 209 for this incident.
	☐ Update	Check "Update" if this is a subsequent report for the same incident. These can be submitted at various time intervals (see "Reporting Requirements" above).
	☐ Final	• Check "Final" if this is the last ICS 209 to be submitted for this incident (usually when the incident requires only minor support that can be supplied by the organization having jurisdiction). • Incidents may also be marked as "Final" if they become part of a new Complex (when this occurs, it can be indicated in Remarks, Block 47).
	Report # (if used)	Use this optional field if your agency or organization requires the tracking of ICS 209 report numbers. Agencies may also track the ICS 209 by the date/time submitted.
*4	**Incident Commander(s) & Agency or Organization**	**REQUIRED BLOCK.** • Enter both the first and last name of the Incident Commander. • If the incident is under a Unified Command, list all Incident Commanders by first initial and last name separated by a comma, including their organization. For example: L. Burnett – Minneapolis FD, R. Domanski – Minneapolis PD, C. Taylor – St. Paul PD, Y. Martin – St. Paul FD, S. McIntyre – U.S. Army Corps, J. Hartl – NTSB
5	**Incident Management Organization**	Indicate the incident management organization for the incident, which may be a Type 1, 2, or 3 Incident Management Team (IMT), a Unified Command, a Unified Command with an IMT, etc. This block should not be completed unless a recognized incident management organization is assigned to the incident.

Block Number	Block Title	Instructions
*6	**Incident Start Date/Time**	**REQUIRED.** This is always the start date and time of the incident (not the report date and time or operational period).
	Date	Enter the start date (month/day/year).
	Time	Enter the start time (using the 24-hour clock).
	Time Zone	Enter the time zone of the incident (e.g., EDT, PST).
7	**Current Incident Size or Area Involved** (use unit label – e.g., "sq mi," "city block")	• Enter the appropriate incident descriptive size or area involved (acres, number of buildings, square miles, hectares, square kilometers, etc.). • Enter the total area involved for incident Complexes in this block, and list each sub-incident and size in Remarks (Block 47). • Indicate that the size is an estimate, if a more specific figure is not available. • Incident size may be a population figure rather than a geographic figure, depending on the incident definition and objectives. • If the incident involves more than one jurisdiction or mixed ownership, agencies/organizations may require listing a size breakdown by organization, or including this information in Remarks (Block 47). • The incident may be one part of a much larger event (refer to introductory instructions under "Preparation). Incident size/area depends on the area actively managed within the incident objectives and incident operations, and may also be defined by a delegation of authority or letter of expectation outlining management bounds.
8	**Percent (%) Contained or Completed** (circle one)	• Enter the percent that this incident is completed or contained (e.g., 50%), with a % label. • For example, a spill may be 65% contained, or flood response objectives may be 50% met.
*9	**Incident Definition**	**REQUIRED BLOCK.** Enter a general definition of the incident in this block. This may be a general incident category or kind description, such as "tornado," "wildfire," "bridge collapse," "civil unrest," "parade," "vehicle fire," "mass casualty," etc.
10	**Incident Complexity Level**	Identify the incident complexity level as determined by Unified/Incident Commanders, if available or used.
*11	**For Time Period**	**REQUIRED BLOCK.** • Enter the time interval for which the form applies. This period should include all of the time since the last ICS 209 was submitted, or if it is the initial ICS 209, it should cover the time lapsed since the incident started. • The time period may include one or more operational periods, based on agency/organizational reporting requirements.
	From Date/Time	• Enter the start date (month/day/year). • Enter the start time (using the 24-hour clock).
	To Date/Time	• Enter the end date (month/day/year). • Enter the end time (using the 24-hour clock).

Block Number	Block Title	Instructions
APPROVAL & ROUTING INFORMATION		
***12**	**Prepared By**	**REQUIRED BLOCK.** When an incident management organization is in place, this would be the Situation Unit Leader or Planning Section Chief at the incident. On other incidents, it could be a dispatcher in the local emergency communications center, or another staff person or manager.
	Print Name	Print the name of the person preparing the form.
	ICS Position	The ICS title of the person preparing the form (e.g., "Situation Unit Leader").
	Date/Time Prepared	Enter the date (month/day/year) and time (using the 24-hour clock) the form was prepared. Enter the time zone if appropriate.
***13**	**Date/Time Submitted**	**REQUIRED.** Enter the submission date (month/day/year) and time (using the 24-hour clock).
	Time Zone	Enter the time zone from which the ICS 209 was submitted (e.g., EDT, PST).
***14**	**Approved By**	**REQUIRED.** When an incident management organization is in place, this would be the Planning Section Chief or Incident Commander at the incident. On other incidents, it could be the jurisdiction's dispatch center manager, organizational administrator, or other manager.
	Print Name	Print the name of the person approving the form.
	ICS Position	The position of the person signing the ICS 209 should be entered (e.g., "Incident Commander").
	Signature	Signature of the person approving the ICS 209, typically the Incident Commander. The original signed ICS 209 should be maintained with other incident documents.
***15**	**Primary Location, Organization, or Agency Sent To**	**REQUIRED BLOCK.** Enter the appropriate primary location or office the ICS 209 was sent to apart from the incident. This most likely is the entity or office that ordered the incident management organization that is managing the incident. This may be a dispatch center or a MACS element such as an emergency operations center. If a dispatch center or other emergency center prepared the ICS 209 for the incident, indicate where it was submitted initially.
INCIDENT LOCATION INFORMATION		
• Much of the "Incident Location Information" in Blocks 16–26 is optional, but completing as many fields as possible increases accuracy, and improves interoperability and information sharing between disparate systems. • As with all ICS 209 information, accuracy is essential because the information may be widely distributed and used in a variety of systems. Location and/or geospatial data may be used for maps, reports, and analysis by multiple parties outside the incident. • Be certain to follow accepted protocols, conventions, or standards where appropriate when submitting location information, and clearly label all location information. • Incident location information is usually based on the point of origin of the incident, and the majority of the area where the incident jurisdiction is.		
***16**	**State**	**REQUIRED BLOCK WHEN APPLICABLE.** • Enter the State where the incident originated. • If other States or jurisdictions are involved, enter them in Block 25 or Block 44.

Block Number	Block Title	Instructions
*17	**County / Parish / Borough**	**REQUIRED BLOCK WHEN APPLICABLE.** • Enter the county, parish, or borough where the incident originated. • If other counties or jurisdictions are involved, enter them in Block 25 or Block 47.
*18	**City**	**REQUIRED BLOCK WHEN APPLICABLE.** • Enter the city where the incident originated. • If other cities or jurisdictions are involved, enter them in Block 25 or Block 47.
19	**Unit or Other**	Enter the unit, sub-unit, unit identification (ID) number or code (if used), or other information about where the incident originated. This may be a local identifier that indicates primary incident jurisdiction or responsibility (e.g., police, fire, public works, etc.) or another type of organization. Enter specifics in Block 25.
*20	**Incident Jurisdiction**	**REQUIRED BLOCK WHEN APPLICABLE.** Enter the jurisdiction where the incident originated (the entry may be general, such as Federal, city, or State, or may specifically identify agency names such as Warren County, U.S. Coast Guard, Panama City, NYPD).
21	**Incident Location Ownership** (if different than jurisdiction)	• When relevant, indicate the ownership of the area where the incident originated, especially if it is different than the agency having jurisdiction. • This may include situations where jurisdictions contract for emergency services, or where it is relevant to include ownership by private entities, such as a large industrial site.
22	**22. Longitude** (indicate format): **Latitude** (indicate format):	• Enter the longitude and latitude where the incident originated, if available and normally used by the authority having jurisdiction for the incident. • Clearly label the data, as longitude and latitude can be derived from various sources. For example, if degrees, minutes, and seconds are used, label as "33 degrees, 45 minutes, 01 seconds."
23	**US National Grid Reference**	• Enter the US National Grid (USNG) reference where the incident originated, if available and commonly used by the agencies/jurisdictions with primary responsibility for the incident. • Clearly label the data.
24	**Legal Description** (township, section, range)	• Enter the legal description where the incident originated, if available and commonly used by the agencies/jurisdictions with primary responsibility for the incident. • Clearly label the data (e.g., N 1/2 SE 1/4, SW 1/4, S24, T32N, R18E).
*25	**Short Location or Area Description** (list all affected areas or a reference point)	**REQUIRED BLOCK.** • List all affected areas as described in instructions for Blocks 16–24 above, OR summarize a general location, OR list a reference point for the incident (e.g., "the southern third of Florida," "in ocean 20 miles west of Catalina Island, CA," or "within a 5 mile radius of Walden, CO"). • This information is important for readers unfamiliar with the area (or with other location identification systems) to be able to quickly identify the general location of the incident on a map. • Other location information may also be listed here if needed or relevant for incident support (e.g., base meridian).
26	**UTM Coordinates**	Indicate Universal Transverse Mercator reference coordinates if used by the discipline or jurisdiction.

Block Number	Block Title	Instructions
27	**Note any electronic geospatial data included or attached** (indicate data format, content, and collection time information and labels)	• Indicate whether and how geospatial data is included or attached. • Utilize common and open geospatial data standards. • WARNING: Do not attach or send extremely large data files with the ICS 209. Incident geospatial data that is distributed with the ICS 209 should be simple incident geospatial basics, such as the incident perimeter, origin, etc. Data file sizes should be small enough to be easily transmitted through dial-up connections or other limited communications capabilities when ICS 209 information is transmitted electronically. • NOTE: Clearly indicate data content. For example, data may be about an incident perimeter (such as a shape file), the incident origin (a point), a point and radius (such as an evacuation zone), or a line or lines (such as a pipeline). • NOTE: Indicate the data format (e.g., .shp, .kml, .kmz, or .gml file) and any relevant information about projection, etc. • NOTE: Include a hyperlink or other access information if incident map data is posted online or on an FTP (file transfer protocol) site to facilitate downloading and minimize information requests. • NOTE: Include a point of contact for getting geospatial incident information, if included in the ICS 209 or available and supporting the incident.
INCIDENT SUMMARY		

*28	**Significant Events for the Time Period Reported** (summarize significant progress made, evacuations, incident growth, etc.)	**REQUIRED BLOCK.**
		• Describe significant events that occurred during the period being reported in Block 6. Examples include:
		  ○ Road closures.
		  ○ Evacuations.
		  ○ Progress made and accomplishments.
		  ○ Incident command transitions.
		  ○ Repopulation of formerly evacuated areas and specifics.
		  ○ Containment.
		• Refer to other blocks in the ICS 209 when relevant for additional information (e.g., "Details on evacuations may be found in Block 33"), or in Remarks, Block 47.
		• Be specific and detailed in reference to events. For example, references to road closures should include road number and duration of closure (or include further detail in Block 33). Use specific metrics if needed, such as the number of people or animals evacuated, or the amount of a material spilled and/or recovered.
		• This block may be used for a single-paragraph synopsis of overall incident status.

29	**Primary Materials or Hazards Involved** (hazardous chemicals, fuel types, infectious agents, radiation, etc.)	• When relevant, enter the appropriate primary materials, fuels, or other hazards involved in the incident that are leaking, burning, infecting, or otherwise influencing the incident. • Examples include hazardous chemicals, wildland fuel models, biohazards, explosive materials, oil, gas, structural collapse, avalanche activity, criminal activity, etc.
	Other	Enter any miscellaneous issues which impacted Critical Infrastructure and Key Resources.

Block Number	Block Title	Instructions
30	**Damage Assessment Information** (summarize damage and/or restriction of use or availability to residential or commercial property, natural resources, critical infrastructure and key resources, etc.)	• Include a short summary of damage or use/access restrictions/ limitations caused by the incident for the reporting period, and cumulatively. • Include if needed any information on the facility status, such as operational status, if it is evacuated, etc. when needed. • Include any critical infrastructure or key resources damaged/destroyed/ impacted by the incident, the kind of infrastructure, and the extent of damage and/or impact and any known cascading impacts. • Refer to more specific or detailed damage assessment forms and packages when they are used and/or relevant.
	A. Structural Summary	Complete this table as needed based on the definitions for 30B–F below. Note in table or in text block if numbers entered are estimates or are confirmed. Summaries may also include impact to Shoreline and Wildlife, etc.
	B. # Threatened (72 hrs)	Enter the number of structures potentially threatened by the incident within the next 72 hours, based on currently available information.
	C. # Damaged	Enter the number of structures damaged by the incident.
	D. # Destroyed	Enter the number of structures destroyed beyond repair by the incident.
	E. Single Residences	Enter the number of single dwellings/homes/units impacted in Columns 30B–D. Note any specifics in the text block if needed, such as type of residence (apartments, condominiums, single-family homes, etc.).
	F. Nonresidential Commercial Properties	Enter the number of buildings or units impacted in Columns 30B–D. This includes any primary structure used for nonresidential purposes, excluding Other Minor Structures (Block 30G). Note any specifics regarding building or unit types in the text block.
	Other Minor Structures	Enter any miscellaneous structures impacted in Columns 30B–D not covered in 30E–F above, including any minor structures such as booths, sheds, or outbuildings.
	Other	Enter any miscellaneous issues which impacted Critical Infrastructure and Key Resources.

Block Number	Block Title	Instructions
ADDITIONAL INCIDENT DECISION SUPPORT INFORMATION (PAGE 2)		

***31**	**Public Status Summary**	• This section is for summary information regarding incident-related injuries, illness, and fatalities for civilians (or members of the public); see 31C–N below.
		• Explain or describe the nature of any reported injuries, illness, or other activities in Life, Safety, and Health Status/Threat Remarks (Block 33).
		• Illnesses include those that may be caused through a biological event such as an epidemic or an exposure to toxic or radiological substances.
		• NOTE: *Do not estimate any fatality information*.
		• NOTE: Please use caution when reporting information in this section that may be on the periphery of the incident or change frequently. This information should be reported as accurately as possible as a snapshot in time, as much of the information is subject to frequent change.
		• NOTE: Do not complete this block if the incident covered by the ICS 209 is *not directly responsible* for these actions (such as evacuations, sheltering, immunizations, etc.) *even if they are related to the incident*.
		  ○ Only the authority having jurisdiction should submit reports for these actions, to mitigate multiple/conflicting reports.
		  ○ For example, if managing evacuation shelters is part of the incident operation itself, do include these numbers in Block 31J with any notes in Block 33.
		• NOTE: When providing an estimated value, denote in parenthesis: "est."
		
		Handling Sensitive Information
		• Release of information in this section should be carefully coordinated within the incident management organization to ensure synchronization with public information and investigative/intelligence actions.
		• Thoroughly review the "Distribution" section in the introductory ICS 209 instructions for details on handling sensitive information. Use caution when providing information in any situation involving fatalities, and verify that appropriate notifications have been made prior to release of this information. Electronic transmission of any ICS 209 may make information available to many people and networks at once.
		• Information regarding fatalities should be cleared with the Incident Commander and/or an organizational administrator prior to submission of the ICS 209.

	A. # This Reporting Period	Enter the total number of individuals impacted in each category for this reporting period (since the previous ICS 209 was submitted).
	B. Total # to Date	• Enter the total number of individuals impacted in each category for the entire duration of the incident. • This is a cumulative total number that should be adjusted each reporting period.
	C. Indicate Number of Civilians (Public) Below	• For lines 31D–M below, enter the number of civilians affected for each category. • Indicate if numbers are estimates, for those blocks where this is an option. • Civilians are those members of the public who are affected by the incident, but who are not included as part of the response effort through Unified Command partnerships and those organizations and agencies assisting and cooperating with response efforts.
	D. Fatalities	• Enter the number of *confirmed* civilian/public fatalities. • See information in introductory instructions ("Distribution") and in Block 31 instructions regarding sensitive handling of fatality information.

Block Number	Block Title	Instructions
	E. With Injuries/Illness	Enter the number of civilian/public injuries or illnesses directly related to the incident. Injury or illness is defined by the incident or jurisdiction(s).
***31** (continued)	F. Trapped/In Need of Rescue	Enter the number of civilians who are trapped or in need of rescue due to the incident.
	G. Missing (note if estimated)	Enter the number of civilians who are missing due to the incident. Indicate if an estimate is used.
	H. Evacuated (note if estimated)	Enter the number of civilians who are evacuated due to the incident. These are likely to be best estimates, but indicate if they are estimated.
	I. Sheltering-in-Place (note if estimated)	Enter the number of civilians who are sheltering in place due to the incident. Indicate if estimates are used.
	J. In Temporary Shelters (note if estimated)	Enter the number of civilians who are in temporary shelters as a direct result of the incident, noting if the number is an estimate.
	K. Have Received Mass Immunizations	Enter the number of civilians who have received mass immunizations due to the incident and/or as part of incident operations. Do not estimate.
	L. Require Mass Immunizations (note if estimated)	Enter the number of civilians who require mass immunizations due to the incident and/or as part of incident operations. Indicate if it is an estimate.
	M. In Quarantine	Enter the number of civilians who are in quarantine due to the incident and/or as part of incident operations. Do not estimate.
	N. Total # Civilians (Public) Affected	Enter sum totals for Columns 31A and 31B for Rows 31D–M.
***32**	**Responder Status Summary**	• This section is for summary information regarding incident-related injuries, illness, and fatalities for responders; see 32C–N. • Illnesses include those that may be related to a biological event such as an epidemic or an exposure to toxic or radiological substances directly in relation to the incident. • Explain or describe the nature of any reported injuries, illness, or other activities in Block 33. • NOTE: *Do not estimate any fatality information or responder status information.* • NOTE: Please use caution when reporting information in this section that may be on the periphery of the incident or change frequently. This information should be reported as accurately as possible as a snapshot in time, as much of the information is subject to frequent change. • NOTE: Do not complete this block if the incident covered by the ICS 209 is *not directly responsible* for these actions (such as evacuations, sheltering, immunizations, etc.) even if they are related to the incident. Only the authority having jurisdiction should submit reports for these actions, to mitigate multiple/conflicting reports. **Handling Sensitive Information** • Release of information in this section should be carefully coordinated within the incident management organization to ensure synchronization with public information and investigative/intelligence actions. • Thoroughly review the "Distribution" section in the introductory ICS 209 instructions for details on handling sensitive information. Use caution when providing information in any situation involving fatalities, and verify that appropriate notifications have been made prior to release of this information. Electronic transmission of any ICS 209 may make information available to many people and networks at once. • Information regarding fatalities should be cleared with the Incident Commander and/or an organizational administrator prior to submission of the ICS 209.

Block Number	Block Title	Instructions
***32** (continued)	A. # This Reporting Period	Enter the total number of responders impacted in each category for this reporting period (since the previous ICS 209 was submitted).
	B. Total # to Date	• Enter the total number of individuals impacted in each category for the *entire duration* of the incident. • This is a *cumulative* total number that should be adjusted each reporting period.
	C. Indicate Number of Responders Below	• For lines 32D–M below, enter the number of responders relevant for each category. • Responders are those personnel included as part of Unified Command partnerships and those organizations and agencies assisting and cooperating with response efforts.
	D. Fatalities	• Enter the number of *confirmed* responder fatalities. • See information in introductory instructions ("Distribution") and for Block 32 regarding sensitive handling of fatality information.
	E. With Injuries/Illness	• Enter the number of incident responders with serious injuries or illnesses due to the incident. • *For responders, serious injuries or illness are typically those in which the person is unable to continue to perform in his or her incident assignment,* but the authority having jurisdiction may have additional guidelines on reporting requirements in this area.
	F. Trapped/In Need Of Rescue	Enter the number of incident responders who are in trapped or in need of rescue due to the incident.
	G. Missing	Enter the number of incident responders who are missing due to incident conditions.
	H.	(BLANK; use however is appropriate.)
	I. Sheltering in Place	Enter the number of responders who are sheltering in place due to the incident. Once responders become the victims, this needs to be noted in Block 33 or Block 47 and handled accordingly.
	J.	(BLANK; use however is appropriate.)
	L. Require Immunizations	Enter the number of responders who require immunizations due to the incident and/or as part of incident operations.
	M. In Quarantine	Enter the number of responders who are in quarantine as a direct result of the incident and/or related to incident operations.
	N. Total # Responders Affected	Enter sum totals for Columns 32A and 32B for Rows 32D–M.
33	**Life, Safety, and Health Status/Threat Remarks**	• Enter any details needed for Blocks 31, 32, and 34. Enter any specific comments regarding illness, injuries, fatalities, and threat management for this incident, such as whether estimates were used for numbers given in Block 31. • This information should be reported as accurately as possible as a snapshot in time, as much of the information is subject to frequent change. • Evacuation information can be very sensitive to local residents and officials. Be accurate in the assessment. • Clearly note primary responsibility and contacts for any activities or information in Blocks 31, 32, and 34 that may be caused by the incident, but that are being managed and/or reported by other parties. • Provide additional explanation or information as relevant in Blocks 28, 36, 38, 40, 41, or in Remarks (Block 47).

Block Number	Block Title	Instructions
*34	**Life, Safety, and Health Threat Management**	Note any details in Life, Safety, and Health Status/Threat Remarks (Block 33), and provide additional explanation or information as relevant in Blocks 28, 36, 38, 40, 41, or in Remarks (Block 47). Additional pages may be necessary for notes.
	A. Check if Active	Check any applicable blocks in 34C–P based on currently available information regarding incident activity and potential.
	B. Notes	Note any specific details, or include in Block 33.
	C. No Likely Threat	Check if there is no likely threat to life, health, and safety.
	D. Potential Future Threat	Check if there is a potential future threat to life, health, and safety.
	E. Mass Notifications In Progress	• Check if there are any mass notifications in progress regarding emergency situations, evacuations, shelter in place, or other public safety advisories related to this incident. • These may include use of threat and alert systems such as the Emergency Alert System or a “reverse 911” system. • Please indicate the areas where mass notifications have been completed (e.g., “mass notifications to ZIP codes 50201, 50014, 50010, 50011,” or “notified all residents within a 5-mile radius of Gatlinburg”).
	F. Mass Notifications Completed	Check if actions referred to in Block 34E above have been completed.
	G. No Evacuation(s) Imminent	Check if evacuations are not anticipated in the near future based on current information.
	H. Planning for Evacuation	Check if evacuation planning is underway in relation to this incident.
	I. Planning for Shelter-in-Place	Check if planning is underway for shelter-in-place activities related to this incident.
	J. Evacuation(s) in Progress	Check if there are active evacuations in progress in relation to this incident.
	K. Shelter-In-Place in Progress	Check if there are active shelter-in-place actions in progress in relation to this incident.
	L. Repopulation in Progress	Check if there is an active repopulation in progress related to this incident.
	M. Mass Immunization in Progress	Check if there is an active mass immunization in progress related to this incident.
	N. Mass Immunization Complete	Check if a mass immunization effort has been completed in relation to this incident.
	O. Quarantine in Progress	Check if there is an active quarantine in progress related to this incident.
	P. Area Restriction in Effect	Check if there are any restrictions in effect, such as road or area closures, especially those noted in Block 28.

Block Number	Block Title	Instructions
35	**Weather Concerns** (synopsis of current and predicted weather; discuss related factors that may cause concern)	• Complete a short synopsis/discussion on significant weather factors that could cause concerns for the incident when relevant. • Include current and/or predicted weather factors, and the timeframe for predictions. • Include relevant factors such as: o Wind speed (label units, such as mph). o Wind direction (clarify and label where wind is coming from and going to in plain language – e.g., "from NNW," "from E," or "from SW"). o Temperature (label units, such as F). o Relative humidity (label %). o Watches. o Warnings. o Tides. o Currents. • Any other weather information relative to the incident, such as flooding, hurricanes, etc.
36	**Projected Incident Activity, Potential, Movement, Escalation, or Spread** and influencing factors during the next operational period and in 12-, 24-, 48-, and 72-hour timeframes **12 hours** **24 hours** **48 hours** **72 hours** **Anticipated after 72 hours**	• Provide an estimate (when it is possible to do so) of the direction/scope in which the incident is expected to spread, migrate, or expand during the next indicated operational period, or other factors that may cause activity changes. • Discuss incident potential relative to values at risk, or values to be protected (such as human life), and the potential changes to those as the incident changes. • Include an estimate of the acreage or area that will likely be affected. • If known, provide the above information in 12-, 24-, 48- and 72-hour timeframes, and any activity anticipated after 72 hours.
37	**Strategic Objectives** (define planned end-state for incident)	Briefly discuss the desired outcome for the incident based on currently available information. Note any high-level objectives and any possible strategic benefits as well (especially for planned events).

Block Number	Block Title	Instructions
ADDITIONAL INCIDENT DECISION SUPPORT INFORMATION (continued) **(PAGE 3)**		
38	**Current Incident Threat Summary and Risk Information in 12-, 24-, 48-, and 72-hour timeframes and beyond.** Summarize primary incident threats to life, property, communities and community stability, residences, health care facilities, other critical infrastructure and key resources, commercial facilities, natural and environmental resources, cultural resources, and continuity of operations and/or business. Identify corresponding incident-related potential economic or cascading impacts. **12 hours** **24 hours** **48 hours** **72 hours** **Anticipated after 72 hours**	Summarize major or significant threats due to incident activity based on currently available information. Include a breakdown of threats in terms of 12-, 24-, 48-, and 72-hour timeframes.

Block Number	Block Title	Instructions

39	**Critical Resource Needs** in 12-, 24-, 48-, and 72-hour timeframes and beyond to meet critical incident objectives. List resource category, kind, and/or type, and amount needed, in priority order:
	12 hours
	24 hours
	48 hours
	72 hours
	Anticipated after 72 hours
		• List the specific critical resources and numbers needed, in order of priority. *Be specific as to the need.*
		• Use plain language and common terminology for resources, and indicate resource category, kind, and type (if available or known) to facilitate incident support.
		• If critical resources are listed in this block, there should be corresponding orders placed for them through appropriate resource ordering channels.
		• Provide critical resource needs in 12-, 24-, 48- and 72-hour increments. List the most critical resources needed for each timeframe, if needs have been identified for each timeframe. Listing critical resources by the time they are needed gives incident support personnel a "heads up" for short-range planning, and assists the ordering process to ensure these resources will be in place when they are needed.
		• More than one resource need may be listed for each timeframe. For example, a list could include:
		  ○ 24 hrs: 3 Type 2 firefighting helicopters, 2 Type I Disaster Medical Assistance Teams
		  ○ 48 hrs: Mobile Communications Unit (Law/Fire)
		  ○ After 72 hrs: 1 Type 2 Incident Management Team
		• Documentation in the ICS 209 can help the incident obtain critical regional or national resources through outside support mechanisms including multiagency coordination systems and mutual aid.
		  ○ Information provided in other blocks on the ICS 209 can help to support the need for resources, including Blocks 28, 29, 31–38, and 40–42.
		  ○ Additional comments in the Remarks section (Block 47) can also help explain what the incident is requesting and why it is critical (for example, "Type 2 Incident Management Team is needed in three days to transition command when the current Type 2 Team times out").
		• Do not use this block for noncritical resources.

40	**Strategic Discussion: Explain the relation of overall strategy, constraints, and current available information to:** 1) critical resource needs identified above, 2) the Incident Action Plan and management objectives and targets, 3) anticipated results. **Explain major problems and concerns such as operational challenges, incident management problems, and social, political, economic, or environmental concerns or impacts.**	• Wording should be consistent with Block 39 to justify critical resource needs, which should relate to planned actions in the Incident Action Plan. • Give a short assessment of the likelihood of meeting the incident management targets, given the current management strategy and currently known constraints. • Identify when the chosen management strategy will succeed given the current constraints. Adjust the anticipated incident management completion target in Block 43 as needed based on this discussion. • Explain major problems and concerns as indicated.

Block Number	Block Title	Instructions
41	**Planned Actions for Next Operational Period**	• Provide a short summary of actions planned for the next operational period. • Examples: ○ "The current Incident Management Team will transition out to a replacement IMT." ○ "Continue to review operational/ engineering plan to facilitate removal of the partially collapsed west bridge supports." ○ "Continue refining mapping of the recovery operations and damaged assets using GPS." ○ "Initiate removal of unauthorized food vendors."
42	**Projected Final Incident Size/Area** (use unit label – e.g., "sq mi")	• Enter an estimate of the total area likely to be involved or affected over the course of the incident. • Label the estimate of the total area or population involved, affected, or impacted with the relevant units such as acres, hectares, square miles, etc. • Note that total area involved may not be limited to geographic area (see previous discussions regarding incident definition, scope, operations, and objectives). Projected final size may involve a population rather than a geographic area.
43	**Anticipated Incident Management Completion Date**	• Enter the date (month/day/year) at which time it is expected that incident objectives will be met. This is often explained similar to incident containment or control, or the time at which the incident is expected to be closed or when significant incident support will be discontinued. • Avoid leaving this block blank if possible, as this is important information for managers.
44	**Projected Significant Resource Demobilization Start Date**	Enter the date (month/day/year) when initiation of significant resource demobilization is anticipated.
45	**Estimated Incident Costs to Date**	• Enter the estimated total incident costs to date for the entire incident based on currently available information. • Incident costs include estimates of all costs for the response, including all management and support activities per discipline, agency, or organizational guidance and policy. • This does not include damage assessment figures, as they are impacts from the incident and not response costs. • If costs decrease, explain in Remarks (Block 47). • If additional space is required, please add as an attachment.
46	**Projected Final Incident Cost Estimate**	• Enter an estimate of the total costs for the incident once all costs have been processed based on current spending and projected incident potential, per discipline, agency, or organizational guidance and policy. This is often an estimate of daily costs combined with incident potential information. • This does not include damage assessment figures, as they are impacts from the incident and not response costs. • If additional space is required, please add as an attachment.

Block Number	Block Title	Instructions

47	**Remarks** (or continuation of any blocks above – list block number in notation)	• Use this block to expand on information that has been entered in previous blocks, or to include other pertinent information that has not been previously addressed.
		• List the block number for any information continued from a previous block.
		• Additional information may include more detailed weather information, specifics on injuries or fatalities, threats to critical infrastructure or other resources, more detailed evacuation site locations and number of evacuated, information or details regarding incident cause, etc.
		• For Complexes that include multiple incidents, list all sub-incidents included in the Complex.
		• List jurisdictional or ownership breakdowns if needed when an incident is in more than one jurisdiction and/or ownership area. Breakdown may be:
		  ○ By size (e.g., 35 acres in City of Gatlinburg, 250 acres in Great Smoky Mountains), and/or
		  ○ By geography (e.g., incident area on the west side of the river is in jurisdiction of City of Minneapolis; area on east side of river is City of St. Paul jurisdiction; river is joint jurisdiction with USACE).
		• Explain any reasons for incident size reductions or adjustments (e.g., reduction in acreage due to more accurate mapping).
		• This section can also be used to list any additional information about the incident that may be needed by incident support mechanisms outside the incident itself. This may be basic information needed through multiagency coordination systems or public information systems (e.g., a public information phone number for the incident, or the incident Web site address).
		• Attach additional pages if it is necessary to include additional comments in the Remarks section.

INCIDENT RESOURCE COMMITMENT SUMMARY (PAGE 4)

- This last/fourth page of the ICS 209 can be copied and used if needed to accommodate additional resources, agencies, or organizations. Write the actual page number on the pages as they are used.
- Include only resources that have been assigned to the incident and that have arrived and/or been checked in to the incident. Do not include resources that have been ordered but have *not* yet arrived.

For summarizing:

- When there are large numbers of responders, it may be helpful to group agencies or organizations together. Use the approach that works best for the multiagency coordination system applicable to the incident. For example,
  - Group State, local, county, city, or Federal responders together under such headings, or
  - Group resources from one jurisdiction together and list only individual jurisdictions (e.g., list the public works, police, and fire department resources for a city under that city's name).
- On a large incident, it may also be helpful to group similar categories, kinds, or types of resources together for this summary.

Block Number	Block Title	Instructions

48	**Agency or Organization**	• List the agencies or organizations contributing resources to the incident as responders, through mutual aid agreements, etc.
		• List agencies or organizations using clear language so readers who may not be from the discipline or host jurisdiction can understand the information.
		• Agencies or organizations may be listed individually or in groups.
		• When resources are grouped together, individual agencies or organizations may be listed below in Block 53.
		• Indicate in the rows under Block 49 how many resources are assigned to the incident under each resource identified.
		  ○ These can listed with the number of resources on the top of the box, and the number of personnel associated with the resources on the bottom half of the box.
		  ○ For example:
		  ▪ *Resource:* Type 2 Helicopters… 3/8 (indicates 3 aircraft, 8 personnel).
		  ▪ *Resource:* Type 1 Decontamination Unit… 1/3 (indicates 1 unit, 3 personnel).
		• Indicate in the rows under Block 51 the total number of personnel assigned for each agency listed under Block 48, including both individual overhead and those associated with other resources such as fire engines, decontamination units, etc.

49	**Resources** (summarize resources by category, kind, and/or type; show # of resources on top ½ of box, show # of personnel associated with resource on bottom ½ of box)	• List resources using clear language when possible – so ICS 209 readers who may not be from the discipline or host jurisdiction can understand the information.
		  ○ Examples: Type 1 Fire Engines, Type 4 Helicopters
		• Enter total numbers in columns for each resource by agency, organization, or grouping in the proper blocks.
		  ○ These can listed with the number of resources on the top of the box, and the number of personnel associated with the resources on the bottom half of the box.
		  ○ For example:
		  ▪ *Resource:* Type 2 Helicopters… 3/8 (indicates 3 aircraft, 8 personnel).
		  ▪ *Resource:* Type 1 Decontamination Unit… 1/3 (indicates 1 unit, 3 personnel).
		• <u>NOTE</u>: One option is to group similar resources together when it is sensible to do so for the summary.
		  ○ For example, do not list every type of fire engine – rather, it may be advisable to list two generalized types of engines, such as "structure fire engines" and "wildland fire engines" in separate columns with totals for each.
		• <u>NOTE</u>: It is not advisable to list individual overhead personnel individually in the resource section, especially as this form is intended as a summary. These personnel should be included in the Total Personnel sums in Block 51.

50	**Additional Personnel** not assigned to a resource	List the number of *additional* individuals (or overhead) that are not assigned to a specific resource by agency or organization.

51	**Total Personnel** (includes those associated with resources – e.g., aircraft or engines – *and* individual overhead)	• Enter the total personnel for each agency, organization, or grouping in the Total Personnel column.
		• <u>WARNING</u>: Do not simply add the numbers across!
		• The number of Total Personnel for each row should include <u>both</u>:
		  ○ The total number of personnel assigned to each of the resources listed in Block 49, and
		  ○ The total number of additional individual overhead personnel from each agency, organization, or group listed in Block 50.

Block Number	Block Title	Instructions
52	**Total Resources**	Include the sum total of resources for each column, including the total for the column under Blocks 49, 50, and 51. This should include the total number of *resources* in Block 49, as personnel totals will be counted under Block 51.
53	**Additional Cooperating and Assisting Organizations Not Listed Above**	• List all agencies and organizations that are not directly involved in the incident, but are providing support. • Examples may include ambulance services, Red Cross, DHS, utility companies, etc. • Do not repeat any resources counted in Blocks 48–52, unless explanations are needed for groupings created under Block 48 (Agency or Organization).

(b) (3), (b) (7)(F)

[redacted]

(b) (7)(F), (b) (3)

LEGEND

- OF 007 — OUTFALL LOCATION
- FW — FIRE WATER PIPE
- WEIR VALVES
- SHUTOFF VALVE
- DIRECTION OF STORM WATER FLOW
- ST. JAMES PARISH FIRE HYDRANT

N

0 500 1000

SCALE: 1" = 500'

NUSTAR ENERGY L.P.
SAN ANTONIO. TEXAS

ST. JAMES TERMINAL

FACILITY DRAINAGE PLAN

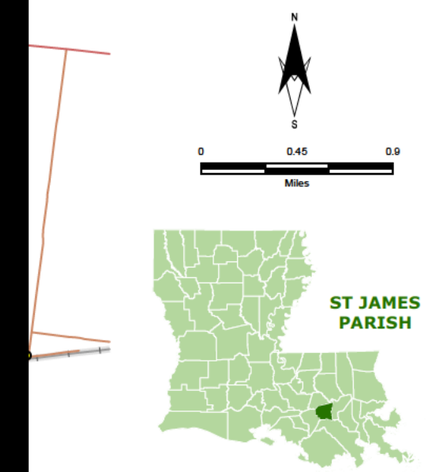
ST. JAMES PARISH

CK ASSOCIATES
Environmental Consultants

Drawn:	CAL/ACAD
Checked:	SM
Approved:	AS
Date:	4/30/14
Dwg. No.:	B10769-01

FIGURE 2

(b) (7)(F), (b) (3)



- St James Facility
- Mile Markers
- Sensitive Areas
- Water Intakes
- Flow Line
- Half Mile Buffer

Reference

U.S.G.S. 7 5 MINUTE SERIES QUAD MAP, SCOTLANDV LLE, LA,

NUSTAR ENERGY, LP
ST JAMES, LOUISIANA

ST JAMES TERMINAL FRP/SPCC

SENSITIVITY MAP

ST JAMES PARISH

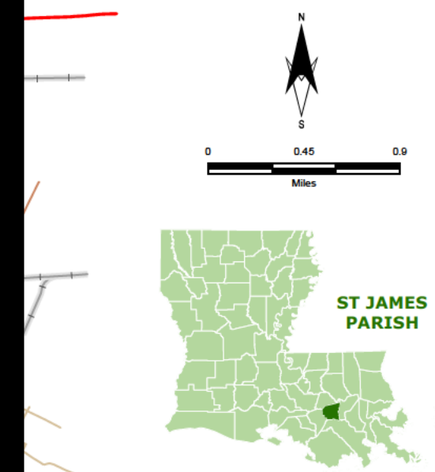
CK ASSOCIATES
Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/20/2014
Dwg. No.:	B10769-07a

FIGURE 1

(b) (7)(F), (b) (3)

[redacted]



- St James Facility
- Mile Markers
- Sensitive Areas
- Water Intakes
- Flow Line
- Half Mile Buffer

Reference

U.S.G.S. 7 5 MINUTE SERIES QUAD MAP, SCOTLANDV LLE, LA,

NUSTAR ENERGY, LP
ST JAMES, LOUISIANA

ST JAMES TERMINAL FRP/SPCC

SENSITIVITY MAP

ST JAMES PARISH

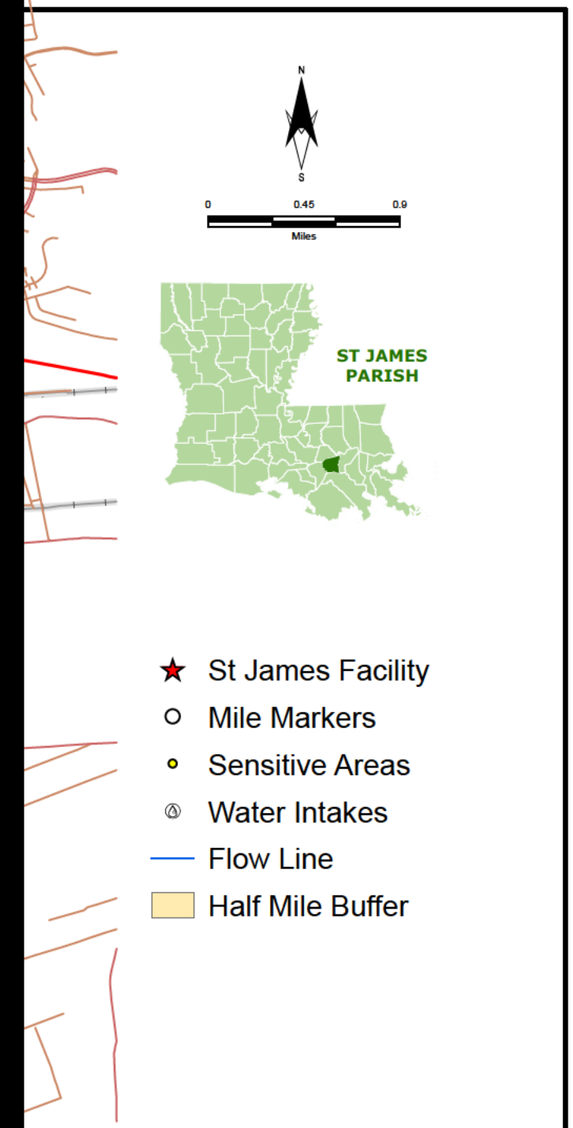
CK ASSOCIATES Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/20/2014
Dwg. No.:	B10769-07b

FIGURE 2

(b) (7)(F), (b) (3)

[redacted]



Reference

U.S.G.S. 7 5 MINUTE SERIES QUAD MAP, SCOTLANDV LLE, LA,

NUSTAR ENERGY, LP
ST JAMES, LOUISIANA

ST JAMES TERMINAL FRP/SPCC

SENSITIVITY MAP

ST JAMES PARISH

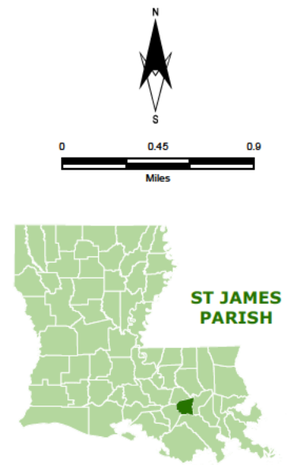
CK ASSOCIATES Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/20/2014
Dwg. No.:	B10769-07c

FIGURE 3

(b) (7)(F), (b) (3)

[redacted]



- St James Facility
- Mile Markers
- Sensitive Areas
- Water Intakes
- Flow Line
- Half Mile Buffer

Reference

U.S.G.S. 7 5 MINUTE SERIES QUAD MAP, SCOTLANDV LLE, LA,

NUSTAR ENERGY, LP
ST JAMES, LOUISIANA

ST JAMES TERMINAL FRP/SPCC

SENSITIVITY MAP

ST JAMES PARISH

CK ASSOCIATES
Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/20/2014
Dwg. No.:	B10769-07d

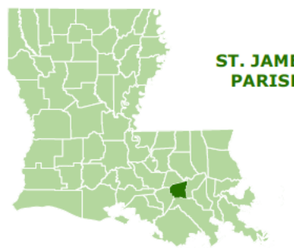
FIGURE 4

Feature ID	Name	Type	City
1	Chatman Town	Populated Place	Convent
2	Olga Landing	Locale	Convent
3	Cantrelle Reach	Channel	Convent
4	Burton Lane	Populated Place	Convent
5	Burton Lane Church	Church	Convent
6	(b) (3), (b) (7)(F)		
7	Celestin Cemetery	Cemetery	Convent
8	Burton (historical)	Populated Place	Convent
9	Saint James Canal	Canal	Madewood
10	Uncle Sam Plantation	Locale	Convent
11	Uncle Sam Landing	Locale	Convent
12	Convent	Populated Place	Convent
13	Saint James Church	Church	Convent
14	(b) (3), (b) (7)(F)		
15	Sacred Heart Convent (historical)	Church	Convent
16	Saint James Cemetery	Cemetery	Convent
17	(b) (3), (b) (7)(F)		
18	Saint Michaels Church Historic District	Park	Convent
19	Saint Michaels Church	Church	Convent
20	Saint Paul Church	Church	Lagan
21	Convent Landing	Locale	Convent
22	College Point Landing	Locale	Lagan
2	(b) (3), (b) (7)(F)		
24	Caribu Landing	Locale	Lagan
25	Saint James Post Office	Post Office	Lagan
26	Saint James Landing	Locale	Lagan
27	Rich Bend Revetment	Levee	Lagan
28	Rich Bend	Bend	Lagan
29	Saint Luke Baptist Church	Church	Lagan
30	Moonshine (historical)	Locale	Lagan
31	Pikes Peak	Populated Place	Lagan
32	Chopin (historical)	Populated Place	Lagan
33	Home Place Plantation (historical)	Locale	Lagan
34	Batree	Populated Place	Lagan
35	Welham Landing	Locale	Convent
36	Welham Plantation	Locale	Convent
37	Belmont Crevasse	Basin	Convent
38	Oak Alley Landing	Locale	Convent
39	Belmont Revetment	Levee	Convent
40	Hester Station (historical)	Locale	Convent
41	Paulina Grand Point Belmont Volunteer Fire Department Hester Station	Building	Convent
42	Bend	Populated Place	Convent
43	Greater Evergreen Baptist Church	Church	Convent
44	Vacherie Oil and Gas Field	Oilfield	Lutcher
45	Saint Matthew Baptist Church	Church	Lutcher
46	Mount Olive Baptist Church	Church	Lutcher
47	Remy	Populated Place	Lutcher
48	Vacherie Volunteer Fire Department Station 1	Building	Lutcher
49	Armant Landing	Locale	Lutcher
50	Duprac Landing	Locale	Lutcher
51	(b) (3), (b) (7)(F)		
52	Paulina - Grand Point - Belmont Fire Department Paulina Station	Building	Lutcher
53	Vacherie	Populated Place	Lutcher
54	Pilgrim Church	Church	Lutcher
55	Highway Baptist Church	Church	Lutcher
5	(b) (3), (b) (7)(F)		
57	Magnolia Landing	Locale	Lutcher
58	Vacherie Revetment	Levee	Lutcher
59	(b) (3), (b) (7)(F)		
60	Oubre	Populated Place	Lutcher
61	Paulina	Populated Place	Lutcher
62	(b) (3), (b) (7)(F)		
63	Grandview Reach	Channel	Lutcher
64	Crescent Landing	Locale	Lutcher
65	Paulina Post Office	Post Office	Lutcher

Feature ID	Name	Type	City
66	Saint Phillips Cemetery	Cemetery	Lutcher
67	Saint Philip Catholic Church	Church	Lutcher
68	Lutcher-Cresent Ferry	Crossing	Lutcher
69	Saint James Culture and Heritage Center	Building	Lutcher
70	Riverlands Health Care Center	Building	Lutcher
71	Gramercy Volunteer Fire Department Station 2	Building	Lutcher
72	Norma Landing	Locale	Lutcher
73	West Saint John Fire Department	Building	Lutcher
74	Wallace	Populated Place	Lutcher
75	Sport	Populated Place	Lutcher
76	Mount Airy Landing	Locale	Lutcher
77	Angelina Revetment	Levee	Lutcher
78	Willow Grove	Populated Place	Lutcher
79	Angelina Landing	Locale	Lutcher
80	Whitney Landing	Locale	Lutcher
81	Mount Airy	Populated Place	Lutcher
82	Mount Airy Post Office	Post Office	Lutcher
83	Garyville Volunteer Fire Department Station 72	Building	Lutcher
84	Wallace Post Office (historical)	Post Office	Reserve
85	Fortyeight Mile Point	Cape	Reserve
86	Willow Bend	Bend	Reserve
87	(b) (3), (b) (7)(F)		
88	Saint Martins Church	Church	Reserve
89	White Rose Landing	Locale	Reserve
90	Willow Bend Revetment	Levee	Reserve
91	Saint John Westside Volunteer Fire Department	Building	Reserve
92	Cooper Shop Landing	Locale	Reserve
93	Lions	Populated Place	Reserve
94	Terre Haute Plantation	Locale	Reserve
95	Saint John the Baptist Parish Library Edgard Branch	Building	Reserve
96	Columbia Plantation	Locale	Reserve
97	(b) (3), (b) (7)(F)		
98	Saint John the Baptist Parish Library Reserve Branch	Building	Reserve
99	(b) (3), (b) (7)(F)		
100	Reserve Revetment	Levee	Reserve
101	Saint Peter Catholic Church	Church	Reserve
102	(b) (3), (b) (7)(F)		
103			
104	Reserve Post Office	Post Office	Reserve
105	Reserve-Edgard Ferry	Crossing	Reserve
106	Edgard Landing	Locale	Reserve
107	Saint John Parish Police Jury	Building	Reserve
108	Edgard	Populated Place	Reserve
109	Saint John Westside Volunteer Fire Department Station 95	Building	Reserve
110	Saint John the Baptist Cemetery	Cemetery	Reserve
111	Saint John the Baptist Catholic Church	Church	Reserve
112	Global Maritime Ministries	Church	Reserve
113	Reserve	Populated Place	Reserve
114	Saint John the Baptist Parish	Civil	Reserve
115	Reserve Volunteer Fire Department Station 63	Building	Reserve
116	New Jerusalem Baptist Church	Church	Reserve
117	Tigerville	Populated Place	Reserve
118	Bethlehem Baptist Church	Church	Reserve
119	Reserve Landing	Locale	Reserve
120	(b) (3), (b) (7)(F)		
121			
122	Our Lady of Grace Church	Church	Reserve
123	Gold Mine Plantation	Locale	Reserve
124	Belle Point Plantation (historical)	Locale	Reserve
125	Lucy Revetment	Levee	Reserve
126	Lucy	Populated Place	Reserve
127	Bonnet Carre Point	Cape	Laplace

Feature ID	Name	Type	City
128	Bonnet Carre Island	Island	Laplace
129	Killona Landing	Locale	Laplace
130	Saint Isadore Church (historical)	Church	Laplace
131	Killona	Populated Place	Laplace
132	Thirtyfive Mile Point	Cape	Laplace
133	Montz	Populated Place	Laplace
134	Waterford	Populated Place	Hahnville
135	Providence Baptist Church	Church	Laplace
136	Montz Park	Park	Laplace
137	Taft	Populated Place	Hahnville
138	Waterford Revetment	Levee	Hahnville
13	(b) (3), (b) (7)(F) [redacted]		
140	Sellers	Populated Place	Hahnville
141	Greater Good Hope Baptist Church	Church	Laplace
142	Good Hope Missionary Baptist Church	Church	Hahnville
143	Faith Praise and Deliverance Church	Church	Hahnville
14	(b) (3), (b) (7)(F) [redacted]		
145	Norco	Populated Place	Hahnville
146	Norco Post Office	Post Office	Hahnville
147	Good Hope Landing	Locale	Hahnville
148	Good Hope	Populated Place	Hahnville
149	Good Hope Presbyterian Church	Church	Hahnville
150	River of Life Church	Church	Hahnville
151	Saint Charles Parish Police Jury	Building	Hahnville
152	Hahnville Landing	Locale	Hahnville
153	East Saint Charles Volunteer Fire Department Station 1	Building	Hahnville
154	New Sarpy Post Office	Post Office	Hahnville

(b) (3), (b) (7)(F)



0 37.5 75 150

Feet

NOTES: NORTH ARROW REFERS TO THE LOUISIANA STATE PLANE COORDINATE SYSTEM

AERIAL PHOTOGRAPHY FROM ESRI WORLD IMAGERY
DATE OF SURVEY: APRIL 24, 2014

(b) (3), (b) (7)(F)

Containment Area Levee Top

Survey Points

NUSTAR ENERGY L.P.
ST. JAMES CRUDE TERMINAL

TANK DIKE CONTAINMENT SURVEY

AREA 8
(TANKS 41-44 & 3201)

ST. JAMES PARISH

CK ASSOCIATES Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/30/2014
Dwg. No.:	B10769-1-08

FIGURE 6

17170 Perkins Road
Baton Rouge, Louisiana 70810
Phone: (225) 755-1000
Fax: (225) 751-2010

MEMORANDUM

Date: **April 28, 2014**

To: **Lesley Toke, NuStar Energy**

From: **Alex Sheffield, CK Associates**

Re: **St. James Terminal Tank Dike Containment Measurements**

Tank Dike Area Measurements

CK evaluated the tank dike containment areas at the NuStar Energy L.P. (NuStar) St. James Terminal to determine their adequacy to contain the volume from the largest tank within each area and to provide sufficient freeboard for precipitation for of a potential release. CK collected field measurements on levee-style dike containment areas for a total of five containment areas (Areas 1, 2, 5, 6 & 7). A total of 698 points were collected in these areas. In addition, CK collected field measurements at the truck unloading area, located off Hwy 18. An overview of the measurements collected is presented in Figure 1.

The elevations from the measured areas were referenced to the *GULFNet GPS* Reference Network. The field measurements were used to determine the acreage and dike wall heights associated with each of the areas. CK measured points along the top and bottom of each levee, as well as a number of locations inside each containment area. Each containment area was assigned a number to identify the area's location (Attachment 1), and coincides with the designations previously identified by NuStar in the FRP/SPCC Plan. CK used ArcMap (Version 10.2) and the GPS coordinates associated with the points collected along the top and toe of each containment area (Figures 2-6) to determine the acreage.

Secondary Containment Calculations

CK calculated the containment for each of the five diked areas using the results of the field measurements. The average floor elevation was subtracted from the lowest point along the top of the containment dike levee in order to determine an average dike height and to calculate the total containment volume. The foot print volume of other tanks in the same containment area was subtracted from the total containment volume to define the volume available as secondary containment. Attachment 2 identifies the tanks associated with each containment area and a summary of containment calculation results.

SPCC regulations do not specify a recommended method to determine the additional capacity required to contain rain or the size of the rain event for designing secondary containment. The regulations leave the method to the judgment of the engineer certifying the plan. However, all diked areas at the St. James Terminal were originally constructed to contain the volume of the largest tank plus the National Oceanic and Atmospheric Administration (NOAA) listed 25-year, 24-hour rainfall event for the area (9.46 inches). Industry practice often considers a general rule of thumb of 110% of the tank capacity as adequate containment to account for sufficient freeboard available for precipitation. The use of the 25-year, 24-hour rainfall event in South Louisiana provides a more conservative containment volume. CK developed secondary containment calculations using both methods. These are included in the attachments developed for each containment area. The following narrative text provides recommended containment dike expansion based on the 25-year, 24-hour rainfall event basis since that was the original design basis at the terminal.

Results

Secondary containment in Area 1 (Tank Farm) provides sufficient containment to meet the SPCC requirements for 110% volume of the largest tank; however, it does not meet secondary containment requirements for the largest tank plus sufficient freeboard for precipitation to contain a 25-year, 24-hour rainfall event (see calculations in Attachment 1). Therefore, it is recommended that the minimum dike elevation of 14.63 feet (located just south of tank 6) be raised to a minimum of 14.74 feet. Figure 2 depicts the Area 1 containment and measured points that factored into the secondary containment calculations.
Area 2 (Tanks 3, 4, & 26) does not meet the requirements for sufficient containment. The lowest dike elevation was measured to be 15.58 feet. As the calculations show (Attachment 2), the minimum dike wall height should be raised to 17.73 feet in order to provide containment sufficient to hold 110% of the largest tank volume in addition to the volume of the largest tank plus sufficient freeboard to retain the volume of a maximum rainfall event. Areas of the containment wall that require additional height have been identified in red on Figure 3.

Both Area 5 and Area 6 (Tanks 413, 430, & 463) have sufficient secondary containment for 110% volume of the largest tank. Area 5 (Attachment 3) also provides sufficient secondary containment to retain the volume of the largest tank plus sufficient freeboard for precipitation. However, the available containment volume in Area 6 is not adequate to contain the largest tank volume plus rainfall

(Attachment 4). Accordingly, the minimum dike height in this area should be raised from 18.72 feet to 18.97 feet. These containment areas are depicted in Figure 4.

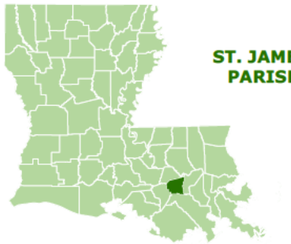
Area 7 (Tanks 25 & 27) does not meet the requirements for sufficient containment for either 110% of the largest tank volume or the design storm event (see Attachment 5). It is recommended that the dike wall in this area be raised from 17.22 feet to a minimum of 18.10 feet in order to meet SPCC requirements for adequate secondary containment. This containment area is depicted in Figure 5.

The truck unloading area has limited containment, providing containment that is less than the volume of a typical tanker truck. In the event of a release from a tanker truck, there is a potential for discharge outside of the unloading area. CK recommends the construction of a small dike wall around the northwest perimeter, with a minimum of a 7 inch height. In addition, CK recommends that a dike wall adjacent to the crossroad on the west side be constructed with a minimum height of 10 inches. Refer to Figure 6 for further details.

FIGURES

(b) (7)(F), (b) (3)

[redacted]



0 250 500 1,000

Feet

NOTES: NORTH ARROW REFERS TO THE LOUISIANA STATE PLANE COORDINATE SYSTEM
AERIAL PHOTOGRAPHY FROM ESRI WORLD IMAGERY
DATE OF SURVEY: APRIL 8-9, 2014

Containment Area Levee Top

[redacted]

ST. JAMES CRUDE TERMINAL

TANK DIKE CONTAINMENT EVALUATION

SITE LOCATION MAP

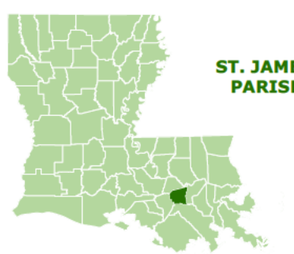
ST. JAMES PARISH

CK ASSOCIATES Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	4/22/2014
Dwg. No.:	B10769-1-01

FIGURE 1

(b) (3), (b) (7)(F)



0 150 300 600
Feet

NOTES: NORTH ARROW REFERS TO THE LOUISIANA STATE PLANE COORDINATE SYSTEM

AERIAL PHOTOGRAPHY FROM ESRI WORLD IMAGERY
DATE OF SURVEY: APR L 8-9, 2014

(b) (3), (b) (7)(F)

Containment Area Levee Top
Recommended Dike Height: 14.74
Survey Points

ST. JAMES CRUDE TERMINAL

TANK DIKE CONTAINMENT SURVEY

AREA 1
(TANK FARM)

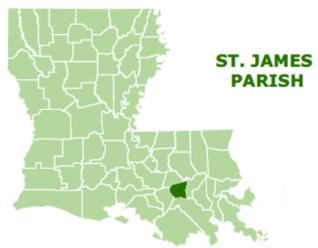
ST. JAMES PARISH

CK ASSOCIATES Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	4/24/2014
Dwg. No.:	B10769-1-02

FIGURE 2

(b) (3), (b) (7)(F)



0 62.5 125 250

Feet

NOTES: NORTH ARROW REFERS TO THE LOUISIANA STATE PLANE COORDINATE SYSTEM

AERIAL PHOTOGRAPHY FROM ESRI WORLD IMAGERY
DATE OF SURVEY: APR L 8-9, 2014

(b) (3), (b) (7)(F)

Containment Area Levee Top

Recommended Dike Height: 17.73

Survey Points

ST. JAMES CRUDE TERMINAL

TANK DIKE CONTAINMENT SURVEY

AREA 2
(TANKS 3, 4 & 26)

ST. JAMES PARISH

CK ASSOCIATES Environmental Consultants

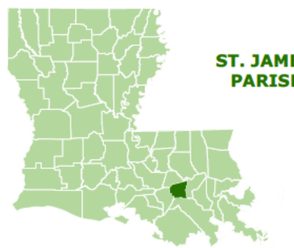
Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	4/24/2014
Dwg. No.:	B10769-1-03

FIGURE 3

(b) (7)(F), (b) (3)

(b) (3), (b) (7)(F)

[redacted]



0 50 100 200

Feet

NOTES: NORTH ARROW REFERS TO THE LOUISIANA STATE PLANE COORDINATE SYSTEM

AERIAL PHOTOGRAPHY FROM ESRI WORLD IMAGERY
DATE OF SURVEY: APR L 8-9, 2014

(b) (3), (b) (7)(F)

Containment Area Levee Top

Recommended Dike Height: 18.10

Survey Points

[redacted]

ST. JAMES CRUDE TERMINAL

TANK DIKE CONTAINMENT SURVEY

AREA 7
(TANKS 25 & 27)

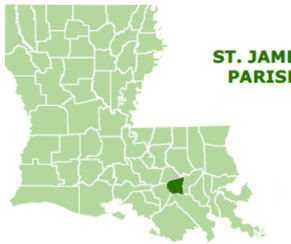
ST. JAMES PARISH

CK ASSOCIATES Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	4/24/2014
Dwg. No.:	B10769-1-05

FIGURE 5

(b) (3), (b) (7)(F)



0 25 50 100
Feet

NOTES: NORTH ARROW REFERS TO THE LOUISIANA STATE PLANE COORDINATE SYSTEM

AERIAL PHOTOGRAPHY FROM ESRI WORLD IMAGERY
DATE OF SURVEY: APRIL 10, 2014

Levee Top
Recommended Dike Height: 7"
Recommended Dike Height: 10"
Survey Points

ST. JAMES CRUDE TERMINAL

TANK DIKE CONTAINMENT SURVEY

TRUCK UNLOADING AREA

ST. JAMES PARISH

CK ASSOCIATES Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	4/25/2014
Dwg. No.:	B10769-1-06

FIGURE 6

ATTACHMENTS

(b) (3), (b) (7)(F)

(b) (3), (b) (7)(F)

ATTACHMENT 3 - CONTA NMENT AREA 5 CALCULATIONS

(b) (3), (b) (7)(F)

(b) (3), (b) (7)(F)

ATTACHMENT 5 - CONTA NMENT AREA 7 CALCULATIONS

(b) (3), (b) (7)(F)

17170 Perkins Road
Baton Rouge, Louisiana 70810
Phone: (225) 755-1000
Fax: (225) 751-2010

MEMORANDUM

Date: **May 30, 2014**

To: **Lesley Toke, NuStar Energy**

From: **Alex Sheffield, CK Associates**

Re: **St. James Terminal Tank Dike Containment Measurements**
CK Project No.: 17069

Tank Dike Area Measurements

CK evaluated the tank dike containment areas at the NuStar Energy L.P. (NuStar) St. James Terminal to determine their adequacy to contain the volume from the largest tank within each area, and to provide sufficient freeboard for precipitation in the event of a release. CK collected field measurements on levee-style dike containment areas for a total of six containment areas (Areas 1, 2, 5, 6, 7 & 8). In addition, CK collected field measurements at the truck unloading area, located off Hwy 18.

The elevations from the measured areas were referenced to the *GULFNet GPS* Reference Network. The field measurements were used to determine the acreage and dike wall heights associated with each of the areas. CK measured points along the top and bottom of each levee, as well as a number of locations inside each containment area. Each containment area was assigned a number to identify the area's location (Figure 1), and coincides with the designations previously identified by NuStar in the FRP/SPCC Plan. CK used ArcMap (Version 10.2) and the GPS coordinates associated with the points collected along the top and floor of each containment area (Figures 2-7) to determine the acreage.

Secondary Containment Calculations

CK calculated the containment for each of the six diked areas using the results of the field measurements. The average floor elevation was subtracted from the lowest point along the top of the containment dike levee in order to determine a spill elevation and to calculate the total containment

volume. Displacement due to dikes and the foot print volume of other tanks in the same containment area were subtracted from the total containment volume to define the volume available as secondary containment. Attachments 1-6 identify the tanks associated with each containment area and a summary of containment calculation results.

SPCC regulations do not specify a recommended method to determine the additional capacity required to contain rain or the size of the rain event for designing secondary containment. The regulations leave the method to the judgment of the Professional Engineer certifying the plan. However, all diked areas at the St. James Terminal were originally constructed to contain the volume of the largest tank plus the National Oceanic and Atmospheric Administration (NOAA) listed 25-year, 24-hour rainfall event for the area (9.46 inches). Industry practice often considers a general rule of thumb of 110% of the tank capacity as adequate containment to account for sufficient freeboard available for precipitation. The use of the 25-year, 24-hour rainfall event in South Louisiana provides a more conservative containment volume. CK developed secondary containment calculations using both methods. These are included in the attachments developed for each containment area. The following narrative text provides recommended containment dike expansion based on the 110% capacity requirement.

Results

Secondary containment in Area 1 (Tank Farm) provides sufficient containment to meet the SPCC requirements for 110% volume of the largest tank (see calculations in Attachment 1). Figure 2 depicts the Area 1 containment and measured points that factored into the secondary containment calculations.

Area 2 (Tanks 3, 4, & 26) does not meet the requirements for sufficient containment. The lowest dike elevation was measured to be 15.58 feet. As the calculations show (Attachment 2), the minimum dike wall height should be raised to 17.11 feet in order to provide containment sufficient to hold 110% of the largest tank volume. Areas of the containment wall that require additional height have been identified in red on Figure 3.

Both Area 5 and Area 6 (Tanks 413, 430, & 463) have sufficient secondary containment for 110% volume of the largest tank. Attachments 3 and 4 denote the containment calculations for Area 5 and 6, respectively. Both containment areas are depicted in Figure 4.

Area 7 (Tanks 25 & 27) does not meet the requirements for sufficient containment for 110% of the largest tank volume (see Attachment 5). It is recommended that the dike wall in this area be raised from 17.22 feet to a minimum of 17.6 feet in order to meet SPCC requirements for adequate secondary containment. This containment area is depicted in Figure 5.

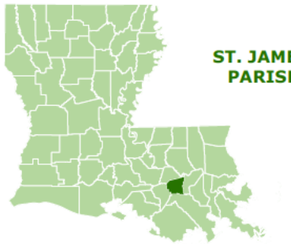
Area 8 (Tanks 41 & 42) provides sufficient containment to meet the 110% capacity requirement. Containment calculations are shown in Attachment 6. Sample points are depicted in Figure 6.

The truck unloading area has limited containment. In the event of a release from a tanker truck, there is a potential for discharge outside of the unloading area. CK recommends the construction of a small dike wall around the northwest perimeter, with a minimum of a 7 inch height. In addition, CK recommends that a dike wall adjacent to the crossroad on the west side be constructed with a minimum height of 10 inches. Refer to Figure 7 for further details.

FIGURES

(b) (7)(F), (b) (3)

[redacted]



0 250 500 1,000

Feet

NOTES: NORTH ARROW REFERS TO THE LOUISIANA STATE PLANE COORDINATE SYSTEM
AERIAL PHOTOGRAPHY FROM ESRI WORLD IMAGERY
DATE OF SURVEY: APRIL 8-9 AND APRIL 24, 2014

Containment Area Levee Top

[redacted]

ST. JAMES CRUDE TERMINAL

TANK DIKE CONTAINMENT EVALUATION

SITE LOCATION MAP

ST. JAMES PARISH

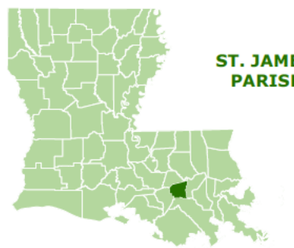
CK ASSOCIATES Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/30/2014
Dwg. No.:	B10769-1-01

FIGURE 1

(b) (3), (b) (7)(F)

[redacted]



0 150 300 600

Feet

NOTES: NORTH ARROW REFERS TO THE LOUISIANA STATE PLANE COORDINATE SYSTEM

AERIAL PHOTOGRAPHY FROM ESRI WORLD IMAGERY
DATE OF SURVEY: APR L 8-9, 2014

(b) (3), (b) (7)(F)

Containment Area Levee Top

Survey Points

[redacted]

ST. JAMES CRUDE TERMINAL

TANK DIKE CONTAINMENT SURVEY

AREA 1

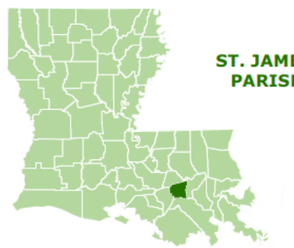
ST. JAMES PARISH

CK ASSOCIATES Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/30/2014
Dwg. No.:	B10769-1-02B

FIGURE 2

(b) (3), (b) (7)(F)



0 62.5 125 250

Feet

NOTES: NORTH ARROW REFERS TO THE LOUISIANA STATE PLANE COORDINATE SYSTEM

AERIAL PHOTOGRAPHY FROM ESRI WORLD IMAGERY
DATE OF SURVEY: APR L 8-9, 2014

(b) (3), (b) (7)(F)

Containment Area Levee Top

Recommended Dike Height: 17.11

Survey Points

ST. JAMES CRUDE TERMINAL

TANK DIKE CONTAINMENT SURVEY

AREA 2
(TANKS 3, 4 & 26)

ST. JAMES PARISH

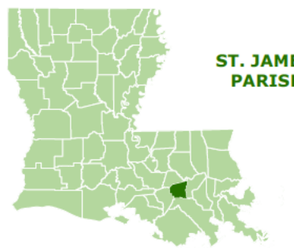
CK ASSOCIATES Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/30/2014
Dwg. No.:	B10769-1-03B

FIGURE 3

(b) (3), (b) (7)(F)

[redacted]



0 50 100 200

Feet

NOTES: NORTH ARROW REFERS TO THE LOUISIANA STATE PLANE COORDINATE SYSTEM

AERIAL PHOTOGRAPHY FROM ESRI WORLD IMAGERY
DATE OF SURVEY: APR L 8-9, 2014

(b) (3), (b) (7)(F)

Containment Area Levee Top

Survey Points

[redacted]

ST. JAMES CRUDE TERMINAL

TANK DIKE CONTAINMENT SURVEY

AREAS 5 & 6
(TANKS 413, 430, 463)

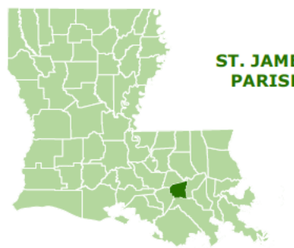
ST. JAMES PARISH

CK ASSOCIATES Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/30/2014
Dwg. No.:	B10769-1-04B

FIGURE 4

(b) (3), (b) (7)(F)



0 55 110 220

Feet

NOTES: NORTH ARROW REFERS TO THE LOUISIANA STATE PLANE COORDINATE SYSTEM

AERIAL PHOTOGRAPHY FROM ESRI WORLD IMAGERY
DATE OF SURVEY: APR L 8-9, 2014

(b) (3), (b) (7)(F)

Containment Area Levee Top

Recommended Dike Height: 17.60

Survey Points

NUSTAR ENERGY L.P.

ST. JAMES CRUDE TERMINAL

TANK DIKE CONTAINMENT SURVEY

AREA 7
(TANKS 25 & 27)

ST. JAMES PARISH

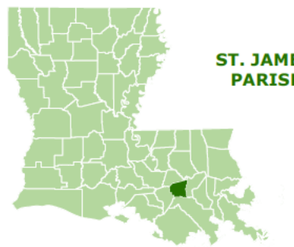
CK ASSOCIATES Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/30/2014
Dwg. No.:	B10769-1-05B

FIGURE 5

(b) (3), (b) (7)(F)

[redacted]



0 37.5 75 150

Feet

NOTES: NORTH ARROW REFERS TO THE LOUISIANA STATE PLANE COORDINATE SYSTEM

AERIAL PHOTOGRAPHY FROM ESRI WORLD IMAGERY
DATE OF SURVEY: APRIL 24, 2014

(b) (3), (b) (7)(F)

Containment Area Levee Top

Survey Points

[redacted]

ST. JAMES CRUDE TERMINAL

TANK DIKE CONTAINMENT SURVEY

AREA 8
(TANKS 41-44 & 3201)

ST. JAMES PARISH

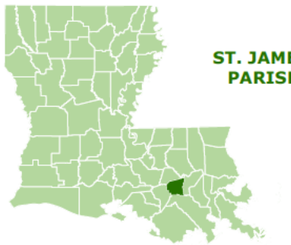
CK ASSOCIATES Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/30/2014
Dwg. No.:	B10769-1-08

FIGURE 6

(b) (7)(F), (b) (3)

[redacted]



0 25 50 100

Feet

NOTES: NORTH ARROW REFERS TO THE LOUISIANA STATE PLANE COORDINATE SYSTEM

AERIAL PHOTOGRAPHY FROM ESRI WORLD IMAGERY
DATE OF SURVEY: APRIL 10, 2014

Levee Top

Recommended Dike Height: 7"

Recommended Dike Height: 10"

Survey Points

[redacted]

ST. JAMES CRUDE TERMINAL

TANK DIKE CONTAINMENT SURVEY

TRUCK UNLOADING AREA

ST. JAMES PARISH

CK ASSOCIATES Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/30/2014
Dwg. No.:	B10769-1-06B

FIGURE 7

ATTACHMENTS

(b) (3), (b) (7)(F)

(b) (3), (b) (7)(F)

(b) (3), (b) (7)(F)

ATTACHMENT 4 - CONTA NMENT AREA 6 CALCULATIONS

(b) (3), (b) (7)(F)

(b) (3), (b) (7)(F)

ATTACHMENT 6 - CONTAINMENT AREA 8 CALCULATIONS

(b) (3), (b) (7)(F)

Master Environmental Services Agreement

This Master Environmental Services Agreement ("Agreement") is entered into among NuStar Logistics, L.P. ("Logistics"), a Delaware limited partnership with offices at 2330 N. Loop 1604 W., San Antonio, Texas 78248 and Conestoga Rovers & Associates, Inc. ("Contractor"), a Delaware corporation with offices at 2055 Niagara Falls Boulevard, Suite #3, Niagara Falls, NY 14304 on August 4, 2010 ("Effective Date").

Logistics and certain of its Affiliates operate pipelines and terminals primarily for the transportation and storage of liquid products. Logistics and any of its Affiliates may engage Contractor to provide environmental services. In order to expedite the process of Logistics and its Affiliates engaging Contractor to provide environmental services, Logistics and Contractor desire to agree in advance to the terms and conditions that will govern any such engagement.

This Agreement consists of these terms and conditions together with Exhibit A and Exhibit B attached hereto and incorporated herein, and all exhibits and addenda executed by the parties from time to time that reference and incorporate this Agreement. Logistics and Contractor agree as follows:

1. Definitions. In addition to the definitions provided elsewhere in this Agreement, the following definitions will apply to this Agreement:

"Affiliate" shall mean any entity that is Controlled by NuStar GP, LLC, NuStar Energy L.P. or NuStar GP Holdings, LLC.

"Agreement" is defined in the preamble.

"CFR" means Code of Federal Regulations.

"Change Order" is defined in Section 2.2.

"Company" means an entity that engages Contractor to perform Services pursuant to this Agreement, which entity may be Logistics or any Affiliate.

"Contractor" is defined in the preamble.

"Controlled" shall mean: (i) owns or controls, directly or indirectly through one or more subsidiaries (including those subsidiaries hereinafter described in (ii)), at least 50% of the stock, partnership shares or equity interests in an entity having the right to vote for or appoint directors thereto, and/or (ii) has the right to determine management direction, whether through having a majority representation on a board of directors of an entity or by owning or holding, directly or indirectly through one or more subsidiaries, at least 50% of the general partner interests of a partnership.

"Governmental Authority" means any federal, state, or local government, including agencies, commissions, courts, and departments.

"Hazardous Substance" means any substance, material or waste (including friable asbestos non-friable asbestos, benzene, lead-based paint, petroleum, petroleum products, methyl tertiary butyl ether, and polychlorinated biphenyl) that is: (1) regulated by Law (including Clean Air Act; the Comprehensive Environmental Response, Compensation, and Liability Act of 1980; the Federal Water Pollution Control Act, the Occupational Safety and Health Act of 1970; the Resource Conservation and Recovery Act of

1976; the Safe Drinking Water Act; the Toxic Substances Control Act; the Hazardous & Solid Waste Amendments Act of 1984; the Superfund Amendments and Reauthorization Act of 1986; the Hazardous Materials Transportation Act; the Oil Pollution Act of 1990; and any of the regulations implementing the forgoing statues) as hazardous or toxic, as a pollutant or a contaminate, or otherwise as a threat to human health or to the environment; or (2) found by any Governmental Authority to be hazardous or toxic, a pollutant or a contaminate, or otherwise a threat to human health or to the environment.

"Law" means any and all applicable federal, state, and local codes, constitutions, decrees, directives, laws, licenses, ordinances, injunctions, orders, permits, regulations, requirements, rules, and statutes.

"Liabilities" means actions, claims, causes of action, costs, demands, damages, expenses, fines, lawsuits, liabilities, losses, obligations, and penalties including court costs, defense costs, and reasonable attorneys' fees.

"Logistics" is defined in the preamble.

"Party" means either Company or Contractor, and "Parties" means both Company and Contractor.

"Personnel" means the Representatives of Contractor and its subcontractors and suppliers.

"Purchase Order" is defined in Section 2.1.

"Representatives" means officers, directors, employees, and borrowed servants of the referenced entity and its affiliates.

"Services" means the environmental services performed by Contractor for Company as described in a Purchase Order.

2. Scope of Services.

2.1 Purchase Orders. If Company desires to engage Contractor to perform Services, it will issue a purchase order to Contractor describing the Services, designating the time for performance, and stating the compensation to be paid ("Purchase Order"). Contractor may accept a Purchase Order either in writing or by commencing the performance of the Services.

2.2. Change Orders. If Company desires to change the description of Services, time for performance, or compensation stated in a Purchase Order, it will issue a written change order to Contractor ("Change Order"). Contractor may accept a Change Order either in writing or by performance that complies with the Change Order. Contractor may not unreasonably withhold, condition, or delay acceptance of any Change Order, and Contractor may not withhold, condition, or delay acceptance of a Change Order that consists of minor modifications to the description of the Services that do not materially impact the time for performance or the compensation to be paid.

3. Terms and Conditions. Unless Company and Contractor expressly agree in writing, signed by both Parties, to modify the terms and conditions of this Agreement for the performance of the Services, the performance of the Services will be governed by the terms and conditions of this Agreement; and the description of the Services, the designated time for performance, and the compensation to be paid set forth in the Purchase Order as modified by any Change Order. If a Purchase Order or Change Order contains any pre-printed terms and conditions (excluding the identity of the Company, the description of the Services, the designated time for performance, and the compensation to be paid), those terms and conditions will have no

force or affect. If Contractor's written acceptance of a Purchase Order or Change Order contains any terms or conditions, those terms and conditions will have no force or effect.

4. Term. The initial term of this Agreement will be for a period of one (1) year(s) commencing on the Effective Date ("Initial Term"). After the Initial Term, this Agreement will extend from year to year. Company or Contractor may terminate this Agreement at the end of the Initial Term or at the end of any annual extension by providing the other Parties with written notice of termination at least sixty (60) days prior to the intended termination date. The terms and conditions of this Agreement will survive the termination of this Agreement to govern any Purchase Order that was issued prior to the termination of this Agreement.

5. Compensation.

5.1 Lump-Sum Services. If the Services are performed on a lump-sum basis:

a. Company will pay Contractor the lump-sum price stated in the Purchase Order;

b. Contractor will invoice Company in accordance with the schedule stated in the Purchase Order, and if no schedule is stated in the Purchase Order, Contractor will invoice Company upon completion of the Services;

5.2 Time-and-Materials Services.

a. Contractor's rates for time-and-materials Services are shown on Exhibit A, which is attached to and incorporated into this Agreement. Contractor may increase the rates shown on Exhibit A at the end of the Initial Term and at the end of any annual extension thereafter by providing Company with written notice of the new rates at least ninety (90) days prior to the effective date of the increase. Unless otherwise provided in the Purchase Order, the existing rates will continue to apply to any time-and-material Services for which a Purchase Order was issued prior to the effective date of the revised rates.

b. If the Services are performed on a time-and-materials basis:

i. Unless otherwise provided in a Purchase Order, Company will pay Contractor at the then-current rates as provided in Section 5.2(a);

ii. Contractor will invoice Company monthly, in arrears, and Contractor will provide documentation with each invoice sufficient to justify the amount billed, including: a statement itemizing the people assigned to the Services, the amount of time worked on the Services by each person assigned, the tasks performed by each person assigned, the billing rate for each person assigned, and the total amount billed for each person assigned; a statement itemizing expenses to be reimbursed by Company itemizing the nature of each expense, the date each expense was incurred, the reason each expense was incurred, and attaching receipts, invoices, or other documentation substantiating the amount of each expense.

5.3 Taxes. The amounts charged by Contractor to Company for the Services are inclusive of any and all federal, state, and local taxes and other assessments applicable to the Services, including sales, use, excise, and value added taxes. Contractor will be responsible for remitting any and all taxes and other assessments applicable to the Services to the proper Governmental Authority.

5.4 Payment. Company will pay the undisputed amount of each invoice within thirty (30) days of receipt of the invoice. Company will have the right, but not the obligation, to set off any amounts owed by Company to Contractor hereunder against any amounts owed by Contractor to Company, whether arising under this Agreement or otherwise.

5.5 Audit. For Services performed on a time-and-materials basis, Contractor will maintain complete and accurate records in accordance with generally accepted accounting principles to substantiate each invoice submitted to Company under this Agreement for a period of three (3) years after the date of final payment by Company to Contractor in connection with the Services. Company, at Company's expense, may audit and photocopy such records at Contractor's offices during Contractor's normal business hours. Contractor's obligation to maintain records and Company's audit rights will survive the termination of this Agreement. Contractor shall require all subcontractors, insurance agents, and materials suppliers to comply with the provisions of this Section 5.5 by insertion of these same or substantially similar requirements in each written contract between Contractor and such parties.

6. Independent Contractor.

6.1 General. Contractor is an independent contractor. Neither this Agreement nor any Purchase Order forms a partnership or joint venture between Contractor and Company. Contractor is not an agent of Company, and Contractor has no authority to act on behalf of Company. Except as otherwise provided in the Purchase Order, Contractor will provide any and all labor, supervision, materials, and equipment necessary to perform the Services, and Contractor will obtain any and all permits and authorizations required by Law to perform the Services. Contractor will control the means and manner of the performance of the Services. Contractor's Personnel will not be considered employees of Company, and Company will not provide Contractor's Personnel with wages, salaries, or benefits.

6.2 Subcontracts. Contractor may not subcontract the performance of the Services without the prior written authorization of Company. Contractor will be responsible for the acts and omissions of its subcontractors and Personnel in the same capacity as it is responsible for its own acts and omissions.

7. Performance Standards.

7.1 Professional Services Standards. In performing the Services, Contractor will: (a) exercise the degree of skill and learning commonly applied by nationally recognized environmental firms to the performance of similar services; (b) comply with any descriptions and standards incorporated into the Release and any Change Order; and (c) provide deliverables to Company that are free from defects. If Company discovers that Contractor failed to comply with this Section 7.1 within twenty-four (24) months of the completion of the Services, Company may provide Contractor with notice. If Company provides Contractor with notice of non-compliance within the time required, Contractor, at Contractor's expense, will correct the deficiencies in the Services, including any including any redesigns, repairs, and reconstruction resulting from deficiencies in the Services.

7.2 Procurement and Construction. If Contractor provides Company with any goods as part of the Services, including through the construction or installation of any fixtures or equipment, the following performance standards will apply:

(a) Procurement and Construction Standards. (i) Contractor will perform the Services in a workmanlike manner; (ii) Contractor will ensure that the Services are free from defects in materials and workmanship; (iii) Contractor will ensure that the Services will be performed in compliance with the descriptions of the Services in the applicable Purchase Order. If Company discovers that Contractor failed to comply with this Section 7.2(a) within twenty-four (24) months of the completion of the Services, Company may provide Contractor with notice. If Company provides Contractor with notice of non-compliance within the time required, Contractor, at Contractor's expense, will correct the deficiencies in the Services, including any preparations necessary to correct the deficiencies in the Services.

(b) Title. (i) Contractor will convey good title to any goods it provides to Company; (ii) Contractor's transfer of title to any goods it provides to Company will be rightful; and (iii) any goods Contractor provides to Company will be free from any security interest, lien, claim, or encumbrance. Title to goods provided by Contractor to Company will pass to Company upon delivery of the goods to the Services site. Risk of loss to goods provided by Contractor to Company will pass to Company upon completion of the Services.

7.3 Liens. Contractor will pay any and all amounts owed to its subcontractors and suppliers as and when due. Contractor will ensure that its subcontractors and suppliers do not file any liens, claims, security interests, or other encumbrances against any property owned or otherwise occupied by Company. Within ten (10) days of receipt of notice from Company that one of Contractor's subcontractors or suppliers has filed a lien, claim, security interest, or other encumbrance against any property owned or otherwise occupied by Company, Contractor will clear such lien, claim, security interest, or other encumbrance by payment or by bond. Provided that Company is paying Contractor in compliance with this Agreement, Contractor will not file any liens, claims, or other encumbrances against any property owned or otherwise occupied by Company. If Contractor files a lien, claim, security interest, or other encumbrance against any property owned or otherwise occupied by Company, Contractor will clear such lien, claim, security interest, or other encumbrance of record within ten (10) days of receipt of payment of the amount due from Company.

7.4 On-Site Services. If Contractor performs any Services on property owned or otherwise occupied by Company, the following performance standards will apply:

(a) Company Policies. Contractor will comply with Company's policies for contractors at the Services site, including Company's safety, security, and drug and alcohol policies that are provided by Company to Contractor. Contractor will request a copy of Company's then-current policies that are applicable to the Services prior to accepting a Purchase Order.

(b) Interference. Contractor will perform the Services in a manner that causes a minimum of interference to the operations of Company at the Services site.

(c) Safety. Contractor will be responsible for providing its Personnel with a safe working environment. Contractor will inspect the areas at the site where its Personnel will be present and report any unsafe working conditions to Company. Contractor will not perform the Services under working conditions that are unsafe for its Personnel.

(d) Hazardous Substances. Contractor and all its subcontractors must furnish to the Company a current Material Safety Data Sheet or other applicable form(s) that meet the requirements of all applicable Laws, including the federal Superfund Amendment and Reauthorization Act of 1986 (SARA) and the OSHA Hazard Communication Standards for each chemical product/substance

covered by such Laws prior to the product being brought onto Company's premises. While on Company's premises, such materials are solely the responsibility of the Contractor who is responsible for any and all subcontractors. Unless otherwise expressly agreed to in writing by the Company, Contractor must remove, or cause to be removed, any materials brought to the Company's premises by or at the direction of Contractor or its subcontractors or Personnel that are "hazardous" or "toxic" under any applicable Laws. Contractor will ensure that no Hazardous Substances are released into the air, onto any land, or into any water arising out of the Services in connection with the acts or omissions of Contractor's Personnel. Contractor will be liable for any and all Liabilities that arise, directly or indirectly, from such materials while they are on Company's premises. In addition, to the extent that Contractor, in the course of performing Services hereunder, discovers any substances or compounds not brought on the site by Contractor or its Personnel and which Contractor believes may be toxic or hazardous, Contractor shall take appropriate steps to protect its employees and others from exposure thereto, and to prevent the further disturbance or propagation thereof, and shall immediately notify the Company.

7.5 Disposal Services. If Contractor performs treatment, storage, or disposal of any hazardous or non-hazardous substances as part of the Services, Contractor will provide Company with notice of the treatment, storage and disposal facility ("TSDF") that Contractor intends to use to perform the treatment, storage or disposal services. Contractor's notice will also provide the TSDF's name and address of the TSDF's permitting or licensing agency and the TSDF's permit or license number. Contractor will ensure that each TSDF identified has, at a minimum, EPA RCRA interim status or state approval as a treatment or disposal facility and be in good standing with the regulating Governmental Authorities. Contractor agrees that no TSDF other than those initially approved for use by Company will be used, without first obtaining the written approval of Company.

7.6 Compliance with Laws. In performing its obligations hereunder, Contractor shall comply fully with all applicable Laws. Contractor will comply with any and all Laws applicable to subcontractors of government contractors, including the following Department of Labor regulations: (a) 41 C.F.R. 60-1.4(a), Obligations of Contractors and Subcontractors (December 1997); (b) 41 C.F.R. 60-250.5(a), Affirmative Action Obligations of Contractors and Subcontractors for Disabled Veterans and Veterans of the Vietnam Era (November 1998); and (c) 41 C.F.R. 60-741.5(a), Affirmative Action and Nondiscrimination Obligations of Contractors and Subcontractors Regarding Individuals With Disabilities Act (May 1996). If requested by Company in order to comply with Law, Contractor will execute and deliver to Company certifications of its compliance with any Laws applicable to subcontractors of government contractors.

7.7 Certain Jurisdictions.

(a) Louisiana. If Contractor performs any Services on property owned or otherwise occupied by Company in Louisiana, the following will apply: Company will be the statutory employer of Contractor's direct, borrowed, and statutory employees within the meaning of Louisiana Revised Statutes § 23:1061. Company and Contractor acknowledge that the Services are an integral part of or essential to the ability of Company to generate goods, products, or services.

(b) California. If in California Contractor provides Company with any goods as part of the Services, including through the construction or installation of any fixtures or equipment, the following statement is included in this Agreement as required by California Law:

> "Contractors are required by law to be licensed and regulated by the Contractors' State License Board which has jurisdiction to investigate complaints against

contractors if a complaint regarding a patent act or omission is filed within four years of the date of the alleged violation. A complaint regarding a latent act or omission pertaining to structural defects must be filed within 10 years of the date of the alleged violation. Any questions concerning a contractor may be referred to the Registrar, Contractors' State License Board, P.O. Box 26000, Sacramento, California, 95826."

7.8 Representations. Contractor represents that: (i) Contractor is financially solvent, able to pay all debts as they mature, and possesses sufficient working capital to perform its obligations under any Purchase Order it accepts; (ii) Contractor's acceptance and performance of each Purchase Order has been duly authorized; (iii) each Purchase Order accepted by Contractor constitutes a legal, valid, and binding obligation of Contractor and is enforceable in accordance with its terms against Contractor (except as the enforceability hereof may be limited by bankruptcy, insolvency, reorganization or other similar laws); (iv) Contractor has the capability (including the supervision and labor) and experience necessary to perform the Services specified in each Purchase Order it accepts; (v) Contractor has independently evaluated the labor, supervision, services, material, equipment, permits, and authorizations necessary to perform the Services specified in each Purchase Order it accepts; (vi) Contractor will comply with Law in the performance of the Services, including fire codes, building codes, environmental regulations, and other Laws that must be taken into account when preparing a design; and (vii) Contractor will provide appropriately skilled and experienced Personnel to perform the Services.

7.9 Time of the Essence. ***Contractor understands that time is of the essence with respect to the performance of the obligations under this Agreement and any Purchase Order.*** Contractor will strictly comply with any timing requirements stated in any Purchase Order.

7.10 Inspections. Company will have the right, but not the obligation, to inspect the Services during the course of performance to determine whether it is being performed in compliance with this Agreement. Neither inspection by Company nor the lack of inspections by Company will be deemed to waive Contractor's obligations or Company's rights under this Agreement.

7.11 Disclaimer. ***Except as expressly provided in this Agreement and the applicable Purchase Order, Contractor makes no representations or warranties regarding the Services, and Contractor disclaims any implied warranties including, without limitation, any implied warranty of merchantability or of fitness for particular purpose.***

8. Intellectual Property. Contractor represents and warrants that the Services will not infringe on any third party's intellectual property rights, including, any rights protected by patent, by copyright, by trademark, or by a contract to which Contractor is bound. Any deliverable prepared by Contractor in the performance of the Services will be a work made for hire, and any copyright for a deliverable will belong to Company. If the deliverables prepared by Contractor in the performance of the Services contain new ideas or principles that are patentable, the right to patent such new ideas or principles will belong to Company. If Contractor incorporates any pre-existing intellectual property into a deliverable, Contractor will retain all rights to the pre-existing intellectual property, except that Company will have a perpetual, non-exclusive license to use the pre-existing intellectual property. Contractor will provide deliverables, including blueprints, plans, and schematics, to Company in an editable, digital format that is compatible with Company's information systems. In addition to Contractor's obligations under Section 10.1, Contractor shall indemnify, defend and hold harmless the Company, its Affiliates, and its and their Representatives from and against any and all Liabilities based on a claim that the Services, or any article, machine, manufacture, structure, composition, arrangement, improvement, design, device, methods, or process embodied or used in the Services or in the

performance of this Agreement by Contractor or any subcontractor, constitutes an infringement, willful or otherwise, of any patent, copyright, trademark, trade secret or other proprietary right of any third party.

9. Confidentiality. Contractor agrees to hold in confidence all drawings, diagrams, specifications, customer and supplier lists, accounting and financial information, trade secrets, business "know how," processes, formulas, procedures, technology, strategies, data processing procedures, or other information furnished by the Company whether verbally or in writing (hereafter "Confidential Information") and use such Confidential Information only for the purpose furnished. Contractor further agrees not to reproduce, distribute, or disclose the Company's Confidential Information to a third party without first obtaining the Company's written consent, excluding Contractor's Personnel or subcontractors involved in the Services and under an obligation of confidentiality no less restrictive than this Section. This obligation of confidentiality will terminate three years after the termination of this Agreement.

These restrictions shall not apply to information: (a) that is or becomes part of the public domain through no fault of Contractor, (b) that Contractor can show was in its possession prior to its receipt from the Company, (c) that Contractor can show was received by it from a third party not prohibited from disclosing the information, or (d) that was developed independently by Contractor without the use of Confidential Information.

If disclosure is required by subpoena or a Government Authority, Contractor may make such disclosure provided the Company is notified in writing prior to the disclosure, Contractor provides Company with a reasonable opportunity to resist such disclosure, and every reasonable effort is made to protect the proprietary interests in the information. Any required disclosure of Confidential Information will not destroy the confidential nature of such information.

10. Liability.

10.1 Indemnity. ***To the extent of its negligence, Contractor will, indemnify and hold harmless Company, its Affiliates, and its and their Representatives (collectively, the "Indemnified Parties") from and against any and all Liabilities arising out of the Services in connection with: (a) the breach by Contractor of this Agreement (including any Purchase Order); (b) injuries and death to people; (c) damage to property; and (d) violation of Laws. Contractor intends the foregoing indemnity, and hold harmless obligations to apply to the extent Liabilities are caused in part by the negligence, strict liability, or other fault of the Contractor, except to the extent that the Liabilities were caused by the negligence or willful misconduct of the Indemnified Parties. Contractor intends the foregoing indemnity and hold harmless obligations to survive the completion of any Services, the termination of this Agreement, and the termination of any Purchase Order.***

10.2 Defense. If a Liability arises which Contractor is required to defend the Indemnified Parties under this Agreement, Contractor shall provide outside counsel reasonably acceptable to Company for said defense within ten (10) days of Company's notice to Contractor requesting defense. If Contractor fails to provide such counsel within this time period, then the Indemnified Parties may appoint their own outside counsel at Contractor's expense for said defense until Contractor provides such counsel.

10.3 Insurance. Contractor will comply with the insurance requirements stated in Exhibit B, which is attached to and incorporated into this Agreement.

11. Suspension and Termination.

11.1 Notice. Company may suspend or terminate the performance of the Services under a Purchase Order, in whole or in part, upon notice to Contractor. In such notice, Company will specify whether the suspension or termination is for all or part of the Services. If the suspension or termination is for part of the Services, Contractor will continue to perform that part of the Services that has not been suspended or terminated without interruption.

11.2 Reactivation. Company may reactivate suspended Services by providing notice to Contractor. If Company does not reactivate any Services that are suspended within 90 days of the date of the Company's notice suspending the Services, such Services will be deemed to have been terminated. The schedule for completing reactivated Services will be extended by the number of days of the suspension plus a reasonable amount of time for re-mobilization.

11.3 Adjustment of Lump-Sum Price. If the suspended or terminated Services were being performed on a lump-sum basis: Company will pay Contractor a percentage of the lump-sum price equivalent to the percentage of the Services that were performed prior to the suspension or termination; and if the Services were suspended or terminated in part, Company will also pay Contractor a percentage of the lump-sum price that is equivalent to the percentage of the Services that are not suspended or terminated.

12. Default. A Party will be in default if it: (a) breaches this Agreement (including any Purchase Order), and the breach is not cured within fifteen (15) days of notice from the non-defaulting Party; (b) becomes insolvent (which means the failure to pay any obligations when due); or (c) files or has filed against it a petition in bankruptcy, for reorganization, or for appointment of a receiver or trustee. In the event of default, the non-defaulting Party may, in addition to exercising any other rights at law or in equity, terminate the Agreement or affected Purchase Order upon notice to the defaulting Party. If Company terminates this Agreement as a result of Contractor's default, Contractor will be liable to Company, in addition to any other damages to which Company may be entitled at law or in equity, for the difference between: the amount that would have been paid by Company to Contractor to complete the Services but for the termination; and the actual amount paid by Company to complete the Services.

13. Force Majeure. Both Parties shall be excused from performance (except for payment obligations), and shall incur no liability for any loss or damage due to any delay or failure to perform its obligations under this Agreement when caused by occurrences beyond the reasonable control of the Party affected ("Force Majeure"), including, but not limited to, riots, wars or hostilities between any nations, acts of God, fires, storms, floods, earthquakes, labor disputes or strikes, shortages or curtailments of raw materials, and power or other utility services. Performance shall be excused hereunder only if the affected Party delivers written notice of the occurrence, including a full description thereof, to the other Party and endeavors to remedy such non-performance with all reasonable dispatch. Shortages of labor or materials resulting from payment disputes or other disputes between Contractor and its subcontractors or suppliers shall not under any circumstance excuse Contractor's performance hereunder.

14. Governing Law. ***This Agreement (including any Purchase Order) will be governed and construed in accordance with the laws of the State of Texas, without reference to the choice of law principles thereof. Any disputes arising out of this Agreement (including any Purchase Order) will be subject to the exclusive jurisdiction of the U.S. District Court located in Harris County, Texas if federal jurisdiction is available and to the courts of the State of Texas located in Harris County, Texas if federal jurisdiction is not available. Company and Contractor irrevocably waive any right to a trial by jury in connection with any disputes arising out of this Agreement (including any Purchase Order).***

15. Notices. To be effective, notices will be in writing and delivered either: by overnight courier to the address set forth below; or by fax to the number set forth below confirmed by certified U.S. mail, return receipt requested to the address set forth below. Notice addresses or fax numbers may be changed upon notice at least ten (10) days in advance of the effective date of the change.

To Logistics or any of its Affiliates:

Attn: Director, Procurement
2330 N. Loop 1604 W.
San Antonio, Texas 78248
Fax: (210) 918-5495

With a copy to:

Attn: Commercial Counsel
2330 N. Loop 1604 W.
San Antonio, Texas 78248
Fax: (210) 918-5500

To Contractor:

Conestoga Rovers & Associates, Inc.
Attn:
2055 Niagara Falls Boulevard, Suite #3
Niagara Falls, NY 14304
E-mail:
Fax: 410-677-6723

16. Miscellaneous.

16.1 No Waiver. No waiver by either Party of any right under this Agreement (including any Purchase Order) at any time will serve to waive of the same right at any future date.

16.2 Amendment. Except as otherwise provided in this Agreement, no amendment to this Agreement (including any Purchase Order) will be effective unless made in writing and signed by both Parties.

16.3 Severability. If a provision of this Agreement (including any Purchase Order) is unenforceable under applicable law, that provision will be enforced to the maximum extent permitted by applicable Law, and the remaining provisions of this Agreement will continue in full force and effect.

16.4 Assignment. Neither Party may assign this Agreement (including any Purchase Order), in whole or in part, without the prior written consent of the other Party, and any purported assignment in violation if this provision will be void.

16.5 Conflict of Interest. Neither Party will pay any commission, fee, or rebate to an employee of the other Party or favor an employee of the other Party with any gift or entertainment of significant value.

16.6 Counterparts. This Agreement may be executed in one or more counterparts, each of which will be deemed an original and part of one and the same document.

16.7 Construction. The following rules of construction will govern the interpretation of this Agreement (including any Purchase Order): (a) "days," "months," and "years" will mean calendar days, months and years unless otherwise indicated; (b) "including" does not limit the preceding word or phrase; (c) section titles do not affect interpretation; (d) "hereof," "herein," and "hereunder" and words of similar meaning refer to this Agreement as a whole and not to any particular provision of this Agreement; and (e) no rule of construction interpreting this Agreement against the drafter will apply.

16.8 Entire Agreement. This Agreement represents the entire agreement of the Parties with respect to the matters contemplated herein.

NuStar Logistics, L.P.
By NuStar GP, Inc., Its General Partner

By:_____

Name: Todd Denton

Title: Vice President of NuStar GP, Inc.

Conestoga Rovers & Associates, Inc.

By:_____

Name: Vincent Nacewski

Title: Principal

Exhibit A
To
Master Environmental Services Agreement between NuStar Logistics, L.P. and Conestoga Rovers & Associates, Inc., dated effective August 4, 2010.

Rates

NuStar
Revised Professional Services Rate Schedule
Effective 08-04-2010

Personnel Classification	Standard per unit
Principal	120/hr
Sr. Personnel or Spill Coordinator	95/hr
Project Manager, Geologist, Engineer, Hydrologist	75/hr
Industrial Hygenist	65/hr
Safety Manager	58/hr
Staff Engineer, Geologist, Hyrdrologist	68/hr
Field Engineer, Geologist, Manager	60/hr
CADD/Drafting	50/hr
Construction Mgr.	68/hr
Crew Supervisor/Foreman	55/hr
Environmental Technician	53/hr
Emergency Response Technician	45/hr
Equipment Operator	42/hr
Truck Driver	35/hr
Labor	35/hr
Word Processing/Secretarial	35/hr
Per Diem (food & lodging)	140/day
Per Diem (food only)	45/day

Equipment Description	Daily/Weekly per unit
Field Screening - PID	$70/$200
Field Screening - FID	$80/$210
Four gas meter (O2, VOC, H2S, CO)	$70/$200
H2S Personal Monitor	$25/$75
Oil/Water Interface Probe	$55/$200
Water Level Meter	$25/$75
Water Quality Meter (temp/pH/cond)	$55/$65
Water Quality Meter w/flow thru cell	$100/$300
Turbidity Meter	$25/$75
Low flow pump w/controller	$100/$300
Peristaltic Pump	$30/$90
Bailer (1.5-inch poly)	$9/well
PPE Standard Level D	No Additional Charge
PPE Level C	$25/$100
PPE (level A&B)	quoted upon need
Small Tools/Expendables	25/day
Cell Phones	$10/$30
1/2 ton truck + Mileage	35/day + .IRS/mile
1 ton truck w/tools + Mileage	58/day + .IRS/mile
Trimble GIS/GPS Survey Equipment	350/day
Infrared Field Screening	125/day
Hand-held Radios	25/day
Long Range Hand-held Radios	30/day
4 x 4 ATV (including fuel)	180/day
Haul trucks and trailer	$65/hr
16' to 20' trailer	$55/day
8' - 10' trailer	35/day
Spill Response Trailer	200/day

Pass Through Expenses	
Mark Up %	Cost + 5%

Annual Volume Based Discounts	
Professional fees between $2.5 - $3.0 Million	2%
Professional fees between $3.0 - $3.5 Million	3%
Professional fees above $3.5 Million+	5%

Exhibit B

Minimum Insurance Requirements

With respect to Contractor's performance under the Agreement, and in addition to Contractor's obligations of indemnification thereunder, Contractor shall, at its sole cost and expense, obtain and maintain the following insurance policies:

Policy	Limits	Coverage
Workers' Compensation	Amount required by Law in each state where Contractor conducts operations.	Must include coverage for alternate employers and borrowed servants, if leased employees will be used. To the extent Contractor's activities are subject to the Jones Act, the Longshore and Harbor Workers Compensation Act, or the Defense Base Act (collectively, the "Acts"), the Workers' Compensation policy must be endorsed to cover all liability under any such Acts.
Stop Gap Employers Liability	$500,000 (each accident or disease)	Required in all states where Workers' Compensation insurance is a monopolistic state-run system.
Employer's Liability	• $500,000 for bodily injury (each accident) • $500,000 for bodily injury by disease (policy limits) • $500,000 for bodily injury by disease (each employee)	
Commercial General Liability	• $2,000,000 general aggregate limit • $1,000,000 each occurrence limit (bodily injury/property damage) • $1,000,000 each occurrence limit (personal injury and advertising injury) • $2,000,000 aggregate limit (products/completed operations) • $1,000,000 each occurrence limit (products/completed operations) • $1,000,000 each occurrence	Must be written on Insurance Services Office (ISO) Form CG 00 01 12 04 or a substitute form providing equivalent coverage, covering liability arising from premises, operations, personal injury, advertising injury, products/completed operations, and liability assumed under an insured contract (including tort liability of a third party assumed in a business contract).

	limit (fire legal liability)	
Business Automobile Liability	$1,000,000 combined single limit (bodily injury/property damage)	Must include coverage for all owned, non-owned and hired vehicles.
Umbrella/Excess Liability	$10,000,000 each occurrence limit	Must include terms at least as broad as the underlying Employer's Liability, Commercial General Liability and Business Automobile Liability policies.
Environmental Insurance (Contractor's Pollution Liability)	• $10,000,0000 aggregate limit • $5,000,000 each occurrence limit	The policy must include Company, its Affiliates, and their directors, officers, and employees as Additional Insureds. Contractor shall provide a copy of the Additional Insured endorsement to Company. The policy must not contain an Insured vs. Insured exclusion, or the exclusion must be modified to allow Company to bring a claim against Contractor. If required within the scope of Contractor's Work, the insurance required herein cannot exclude coverage for bodily injury, property damage, pollution or environmental harm resulting from or arising out of the Work, asbestos, lead or silica-related claims, claims, or liability arising out of the transportation and disposal of waste. The policy must contain a separation of insureds clause. If a motor vehicle is used in connection with the Work, the Business Automobile Liability policy will include coverage at least as broad as Insurance Services Office (ISO) CA 99 48 and be endorsed to include Motor Carrier Act endorsement MCS 90.

The Workers' Compensation, Commercial General Liability and Business Automobile Liability policies will, to the fullest extent allowable by Law, include a waiver of subrogation in favor of Company, its Affiliates, and each of their respective officers, directors, employees and borrowed servants. The Commercial General Liability policy will (i) include Company, its Affiliates, and each of their respective officers, directors, employees and borrowed servants as additional insureds (collectively, the "Company Insured Group"); and (ii) be primary and non-contributory with respect to any insurance or self-insurance maintained by Company. Any additional insured endorsement may be either specific to the Company Insured Group or "blanket" or "automatic" (i.e., addressing any person or entity), as required by contract. The endorsement must include coverage for "completed operations" if the work involves construction, repairs, or maintenance. Contractor shall provide a copy of the additional insured endorsement to Company within 60 days of the date of execution of this Agreement and within 60 days of each policy renewal.

Contractor covenants and agrees to:

(A) maintain the insurance coverages and limits required hereby and any additional insurance and/or bonds required by law (i) at all times during the term of this Agreement and until completion of all Work associated with this Agreement, whichever is later; and (ii) with respect to any coverage maintained in a "claims-made" policy, for two (2) years following termination of this Agreement or completion of all Work associated with this Agreement, whichever is later; provided that, if a "claims-made" policy is maintained, the retroactive date must precede the date of commencement of Work under this Agreement;

(B) require each Subcontractor who may perform Work under this Agreement or enter upon the Work site to maintain coverages, requirements, and limits at least as broad as those listed in this Exhibit B (excluding any Umbrella/Excess Liability requirements) from the time when the Subcontractor begins Work, throughout the term of the Subcontractor's Work and, with respect to any coverage maintained on a "claims-made" policy, for two (2) years following completion of Subcontractor's Work;

(C) procure the required insurance from an insurance company eligible to do business in the state or states where Work will be performed and having and maintaining a Financial Strength Rating of "A-" or better and a Financial Size Category of "VII" or better, as rated in the A.M. Best Key Rating Guide for Property and Casualty Insurance Companies; provided, however, with respect to Workers' Compensation insurance, Contractor may procure such insurance from the state fund of the state where Work is to be performed; and

(D) deliver to Company certificates of insurance stating the types of insurance and policy limits, and further provide, or cause the issuing insurance company to provide, at least 30 days prior written notice to Company of any cancellation, non-renewal, or reduction in coverage, terms, or limits. Contractor shall deliver such certificates (i) prior to execution of this Agreement and prior to commencement of any Work; (ii) prior to expiration of any insurance policy required under this Agreement; and (iii) for any coverage maintained on a "claims-made" policy, for two (2) years following the termination of this Agreement or completion of all Work associated with this Agreement, whichever is later.

Company and Contractor further covenant and agree that (i) the failure of Company to demand such certificate of insurance or failure of Company to identify a deficiency therein will not be construed as a waiver of Contractor's obligation to maintain the insurance required under this Agreement; (ii) the insurance required under this Agreement does not represent that coverage and limits will necessarily be adequate to protect Contractor, nor be deemed as a limitation of Contractor's liability to Company in this Agreement; (iii) Contractor may meet the required insurance coverages and limits with any combination

of primary and umbrella/excess liability insurance; and (iv) Contractor is solely responsible for any deductible or self-insured retention.

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 5/27/2010

PRODUCER (716)819-5500 FAX: (716)819-5140
First Niagara Risk Management, Inc
726 Exchange Street Suite 900

Buffalo NY 14210

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED
Conestoga-Rovers & Associates, Inc.
2055 Niagara Falls Blvd

Niagara Falls NY 14304

INSURERS AFFORDING COVERAGE	NAIC #
INSURER A: National Union Fire Ins Co	
INSURER B: New Hampshire Insurance Co	
INSURER C:	
INSURER D:	
INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS	
		GENERAL LIABILITY				EACH OCCURRENCE	$
		COMMERCIAL GENERAL LIABILITY				DAMAGE TO RENTED PREMISES (Ea occurrence)	$
		CLAIMS MADE / OCCUR				MED EXP (Any one person)	$
						PERSONAL & ADV INJURY	$
						GENERAL AGGREGATE	$
		GEN'L AGGREGATE LIMIT APPLIES PER: POLICY / PRO-JECT / LOC				PRODUCTS - COMP/OP AGG	$
		AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
		X ANY AUTO					
A		X ALL OWNED AUTOS	CA9725603	7/1/2010	7/1/2011	BODILY INJURY (Per person)	$
		SCHEDULED AUTOS					
		X HIRED AUTOS				BODILY INJURY (Per accident)	$
		X NON-OWNED AUTOS					
		X $500 ded collision				PROPERTY DAMAGE (Per accident)	$
		X $250 ded comp					
		GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	$
		ANY AUTO				OTHER THAN AUTO ONLY: EA ACC	$
						AGG	$
		EXCESS / UMBRELLA LIABILITY				EACH OCCURRENCE	$
		OCCUR / CLAIMS MADE				AGGREGATE	$
							$
		DEDUCTIBLE					$
		RETENTION $					$
B		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	WC4800796 AOS	7/1/2010	7/1/2011	X WC STATU-TORY LIMITS / OTH-ER	
		ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N				E.L. EACH ACCIDENT	$ 1,000,000
A		(Mandatory in NH) If yes, describe under SPECIAL PROVISIONS below	WC4800797 CA	7/1/2010	7/1/2011	E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
						E.L. DISEASE - POLICY LIMIT	$ 1,000,000
A		OTHER Hired Auto Physical Damage	CA9725603	7/1/2010	7/1/2011	Max Limit $50,000 $500 Ded Collision $250 Ded Comp	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

RE: NuStar Energy LP Service Contractor List
NuStar Logistics LP, its Affiliates, and their Directors, Officers, employees and borrowed servants is included as Additional Insured as required by written contract with respects to the Automobile Liability Coverage. Waiver of Subrogation is included in favor of NuStar Logistics LP, its Affiliates, and their Directors, Officers, employees and borrowed servants as required by written contract with respects to Auto Liability and Workers Compensation coverages.

CERTIFICATE HOLDER

NuStar Logistics, L.P. its Affiliates, an their Directors, Officers, employees and borrowed servants
Attn: Strategic Sourcing
PO Box 781609
San Antonio, TX 78278-1609

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE
Joseph Teresi/SVIKSJ

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The ACORD name and logo are registered marks of ACORD

IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

DISCLAIMER

This Certificate of Insurance does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY)
10/13/2009

BROKER

HUB International

Program Brokerage Corporation
225 Metro Centre Boulevard
Warwick, RI 02886

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend,extend or alter the coverage afforded by the policies below.

Company A	American International Specialty Lines Ins. Co
Company B	
Company C	
Company D	
Company E	

INSURED'S FULL NAME AND MAILING ADDRESS
Conestoga-Rovers & Associates Inc.
2055 Niagara Falls Blvd., Suite 3
Niagara Falls, NY 14304

COVERAGES

This is to certify that the policies of insurance listed below have been issued to the insured named above for the policy period indicated, not withstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain. The insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies. Limits shown may have been reduced by paid claims.

TYPE OF INSURANCE	CO LTR	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS OF LIABILITY (Canadian dollars unless indicated otherwise)		
COMMERCIAL GENERAL LIABILITY ☐ CLAIMS MADE ☒ OCCURRENCE ☒ PRODUCTS AND/OR COMPLETED OPERATIONS ☒ PERSONAL INJURY ☐ EMPLOYER'S LIABILITY ☒ TENANT'S LEGAL LIABILITY ☐ NON-OWNED AUTOMOBILE ☐ HIRED AUTOMOBILE	A	12380282 LIMITS IN USD	09/30/2009	09/30/2010	EACH OCCURRENCE	$	1,000,000
					GENERAL AGGREGATE	$	2,000,000
					PRODUCTS - COMP/OP AGGREGATE	$	2,000,000
					PERSONAL INJURY	$	1,000,000
					EMPLOYER'S LIABILITY	$	
					TENANT'S LEGAL LIABILITY	$	1,000,000
					NON-OWNED AUTOMOBILE	$	
					HIRED AUTOMOBILE	$	
AUTOMOBILE LIABILITY ☐ DESCRIBED AUTOMOBILES ☐ ALL OWNED AUTOMOBILES ☐ LEASED AUTOMOBILES ** ☐ GARAGE LIABILITY ☐ **ALL AUTOMOBILES LEASED IN EXCESS OF 30 DAYS WHERE THE INSURED IS REQUIRED TO PROVIDE INSURANCE					BODILY INJURY PROPERTY DAMAGE COMBINED	$	
					BODILY INJURY (Per person)	$	
					BODILY INJURY (Per accident)	$	
					PROPERTY DAMAGE	$	
EXCESS LIABILITY ☒ UMBRELLA FORM ☐ OTHER THAN UMBRELLA FORM	A	12380283 LIMITS IN USD	09/30/2009	09/30/2010	EACH OCCURRENCE	$	15,000,000
					AGGREGATE	$	15,000,000
OTHER (SPECIFY) Pollution/Professional Liability	A	12456483 LIMITS IN USD	09/30/2009	09/30/2010	Per Occurrence	$	10,000,000
					Aggregate	$	10,000,000
					Cov A - Prof (Claims Made)	$	
					Cov B - Poll (Occurrence)	$	
						$	

DESCRIPTION OF OPERATIONS/LOCATIONS/AUTOMOBILES/SPECIAL ITEMS/ ADDITIONAL INSURED

Re:NuStar Energy L.P. Service Contractor List, Master Work Agreement

NuStar Logistics, L.P. its Affiliates, and their directors, officers, employees and borrowed servants are added as Additional Insured(s) to the Commercial General Liability Policies, but only with respect to liability arising out of the operations performed by or on behalf of the Named Insured

Waiver of Subrogation is granted in favor of NuStar Logistics, L.P. its Affiliates, and their Directors, Officers, employees and borrowed servants under the Commercial General Liability Policy where required by written contract.

General Liability Coverage is Primary and Non-Contributory.

CERTIFICATE HOLDER

NuStar Logistics, L.P. its Affiliates, and their Directors,
Officers, employees and borrowed servants
Attn: Strategic Sourcing
P.O. Box 781609
San Antonio, TX 78278-1609

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOUR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

Per: _____

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2009

U.S. Department of Labor
Occupational Safety and Health Administration
Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	0	1	3
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
0	5
(K)	(L)

Injury and Illness Types

Total number of...

(M)			
(1) Injury	1	(4) Poisoning	0
(2) Skin Disorder	2	(5) Hearing Loss	0
(3) Respiratory Condition	0	(6) All Other Illnesses	1

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 50 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Your establishment name Conestoga-Rovers & Associates ALL LOCATIONS

Street 2055 Niagara Falls Blvd, Suite 3

City Niagara Falls State NY Zip 14304

Industry description (e.g., Manufacture of motor truck trailers)
Consulting Engineering and Construction

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)
8 7 1 1

OR North American Industrial Classification (NAICS), if known (e.g., 336212)

Employment information

Annual average number of employees 1117

Total hours worked by all employees last year 2,272,805

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive

President
Title

(716)297-6150
Phone

1/5/10
Date

PHMSA 000098065

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2010

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	3	0	1
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
123	133
(K)	(L)

Injury and Illness Types

Total number of... (M)

(1) Injury	3	(4) Poisoning	0
(2) Skin Disorder	0	(5) Hearing Loss	0
(3) Respiratory Condition	0	(6) All Other Illnesses	1

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 50 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Your establishment name Conestoga-Rovers & Associates ALL LOCATIONS

Street 2055 Niagara Falls Blvd, Suite 3

City Niagara Falls State NY Zip 14304

Industry description (e.g., Manufacture of motor truck trailers)
Consulting Engineering and Construction

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)
8 7 1 1

OR North American Industrial Classification (NAICS), if known (e.g., 336212)

Employment information

Annual average number of employees 1044

Total hours worked by all employees last year 2205482

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive

President
Title

(716)297-6150
Phone

1/13/2011
Date

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2011

U.S. Department of Labor
Occupational Safety and Health Administration
Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	0	0	2
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
0	0
(K)	(L)

Injury and Illness Types

Total number of...

	(M)		
(1) Injury	2	(4) Poisoning	0
(2) Skin Disorder	0	(5) Hearing Loss	0
(3) Respiratory Condition	0	(6) All Other Illnesses	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 50 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

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Street 2055 Niagara Falls Blvd, Suite 3

City Niagara Falls State NY Zip 14304

Industry description (e.g., Manufacture of motor truck trailers)
Consulting Engineering and Construction

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)
8 7 1 1

OR North American Industrial Classification (NAICS), if known (e.g., 336212)

Employment information

Annual average number of employees 1102

Total hours worked by all employees last year 2347407

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive

President
Title

(716)297-6150
Phone

1/11/2012
Date

FIRST NIAGARA
Captive Group

June 6, 2011

Conestoga-Rovers & Associates, Inc.
Ms. Colleen Conlon
2055 Niagara Falls Blvd
Niagara Falls, NY 14304

Re: Workers Compensation Experience Rating Modification

Dear Colleen:

The purpose of this letter is to confirm your Workers Compensation Experience Rating Modification factor for the years 2008 through current year.

The modification factors for the subject years are as follows:

7/1/2011 to 7/1/2012	.79
7/1/2010 to 7/1/2011	.75
7/1/2009 to 7/1/2010	.80
9/30/2008 to 7/1/2009	.77

If you should have any questions, please do not hesitate to call me.

Thank you for this opportunity to be of service.

Sincerely,

Sarah Viksjo

Sarah Viksjo

Risk Management Advisor
Direct Line: 716-819-5820
Direct Fax: 716-819-5140
Email: sarah.viksjo@fnrm.com

CONESTOGA-ROVERS
& ASSOCIATES

2270 Springlake Road, Suite 800, Dallas, Texas 75234
Telephone: (972) 331-8500 Fax: (972) 331-8501
www.CRAworld.com

March 15, 2012 Reference No. 077020

Mr. Robert Munguia
410 SPID, Suite 200
Corpus Christi, Texas 78405

Dear Mr. Munguia

Re: Conestoga-Rovers & Associates
EMR and TRIR

CRA understands that our employees are the company's most valuable resource and that they deserve the right to practice their profession in a safe working environment. Safety ranks as the highest priority of commitment by CRA's senior management. CRA's President, Mr. Ed Roberts, is the Managing Principal of the health and safety program. Mr. Roberts and Ms. Colleen Conlon (Corporate Manager of Safety & Health) have established a strong team of Safety Stewards (consisting of seven CRA Principals), Regional Safety Managers/Safety Professionals (over 30), Office Safety Captains, and other support to ensure that we are maintaining vigilance.

CRA's health and safety program is called **S**afety **M**eans **A**wareness **R**esponsibility **T**eamwork (**SMART**). The **SMART** program was developed to provide the foundation for continuous improvement in our safety performance and serve as a vehicle by which we sustain the importance of health and safety management in our daily activities. Our goal with respect to safety performance is for each employee to consider safety a service that we provide to our clients. Our corporate record for safety is something we are proud of, while recognizing that there is always room for improvement. Featured below are our EMR and TRIR rates for the last four years.

Equal
Employment Opportunity
Employer

CONESTOGA-ROVERS & ASSOCIATES

March 15, 2012 Reference No. 077020

Year	*Experience Modification Rate (EMR)*	*OSHA Recordable Incident Rate (TRIR)*	CRA SMART PROGRAM Safety Means Awareness Responsibility Teamwork
2011	0.79	0.17	
2010	0.75	0.36	
2009	0.80	0.35	
2008	0.76	0.50	
CRA is proud to have not experienced a fatality in our 35-year history			

Health and safety procedures are addressed and outlined in CRA's ISO 9001:2008 QMS and in our corporate health and safety program. CRA strives to provide a sound and minimal risk work environment for each employee through the prevention of accidents, occupational illness, and injuries. CRA prepares a site-specific Health and Safety Plan (HASP) for each site at which CRA field staff have potential airborne and/or chemical exposures that may be greater than published occupational exposure values.

Sincerely,

CONESTOGA-ROVERS & ASSOCIATES

Carey Neal

Carey Neal

CDN/cjd/1

RESPONSE RESOURCES
LOCATION GUIDE

24-HOUR EMERGENCY HOTLINE
1-877-4ESANDH

JULY 2012

HOUMA*FOURCHON*GOLDEN MEADOW*MORGAN CITY
BELLE CHASSE*LAPLACE*MOBILE*LAFAYETTE
LAKE CHARLES*BOSSIER CITY*HOUSTON*DALLAS-FT. WORTH

Response Equipment by Location

HMA - Houma FCHN - Fourchon GM - Golden Meadow MCY - Morgan City BC - Belle Chasse LP - LaPlace M-Mobile
LAF - Lafayette LC - Lake Charles BOS - Bossier City HST - Houston DFW - Dallas/Ft. Worth

ITEM	EQUIPMENT DESCRIPTION	HMA	FCHN	GM	MCY	BC	LP	M	LAF	LC	BOS	HST	DFW
1	6" CONTAINMENT BOOM	300'			200'			200'		200'			
2	10" CONTAINMENT BOOM	1,000'		500'	1,000'	1,000'		1,500'	500'		2,000'		2,000'
3	18" CONTAINMENT BOOM	32,000'	1,000'	10,000'	1,000'	16,000'	6,000'	6,000'	13,000'	42,000'	1,500	30,000'	5,300'
4	24" CONTAINMENT BOOM	300'				500'							
5	OIL SPILL RESPONSE TRAILER	3	1	1	1	3	1	1	1	2	1	1	2
6	16' CONTAINMENT BOOM TLR.	5	1	1	2	2	1	1	1		1	1	1
7	24' CONTAINMENT BOOM TLR.									2	1	1	1
8	30' CONTAINMENT BOOM TLR.					1							
9	HAZ-MAT RESPONSE TRAILER						1		1	1	1	1	1
10	INDUSTRIAL SERVICES TRAILER				1	1	3		1			1	1
11	INDUSTRIAL CLEANING TLR.	4	1	1		1	2		1		2	1	1
12	COMMUNICATIONS TRAILER	1											
13	MOBILE COMMAND POST TLR.	2				1	1			1			
14	35' PPE/Consumables TLR.									1			
15	48' CONTAINMENT BOOM TLR.	5		2		2	1	1	2	6	1	4	1
16	48' PPE TRAILER	1		1			2	1		1			1
17	48' DECON TRAILER	1											
18	48' CONSUMABLES TRAILER	7		1			1						
19	48' ABSORBENT MATERIALS TLR.	5		1		1	7	1	1	2	1		
20	48' FLATBED TRAILER	2											
21	RESPONSE VEHICLES (P/U TRUCKS)	17		3	3	7	20	3	4	6	5	6	12
22	TRACTOR TRUCK	10				3	10			1	1	3	3
23	70/80 BBL VACUUM TRUCK	4		1		1	3	1		1	1	2	2
24	130 BBL VACUUM TRAILER	8		1		3				1	1	2	1
25	S/S CHEMICAL TRANSPORT TLR.												1
26	FLATBED DRUM TRUCK	1					2			1			
27	BOBTAIL ROLL-OFF TRUCK	2					5			1	1		1
28	SINGLE RAIL ROLL OFF BOX TLR.	1					1				1	1	2
29	DOUBLE RAIL ROLL OFF BOX TLR.	2				1	9						
30													

Response Equipment by Location

HMA - Houma FCHN - Fourchon GM - Golden Meadow MCY - Morgan City BC - Belle Chasse LP - LaPlace M-Mobile
LAF - Lafayette LC - Lake Charles BOS - Bossier City HST - Houston DFW - Dallas/Ft. Worth

ITEM	EQUIPMENT DESCRIPTION	HMA	FCHN	GM	MCY	BC	LP	M	LAF	LC	BOS	HST	DFW
31	LORI BRUSH SKIMMER			2									
32	JBF SKIMMER									1			
33	MARCO SKIMMER	2				1				1		1	
34	SIDEWINDER BELT SKIMMER									2			
35	GOO GOBBLER SKIMMER	1		1			1	1					
36	MOBILE DRUM SKIMMER BARGE	2											
37	SMALL DRUM SKIMMER				1								1
38	MEDIUM DRUM SKIMMER	7	1	3	2	2	2	1	3	6		2	2
39	LARGE DRUM SKIMMER	5		1	1	1	1	1	2	2	2	1	1
40	SMALL SKIM-PAK SKIMMER	4							2	1			
41	MEDIUM SKIM-PAK SKIMMER	2				1							
42	LARGE SKIM-PAK SKIMMER	9		2	1	3	2	2	2	3	1	2	2
43	MANTA RAY SKIMMER					1							
44	ROPE MOP SKIMMER	2											
45	30 BBL OIL STORAGE BARGE	2											
46	225 BBL OIL STORAGE BARGE	2											
47	12' - 14' RESPONSE BOAT	36	2	2	3	4		2	3	3	1		1
48	16' RESPONSE BOAT				1	1			1			4	
49	18' - 21' RESPONSE BOAT	2	1	1	1	1			1	1			
50	22' - 25' RESPONSE BOAT	5			1	1		1	1	1	1		
51	26' - 29' RESPONSE BOAT	5		1	1	2		1	1	2		3	1
52	30' - 33' RESPONSE BOAT												
53	34' - 37' RESPONSE BOAT												
54	38' - 40' RESPONSE BOAT												
55	22' - 25' BARGE BOAT									1			
56	26' - 30' BARGE BOAT	2								1			
57	31' - 35' BARGE BOAT												
58	36' - 39' BARGE BOAT												
59	40' - 45' BARGE BOAT	2	1	2									

Response Equipment by Location

HMA - Houma FCHN - Fourchon GM - Golden Meadow MCY - Morgan City BC - Belle Chasse LP - LaPlace M-Mobile
LAF - Lafayette LC - Lake Charles BOS - Bossier City HST - Houston DFW - Dallas/Ft. Worth

ITEM	EQUIPMENT DESCRIPTION	HMA	FCHN	GM	MCY	BC	LP	M	LAF	LC	BOS	HST	DFW
60	PERSONNEL VAN	3											
61	30 PASSENGER BUS	1											
62	4 x 4 ATV	2							1	2			
63	UTV/RTV	2		2			1			2	1		2
64	25 - 40 HP TRACTOR	1							1				
65	TRITON VACUUM UNIT						4						1
66	PORTABLE MINI-VAC	2		1						1			
67	DRUM HEAD VACUUM UNIT										3	2	4
68	MERCURY VACUUM UNIT						3				1	1	1
69	25 CU. YD. VACUUM BOX	2					4				1		3
70	20 - 25 CU. YD. ROLL OFF BOX	45					5			5	12		20
71	250 BBL FRAC TANK												1
72	1" DIAPHRAGM PUMP	1			1	2	3		1	2	2	1	3
73	1" CHEMICAL TRANSFER PUMP					1	1		1	1	2	1	3
74	2" DIAPHRAGM PUMP	24	2	4	6	2	10	3	5	5	3	4	5
75	2" CHEMICAL TRANSFER PUMP					1	2		1	2	1	1	1
76	3" DIAPHRAGM PUMP	9				1	11					8	2
77	2" CENTRIFUGAL PUMP	50	2	6	5	6	6	3	10	12	2	3	2
78	3" CENTRIFUGAL PUMP						3			1			
79	5 kW GENERATOR	12	1	2	3	7	1	1	3	4	2	3	6
80	15 kW GENERATOR	1											
81	10 CFM AIR COMPRESSOR	20	1	4	4	7	2	2	4	8	2	3	4
82	185 CFM AIR COMPRESSOR	1							1		2	1	3
83	375 CFM AIR COMPRESSOR						3						1
84	1500 PSI PRESSURE WASHER	6	1	1	1		1	1	1	2			
85	3000 PSI PRESSURE WASHER				1	2	3	1	2			1	
86	4000 PSI STEAM CLEANER	4		1			1		1	1	1	1	1
87	BOBCAT SKID STEER LOADER										1		1
88	LIGHT TOWER	4	2	2			6			2	2	2	2
89													

Response Equipment by Location

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LAF - Lafayette LC - Lake Charles BOS - Bossier City HST - Houston DFW - Dallas/Ft. Worth

ITEM	EQUIPMENT DESCRIPTION	HMA	FCHN	GM	MCY	BC	LP	M	LAF	LC	BOS	HST	DFW
90	4 GAS AIR MONITORING INSTR.	7		2	2	2	9	1	2	3	2	1	2
91	CMS AIR MONITORING INSTR.	2		1	1	2	1	1	1	2	1		
92	PID/FID	1										1	
93	4 GAS PID + VOC					1					1		2
94	CHEMICAL SPECIFIC PID										1		1
95	NORM SURVEY INSTRUMENT	2			2	2			2	2	2		2
96	SCBA						4		4	4	4	4	4
97	SCBA SPARE BOTTLES						4		4	4	8	8	8
98	TRIPOD/WINCH RETRIEVAL SYSTEM					1					1	3	1
99	COPPUS BLOWERS	1				1	6		2	2	2	4	2
100	SATELLITE PHONE	6			1	2			1	1			
101													
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Response Equipment by Location

HMA - Houma FCHN - Fourchon GM - Golden Meadow MCY - Morgan City BC - Belle Chasse LP - LaPlace M-Mobile
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ITEM	EQUIPMENT DESCRIPTION	HMA	FCHN	GM	MCY	BC	LP	M	LAF	LC	BOS	HST	DFW
120	OIL ABSORBENT PADS	750	50	100	125	200	500	300	250	500	200	200	200
121	5" OIL ABSORBENT BOOM	1,000	25	150	100	100	1150	300	150	850	50	50	50
122	8" OIL ABSORBENT BOOM	200		10	25	150			25		25	25	25
123	UNIVERSAL ABSORBENT PADS	75	10	15	15				40	15	20	20	20
124	UNIVERSAL ABSORBENT BOOM	30	5	5	10				10	10	10	10	10
125	CHEMICAL ABSORBENT PADS	12	10	25	5	50	15		12	25	30	30	50
126	CHEMICAL ABSORBENT BOOM	25	5	10	5	50	10		6	12	10	10	10
127	OIL ABSORBENT ROLL	750	15	25	12	40	730	10	15	25	10	10	10
128	OIL ABSORBENT SWEEP	100		15	6				10	10	0	0	0
129	INDUSTRIAL CARPET	200	10	15	6	25	1170	25	25	50	10	10	10
130	POM-POM SNARE	150		25	10				25	25			
131	50' SNARE ON A ROPE	200		50	12	50			12	25			
132	100' SNARE ON A ROPE	300		50	6		580		6	30			
133	OIL GATOR	100	25	50	12	25	24	25	25	50	25	25	25
134	55 gal. PLASTIC DRUM	250	12	25	50	20	16	15	35	75	20	20	40
135	55 gal. STEEL DRUM	12	6	12	6		12		10	10	40	25	40
136	95 gal. PLASTIC SALVAGE DRUM	50	3	6	6	10	4	5	12	12	15	5	15
137	POLLUTION BAGS	320	10	25	25	150	32	100	50	150	50	50	50
138	POLY SHEETING	100	6	25	10	100	4	10	15	50	25	25	25
139	ROLL OFF BOX LINERS	100	6	12	10	50	100	15	15	25	100	100	100
140													
141													
142													
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148													
149													

Specific Information on Resources

Items 1 – 4: **Total** amount of containment boom stored at each ES&H office location.

Item 5: **Oil Spill Response Trailer** – contains up to 500' of containment boom, 1 drum skimmer package, 3 wash pump packages, PPE and various absorbent products. Designed to accommodate a 4 man crew working for 1 to 2 days on Average Most Probable Discharge (AMPD).

Item 6: **16' Containment Boom Trailer** – contains 1000' of 18" containment boom, anchors, anchor buoys and rope.

Item 7: **24' Containment Boom Trailer** – contains 2000' of 18" containment boom, anchors, anchor buoys and rope.

Item 8: **30' Containment Boom Trailer** – contains 3000' of 18" containment boom, anchors, anchor buoys and rope.

Item 9: **Haz-Mat Response Trailer** – contains specialized tools and equipment to respond to hazardous materials incidents; also contains chemical absorbent products and high level PPE. Designed to accommodate a 4 man crew responding to any hazardous materials incident.

Item 10: **Industrial Services Trailer** – contains specialized tools and equipment for industrial cleaning services, including confined space entry safety equipment and PPE.

Item 11: **Industrial Cleaning Trailer** – contains 350 gallon water storage tank and 4,000 psi hot water pressure washer. Self contained unit to perform industrial cleaning services.

Item 12: **Communications Trailer** – enclosed trailer with air conditioning; contains cellular and satellite communications and IT support. Self contained unit with generator and shore power capabilities.

Item 13: **Mobile Command Post Trailer** – enclosed trailer with air conditioning; contains work space for personnel on emergency response projects. Self contained unit with generator and shore power capabilities.

Item 14: **35' PPE/Consumables Trailer** – enclosed trailer containing significant quantities of PPE and consumable items.

Item 15: **48' Containment Boom Trailer** – 48' box trailer containing 6,000' of 18" containment boom, anchors, anchor buoys, and rope.

Item 16: **48' PPE Trailer** – 48' box trailer containing significant quantities of PPE (i.e., protective coveralls, inner and outer protective gloves, hard hats, safety glasses, etc.).

Item 17: **48' Decon Trailer** – 48' box trailer containing equipment decontamination supplies and equipment (i.e., decon pools, degreaser soap, hand tools, sorbent materials, etc.)

Item 18: **48' Consumables Trailer** – 48' box trailer containing variety of consumable items (i.e., pollution bags, poly sheeting, rope, degreaser soap, industrial carpet, etc.)

Item 19: **48' Absorbent Materials Trailer** – 48' box trailer containing oil absorbent materials (i.e., absorbent pads, 5" absorbent boom, etc.)

Item 31: **LORI Brush Skimmer** – 56’ OSRV with shallow draft capabilities. 2 side mounted LORI Brush Skimmers with 45’ skimming width. Capable of recovering spilled oil at rates up to 15 gpm. Storage capacity of 90 bbls.

Item 32: **JBF Skimmer** – 38’ OSRV DIP 3003 with Filterbelt skimming module capable of recovering spilled oil at rates up to 400 gpm. Storage capacity of 95 bbls.

Item 33: **Marco Skimmer** - Harbor Class OSRV (30’) with shallow draft capabilities. One foot (1’) wide Filterbelt skimming module capable of recovering spilled oil at rates up to 427 bbls per day. Storage capacity of 25 bbls.

Item 34: **Sidewinder Belt Skimmer** – Sorbent Lifting Belt Skimmer. Designed to be installed on any suitable vessel as an over-the-side skimmer for stationary and advancing applications. Capable of recovering spilled oil at rates of up to 773 bbls per day.

Item 35: **Goo Gobbler Skimmer** – Harbor Class OSRV (32’) with shallow draft capabilities. 30” aluminum cylinder skimmer capable of recovering spilled oil at rates up to 770 bbls per day.

Item 36: **Mobile Drum Skimmer Barge** – 8’ X 16’ shallow draft aluminum storage barge (25 bbl storage capacity) with Drum Skimmer Package.

Item 37: **Small Drum Skimmer** – Elastec MiniMax industrial skimmer. Recovery rate of up to 20 gpm.

Item 38: **Medium Drum Skimmer** – Elastec TDS 118 skimmer. Recovery rate of up to 35 gpm.

Item 39: **Large Drum Skimmer** – Elastec TDS 136 skimmer. Recovery rate of up to 70 gpm.

Item 40: **Small Skim Pak Skimmer** – Skim Pak Model 2300-SH floating suction skimmer. Self –adjusting weir with recovery rate of up to 58 gpm.

Item 41: **Medium Skim Pak Skimmer** – Skim Pak Model 4300-SH floating suction skimmer. Self-adjusting weir with recovery rate of up to 95 gpm.

Item 42: **Large Skim Pak Skimmer** – Skim Pak Model 18300-SH floating suction skimmer. Self-adjusting weir with recovery rate of up to 420 gpm.

Item 43: **Manta Ray Skimmer** – Rigid Manta Ray floating suction skimmer. Recovery rate of up to 150 gpm.

Item 44: **Rope Mop Skimmer** – 4” X 50’ Rope Mop (single roller). Recovery rate of up to 35 bbls per day.

Item 45: **30 bbl Oil Storage Barge** – 8’ X 16’ aluminum oil storage barge. 25 bbl storage capacity.

Item 46: **225 bbl Oil Storage Barges** – 8’ X 40’ aluminum oil storage barges (2 barges per set). Each set has 225 bbl storage capacity.

Item 65: **Triton Vacuum Unit** – 2500 Series (2500 cfm) Liquid Ring Vacuum Pump. Product intake through 6” inlet. Can load into collection tank or vacuum box, or alternatively into drums, supersacks, or open top boxes.

Item 66: **Portable Mini-Vac** – Mobile, portable vacuum system designed for spill recovery. Capable of recovering a wide range of liquids, oils and sludges with solids up to 2” diameter. Recovered material deposited into 500 gallon built-in storage tank.

Item 67: **Drum Head Vacuum Unit -** Mobile, portable vacuum system designed for spill recovery. Capable of recovering a wide range of liquids, oils and sludges with solids up to 2" diameter. Recovered material deposited into common open top drums.

Item 90: **4 Gas Air Monitoring Instrument -** Multi-gas detector used to monitor Oxygen, Lower Explosive Limit, Carbon Monoxide and Hydrogen Sulfide.

Item 91: **CMS Air Monitoring Instrument** – The Chip Measuring System (CMS) instrument provides a quantitative determination of hazardous gas or vapor concentrations in the air. Each chip is substance – specific and has 10 possible measurements per chip.

Item 92: **PID / FID** – Photoionization or Flame Ionization Detectors; used to measure volatile organic compounds and other gases in concentrations from sub parts per billion to 10,000 parts per million.

Item 93: **4 Gas PID + VOC** – 4 Gas Air Monitoring Instrument with Volatile Organic Compound measuring capabilities.

Item 94: **Chemical Specific PID** – Photoionization detector with specific chemical vapor or gas measuring ability.

Item 95: **NORM Survey Instrument** – Ludlum NORM Surveying Instrument calibrated to detect Radium 226.

1730 Coteau Road (70364) ▪ P.O. Box 9217 ▪ Houma, LA 70361
Phone: (985) 851-5350 ▪ Fax: (985) 853-1978
Website: www.esandh.com ▪ Email: info@esandh.com

24 Hour Emergency Response Hotline: 1-877-437-2634

Office Locations

Houma Response Location & Headquarters: 1730 Coteau Road
P.O. Box 9217 (70361)
Houma, LA 70364
Phone: (985) 851-5350 Fax: (985) 853-1978
POC: Kevin Lormand Cell: (b) (6)

Lafayette Response Location 203 Glaser Drive
Lafayette, LA 70508
Phone: (337) 839-0646 Fax: (337) 839-0972
POC: Kevin Lormand Cell: (b) (6)

Lake Charles Response Location: 4141 S. Beglis Parkway
Sulphur, LA 70665
Phone: (337) 558-7543 Fax: (337) 558-7546
POC: Kevin Lormand Cell: (b) (6)

Belle Chase Response Location: 2305 N. Concord Road
Belle Chase, LA 70037
Phone: (504) 340-0336 Fax: (504) 340-0326
POC: Kevin Lormand Cell: (b) (6)

Morgan City Response Location: 3189 Highway 70
Morgan City, LA 70380
Phone: (985) 385-6730 Fax: (985) 385-6754
POC: Kevin Lormand Cell: (b) (6)

Fourchon Response Location: 106 17th Street
Fourchon, LA 70357
Phone: (985) 396-2798 Fax: (985) 396-2660
POC: Kevin Lormand Cell: (b) (6)

Golden Meadow Response Location: 21148 Highway 1
Golden Meadow, LA 70357
Phone: (985) 475-3030 Fax: (985) 475-3031
POC: Kevin Lormand Cell: (b) (6)

Houston Response Location: 202 Preston Avenue
Pasadena, TX 77503
Phone: (713) 921-7600 Fax: (713) 921-7602
POC: Jeremmy McEntire Cell: (b) (6)

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Office Locations

Alabama Response Location:	5400-A Willis Road	
	Theodore, AL 36582	
	Phone: (251) 653-9978	Fax: (251) 653-9979
	POC: Kevin Lormand	Cell: (b) (6) [redacted]
Bossier City Response Location	101 Crown Court Place	
	Bossier City, LA 71112	
	Phone: (318) 746-5620	Fax: (318) 746-5622
	POC: Jeremmy McEntire	Cell: (b) (6) [redacted]
LaPlace Response Location:	1085 Bert Street	
	LaPlace, LA 70069	
	Phone: (985) 652-4885	Fax: (985) 652-4854
	POC: Kevin Lormand	Cell: (b) (6) [redacted]
Dallas - Ft. Worth Response Location	3418 S. Gilbert Road	
	Grand Prairie, TX 75050	
	Phone: (972) 870-9424	Fax: (972) 870-9430
	POC: Jeremmy McEntire	Cell: (b) (6) [redacted]
Transfer Facility:	3510 Industrial Avenue A	
	Houma, LA 70363	
	Phone: (985)851-0275	
	POC: Kevin Lormand	Cell: (b) (6) [redacted]
Consulting & Training Group:	1730 Coteau Road	
	Houma, LA 70364	
	Phone: (985) 851-5055	Fax: (985) 851-7480
	POC: Patrick J. Bergeron	Cell: (b) (6) [redacted]
Houston Consulting & Training Group:	202 Preston Avenue	
	Pasadena, TX 77503	
	Phone: (713) 921-7600	Fax: (713) 921-7602
	POC: Kevin Voisin	Cell: (b) (6) [redacted]

ENVIRONMENTAL SENSITIVITY INDEX MAP

(b) (7)(F), (b) (3)

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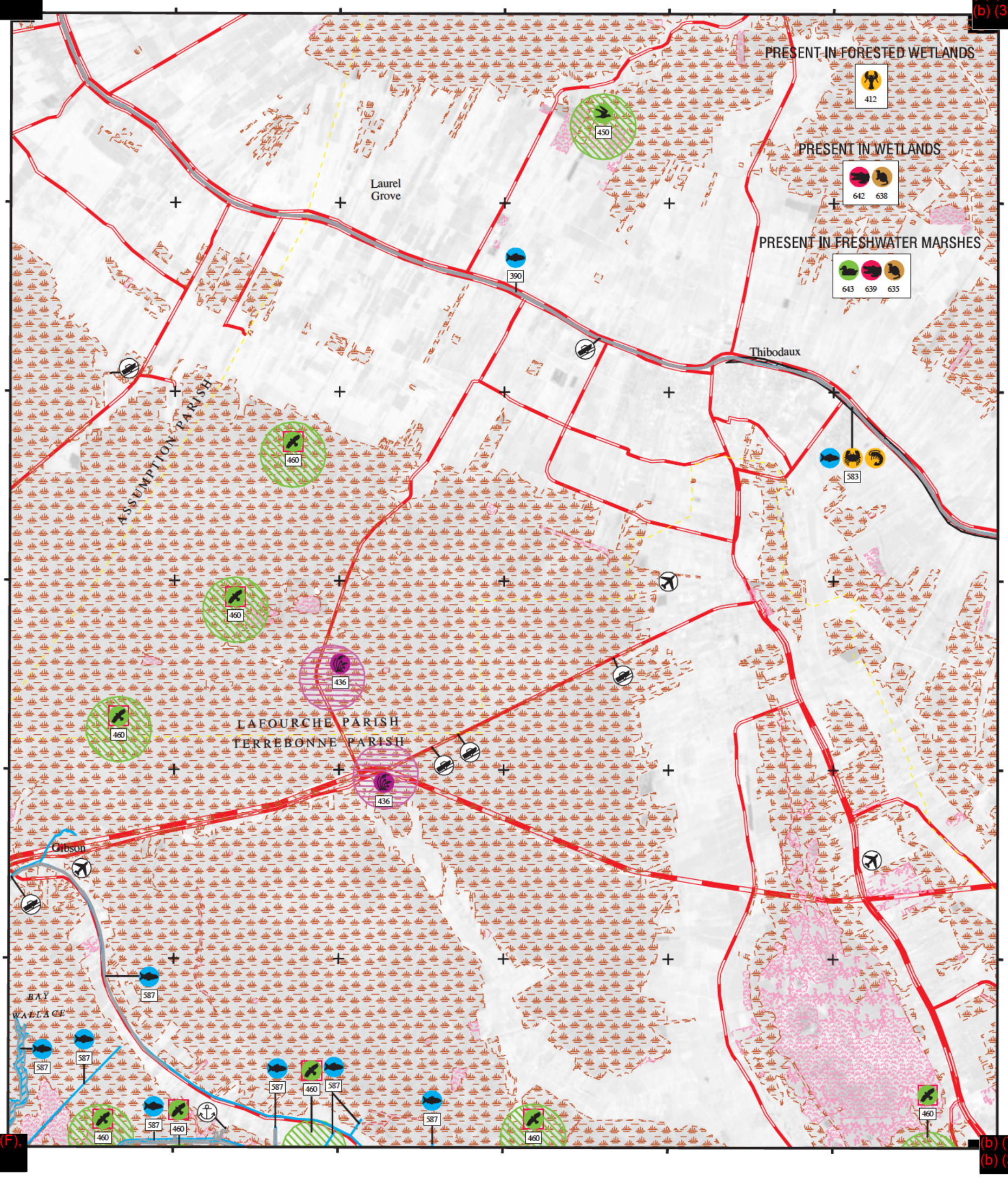

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(b) (7)(F), (b) (3)

SHORELINE

1988 SHORELINE

2001 SHORELINE

NOTE FOR COASTAL MAPS:

Due to the dynamic nature of the Louisiana coastline, biological resources may represent historical locations that do not correspond with the depicted shoreline.

SHORELINE HABITATS (ESI)

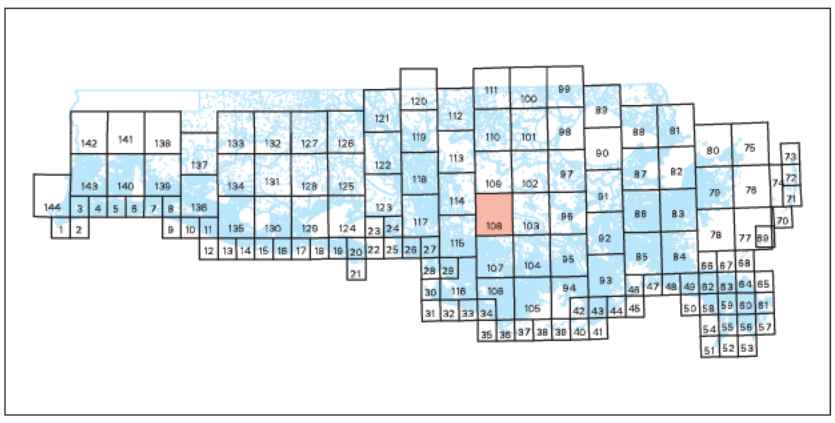
2001 ESI Shoreline Classification

- 1B EXPOSED, SOLID MAN-MADE STRUCTURES
- 2A EXPOSED WAVE-CUT PLATFORMS IN CLAY
  2B EXPOSED SCARPS AND STEEP SLOPES IN CLAY
- 3A FINE- TO MEDIUM-GRAINED SAND BEACHES
  3B SCARPS AND STEEP SLOPES IN SAND
- 4 COARSE-GRAINED SAND BEACHES
- 5 MIXED SAND AND GRAVEL BEACHES
- 6A GRAVEL BEACHES
- 6B RIPRAP
- 7 EXPOSED TIDAL FLATS
- 8A SHELTERED ROCKY SHORES AND SHELTERED SCARPS IN MUD OR CLAY
- 8B SHELTERED, MAN-MADE STRUCTURES
- 8C SHELTERED RIPRAP
- 9A SHELTERED TIDAL FLATS
  9B SHELTERED, VEGETATED LOW BANKS
- 10A SALT- AND BRACKISH-WATER MARSHES
- 10B FRESHWATER MARSHES
- 10C FRESHWATER SWAMPS
- 10D SCRUB-SHRUB WETLANDS

COASTAL HABITATS

Based on 1988 Digital Shoreline

- 10A SALT MARSH
- 10A BRACKISH MARSH
- 10A INTERMEDIATE MARSH
- 10B FRESHWATER MARSH
- 10C FORESTED WETLAND
- 10D SCRUB- SHRUB WETLAND
- SEAGRASS



N W E S

SCALE 1:100000

1 5 0 1 KILOMETER

1 5 0 1 MILE

Not For Navigation

December 2003

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National Oceanic and Atmospheric Administration
National Ocean Service
Office of Response and Restoration
Hazardous Materials Response Division

NEW ORLEANS LA-108

ENVIRONMENTAL SENSITIVITY INDEX MAP

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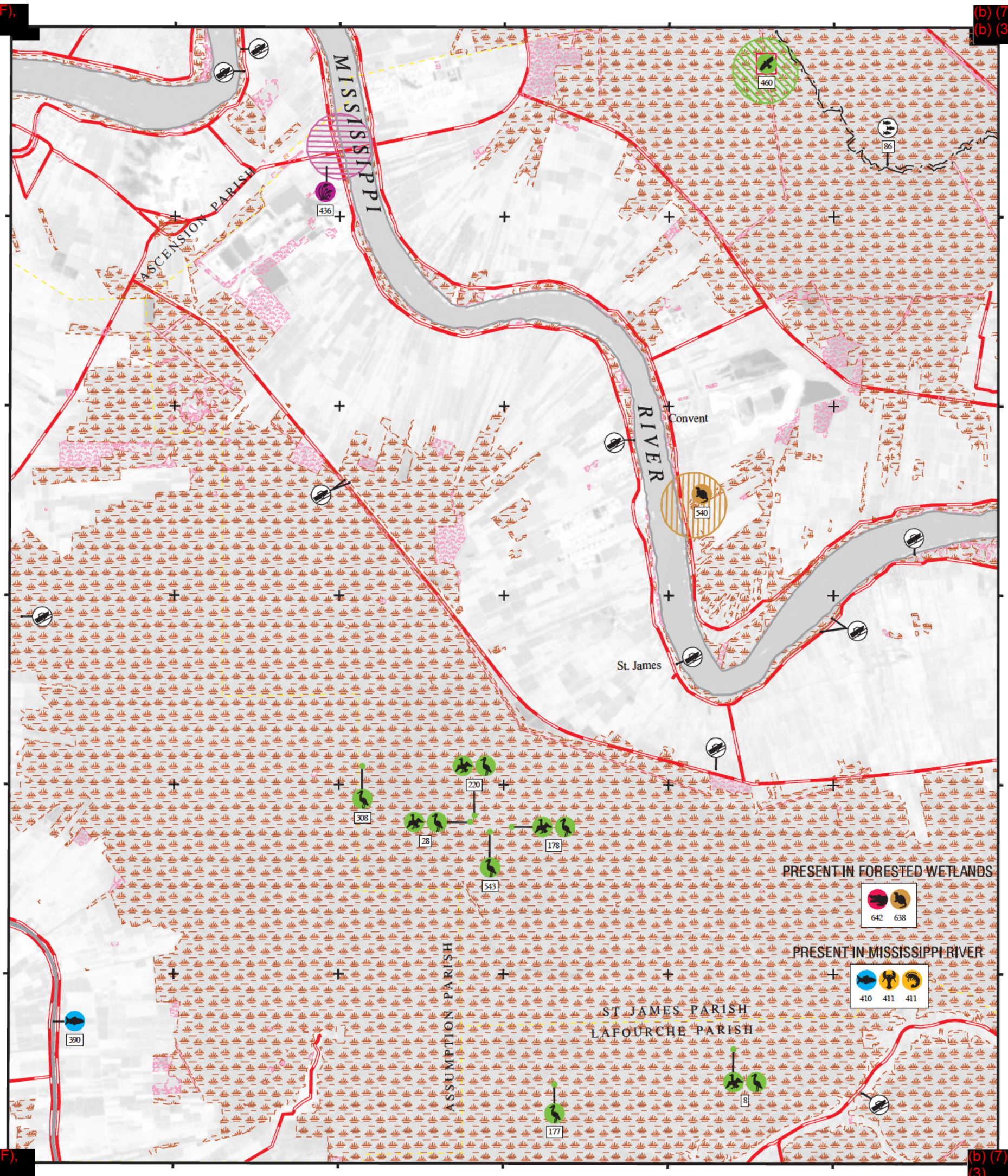
(b) (7)(F), (b) (3)



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(b) (7)(F), (b) (3)

SHORELINE

1988 SHORELINE

2001 SHORELINE

NOTE FOR COASTAL MAPS:

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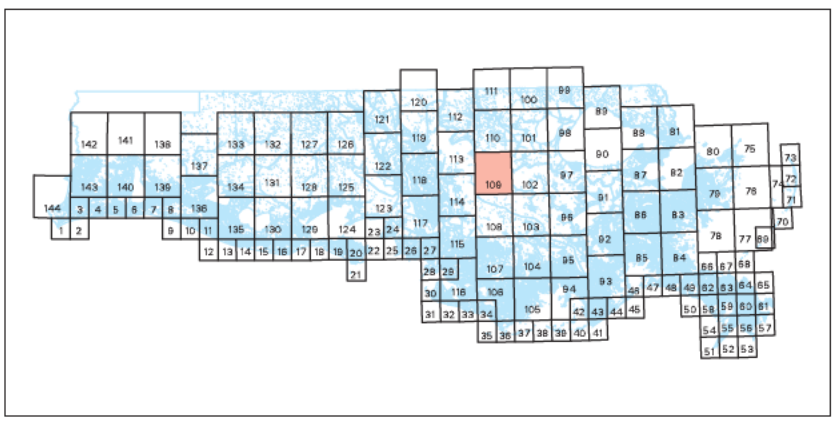
- 6B RIPRAP
- 7 EXPOSED TIDAL FLATS
- 8A SHELTERED ROCKY SHORES AND SHELTERED SCARPS IN MUD OR CLAY
- 8B SHELTERED, MAN-MADE STRUCTURES
- 8C SHELTERED RIPRAP
- 9A SHELTERED TIDAL FLATS
  9B SHELTERED, VEGETATED LOW BANKS
- 10A SALT- AND BRACKISH-WATER MARSHES
- 10B FRESHWATER MARSHES
- 10C FRESHWATER SWAMPS
- 10D SCRUB-SHRUB WETLANDS

COASTAL HABITATS

Based on 1988 Digital Shoreline

- 10A SALT MARSH
- 10A BRACKISH MARSH
- 10A INTERMEDIATE MARSH
- 10B FRESHWATER MARSH
- 10C FORESTED WETLAND
- 10D SCRUB- SHRUB WETLAND
- SEAGRASS



N W E S

SCALE 1:100000

1 .5 0 1 KILOMETER

1 .5 0 1 MILE

Not For Navigation

December 2003

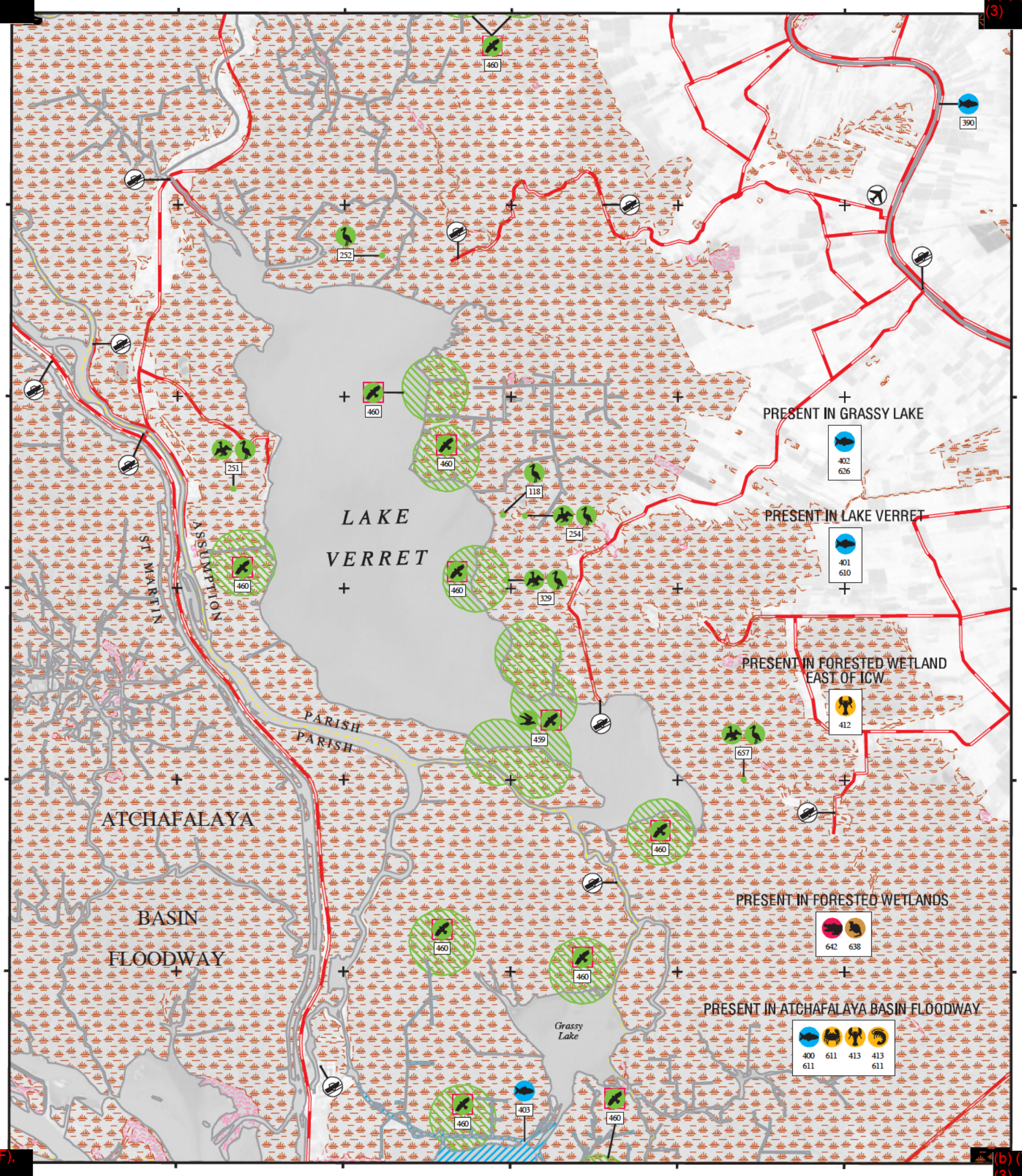
Published at Seattle, Washington
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Response and Restoration
Hazardous Materials Response Division

PONCHATOULA LA-109

ENVIRONMENTAL SENSITIVITY INDEX MAP

(b) (7)(F), (b) (3)

(b) (7)(F), (b) (3)



(b) (7)(F), (b) (3)

(b) (7)(F), (b) (3)

SHORELINE

1988 SHORELINE

2001 SHORELINE

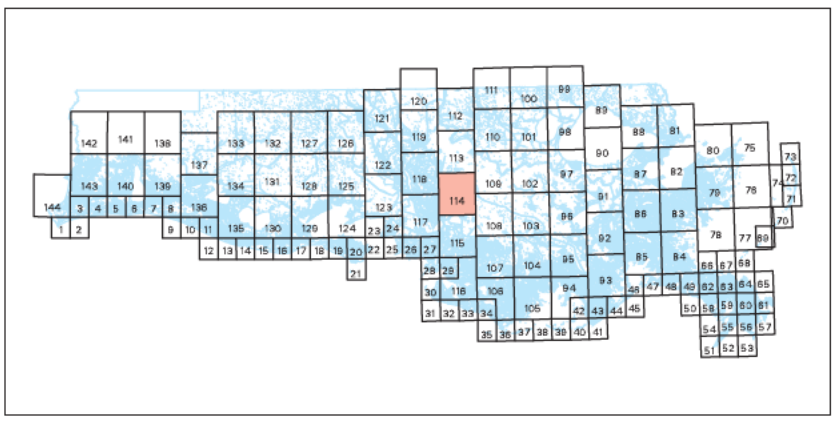
NOTE FOR COASTAL MAPS:
Due to the dynamic nature of the Louisiana coastline, biological resources may represent historical locations that do not correspond with the depicted shoreline.

SHORELINE HABITATS (ESI)
2001 ESI Shoreline Classification

- 1B EXPOSED, SOLID MAN-MADE STRUCTURES
- 2A EXPOSED WAVE-CUT PLATFORMS IN CLAY
- 2B EXPOSED SCARPS AND STEEP SLOPES IN CLAY
- 3A FINE- TO MEDIUM-GRAINED SAND BEACHES
- 3B SCARPS AND STEEP SLOPES IN SAND
- 4 COARSE-GRAINED SAND BEACHES
- 5 MIXED SAND AND GRAVEL BEACHES
- 6A GRAVEL BEACHES
- 6B RIPRAP
- 7 EXPOSED TIDAL FLATS
- 8A SHELTERED ROCKY SHORES AND SHELTERED SCARPS IN MUD OR CLAY
- 8B SHELTERED, MAN-MADE STRUCTURES
- 8C SHELTERED RIPRAP
- 9A SHELTERED TIDAL FLATS
- 9B SHELTERED, VEGETATED LOW BANKS
- 10A SALT- AND BRACKISH-WATER MARSHES
- 10B FRESHWATER MARSHES
- 10C FRESHWATER SWAMPS
- 10D SCRUB-SHRUB WETLANDS

COASTAL HABITATS
Based on 1988 Digital Shoreline

- 10A SALT MARSH
- 10A BRACKISH MARSH
- 10A INTERMEDIATE MARSH
- 10B FRESHWATER MARSH
- 10C FORESTED WETLAND
- 10D SCRUB- SHRUB WETLAND
- SEAGRASS



N W E S

SCALE 1:100000

1 .5 0 1 KILOMETER

1 .5 0 1 MILE

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Office of Response and Restoration
Hazardous Materials Response Division

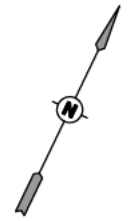
MORGAN CITY LA-114

Group	Name	Population	Status	Lead Office	Recovery Plan Name	Recovery Plan Stage
Fishes	Gulf sturgeon (Acipenser	Entire	Threatened	Panama City Ecological	Gulf Sturgeon	Final
Fishes	Pallid sturgeon (Scaphirhynchus	Entire	Endangered	Northern Rockies Fish And	Final Revised Recovery Plan for	Final Revision 1
Mammals	West Indian Manatee	Entire	Endangered	North Florida Ecological	Recovery Plan Puerto Rican	Final
Mammals	West Indian Manatee	Entire	Endangered	North Florida Ecological	Florida Manatee Recovery Plan,	Final Revision 3
Mammals	Louisiana black bear (Ursus	Entire	Threatened	Louisiana Ecological Services	Louisiana Black Bear	Final

(b) (7)(F), (b) (3)

LEGEND

- OF 007 — OUTFALL LOCATION
- WEIR VALVES



0 500 1000

SCALE: 1" = 500'

NUSTAR ENERGY L.P.
SAN ANTONIO. TEXAS

ST. JAMES TERMINAL

FACILITY SITE PLAN

ST. JAMES PARISH

CK ASSOCIATES
Environmental Consultants

Drawn:	CPL/ACAD
Checked:	SM
Approved:	AS
Date:	5/29/14
Dwg. No.:	B10769-01

FIGURE 1

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Date Time: HHMM

4. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment)**:**

5. Situation Summary and Health and Safety Briefing (for briefings or transfer of command)**:** Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.

6. Prepared by: Name: Position/Title: Signature: _____

 Date/Time: Date

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Date Time: HHMM

7. Current and Planned Objectives:

8. Current and Planned Actions, Strategies, and Tactics:

Time:	Actions:
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
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HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	

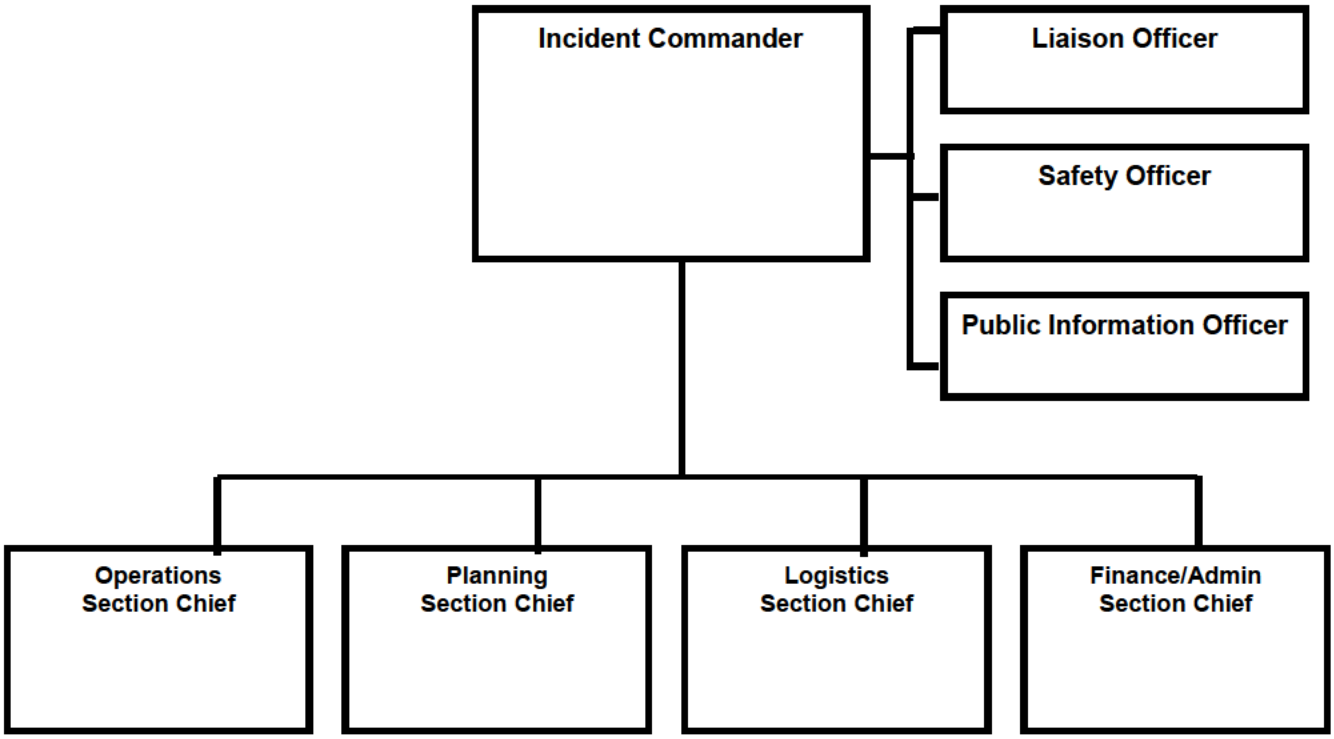
6. Prepared by: Name: Position/Title: Signature: _____

 Date/Time: Date

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Date Time: HHMM

9. Current Organization (fill in additional organization as appropriate):



6. Prepared by: Name:	Position/Title:	Signature: _____
ICS 201, Page 3	Date/Time: Date	

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: DateTime: HHMM

10. Resource Summary:

Resource	Resource Identifier	Date/Time Ordered	ETA	Arrived	Notes (location/assignment/status)
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	

6. Prepared by: Name: Position/Title: Signature: _____

ICS 201, Page 4 Date/Time: Date

ICS 201
Incident Briefing

Purpose. The Incident Briefing (ICS 201) provides the Incident Commander (and the Command and General Staffs) with basic information regarding the incident situation and the resources allocated to the incident. In addition to a briefing document, the ICS 201 also serves as an initial action worksheet. It serves as a permanent record of the initial response to the incident.

Preparation. The briefing form is prepared by the Incident Commander for presentation to the incoming Incident Commander along with a more detailed oral briefing.

Distribution. Ideally, the ICS 201 is duplicated and distributed before the initial briefing of the Command and General Staffs or other responders as appropriate. The "Map/Sketch" and "Current and Planned Actions, Strategies, and Tactics" sections (pages 1–2) of the briefing form are given to the Situation Unit, while the "Current Organization" and "Resource Summary" sections (pages 3–4) are given to the Resources Unit.

Notes:

- The ICS 201 can serve as part of the initial Incident Action Plan (IAP).
- If additional pages are needed for any form page, use a blank ICS 201 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Date/Time Initiated** • Date, Time	Enter date initiated (month/day/year) and time initiated (using the 24-hour clock).
4	**Map/Sketch** (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment)	Show perimeter and other graphics depicting situational status, resource assignments, incident facilities, and other special information on a map/sketch or with attached maps. Utilize commonly accepted ICS map symbology. If specific geospatial reference points are needed about the incident's location or area outside the ICS organization at the incident, that information should be submitted on the Incident Status Summary (ICS 209). North should be at the top of page unless noted otherwise.
5	**Situation Summary and Health and Safety Briefing (**for briefings or transfer of command): Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.	Self-explanatory.
6	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).
7	**Current and Planned Objectives**	Enter the objectives used on the incident and note any specific problem areas.

Block Number	Block Title	Instructions
8	**Current and Planned Actions, Strategies, and Tactics** • Time • Actions	Enter the current and planned actions, strategies, and tactics and time they may or did occur to attain the objectives. If additional pages are needed, use a blank sheet or another ICS 201 (Page 2), and adjust page numbers accordingly.
9	**Current Organization** (fill in additional organization as appropriate) • Incident Commander(s) • Liaison Officer • Safety Officer • Public Information Officer • Planning Section Chief • Operations Section Chief • Finance/Administration Section Chief • Logistics Section Chief	• Enter on the organization chart the names of the individuals assigned to each position. • Modify the chart as necessary, and add any lines/spaces needed for Command Staff Assistants, Agency Representatives, and the organization of each of the General Staff Sections. • If Unified Command is being used, split the Incident Commander box. • Indicate agency for each of the Incident Commanders listed if Unified Command is being used.
10	**Resource Summary**	Enter the following information about the resources allocated to the incident. If additional pages are needed, use a blank sheet or another ICS 201 (Page 4), and adjust page numbers accordingly.
	• Resource	Enter the number and appropriate category, kind, or type of resource ordered.
	• Resource Identifier	Enter the relevant agency designator and/or resource designator (if any).
	• Date/Time Ordered	Enter the date (month/day/year) and time (24-hour clock) the resource was ordered.
	• ETA	Enter the estimated time of arrival (ETA) to the incident (use 24-hour clock).
	• Arrived	Enter an “X” or a checkmark upon arrival to the incident.
	• Notes (location/ assignment/status)	Enter notes such as the assigned location of the resource and/or the actual assignment and status.

INCIDENT OBJECTIVES (ICS 202)

1. Incident Name:	**2. Operational Period:**	Date From: Date	Date To: Date
		Time From: HHMM	Time To: HHMM

3. Objective(s):

4. Operational Period Command Emphasis:

General Situational Awareness

5. Site Safety Plan Required? Yes ☐ No ☐

Approved Site Safety Plan(s) Located at: _____

6. Incident Action Plan (the items checked below are included in this Incident Action Plan)**:**

☐ ICS 203	☐ ICS 207	Other Attachments:
☐ ICS 204	☐ ICS 208	☐ _____
☐ ICS 205	☐ Map/Chart	☐ _____
☐ ICS 205A	☐ Weather Forecast/Tides/Currents	☐ _____
☐ ICS 206		☐ _____

7. Prepared by: Name: Position/Title: Signature: _____

8. Approved by Incident Commander: Name: Signature: _____

ICS 202	**IAP Page**	Date/Time: Date

ICS 202
Incident Objectives

Purpose. The Incident Objectives (ICS 202) describes the basic incident strategy, incident objectives, command emphasis/priorities, and safety considerations for use during the next operational period.

Preparation. The ICS 202 is completed by the Planning Section following each Command and General Staff meeting conducted to prepare the Incident Action Plan (IAP). In case of a Unified Command, one Incident Commander (IC) may approve the ICS 202. If additional IC signatures are used, attach a blank page.

Distribution. The ICS 202 may be reproduced with the IAP and may be part of the IAP and given to all supervisory personnel at the Section, Branch, Division/Group, and Unit levels. All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 202 is part of the IAP and can be used as the opening or cover page.
- If additional pages are needed, use a blank ICS 202 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident. If needed, an incident number can be added.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Objective(s)**	Enter clear, concise statements of the objectives for managing the response. Ideally, these objectives will be listed in priority order. These objectives are for the incident response for this operational period as well as for the duration of the incident. Include alternative and/or specific tactical objectives as applicable. Objectives should follow the SMART model or a similar approach: **S**pecific – Is the wording precise and unambiguous? **M**easurable – How will achievements be measured? **A**ction-oriented – Is an action verb used to describe expected accomplishments? **R**ealistic – Is the outcome achievable with given available resources? **T**ime-sensitive – What is the timeframe?
4	**Operational Period Command Emphasis**	Enter command emphasis for the operational period, which may include tactical priorities or a general weather forecast for the operational period. It may be a sequence of events or order of events to address. This is not a narrative on the objectives, but a discussion about where to place emphasis if there are needs to prioritize based on the Incident Commander's or Unified Command's direction. Examples: Be aware of falling debris, secondary explosions, etc.
	General Situational Awareness	General situational awareness may include a weather forecast, incident conditions, and/or a general safety message. If a safety message is included here, it should be reviewed by the Safety Officer to ensure it is in alignment with the Safety Message/Plan (ICS 208).
5	**Site Safety Plan Required?** Yes ☐ No ☐	Safety Officer should check whether or not a site safety plan is required for this incident.
	Approved Site Safety Plan(s) Located At	Enter the location of the approved Site Safety Plan(s).

Block Number	Block Title	Instructions
6	**Incident Action Plan** (the items checked below are included in this Incident Action Plan): ☐ ICS 203 ☐ ICS 204 ☐ ICS 205 ☐ ICS 205A ☐ ICS 206 ☐ ICS 207 ☐ ICS 208 ☐ Map/Chart ☐ Weather Forecast/ Tides/Currents Other Attachments:	Check appropriate forms and list other relevant documents that are included in the IAP. ☐ ICS 203 – Organization Assignment List ☐ ICS 204 – Assignment List ☐ ICS 205 – Incident Radio Communications Plan ☐ ICS 205A – Communications List ☐ ICS 206 – Medical Plan ☐ ICS 207 – Incident Organization Chart ☐ ICS 208 – Safety Message/Plan
7	**Prepared by** • Name • Position/Title • Signature	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).
8	**Approved by Incident Commander** • Name • Signature • Date/Time	In the case of a Unified Command, one IC may approve the ICS 202. If additional IC signatures are used, attach a blank page.

ORGANIZATION ASSIGNMENT LIST (ICS 203)

1. Incident Name:	2. Operational Period:	Date From: Date	Date To: Date
		Time From: HHMM	Time To: HHMM

3. Incident Commander(s) and Command Staff:	
IC/UCs	
Deputy	
Safety Officer	
Public Info. Officer	
Liaison Officer	

4. Agency/Organization Representatives:	
Agency/Organization	Name

5. Planning Section:	
Chief	
Deputy	
Resources Unit	
Situation Unit	
Documentation Unit	
Demobilization Unit	
Technical Specialists	

6. Logistics Section:	
Chief	
Deputy	
Support Branch	
Director	
Supply Unit	
Facilities Unit	
Ground Support Unit	
Service Branch	
Director	
Communications Unit	
Medical Unit	
Food Unit	

7. Operations Section:		
Chief		
Deputy		
Staging Area		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Air Operations Branch		
Air Ops Branch Dir.		

8. Finance/Administration Section:	
Chief	
Deputy	
Time Unit	
Procurement Unit	
Comp/Claims Unit	
Cost Unit	

9. Prepared by:	Name:	Position/Title:	Signature: _____
ICS 203	**IAP Page**	Date/Time: Date	

ICS 203
Organization Assignment List

Purpose. The Organization Assignment List (ICS 203) provides ICS personnel with information on the units that are currently activated and the names of personnel staffing each position/unit. It is used to complete the Incident Organization Chart (ICS 207) which is posted on the Incident Command Post display. An actual organization will be incident or event-specific. **Not all positions need to be filled.** Some blocks may contain more than one name. The size of the organization is dependent on the magnitude of the incident, and can be expanded or contracted as necessary.

Preparation. The Resources Unit prepares and maintains this list under the direction of the Planning Section Chief. Complete only the blocks for the positions that are being used for the incident. If a trainee is assigned to a position, indicate this with a "T" in parentheses behind the name (e.g., "A. Smith (T)").

Distribution. The ICS 203 is duplicated and attached to the Incident Objectives (ICS 202) and given to all recipients as part of the Incident Action Plan (IAP). All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 203 serves as part of the IAP.
- If needed, more than one name can be put in each block by inserting a slash.
- If additional pages are needed, use a blank ICS 203 and repaginate as needed.
- ICS allows for organizational flexibility, so the Intelligence/Investigations Function can be embedded in several different places within the organizational structure.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Incident Commander(s) and Command Staff** • IC/UCs • Deputy • Safety Officer • Public Information Officer • Liaison Officer	Enter the names of the Incident Commander(s) and Command Staff. Label Assistants to Command Staff as such (for example, "Assistant Safety Officer"). For all individuals, use at least the first initial and last name. For Unified Command, also include agency names.
4	**Agency/Organization Representatives** • Agency/Organization • Name	Enter the agency/organization names and the names of their representatives. For all individuals, use at least the first initial and last name.
5	**Planning Section** • Chief • Deputy • Resources Unit • Situation Unit • Documentation Unit • Demobilization Unit • Technical Specialists	Enter the name of the Planning Section Chief, Deputy, and Unit Leaders after each position title. List Technical Specialists with an indication of specialty. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.

Block Number	Block Title	Instructions
6	**Logistics Section** • Chief • Deputy **Support Branch** • Director • Supply Unit • Facilities Unit • Ground Support Unit **Service Branch** • Director • Communications Unit • Medical Unit • Food Unit	Enter the name of the Logistics Section Chief, Deputy, Branch Directors, and Unit Leaders after each position title. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.
7	**Operations Section** • Chief • Deputy • Staging Area **Branch** • Branch Director • Deputy • Division/Group **Air Operations Branch** • Air Operations Branch Director	Enter the name of the Operations Section Chief, Deputy, Branch Director(s), Deputies, and personnel staffing each of the listed positions. For Divisions/Groups, enter the Division/Group identifier in the left column and the individual's name in the right column. Branches and Divisions/Groups may be named for functionality or by geography. For Divisions/Groups, indicate Division/Group Supervisor. Use an additional page if more than three Branches are activated. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.
8	**Finance/Administration Section** • Chief • Deputy • Time Unit • Procurement Unit • Compensation/Claims Unit • Cost Unit	Enter the name of the Finance/Administration Section Chief, Deputy, and Unit Leaders after each position title. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.
9	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

ASSIGNMENT LIST (ICS 204)

1. Incident Name:	2. Operational Period: Date From: Date Date To: Date Time From: HHMM Time To: HHMM	3. Branch: Division: Group: Staging Area:

4. Operations Personnel:

	Name	Contact Number(s)
Operations Section Chief:		XXX-XXX-XXXX
Branch Director:		XXX-XXX-XXXX
Division/Group Supervisor:		XXX-XXX-XXXX

5. Resources Assigned:

Resource Identifier	Leader	# of Persons	Contact (e.g., phone, pager, radio frequency, etc.)	Reporting Location, Special Equipment and Supplies, Remarks, Notes, Information

6. Work Assignments:

7. Special Instructions:

8. Communications (radio and/or phone contact numbers needed for this assignment)**:**

Name	/Function	Primary Contact: indicate cell, pager, or radio (frequency/system/channel)
	/	
	/	
	/	
	/	

9. Prepared by: Name: Position/Title: Signature: _____

ICS 204	IAP Page	Date/Time: Date

ICS 204
Assignment List

Purpose. The Assignment List(s) (ICS 204) informs Division and Group supervisors of incident assignments. Once the Command and General Staffs agree to the assignments, the assignment information is given to the appropriate Divisions and Groups.

Preparation. The ICS 204 is normally prepared by the Resources Unit, using guidance from the Incident Objectives (ICS 202), Operational Planning Worksheet (ICS 215), and the Operations Section Chief. It must be approved by the Incident Commander, but may be reviewed and initialed by the Planning Section Chief and Operations Section Chief as well.

Distribution. The ICS 204 is duplicated and attached to the ICS 202 and given to all recipients as part of the Incident Action Plan (IAP). In some cases, assignments may be communicated via radio/telephone/fax. All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 204 details assignments at Division and Group levels and is part of the IAP.
- Multiple pages/copies can be used if needed.
- If additional pages are needed, use a blank ICS 204 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Branch** **Division** **Group** **Staging Area**	This block is for use in a large IAP for reference only. Write the alphanumeric abbreviation for the Branch, Division, Group, and Staging Area (e.g., "Branch 1," "Division D," "Group 1A") in large letters for easy referencing.
4	**Operations Personnel** • Name, Contact Number(s) – Operations Section Chief – Branch Director – Division/Group Supervisor	Enter the name and contact numbers of the Operations Section Chief, applicable Branch Director(s), and Division/Group Supervisor(s).
5	**Resources Assigned**	Enter the following information about the resources assigned to the Division or Group for this period:
	• Resource Identifier	The identifier is a unique way to identify a resource (e.g., ENG-13, IA-SCC-413). If the resource has been ordered but no identification has been received, use TBD (to be determined).
	• Leader	Enter resource leader's name.
	• # of Persons	Enter total number of persons for the resource assigned, including the leader.
	• Contact (e.g., phone, pager, radio frequency, etc.)	Enter primary means of contacting the leader or contact person (e.g., radio, phone, pager, etc.). Be sure to include the area code when listing a phone number.
5 (continued)	• Reporting Location, Special Equipment and Supplies, Remarks, Notes, Information	Provide special notes or directions specific to this resource. If required, add notes to indicate: (1) specific location/time where the resource should report or be dropped off/picked up; (2) special equipment and supplies that will be used or needed; (3) whether or not the resource received briefings; (4) transportation needs; or (5) other information.

Block Number	Block Title	Instructions
6	**Work Assignments**	Provide a statement of the tactical objectives to be achieved within the operational period by personnel assigned to this Division or Group.
7	**Special Instructions**	Enter a statement noting any safety problems, specific precautions to be exercised, dropoff or pickup points, or other important information.
8	**Communications** (radio and/or phone contact numbers needed for this assignment) • Name/Function • Primary Contact: indicate cell, pager, or radio (frequency/system/channel)	Enter specific communications information (including emergency numbers) for this Branch/Division/Group. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics. In light of potential IAP distribution, use sensitivity when including cell phone number. Add a secondary contact (phone number or radio) if needed.
9	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

INCIDENT RADIO COMMUNICATIONS PLAN (ICS 205)

1. Incident Name:	**2. Date/Time Prepared:** Date: Date Time: HHMM	**3. Operational Period:** Date From: Date Date To: Date Time From: HHMM Time To: HHMM

4. Basic Radio Channel Use:

Zone Grp.	Ch #	Function	Channel Name/Trunked Radio System Talkgroup	Assignment	RX Freq N or W	RX Tone/NAC	TX Freq N or W	TX Tone/NAC	Mode (A, D, or M)	Remarks

5. Special Instructions:

6. Prepared by (Communications Unit Leader)**:** Name: Signature: _____

ICS 205	**IAP Page**	Date/Time: Date

ICS 205
Incident Radio Communications Plan

Purpose. The Incident Radio Communications Plan (ICS 205) provides information on all radio frequency or trunked radio system talkgroup assignments for each operational period. The plan is a summary of information obtained about available radio frequencies or talkgroups and the assignments of those resources by the Communications Unit Leader for use by incident responders. Information from the Incident Radio Communications Plan on frequency or talkgroup assignments is normally placed on the Assignment List (ICS 204).

Preparation. The ICS 205 is prepared by the Communications Unit Leader and given to the Planning Section Chief for inclusion in the Incident Action Plan.

Distribution. The ICS 205 is duplicated and attached to the Incident Objectives (ICS 202) and given to all recipients as part of the Incident Action Plan (IAP). All completed original forms must be given to the Documentation Unit. Information from the ICS 205 is placed on Assignment Lists.

Notes:

- The ICS 205 is used to provide, in one location, information on all radio frequency assignments down to the Division/Group level for each operational period.
- The ICS 205 serves as part of the IAP.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Date/Time Prepared**	Enter date prepared (month/day/year) and time prepared (using the 24-hour clock).
3	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
4	**Basic Radio Channel Use**	Enter the following information about radio channel use:
	Zone Group	
	Channel Number	Use at the Communications Unit Leader's discretion. Channel Number (Ch #) may equate to the channel number for incident radios that are programmed or cloned for a specific Communications Plan, or it may be used just as a reference line number on the ICS 205 document.
	Function	Enter the Net function each channel or talkgroup will be used for (Command, Tactical, Ground-to-Air, Air-to-Air, Support, Dispatch).
	Channel Name/Trunked Radio System Talkgroup	Enter the nomenclature or commonly used name for the channel or talk group such as the National Interoperability Channels which follow DHS frequency Field Operations Guide (FOG).
	Assignment	Enter the name of the ICS Branch/Division/Group/Section to which this channel/talkgroup will be assigned.
	RX (Receive) Frequency (N or W)	Enter the Receive Frequency (RX Freq) as the mobile or portable subscriber would be programmed using xxx.xxxx out to four decimal places, followed by an "N" designating narrowband or a "W" designating wideband emissions. The name of the specific trunked radio system with which the talkgroup is associated may be entered across all fields on the ICS 205 normally used for conventional channel programming information.
	RX Tone/NAC	Enter the Receive Continuous Tone Coded Squelch System (CTCSS) subaudible tone (RX Tone) or Network Access Code (RX NAC) for the receive frequency as the mobile or portable subscriber would be programmed.

Block Number	Block Title	Instructions
4 (continued)	TX (Transmit) Frequency (N or W)	Enter the Transmit Frequency (TX Freq) as the mobile or portable subscriber would be programmed using xxx.xxxx out to four decimal places, followed by an "N" designating narrowband or a "W" designating wideband emissions.
	TX Tone/NAC	Enter the Transmit Continuous Tone Coded Squelch System (CTCSS) subaudible tone (TX Tone) or Network Access Code (TX NAC) for the transmit frequency as the mobile or portable subscriber would be programmed.
	Mode (A, D, or M)	Enter "A" for analog operation, "D" for digital operation, or "M" for mixed mode operation.
	Remarks	Enter miscellaneous information concerning repeater locations, information concerning patched channels or talkgroups using links or gateways, etc.
5	**Special Instructions**	Enter any special instructions (e.g., using cross-band repeaters, secure-voice, encoders, private line (PL) tones, etc.) or other emergency communications needs). If needed, also include any special instructions for handling an incident within an incident.
6	**Prepared by** (Communications Unit Leader) • Name • Signature • Date/Time	Enter the name and signature of the person preparing the form, typically the Communications Unit Leader. Enter date (month/day/year) and time prepared (24-hour clock).

MEDICAL PLAN (ICS 206)

1. Incident Name:	**2. Operational Period:**	Date From: Date	Date To: Date
		Time From: HHMM	Time To: HHMM

3. Medical Aid Stations:

Name	Location	Contact Number(s)/Frequency	Paramedics on Site?
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No

4. Transportation (indicate air or ground)**:**

Ambulance Service	Location	Contact Number(s)/Frequency	Level of Service
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS

5. Hospitals:

Hospital Name	Address, Latitude & Longitude if Helipad	Contact Number(s)/ Frequency	Travel Time		Trauma Center	Burn Center	Helipad
			Air	Ground			
					☐ Yes Level: ____	☐ Yes ☐ No	☐ Yes ☐ No
					☐Yes Level: ____	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level: ____	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level: ____	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level:	☐ Yes ☐ No	☐ Yes ☐ No

6. Special Medical Emergency Procedures:

☐ Check box if aviation assets are utilized for rescue. If assets are used, coordinate with Air Operations.

7. Prepared by (Medical Unit Leader)**:** Name: Signature: _____

8. Approved by (Safety Officer)**:** Name: Signature: _____

ICS 206	**IAP Page**	Date/Time: Date

ICS 206
Medical Plan

Purpose. The Medical Plan (ICS 206) provides information on incident medical aid stations, transportation services, hospitals, and medical emergency procedures.

Preparation. The ICS 206 is prepared by the Medical Unit Leader and reviewed by the Safety Officer to ensure ICS coordination. If aviation assets are utilized for rescue, coordinate with Air Operations.

Distribution. The ICS 206 is duplicated and attached to the Incident Objectives (ICS 202) and given to all recipients as part of the Incident Action Plan (IAP). Information from the plan pertaining to incident medical aid stations and medical emergency procedures may be noted on the Assignment List (ICS 204). All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 206 serves as part of the IAP.
- This form can include multiple pages.

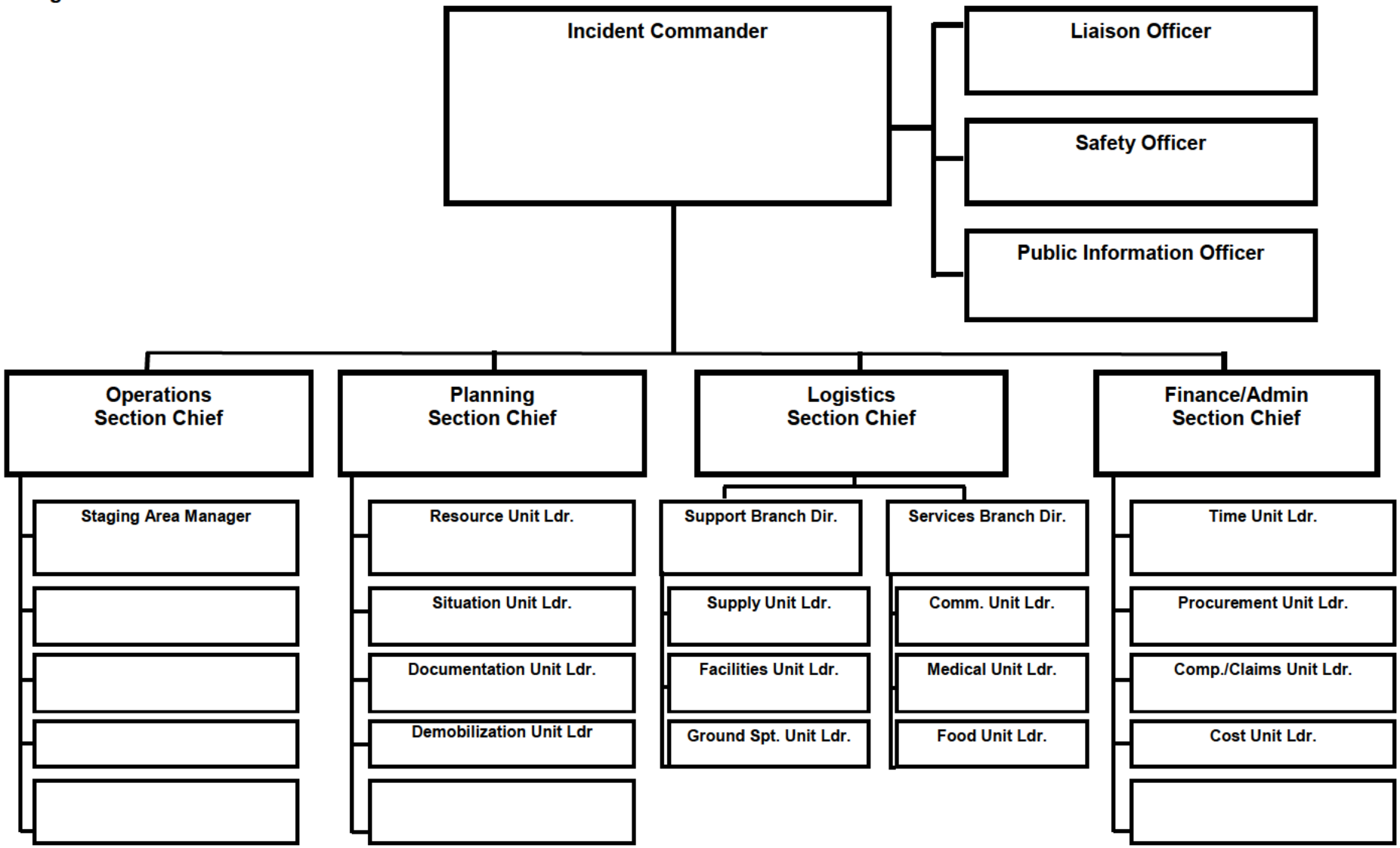
Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Medical Aid Stations**	Enter the following information on the incident medical aid station(s):
	• Name	Enter name of the medical aid station.
	• Location	Enter the location of the medical aid station (e.g., Staging Area, Camp Ground).
	• Contact Number(s)/Frequency	Enter the contact number(s) and frequency for the medical aid station(s).
	• Paramedics on Site? ☐ Yes ☐ No	Indicate (yes or no) if paramedics are at the site indicated.
4	**Transportation** (indicate air or ground)	Enter the following information for ambulance services available to the incident:
	• Ambulance Service	Enter name of ambulance service.
	• Location	Enter the location of the ambulance service.
	• Contact Number(s)/Frequency	Enter the contact number(s) and frequency for the ambulance service.
	• Level of Service ☐ ALS ☐ BLS	Indicate the level of service available for each ambulance, either ALS (Advanced Life Support) or BLS (Basic Life Support).

Block Number	Block Title	Instructions
5	**Hospitals**	Enter the following information for hospital(s) that could serve this incident:
	• Hospital Name	Enter hospital name and identify any predesignated medivac aircraft by name a frequency.
	• Address, Latitude & Longitude if Helipad	Enter the physical address of the hospital and the latitude and longitude if the hospital has a helipad.
	• Contact Number(s)/ Frequency	Enter the contact number(s) and/or communications frequency(s) for the hospital.
	• Travel Time • Air • Ground	Enter the travel time by air and ground from the incident to the hospital.
	• Trauma Center ☐ Yes Level:_____	Indicate yes and the trauma level if the hospital has a trauma center.
	• Burn Center ☐ Yes ☐ No	Indicate (yes or no) if the hospital has a burn center.
	• Helipad ☐ Yes ☐ No	Indicate (yes or no) if the hospital has a helipad. Latitude and Longitude data format need to compliment Medical Evacuation Helicopters and Medical Air Resources
6	**Special Medical Emergency Procedures**	Note any special emergency instructions for use by incident personnel, including (1) who should be contacted, (2) how should they be contacted; and (3) who manages an incident within an incident due to a rescue, accident, etc. Include procedures for how to report medical emergencies.
	☐ Check box if aviation assets are utilized for rescue. If assets are used, coordinate with Air Operations.	Self explanatory. Incident assigned aviation assets should be included in ICS 220.
7	**Prepared by** (Medical Unit Leader) • Name • Signature	Enter the name and signature of the person preparing the form, typically the Medical Unit Leader. Enter date (month/day/year) and time prepared (24-hour clock).
8	**Approved by** (Safety Officer) • Name • Signature • Date/Time	Enter the name of the person who approved the plan, typically the Safety Officer. Enter date (month/day/year) and time reviewed (24-hour clock).

INCIDENT ORGANIZATION CHART (ICS 207)

1. Incident Name:	2. Operational Period: Date From: Date Time From: HHMM	Date To: Date Time To: HHMM

3. Organization Chart



ICS 207	IAP Page	4. Prepared by: Name:	Position/Title:	Signature: _____	Date/Time:

ICS 207
Incident Organization Chart

Purpose. The Incident Organization Chart (ICS 207) provides a **visual wall chart** depicting the ICS organization position assignments for the incident. The ICS 207 is used to indicate what ICS organizational elements are currently activated and the names of personnel staffing each element. An actual organization will be event-specific. The size of the organization is dependent on the specifics and magnitude of the incident and is scalable and flexible. Personnel responsible for managing organizational positions are listed in each box as appropriate.

Preparation. The ICS 207 is prepared by the Resources Unit Leader and reviewed by the Incident Commander. Complete only the blocks where positions have been activated, and add additional blocks as needed, especially for Agency Representatives and all Operations Section organizational elements. For detailed information about positions, consult the NIMS ICS Field Operations Guide. The ICS 207 is intended to be used as a wall-size chart and printed on a plotter for better visibility. A chart is completed for each operational period, and updated when organizational changes occur.

Distribution. The ICS 207 is intended to be **wall mounted** at Incident Command Posts and other incident locations as needed, and is not intended to be part of the Incident Action Plan (IAP). All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 207 is intended to be **wall mounted** (printed on a plotter). Document size can be modified based on individual needs.
- Also available as 8½ x 14 (legal size) chart.
- ICS allows for organizational flexibility, so the Intelligence/Investigative Function can be embedded in several different places within the organizational structure.
- Use additional pages if more than three branches are activated. Additional pages can be added based on individual need (such as to distinguish more Division/Groups and Branches as they are activated).

Block Number	Block Title	Instructions
1	**Incident Name**	Print the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Organization Chart**	• Complete the incident organization chart. • For all individuals, use at least the first initial and last name. • List agency where it is appropriate, such as for Unified Commanders. • If there is a shift change during the specified operational period, list both names, separated by a slash.
4	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

SAFETY MESSAGE/PLAN (ICS 208)

1. Incident Name:	2. Operational Period:	Date From: Date	Date To: Date
		Time From: HHMM	Time To: HHMM

3. Safety Message/Expanded Safety Message, Safety Plan, Site Safety Plan:

4. Site Safety Plan Required? Yes ☐ No ☐

Approved Site Safety Plan(s) Located At:

5. Prepared by:	Name:	Position/Title:	Signature: _____
ICS 208	IAP Page	Date/Time: Date	

ICS 208
Safety Message/Plan

Purpose. The Safety Message/Plan (ICS 208) expands on the Safety Message and Site Safety Plan.

Preparation. The ICS 208 is an optional form that may be included and completed by the Safety Officer for the Incident Action Plan (IAP).

Distribution. The ICS 208, if developed, will be reproduced with the IAP and given to all recipients as part of the IAP. All completed original forms must be given to the Documentation Unit.

Notes:
- The ICS 208 may serve (optionally) as part of the IAP.
- Use additional copies for continuation sheets as needed, and indicate pagination as used.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Safety Message/Expanded Safety Message, Safety Plan, Site Safety Plan**	Enter clear, concise statements for safety message(s), priorities, and key command emphasis/decisions/directions. Enter information such as known safety hazards and specific precautions to be observed during this operational period. If needed, additional safety message(s) should be referenced and attached.
4	**Site Safety Plan Required?** Yes ☐ No ☐	Check whether or not a site safety plan is required for this incident.
	Approved Site Safety Plan(s) Located At	Enter where the approved Site Safety Plan(s) is located.
5	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

RESOURCE STATUS CHANGE (ICS 210)

1. Incident Name:	**2. Operational Period:**	Date From: Date Time From: HHMM	Date To: Date Time To: HHMM

3. Resource Number	**4. New Status** (Available, Assigned, O/S)	**5. From** (Assignment and Status)**:**	**6. To** (Assignment and Status)**:**	**7. Time and Date of Change:**	

8. Comments:

9. Prepared by: Name: Position/Title: Signature: _____

ICS 210 Date/Time: Date

ICS 210
Resource Status Change

Purpose. The Resource Status Change (ICS 210) is used by the Incident Communications Center Manager to record status change information received on resources assigned to the incident. This information could be transmitted with a General Message (ICS 213). The form could also be used by Operations as a worksheet to track entry, etc.

Preparation. The ICS 210 is completed by radio/telephone operators who receive status change information from individual resources, Task Forces, Strike Teams, and Division/Group Supervisors. Status information could also be reported by Staging Area and Helibase Managers and fixed-wing facilities.

Distribution. The ICS 210 is maintained by the Communications Unit and copied to Resources Unit and filed by Documentation Unit.

Notes:

- The ICS 210 is essentially a message form that can be used to update Resource Status Cards or T-Cards (ICS 219) for incident-level resource management.
- If additional pages are needed, use a blank ICS 210 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Resource Number**	Enter the resource identification (ID) number (this may be a letter and number combination) assigned by either the sending unit or the incident.
4	**New Status** (Available, Assigned, Out of Service)	Indicate the current status of the resource: • Available – Indicates resource is available for incident use immediately. • Assigned – Indicates resource is checked in and assigned a work task on the incident. • Out of Service – Indicates resource is assigned to the incident but unable to respond for mechanical, rest, or personnel reasons. If space permits, indicate the estimated time of return (ETR). It may be useful to indicate the reason a resource is out of service (e.g., "O/S – Mech" (for mechanical issues), "O/S – Rest" (for off shift), or "O/S – Pers" (for personnel issues).
5	**From** (Assignment and Status)	Indicate the current location of the resource (where it came from) and the status. When more than one Division, Staging Area, or Camp is used, identify the specific location (e.g., Division A, Staging Area, Incident Command Post, Western Camp).
6	**To** (Assignment and Status)	Indicate the assigned incident location of the resource and status. When more than one Division, Staging Area, or Camp is used, identify the specific location.
7	**Time and Date of Change**	Enter the time and location of the status change (24-hour clock). Enter the date as well if relevant (e.g., out of service).
8	**Comments**	Enter any special information provided by the resource or dispatch center. This may include details about why a resource is out of service, or individual identifying designators (IDs) of Strike Teams and Task Forces.
9	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

INCIDENT CHECK-IN LIST (ICS 211)

1. Incident Name:	2. Incident Number:	3. Check-In Location (complete all that apply):	4. Start Date/Time:
		☐ Base ☐ Staging Area ☐ ICP ☐ Helibase ☐ Other	Date: Date Time: HHMM

Check-In Information (use reverse of form for remarks or comments)

5. List single resource personnel (overhead) by agency and name, OR list resources by the following format:							6. Order Request #	7. Date/Time Check-In	8. Leader's Name	9. Total Number of Personnel	10. Incident Contact Information	11. Home Unit or Agency	12. Departure Point, Date and Time	13. Method of Travel	14. Incident Assignment	15. Other Qualifications	16. Data Provided to Resources Unit
State	Agency	Category	Kind	Type	Resource Name or Identifier	ST or TF											

ICS 211	17. Prepared by:	Name:	Position/Title:	Signature: _____	Date/Time:

ICS 211
Incident Check-In List

Purpose. Personnel and equipment arriving at the incident can check in at various incident locations. Check-in consists of reporting specific information, which is recorded on the Check-In List (ICS 211). The ICS 211 serves several purposes, as it: (1) records arrival times at the incident of all overhead personnel and equipment, (2) records the initial location of personnel and equipment to facilitate subsequent assignments, and (3) supports demobilization by recording the home base, method of travel, etc., for resources checked in.

Preparation. The ICS 211 is initiated at a number of incident locations including: Staging Areas, Base, and Incident Command Post (ICP). Preparation may be completed by: (1) overhead at these locations, who record the information and give it to the Resources Unit as soon as possible, (2) the Incident Communications Center Manager located in the Communications Center, who records the information and gives it to the Resources Unit as soon as possible, (3) a recorder from the Resources Unit during check-in to the ICP. As an option, the ICS 211 can be printed on colored paper to match the designated Resource Status Card (ICS 219) colors. The purpose of this is to aid the process of completing a large volume of ICS 219s. The ICS 219 colors are:

- 219-1: Header Card – Gray (used only as label cards for T-Card racks)
- 219-2: Crew/Team Card – Green
- 219-3: Engine Card – Rose
- 219-4: Helicopter Card – Blue
- 219-5: Personnel Card – White
- 219-6: Fixed-Wing Card – Orange
- 219-7: Equipment Card – Yellow
- 219-8: Miscellaneous Equipment/Task Force Card – Tan
- 219-10: Generic Card – Light Purple

Distribution. ICS 211s, which are completed by personnel at the various check-in locations, are provided to the Resources Unit, Demobilization Unit, and Finance/Administration Section. The Resources Unit maintains a master list of all equipment and personnel that have reported to the incident.

Notes:

- Also available as 8½ x 14 (legal size) or 11 x 17 chart.
- Use reverse side of form for remarks or comments.
- If additional pages are needed for any form page, use a blank ICS 211 and repaginate as needed.
- Contact information for sender and receiver can be added for communications purposes to confirm resource orders. Refer to 213RR example (Appendix B)

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Check-In Location** ☐ Base ☐ Staging Area ☐ ICP ☐ Helibase ☐ Other	Check appropriate box and enter the check-in location for the incident. Indicate specific information regarding the locations under each checkbox. ICP is for Incident Command Post. Other may include…
4	**Start Date/Time** • Date • Time	Enter the date (month/day/year) and time (using the 24-hour clock) that the form was started.

Block Number	Block Title	Instructions
	Check-In Information	Self explanatory.
5	**List single resource personnel (overhead) by agency and name, OR list resources by the following format**	Enter the following information for resources: OPTIONAL: Indicate if resource is a single resource versus part of Strike Team or Task Force. Fields can be left blank if not necessary.
	• State	Use this section to list the home State for the resource.
	• Agency	Use this section to list agency name (or designator), and individual names for all single resource personnel (e.g., ORC, ARL, NYPD).
	• Category	Use this section to list the resource category based on NIMS, discipline, or jurisdiction guidance.
	• Kind	Use this section to list the resource kind based on NIMS, discipline, or jurisdiction guidance.
	• Type	Use this section to list the resource type based on NIMS, discipline, or jurisdiction guidance.
	• Resource Name or Identifier	Use this section to enter the resource name or unique identifier. If it is a Strike Team or a Task Force, list the unique Strike Team or Task Force identifier (if used) on a single line with the component resources of the Strike Team or Task Force listed on the following lines. For example, for an Engine Strike Team with the call sign "XLT459" show "XLT459" in this box and then in the next five rows, list the unique identifier for the five engines assigned to the Strike Team.
	• ST or TF	Use ST or TF to indicate whether the resource is part of a Strike Team or Task Force. See above for additional instructions.
6	**Order Request #**	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline, since several incident numbers may be used for the same incident.
7	**Date/Time Check-In**	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
8	**Leader's Name**	• For equipment, enter the operator's name. • Enter the Strike Team or Task Force leader's name. • Leave blank for single resource personnel (overhead).
9	**Total Number of Personnel**	Enter total number of personnel associated with the resource. Include leaders.
10	**Incident Contact Information**	Enter available contact information (e.g., radio frequency, cell phone number, etc.) for the incident.
11	**Home Unit or Agency**	Enter the home unit or agency to which the resource or individual is normally assigned (may not be departure location).
12	**Departure Point, Date and Time**	Enter the location from which the resource or individual departed for this incident. Enter the departure time using the 24-hour clock.
13	**Method of Travel**	Enter the means of travel the individual used to bring himself/herself to the incident (e.g., bus, truck, engine, personal vehicle, etc.).
14	**Incident Assignment**	Enter the incident assignment at time of dispatch.
15	**Other Qualifications**	Enter additional duties (ICS positions) pertinent to the incident that the resource/individual is qualified to perform. Note that resources should not be reassigned on the incident without going through the established ordering process. This data may be useful when resources are demobilized and remobilized for another incident.

Block Number	Block Title	Instructions
16	**Data Provided to Resources Unit**	Enter the date and time that the information pertaining to that entry was transmitted to the Resources Unit, and the initials of the person who transmitted the information.
17	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

GENERAL MESSAGE (ICS 213)

1. Incident Name (Optional)**:**		
2. To (Name and Position)**:**		
3. From (Name and Position)**:**		
4. Subject:	**5. Date:** Date	**6. Time** HHMM
7. Message:		
8. Approved by: Name:	Signature: _____	Position/Title:
9. Reply:		
10. Replied by: Name:	Position/Title:	Signature: _____
ICS 213	Date/Time: Date	

ICS 213
General Message

Purpose. The General Message (ICS 213) is used by the incident dispatchers to record incoming messages that cannot be orally transmitted to the intended recipients. The ICS 213 is also used by the Incident Command Post and other incident personnel to transmit messages (e.g., resource order, incident name change, other ICS coordination issues, etc.) to the Incident Communications Center for transmission via radio or telephone to the addressee. This form is used to send any message or notification to incident personnel that requires hard-copy delivery.

Preparation. The ICS 213 may be initiated by incident dispatchers and any other personnel on an incident.

Distribution. Upon completion, the ICS 213 may be delivered to the addressee and/or delivered to the Incident Communication Center for transmission.

Notes:

- The ICS 213 is a three-part form, typically using carbon paper. The sender will complete Part 1 of the form and send Parts 2 and 3 to the recipient. The recipient will complete Part 2 and return Part 3 to the sender.
- A copy of the ICS 213 should be sent to and maintained within the Documentation Unit.
- Contact information for the sender and receiver can be added for communications purposes to confirm resource orders. Refer to 213RR example (Appendix B)

Block Number	Block Title	Instructions
1	**Incident Name** (Optional)	Enter the name assigned to the incident. This block is optional.
2	**To** (Name and Position)	Enter the name and position the General Message is intended for. For all individuals, use at least the first initial and last name. For Unified Command, include agency names.
3	**From** (Name and Position)	Enter the name and position of the individual sending the General Message. For all individuals, use at least the first initial and last name. For Unified Command, include agency names.
4	**Subject**	Enter the subject of the message.
5	**Date**	Enter the date (month/day/year) of the message.
6	**Time**	Enter the time (using the 24-hour clock) of the message.
7	**Message**	Enter the content of the message. Try to be as concise as possible.
8	**Approved by** • Name • Signature • Position/Title	Enter the name, signature, and ICS position/title of the person approving the message.
9	**Reply**	The intended recipient will enter a reply to the message and return it to the originator.
10	**Replied by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person replying to the message. Enter date (month/day/year) and time prepared (24-hour clock).

ACTIVITY LOG (ICS 214)

1. Incident Name:	**2. Operational Period:** Date From: Date Time From: HHMM	Date To: Date Time To: HHMM
3. Name:	**4. ICS Position:**	**5. Home Agency** (and Unit)**:**

6. Resources Assigned:

Name	ICS Position	Home Agency (and Unit)

7. Activity Log:

Date/Time	Notable Activities

8. Prepared by: Name: Position/Title: Signature: _____

ICS 214, Page 1 Date/Time: Date

ACTIVITY LOG (ICS 214)

1. Incident Name:	2. Operational Period: Date From: Date Date To: Date Time From: HHMM Time To: HHMM

7. Activity Log (continuation)**:**

Date/Time	Notable Activities

8. Prepared by: Name:	Position/Title:	Signature: ___________________
ICS 214, Page 2	Date/Time: Date	

ICS 214
Activity Log

Purpose. The Activity Log (ICS 214) records details of notable activities at any ICS level, including single resources, equipment, Task Forces, etc. These logs provide basic incident activity documentation, and a reference for any after-action report.

Preparation. An ICS 214 can be initiated and maintained by personnel in various ICS positions as it is needed or appropriate. Personnel should document how relevant incident activities are occurring and progressing, or any notable events or communications.

Distribution. Completed ICS 214s are submitted to supervisors, who forward them to the Documentation Unit. All completed original forms must be given to the Documentation Unit, which maintains a file of all ICS 214s. It is recommended that individuals retain a copy for their own records.

Notes:

- The ICS 214 can be printed as a two-sided form.
- Use additional copies as continuation sheets as needed, and indicate pagination as used.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Name**	Enter the title of the organizational unit or resource designator (e.g., Facilities Unit, Safety Officer, Strike Team).
4	**ICS Position**	Enter the name and ICS position of the individual in charge of the Unit.
5	**Home Agency** (and Unit)	Enter the home agency of the individual completing the ICS 214. Enter a unit designator if utilized by the jurisdiction or discipline.
6	**Resources Assigned**	Enter the following information for resources assigned:
	• Name	Use this section to enter the resource's name. For all individuals, use at least the first initial and last name. Cell phone number for the individual can be added as an option.
	• ICS Position	Use this section to enter the resource's ICS position (e.g., Finance Section Chief).
	• Home Agency (and Unit)	Use this section to enter the resource's home agency and/or unit (e.g., Des Moines Public Works Department, Water Management Unit).
7	**Activity Log** • Date/Time • Notable Activities	• Enter the time (24-hour clock) and briefly describe individual notable activities. Note the date as well if the operational period covers more than one day. • Activities described may include notable occurrences or events such as task assignments, task completions, injuries, difficulties encountered, etc. • This block can also be used to track personal work habits by adding columns such as "Action Required," "Delegated To," "Status," etc.
8	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

OPERATIONAL PLANNING WORKSHEET (ICS 215)

1. Incident Name:

2. Operational Period: Date From: Date Date To: Date
Time From: HHMM Time To: HHMM

3. Branch	4. Division, Group, or Other	5. Work Assignment & Special Instructions	6. Resources													7. Overhead Position(s)	8. Special Equipment & Supplies	9. Reporting Location	10. Requested Arrival Time
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
		11. Total Resources Required															**14. Prepared by:**		
		12. Total Resources Have on Hand															Name:		
																	Position/Title:		
		13. Total Resources Need To Order															Signature:		
ICS 215																	Date/Time: Date		

ICS 215
Operational Planning Worksheet

Purpose. The Operational Planning Worksheet (ICS 215) communicates the decisions made by the Operations Section Chief during the Tactics Meeting concerning resource assignments and needs for the next operational period. The ICS 215 is used by the Resources Unit to complete the Assignment Lists (ICS 204) and by the Logistics Section Chief for ordering resources for the incident.

Preparation. The ICS 215 is initiated by the Operations Section Chief and often involves logistics personnel, the Resources Unit, and the Safety Officer. The form is shared with the rest of the Command and General Staffs during the Planning Meeting. It may be useful in some disciplines or jurisdictions to prefill ICS 215 copies prior to incidents.

Distribution. When the Branch, Division, or Group work assignments and accompanying resource allocations are agreed upon, the form is distributed to the Resources Unit to assist in the preparation of the ICS 204. The Logistics Section will use a copy of this worksheet for preparing requests for resources required for the next operational period.

Notes:

- This worksheet can be made into a wall mount.
- Also available as 8½ x 14 (legal size) and 11 x 17 chart.
- If additional pages are needed, use a blank ICS 215 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Branch**	Enter the Branch of the work assignment for the resources.
4	**Division, Group, or Other**	Enter the Division, Group, or other location (e.g., Staging Area) of the work assignment for the resources.
5	**Work Assignment & Special Instructions**	Enter the specific work assignments given to each of the Divisions/Groups and any special instructions, as required.
6	**Resources**	Complete resource headings for category, kind, and type as appropriate for the incident. The use of a slash indicates a single resource in the upper portion of the slash and a Strike Team or Task Force in the bottom portion of the slash.
	• Required	Enter, for the appropriate resources, the number of resources by type (engine, squad car, Advanced Life Support ambulance, etc.) required to perform the work assignment.
	• Have	Enter, for the appropriate resources, the number of resources by type (engines, crew, etc.) available to perform the work assignment.
	• Need	Enter the number of resources needed by subtracting the number in the "Have" row from the number in the "Required" row.
7	**Overhead Position(s)**	List any supervisory and nonsupervisory ICS position(s) not directly assigned to a previously identified resource (e.g., Division/Group Supervisor, Assistant Safety Officer, Technical Specialist, etc.).
8	**Special Equipment & Supplies**	List special equipment and supplies, including aviation support, used or needed. This may be a useful place to monitor span of control.
9	**Reporting Location**	Enter the specific location where the resources are to report (Staging Area, location at incident, etc.).
10	**Requested Arrival Time**	Enter the time (24-hour clock) that resources are requested to arrive at the reporting location.

Block Number	Block Title	Instructions
11	**Total Resources Required**	Enter the total number of resources required by category/kind/type as preferred (e.g., engine, squad car, ALS ambulance, etc.). A slash can be used again to indicate total single resources in the upper portion of the slash and total Strike Teams/ Task Forces in the bottom portion of the slash.
12	**Total Resources Have on Hand**	Enter the total number of resources on hand that are assigned to the incident for incident use. A slash can be used again to indicate total single resources in the upper portion of the slash and total Strike Teams/Task Forces in the bottom portion of the slash.
13	**Total Resources Need To Order**	Enter the total number of resources needed. A slash can be used again to indicate total single resources in the upper portion of the slash and total Strike Teams/Task Forces in the bottom portion of the slash.
14	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

SUPPORT VEHICLE/EQUIPMENT INVENTORY (ICS 218)

1. Incident Name:	2. Incident Number:	3. Date/Time Prepared: Date: Date Time: HHMM	4. Vehicle/Equipment Category:

5. Vehicle/Equipment Information

Order Request Number	Incident ID No.	Vehicle or Equipment Classification	Vehicle or Equipment Make	Category/ Kind/Type, Capacity, or Size	Vehicle or Equipment Features	Agency or Owner	Operator Name or Contact	Vehicle License or ID No.	Incident Assignment	Incident Start Date and Time	Incident Release Date and Time

ICS 218	6. Prepared by: Name: Position/Title: Signature: _____

ICS 218
Support Vehicle/Equipment Inventory

Purpose. The Support Vehicle/Equipment Inventory (ICS 218) provides an inventory of all transportation and support vehicles and equipment assigned to the incident. The information is used by the Ground Support Unit to maintain a record of the types and locations of vehicles and equipment on the incident. The Resources Unit uses the information to initiate and maintain status/resource information.

Preparation. The ICS 218 is prepared by Ground Support Unit personnel at intervals specified by the Ground Support Unit Leader.

Distribution. Initial inventory information recorded on the form should be given to the Resources Unit. Subsequent changes to the status or location of transportation and support vehicles and equipment should be provided to the Resources Unit immediately.

Notes:

- If additional pages are needed, use a blank ICS 218 and repaginate as needed.
- Also available as 8½ x 14 (legal size) and 11 x 17 chart.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Date/Time Prepared**	Enter the date (month/day/year) and time (using the 24-hour clock) the form is prepared.
4	**Vehicle/Equipment Category**	Enter the specific vehicle or equipment category (e.g., buses, generators, dozers, pickups/sedans, rental cars, etc.). Use a separate sheet for each vehicle or equipment category.
5	**Vehicle/Equipment Information**	Record the following information:
	Order Request Number	Enter the order request number for the resource as used by the jurisdiction or discipline, or the relevant EMAC order request number.
	Incident Identification Number	Enter any special incident identification numbers or agency radio identifier assigned to the piece of equipment used only during the incident, if this system if used (e.g., "Decontamination Unit 2," or "Water Tender 14").
	Vehicle or Equipment Classification	Enter the specific vehicle or equipment classification (e.g., bus, backhoe, Type 2 engine, etc.) as relevant.
	Vehicle or Equipment Make	Enter the vehicle or equipment manufacturer name (e.g., "GMC," "International").
	Category/Kind/Type, Capacity, or Size	Enter the vehicle or equipment category/kind/type, capacity, or size (e.g., 30-person bus, 3/4-ton truck, 50 kW generator).
	Vehicle or Equipment Features	Indicate any vehicle or equipment features such as 2WD, 4WD, towing capability, number of axles, heavy-duty tires, high clearance, automatic vehicle locator (AVL), etc.
	Agency or Owner	Enter the name of the agency or owner of the vehicle or equipment.
	Operator Name or Contact	Enter the operator name and/or contact information (cell phone, radio frequency, etc.).
	Vehicle License or Identification Number	Enter the license plate number or another identification number (such as a serial or rig number) of the vehicle or equipment.
	Incident Assignment	Enter where the vehicle or equipment will be located at the incident and its function (use abbreviations per discipline or jurisdiction).

Block Number	Block Title	Instructions
5 (continued)	Incident Start Date and Time	Indicate start date (month/day/year) and time (using the 24-hour clock) for driver or for equipment as may be relevant.
	Incident Release Date and Time	Enter the date (month/day/year) and time (using the 24-hour clock) the vehicle or equipment is released from the incident.
6	**Prepared by** • Name • Position/Title • Signature	Enter the name, ICS position/title, and signature of the person preparing the form.

ICS 219
Resource Status Card (T-Card)

Purpose. Resource Status Cards (ICS 219) are also known as "T-Cards," and are used by the Resources Unit to record status and location information on resources, transportation, and support vehicles and personnel. These cards provide a visual display of the status and location of resources assigned to the incident.

Preparation. Information to be placed on the cards may be obtained from several sources including, but not limited to:

- Incident Briefing (ICS 201).
- Incident Check-In List (ICS 211).
- General Message (ICS 213).
- Agency-supplied information or electronic resource management systems.

Distribution. ICS 219s are displayed in resource status or "T-Card" racks where they can be easily viewed, retrieved, updated, and rearranged. The Resources Unit typically maintains cards for resources assigned to an incident until demobilization. At demobilization, all cards should be turned in to the Documentation Unit.

Notes. There are eight different status cards (see list below) and a header card, to be printed front-to-back on cardstock. Each card is printed on a different color of cardstock and used for a different resource category/kind/type. The format and content of information on each card varies depending upon the intended use of the card.

- 219-1: Header Card – Gray (used only as label cards for T-Card racks)
- 219-2: Crew/Team Card – Green
- 219-3: Engine Card – Rose
- 219-4: Helicopter Card – Blue
- 219-5: Personnel Card – White
- 219-6: Fixed-Wing Card – Orange
- 219-7: Equipment Card – Yellow
- 219-8: Miscellaneous Equipment/Task Force Card – Tan
- 219-10: Generic Card – Light Purple

Acronyms. Abbreviations utilized on the cards are listed below:

- AOV: Agency-owned vehicle
- ETA: Estimated time of arrival
- ETD: Estimated time of departure
- ETR: Estimated time of return
- O/S Mech: Out-of-service for mechanical reasons
- O/S Pers: Out-of-service for personnel reasons
- O/S Rest: Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft
- POV: Privately owned vehicle

Prepared by:
Date/Time: Date

ICS 219-1 HEADER CARD (GRAY)

Prepared by:
Date/Time: Date

ICS 219-1 HEADER CARD (GRAY)

ICS 219-1: Header Card

Block Title	Instructions
Prepared by Date/Time	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Front

Date/Time Checked In:

Leader Name:

Primary Contact Information:

Crew/Team ID #(s) or Name(s):

Manifest: ☐ Yes ☐ No

Total Weight:

Method of Travel to Incident:
☐ AOV ☐ POV ☐ Bus ☐ Air ☐ Other

Home Base:

Departure Point:

ETD: **ETA:**

Transportation Needs at Incident:
☐ Vehicle ☐ Bus ☐ Air ☐ Other

Date/Time Ordered:

Remarks:

Prepared by:

Date/Time: Date

ICS 219-2 CREW/TEAM (GREEN)

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Back

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Prepared by:

Date/Time: Date

ICS 219-2 CREW/TEAM (GREEN)

ICS 219-2: Crew/Team Card

Block Title	Instructions
ST/Unit	Enter the State and/or unit identifier (3–5 letters) used by the authority having jurisdiction.
LDW (Last Day Worked)	Indicate the last available workday that the resource is allowed to work
# Pers	Enter total number of personnel associated with the crew/team. Include leaders.
Order #	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline, since several incident numbers may be used for the same incident.
Agency	Use this section to list agency name or designator (e.g., ORC, ARL, NYPD).
Cat/Kind/Type	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance.
Name/ID #	Use this section to enter the resource name or unique identifier (e.g., 13, Bluewater, Utility 32).
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Leader Name	Enter resource leader's name (use at least the first initial and last name).
Primary Contact Information	Enter the primary contact information (e.g., cell phone number, radio, etc.) for the leader. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics.
Crew/Team ID #(s) or Name(s)	Provide the identifier number(s) or name(s) for this crew/team (e.g., Air Monitoring Team 2, Entry Team 3).
Manifest ☐ Yes ☐ No	Use this section to enter whether or not the resource or personnel has a manifest. If they do, indicate the manifest number.
Total Weight	Enter the total weight for the crew/team. This information is necessary when the crew/team are transported by charter air.
Method of Travel to Incident ☐ AOV ☐ POV ☐ Bus ☐ Air ☐ Other	Check the box(es) for the appropriate method(s) of travel the individual used to bring himself/herself to the incident. AOV is "agency-owned vehicle." POV is "privately owned vehicle."
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the crew/team's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the crew/team's estimated time of arrival (using the 24-hour clock) at the incident.
Transportation Needs at Incident ☐ Vehicle ☐ Bus ☐ Air ☐ Other	Check the box(es) for the appropriate method(s) of transportation at the incident.

Block Title	Instructions
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the crew/team was ordered to the incident.
Remarks	Enter any additional information pertaining to the crew/team.
BACK OF FORM	
Incident Location	Enter the location of the crew/team.
Time	Enter the time (24-hour clock) the crew/team reported to this location.
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: _____	Enter the crew/team's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the crew/team's current location or status.
Prepared by Date/Time	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Front

Date/Time Checked In:

Leader Name:

Primary Contact Information:

Resource ID #(s) or Name(s):

Home Base:

Departure Point:

ETD: **ETA:**

Date/Time Ordered:

Remarks:

Prepared by:

Date/Time: Date

ICS 219-3 ENGINE (ROSE)

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Back

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Prepared by:

Date/Time: Date

ICS 219-3 ENGINE (ROSE)

ICS 219-3: Engine Card

Block Title	Instructions
ST/Unit	Enter the State and or unit identifier (3–5 letters) used by the authority having jurisdiction.
LDW (Last Day Worked)	Indicate the last available workday that the resource is allowed to work
# Pers	Enter total number of personnel associated with the resource. Include leaders.
Order #	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline since several incident numbers may be used for the same incident.
Agency	Use this section to list agency name or designator (e.g., ORC, ARL, NYPD).
Cat/Kind/Type	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance.
Name/ID #	Use this section to enter the resource name or unique identifier (e.g., 13, Bluewater, Utility 32).
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Leader Name	Enter resource leader's name (use at least the first initial and last name).
Primary Contact Information	Enter the primary contact information (e.g., cell phone number, radio, etc.) for the leader. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics.
Resource ID #(s) or Name(s)	Provide the identifier number(s) or name(s) for the resource(s).
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the resource's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the resource's estimated time of arrival (using the 24-hour clock) at the incident.
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the resource was ordered to the incident.
Remarks	Enter any additional information pertaining to the resource.
BACK OF FORM	
Incident Location	Enter the location of the resource.
Time	Enter the time (24-hour clock) the resource reported to this location.
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: _____	Enter the resource's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the resource's current location or status.
Prepared by Date/Time	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Front

Date/Time Checked In:

Pilot Name:

Home Base:

Departure Point:

ETD: **ETA:**

Destination Point:

Date/Time Ordered:

Remarks:

Prepared by:

Date/Time: Date

ICS 219-4 HELICOPTER (BLUE)

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Back

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Prepared by:

Date/Time: Date

ICS 219-4 HELICOPTER (BLUE)

ICS 219-4: Helicopter Card

Block Title	Instructions
ST/Unit	Enter the State and or unit identifier (3–5 letters) used by the authority having jurisdiction.
LDW (Last Day Worked)	Indicate the last available workday that the resource is allowed to work.
# Pers	Enter total number of personnel associated with the resource. Include the pilot.
Order #	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline since several incident numbers may be used for the same incident.
Agency	Use this section to list agency name or designator (e.g., ORC, ARL, NYPD).
Cat/Kind/Type	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance.
Name/ID #	Use this section to enter the resource name or unique identifier.
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Pilot Name:	Enter pilot's name (use at least the first initial and last name).
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the resource's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the resource's estimated time of arrival (using the 24-hour clock) at the destination point.
Destination Point	Use this section to enter the location at the incident where the resource has been requested to report.
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the resource was ordered to the incident.
Remarks	Enter any additional information pertaining to the resource.
BACK OF FORM	
Incident Location	Enter the location of the resource.
Time	Enter the time (24-hour clock) the resource reported to this location.
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: _____	Enter the resource's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the resource's current location or status.
Prepared by Date/Time	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

ST/Unit:	Name:	Position/Title:

Front

Date/Time Checked In:

Name:

Primary Contact Information:

Manifest: ☐ Yes ☐ No

Total Weight:

Method of Travel to Incident:
☐ AOV ☐ POV ☐ Bus ☐ Air ☐ Other

Home Base:

Departure Point:

ETD:

ETA:

Transportation Needs at Incident:
☐ Vehicle ☐ Bus ☐ Air ☐ Other

Date/Time Ordered:

Remarks:

Prepared by:

Date/Time: Date

ICS 219-5 PERSONNEL (WHITE CARD)

ST/Unit:	Name:	Position/Title:

Back

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Prepared by:

Date/Time: Date

ICS 219-5 PERSONNEL (WHITE CARD)

ICS 219-5: Personnel Card

Block Title	Instructions
ST/Unit	Enter the State and or unit identifier (3–5 letters) used by the authority having jurisdiction.
Name	Enter the individual's first initial and last name.
Position/Title	Enter the individual's ICS position/title.
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Name	Enter the individual's full name.
Primary Contact Information	Enter the primary contact information (e.g., cell phone number, radio, etc.) for the leader. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics.
Manifest ☐ Yes ☐ No	Use this section to enter whether or not the resource or personnel has a manifest. If they do, indicate the manifest number.
Total Weight	Enter the total weight for the crew. This information is necessary when the crew are transported by charter air.
Method of Travel to Incident ☐ AOV ☐ POV ☐ Bus ☐ Air ☐ Other	Check the box(es) for the appropriate method(s) of travel the individual used to bring himself/herself to the incident. AOV is "agency-owned vehicle." POV is "privately owned vehicle."
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the crew's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the crew's estimated time of arrival (using the 24-hour clock) at the incident.
Transportation Needs at Incident ☐ Vehicle ☐ Bus ☐ Air ☐ Other	Check the box(es) for the appropriate method(s) of transportation at the incident.
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the crew was ordered to the incident.
Remarks	Enter any additional information pertaining to the crew.
BACK OF FORM	
Incident Location	Enter the location of the crew.
Time	Enter the time (24-hour clock) the crew reported to this location.

Block Title	Instructions
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: _____	Enter the crew's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the crew's current location or status.
Prepared by Date/Time	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Front

Date/Time Checked-In:

Pilot Name:

Home Base:

Departure Point:

ETD: **ETA:**

Destination Point:

Date/Time Ordered:

Manufacturer:

Remarks:

Prepared by:

Date/Time: Date

ICS 219-6 FIXED-WING (ORANGE)

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Back

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Prepared by:

Date/Time: Date

ICS 219-6 FIXED-WING (ORANGE)

ICS 219-6: Fixed-Wing Card

Block Title	Instructions
ST/Unit	Enter the State and or unit identifier (3–5 letters) used by the authority having jurisdiction.
LDW (Last Day Worked)	Indicate the last available workday that the resource is allowed to work.
# Pers	Enter total number of personnel associated with the resource. Include the pilot.
Order #	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline since several incident numbers may be used for the same incident.
Agency	Use this section to list agency name or designator (e.g., ORC, ARL, NYPD).
Cat/Kind/Type	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance.
Name/ID #	Use this section to enter the resource name or unique identifier.
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Pilot Name:	Enter pilot's name (use at least the first initial and last name).
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the resource's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the resource's estimated time of arrival (using the 24-hour clock) at the destination point.
Destination Point	Use this section to enter the location at the incident where the resource has been requested to report.
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the resource was ordered to the incident.
Manufacturer	Enter the manufacturer of the aircraft.
Remarks	Enter any additional information pertaining to the resource.
BACK OF FORM	
Incident Location	Enter the location of the resource.
Time	Enter the time (24-hour clock) the resource reported to this location.
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: _____	Enter the resource's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the resource's current location or status.
Prepared by Date/Time	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Front

Date/Time Checked In:

Leader Name:

Primary Contact Information:

Resource ID #(s) or Name(s):

Home Base:

Departure Point:

ETD: **ETA:**

Date/Time Ordered:

Remarks:

Prepared by:

Date/Time: Date

ICS 219-7 EQUIPMENT (YELLOW)

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Back

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Prepared by:

Date/Time: Date

ICS 219-7 EQUIPMENT (YELLOW)

ICS 219-7: Equipment Card

Block Title	Instructions
ST/Unit	Enter the State and or unit identifier (3–5 letters) used by the authority having jurisdiction.
LDW (Last Day Worked)	Indicate the last available workday that the resource is allowed to work.
# Pers	Enter total number of personnel associated with the resource. Include leaders.
Order #	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline since several incident numbers may be used for the same incident.
Agency	Use this section to list agency name or designator (e.g., ORC, ARL, NYPD).
Cat/Kind/Type	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance.
Name/ID #	Use this section to enter the resource name or unique identifier (e.g., 13, Bluewater, Utility 32).
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Leader Name	Enter resource leader's name (use at least the first initial and last name).
Primary Contact Information	Enter the primary contact information (e.g., cell phone number, radio, etc.) for the leader. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics.
Resource ID #(s) or Name(s)	Provide the identifier number(s) or name(s) for this resource.
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the resource's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the resource's estimated time of arrival (using the 24-hour clock) at the incident.
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the resource was ordered to the incident.
Remarks	Enter any additional information pertaining to the resource.
BACK OF FORM	
Incident Location	Enter the location of the resource.
Time	Enter the time (24-hour clock) the resource reported to this location.
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: _____	Enter the resource's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the resource's current location or status.
Prepared by Date/Time	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Front

Date/Time Checked In:

Leader Name:

Primary Contact Information:

Resource ID #(s) or Name(s):

Home Base:

Departure Point:

ETD: **ETA:**

Date/Time Ordered:

Remarks:

Prepared by:

Date/Time: Date

ICS 219-8 MISCELLANEOUS EQUIPMENT/TASK FORCE (TAN)

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Back

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Prepared by:

Date/Time: Date

ICS 219-8 MISCELLANEOUS EQUIPMENT/TASK FORCE (TAN)

ICS 219-8: Miscellaneous Equipment/Task Force Card

Block Title	Instructions
ST/Unit	Enter the State and or unit identifier (3–5 letters) used by the authority having jurisdiction.
LDW (Last Day Worked)	Indicate the last available work day that the resource is allowed to work.
# Pers	Enter total number of personnel associated with the resource. Include leaders.
Order #	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline since several incident numbers may be used for the same incident.
Agency	Use this section to list agency name or designator (e.g., ORC, ARL, NYPD).
Cat/Kind/Type	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance.
Name/ID #	Use this section to enter the resource name or unique identifier (e.g., 13, Bluewater, Utility 32).
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Leader Name	Enter resource leader's name (use at least the first initial and last name).
Primary Contact Information	Enter the primary contact information (e.g., cell phone number, radio, etc.) for the leader. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics.
Resource ID #(s) or Name(s)	Provide the identifier number or name for this resource.
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the resource's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the resource's estimated time of arrival (using the 24-hour clock) at the incident.
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the resource was ordered to the incident.
Remarks	Enter any additional information pertaining to the resource.
BACK OF FORM	
Incident Location	Enter the location of the resource.
Time	Enter the time (24-hour clock) the resource reported to this location.
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: _____	Enter the resource's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the resource's current location or status.
Prepared by Date/Time	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Front

Date/Time Checked In:

Leader Name:

Primary Contact Information:

Resource ID #(s) or Name(s):

Home Base:

Departure Point:

ETD: **ETA:**

Date/Time Ordered:

Remarks:

Prepared by:

Date/Time: Date

ICS 219-10 GENERIC (LIGHT PURPLE)

ST/Unit:	LDW:	# Pers:	Order #:
Agency	Cat/Kind/Type		Name/ID #

Back

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Incident Location: **Time:**

Status:
☐ Assigned ☐ O/S Rest ☐ O/S Pers
☐ Available ☐ O/S Mech ☐ ETR: HHMM

Notes:

Prepared by:

Date/Time: Date

ICS 219-10 GENERIC (LIGHT PURPLE)

ICS 219-10: Generic Card

Block Title	Instructions
ST/Unit	Enter the State and or unit identifier (3–5 letters) used by the authority having jurisdiction.
LDW (Last Day Worked)	Indicate the last available workday that the resource is allowed to work.
# Pers	Enter total number of personnel associated with the resource. Include leaders.
Order #	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline since several incident numbers may be used for the same incident.
Agency	Use this section to list agency name or designator (e.g., ORC, ARL, NYPD).
Cat/Kind/Type	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance.
Name/ID #	Use this section to enter the resource name or unique identifier (e.g., 13, Bluewater, Utility 32).
Date/Time Checked In	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
Leader Name	Enter resource leader's name (use at least the first initial and last name).
Primary Contact Information	Enter the primary contact information (e.g., cell phone number, radio, etc.) for the leader. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics.
Resource ID #(s) or Name(s)	Provide the identifier number(s) or name(s) for this resource.
Home Base	Enter the home base to which the resource or individual is normally assigned (may not be departure location).
Departure Point	Enter the location from which the resource or individual departed for this incident.
ETD	Use this section to enter the resource's estimated time of departure (using the 24-hour clock) from their home base.
ETA	Use this section to enter the resource's estimated time of arrival (using the 24-hour clock) at the incident.
Date/Time Ordered	Enter date (month/day/year) and time (24-hour clock) the resource was ordered to the incident.
Remarks	Enter any additional information pertaining to the resource.
BACK OF FORM	
Incident Location	Enter the location of the resource.
Time	Enter the time (24-hour clock) the resource reported to this location.
Status ☐ Assigned ☐ O/S Rest ☐ O/S Pers ☐ Available ☐ O/S Mech ☐ ETR: _____	Enter the resource's current status: • Assigned – Assigned to the incident • O/S Rest – Out-of-service for rest/recuperation purposes/guidelines, or due to operating time limits/policies for pilots, operators, drivers, equipment, or aircraft • O/S Pers – Out-of-service for personnel reasons • Available – Available to be assigned to the incident • O/S Mech – Out-of-service for mechanical reasons • ETR – Estimated time of return
Notes	Enter any additional information pertaining to the resource's current location or status.
Prepared by Date/Time	Enter the name of the person preparing the form. Enter the date (month/day/year) and time prepared (using the 24-hour clock).

AIR OPERATIONS SUMMARY (ICS 220)

1. Incident Name:	**2. Operational Period:** Date From: Date Date To: Date Time From: HHMM Time To: HHMM	**3. Sunrise:** HHMM **Sunset:** HHMM

4. Remarks (safety notes, hazards, air operations special equipment, etc.)**:**	**5. Ready Alert Aircraft:** Medivac: New Incident:	**6. Temporary Flight Restriction Number:** Altitude: Center Point:

8. Frequencies:	AM	FM	**9. Fixed-Wing** (category/kind/type, make/model, N#, base)**:**
Air/Air Fixed-Wing			Air Tactical Group Supervisor Aircraft:
Air/Air Rotary-Wing – Flight Following			
Air/Ground			
Command			Other Fixed-Wing Aircraft:
Deck Coordinator			
Take-Off & Landing Coordinator			
Air Guard			

7. Personnel:	Name:	Phone Number:
Air Operations Branch Director		XXX-XXX-XXXX
Air Support Group Supervisor		XXX-XXX-XXXX
Air Tactical Group Supervisor		XXX-XXX-XXXX
Helicopter Coordinator		XXX-XXX-XXXX
Helibase Manager		XXX-XXX-XXXX

10. Helicopters (use additional sheets as necessary)**:**

FAA N#	Category/Kind/Type	Make/Model	Base	Available	Start	Remarks

11. Prepared by: Name: Position/Title: Signature: _____

ICS 220, Page 1 Date/Time: Date

AIR OPERATIONS SUMMARY (ICS 220)

1. Incident Name:	2. Operational Period: Date From: Date Date To: Date Time From: HHMM Time To: HHMM	3. Sunrise: HHMM Sunset: HHMM

12. Task/Mission/Assignment (category/kind/type and function includes: air tactical, reconnaissance, personnel transport, search and rescue, etc.)**:**

Category/Kind/Type and Function	Name of Personnel or Cargo (if applicable) or Instructions for Tactical Aircraft	Mission Start	Fly From	Fly To

11. Prepared by: Name: Position/Title: Signature: _____

ICS 220, Page 2 Date/Time: Date

ICS 220
Air Operations Summary

Purpose. The Air Operations Summary (ICS 220) provides the Air Operations Branch with the number, type, location, and specific assignments of helicopters and air resources.

Preparation. The ICS 220 is completed by the Operations Section Chief or the Air Operations Branch Director during each Planning Meeting. General air resources assignment information is obtained from the Operational Planning Worksheet (ICS 215), which also is completed during each Planning Meeting. Specific designators of the air resources assigned to the incident are provided by the Air and Fixed-Wing Support Groups. If aviation assets would be utilized for rescue or are referenced on the Medical Plan (ICS 206), coordinate with the Medical Unit Leader and indicate on the ICS 206.

Distribution. After the ICS 220 is completed by Air Operations personnel, the form is given to the Air Support Group Supervisor and Fixed-Wing Coordinator personnel. These personnel complete the form by indicating the designators of the helicopters and fixed-wing aircraft assigned missions during the specified operational period. This information is provided to Air Operations personnel who, in turn, give the information to the Resources Unit.

Notes:

- If additional pages are needed for any form page, use a blank ICS 220 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Sunrise/Sunset**	Enter the sunrise and sunset times.
4	**Remarks** (safety notes, hazards, air operations special equipment, etc.)	Enter special instructions or information, including safety notes, hazards, and priorities for Air Operations personnel.
5	**Ready Alert Aircraft** • Medivac • New Incident	Identify ready alert aircraft that will be used as Medivac for incident assigned personnel and indicate on the Medical Plan (ICS 206). Identify aircraft to be used for new incidents within the area or new incident(s) within an incident.
6	**Temporary Flight Restriction Number** • Altitude • Center Point	Enter Temporary Flight Restriction Number, altitude (from the center point), and center point (latitude and longitude). This number is provided by the Federal Aviation Administration (FAA) or is the order request number for the Temporary Flight Restriction.
7	**Personnel** • Name • Phone Number	Enter the name and phone number of the individuals in Air Operations.
	Air Operations Branch Director	
	Air Support Group Supervisor	
	Air Tactical Group Supervisor	
	Helicopter Coordinator	
	Helibase Manager	

Block Number	Block Title	Instructions
8	**Frequencies** • AM • FM	Enter primary air/air, air/ground (if applicable), command, deck coordinator, take-off and landing coordinator, and other radio frequencies to be used during the incident.
	Air/Air Fixed-Wing	
	Air/Air Rotary-Wing – Flight Following	Flight following is typically done by Air Operations.
	Air/Ground	
	Command	
	Deck Coordinator	
	Take-Off & Landing Coordinator	
	Air Guard	
9	**Fixed-Wing** (category/kind/type, make/model, N#, base)	Enter the category/kind/type based on NIMS, discipline, or jurisdiction guidance, make/model, N#, and base of air assets allocated to the incident.
	Air Tactical Group Supervisor Aircraft	
	Other Fixed-Wing Aircraft	
10	**Helicopters**	Enter the following information about the helicopter resources allocated to the incident.
	FAA N#	Enter the FAA N#.
	Category/Kind/Type	Enter the helicopter category/kind/type based on NIMS, discipline, or jurisdiction guidance.
	Make/Model	Enter the make and model of the helicopter.
	Base	Enter the base where the helicopter is located.
	Available	Enter the time the aircraft is available.
	Start	Enter the time the aircraft becomes operational.
	Remarks	
11	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).
12	**Task/Mission/Assignment** (category/kind/type and function includes: air tactical, reconnaissance, personnel transport, search and rescue, etc.)	Enter the specific assignment (e.g., water or retardant drops, logistical support, or availability status for a specific purpose, support backup, recon, Medivac, etc.). If applicable, enter the primary air/air and air/ground radio frequency to be used. Mission assignments may be listed by priority.
	Category/Kind/Type and Function	
	Name of Personnel or Cargo (if applicable) or Instructions for Tactical Aircraft	
	Mission Start	
	Fly From	Enter the incident location or air base the aircraft is flying from.
	Fly To	Enter the incident location or air base the aircraft is flying to.

DEMOBILIZATION CHECK-OUT (ICS 221)

1. Incident Name:	2. Incident Number:	
3. Planned Release Date/Time: Date: Date Time: HHMM	4. Resource or Personnel Released:	5. Order Request Number:

6. Resource or Personnel:

You and your resources are in the process of being released. Resources are not released until the checked boxes below have been signed off by the appropriate overhead and the Demobilization Unit Leader (or Planning Section representative).

LOGISTICS SECTION

	Unit/Manager	Remarks	Name	Signature
☐	Supply Unit			
☐	Communications Unit			
☐	Facilities Unit			
☐	Ground Support Unit			
☐	Security Manager			
☐				

FINANCE/ADMINISTRATION SECTION

	Unit/Leader	Remarks	Name	Signature
☐	Time Unit			
☐				
☐				

OTHER SECTION/STAFF

	Unit/Other	Remarks	Name	Signature
☐				
☐				

PLANNING SECTION

	Unit/Leader	Remarks	Name	Signature
☐				
☐	Documentation Leader			
☐	Demobilization Leader			

7. Remarks:

8. Travel Information:

Room Overnight: ☐ Yes ☐ No

Estimated Time of Departure: _____ Actual Release Date/Time: _____

Destination: _____ Estimated Time of Arrival: _____

Travel Method: _____ Contact Information While Traveling: _____

Manifest: ☐ Yes ☐ No
Number: _____

Area/Agency/Region Notified: _____

9. Reassignment Information: ☐ Yes ☐ No

Incident Name: _____ Incident Number: _____

Location: _____ Order Request Number: _____

10. Prepared by: Name: Position/Title: Signature: _____

ICS 221 Date/Time: Date

ICS 221
Demobilization Check-Out

Purpose. The Demobilization Check-Out (ICS 221) ensures that resources checking out of the incident have completed all appropriate incident business, and provides the Planning Section information on resources released from the incident. Demobilization is a planned process and this form assists with that planning.

Preparation. The ICS 221 is initiated by the Planning Section, or a Demobilization Unit Leader if designated. The Demobilization Unit Leader completes the top portion of the form and checks the appropriate boxes in Block 6 that may need attention after the Resources Unit Leader has given written notification that the resource is no longer needed. The individual resource will have the appropriate overhead personnel sign off on any checked box(es) in Block 6 prior to release from the incident.

Distribution. After completion, the ICS 221 is returned to the Demobilization Unit Leader or the Planning Section. All completed original forms must be given to the Documentation Unit. Personnel may request to retain a copy of the ICS 221.

Notes:

- Members are not released until form is complete when all of the items checked in Block 6 have been signed off.
- If additional pages are needed for any form page, use a blank ICS 221 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Planned Release Date/Time**	Enter the date (month/day/year) and time (using the 24-hour clock) of the planned release from the incident.
4	**Resource or Personnel Released**	Enter name of the individual or resource being released.
5	**Order Request Number**	Enter order request number (or agency demobilization number) of the individual or resource being released.
6	**Resource or Personnel** You and your resources are in the process of being released. Resources are not released until the checked boxes below have been signed off by the appropriate overhead and the Demobilization Unit Leader (or Planning Section representative). • Unit/Leader/Manager/Other • Remarks • Name • Signature	Resources are not released until the checked boxes below have been signed off by the appropriate overhead. Blank boxes are provided for any additional unit requirements as needed (e.g., Safety Officer, Agency Representative, etc.).
	Logistics Section ☐ Supply Unit ☐ Communications Unit ☐ Facilities Unit ☐ Ground Support Unit ☐ Security Manager	The Demobilization Unit Leader will enter an "X" in the box to the left of those Units requiring the resource to check out. Identified Unit Leaders or other overhead are to sign the appropriate line to indicate release.

Block Number	Block Title	Instructions
6 (continued)	**Finance/Administration Section** ☐ Time Unit	The Demobilization Unit Leader will enter an "X" in the box to the left of those Units requiring the resource to check out. Identified Unit Leaders or other overhead are to sign the appropriate line to indicate release.
	Other Section/Staff ☐	The Demobilization Unit Leader will enter an "X" in the box to the left of those Units requiring the resource to check out. Identified Unit Leaders or other overhead are to sign the appropriate line to indicate release.
	Planning Section ☐ Documentation Leader ☐ Demobilization Leader	The Demobilization Unit Leader will enter an "X" in the box to the left of those Units requiring the resource to check out. Identified Unit Leaders or other overhead are to sign the appropriate line to indicate release.
7	**Remarks**	Enter any additional information pertaining to demobilization or release (e.g., transportation needed, destination, etc.). This section may also be used to indicate if a performance rating has been completed as required by the discipline or jurisdiction.
8	**Travel Information**	Enter the following travel information:
	Room Overnight	Use this section to enter whether or not the resource or personnel will be staying in a hotel overnight prior to returning home base and/or unit.
	Estimated Time of Departure	Use this section to enter the resource's or personnel's estimated time of departure (using the 24-hour clock).
	Actual Release Date/Time	Use this section to enter the resource's or personnel's actual release date (month/day/year) and time (using the 24-hour clock).
	Destination	Use this section to enter the resource's or personnel's destination.
	Estimated Time of Arrival	Use this section to enter the resource's or personnel's estimated time of arrival (using the 24-hour clock) at the destination.
	Travel Method	Use this section to enter the resource's or personnel's travel method (e.g., POV, air, etc.).
	Contact Information While Traveling	Use this section to enter the resource's or personnel's contact information while traveling (e.g., cell phone, radio frequency, etc.).
	Manifest ☐ Yes ☐ No Number	Use this section to enter whether or not the resource or personnel has a manifest. If they do, indicate the manifest number.
	Area/Agency/Region Notified	Use this section to enter the area, agency, and/or region that was notified of the resource's travel. List the name (first initial and last name) of the individual notified and the date (month/day/year) he or she was notified.
9	**Reassignment Information** ☐ Yes ☐ No	Enter whether or not the resource or personnel was reassigned to another incident. If the resource or personnel was reassigned, complete the section below.
	Incident Name	Use this section to enter the name of the new incident to which the resource was reassigned.
	Incident Number	Use this section to enter the number of the new incident to which the resource was reassigned.
	Location	Use this section to enter the location (city and State) of the new incident to which the resource was reassigned.
	Order Request Number	Use this section to enter the new order request number assigned to the resource or personnel.

Block Number	Block Title	Instructions
10	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (using the 24-hour clock).

NATIONAL INCIDENT MANAGEMENT SYSTEM
INCIDENT COMMAND SYSTEM

ICS FORMS BOOKLET
FEMA 502-2

September 2010

INTRODUCTION TO ICS FORMS

The National Incident Management System (NIMS) Incident Command System (ICS) Forms Booklet, FEMA 502-2, is designed to assist emergency response personnel in the use of ICS and corresponding documentation during incident operations. This booklet is a companion document to the NIMS ICS Field Operations Guide (FOG), FEMA 502-1, which provides general guidance to emergency responders on implementing ICS. This booklet is meant to complement existing incident management programs and does not replace relevant emergency operations plans, laws, and ordinances. These forms are designed for use within the Incident Command System, and are not targeted for use in Area Command or in multiagency coordination systems.

These forms are intended for use as tools for the creation of Incident Action Plans (IAPs), for other incident management activities, and for support and documentation of ICS activities. Personnel using the forms should have a basic understanding of NIMS, including ICS, through training and/or experience to ensure they can effectively use and understand these forms. These ICS Forms represent an all-hazards approach and update to previously used ICS Forms. While the layout and specific blocks may have been updated, the functionality of the forms remains the same. It is recommended that all users familiarize themselves with the updated forms and instructions.

A general description of each ICS Form's purpose, suggested preparation, and distribution are included immediately after the form, including block-by-block completion instructions to ensure maximum clarity on specifics, or for those personnel who may be unfamiliar with the forms.

The ICS organizational charts contained in these forms are examples of how an ICS organization is typically developed for incident response. However, the flexibility and scalability of ICS allow modifications, as needed, based on experience and particular incident requirements.

These forms are designed to include the essential data elements for the ICS process they address. The use of these standardized ICS Forms is encouraged to promote consistency in the management and documentation of incidents in the spirit of NIMS, and to facilitate effective use of mutual aid. In many cases, additional pages can be added to the existing ICS Forms when needed, and several forms are set up with this specific provision. The section after the ICS Forms List provides details on adding appendixes or fields to the forms for jurisdiction- or discipline-specific needs.

It may be appropriate to compile and maintain other NIMS-related forms with these ICS Forms, such as resource management and/or ordering forms that are used to support incidents. Examples of these include the following Emergency Management Assistance Compact (EMAC) forms: REQ-A (Interstate Mutual Aid Request), Reimbursement Form R-1 (Interstate Reimbursement Form), and Reimbursement Form R-2 (Intrastate Reimbursement Form).

ICS FORMS LIST

This table lists all of the ICS Forms included in this publication.

Notes:

- In the following table, the ICS Forms identified with an asterisk (*) are typically included in an IAP.
- Forms identified with two asterisks (**) are additional forms that could be used in the IAP.
- The other ICS Forms are used in the ICS process for incident management activities, but are not typically included in the IAP.
- The date and time entered in the form blocks should be determined by the Incident Command or Unified Command. Local time is typically used.

ICS Form #:	Form Title:	Typically Prepared by:
ICS 201	**Incident Briefing**	Initial Incident Commander
***ICS 202**	**Incident Objectives**	Planning Section Chief
***ICS 203**	**Organization Assignment List**	Resources Unit Leader
***ICS 204**	**Assignment List**	Resources Unit Leader and Operations Section Chief
***ICS 205**	**Incident Radio Communications Plan**	Communications Unit Leader
****ICS 205A**	**Communications List**	Communications Unit Leader
***ICS 206**	**Medical Plan**	Medical Unit Leader (reviewed by Safety Officer)
ICS 207	**Incident Organization Chart** *(wall-mount size, optional 8½" x 14")*	Resources Unit Leader
****ICS 208**	**Safety Message/Plan**	Safety Officer
ICS 209	**Incident Status Summary**	Situation Unit Leader
ICS 210	**Resource Status Change**	Communications Unit Leader
ICS 211	**Incident Check-In List** *(optional 8½" x 14" and 11" x 17")*	Resources Unit/Check-In Recorder
ICS 213	**General Message** *(3-part form)*	Any Message Originator
ICS 214	**Activity Log** *(optional 2-sided form)*	All Sections and Units
ICS 215	**Operational Planning Worksheet** *(optional 8½" x 14" and 11" x 17")*	Operations Section Chief
ICS 215A	**Incident Action Plan Safety Analysis**	Safety Officer
ICS 218	**Support Vehicle/Equipment Inventory** *(optional 8½" x 14" and 11" x 17")*	Ground Support Unit
ICS 219-1 to ICS 219-8, ICS 219-10 ***(Cards)***	**Resource Status Card (T-Card)** *(may be printed on cardstock)*	Resources Unit
ICS 220	**Air Operations Summary Worksheet**	Operations Section Chief or Air Branch Director
ICS 221	**Demobilization Check-Out**	Demobilization Unit Leader
ICS 225	**Incident Personnel Performance Rating**	Supervisor at the incident

ICS FORM ADAPTION, EXTENSION, AND APPENDIXES

The ICS Forms in this booklet are designed to serve all-hazards, cross-discipline needs for incident management across the Nation. These forms include the essential data elements for the ICS process they address, and create a foundation within ICS for complex incident management activities. However, the flexibility and scalability of NIMS should allow for needs outside this foundation, so the following are possible mechanisms to add to, extend, or adapt ICS Forms when needed.

Because the goal of NIMS is to have a consistent nationwide approach to incident management, jurisdictions and disciplines are encouraged to use the ICS Forms as they are presented here – unless these forms do not meet an organization's particular incident management needs for some unique reason. If changes are needed, the focus on essential information elements should remain, and as such the spirit and intent of particular fields or "information elements" on the ICS Forms should remain intact to maintain consistency if the forms are altered. Modifications should be clearly indicated as deviations from or additions to the ICS Forms. The following approaches may be used to meet any unique needs.

ICS Form Adaptation

When agencies and organizations require specialized forms or information for particular kinds of incidents, events, or disciplines, it may be beneficial to utilize the essential data elements from a particular ICS Form to create a more localized or field-specific form. When this occurs, organizations are encouraged to use the relevant essential data elements and ICS Form number, but to clarify that the altered form is a specific organizational adaptation of the form. For example, an altered form should clearly indicate in the title that it has been changed to meet a specific need, such as "ICS 215A, Hazard Risk Analysis Worksheet, Adapted for Story County Hazmat Program."

Extending ICS Form Fields

Particular fields on an ICS Form may need to include further breakouts or additional related elements. If such additions are needed, the form itself should be clearly labeled as an adapted form (see above), and the additional sub-field numbers should be clearly labeled as unique to the adapted form. Letters or other indicators may be used to label the new sub-fields (if the block does not already include sub-fields).

Examples of possible field additions are shown below for the ICS 209:

- Block 2: Incident Number.
  - Block 2A (adapted): Full agency accounting cost charge number for primary authority having jurisdiction.
- Block 29: Primary Materials or Hazards Involved (hazardous chemicals, fuel types, infectious agents, radiation, etc.).
  - Block 29A (adapted): Indicate specific wildland fire fuel model number.

Creating ICS Form Appendixes

Certain ICS Forms may require appendixes to include additional information elements needed by a particular jurisdiction or discipline. When an appendix is needed for a given form, it is expected that the jurisdiction or discipline will determine standardized fields for such an appendix and make the form available as needed.

Any ICS Form appendixes should be clearly labeled with the form name and an indicator that it is a discipline- or jurisdiction-specific appendix. Appendix field numbering should begin following the last identified block in the corresponding ICS Form.

IAP COVER A

1. Incident Name:	2. Operational Period to be covered by IAP (Date/Time) From: To:	IAP COVER SHEET

3. Approved by:

FOSC	_____
SOSC	_____
RPIC	_____
_____	_____
_____	_____

INCIDENT ACTION PLAN

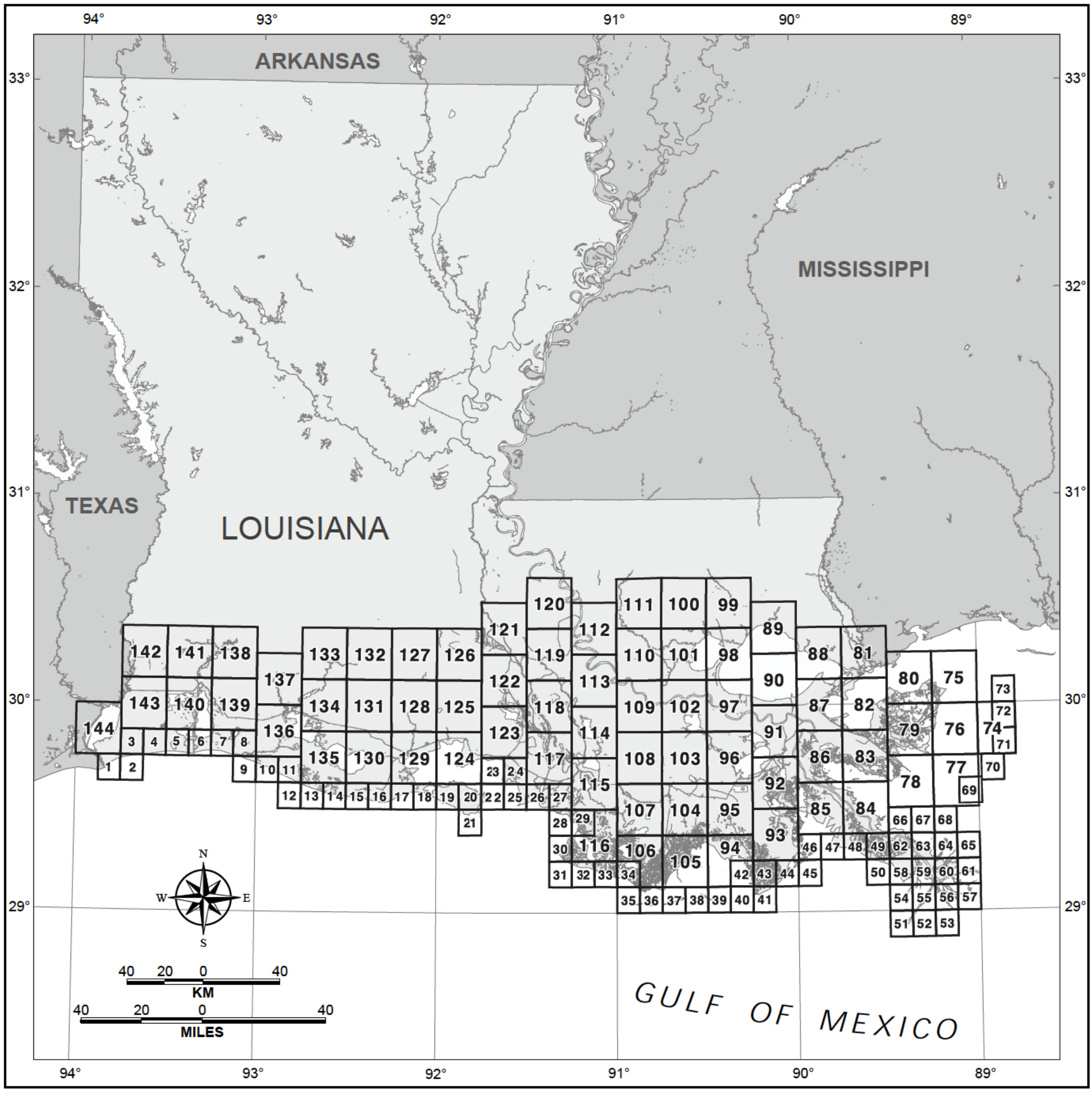
The items checked below are included in this Incident Action Plan:

- ☐ ICS 202-OS (Response Objectives)
- ☐ ICS 203-OS (Organization List) - OR - ICS 207-OS (Organization Chart)
- ☐ ICS 204-OS (Assignment List)
  - ☐ Map
  - ☐ Weather forecast
  - ☐ Tides
  - ☐ Shoreline Cleanup Assessment Team Report for location
  - ☐ Previous day's progress, problems for location
- ☐ ICS 205-OS (Communications Plan)
- ☐ ICS 206-OS (Medical Plan)
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

4. Prepared By:	Date/Time:

Sensitivity of Coastal Environments and Wildlife to Spilled Oil

LOUISIANA



Supported by:

National Oceanic and Atmospheric Administration

National Ocean Service

Office of Response and Restoration
Hazardous Materials Response Division
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In Cooperation with:

Minerals Management Service (MMS)
New Orleans, Louisiana

U.S. Fish and Wildlife Service (USFWS)
Lafayette, Louisiana

The Louisiana Oil Spill Coordinator's Office (LOSCO)
Baton Rouge, Louisiana

Louisiana Department of Wildlife and Fisheries (LDWF)
Baton Rouge, Louisiana

Louisiana Department of Natural Resources (LDNR)
Baton Rouge, Louisiana

DEC 2003

SENSITIVITY OF COASTAL ENVIRONMENTS AND WILDLIFE TO SPILLED OIL: LOUISIANA

INTRODUCTION

Environmental Sensitivity Index (ESI) maps have been developed for marine and coastal areas of Louisiana. The maps extend inland to Interstate 10. ESI maps are a compilation of information for three main categories: shoreline habitats, sensitive biological resources, and human-use resources.

The maps are plotted at two scales. The outer coast maps (map numbers 1-73) are divided according to the 1:24,000 U.S. Geological Survey (USGS) topographic quadrangle index and plotted at a size of 11 x 17 inches and a scale of 1:50,000. Grey-scale Digital Orthophoto Quarter Quadrangles (DOQQ) are used as backdrops for the outer coast maps. Maps for the interior area (map numbers 74-144) are divided according to a group of 1:24,000 USGS topographic quadrangles that are plotted at a size of 11x17 inches and a scale of 1:100,000. The Landsat thematic mapper satellite imagery was used as a backdrop for these inland maps.

SHORELINE HABITAT MAPPING

The shoreline was primarily digitized from the 1998 DOQQs and represents the high-tide line as visible in the photography. In the case of wetlands, this line was digitized as the seaward extent of vegetation. Areas digitized included the shoreline of all barrier islands from the Chandeleur Islands west, as well as the outer coast of the Mississippi River Delta, the Wax Lake and Main Atchafalaya River Deltas, a portion of the coast of Vermilion Bay, and the Chenier Plain coast from Marsh Island west to Sabine Pass. This shoreline was initially classified by a geomorphologist (Dr. Miles O. Hayes) performing on-screen photointerpretation of the DOQQs using the standard ESI classification scheme. The coastal geomorphological classification data of Ramsey and Penland (1999), interpreted from geo-referenced oblique aerial videography flown in 1999, were used during this process to help differentiate among shoreline types that were visually similar and difficult to photo-interpret. Hardcopy maps of this attributed shoreline were plotted at 1:24,000 scale for field verification of the ESI attributes.

The shoreline ESI classifications were field checked during helicopter overflights conducted in May 2001. The surveys were conducted at elevations of 100-500 feet and slow air speed. All shoreline attributed by photointerpretation was surveyed. A coastal geologist edited the ESI classifications on 1:24,000 scale maps during the overflights. Where appropriate, multiple habitats were assigned for each shoreline segment. In some areas, drastic change in shoreline position occurred between the dates of the 1998 DOQQs and the 2001 field surveys due to erosion or active delta building. These areas included, but were not limited to: 1) The Chandaleur Islands; 2) Several marsh restoration sites in the Isles Derniers and Timbalier Islands; and 3) both the Wax Lake and Main Atchafalaya Deltas. In areas of major shoreline change, the new shoreline position was sketched in and assigned a shoreline type(s) based on field sketches and oblique aerial photography acquired during the field surveys. The field maps were then scanned and registered and edits were made using on-screen digitizing. The variety of wetland plant communities in coastal Louisiana made it difficult to classify marsh shorelines by ESI marsh type during the field surveys. As such, the 1997 Louisiana Department of Wildlife and Fisheries Marsh Type data were used to update all shoreline segments with the appropriate ESI code, via a GIS overlay operation.

To determine the sensitivity of a particular intertidal shoreline habitat, the following factors are integrated:

1) Shoreline type (substrate, grain size, tidal elevation, origin)
2) Exposure to wave and tidal energy
3) Biological productivity and sensitivity
4) Ease of cleanup

Prediction of the behavior and persistence of oil in intertidal habitats is based on an understanding of the dynamics of the coastal environments, not just the substrate type and grain size. The intensity of energy expended upon a shoreline by wave action, tidal currents, and river currents directly affects the persistence of stranded oil. The need for shoreline cleanup activities is determined, in part, by the slowness of natural processes in removal of oil stranded on the shoreline. The potential for biological injury and ease of cleanup of spilled oil are also important factors in the ESI ranking. Generally speaking, areas exposed to high levels of physical energy, such as wave action and tidal currents, and low biological activity rank low on the scale, whereas sheltered areas with associated high biological activity have the highest ranking. The list below includes the shoreline habitats delineated for Louisiana ordered by increasing sensitivity to spilled oil.

1B) Exposed, Solid Man-made Structures
2A) Exposed Wave-cut Platforms in Clay
2B) Exposed Scarps and Steep Slopes in Clay
3A) Fine- to Medium-grained Sand Beaches
3B) Scarps and Steep Slopes in Sand
4) Coarse-grained Sand Beaches
5) Mixed Sand and Gravel Beaches
6A) Gravel Beaches
6B) Riprap
7) Exposed Tidal Flats
8A) Sheltered Rocky Shores and Sheltered Scarps in Mud or Clay
8B) Sheltered, Man-made Structures
8C) Sheltered Riprap
9A) Sheltered Tidal Flats
9B) Sheltered, Vegetated Low Banks
10A) Salt- and Brackish-water Marshes
10B) Freshwater Marshes
10C) Freshwater Swamps
10D) Scrub-Shrub Wetlands, including Black Mangroves

Each of the shoreline habitats is described on pages 9-15, in terms of their physical description, predicted oil behavior, and response considerations.

SENSITIVE BIOLOGICAL RESOURCES

Biological information presented in this atlas was collected, compiled, and reviewed with the assistance of biologists and resource managers from the U.S. Fish and Wildlife Service (USFWS), Louisiana Department of Wildlife and Fisheries (LDWF), U.S. Geological Survey (USGS), National Marine Fisheries Service (NMFS), National Park Service (NPS), and the Louisiana Natural Heritage Program (LNHP). Information collected and depicted on the maps denotes the key biological resources that are most likely at risk in the event of an oil spill. Six major categories of biological resources are included in this atlas: terrestrial mammals, reptiles, birds, fish, invertebrates, and benthic and wetland habitats.

Certain portions of the Louisiana Natural Heritage Program Element Occurrence Record (EOR) database were included as part of the biological resources mapped. The data were processed to filter records of concern. In general, records were preserved for species with a Global or State Conservation Status Rank of 1-3 or that are federally threatened or endangered species. Historical records and records for extirpated species and occurrences were removed from the database. Records describing the location of animal specimens or marine mammal strandings were also removed from the database. Rather than use actual common and scientific species names, species for all records, except ecological communities, were converted to generic sub-element descriptor (e.g., Rare wading bird). The prefix "Rare" was attached to all generic sub-element descriptors, except federally threatened or endangered species. For these species, the prefix "Threatened" or "Endangered" was used. The LNHP EOR database contained point locations collected over time from a variety of sources with varying degrees of spatial precision, ranging from seconds to "general". Point locations that were obviously incorrect (e.g., located far offshore or far outside the boundary of the state) were removed from the data. The remaining point locations were buffered by 800 meters (m) to create circular polygons. Overlapping polygons were dissolved such that the resulting polygons contain information describing all species found in the original overlapping polygons. The LNHP EOR database contains information describing the spatial precision of each record, but this information was not included in the attribute data associated with this layer. Also, note that the EOR database is continually updated and maintained by the LNHP. For the most up to date, specific, and complete version of this dataset, please contact the Louisiana Natural Heritage Program at 225/765-2823.

Polygons, points, and arcs represent the spatial distribution of biological resources on the maps. Associated with each of these representations is an icon depicting the types of species that are present. Species have been divided into groups and subgroups, based on their behavior, morphology, taxonomic classification, and spill vulnerability and sensitivity. The icons below reflect this grouping scheme. Please note that benthic marine habitats are displayed on the maps using “simplified-wetland” patterns rather than the hatched patterns used for the other species groups, and no icons are used (see legend). For all other species, the groups are color coded, and different icons represent the subgroups:

TERRESTRIAL MAMMALS

- Bats
- Bears
- Small Mammals

BIRDS

- Diving Birds
- Gulls and Terns
- Passerine Birds
- Raptors
- Shorebirds
- Wading Birds
- Waterfowl

FISH

- Fish

REPTILES

- Alligators
- Turtles
- Other Reptiles / Amphibians

INVERTEBRATES

- Bivalves
- Cephalopods
- Crabs
- Crayfish
- Insects
- Shrimp

HABITATS

- Plants
- Seagrasses

The polygon color and pattern are generally the same for all species in each major group (e.g., birds are green), and match the icon colors. Also associated with each biological polygon or point feature on the map is a Resources at Risk identification number (RAR#), located under each icon or group of icons. The RAR# references a table on the reverse side of the map with a complete list of species associated with the polygon, point, or line feature, and the state and federal protected status as threatened, endangered (T&E), or species of special concern (C), concentration, seasonality, and life-history information for each species.

There are some species that are found throughout specific geographical areas or habitat types on certain maps. Displaying the polygons for these species would cover large areas or would obscure the shoreline, ESI classification, or other biological features, making the maps very difficult to read. Thus, species that occur over the majority of certain geographic areas or habitats are often identified in a small box on the maps which states that they are “Present in ...” (e.g., “Present in Terrebonne Bay” or “Present in Salt Marsh”). The use of this strategy is implemented on a map per map basis, depending on the location, size, and number of polygons present on each map.

TERRESTRIAL MAMMALS

Louisiana black bear concentration areas are depicted in the Louisiana atlas. LDWF wildlife biologists provided the names of the 1:24,000 USGS topographic maps representing the distribution of Louisiana black bear in the state. Based upon these data, expert habitat information from LDWF biologists, and additional habitat and distribution information from the 1995 USFWS Louisiana Black Bear Recovery Plan, polygons representing occupied habitat for the Louisiana black bear were developed. The primary sources used to create polygons depicting Louisiana black bear habitat areas were: 1) the 1988 USGS Coastal Louisiana Habitat data; and 2) the 1997 LDWF Louisiana Coastal Marsh Vegetative Type data. The 1988 USGS Coastal Habitat data represent the actual habitat polygons used to create bear polygons. Habitats used in the development of this layer included forested wetlands, agricultural fields (mainly sugarcane), and certain marsh types adjacent to forested wetlands. Integration of the 1988 USGS and 1997 LDWF Marsh Type data was performed using a GIS overlay operation to reattribute the more spatially explicit USGS marsh polygons with marsh type values from the more recent 1997 LDWF marsh type data.

Small semi-aquatic, fur-bearing mammal areas with harvest density values by habitat zone are also shown on the maps. These species include nutria, muskrat, raccoon, mink, and river otter. The primary sources used to create polygons depicting small semi-aquatic, fur-bearing mammal areas were: 1) the 1988 USGS Coastal Louisiana Habitat data; 2) the 1997 LDWF Louisiana Coastal Marsh Vegetative Type data; and 3) the 2000 LOSCO Louisiana Parish Boundaries data. Polygons representing semi-aquatic fur-bearing mammal distributions and densities are based on habitat type "zones" comprised of land and adjacent water. Major habitat zones include fresh marsh, intermediate marsh, brackish marsh, salt marsh, and forested wetlands. The 1988 USGS Coastal Habitat data represent the actual wetland polygons used for this atlas. Integration of the 1988 USGS and 1997 LDWF Marsh Type data was performed using a GIS overlay operation to reattribute the more spatially explicit USGS marsh polygons with marsh type values from the more recent 1997 LDWF marsh type data. Wetland polygons adjacent to water features were buffered to create polygons that included small waterbodies and extended out into coastal lakes and bays by either 100 or 500 m depending on the location and the complexity of the shoreline. In addition, larger coastal lakes were either included or excluded from the semi-aquatic fur-bearing mammal polygons based on the expert opinion of LDWF wildlife biologists. Small (area <3 km^2) polygons of a particular marsh or other habitat type that were isolated in an upland area were excluded from the coverage. Similarly, small "inclusion" polygons of one wetland type occurring within another wetland type were dissolved into the surrounding "matrix" habitat type. Finally, physiographic province boundaries were used to further divide semi-aquatic fur-bearing mammal habitat polygons. LDWF fur harvest distribution data for coastal Louisiana from 1972-1985 were used to develop density values for semi-aquatic fur-bearing mammals in each combination of habitat zone (four marsh types, forested wetland areas) and physiographic province. Mean densities were recorded and were rounded to the nearest whole acre per individual. In addition to quantitative density, a categorical description of population status has been assigned to these species. This categorical description (HIGH/MED/LOW) was developed by LDWF biologists and indicates the relative population status by region and habitat of each species described. The LDWF survey effort did not include salt marsh. However, because semi-aquatic fur-bearing mammal are present in salt marsh, concentrations are listed as either 'TRANSIENT' or 'RESIDENT' for polygons representing this habitat type, depending on the behavior of each particular species.

Additional terrestrial mammal species (including rare bats) are included in this atlas as part of the LNHP Element Occurrence Record (EOR) database. See the above description of these data and their preparation for details. Note that the EOR database is continually updated and maintained by the LNHP. For the most up to date, specific, and complete version of this data set, please contact the Louisiana Natural Heritage Program at 225/765-2823.

Terrestrial mammal areas are shown on the maps as polygons with a brown-hatched pattern. A brown icon with a bear silhouette is used to indicate the presence of black bears and is associated with all polygons containing this species. A brown icon with a small mammal silhouette is used to indicate the presence of furbearing mammal species and is associated with all polygons containing these species.

The RAR# under an icon (or icon group) on the maps references a table on the reverse side of the map. In this table, the first column gives the species name. The next column provides an estimate of the concentration of the species at the site. The seasonality for each species or resource is shown in the next twelve columns, corresponding to the months of the year. If a species is present at a location in a particular month, an “X” is placed in the month column.

Expert contacts are: Gary Lester (LNHP), 225/765-2823, and Greg Linscombe (LDWF), 337/373-0032, and Noel Kinler (LDWF), 337/373-0032.

MARINE MAMMALS

No marine mammals are included in this atlas. Note that West Indian manatees may be found infrequently throughout the coastal waters of Louisiana.

REPTILES

Reptiles depicted in this atlas primarily include the American alligator. Polygons represent American alligator habitats with nest density values by habitat zone and management unit. The primary sources used to create polygons depicting alligator habitat areas were: 1) the 1988 USGS Coastal Louisiana Habitat data; 2) the 1997 LDWF Louisiana Coastal Marsh Vegetative Type data; and 3) the 2000 USGS stewardship areas. Polygons representing alligator distributions and densities are based on a combination of habitat type "zones," comprised of land and adjacent water, and management unit boundaries. Major habitat zones include fresh marsh, intermediate marsh, brackish marsh, salt marsh, and forested wetlands. The 1988 USGS Coastal Habitat data represent the actual wetland polygons used for this atlas. Integration of the 1988 USGS and 1997 LDWF Marsh Type data was performed using a GIS overlay operation to reattribute the more spatially explicit USGS marsh polygons with marsh type values from the more recent 1997 LDWF marsh type data. Wetland polygons adjacent to water features were buffered to create polygons that included small waterbodies and extended out into coastal lakes and bays by either 100 or 500 m depending on the location and the complexity of the shoreline. In addition, larger coastal lakes were either included or excluded from the alligator polygons based on the expert opinion of LDWF wildlife biologists. Small (area <3 km^2) polygons of a particular marsh or other habitat type that were isolated in an upland area were excluded from the coverage. Similarly, small "inclusion" polygons of one wetland type occurring within another wetland type were dissolved into the surrounding "matrix" habitat

type. Management unit boundaries were used to further divide alligator habitat polygons. In addition, marsh impoundment areas inside some management units were digitized, creating an additional habitat type.

LDWF Alligator Nest Survey data from 1996-2000 were used to develop density values for alligators in each combination of habitat zone (four marsh types, forested wetland areas) and management unit. Nest density values for management units were given higher priority because sampling effort is greater in these areas and/or because theses areas are managed for wildlife, typically resulting in different nest densities than marsh areas in the surrounding parishes. Maximum mean nest densities were recorded as concentrations and rounded to the nearest whole acre per nest. In addition to quantitative density, a categorical description of population status has been assigned to these species. This categorical description was developed by LDWF biologists as follows: HIGH - less than 125 acres per nest; MEDIUM - between 125 and 250 acres per nest; and LOW - greater that 250 acres per nest. American alligators do not typically nest in salt marsh, and the LDWF survey effort did not include this habitat. However, because alligators are sometimes present in salt marsh, concentrations are listed as either 'TRANSIENT' or 'RESIDENT' for polygons representing this habitat type.

Additional reptile species (including sea turtles, aquatic turtles, and terrestrial turtles) are included in this atlas as part of the LNHP Element Occurrence Record (EOR) database. Although sea turtle nesting is a rare event in Louisiana, multiple species of sea turtles may be present in nearshore and onshore waters. See the above description of these data and their preparation for details. Note that the EOR database is continually updated and maintained by the LNHP. For the most up to date, specific, and complete version of this data set, please contact the Louisiana Natural Heritage Program at 225/765-2823.

Reptile areas are displayed on the maps as polygons with a red-hatched pattern. A red icon with an alligator silhouette is used to indicate the presence of alligators. This icon is associated with all polygons containing this species.

The RAR# under an icon (or icon group) on the maps references a table on the reverse side of the map. In this table, the first column gives the species name. The next column provides an estimate of the concentration of the species at the site. The seasonality for each species or resource is shown in the next twelve columns, corresponding to the months of the year. If a species is present at a location in a particular month, an “X” is placed in the month column.

Expert contact for alligators is: Noel Kinler (LDWF), 337/373-0032.

BIRDS

Birds included in this atlas are divided into subgroups based on taxonomy, morphology, behavior, and oil spill vulnerability and sensitivity. The species table lists all birds included on the maps, sorted by subgroup. These species are included either because of their likelihood of direct or indirect impact by an oil spill or similar incident, their general rarity or imperilment, or their special protection status as threatened or endangered.

The atlas includes colonial waterbird nesting colonies, waterfowl concentration areas, and shorebird critical habitat. Nesting sites are of particular concern due to high concentrations of birds in adjacent waters, contamination of eggs and young by oiled adults and prey, and the potential for disturbance from response activities.

Colonial waterbird nesting sites – Three sources of data were used to depict waterbird nesting colonies for this atlas: 1) the 1990-1999 LDWF Colonial Waterbird data set; 2) the 1997 LSU CCEER Seabird Colonies data set; and 3) selected waterbird colony records from the 2001 LNHP Element Occurrence Record (EOR) Database. The 1990-1999 LDWF data set was used as the primary source. These data included records for active seabird and wading bird nesting colonies for the eastern two-thirds (approximate) of coastal Louisiana. The western portion of the study area not covered by this source corresponded approximately to the following four USGS 1:100,000 topographic maps: Crowley, LA; Lake Charles, LA; Port Arthur, LA; and White Lake, LA. Records in the LDWF data set included the mean number of individuals for each species recorded at each colony during LDWF surveys between 1990 and 1999. These mean abundance values are included in this atlas. The 1997 LSU seabird colony data set covered the entire study area and was used to obtain seabird colony information for the western portion of the coastal zone that was not included in the LDWF data set (note that the LSU data covered seabirds only, not wading bird colonies). All seabird colonies from the LSU data set that were active for at least one year during 1990-1997 were included for the western portion of the study area. In addition, all colonies documented during LSU's 1997 field surveys that were not also recorded in the LDWF data set (colonies not identified or tracked by LDWF) were retained for the entire study area. All records from the LSU data set corresponding to colonies that were present in the LDWF data set were omitted from the layer described here. Records from the LSU data set included 1997 counts of individuals for each species occurring at each colony. These values were retained for the attribute tables associated with the layer described here. For the LSU data set, colonies active during 1990 or later that had no nests recorded during the 1997 field surveys were entered as "0" counts. Since colonies may be active in some years but not others, this does not imply that a colony site is no longer active or no longer present, or that the colony is small or unimportant. Finally, the 2001 LNHP data set was used to obtain wading bird colony locations for the western portion of the study area not covered by the LDWF data set. Only colonies that were active during or since 1990 were considered. For the LNHP data, counts of individuals or nests from the latest survey period were included.

Migratory waterfowl concentration areas – Polygons in this atlas represent waterfowl habitats with density values by marsh habitat zone and watershed, or by nearshore survey zone. Waterfowl in these data include several species of ducks and American coot. Geese were not part of the survey data available when this atlas was created, although migratory geese occur in the study area. Waterfowl represented in this dataset fall into two major groups: 1) marsh waterfowl distributions and peak monthly densities for multiple species (including lesser scaup); and 2) separate lesser scaup distributions and peak densities in nearshore Gulf of Mexico waters and coastal lakes and bays. The geographic area, habitat type, species, type of survey, and volume of survey data (number surveys, months surveyed, and years surveyed) differ substantially between these two groups.

The primary sources used to create polygons depicting marsh waterfowl habitat areas were: 1) the USGS 1988 Coastal Louisiana Habitat data; and 2) the 1997 LDWF Louisiana Coastal Marsh Vegetative Type Map data. For the marsh waterfowl polygons, LDWF Marsh Waterfowl Transect Survey data from 1988-1998 were used to develop density values for each species in each combination of habitat zone (four marsh types, selected agriculture areas), for each surveyed month. For all species, density values were rounded to the nearest whole individual per square mile. Mean monthly densities less than 0.5 were rounded to zero. For areas where the peak mean monthly density for a species was not sampled, concentrations were listed as 'PRESENT'. In cases where the peak mean monthly density was zero, concentrations were listed as 'PRESENT'. Because waterfowl are present in coastal Louisiana outside the months when surveys were conducted, seasonalities reflect when migratory concentrations (for most species) and major resident populations (mottled duck) are present in the study area.

Lesser scaup distributions and densities in nearshore Gulf of Mexico waters and coastal lakes and bays were developed from hardcopy maps depicting lesser scaup survey zones and transect lines which were distinct and separate from the more extensive marsh waterfowl transect surveys. Lesser scaup is the major diving duck species using nearshore Gulf waters and coastal lakes and bays, hence the separate survey effort and polygons depicting this species, in addition to the marsh waterfowl areas.

Shorebird concentration areas – Polygons in this atlas represent concentration areas and "hotspots" for migratory shorebird species. Nesting locations for certain resident species are also depicted. LDWF wildlife biologists identified areas considered important for migratory shorebirds based upon expert knowledge. The primary sources used to create polygons depicting migratory shorebird habitat areas were: 1) the USGS 1988 Coastal Louisiana Habitat data; 2) the 2001 Outer Coast Environmental Sensitivity Index (ESI) data; 3) the 2000 USGS managed lands boundaries; and 4) the 2001 mini-refuge boundaries. Both the 1988 USGS Coastal Habitat data and the 2001 ESI shoreline classification were used to delineate shorebird concentration areas. In some cases, polygons represent a 100 m buffer of the shoreline. Some coastal management areas were identified as concentration areas for migratory shorebirds. Mini-refuge boundaries, describing boundaries of private properties managed for shorebirds and waterfowl, were also used to delineate shorebird concentration areas. In addition, digitized marsh impoundment areas inside some management units were used to delineate shorebird concentration areas.

Additional bird species, including raptor-nesting sites, are included in this atlas as part of the LNHP Element Occurrence Record (EOR) database. See the above description of these data and their preparation for details. Because historical and inactive waterbird colony locations can become active, all records describing waterbird colonies were retained, regardless of the age of the record. The waterbird colony records from the LNHP EOR database and mapped as buffer polygons that were duplicated in the LDWF Colonial waterbird nesting colonies were deleted. Note that the EOR database is continually updated and maintained by the LNHP. For the most up to date, specific, and complete version of this data set,

please contact the Louisiana Natural Heritage Program at 225/765-2823.

Expert contacts are: Gary Lester (LNHP), 225/765-2823, Robert Helm (LDWF), and William Vermillion (LDWF).

Birds are shown on the maps as polygons with a green-hatched pattern. Waterbird nesting colonies are shown as green points. Users should be aware that waterfowl may be feeding and rafting in nearshore and offshore areas in the vicinity and up to several kilometers (km) away from their nests.

The RAR# under an icon (or icon group) on the maps references a table on the reverse side of the map. In this table, the first column contains the species common name. The second column indicates whether the species is listed as threatened (T), endangered (E), or special concern (C) on either the state (S) and/or federal (F) lists. The next column provides an estimate of the concentration of the species at the site. See the descriptions of the species groups mapped and the sources of data used (above) for information on how numeric concentration values and descriptive terms were generated. In some cases, concentration values have not been used if the information was not available. Note that concentration should not be interpreted as the "level of concern" or "importance" associated with a certain site or particular resource.

The seasonality for each species or resource is shown in the next twelve columns, corresponding to months of the year. If a species or resource is present at a location in a particular month, an "X" is placed in the month column. The last three columns denote the migratory, nesting, and molting time-periods for each species.

Fish

Finfish depicted in this atlas include selected marine, estuarine, and freshwater species. Species of commercial, subsistence, recreational, ecological, and/or conservation interest are emphasized.

Freshwater fish – Polygons in this atlas represent waterbodies and other fish habitats with similar species composition and relative abundance summarized from groups of sampling stations and grouped by waterbody. LDWF fisheries biologists delineated representative waterbodies for each major group of sampling stations. In some cases, such as the Atchafalaya and Pearl River Basins, polygons represent both waterbodies and areas of regularly flooded wetlands. When these areas are flooded, fish species identified as present in waterbodies may be present in adjacent flooded habitats. The Mississippi and Atchafalaya Rivers were delineated as the boundary of the river itself as well as any connecting waterbody that fell within a 1 km buffer of the approximate centerline of the river. The primary source of data used to map inland fisheries for this atlas was the 1965-1997 LDWF inland fisheries sampling data set. In many locations, only electro-fishing was used to sample largemouth bass, a species of significant recreational importance. In some larger waterbodies, other gear, such as gillnets and rotenone sampling, was used, resulting in data for a larger variety of fish species. Gillnetting typically targets catfish, carp, drum, crappie, buffalo, gar, and bowfin. Rotenone typically results in data for the largest variety of species, including many smaller forage species. Data for each major waterbody were applied to the waterbody polygon delineated by LDWF fisheries biologists. A categorical description of the abundance values calculated by LDWF fisheries biologists was recorded as concentration. For largemouth bass, data from 1987 to 1997 were combined to derive average catch rates. For species sampled with rotenone or other gear, all data from 1965 to 1997 were combined to derive average catch rates. Categorical descriptors of relative abundance values for each species are based on percentile breaks in catch rates for that species, across waterbodies sampled in Louisiana, including waterbodies outside this atlas. In some cases, species were identified as present in certain waterbodies without a relative concentration. These species were assigned a concentration of 'PRESENT'. Note that all species identified as present in the Mississippi and Atchafalaya Rivers were not sampled and are based on expert knowledge. These species were assigned a concentration of 'PRESENT'. Many inland freshwater areas in coastal Louisiana are not sampled by the LDWF. Though not documented in this atlas, species such as catfish, carp, minnow and silverside are typically present in these areas.

Marine/estuarine fish – Polygons for marine/estuarine fish were obtained from NOAA Estuarine Living Marine Resources (ELMR) fish data. The ELMR data contained polygons of identified groups of fish based on the seasonality and salinity regime. The ELMR data were generalized to combine all regions that had the same species composition, regardless of lifestage and concentration, into one region. The variability was usually +/- 2 months on the seasonality information. The maximum relative abundance and sum of the seasonal range were used in creating the generalized distributions. Relative abundances are listed by month in the BREED data table. For each month where an ELMR species is present, a number code indicates the species abundance (1 = no information, 2 = rare, 3 = common, 4 = abundant, 5 = highly abundant). The maximum abundance during the year is shown. The ELMR abundance codes usually refer to juvenile life stages, even though other life stages may be present. If juveniles are not present, the abundances refer to adults, or to larvae if adults and juveniles are not present. Various life-history stages or activities associated with the ELMR fish data include: spawning (parturition for sharks); eggs; larvae; juveniles; and adults.

To prevent conflict with the LDWF Inland fisheries data, duplicate species in the ELMR dataset were removed.

Additional freshwater and marine/estuarine fish species are included in this atlas as part of the LNHP Element Occurrence Record (EOR) database. See the above description of these data and their preparation for details. Note that the EOR database is continually updated and maintained by the LNHP. For the most up to date, specific, and complete version of this data set, please contact the Louisiana Natural Heritage Program at 225/765-2823.

The resource experts listed below should be contacted for additional information on any of these or other finfish species that may occur in the area. Expert contacts are: Inland Fisheries Department (LDWF), 225/765-2330 and for ELMR Mark Monaco (NOAA), 301/713-3000.

Fish are shown on the maps as polygons with a blue-hatched pattern. In cases where multiple resource types occupy the same polygon (such as fish and invertebrates), a black-hatched, multi-group pattern is used rather than a blue-hatched polygon. A blue icon with a fish silhouette is used to indicate the presence of fish. This icon is associated with all polygons containing fish.

The RAR# under an icon (or icon group) on the maps references a table on the reverse side of the map. In this table, the first column contains the species common name. The second column indicates whether the species is listed as threatened (T), endangered (E), or special concern (C) on either the state (S) and/or federal (F) lists. The next column provides an estimate of the concentration of the species at the site. Concentration values were not used for fish because concentration is often quite variable from year to year or not well known.

Seasonality for each species or resource is shown in the next twelve columns, corresponding to the months of the year. If a species or resource is present at a location in a particular month, an "X" is placed in the month column. If the species is from ELMR data then a value of 1-5 is placed in the month column to indicate relative abundance. The last columns denote different life-history time-periods for fish including spawning, eggs, larvae, juveniles, and adults.

Invertebrates

Invertebrates depicted in this atlas include crawfish and freshwater shrimp, which are species of commercial interest. Distribution and density information were derived from the 1965-1997 LDWF inland fisheries sampling data set used to map freshwater fish.

Polygons for marine/estuarine invertebrates were obtained from NOAA ELMR invertebrate data. The ELMR data contained polygons of identified groups of invertebrates based on the seasonality and salinity regime. The ELMR data were generalized to combine all regions that had the same species composition, regardless of life-history stage and concentration, into one region. The variability was usually +/- 2 months on the seasonality information. The maximum relative abundance and sum of the seasonal range were used in creating the generalized distributions. Relative abundances are listed by month in the BREED data table. For each month where an ELMR species is present, a number code indicates the species abundance (1 = no information, 2 = rare, 3 = common, 4 = abundant, 5 = highly abundant). The maximum abundance during the year is shown. The ELMR abundance codes usually refer to juvenile life stages, even though other life stages may be present. If juveniles are not present, the abundances refer to adults, or to larvae if adults and juveniles are not present. Various life-history stages or activities associated with the ELMR invertebrate data include: spawning; eggs; larvae; juveniles; and adults. Expert contacts are: Inland Fisheries Department (LDWF), 225/765-2330 and for ELMR Mark Monaco (NOAA), 301/713-3000.

Additional invertebrate species may be included in this atlas as part of the LNHP Element Occurrence Record (EOR) database. See the above description of these data and their preparation for details. Note that the EOR database is continually updated and maintained by the LNHP. For the most up to date, specific, and complete version of this data set, please contact the Louisiana Natural Heritage Program at 225/765-2823.

Invertebrates are shown on the maps as polygons with an orange-hatched pattern. An orange icon with a crab or bivalve silhouette is used to indicate the presence of these species. This icon

is associated with all polygons or point features containing invertebrates.

The RAR# under an icon (or icon group) on the maps references a table on the reverse side of the map. In this table, the first column contains the species common name. The second column indicates whether the species is listed as threatened (T), endangered (E), or special concern (C) on either the state (S) and/or federal (F) lists. The next column provides an estimate of the concentration of the species at the site. Concentration values were not used for invertebrates because concentration is often quite variable from year to year or not well known.

The seasonality for each species or resource is shown in the next twelve columns, corresponding to the months of the year. If a species or resource is present at a location in a particular month, an "X" is placed in the month column. If the species is from ELMR data then a value of 1-5 is placed in the month column to indicate relative abundance. The last columns denote different life-history time-periods for invertebrates including spawning, eggs, larvae, juveniles, and adults.

BENTHIC AND WETLAND MARINE HABITATS

Three primary sources of data were used to map benthic and wetland habitats for this atlas: 1) 1988 USGS Coastal Louisiana Habitat data; 2) 1997 LDWF Louisiana Coastal Marsh Vegetative Type data; and 3) 1992 USGS Submerged Aquatic Vegetation data. Data for habitat types, particularly marsh types (saline, brackish, intermediate, and fresh), are critical to the entire Louisiana ESI atlas, in that most of the other biological data sets are based fully or in part on wetland habitats. The 1988 USGS Coastal Habitat data represent the actual wetland polygons used for this atlas. Integration of the 1988 USGS Coastal Habitat and 1997 LDWF Marsh Type data was performed using a GIS overlay operation to reattribute the more spatially explicit USGS marsh polygons with marsh type values from the more recent 1997 LDWF Marsh Type data.

In addition to the four marsh types, other habitats from the USGS data used in this atlas include forested wetlands, scrub-shrub wetlands, mangroves, and seagrasses. The 1992 USGS Submerged Aquatic Vegetation data were used to delineate seagrass beds in the Chandeleur Islands. Polygons representing seagrass beds from both the 1992 USGS data set and the 1988 USGS data set were merged to develop polygons representing seagrass in this data layer.

In summary, the wetland habitats added to the maps from the integration of USGS and LDWF data are listed below with their corresponding ESI shoreline code. (Also see legend for patterns shown on the maps).

10A) Salt Marsh	10B) Freshwater Marsh
10A) Brackish Marsh	10C) Forested Wetland
10A) Intermediate Marsh	10D) Scrub-Shrub Wetland (including black mangroves)
	Seagrass (no ESI code)

Additional habitats and community occurrences may be included in this atlas as part of the LNHP Element Occurrence Record (EOR) database. See the above description of these data and their preparation for details. Note that all occurrences of seagrass and mangrove habitat occurrences were removed from the EOR database. The EOR database is continually updated and maintained by the LNHP. For the most up to date, specific, and complete version of this data set, please contact the Louisiana Natural Heritage Program at 225/765-2823.

Rare plants are shown on the maps as polygons with a purple-hatched pattern. A purple icon with a plant silhouette is used to indicate the presence of these species. This icon is associated with all polygons or point features containing rare plants.

The RAR# under an icon (or icon group) on the maps references a table on the reverse side of the map. In this table, the first column contains the species common name. The second column indicates whether the species is listed as threatened (T), endangered (E), or special concern (C) on either the state (S) and/or federal (F) lists. The next column provides an estimate of the concentration of the species at the site. Concentration values were not used for plants because concentration is not available.

HUMAN-USE RESOURCES

Most human-use resources in this atlas are mapped as point features, indicated by a black and white icon (see legend). Management areas such as wildlife refuges, national parks, and scenic rivers, are mapped as polygons, with the boundaries indicated as a black dot-dash line with the corresponding icon placed near the center of the polygon. Where the feature is a known point location (e.g., airport), the exact location is shown as a small black dot and a leader line is drawn from it to the icon. The types of human-use features included in the atlas are described below:

Airport / Heliport	National Park / Nature Conservancy
Boat Ramp	Scenic River
Indian Reservation	State Park
Marina	Wildlife Refuge

Airports/Heliport: Locations of airports, airfields, landing strips, helipads etc., whether they are manned or unmanned, are shown as point features.

Boat Ramps: Locations of boat ramps, improved and unimproved, are shown as point features.

Indian Reservations: Tribal lands are depicted using dashed lines to indicate site boundaries. Site names are provided on the data tables for each map.

Marinas: Locations of marinas are shown as point features.

National Parks: Areas managed by the National Park Service are depicted using dashed lines to indicate site boundaries. Site names are provided on the data tables for each map.

Nature Conservancy Preserves: Areas managed by the Nature Conservancy are depicted using dashed lines to indicate site boundaries. Site names are provided on the data tables for each map.

Scenic Rivers: National Wild and Scenic Rivers are depicted using dashed lines to indicate designation boundaries.

State Parks: Areas managed by state and local authorities are depicted using dashed lines to indicate site boundaries. Site names are provided on the data tables for each map.

Wildlife Refuges: Areas managed by the USFWS as National Wildlife Refuges and Wilderness Areas are depicted using dashed lines to indicate site boundaries. Site names are provided on the data tables for each map.

GEOGRAPHIC INFORMATION SYSTEM

The entire atlas product is stored in digital form in a Geographic Information System (GIS) as spatial data layers and associated databases. Format for the data varies depending on the type of information or features for which the data are being stored.

Under separate cover is a metadata document that details the data dictionary, processing techniques, data lineage, and other descriptive information for the digital data sets and maps that were used to create this atlas. Below is a brief synopsis of the information contained in the digital version. Refer to the metadata file for a full explanation of the data and its structure.

SHORELINE CLASSIFICATIONS

The ESI shoreline habitat classification is stored as lines and polygons with associated attributes. In many cases, a shoreline may have two or three different classifications. These multiple classifications are represented on the maps by double and triple line patterns and in the database by ESI#1/ESI#2, where ESI#1 is the landward-most classification and ESI#2 is the seaward-most classification. In addition to the line features, exposed wave-cut platforms (ESI = 2A) and tidal flats (ESI = 7, ESI = 9A) are also stored as polygons.

SENSITIVE BIOLOGICAL RESOURCES

Biological resources are stored as polygons, points, or arcs. Associated with each feature is a unique identification number that is linked to a series of data tables that further identify the resources. The main biological resource table consists of a list of species identification numbers for each site, the concentration of each species at each site, and identification codes for seasonality and source information. This data table is linked to other tables that describe the seasonality and life-history time-periods for each species (at month resolution) for the specified map feature. Other data tables linked to the first table include: the species identification table, that includes common and scientific names; the species status table, that gives information for state and/or federal threatened or endangered listings; and the source database, that provides source metadata at the feature-species level (specific sources are listed for each species occurring at each mapped feature in the biology coverages).

HUMAN-USE FEATURES

Human-use features are represented as lines, points, or polygons. The resource name, the owner/manager, a contact person, and phone number are included in the database for management areas when available. All metadata sources are documented at the feature level.

REFERENCES

The major hardcopy reference materials used in this project are listed below. In some instances, reference materials were not directly used as source materials, but were instead used or interpreted by scientists or resource managers who provided expert knowledge or personal communication for the resources depicted in the atlas.

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At Research Planning, Inc., Scott Zengel was the LA G-WIS Project Manager. Colin Plank and Miles Hayes performed the shoreline classification. William Holton was responsible for atlas production. Zach Nixon was the GIS Coordinator. Jeff Dahlin, Jon Whitlock, Chris Locke, and Jennifer Rainman performed data processing under the direction of Mark White, GIS Manager. Vermell Simon prepared the final metadata. Joe Holmes provided cartographic design, text, and graphics production.

APPROPRIATE USE OF ATLAS AND DATA

This atlas and the associated database were developed to provide summary information on sensitive natural and human-use resources for the purposes of oil and chemical spill planning and response. Although the atlas and database should be very useful for other environmental and natural resource planning purposes, it should not be used in place of data held by the USFWS, NPS, USGS, LDWF, NMFS, or other agencies. Likewise, information contained in the atlas and database cannot be used in place of consultations with natural and cultural resource agencies, or in place of field surveys. Also, this atlas should not be used for navigation.

SPECIES LIST

Common Name	* Species Name
BIRDS	
DIVING BIRDS	
Anhinga	*Anhinga anhinga*
Brown pelican	*Pelecanus occidentalis*
Neotropic cormorant	*Phalacrocorax brasilianus*
GULLS AND TERNS	
Black skimmer	*Rynchops niger*
Caspian tern	*Sterna caspia*
Colonial waterbirds	-
Endangered seabird	-
Forster's tern	*Sterna forsteri*
Gull-billed tern	*Sterna nilotica*
Laughing gull	*Larus atricilla*
Least tern	*Sterna antillarum*
Rare seabird	-
Royal tern	*Sterna maxima*
Sandwich tern	*Sterna sandvicensis*
PASSERINE BIRDS	
Endangered passerine-like bird	-
Rare passerine-like bird	-
Raptors	-
Rare raptor	-
Threatened raptor	-
SHOREBIRDS	
Piping plover	*Charadrius melodus*
Rare shorebird	-
Shorebirds	-
Snowy plover	*Charadrius alexandrinus*
Threatened shorebird	-
Wilson's plover	*Charadrius wilsonia*
WADING BIRDS	
Black-crowned night-heron	*Nycticorax nycticorax*
Cattle egret	*Bubulcus ibis*
Great blue heron	*Ardea herodias*
Great egret	*Ardea alba*
Little blue heron	*Egretta caerulea*
Rare wading bird	-
Reddish egret	*Egretta rufescens*
Roseate spoonbill	*Ajaia ajaja*
Snowy egret	*Egretta thula*
Tricolored heron	*Egretta tricolor*
White ibis	*Eudocimus albus*
White-faced or Glossy ibis	*Plegadis spp.*
Yellow-crowned night-heron	*Nyctanassa violacea*
WATERFOWL	
American coot	*Fulica americana*
American wigeon	*Anas americana*
Blue-winged teal	*Anas discors*
Canvasback	*Aythya valisineria*
Gadwall	*Anas strepera*
Green-winged teal	*Anas crecca*
Hooded merganser	*Lophodytes cucullatus*
Lesser scaup	*Aythya affinis*
Mallard	*Anas platyrhynchos*
Mottled duck	*Anas fulvigula*
Northern pintail	*Anas acuta*
Northern shoveler	*Anas clypeata*
Ring-necked duck	*Aythya collaris*
FISH	
FISH	
Endangered fish	-
Rare fish	-
Threatened fish	-
Diadromous fish	-
American eel	*Anguilla rostrata*
Gizzard shad	*Dorosoma cepedianum*
Gulf sturgeon	*Acipenser oxyrinchus desotoi*
Hybrid striped bass	*Morone sp.*
Skipjack herring	*Alosa chrysochloris*
Striped bass	*Morone saxatilis*
Estuarine nursery fish	-
Atlantic croaker	*Micropogonias undulatus*
Bay anchovy	*Anchoa mitchilli*
Black drum	*Pogonias cromis*
Gray snapper	*Lutjanus griseus*
Gulf menhaden	*Brevoortia patronus*
Hogchoker	*Trinectes maculatus*
Ladyfish	*Elops saurus*
Red drum	*Sciaenops ocellatus*
Sand seatrout	*Cynoscion arenarius*
Sheepshead	*Archosargus probatocephalus*
Southern flounder	*Paralichthys lethostigma*
Spot	*Leiostomus xanthurus*
Spotted seatrout	*Cynoscion nebulosus*
Striped mullet	*Mugil cephalus*
Tarpon	*Megalops atlanticus*

Common Name	* Species Name
FISH cont.	
Estuarine resident fish	-
Gulf pipefish	*Syngnathus scovelli*
Inland silverside	*Menidia beryllina*
Lined sole	*Achirus lineatus*
Roughtail stingray	*Dasyatis centroura*
Silver perch	*Bairdiella chrysoura*
Violet goby	*Gobioides broussoneti*
Freshwater fish	-
Alligator gar	*Lepisosteus spatula*
Bantam sunfish	*Lepomis symmetricus*
Bighead carp	*Hypopthalmichthys nobilis*
Bigmouth buffalo	*Ictiobus cyprinellus*
Black buffalo	*Ictiobus niger*
Black bullhead	*Ameiurus melas*
Black crappie	*Pomoxis nigromaculatus*
Blue catfish	*Ictalurus furcatus*
Blue sucker	*Cycleptus elongatus*
Bluegill	*Lepomis macrochirus*
Bowfin	*Amia calva*
Catfish	-
Channel catfish	*Ictalurus punctatus*
Chubsucker	*Erimyzon sp.*
Common carp	*Cyprinus carpio*
Darters	-
Flathead catfish	*Pylodictis olivaris*
Flier	*Centrarchus macropterus*
Freshwater drum	*Aplodinotus grunnieus*
Golden shiner	*Notemigonus crysoleucas*
Goldfish	*Carassius auratus*
Grass carp	*Ctenopharyngodon idella*
Green sunfish	*Lepomis cyanellus*
Hybrid sunfish	*Lepomis spp.*
Largemouth bass	*Micropterus salmoides*
Logperch	*Percina caprodes*
Longear sunfish	*Lepomis megalotis*
Longnose gar	*Lepisosteus osseus*
Madtoms	*Noturus spp.*
Minnows	-
Orangespotted sunfish	*Lepomis humilis*
Paddlefish	*Polyodon spathula*
Pirate perch	*Aphredoderus sayanus*
Quillback	*Carpiodes cyprinus*
Redear sunfish	*Lepomis microlophus*
River carpsucker	*Carpiodes carpio*
Shiners	*Notropis spp.*
Shortnose gar	*Lepisosteus platostomus*
Shovelnose sturgeon	*Scaphirhynchus platorynchus*
Silver carp	*Hypopthalmichthys molitrix*
Smallmouth buffalo	*Ictiobus bubalus*
Spotted bass	*Micropterus punctulatus*
Spotted gar	*Lepisosteus oculatus*
Spotted sucker	*Minytrema melanops*
Spotted sunfish	*Lepomis punctatus*
Threadfin shad	*Dorosoma petenense*
Warmouth	*Lepomis gulosus*
White bass	*Morone chrysops*
White crappie	*Pomoxis annularis*
Yellow bass	*Morone mississippiensis*
Yellow bullhead	*Ameiurus natalis*
Marine Benthic	-
Bay whiff	*Citharichthys spilopterus*
Florida pompano	*Trachinotus carolinus*
Fringed flounder	*Etropus crossotus*
Gobies	-
Speckled worm eel	*Myrophis punctatus*
Marine pelagic fish	-
Atlantic needlefish	*Strongylura marina*
Crevalle jack	*Caranx hippos*
Spanish mackerel	*Scomberomorus maculatus*
HABITAT	
PLANTS	
Endangered plant	-
Rare plant	-
Seagrass	-
Submersed aquatic vegetation	-
Upland	-
Coastal dune grassland	-
Coastal dune scrub thicket	-
Coastal live oak-hackberry forest	-
Coastal prairie	-
Hardwood slope forest	-
Live oak forest	-
Longleaf pine savannah	-
Pine flatwoods	-
Pine savannah	-

*** Threatened and endangered species are designated by underlining.**

Common Name	* Species Name

HABITAT cont.

PLANTS cont.	
Prairie terrace loess forest	-
Salt dome	-
Slash pine/post oak forest	-
Spruce pine-hardwood mesic flatwood	-
Wetland	-
Brackish marsh	-
Forested wetland	-
Freshwater marsh	-
Intermediate marsh	-
Salt marsh	-
Scrub-shrub wetland, including black mangroves	-
Slash pine-cypress/hardwood forest	-

INVERTEBRATES

BIVALVES	
Rare freshwater mussel	-
Threatened freshwater mussel	-
CEPHALOPOD	
Bay squid	*Lolliguncula brevis*
CRABS	
Blue crab	*Callinectes sapidus*
Gulf stone crab	*Menippe adina*
CRAYFISH	
Rare crayfish	-
Red swamp crawfish	*Procambarus clarkii*
White river crawfish	*Procambarus acutus*
INSECTS	
Rare insect	-
SHRIMP	
Brown shrimp	*Penaeus aztecus*
Florida stone crab	*Menippe mercenaria*
Pink shrimp	*Penaeus duorarum*
River shrimp	*Macrobrachium sp.*
White shrimp	*Penaeus setiferus*

REPTILES

ALLIGATORS	
American alligator	*Alligator mississippiensis*
OTHER REPTILES/AMPHIBIANS	
Rare amphibian	-
Rare lizard	-
Rare snake	-
TURTLES	
Rare terrestrial/aquatic turtle	-
Threatened aquatic turtle	-
Threatened sea turtle	-

TERRESTRIAL MAMMALS

BATS	
Rare bat	-
BEARS	
Louisiana black bear	*Ursus americanus luteolus*
Threatened bear	-
SMALL MAMMALS	
Common raccoon	*Procyon lotor*
Mink	*Mustela vison*
Muskrat	*Ondatra zibethicus*
Northern river otter	*Lutra canadensis*
Nutria	*Myocastor coypus*
Rare small mammal	-

*** Threatened and endangered species are designated by underlining.**

SHORELINE DESCRIPTIONS

EXPOSED, SOLID MAN-MADE STRUCTURES **ESI = 1B**

DESCRIPTION

- Typically composed of concrete or metal bulkheads
- Organisms, such as barnacles and algae, may be common on the lower levels, whereas biota along the upper intertidal zone are sparse
- Attached organisms are hardy and accustomed to strong hydraulic impacts and pressures
- Found only in small areas usually on the barrier islands to provide protection to residential and industrial developments where these structures are threatened by beach erosion

PREDICTED OIL BEHAVIOR

- Much of the oil will be held offshore by wave reflection
- Oil could percolate between the joints of the structures
- Under heavy accumulations, oil may coat the intertidal area and biota present would be impacted

RESPONSE CONSIDERATIONS

- High-pressure spraying may be required in order to:
  - remove oil
  - prepare substrate for re-colonization of epifaunal communities
  - minimize aesthetic damage
  - prevent the chronic leaching of oil from the structure

EXPOSED WAVE-CUT PLATFORMS IN CLAY **ESI = 2A**
EXPOSED SCARPS AND STEEP SLOPES IN CLAY **ESI = 2B**

DESCRIPTION

- Regular exposure to high wave energy, with strong wave reflection patterns
- Intertidal zone is a flat muddy bench of variable width
- The mud may incorporate a high percentage of organic material and root masses from older salt marsh vegetation
- May be backed by a shell berm (considered a gravel beach)
- Substrate is relatively impermeable though potential for deep subsurface penetration exists where burrowed by organisms or where root cavities are exposed
- Surface is irregular and tidal pools may be present
- Small accumulations of gravel or shells can be found in the tidal pools and crevices in the platform
- May support large populations of encrusting animals and plants, with rich tidal pool communities
- Common throughout the more exposed shorelines of the delta

PREDICTED OIL BEHAVIOR

- Oil will not adhere to the muddy substrate, but rather be transported across the platform and accumulate along the high-tide line, where it can penetrate in beach sediments, if present. Oil may also adhere to any relict plant material (root masses, etc.)
- Persistence of oiled sediments is usually short-term, except in burrows or larger sediment accumulations at the landward edge of the platform, where oil can persist for up to several weeks to months
- Biological impacts can be immediate and severe, particularly if fresh oil slicks cover tidal pool communities or penetrate burrows

- Where oil penetrates burrows it can be expected to persist in relatively unweathered condition for long periods of time

RESPONSE CONSIDERATIONS

- Cleanup is usually not required, because oil is quickly removed by wave action
- Access may be difficult and dangerous; minimize trampling to avoid increased penetration
- Where the high-tide area is accessible, it may be feasible to remove heavy oil accumulations and oiled debris in areas of high recreational use or in order to protect a nearshore marine resource, such as marine birds

FINE- TO MEDIUM-GRAINED SAND BEACHES **ESI = 3A**
SCARPS AND STEEP SLOPES IN SAND **ESI = 3B**

DESCRIPTION

- Generally flat, wide, and hard-packed
- Rate of sediment mobility is relatively low, thus rapid, dramatic changes in the beach profile are not common
- Surface sediments subject to regular reworking by waves
- Beach fauna can vary in type and density; mobile surface, burrowing, and interstitial forms are typical
- Shorebird nests, eggs, and hatchlings can be expected on nearly all outer coast sand beaches
- Extensive fine- to medium-grained sand beaches are found on the barrier islands of the outer coast

PREDICTED OIL BEHAVIOR

- Light oil accumulations are deposited as oily swashes or bands along the upper intertidal zone
- Heavy oil accumulations, can cover entire beach surface; the oil will be lifted off the lower beach with the rising tide

- Maximum penetration of oil is about 10 cm into fine-grained sand and 15 cm into medium-grained sand
- Burial of oiled layers by clean sand can occur within hours on these microtidal beaches, but the maximum burial will typically occur along the upper beach face to depths less than 30 cm
- Organisms living in the beach may be killed by smothering or lethal oil concentrations in interstitial water
- There can be direct and indirect impacts to bird nests, eggs, and hatchlings

RESPONSE CONSIDERATIONS

- The easiest beach type to clean, because hard substrate can support vehicular and foot traffic and depths of oil burial and penetration are minimal
- After all oil has come ashore, cleanup activities should concentrate on the removal of oil from the upper swash zone
- Vehicular traffic and walking through oiled areas and dunes should be limited to prevent contamination of clean areas and disturbance of dune vegetation
- Vehicular and foot traffic, and mechanical or manual beach cleanup, should be carefully planned and monitored in shorebird nesting areas to avoid disturbance and destruction of nests, eggs, and young
- Manual cleanup, rather than road graders and front-end loaders, is advised where feasible to minimize the volume of sand removed from the shore
- Prevent the mixture of oil deeper into the sediments by vehicular and foot traffic

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COARSE-GRAINED SAND BEACHES — ESI = 4

DESCRIPTION

- Moderate to steep beachface slopes. Sediments are soft and permeable with low trafficability
- The rate of sediment mobility is relatively high, with the vertical accumulation of up to 20 cm of sediments possible within a single tidal cycle
- Beach fauna can vary in type and density; mobile surface, burrowing, and interstitial forms are typical
- Not quite as common as fine-to-medium grained sand beaches, they are found on transgressive portions of the barrier islands, usually grading into mixed sand and gravel beaches
- In places, they occur at the upper intertidal zone on wave-cut platforms

PREDICTED OIL BEHAVIOR

- During small spills, oil may be deposited primarily as a band along the high-tide line
- Under very heavy accumulations, oil may spread across the entire intertidal zone, though it will be lifted off the lower part of the beach during the rising tide
- Penetration up to 25 cm possible
- Burial of oiled layers by clean sand can be rapid, to depths of 1 m or more if the oil comes ashore at the start of a depositional period
- Organisms living in the beach may be killed by smothering or lethal oil concentrations in interstitial water
- There can be direct and indirect impacts to bird nests, eggs, and hatchlings

RESPONSE CONSIDERATIONS

- Cleanup is more difficult than for finer-grained beaches because equipment tends to grind oil into the substrate due to the loosely packed and permeable nature of these coarser-grained sediments; therefore, special care must be exercised at all times while using heavy equipment in order to prevent mixing oil deeper into the beach sediment

- Use of heavy equipment for oil/sand removal may also result in the removal of excessive amounts of sand; therefore, where feasible and for smaller amounts of oil, manual cleanup may be desirable
- Vehicular traffic and walking through oiled areas and dunes should be limited, to prevent contamination of clean areas and disturbance of dune vegetation
- Vehicular and foot traffic, and mechanical or manual beach cleanup, should be carefully planned and monitored in shorebird nesting areas to avoid disturbance and destruction of nests, eggs, and young
- Removal of sediment should be limited as much as possible to avoid erosion problems on the beach in the future; however, the common occurrence of multiple buried oil layers in these types of beaches increases the amount of sediment to be handled and disposed of
- Mechanical reworking of the sand into the surf zone (surf washing) may be used under optimal conditions as a polishing step for lightly oiled sediments without sediment removal

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MIXED SAND AND GRAVEL BEACHES — ESI = 5

DESCRIPTION

- Moderately sloping beach composed of a mixture of sand and at least 20 percent gravel
- Soft sediments with low trafficability
- Sediment mobility is very high during storms, but considerably less than sand beaches during normal conditions
- Spatial variations in the distribution of grain sizes may be significant, with separate zones of pure sand, pebbles, or cobbles, in addition to the mixed zones
- Gravel can be composed of a variety of materials, including shells and other calcium carbonate materials
- Substrate has medium-to-high permeability
- Beach fauna can vary in type and density; mobile surface, burrowing, and interstitial forms are typical
- Though relatively uncommon they are found where the barrier islands are undergoing long-term erosion and as berms perched at the landward edge of mud platforms

PREDICTED OIL BEHAVIOR

- During small spills, oil may be deposited along the high-tide swash line
- During large spills, oil may be spread across the entire intertidal area
- Oil penetration into the beach sediments may be up to 50 cm; however, the sand fraction can be quite mobile, and if the sand fraction exceeds about 40 percent, oil behavior is similar to that described for sand beaches
- Significant amounts of oil can be eroded away during storms
- Burial of oil may be deep (up to 1 m) if oil comes ashore while the beach is recovering from storm conditions
- Organisms living in the beach may be killed by smothering or lethal oil concentrations in interstitial water

RESPONSE CONSIDERATIONS

- Remove heavy accumulations of pooled oil as quickly as possible
- All oiled debris should be removed
- Vehicular traffic and walking through oiled areas should be limited, to prevent contamination of clean areas
- Vehicular and foot traffic, and mechanical or manual beach cleanup, should be carefully planned and monitored in shorebird nesting areas to avoid disturbance and destruction of nests, eggs, and young
- Mechanical reworking of oiled sediments from the high-tide zone to the upper intertidal zone for wave reworking (berm relocation) can be effective in areas subject to significant wave action
- In-place tilling may be used to expose deeply buried oil layers to wave reworking in areas subject to significant wave action
- In-place Mechanical reworking of the sediments into the surf zone (surf washing) may be used under optimal conditions as a polishing step for lightly oiled sediments without sediment removal

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GRAVEL BEACHES **ESI = 6A**

DESCRIPTION

- Composed of sediments larger than 2 mm (granules, pebbles, cobbles and boulders) made up of shell fragments
- Most permeable of all beach sediments
- Lowest trafficability of all beach types
- Slope is intermediate to steep with multiple, wave-built berms and washovers usually forming the upper beach (see arrow)
- Sediment replenishment rates are lowest of all beach types
- Attached animals and plants are usually restricted to lowest parts of the beach, where the sediments are less mobile
- Common throughout the delta as perched berms and washovers atop wave-cut mud scarps

PREDICTED OIL BEHAVIOR

- Deep penetration and rapid burial of stranded oil is likely; penetration of tens of cm (over 1 m possible) can extend oil to depths below where it cannot be reworked by any natural process except extreme storms
- Therefore, long-term persistence will be controlled by the depth of penetration versus the depth of routine reworking by storm waves
- Oil may be carried over the normal high-tide line and storm berms during high-water events, where it can pool and persist above the normal zone of wave wash
- In more sheltered areas, formation of asphalt pavements is likely if oil accumulations are heavy

RESPONSE CONSIDERATIONS

- Because of the low trafficability, the rapid rates of burial, and deep penetration of the oil, this is the most difficult of all the beach types to clean

- Sediment removal should be limited as much as possible, because of potential beach erosion problems in the future
- Low-pressure flushing can be used to remove heavy oil where collection of the flushed oil is feasible, but high-pressure flushing should be avoided since the shell fragments are likely to be blown away by the water pressure

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RIPRAP **ESI = 6B**

DESCRIPTION

- Composed of cobble- to boulder-sized rock fragments
- Used for shoreline protection and inlet stabilization
- Attached low-intertidal zone biota may be plentiful and varied
- Relatively common in all the developed areas of the barrier islands and in small amounts associated with industrial sites

PREDICTED OIL BEHAVIOR

- Oil can penetrate deeply into the highly permeable riprap
- Oil adheres readily to the rough rock surfaces
- If left uncleaned, oil may cause chronic leaching (weeks to months) until it hardens
- Resident fauna and flora may be killed by the oil

RESPONSE CONSIDERATIONS

- Flushing can be effective for removing mobile oil, but large amounts of residue can remain after flushing, particularly for heavy oil

EXPOSED TIDAL FLATS **ESI = 7**

DESCRIPTION

- Flat intertidal areas, composed primarily of sand and mud, that vary in width from a few to hundreds of meters
- The presence of sand indicates that tidal or wind-driven currents and waves are strong enough to mobilize the sediments
- Usually associated with another shoreline type on the landward side of the flat
- Sediments usually remain water-saturated, with only the topographically higher ridges drying out during low tide
- Sediments are generally too soft for vehicular traffic
- Biological utilization can be very high, with large numbers of infauna and heavy use by birds for roosting and foraging
- Common in the study area, associated with inlets and washovers of barrier islands and the chenier west of the deltas

PREDICTED OIL BEHAVIOR

- Oil does not usually adhere to the surface of exposed tidal flats, but rather moves across the flat and accumulates at the high-tide line
- Deposition of oil on the flat may occur on a falling tide if concentrations are heavy
- Oil does not typically penetrate these water-saturated sediments, except on the top of sand bars and into animal burrows if they dry out at low tide; thus, oil penetration is limited to a maximum of a few cm
- Because of the high biological use, impacts can be significant to benthic invertebrates that are smothered or exposed to the water-accommodated fraction of the oil

RESPONSE CONSIDERATIONS

- In most cases, the best response is to let the oil, which is primarily on the surface of the flat, be removed naturally
- Natural removal tends to happen rather quickly in this habitat, because of its exposure to waves and tidal currents
- Cleanup is very difficult, because of the potential for mixing the oil deeper into the sediments
- If cleanup is attempted, the use of heavy machinery should be restricted in order to prevent contamination of the subsurface sediments, with manual removal being preferred; however, heavy foot traffic can also result in mixing the oil deeper

SHELTERED ROCKY SHORES AND SHELTERED SCARPS IN MUD OR CLAY **ESI = 8A**

DESCRIPTION

- Mud and clay shores of variable slope (from vertical cliffs to wide, rocky ledges) that are sheltered from exposure to most wave and tidal energy
- Attached biota may be plentiful and varied, especially in lower and mid-intertidal zones
- Sheltered muddy scarps are relatively rare on the outer coast and are usually associated with man-made cuts through salt marsh, occurring naturally in only a few bays and coves

PREDICTED OIL BEHAVIOR

- Oil will be found along the high-tide line, forming a distinct oil band
- Oil can persist because of the low energy setting
- Where burrowing is present, oil can penetrate deeply, causing long-term contamination of the subsurface
- Impacts to attached organisms can be severe

RESPONSE CONSIDERATIONS

- Cleanup is often required because natural removal rates are slow
- Water flushing at ambient water temperatures is most effective when the oil is fresh
- All pooled oil and oiled debris should be removed as soon as possible
- Pockets of liquid oil can be removed manually or with sorbents

SHELTERED, MAN-MADE STRUCTURES **ESI = 8B**

DESCRIPTION

- Include revetments, seawalls, piers, and docks typically constructed of impermeable materials such as concrete and wood
- Commonly found inside harbors and bays in highly developed areas sheltered from direct exposure to waves
- Attached biota may be plentiful and varied, especially in lower tidal zones

PREDICTED OIL BEHAVIOR

- On impermeable surfaces, the oil will form a band at the high-tide line
- If the oil is not removed, it may cause chronic leaching until the oil hardens
- Impacts to attached organisms can be severe

RESPONSE CONSIDERATIONS

- Cleanup is frequently required, because natural removal rates are slow and these features are located in populated areas
- High-pressure spraying may be required to remove oil for aesthetic reasons and to prevent oil leaching from the structure
- Cleanup crews should make sure to recover all released oil
- All pooled oil and oiled debris should be removed as soon as possible

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SHELTERED RIPRAP **ESI = 8C**

DESCRIPTION

- Composed of cobble- to boulder-sized rock fragments, similar to exposed riprap but sheltered from wave energy
- Commonly found inside harbors and bays in highly developed areas sheltered from direct exposure to waves
- Attached biota may be plentiful and varied, especially in lower tidal zones

PREDICTED OIL BEHAVIOR

- On impermeable surfaces, the oil will form a band at the high-tide line; oil will adhere readily to the rough rock surfaces
- Deep penetration of oil possible because of the high permeability of the riprap
- If the oil is not removed, it may cause chronic leaching (weeks to months) until the oil hardens
- Impacts to attached organisms can be severe

RESPONSE CONSIDERATIONS

- Cleanup is frequently required, because natural removal rates are slow and these features are located in populated areas
- Flushing can be effective for removing mobile oil, but large amounts of residue can remain after flushing, particularly for heavy oil. Clean up is often difficult and intrusive

- High-pressure spraying and/or scraping may be required to remove oil for aesthetic reasons and to prevent leaching of oil from the structure
- Cleanup crews should make sure to recover all released oil
- All pooled oil and oiled debris should be removed quickly

SHELTERED TIDAL FLATS **ESI = 9A**

DESCRIPTION

- Sheltered tidal flats are composed primarily of mud with minor amounts of sand and shell
- They are present in calm-water habitats, sheltered from major wave activity, frequently in unvegetated areas within back-barrier portions of the islands and inner regions of the delta
- The sediments are very soft and cannot support even light foot traffic in many areas
- They can have heavy wrack deposits along the upper fringe
- There can be large concentrations of invertebrates on and in the sediments

PREDICTED OIL BEHAVIOR

- Oil does not usually adhere to the surface of sheltered tidal flats, but rather moves across the flat and accumulates at the high-tide line
- Deposition of oil on the flat may occur on a falling tide if concentrations are heavy
- Oil will not penetrate the water-saturated sediments, but could penetrate burrows and desiccation cracks or other crevices in muddy sediments

RESPONSE CONSIDERATIONS

- These are high-priority areas necessitating the use of spill protection devices to limit oil-spill impact; deflection or sorbent booms and open water skimmers should be used

- Cleanup of the flat surface is very difficult because of the soft substrate; many methods may be restricted
- Care should be taken to limit foot traffic during any cleanup operations, to avoid mixing oil into the sediments
- Low-pressure flushing and deployment of sorbents from shallow-draft boats may be helpful
- Oiled wrack should be removed without sediment disturbance

SHELTERED, VEGETATED LOW BANKS **ESI = 9B**

DESCRIPTION

- Sheltered banks of stream channels, canals, and other waterways
- Calm-water habitats that are typically muddy, soft, and highly vegetated
- Wave energy is very low, although there may be some tidal and/or riverine currents along the banks
- Present but not abundant throughout the delta, usually along man-made cuts or areas flooded during surveys

PREDICTED OIL BEHAVIOR

- Oil adheres readily to vegetation
- Natural removal rates very slow because of low energy and dense vegetation

- The band of oil coating on the vegetation will vary widely, depending upon the tidal stage at the time of oiling; there may be multiple bands
- If the vegetation is thick, heavy oil coating will be restricted to the outer fringe, with penetration and lighter oiling to the limit of tidal influence
- In areas of high suspended sediments, sorption of oil can result in deposition of contaminated sediments on the channel banks and bottoms

RESPONSE CONSIDERATIONS

- These are high-priority areas necessitating the use of spill protection devices to limit oil-spill impact; most are along channels that have a opening to the open ocean close by; therefore, deflection booming should be used to prevent the oil from entering the channel mouth
- Cleanup of the banks is very difficult because of the soft substrate
- Manual operations and deployment of sorbents from shallow-draft boats may be helpful
- Under light oiling, the best practice is to let the area recover naturally
- Heavy accumulations of pooled oil can be removed by vacuum, sorbents, or low-pressure flushing
- Any cleanup activity must not mix the oil deeper into the sediments; trampling of the plant roots must be minimized
- Cutting of oiled vegetation should only be considered when other resources present (such as birds) are at great risk from leaving the oiled vegetation in place

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SALT- AND BRACKISH-WATER MARSHES **ESI = 10A**

DESCRIPTION

- Intertidal wetlands consisting of emergent, herbaceous vegetation
- Marshes vary in extent from extensive areas to narrow fringes
- Sediments in the substrate range from fine sands to silts and organically rich muds

PREDICTED OIL BEHAVIOR

- Oil adheres readily to intertidal vegetation
- Oil coating typically takes the form of a band of varying width; multiple bands are possible
- Large slicks will persist through multiple tidal cycles and coat vegetation from high tide line to the base of the stem
- If the vegetation is thick, the heaviest oil coating will be restricted to the outer fringe of the marsh. However, the lighter the oil, the further into the marsh it may penetrate
- Heavy and weathered oils do not readily adhere to or penetrate the fine sediments, but can pool in surface depressions or collect in burrows
- Light oils can penetrate the top few centimeters of sediment and deeply into burrows and cracks (up to one meter)

RESPONSE CONSIDERATIONS

- Extent of oiling and natural removal processes and rates should be evaluated prior to conducting cleanup
- Under light oiling, allow the area time to recover naturally

- Sorbents should be deployed to contain oil as it is naturally removed
- Cleanup crews and activities must be carefully monitored to avoid unnecessary vegetation damage
- Any cleanup activity must not mix the oil deeper into the sediments. Trampling of the roots must be minimized
- Cutting of oiled vegetation should only be considered when other resources present (such as birds) are at great risk from leaving the oiled vegetation in place
- In-situ burning may be considered for removal of free oil pooled in the marsh

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FRESHWATER MARSHES **ESI = 10B**

DESCRIPTION

- Consist of emergent, herbaceous freshwater vegetation
- Marshes vary in extent from extensive areas to narrow fringes
- Sediments are composed of fine sand, silt, organic-rich mud, and potentially thick accumulations of peat

PREDICTED OIL BEHAVIOR

- Oil adheres readily to vegetation
- Oil coating typically takes the form of a band of varying width; multiple bands are possible
- If the vegetation is thick, the heaviest oil coating will be restricted to the outer fringe of the marsh. However, the lighter the oil, the further into the marsh it may penetrate
- Medium to heavy oils do not readily adhere to or penetrate the fine sediments, but can pool in surface depressions or collect in burrows
- Light oils can penetrate the top few centimeters of sediment and deeply into burrows and cracks (up to one meter)

RESPONSE CONSIDERATIONS

- Extent of oiling and natural removal processes and rates should be evaluated prior to conducting cleanup
- Under light oiling, allow the area time to recover naturally
- Heavy accumulations of pooled oil can be removed by vacuum, sorbents, or low-pressure flushing taking care to prevent oiling of sensitive areas down slope or along shore
- Sorbents should be deployed to contain oil as it is naturally removed

- Cleanup crews and activities must be carefully monitored to avoid unnecessary vegetation damage
- Any cleanup activity must not mix the oil deeper into the sediments. Trampling of the roots must be minimized
- Cutting of oiled vegetation should only be considered when other resources present (such as birds) are at great risk from leaving the oiled vegetation in place
- In-situ burning may be considered for removal of free oil pooled in the marsh

FRESHWATER SWAMPS **ESI = 10C**

DESCRIPTION

- Freshwater swamps consist of shrubs and forested wetlands
- The sediment tends to be silty clay with large amounts of organic debris
- They may be seasonally flooded, though there are many low, permanently flooded areas
- Resident flora and fauna are abundant with numerous species
- They occur along freshwater drainages, often adjacent to freshwater marshes

PREDICTED OIL BEHAVIOR

- Oiled woody vegetation is less sensitive than marshes to oil coating
- Some oil can be trapped and pooled on the swamp flood plain as water levels drop
- Penetration into the floodplain soils is usually limited because of high water levels, muddy composition, surface organic debris, and vegetation cover
- Large amounts of oily debris can be sources of chronic sheening
- During dry periods, terrestrial spills flow downhill and accumulate in depressions or reach waterbodies

RESPONSE CONSIDERATIONS

- Under light oiling, the best practice is to let the area recover naturally
- Heavy accumulations of pooled oil can be removed by vacuum, sorbents, or low-pressure flushing. During flushing, care must be taken to prevent transporting oil to sensitive areas down slope or along shore

- Cleanup crews and activities must be carefully monitored to avoid unnecessary vegetation damage
- Any cleanup activity must not mix the oil deeper into the sediments. Trampling of the roots must be minimized
- Cutting of oiled herbaceous vegetation should only be considered when other resources present (such as birds) are at great risk from leaving the oiled vegetation in place; trees should not be cut
- Under stagnant water conditions, herding of oil with water spray may be needed to push oil to collection areas
- Oily debris can be removed where there is access

SCRUB-SHRUB WETLANDS, INCLUDING BLACK MANGROVES **ESI = 10D**

DESCRIPTION

- Roots and trunks are submerged in water, with only the lowest leaves inundated at high water levels
- Includes black mangroves along the outer coast, which increase in occurrence during years of mild winters; black mangroves tend to occur along the outer fringe of salt marshes
- Relatively sheltered from waves and strong tidal currents
- The width of the forest can range from one tree to a many kilometers
- The substrate generally consists of muds and/or hydric soils
- Important feeding and nesting areas for wildlife (such as birds)
- Occur along sheltered shorelines and estuarine areas throughout the delta

PREDICTED OIL BEHAVIOR

- Oil can wash through vegetation if it comes ashore at high tide
- Heavy and emulsified oil can be trapped in and adhere to thickets of roots or pneumatophores
- Re-oiling from resuspended or released oil residues may cause additional injury over time
- Oiled trees may start to show evidence of effects (leaf yellowing) days to weeks after oiling; tree mortality may take months, especially for heavy oils
- Oil that penetrates the substrate or gets mixed into the sediments can cause long-term contamination of sediments and severe plant injury and mortality

RESPONSE CONSIDERATIONS

- Wrack may protect the trees from oiling, so wait until the threat of oiling has passed before removing it

- Sorbent boom can be placed in front of oiled forests to recover oil released naturally
- In most cases, no other cleanup activities are recommended
- Where thick oil accumulations are not being naturally removed, low-pressure flushing or vacuum may be attempted at the outer fringe
- It is extremely important to prevent disturbance of soft substrates by foot traffic, which can mix oil into the sediments

LOUISIANA

SHORELINE HABITATS (ESI)
2001 ESI Shoreline Classification

- 1B) EXPOSED, SOLID MAN-MADE STRUCTURES
- 2A) EXPOSED WAVE-CUT PLATFORMS IN CLAY
- 2B) EXPOSED SCARPS AND STEEP SLOPES IN CLAY
- 3A) FINE- TO MEDIUM-GRAINED SAND BEACHES
- 3B) SCARPS AND STEEP SLOPES IN SAND
- 4) COARSE-GRAINED SAND BEACHES
- 5) MIXED SAND AND GRAVEL BEACHES
- 6A) GRAVEL BEACHES
- 6B) RIPRAP
- 7) EXPOSED TIDAL FLATS
- 8A) SHELTERED ROCKY SHORES AND SHELTERED SCARPS IN MUD OR CLAY
- 8B) SHELTERED MAN-MADE STRUCTURES
- 8C) SHELTERED RIPRAP
- 9A) SHELTERED TIDAL FLATS
- 9B) SHELTERED, VEGETATED LOW BANKS
- 10A) SALT- AND BRACKISH-WATER MARSHES
- 10B) FRESHWATER MARSHES
- 10C) FRESHWATER SWAMPS
- 10D) SCRUB-SHRUB WETLANDS

COASTAL HABITATS
From 1988 Digital Shoreline

- 10A) SALT MARSH
- 10A) BRACKISH MARSH
- 10A) INTERMEDIATE MARSH
- 10B) FRESHWATER MARSH
- 10C) FORESTED WETLAND
- 10D) SCRUB-SHRUB WETLAND
- SEAGRASS

SENSITIVE BIOLOGICAL RESOURCES

BIRD
- DIVING BIRD
- GULL / TERN
- PASSERINE
- RAPTOR
- SHOREBIRD
- WADING BIRD
- WATERFOWL
- NESTING SITE

FISH
- FISH

TERRESTRIAL MAMMAL
- BAT
- BEAR
- SMALL MAMMAL

INVERTEBRATE
- BIVALVE
- CEPHALOPOD
- CRAB
- CRAYFISH
- INSECT
- SHRIMP

REPTILE / AMPHIBIAN
- ALLIGATOR
- TURTLE
- OTHER REPTILE / AMPHIBIAN

HABITAT
- PLANT
- SEAGRASS

MUTIPLE ELEMENTS
- THREATENED / ENDANGERED
- 123 RAR NUMBER

HUMAN-USE FEATURES

- AIRPORT / HELIPORT
- BOAT RAMP
- INDIAN RESERVATION
- MARINA
- NATIONAL PARK / NATURE CONSERVANCY
- SENIC RIVER
- STATE PARK
- WILDLIFE REFUGE
- 123 HUMAN-USE NUMBER
- PARISH BOUNDARY
- MANAGEMENT BOUNDARY
- MAJOR ROAD
- MINOR ROAD
- SHORELINE FROM 2001 PHOTO INTERPRETATION
- SHORELINE FROM 1988 DIGITAL DATA

Guidelines for Interpreting ESI Maps

To help users interpret the ESI maps and tabular data, we offer the following guidelines for use in addition to the map legend:

• Shoreline Habitats. The "shoreline," representing the boundary between land and water, is color-coded with the ESI classification. Most shoreline habitats are shown as a line, with no areal dimension. Where there is more than one shoreline type (e.g., a beach in front of a seawall), the colors for each habitat are shown, with the color for the landward habitat on the land side of the shoreline and the color for the seaward habitat on the water side. In areas where the intertidal zone is wide (e.g., wide tidal flats, wave-cut rocky platforms), the habitat from high to low water is filled with the ESI classification color. When data are available, the entire extent of wetlands are filled with colored patterns. The seaward edge of the wetland is color-coded with the ESI classification; the landward extent of the wetland is indicated by a dashed, colored line.

• Biological Resources. The distribution of biological resources is shown using many different conventions. The major convention is an icon associated with a point, line, or polygon that shows the species' areal distribution. The icon's reference number corresponds to a data table with details on species and life history. Biological resource data are organized into six major groups, each with a reference color: birds (green), mammals (brown), fish (blue), shellfish (orange), reptiles (red), and rare/endangered plants and special habitats (purple). These colors are used to fill hatched polygons and the icons. Each major group has subgroups with unique icons to visually indicate the type of organism or feature present. The icon or group of icons is usually located inside the polygon it represents; however, sometimes a line is connected between the icon and the polygon or point to make it easier to relate the two. Note that icons are used to indicate the types of resources present, but the actual data are the points and polygons. A red box around an icon indicates the presence of a species on the state or Federal list of threatened or endangered species.

The number listed below each icon refers to the first column of a data table for each map. The data tables, organized by group (birds, fish, etc.), include the following information: species name, status as threatened or endangered on state and Federal lists, concentration (specifically for each point or polygon), presence by month, and special life-history time periods. When a polygon contains multiple groups, the one number under the group of icons is listed under each group heading in the data tables. Where possible, the same number is used on multiple maps. For example, all bald eagle nests with the same seasonality could have the same number throughout the atlas, or the same assemblage of fish would have the same number wherever it occurred.

A data table has a separate listing for every unique combination of species, concentration, seasonality, life-history stage, and source. By looking at the monthly seasonality data in the table for each map, the species present at the time of concern can be easily identified. An 'X' or number is placed under each month in which any life stage of the species is present in the area represented by the point or polygon. Numbers are used typically for fish and shellfish where data on relative abundance are available. The final columns in the data tables include the months when reproductive activities occur or early life stages are present. Users should pay close attention to the data tables because they contain much of the information needed to identify the most sensitive resources at different times of the year.

Points, lines, and polygons on a map represent the distribution of the resources. Green points show bird nesting sites, including bald eagle nests and dense colonial nesters (e.g., heron rookeries and seabird nesting colonies). Animals and habitats are also represented as: 1) hatched polygons in the color for the animal group (e.g., green for birds); 2) black hatched polygons which contain multiple groups of resources (birds and fish in the same tidal channels); 3) solid lines (usually used for fish in small streams); or 4) in "common in ..." boxes. When showing the biological resource polygons would make the maps too difficult to read (usually when multiple polygons cover a large area), the polygons are not plotted and the presence of the resource is indicated by placing the icon in a box labeled "common in ..." The box contains an appropriate geographic reference. Different boxes can be used on the same map when, for example: "common in Winyah Bay" or "common in tidal creeks." The data for these resources are still fully present in the database but are not shown to make the maps more readable.

- Human-use Resources. Most of the human-use resources are point features indicated by a black-and-white icon. Managed lands, such as refuges and sanctuaries, have their boundaries shown as a dot-dash line with an icon and name placed inside. Where the feature is a known point location (e.g., a drinking water intake, boat ramp, marina), the exact location is shown as a small black dot and a line is drawn from it to the icon. Activities such as commercial and recreational fishing and areas such as recreational beaches are also indicated by an icon placed in the general area without any lines to points or polygons since the boundaries are not readily defined.

Some features, like historic and archaeological sites, are location-sensitive: the agency managing the resource believes the exact location should not be shown in order to protect the site. In these cases, the icon is placed in the general area of the resource, but the exact location is not shown.

(b) (7)(F), (b) (3)

NOTES:

REFERENCE DRAWINGS:

DIAL 811

NO.	REVISION	BY	DATE	APR

NuStar Energy L.P.

2330 Loop 1604 W
San Antonio, Texas 78248
Tel: (210) 918-2000
1-800-866-9060

PROJECT LOCATION: ST. JAMES PARISH, LOUISIANA

DRAWN BY: DATE:

CHECKED: DATE:

APPROVED: DATE:

SCALE: AS SHOWN

ST. JAMES TERMINAL
PIPELINE SYSTEM OVERVIEW

ORIGINAL PROJECT NO.

DRAWING NO. REV.

(b) (7)(F), (b) (3)

(b) (7)(F), (b) (3)

(b) (7)(F), (b) (3)

(b) (7)(F), (b) (3)

(b) (7)(F), (b) (3)

NOTES:
1) CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO FABRICATION AND INSTALLATION.

REFERENCE DRAWINGS:

NO.	REVISION	BY	DATE	APR

NuStar Energy L.P.

2330 Loop 1604 N
San Antonio, Texas 78248
Tel: (210) 345-2000
1-800-531-7911

PROJECT LOCATION: St. James, Louisiana	
DRAWN BY:	DATE:
CHECKED:	DATE:
APPROVED:	DATE:
SCALE: As shown	

ST. JAMES TERMINAL
EVACUATION PLAN

ORIGINAL PROJECT NO.

DRAWING NO. | REV.

(b) (7)(F), (b) (3)

NOTES:
1) CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO FABRICATION AND INSTALLATION.

REFERENCE DRAWINGS:

NO.	REVISION	BY	DATE	APR

NuStar Energy L.P.

2330 Loop 1604 N
San Antonio, Texas 78248
Tel: (210) 345-2000
1-800-531-7911

PROJECT LOCATION: St. James, Louisiana	
DRAWN BY:	DATE:
CHECKED:	DATE:
APPROVED:	DATE:
SCALE: As shown	

ST. JAMES TERMINAL
PIPING PLAN

ORIGINAL PROJECT NO.

DRAWING NO. | REV.

CONTAINMENT AREA 1 CALCULATIONS

(b) (3), (b) (7)(F)

[redacted]

REQUIRED DIKE ELEVATION (ft)

REQUIRED DIKE ELEVATION (ft)

CONTAINMENT AREA 2 CALCULATIONS

(b) (3), (b) (7)(F)

CONTAINMENT AREA 5 CALCULATIONS

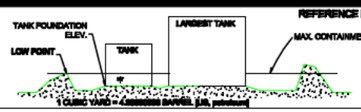
(b) (3), (b) (7)(F)

(b) (3), (b) (7)(F)

(b) (3), (b) (7)(F)

(b) (3), (b) (7)(F)

(b) (7)(F), (b) (3)



REFERENCE DRAWING

* = CALCULATED FROM SURVEY DATA AND AUTO CAD MODEL

NO.	REVISION	BY	DATE	APR
1	ISSUED FOR REVIEW		4/30/10	X

NuStar Energy L.P.

2330 Loop 1604 N San Antonio, Texas 78248 (210)918-3045

ST. JAMES, LA

DRAWN:	STB	DATE: 4/30/10
CHECKED:	STB	DATE: 4/30/10
APPROVED:	X	DATE: X

ST. JAMES TERMINAL
TEMPORARY RAIL UN-LOADING FACILITY
AS-BUILT & CONTAINMENT SURVEY

ORIGINAL PROJECT NO. X

DRAWING NO. X REV. A

Species by Parish List

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Explanation of Ranking Categories Employed by Natural Heritage Programs Nationwide

Federal Ranks (USESA FIELD):

Global Element Ranks:

State Element Ranks:

State Protection Status:

Filter By Parish
St. James

Filter by Type
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Rare Plant Species

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
Asclepias incarnata	Swamp Milkweed	S2	G5			Asclepias incarnata	Jefferson, Lafourche, Charles, St. James, St. . the Baptist, Terrebonne

PHMSA 000098196

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Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
Physostegia correllii	Correll's False Dragon-head	S1	G2			Physostegia correllii	Cameron, S Charles, St. James, St. Tammany

Natural Communities

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
Cypress-Tupelo Swamp		S4	G3G5				Ascension, Assumptior Bossier, Ea: Baton Rouc Franklin, Ib Iberville, Livingston, Natchitoche Pointe Cou Rapides, St Charles, St. James, St. . the Baptist, Landry, St. Martin, St. Mary, St. Tammany, Terrebonne West Felicia Winn

Rare Animal Species

PHMSA 00009819

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
Haliaeetus leucocephalus	Bald Eagle	S2N,S3B	G5	E	Delisted	Haliaeetus leucocephalus	Ascension, Assumptior Avoyelles, Beauregard Bossier, Ca Calcasieu, Claiborne, Concordia, DeSoto, Ea Baton Rouc East Felicia Franklin, Ib Iberville, Jackson, Jefferson, Lafourche, LaSalle, Livingston, Morehouse, Natchitoche Orleans, Ouachita, Plaquemine Pointe Cou Rapides, Richland, Sabine, St. Bernard, St Charles, St. James, St. the Baptist, Landry, St. Martin, St. Mary, St.

PHMSA 00009819

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
							Tammany, Tangipahoa Tensas, Terrebonne Union, Vermilion, \ Baton Rouc West Felicia
Mustela frenata	Long-tailed Weasel	S2S4	G5			Mustela frenata	Allen, East Baton Rouc East Felicia Jackson, Lincoln, Livingston, Ouachita, Rapides, St James, St. Tammany, Union, Verr West Felicia
Scaphirhynchus albus	Pallid Sturgeon	S1	G2	E	E	Scaphirhynchus albus	Ascension, Concordia, Baton Rouc East Carroll East Felicia Iberville, Jefferson, Orleans, Po Coupee, St. Bernard, St Charles, St. James, St. Landry, St.

PHMSA 000098199

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
							Martin, Ten West Baton Rouge, We: Feliciana
Trichechus manatus	Manatee	SNA	G2	E	E	Trichechus manatus	Ascension, Cameron, E Baton Rouc East Felicia Orleans, Plaquemine St. Bernard Charles, St. James, St. . the Baptist, Tammany, Tangipahoa Terrebonne

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PHMSA 000098200

Species by Parish List

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Federal Ranks (USESA FIELD):

Global Element Ranks:

State Element Ranks:

State Protection Status:

Filter By Parish	Filter by Type	
St. John the Baptist	<Any>	Apply

Rare Plant Species

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
Asclepias incarnata	Swamp Milkweed	S2	G5			Asclepias incarnata	Jefferson, Lafourche, Charles, St. James, St. . the Baptist, Terrebonne

PHMSA 00009820

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Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
Ceratopteris pteridoides	Floating Antler-fern	S2	G5?			Ceratopteris pteridoides	Jefferson, Lafourche, Charles, St. John the Baptist, St. Martin, St. Mary, Terrebonne
Eleocharis radicans	Rooted Spike-rush	S1?	G5			Eleocharis radicans	East Felicia Lafourche, John the Baptist, St. Mary

Natural Communities

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
Batture		S4S5	G4G5			Batture	Jefferson, S John the Baptist, We Feliciana
Cypress-Tupelo Swamp		S4	G3G5				Ascension, Assumptior Bossier, Ea: Baton Rouc Franklin, Ib Iberville, Livingston, Natchitoche Pointe Cou Rapides, St

PHMSA 00009820

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
							Charles, St. James, St. . the Baptist, Landry, St. Martin, St. Mary, St. Tammany, Terrebonne West Felici Winn

Rare Animal Species

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
Haliaeetus leucocephalus	Bald Eagle	S2N,S3B	G5	E	Delisted	Haliaeetus leucocephalus	Ascension, Assumptior Avoyelles, Beauregard Bossier, Ca Calcasieu, Claiborne, Concordia, DeSoto, Ea Baton Rouc East Felicia Franklin, Ib Iberville, Jackson, Jefferson, Lafourche, LaSalle, Livingston,

PHMSA 000098203

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
							Morehouse, Natchitoche Orleans, Ouachita, Plaquemine Pointe Cou Rapides, Richland, Sabine, St. Bernard, St Charles, St. James, St. the Baptist, Landry, St. Martin, St. Mary, St. Tammany, Tangipaho Tensas, Terrebonne Union, Vermilion, Baton Rou West Felici
Macrochelys temminckii	Alligator Snapping Turtle	S3	G3G4	Restricted Harvest		Macrochelys temminckii	Acadia, Alle Avoyelles, Beauregard Bienville, Catahoula, Concordia, Grant, Iber Lafayette, Madison, Ouachita,

PHMSA 00009820

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
							Rapides, St John the Baptist, St. Landry, St. Tammany, Tangipahoa Tensas, Vermilion
Pandion haliaetus	Osprey	S2B,S3N	G5			Pandion haliaetus	Grant, Iber Lafourche, Natchitoche Plaquemine Rapides, St John the Baptist, St. Martin, St. Tammany, Winn
Polyodon spathula	Paddlefish	S3	G4			Polyodon spathula	Acadia, Avoyelles, Cameron, Catahoula, Concordia, Evangeline, Franklin, Ib Jefferson Davis, LaSa Orleans, Ouachita, Rapides, Sabine, St. Bernard, St Charles, St.

PHMSA 000098205

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
							John the Baptist, St. Martin, St. Mary, St. Tammany, Tangipahoa Tensas, Un
Trichechus manatus	Manatee	SNA	G2	E	E	Trichechus manatus	Ascension, Cameron, E Baton Rouge East Felicia Orleans, Plaquemine St. Bernard Charles, St. James, St. . the Baptist, Tammany, Tangipahoa Terrebonne

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PHMSA 000098206

Louisiana Natural Heritage Program

- Explanation of Endangered Species Rankings
- How to Request Data
- Natural Areas Registry Program
- Natural Communities
- Natural Heritage Program Staff
- Rare Animal Species
- Rare Plant Species
- Species by Parish List

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- Black Bear Program
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- Louisiana Natural Heritage Program

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Federal Ranks (USESA FIELD):

Global Element Ranks:

State Element Ranks:

State Protection Status:

Filter By Parish	Filter by Type	
St. Charles	<Any>	Apply

Rare Plant Species

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
Asclepias incarnata	Swamp Milkweed	S2	G5			Asclepias incarnata	Jefferson, Lafourche, Charles, St. James, St. . the Baptist, Terrebonne

PHMSA 000098207

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Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
Canna flaccida	Golden Canna	S4?	G4?			Canna flaccida	Cameron, Jefferson, Lafourche, Plaquemine St. Charles, Mary, Verm
Ceratopteris pteridoides	Floating Antler-fern	S2	G5?			Ceratopteris pteridoides	Jefferson, Lafourche, Charles, St. John the Baptist, St. Martin, St. Mary, Terrebonne
Cyperus distinctus	Marshland Flatsedge	S1	G4			Cyperus distinctus	St. Charles
Fuirena simplex var. aristulata	Western Umbrella Sedge	S1	G5T4				East Carroll Natchitoche Rapides, St Charles, St. Landry, St. Tammany
Mimulus ringens	Square-stemmed Monkey-flower	S2	G5			Mimulus ringens	Concordia, Baton Rouc East Felicia Madison, St Charles, St. Mary, Tens
Physostegia correllii	Correll's False Dragon-head	S1	G2			Physostegia correllii	Cameron, S Charles, St.

PHMSA 000098208

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
							James, St. Tammany

Natural Communities

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
Brackish Marsh		S3S4	G4?			Brackish Marsh	Calcasieu, Cameron, Lafourche, Plaquemine St. Bernard Charles, Vermilion
Cypress-Tupelo Swamp		S4	G3G5				Ascension, Assumptior Bossier, Ea: Baton Rouc Franklin, Ib Iberville, Livingston, Natchitoche Pointe Cou Rapides, St Charles, St. James, St. the Baptist, Landry, St. Martin, St. Mary, St. Tammany, Terrebonne

PHMSA 000098209

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
							West Felicia Winn
Freshwater Marsh		S1S2	G3G4			Freshwater Marsh	Cameron, Lafourche, Plaquemine St. Charles, Mary, St. Tammany, Tangipahoa Terrebonne Vermilion
Intermediate Marsh		S3S4	G4?			Intermediate Marsh	Orleans, Plaquemine St. Charles, Tammany
Live Oak Natural Levee Forest		S1S2	G2			Live Oak Natural Levee Forest	Orleans, Plaquemine St. Charles, Mary, Verm

Rare Animal Species

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
Haliaeetus leucocephalus	Bald Eagle	S2N,S3B	G5	E	Delisted	Haliaeetus leucocephalus	Ascension, Assumption Avoyelles, Beauregard Bossier, Ca Calcasieu, Claiborne,

PHMSA 00009821O

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
							Concordia, DeSoto, Ea: Baton Rouc East Felicia Franklin, Ib Iberville, Jackson, Jefferson, Lafourche, LaSalle, Livingston, Morehouse, Natchitoche Orleans, Ouachita, Plaquemine Pointe Cou Rapides, Richland, Sabine, St. Bernard, St Charles, St. James, St. . the Baptist, Landry, St. Martin, St. Mary, St. Tammany, Tangipahoa Tensas, Terrebonne Union, Vermilion, \

PHMSA 00009821

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
							Baton Rouc West Felici
Polyodon spathula	Paddlefish	S3	G4			Polyodon spathula	Acadia, Avoyelles, Cameron, Catahoula, Concordia, Evangeline, Franklin, Ib Jefferson Davis, LaSa Orleans, Ouachita, Rapides, Sabine, St. Bernard, St Charles, St. John the Baptist, St. Martin, St. Mary, St. Tammany, Tangipahoa Tensas, Un
Scaphirhynchus albus	Pallid Sturgeon	S1	G2	E	E	Scaphirhynchus albus	Ascension, Concordia, Baton Rouc East Carroll East Felicia Iberville, Jefferson, Orleans, Po Coupee, St.

PHMSA 00009821 2

Scientific Name	Common Name	State Rank	Global Rank	State Status	Federal Status	Fact Sheet	Parishes
							Bernard, St Charles, St. James, St. Landry, St. Martin, Ten West Baton Rouge, We: Feliciana
Trichechus manatus	Manatee	SNA	G2	E	E	Trichechus manatus	Ascension, Cameron, E Baton Rouc East Felicia Orleans, Plaquemine St. Bernard Charles, St. James, St. . the Baptist, Tammany, Tangipahoa Terrebonne

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PHMSA 00009821 3

CONTAINMENT AREA 2	
CONTAINMENT TYPE	SOIL
VOLUME OF CONTAINMENT (yd^3)*	(b) (3), (b) (7)(F)
VOLUME (bbls)	(b) (7)(F), (b) (3)

LARGEST TANK	
TANK #	15
DIAMETER (ft)	(b) (7)(F), (b) (3)
RADIUS (ft)	155
HEIGHT (ft)	(b) (7)(F), (b) (3)
FOUNDATION ELEVATION (ft)	
LOW DIKE ELEVATION (ft)	
TANK VOLUME (ft^3)	(b) (3), (b) (7)(F)
TANK VOLUME (yd^3)	
TANK VOLUME (bbls)	(3)

110% LARGEST TANK CONTAINMENT		
CONTAINMENT (bbls)	(b) (7)(F), (b) (3)	1
OTHER TANK FOOT PRINT (bbls)		2
LARGEST TANK (bbls)		3
110% LARGEST TANK (bbls)		4
AVAILABLE CONTAIN. (bbls) = (1 - 2)		5
EXCESS CONTAIN. (bbls)= (5 - 4)		6

NOAA 24HR, 25YR RAINFALL VOLUMES	
RAINFALL (in)	8.25
AREA (ft^2)*	1300483.00
RAINFALL (yd^3)*	33114.15
RAINFALL (bbls)	**159,242.80**

OTHER TANK FOOT PRINT VOLUME				
TANK #	14	16	17	18
DIAMETER (ft)	(b) (7)(F), (b) (3) [redacted]			
RADIUS (ft)	155	114	114	114
LOW DIKE ELEV. (ft)	(b) (7)(F), (b) (3) [redacted]			
FOUNDATION ELEVATION (ft)	[redacted]			
HEIGHT BELOW DIKE WALL (ft)	[redacted]			
TANK VOLUME BELOW DIKE WALL (ft^3)	[redacted]			
TANK VOLUME BELOW DIKE WALL (yd^3)	[redacted]			
TANK VOLUME BELOW DIKE WALL (bbls)	[redacted]			

(b) (3), (b) (7)(F)

SUMMARY	
24HR 25YR. RAINFALL	[redacted]
CONTAINMENT (bbls)	
OTHER TANK FOOT PRINT(bbls)	
RAINFALL (bbls)	
LARGEST TANK (bbls)	
AVAILABLE CONTAIN. = (1 - 2 - 3)	
EXCESS CONTAINMENT = (5 - 4)	

(b) (3), (b) (7)(F)

Master Environmental Services Agreement

This Master Environmental Services Agreement ("Agreement") is entered into among NuStar Logistics, L.P. ("Logistics"), a Delaware limited partnership with offices at 2330 N. Loop 1604 W., San Antonio, Texas 78278, Kaneb Pipe Line Operating Partnership, L.P. ("Kaneb"), a Delaware limited partnership with offices at 2330 N. Loop 1604 W., San Antonio, Texas 78248, and Environmental Safety & Health Consulting Services, Inc. and/or its Affiliates and Subsidiaries ("Contractor"), a Louisiana *[entity form and jurisdiction]* with offices at 1730 Coteau Road, Houma, LA 70364 *[address]*, on June 22, 2007 ("Effective Date").

Logistics, Kaneb, and their direct and indirect subsidiaries (individually, a "Subsidiary" and collectively, the "Subsidiaries") operate pipelines and terminals primarily for the transportation and storage of liquid products. Logistics, Kaneb, and any of their Subsidiaries may engage Contractor to provide engineering services. In order to expedite the process of Logistics, Kaneb, and their Subsidiaries engaging Contractor to provide engineering services, Logistics, Kaneb, and Contractor desire to agree in advance to the terms and conditions that will govern any such engagement. Logistics, Kaneb, and Contractor agree as follows:

1. Definitions. In addition to the definitions provided elsewhere in this Agreement, the following definitions will apply to this Agreement:

"Affiliate" means any entity that directly or indirectly controls, is controlled by, or is under common control with the referenced entity. In this definition, "control" means the power to direct the management and policies of an entity, directly or indirectly, whether through the ownership of voting securities, by contract, or otherwise.

"Agreement" is defined in the preamble.

"Change Order" is defined in Section 2.2.

"Company" means an entity that engages Contractor to perform Services pursuant to this Agreement, which entity may be Logistics, Kaneb, or any Subsidiary.

"Contractor" is defined in the preamble.

"Governmental Authority" means any federal, state, or local government, including agencies, commissions, courts, and departments.

"Hazardous Substance" means any substance, material or waste (including friable asbestos non-friable asbestos, benzene, lead-based paint, petroleum, petroleum products, methyl tertiary butyl ether, and polychlorinated biphenyl) that is: (1) regulated by Law (including Clean Air Act; the Comprehensive Environmental Response, Compensation, and Liability Act of 1980; the Federal Water Pollution Control Act, the Occupational Safety and Health Act of 1970; the Resource Conservation and Recovery Act of 1976; the Safe Drinking Water Act; the Toxic Substances Control Act; the Hazardous & Solid Waste Amendments Act of 1984; the Superfund Amendments and Reauthorization Act of 1986; the Hazardous Materials Transportation Act; the Oil Pollution Act of 1990; and any of the regulations implementing the forgoing statues) as hazardous or toxic, as a pollutant or a contaminate, or otherwise as a threat to human health or to the environment; or (2) found by any Governmental Authority to be hazardous or toxic, a pollutant or a contaminate, or otherwise a threat to human health or to the environment.

"Kaneb" is defined in the preamble.

"Law" means any and all applicable federal, state, and local codes, constitutions, decrees, directives, laws, licenses, ordinances, injunctions, orders, permits, regulations, requirements, rules, and statutes.

"Liabilities" means actions, claims, causes of action, costs, demands, damages, expenses, fines, lawsuits, liabilities, losses, obligations, and penalties including court costs, defense costs, and reasonable attorneys' fees.

"Logistics" is defined in the preamble.

"Party" means either Company or Contractor and "Parties" means both Company and Contractor.

"Personnel" means the Representatives of Contractor and its subcontractors and suppliers.

"Purchase Order" is defined in Section 2.1.

"Representatives" means officers, directors, employees, and borrowed servants of the referenced entity and its Affiliates.

"Services" means the engineering services performed by Contractor for Company as described in a Purchase Order.

"Subsidiary" and "Subsidiaries" are defined in the preamble.

2. Scope of Services.

2.1 Purchase Orders. If Company desires to engage Contractor to perform Services, it will issue a purchase order to Contractor describing the Services, designating the time for performance, and stating the compensation to be paid ("Purchase Order"). Contractor may accept a Purchase Order either in writing or by commencing the performance of the Services.

2.2. Change Orders. If Company desires to change the description of Services, time for performance, or compensation stated in a Purchase Order, it will issued a written change order to Contractor ("Change Order"). Contractor may accept a Change Order either in writing or by performance that complies with the Change Order. Contractor may not unreasonably withhold, condition, or delay acceptance of any Change Order, and Contractor may not withhold, condition, or delay acceptance of a Change Order that consists of minor modifications to the description of the Services that do not materially impact the time for performance or the compensation to be paid.

4. Terms and Conditions. Unless Company and Contractor expressly agree in writing, signed by both Parties, to modify the terms and conditions of this Agreement for the performance of the Services, the performance of the Services will be governed by: the terms and conditions of this Agreement; and the description of the Services, the designated time for performance, and the compensation to be paid set forth in the Purchase Order as modified by any Change Order. If a Purchase Order or Change Order contains any pre-printed terms and conditions (excluding the identity of the Company, the description of the Services, the designated time for performance, and the compensation to be paid), those terms and conditions will have no force or affect. If Contractor's written acceptance of a Purchase Order or Change Order contains any term or conditions, those terms and conditions will have no force or affect.

5. Term. The initial term of this Agreement will be for a period of one (1) year(s) commencing on the Effective Date ("Initial Term"). After the Initial Term, this Agreement will extend from year to year.

Kaneb, Logistics, or Contractor may terminate this Agreement at the end of the Initial Term or at the end of any annual extension by providing the other parties with written notice of termination at least sixty (60) days prior to the intended termination date. The terms and conditions of this Agreement will survive the termination of this Agreement to govern any Purchase Order that was issued prior to the termination of this Agreement.

6. Compensation.

6.1 Lump-Sum Services. If the Services are performed on a lump-sum basis:

a. Company will pay Contractor the lump-sum price stated in the Purchase Order;

b. Contractor will invoice Company in accordance with the schedule stated in the Purchase Order, and if no schedule is stated in the Purchase Order, Contractor will invoice Company upon completion of the Services;

6.2 Time-and-Materials Services.

a. Contractor's rates for time-and-materials Services are shown on Exhibit A, which is attached to and incorporated into this Agreement. Contractor may increase the rates shown on Exhibit A at the end of the Initial Term and at the end of any annual extension thereafter by providing Kaneb and Logistics with written notice of the new rates at least ninety (90) days prior to the effective date of the increase. Unless otherwise provided in the Purchase Order, the old rates will continue to apply to any time-and-material Services for which a Purchase Order was issued prior to the effective date of the new rates.

b. If the Services are performed on a time-and-materials basis:

i. Unless otherwise provided in a Purchase Order, Company will pay Contractor at the then-current rates as provided in Section 6.2(a);

ii. Contractor will invoice Company monthly, in arrears, and Contractor will provide documentation with each invoice sufficient to justify the amount billed, including: a statement itemizing the people assigned to the Services, the amount of time worked on the Services by each person assigned, the tasks performed by each person assigned, the billing rate for each person assigned, and the total amount billed for each person assigned; a statement itemizing expenses to be reimbursed by Company itemizing the nature of each expense, the date each expense was incurred, the reason each expense was incurred, and attaching receipts, invoices, or other documentation substantiating the amount of each expense.

6.3 Taxes. The amounts charged by Contractor to Company for the Services are inclusive of any and all federal, state, and local taxes and other assessments applicable to the Services, including sales, use, excise, and value added taxes. Contractor will be responsible for remitting and all taxes and other assessments applicable to the Services to the proper governmental authority.

6.4 Payment. Company will pay the undisputed amount of each invoice within thirty (30) days of receipt of the invoice. Company will have the right, but not the obligation, to offset any amounts owed by Company to Contractor hereunder against any amounts owed by Contractor to Company, whether arising under this Agreement or otherwise.

6.5 Audit. For Services performed on a time-and-materials basis, Contractor will maintain complete and accurate records in accordance with generally accepted accounting principles to substantiate each invoice submitted to Company under this Agreement for a period of three (3) years from the date of the invoice. Company, at Company's expense, may audit and photocopy such records at Contractor's offices during Contractor's normal business hours. Contractor's obligation to maintain records and Company's audit rights will survive the termination of this Agreement.

7. Independent Contractor.

7.1 General. Contractor is an independent contractor. Neither this Agreement nor any Purchase Order forms a partnership or joint venture between Contractor and Company. Contractor is not an agent of Company, and Contractor has no authority to act on behalf of Company. Except as otherwise provided in the Purchase Order, Contractor will provide any and all labor, supervision, materials, and equipment necessary to perform the Services, and Contractor will obtain any and all permits and authorizations required by Law to perform the Services. Contractor will control the means and manner of the performance of the Services. Contractor's Personnel will not be considered employees of Company, and Company will not provide Contractor's Personnel with wages, salaries, or benefits.

7.2 Affirmative Action. Contractor will comply with any and all Laws applicable to subcontractors of government contractors, including the following Department of Labor regulations: (a) 41 C.F.R. 60-1.4(a), Obligations of Contractors and Subcontractors (December 1997); (b) 41 C.F.R. 60-250.5(a), Affirmative Action Obligations of Contractors and Subcontractors for Disabled Veterans and Veterans of the Vietnam Era (November 1998); and (c) 41 C.F.R. 60-741.5(a), Affirmative Action and Nondiscrimination Obligations of Contractors and Subcontractors Regarding Individuals With Disabilities Act (May 1996). If requested by Company in order to comply with Law, Contractor will execute and deliver to Company certifications of its compliance with any Laws applicable to subcontractors of government contractors.

7.3 Subcontracts. Contractor may not subcontract the performance of the Services without the prior written authorization of Company. Contractor will be responsible for the acts and omissions of its subcontractors and Personnel in the same capacity as it is responsible for its own acts and omissions

7.4 Inspections. Company will have the right, but not the obligation, to inspect the Services during the course of performance to determine whether it is being performed in compliance with this Agreement. Neither inspection by Company nor the lack of inspections by Company will be deemed to waive Contractor's obligations or Company's rights under this Agreement.

8. Performance Standards.

8.1 Professional Services Standards. In performing the Services, Contractor will: (a) exercise the degree of skill and learning commonly applied by nationally recognized engineering firms to the performance of similar services; (b) comply with any descriptions and standards incorporated into the Release and any Change Order; and (c) provide deliverables to Company that are free from defects. If Company discovers that Contractor failed to comply with this Section 8.1 within twenty-four (24) months of the completion of the Services, Company may provide Contractor with notice. If Company provides Contractor with notice of non-compliance within the time required, Contractor, at Contractor's expense, will correct the deficiencies in the Services, including any including any redesigns, repairs, and reconstruction resulting from deficiencies in the Services.

8.2 Procurement and Construction. If Contractor provides Company with any goods as part of the Services, including through the construction or installation of any fixtures or equipment, the following performance standards will apply:

(a) Procurement and Construction Standards. (i) Contractor will perform the Services in a workmanlike manner; (ii) Contractor will ensure that the Services are free from defects in materials and workmanship; (iii) Contractor will ensure that the Services will be performed in compliance with the descriptions of the Services in the applicable Purchase Order. If Company discovers that Contractor failed to comply with this Section 8.2(a) within twenty-four (24) months of the completion of the Services, Company may provided Contractor with notice. If Company provides Contractor with notice of non-compliance within the time required, Contractor, at Contractor's expense, will correct the deficiencies in the Services, including any preparations necessary to correct the deficiencies in the Services.

(b) Title. (i) Contractor will convey good title to any goods its provides to Company; (ii) Contractor's transfer of title to any goods it provides to Company will be rightful; and (iii) any goods Contractor provides to Company will be free from any security interest, lien, claim, or encumbrance. Title to goods provided by Contractor to Company will pass to Company upon delivery of the goods to the Services site. Risk of loss to goods provided by Contractor to Company will pass to Company upon completion of the Services.

8.3 Liens. Contractor will pay any and all amounts owed to its subcontractors and suppliers as and when due. Contractor will ensure that its subcontractors and suppliers do not file any liens, claims, security interests, or other encumbrances against any property owned or otherwise occupied by Company. Within ten (10) days of receipt of notice from Company that one of Contractor's subcontractors or suppliers has filed a lien, claim, security interest, or other encumbrance against any property owned or otherwise occupied by Company, Contractor will clear such lien, claim, security interest, or other encumbrance by payment or by bond. Provided that Company is paying Contractor in compliance with this Agreement, Contractor will not file any liens, claims, or other encumbrances against any property owned or otherwise occupied by Company. If Contractor files a lien, claim, security interest, or other encumbrance against any property owned or otherwise occupied by Company, Contractor will clear such lien, claim, security interest, or other encumbrance of record within ten (10) days of receipt of payment of the amount due from Company.

8.4 On-Site Services. If Contractor performs any Services on property owned or otherwise occupied by Company, the following performance standards will apply:

(a) Company Policies. Contractor will comply with Company's policies for contractors at the Services site, including Company's safety, security, and drug and alcohol policies, that are provided by Company to Contractor. Contractor will request a copy of Company's then-current policies that are applicable to the Services prior to accepting a Purchase Order.

(b) Interference. Contractor will perform the Services in a manner that causes a minimum of interference to the operations of Company at the Services site.

(c) Safety. Contractor will be responsible for providing its Personnel with a safe working environment. Contractor will inspect the areas at the site where its Personnel will be present and report any unsafe working conditions to Company. Contractor will not perform the Services under working conditions that are unsafe for its Personnel.

(d) Hazardous Substances. Contractor will ensure that no Hazardous Substances are released into the air, onto any land, or into any water arising out of the Work in connection with the acts or omissions of Contractor's Personnel.

8.5 Disposal Services. If Contractor performs treatment, storage, or disposal of any hazardous or non-hazardous substances becomes as part of the Services, Contractor will provide Company with notice of the treatment, storage and disposal facility ("TSDF") that Contractor indents to use to perform the treatment, storage or disposal services. Contractor's notice will also provide the TSDF's name and address of the TSDF's permitting or licensing agency and the TSDF's permit or license number. Contractor will ensure that each TSDF identified has, at a minimum, EPA RCRA interim status or state approval as a treatment or disposal facility and be in good standing with the regulating Governmental Authorities. Contractor agrees that no TSDF other than those initially approved for use by Company will be used, without first obtaining the written approval of Company.

8.6 Certain Jurisdictions.

(a) Louisiana. If Contractor performs any Services on property owned or otherwise occupied by Company in Louisiana, the following will apply: Company will be the statutory employer of Contractor's direct, borrowed, and statutory employees within the meaning of Louisiana Revised Statutes § 23:1061. Company and Contractor acknowledge that the Services are an integral part of or essential to the ability of Company to generate goods, products, or services.

(b) California. If in California Contractor provides Company with any goods as part of the Services, including through the construction or installation of any fixtures or equipment, the following statement is included in this Agreement as required by California Law:

> "Contractors are required by law to be licensed and regulated by the Contractors' State License Board which has jurisdiction to investigate complaints against contractors if a complaint regarding a patent act or omission is filed within four years of the date of the alleged violation. A complaint regarding a latent act or omission pertaining to structural defects must be filed within 10 years of the date of the alleged violation. Any questions concerning a contractor may be referred to the Registrar, Contractors' State License Board, P.O. Box 26000, Sacramento, California, 95826."

8.7 Representations. Contractor represents that: (i) Contractor is financially solvent, able to pay all debts as they mature, and possesses sufficient working capital to perform its obligations under any Purchase Order it accepts; (ii) Contractor's acceptance and performance of each Purchase Order has

been duly authorized; (iii) each Purchase Order accepted by Contractor constitutes a legal, valid, and binding obligation of Contractor and is enforceable in accordance with its terms against Contractor (except as the enforceability hereof may be limited by bankruptcy, insolvency, reorganization or other similar laws); (iv) Contractor has the capability (including the supervision and labor) and experience necessary to perform the Services specified in each Purchase Order it accepts; (v) Contractor has independently evaluated the labor, supervision, services, material, equipment, permits, and authorizations necessary to perform the Services specified in each Purchase Order it accepts; (vi) Contractor will comply with Law in the performance of the Services, including fire codes, building codes, environmental regulations, and other Laws that must be taken into account when preparing a design; and (vii) Contractor will provide appropriately skilled and experienced Personnel to perform the Services.

8.8 Time of the Essence. Contractor understands that time is of the essence with respect to the performance of the Services. Contractor will strictly comply with any timing requirements stated in any Purchase Order.

8.9 Disclaimer. ***Except as expressly provided in this Agreement and the applicable Purchase Order, Contractor makes no representations or warranties regarding the Services, and Contractor disclaims any implied warranties including, without limitation, any implied warranty of merchantability or of fitness for particular purpose.***

9. Intellectual Property. Contractor represents and warrants that the Services will not infringe on any third party's intellectual property rights, including, any rights protected by patent, by copyright, by trademark, or by a contract to which Contractor is bound. Any deliverable prepared by Contractor in the performance of the Services will be a work made for hire, and any copyright for a deliverable will belong to Company. If the deliverables prepared by Contractor in the performance of the Services contain new ideas or principles that are patentable, the right to patent such new ideas or principles will belong to Company. If Contractor incorporates any pre-existing intellectual property into a deliverable, Contractor will retain all rights to the pre-existing intellectual property, except that Company will have a perpetual, non-exclusive license to use the pre-existing intellectual property. Contractor will provide deliverables, including blueprints, plans, and schematics, to Company in an editable, digital format that is compatible with Company's information systems.

10. Confidentiality. Except as may be necessary to enforce its rights under this Agreement (including any Purchase Order), as otherwise may be necessary to respond in any legal proceeding (including any deposition, interrogatory, subpoena, or civil investigative demand), or as otherwise authorized by Company in writing, Contractor will not disclose to any third party any information obtained by Contractor in the course of the performance of the Services regarding Company's assets, operations, or business plans. Contractor will use reasonable means to protect such information from disclosure, including limiting disclosure to Contractor's personnel with a need to know such information in order to perform the Services. Contractor's confidentiality obligations will survive the expiration or termination of this Agreement for a period of five (5) years.

11. Liability.

11.1 Indemnity. ***To the maximum extent permitted by applicable Laws, Contractor will release, indemnify, defend, and hold harmless Company, its Affiliates, its Subsidiaries and its Representatives (collectively, the "Indemnified Parties") from and against any and all Liabilities arising out of the Services in connection with: (a) the breach by Contractor of this Agreement (including any Purchase Order); (b) injuries and death to people; and (c) damage to property. Contractor intends***

the foregoing release, indemnity, defense, and hold harmless obligations to apply regardless of whether Liabilities are caused in part by the negligence, strict liability, or other fault of the Indemnified Parties, except to the extent that the Liabilities were caused solely by the negligence or willful misconduct of the Indemnified Parties. Contractor intends the foregoing release, indemnity, defense, and hold harmless obligations to survive the completion of any Services, the termination of this Agreement, and the termination of any Purchase Order.

11.2 Defense. If a Liability arises which Contractor is required to defend the Indemnified Parties under this Agreement, Contractor shall provide outside counsel reasonably acceptable to Company for said defense within ten (10) days of Company's notice to Contractor requesting defense. If Contractor fails to provide such counsel within this time period, then the Indemnified Parties may appoint their own outside counsel at Contractor's expense for said defense until Contractor provides such counsel.

11.3 Insurance. Contractor will comply with the insurance requirements stated in Exhibit B, which is attached to and incorporated into this Agreement.

12. Suspension and Termination.

12.1 Notice. Company may suspend or terminate the performance of the Services under a Purchase Order, in whole or in part, upon notice to Contractor. In such notice, Company will specify whether the suspension or termination is for all or part of the Services. If the suspension or termination is for part of the Services, Contractor will continue to perform that part of the Services that has not been suspended or terminated without interruption.

12.2 Reactivation. Company may reactive suspended Services by providing notice to Contractor. If Company does not reactivate any Services that are suspended within 90 days of the date of the Company's notice suspending the Services, such Services will be deemed to have been terminated. The schedule for completing reactivated Services will be extended by the number of days of the suspension plus a reasonable amount of time for re-mobilization.

12.3 Adjustment of Lump-Sum Price. If the suspended or terminated Services was being performed on a lump-sum basis: Company will pay Contractor a percentage of the lump-sum price equivalent to the percentage of the Services that was performed prior to the suspension or termination; and if the Services was suspended or terminated in part, Company will also pay Contractor a percentage of the lump-sum price equivalent lump-sum price that is equivalent to the percentage of the Services that are not suspended or terminated.

13. Default. A party will be in default if it: (a) breaches this Agreement (including any Purchase Order), and the breach is not cured within fifteen (15) days of notice from the non-defaulting party; (b) becomes insolvent (which means the failure to pay any obligations when due); or (c) files or has filed against it a petition in bankruptcy, for reorganization, or for appointment of a receiver or trustee. In the event of default, the non-defaulting party may, in addition to exercising any other rights at law or in equity, terminate the affected Purchase Order upon notice to the defaulting party. If Company terminates this Agreement as a result of Contractor's default, Contractor will be liable to Company, in addition to any other damages to which Company may be entitled at law or in equity, the difference between: the amount that would have been paid by Company to Contractor to complete the Services but for the termination; and the actual amount paid by Company to complete the Services.

14. Governing Law. ***This Agreement (including any Purchase Order) will be governed and construed in accordance with the laws of the State of Texas, without reference to the choice of law principles thereof. Any disputes arising out of this Agreement (including any Purchase Order) will be subject to the exclusive jurisdiction of the U.S. District Court located in Harris County, Texas if federal jurisdiction is available and to the courts of the State of Texas located in Harris County, Texas if federal jurisdiction is not available. Company and Contractor irrevocably waive any right to a trial by jury in connection with any disputes arising out of this Agreement (including any Purchase Order).***

15. Notices. To be effective, notices will be in writing and delivered either: by overnight courier to the address set forth below; or by fax to the number set forth below confirmed by certified U.S. mail, return receipt requested to the address set forth below. Notice addresses or fax numbers may be changed upon notice at least ten (10) days in advance of the effective date of the change.

To Logistics, Kaneb or any of their Subsidiaries:

c/o NuStar Energy L.P.
Attn: Director, Procurement
2330 N. Loop 1604 W.
San Antonio, Texas 78278
Fax: (210) 918-5495

With a copy to:

c/o NuStar Energy L.P.
Attn: Commercial Counsel
2330 N. Loop 1604 W.
San Antonio, Texas 78278
Fax: (210) 918-5500

To Contractor:

Environmental Safety & Health Consulting Services, Inc.
and/or its Affiliates and Subsidiaries
Attn: Davian M. Ploger
1730 Coteau Road
Houma, LA 70364
E-mail: davian@esandh.com
Fax: 985-851-5350

16. Miscellaneous.

16.1 No Waiver. No waiver by either Party of any right under this Agreement (including any Purchase Order) at any time will serve to waive of the same right at any future date.

16.2 Amendment. Except as otherwise provided in this Agreement, no amendment to this Agreement (including any Purchase Order) will be effective unless made in writing and signed by both Parties.

16.3 Severability. If a provision of this Agreement (including any Purchase Order) is unenforceable under applicable law, that provision will be enforced to the maximum extent permitted by applicable law, and the remaining provisions of this Agreement will continue in full force and effect.

16.4 Assignment. Neither Party may assign this Agreement (including any Purchase Order), in whole or in part, without the prior written consent of the other Party, and any purported assignment in violation if this provision will be void.

16.5 Conflict of Interest. Neither Party will pay any commission, fee, or rebate to an employee of the other Party or favor an employee of the other Party with any gift or entertainment of significant value.

16.6 Counterparts. This Agreement may be executed in one or more counterparts, each of which will be deemed an original and part of one and the same document.

16.7 Construction. The following rules of construction will govern the interpretation of this Agreement (including any Purchase Order): (a) "days," "months," and "years" will mean calendar days, months and years unless otherwise indicated; (b) "including" does not limit the preceding word or phrase; (c) section titles do not affect interpretation; (d) "hereof," "herein," and "hereunder" and words of similar meaning refer to this Agreement as a whole and not to any particular provision of this Agreement; and (e) no rule of construction interpreting this Agreement against the drafter will apply.

16.8 Entire Agreement. This Agreement represents the entire agreement of the Parties with respect to the matters contemplated herein.

NuStar Logistics, L.P.
By NuStar GP, Inc., Its General Partner

—and—

Kaneb Pipe Line Operating Partnership, L.P.
By Kaneb Pipe Line Company LLC, Its General Partner

By: _____

Name: Michael Burgett

Title: Vice President of NuStar GP, Inc.
—and—
Vice President of Kaneb Pipe Line Company LLC

Environmental Safety & Health Consulting Services, Inc. and/or its Affiliates and Subsidiaries

By: _____

Name: Davian M. Ploger

Title: Executive Vice President

Exhibit A
Rates

PERSONNEL

Experienced emergency response personnel are available for complete spill clean-up operations, 24 hours a day, 7 days a week. Normal hours of operation are from 0800 through 1600 daily, Monday through Friday. All labor charges will be in accordance with ES&H Daily Tickets. Overtime for personnel will be charged at time and a half between 1600 through 0800 Monday through Friday, weekends from 1600 Friday through 0800 Monday. Double time rates will be charged for all National Holidays. Per Diem of $125.00 per day, per employee will be charged for all work-performed 50 miles outside of employee's home base. There will be a 4-hour minimum service charge on all labor call outs. All call outs will be charged portal-to-portal.

LEVEL D PPE

Level D PPE shall be used when the atmosphere contains no known hazard and work functions preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemical. Level D protective equipment such as hard hats, personal flotation devices (PFD), steel toe rubber boots, safety glasses, Tyvek coveralls and inner protective gloves are provided by ES&H at a cost of $50.00 per person, for each day the person is on the work site. Level D PPE is not charged for administrative, support or delivery personnel.

LEVEL C PPE

Level C PPE shall be used when the atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect or be absorbed through any exposed skin. Secondly, the types of air contaminants have been identified, concentrations measured, and an air purifying respirator (APR) is available that can remove the contaminants. Level C protective equipment such as disposable chemical resistant coveralls (poly-coated Tyvek, CPF-1 & CPF-2), 2 piece chemical splash suits, chemical resistant outer protective gloves and NIOSH approved full face APR's shall be invoiced individually as used.

HEAT STRESS

Due to the possibility of elevated temperatures throughout the year, ES&H shall provide all spill response personnel with water and sports drinks to be consumed throughout the work shift in an effort to minimize the effects of elevated temperatures and prevent heat related injuries. Ice chests and ice shall also be provided by ES&H. Water and sports drinks shall be invoiced per case and ice shall be invoiced as per bag (8 pounds).

SITE SAFETY

In the event ES&H mobilizes twelve (12) or more response personnel to a spill site, one or more qualified safety officers will also be mobilized to assist with site safety. The number of safety officers mobilized will be site specific, based upon the logistics of the different work zones. Safety officers will remain on site and work with response personnel throughout the duration of the project until it is agreed upon by ES&H Management and Customer Representatives that these services are no longer required.

AUTOMOTIVE EQUIPMENT

A mileage charge of $0.75 per mile will be charged for all automotive equipment. Fuel for all automotive equipment is included in the $0.75 per mile charge.

BOOM ANCHORS & BUOYS

For each 1000 feet of containment boom deployed, ES&H shall charge a minimum of five (5) anchors, five (5) anchor buoys and the necessary rope. In areas of strong currents, additional anchors may be deployed to hold containment boom in desired locations. All anchors will be billed at the daily rental rate. Lost or destroyed anchors and buoys will be replaced at **Cost + 20%**.

COMMERCIAL TRANSPORATION

For all employees who do not reside in the local commuting area for the work site, ES&H will be reimbursed for costs incurred for employee travel to and from the work site on the basis of ES&H's incurred cost plus 20% for all commercial transportation.

STAND-BY-RATES

Stand-by rates will be ½ the daily rate for equipment. These rates may be negotiated based upon the circumstances causing the need for a stand-by situation. Full rates will apply for personnel and per diem.

TAXES

All federal, state, and municipal taxes, except income taxes and advalorem taxes, now and hereinafter imposed with respect to services rendered; to rental equipment; to the processing, manufacture, repair, delivery, transportation of equipment and supplies shall be added to and become part of the total price payable by the client, unless the proper exemption certificates are furnished.

TERMS

All equipment not listed in this rate schedule, whether requested by the contracting company or needed to complete work in progress, will be negotiated for price with a client company representative. A 20% handling charge will be added to the cost of any equipment rented or subcontracted, which is or is not listed in this rate schedule.

REPLACEMENT OF DAMAGED EQUIPMENT

All equipment and supplies are subject to a replacement charge at ES&H cost + 20% if damaged, or if decontamination is impossible.

DECONTAMINATION OF EQUIPMENT

A mutually agreed price for cleaning contaminated containment boom shall be decided upon and can vary depending on the degree of contamination. The charges for cleaning all other equipment is ½ the daily rental rate. Time and materials will also be included. Any waste water disposal will be at cost + 20%.

Decontamination pools provided by ES&H shall be invoiced as a daily rental item as listed in the following pages. However, in the event that decontamination pools are damaged or destroyed during decontamination activities, ES&H reserves the right to invoice Cost + 20% for repairs and/or replacement.

ROLL OFF BOXES

Roll off box delivery and pickup charges vary according to the distance from the site location. The cost for roll of liners is $ 45.00 each. Box liners are mandatory, however if the roll off box requires cleaning at the end of the rental period, the customer will incur the cleaning charges.

INVOICES

Invoices will be rendered either on a daily basis or at the completion of the job, depending on the duration of the job. Invoices will contain all applicable Federal, State and, Local taxes. All charges are payable NET CASH within thirty (30) days from the date of invoice. Finance charges will be applied to invoices with an unpaid balance beginning thirty-one (31) days from the date of invoice. Finance charges are computed at the periodic rate of 1.5% per month (18% per annum.)

OIL SPILL RESPONSE	HOURLY RATE	
ADMINISTRATIVE PERSONNEL	**Regular**	**Overtime**
Project Manager	$75.00	$112.50
Project Accountant	$65.00	$97.50
Transportation/Disposal Coordinator	$45.00	$67.50
Logistics Coordinator	$42.00	$63.00
Field Clerk	$38.00	$57.00
Administrative/ Logistics Support	$35.00	$52.50
RESPONSE PERSONNEL	**Regular**	**Overtime**
Supervisor	$55.00	$82.50
Foreman	$45.00	$67.50
Specialized Equipment Operator	$42.00	$63.00
Boat Operator	$40.00	$60.00
Mechanic	$40.00	$60.00
Confined Space Entry Technician	$38.00	$57.00
Technician	$33.00	$49.50
SAFETY PERSONNEL	**Regular**	**Overtime**
Safety Officer	$50.00	$75.00
Air Monitoring/Sampling Technician	$45.00	$67.50
Fire Watch/Hole Watch	$35.00	$52.50

HAZMAT RESPONSE	HOURLY RATE	
ADMINISTRATIVE PERSONNEL	**Regular**	**Overtime**
Project Manager	$85.00	$127.50
Project Accountant	$65.00	$97.50
Transportation/Disposal Coordinator	$55.00	$82.50
Logistics Coordinator	$42.00	$63.00
Field Clerk	$38.00	$57.00
Administrative/Logistics Support	$35.00	$52.50
RESPONSE PERSONNEL	**Regular**	**Overtime**
Supervisor	$65.00	$97.50
Foreman	$55.00	$82.50
Heavy Equip./Specialized Response Equip. Operator	$52.00	$78.00
Mechanic	$50.00	$75.00
Confined Space Entry Technician	$48.00	$72.00
Hazmat Technician	$43.00	$64.50
SAFETY PERSONNEL	**Regular**	**Overtime**
Safety Officer	$60.00	$90.00
Air Monitoring/Sampling Technician	$55.00	$82.50
Fire Watch/Hole Watch	$45.00	$67.50

RESPONSE VEHICLES

Pick Up Truck	$125.00 / day
1 Ton Pick Up Truck	$150.00 / day
1.5 Ton Truck	$175.00 / day
Personnel Van	$125.00 / day
4 x 4 Pick Up	$200.00 / day
4 x 4 ATV	$275.00 / day
RTV Mule	$450.00 / day
Command Post (Mobile)	$1000.00 / day
Tractor Truck	$95.00 / hour
130bbl Vacuum Truck	$75.00 / hour
70bbl Vacuum Truck	$70.00 / hour
Flatbed Freightliner (Drum Truck)	$80.00 / hour
Roll Off Delivery (Single)	$95.00 / hour
Roll Off Delivery (Double)	$160.00 / hour
Forklift (Used @ ES&H Offices Only)	$50.00 / hour

RESPONSE TRAILERS

48' Response Trailer	$200.00 / day
36' Response Trailer	$180.00 / day
32' Response Trailer	$175.00 / day
28' Response Trailer	$150.00 / day
24' Response Trailer	$135.00 / day
20' Response Trailer	$125.00 / day
16' Response Trailer	$100.00 / day
8' Response Trailer	$50.00 / day
6' Response Trailer	$25.00 / day

MARINE EQUIPMENT

42' Barge Boat with Radar, GPS, & Twin Engines	$1200.00 / day
36' – 38' Barge Boat with Radar, GPS, & Twin Engines	$1000.00 / day
30' – 32' Barge Boat with Radar, GPS, & Twin Engines	$800.00 / day
26' – 30' Barge Boat with Twin Engines	$750.00 / day
22' – 24' Barge Boat with Single Engine	$600.00 / day
32' Response Boat with Twin Engines	$900.00 / day
30' Response Boat with Twin Engines	$875.00 / day
28' Response Boat with Twin Engines	$850.00 / day
26' Response Boat with Radar, GPS, & Twin Engines	$800.00 / day
25' Cabin Boat with Radar, GPS & Single Engine	$650.00 / day
24' 25' Response Boat with Twin Engines	$550.00 / day
18' – 20' Response Boat with Single Engine	$375.00 / day
16' Response Boat with Single Engine	$250.00 / day
12' – 14' Response Boat with Single Engine	$150.00 / day
12' – 14' Response Boat (No Engine)	$100.00 / day
Pirogue	$35.00 / day
Air Boat	$750.00 / day
Oil Barge (30bbl to 50bbl)	$250.00 / day
Oil Barge (225bbl to 240bbl)	$1000.00 / day

SPILL CONTROL EQUIPMENT

6" Containment Boom	$0.75 / ft / day
10" Containment Boom	$1.00 / ft / day
18" Containment Boom	$1.40 / ft / day
24" Containment Boom	$3.00 / ft / day
36" Containment Boom	$4.00 / ft / day
42" Containment Boom	$5.50 / ft / day
48" Containment Boom	$6.00 / ft / day
Bullet Anchor	$5.00 / each
10 LB Anchor	$20.00 / each / day
15 LB Anchor	$25.00 / each / day
22 LB Anchor	$40.00 / each / day
40 LB Anchor	$65.00 / each / day
65 LB Anchor	$80.00 / each / day
Boom Lights (small, battery powered) (includes batteries)	$15.00 / day
Boom Lights (large, battery powered) (includes batteries)	$25.00 / day
Chemical Boom Lights	$15.00 / each
Anchor Buoys	$25.00 / each
Boom Stakes	$15.00 / each

SKIMMERS

Marco Skimmer	$5000.00 / day
Marco Backing Belt (replacement)	$1200.00 / each
Marco Light Oil Belt (replacement)	$1200.00 / each
Marco Filterbelt / Pad (replacement)	$700.00 / each
Marco Diesel Pad (replacement)	$700.00 / each
Mobile Drum Skimmer Barge System	$3500.00 / day
Drum Skimmer Package (small)	$715.00 / day
Drum Skimmer Package (medium)	$765.00 / day
Drum Skimmer Package (large)	$815.00 / day
Portable Mini-Vac System	$1250.00 / day
Manta Ray Skimmer	$150.00 / day
Skimpack	$125.00 / day
Aluminum (small)	$150.00 / day
Aluminum (large)	$200.00 / day
Slurp Skimmer	$150.00 / day
Rope Mop I-4	$350.00 / day
Rope Mop II-4	$400.00 / day
Rope Mop II-6	$450.00 / day
Rope Mop II-9	$500.00 / day
12" Tail Pulley	$10.00 / day
16" Tail Pulley	$20.00 / day
4" Rope Mop (rental)	$1.00 / ft / day
6" Rope Mop (rental)	$1.25 / ft / day
9" Rope Mop (rental)	$1.50 / ft / day
4" Rope Mop (replacement)	$23.75 / ft
6" Rope Mop (replacement)	$26.00 / ft
9" Rope Mop (replacement)	$40.00 / ft
Pelican Skimmer	$100.00 / day
Duck Bill Skimmer	$25.00 / day

MISCELLANEOUS	
Sorbent Pad (100 / bale)	$45.00 / bale
Sorbent Pad – Universal (50 / bale)	$70.00 / bale
5" Sorbent Boom (40' / bale)	$105.00 / bale
8" Sorbent Boom (40' / bale)	$145.00 / bale
Sorbent Roll (144' x 38')	$135.00 / roll
Sorbent Sweep (100' / bale)	$95.00 / bale
Pompom Snare (30 / box)	$55.00 / box
Pompom Snare (50' on rope)	$75.00 / box
Pompom Snare (100' on rope)	$200.00 / box
Sorbent Part (27 LB / bale)	$93.00 / bale
Fiber Pearl	$25.00 / bag
Industrial Rug	$250.00 / roll
Spag Sorb. (4cu ft / bag)	$80.00 / bag
Spag Sorb. Boom (32' / box)	$200.00 / bag
Peat Moss (3.8 cu. Ft.)	$25.00 / bag
Oil Gator (50LB)	$25.00 / bag
Pitchfork	$20.00 / each
Rake	$20.00 / each
Shovel (Flat. Spade. Scoop)	$20.00 / each
Flat Shovel (Non-Sparking)	$25.00 / each
Squeegee	$20.00 / each
Scrub Brush	$15.00 / each
Rope, 1/4 (roll)	$60.00 / roll
Rope, 3/8 (roll)	$75.00 / roll
Rope, 1/2 (roll)	$85.00 / roll
Rope, 3/4 (roll)	$150.00 / roll
Pool Net	$25.00 / each
Pollution Net	$25.00 / each
Pollution Bags (50 / roll)	$85.00 / roll
Visqueen	$90.00 / roll
30 gal. Plastic Drum	$70.00 / each
55 gal. Plastic Drum	$72.00 / each
55 gal. Steel Drum	$55.00 / each
85 gal. Steel Salvage Drum	$170.00 / each
95 gal. Plastic Salvage Drum	$195.00 / each
Duct Tape	$6.00 / roll
Pollution Cans	$20.00 / each
Decon Sprayer	$45.00 / each
Barrier Tape	$35.00 / each
Hand Cleaner	$5.00 / each
Rags / Wipes (10 # Box)	$15.00 / box
Roll Off Box Liner	$45.00 / each
Disposable Hand Wipes	$35.00 / each
Outboard Oil	$18.00 / gallon
Hose Condom	$30.00 / roll
Micro Blaze (5 gal.)	$275.00 / each
Micro Blaze (55 gal.)	$2900.00 / each
RW 358 TX Soap (5 gal.)	$35.00 / each
Multec 1500 (5 gallon bucket)	$125.00 / each

MISCELLANEOUS cont'd	
Multec 1500 (55 gallon drum)	$900.00 / each
D-Limonene (55 gallon drum)	$900.00 / each
Sample Containers	$5.00 / each
Drinking Water (16 ounce bottles)	$15.00 / case
Drinking Water (5 gallon)	$20.00 / each
Sports Drinks (16 ounce bottles)	$25.00 / case

PERSONAL PROTECTIVE EQUIPMENT	
Polypro Coveralls (Particulate Contaminants Only)	$ Level D PPE
Tyvek Coveralls (Dry Contaminants Only)	$ Level D PPE
Polycoated Tyvek Coveralls	$16.00 / each
CPF – 1 Suit	$24.00 / each
CPF – 2 Suit	$70.00 / each
CPF – 3 Suit	$100.00 / each
CPF – 4 Suit	Cost + 20%
Saranex Suit	$35.00 / each
Acid Suit	$150.00 / each
Disposable Slicker Suit	$15.00 / each
Heavy Duty Slicker Suit	$35.00 / each
Fire Retardant Coveralls	$125.00 / each
Bunker Gear	$175.00 / each
Bunker Gear Refurbishment	$200.00 / each
Hazmat Boots	$100.00 / pair
Tyvek Boot Covers	$5.00 / pair
Rubber Boot Covers	$20.00 / pair
Chemical Resistant Boots	$75.00 / pair
Hip Boots	$75.00 / pair
Chest Waders	$150.00 / pair
Cotton Gloves	$3.50 / pair
PVC Rubber Gloves	$5.50 / pair
Nitrile Gloves (25/box)	$45.00 / box
Safety Glasses	$10.00 / each
Safety Shields	$20.00 / each
Dust / Particulate Mask	$3.00 / each
Half Face Respirator	$25.00 / day
Full Face Respirator	$50.00 / day
5 Min Escape Pack	$100.00 / day
SCBA	$175.00 / day
2 Bottle Breathing Air Cascade System (high pressure)	$200.00 / day
4 Bottle Breathing Air Cascade System (high pressure)	$275.00 / day
6 Bottle Breathing Air Cascade System (high pressure)	$350.00 / day
8 Bottle Breathing Air Cascade System (high pressure)	$400.00 / day
20 Bottle Breathing Air Cascade System (high pressure)	$600.00 / day
Low Pressure Breathing Air Refills	$35.00 / each
High Pressure Breathing Air Refills	$50.00 / each
Breathing Air Compressor	$250.00 / day
H.E.P.A. APR Cartridges	$30.00 / pair
Organic Vapor / H.E.P.A. Cartridges	$30.00 / pair
Chemical Vapor APR Cartridges	$30.00 / pair

PERSONAL PROTECTIVE EQUIPMENT cont'd	
Emergency Signal Horn	$15.00 / each
Safety Harness	$50.00 / day
Lifeline with Safety Hook	$10.00 / day
Tripod / Winch Retrieval System	$160.00 / day
Level D PPE	$50.00 / man / day

SAFETY SUPPORT EQUIPMENT	
Draeger Chip Measuring System	$100.00 / day
Draeger CMS Sample Chip (10 Samples)	$250.00 / each
MSA Passport Air Monitoring	$100.00 / day
FID	$295.00 / day
PID	$275.00 / day
Chemical Tube Pump	$50.00 / day
LudLum Model #2 Norm Survey Meter	$50.00 / day
LudLum Model #3 Norm Survey Meter	$50.00 / day
Chemical Tubes	$15.00 / each
10 lb. A, B, C Dry Chemical Fire Extinguisher	$15.00 / each
20 lb. A, B, C Dry Chemical Fire Extinguisher	$25.00 / day
Portable Hard Wash Station (including servicing)	$75.00 / day
Portable Eye Wash Station (Wall Mount Type)	$20.00 / day
USCG Approved First Aid Kit / Burn Kit	$15.00 / day
Portable Industrial Air Conditioning	Cost + 20%
Forced Air Heaters (250k – 400k BTU)	$35.00 / day
10' x 10' Personnel Tent, Table, & Chairs	$50.00 / day
30' x 30' Personnel Tent, Table, & Chairs	$150.00 / day

MISCELLANEOUS SUPPORT EQUIPMENT	
1" Diaphragm Pump (Gas or Air)	$75.00 / day
2" Diaphragm Pump (Gas or Air)	$110.00 / day
3" Diaphragm Pump (Gas or Air)	$135.00 / day
2" Gas or Diesel Centrifugal Pump	$90.00 / day
3" Gas or Diesel Centrifugal Pump	$110.00 / day
2" Peristaltic Pump (Vac Pump)	$300.00 / day
2" Wash Pump Package (includes 25' Suction/ 100'Discharge)	$140.00 / day
3" Wash Pump Package (includes 25' Suction/ 100'Discharge)	$160.00 / day
½" Air Diaphragm Pump	$65.00 / day
2.8 kW Generator	$70.00 / day
4 kW Generator	$80.00 / day
8 kW – 10 kW Generator	$125.00 / day
15 kW Generator	$175.00 / day
30 kW Generator	$250.00 / day
55 kW Generator	$350.00 / day
10 cfm Air Compressor	$100.00 / day
90 cfm Air Compressor	$150.00 / day
185 cfm Air Compressor	$175.00 / day
375 cfm Air Compressor	$300.00 / day
3/8" Air Hose	$0.15 / ft / day
3/4" Air Hose	$0.25 / ft / day
Heavy Duty Garden Hose	$0.25 / ft / day

MISC. SUPPORT EQUIPMENT cont'd	
1" Suction / Discharge Hose	$0.25 / ft / day
2" Suction / Discharge Hose	$0.40 / ft / day
3" Suction / Discharge Hose	$0.55 / ft / day
4" Suction / Discharge Hose	$0.65 / ft / day
5" Suction / Discharge Hose	$0.75 / ft / day
6" Suction / Discharge Hose	$0.85 / ft / day
2" USCG Approved Hose (Pressure Tested)	$1.20 / ft / day
3" USCG Approved Hose (Pressure Tested)	$1.50 / ft / day
4" Disposable Flex Hose	Cost + 20%
6" Disposable Flex Hose	Cost + 20%
Generated Light Plant	$175.00 / day
Explosion Proof Drop Light	$50.00 / day
Halogen Light Stand	$50.00 / day
Pneumatic Foam Machine	$200.00 / day
Wildlife Hazing Cannon (Includes One Full Propane Bottle)	$50.00 / day
20 # Propane Bottle (Propane Refill Included)	$30.00 / day
Acetylene/ Oxygen Torch Set	$50.00 / day
Acetylene/ Oxygen Bottle Refill	Cost + 20%
Rope Ladder	$20.00 / day
8' Fiberglass Step Ladder	$20.00 / day
24' Fiberglass Extension Ladder	$25.00 / day
40' Aluminum Extension Ladder	$40.00 / day
1500 psi Pressure Washer	$95.00 / day
3000 psi Pressure Washer	$180.00 / day
3000 psi Hot Water Pressure Washer	$250.00 / day
4000 psi Hot Water Pressure Washer	$350.00 / day
Pressure Washer Hose	$0.35 / ft / day
Drum Pump	$200.00 / each
12' Extension Pressure Wand	$10.00 / day
Weedeater (Grass Cutting)	$35.00 / day
Weedeater (Brush Cutting)	$45.00 / day
Air Blower	$35.00 / day
Turbine Air Blower (Ram Fan)	$75.00 / day
4" Cone Blower	$55.00 / day
5" Cone Blower	$65.00 / day
Chain Saw	$35.00 / day
Wheelbarrow	$25.00 / day
Disposable Decon Pool	$20.00 / each
Decon Pool 10 x 10	$150.00 / day
Decon Pool 12 x 50	$200.00 / day
Decon Pool 25 x 50	$275.00 / day
Decon Pool 25 x 100	$425.00 / day
Roll Off Boxes (20 – 25 cubic yard) (Household Garbage)	$25.00 / day
Roll Off Boxes (20 – 25 cubic yard) (Contaminated Debris)	$40.00 / day
Roll Off Boxes (40 cubic yard)	$40.00 / day
Vacuum Box	$75.00 / day
Wooden Pallets (used)	$10.00 / each
Camper Trailers (3 man capacity)	$350.00 / day

COMMUNICATIONS EQUIPMENT	
Disposable Camera & Photo Processing	$30.00 / each
Digital Camera	$50.00 / day
Cellular Phone (No Air Time)	$50.00 / day
Satellite Phone (No Air Time)	$150.00 / day
VHF Radio	$25.00 / day
UHF Radio	$25.00 / day
Portable Radio Repeater	$275.00 / day
Fax Machine	$50.00 / day
Laptop Computer & Printer, Text	$125.00 / day
Poster Printer	$250.00 / day
Copier	$100.00 / day
Handheld GPS	$50.00 / day

EQUIPMENT, MATERIAL, & SUPPLIES, ETC. COST PLUS	
Equipment Fuel	Cost + 20%
Port-o-Lets (rental & servicing)	Cost + 20%
Frac Tank	Cost + 20%
Marine Portable Tanks (any size)	Cost + 20%
Excavator, Backhoe, Dozer	Cost + 20%
Forklift, Crane, Cherry Picker	Cost + 20%
Third Party Transportation Services (Equipment/Materials)	Cost + 20%
Lunches / Catering Services	Cost + 20%
Propane Bottle Refills	Cost + 20%
Tug Boat	Cost + 40%
Deck Barge	Cost + 40%
Spud Barge	Cost + 40%
Crew Boat	Cost + 40%
OSRV / Lift Boat	Cost + 40%
Welding / Cutting Services (to secure equipment on barges)	Cost + 20%
Float Plane / Helicopter Service	Cost + 20%
Decon Facility Rental / Improvements	Cost + 20%

MISCELLANEOUS SERVICES	
Non - Hazardous Drum Disposal (Oily Sorbents / Debris)	$100.00 / each
Non - Hazardous Drum Disposal (Soil / Sand / Rocks)	$150.00 / each
Non – Hazardous Waste Water Disposal (Pending Approval)	$0.19 / gallon

HAZMAT EQUIPMENT & MATERIALS	
16' Hazmat Response Trailer	$200.00 / day
32' Hazmat Response Trailer	$300.00 / day
Chemical Absorbent Pads (100 per bale)	$125.00 / bale
5" Chemical Absorbent Boom	$120.00 / bale
8" Chemical Absorbent Boom	$175.00 / bale
2" Pneumatic Chemical Transfer Pump	$350.00 / day
2" Chemical Suction / Discharge Hose	$2.00 / ft / day
pH Meter	$50.00 / day
pH Test Strips	$3.00 / each

HAZMAT EQUIPMENT & MATERIALS cont'd	
PCB Test Kit	$50.00 / each
Mercury Test Kit	$50.00 / each
Mercury Spill Kit	$250.00 / each
Betts Emergency Value	$750.00 / day
Plug & Patch Kit	$500.00 / day
Bonding & Grounding Kit	$100.00 / day
Non-Sparking Hand Tools Set	$50.00 / day
Pogo Pump	$25.00 / day
Drum Labels	$2.00 / each
Traffic Safety Cones	$5.00 / each / day
Personnel Decon Pool	$20.00 / each
Shrink Wrap	$50.00 / roll
Pallet Puller	$25.00 / day
Drum Dolly	$25.00 / day
Drum Lift / Dump	$25.00 / day
Hazmat Drum Liner	$125.00 / roll
Drum Thief	$30.00 / each
Wet / Dry Vac	$40.00 / day
Sodium Bicarbonate (50 lb.)	$25.00 / each
Muriatic Acid (1 Gallon)	$20.00 / each
Acetic Acid (1 Gallon)	$15.00 / each
Floor Dry (40 LB)	$25.00 / each
Lime (50 lb.)	$20.00 / bag
Stay Dry (40 lb.)	$15.00 / bag

Exhibit B
Insurance Requirements

Contractor will obtain and maintain the following insurance policies:

Policy	Limits	Coverage
Employer's Liability	$100,000 each accident	
Worker's Compensation	amount required by Law in each state where Contractor conducts operations	no alternative forms of coverage coverage for occupational disease coverage for alternate employers and borrowed servants
Commercial Auto Liability	$1,000,000 combined single limit	coverage for owned vehicles, non-owned vehicles, hired vehicles, and mobile equipment
Commercial General Liability	$1,000,000 combined single limit	coverage for premises/operations, products/completed operations, blanket contractual liability including Contractor's indemnification obligations under this Agreement, broad form property damage, independent contractors, personal injury, and sudden and accidental pollution
Umbrella Liability	$10,000,000 combined single limit	bodily injury and property damage in excess of the required employer's liability, commercial auto liability, and commercial general liability policies
Errors and Omissions	$5,000,000 per occurrence	
Pollution Liability	$10,000,000 per occurrence if time element pollution is not covered by the required commercial general liability policy	

Each required policy: (a) will be issued by an insurance carrier that has an A.M. Best Company rating of A or above on the date the policy is issued; (b) will include a provision stating that the policy may not be cancelled or materially altered without thirty (30) days' prior written notice to Logistics and Kaneb; (c) waive subrogation rights against Logistics, Kaneb, and their Affiliates or Subsidiaries; (d) will be primary with respect to the insurance maintained by Logistics, Kaneb, and their Affiliates or Subsidiaries; (e) may consist of a combination of primary and excess liability policies; (f) will be written on an occurrence

form; (g) will not contain any provision or endorsement denying coverage for losses caused by the acts or omissions of subcontractors; and (h) will respond to claims made worldwide (including the United States, Canada, Mexico, and the Netherland Antilles) if Services are performed outside the United States of America. Each required policy, other than the required worker's compensation policy will name Logistics, Kaneb, and their Affiliates as additional insureds. The required commercial general liability and commercial auto liability policies will contain a severability of interests or separation of insureds clause.

Contractor will provide Kaneb and Logistics with a certificate of insurance showing evidence of the required insurance policies, limits, and coverages upon request. Contractor will provide a copy of this Exhibit B to its insurance broker to ensure that the required insurance policies, limits, and coverages are obtained. The required limits are minimum limits and will not be construed to limit Contractor's liability. The cost of the required insurance will be paid by Contractor. Contractor's obligation to obtain and maintain the required insurance policies is separate from any other obligations imposed on Contractor under any other provisions of this Agreement, including, without limitation, the indemnity provisions of this Agreement.

ACORD CERTIFICATE OF LIABILITY INSURANCE

CSR DM ENVIR-3

DATE (MM/DD/YYYY) 08/07/07

PRODUCER
HUB Int'l Gulf South Limited
Formerly: Hibernia Insurance
P.O. Box 6650
Metairie LA 70009-6650
Phone: 504-834-2424 Fax: 504-834-2995

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED
Environmental Safety & Health Consulting Services, Inc., et al see attached for list
P.O. Box 9217
Houma LA 70361

INSURERS AFFORDING COVERAGE	NAIC #
INSURER A: American Int'l Specialty	
INSURER B: Louisiana Workers Compensation	
INSURER C: State National Insurance Co.	12831
INSURER D: New York Marine & General Ins	
INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A		GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS MADE X OCCUR X Contractual-Blkt X Pollution GEN'L AGGREGATE LIMIT APPLIES PER X POLICY PRO-JECT LOC	PROP 2492586	06/30/07	06/30/08	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG Prof Liab	$ 1,000,000 $ 100,000 $ 10,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 1,000,000
		AUTOMOBILE LIABILITY ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS HIRED AUTOS NON OWNED AUTOS	SEPARATE CERT ISSUED BY LIBERTY MUTUAL			COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ $ $ $
		GARAGE LIABILITY ANY AUTO				AUTO ONLY - EA ACCIDENT OTHER THAN AUTO ONLY: EA ACC AGG	$ $ $
A		EXCESS/UMBRELLA LIABILITY X OCCUR CLAIMS MADE DEDUCTIBLE RETENTION $	PROU 2493252	06/30/07	06/30/08	EACH OCCURRENCE AGGREGATE	$ 10,000,000 $ XS OF GL,EL $ Auto $ $
B		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below	55702 - INCL USL&H, OCS, BLANKET ALTERNATE EMPLOYE	06/30/07	06/30/08	X WC STATU-TORY LIMITS OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000
		OTHER					
C		MEL	TUV880085-01	06/30/07	06/30/08	AOP/AOA	$1,000,000
D		Excess MEL	MMO51221ML507	06/30/07	06/30/08		$10,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

See attached for additional policy information.

CERTIFICATE HOLDER

NUSTARL

NuStar Logistics, L.P. Its Affiliates,directors, officers employees & borrowed servents
2330 North Loop 1604 West
San Antonio TX 78248

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE
Eric Williams

© ACORD CORPORATION 1988

NOTEPAD: HOLDER CODE NUSTARL ENVIR-3 PAGE 3
INSURED'S NAME Environmental Safety & Health CSR DM DATE 08/07/07

Certificate Holder is included as an additional insured (only for General Liability policy) ATIMA as required by written contract, but always subject to the policy terms, conditions and exclusions. Waiver of Subrogation is granted in favor of the Certificate Holder (wro of General Liability, Workers Compensation, Maritime Employers Liability) ATIMA as required by written contract but limited to the operations of the Insured, and always subject to the policy terms, conditions and exclusions. General Liability policy is primary and non-contributory as required by written contract.

NOTEPAD: INSURED'S NAME Environmental Safety & Health ENVIR-3 CSR DM PAGE 2 DATE 08/07/07

BLANKET ADDITIONAL INSURED AS REQUIRED BY WRITTEN CONTRACT RE: GL.
BLANKET WAIVER OF SUBROGATION AS REQUIRED BY WRITTEN CONTRACT RE: WC, GL, MEL. EXCESS FOLLOWING FORM OF PRIMARY.

SCHEDULE OF NAMED INSUREDS:
Environmental Safety & Health Consulting Services, Inc.
ES&H, Inc. dba ES&H Consulting and Training Group
ES&H of Lake Charles, LLC
ES&H Industrial Group, LLC
Boucvalt Services, LLC

This certificate is executed by Liberty Mutual Insurance Group as respects such insurance as is afforded by those companies BM0068

Certificate of Insurance

This certificate is issued as a matter of information only and confers no rights upon you the certificate holder This certificate is not an insurance policy and does not amend, extend or alter the coverage afforded by the policies listed below.

This is to certify that (Name and address of Insured)

Environmental Safety and Health Consulting Services, Inc
1730 Coteau Road
Houma, LA 70361

Liberty Mutual™

is, at the issue date of this certificate insured by the Company under the policy(ies) listed below The insurance afforded by the listed policy(ies) is subject to all their terms, exclusions and conditions and is not altered by any requirement, term or condition of any contract or other document with respect to which this certificate may be issued

Expiration Type	Eff./Exp. Date(s)	Policy Number(s)	Limits of Liability	
[ ] Continuous*			Coverage afforded under WC law of the following states:	Employers Liability
[ ] Extended				Bodily Injury By Accident Each Accident
[X] Policy Term				Bodily Injury By Disease Policy Limit
Workers Compensation				Bodily Injury By Disease Each Person
General Liability			General Aggregate-Other than Prod/Completed Operations	
[ ] Claims Made			Products/Completed Operations Aggregate	
[ ] Occurrence			Bodily Injury and Property Damage Liability	Per Occurrence
Retro Date			Personal and Advertising Injury	Per Person / Organization
			Other Liability	Other Liability
Automobile Liability	06/30/2007 / 06/30/2008	AS5-191-446070-017	Each Accident - Single Limit - B. I. and P. D. Combined $1,000,000	
[X] Owned			Each Person	
[X] Non-Owned			Each Accident or Occurrence	
[X] Hired			Each Accident or Occurrence	

COMMENTS

Automobile Liability Policy includes additional insured lessor, blanket waiver of subrogation and blanket additional insured -- Waiver of Subrogation is granted in favor of the Certificate Holder as their interests may appear as required by written contract but limited to the operations of the insured, and always subject to the policy terms, conditions and exclusions

Notice of cancellation (not applicable unless a number of days is entered below) Before the stated expiration date the company will not cancel or reduce the insurance afforded under the above policies until at least 30 days notice of such cancellation has been mailed to

Office: METAIRIE, LA **Phone:** 504 833 8716

Kevin M. Hartman

KEVIN HARTMAN

Authorized Representative

Certificate Holder:

NUSTAR LOGISTICS LP ITS
AFFILIATES AND THEIR DIRECTORS
OFFICERS EMPLOYEES AND BORROWED SERVANTS
2330 NORTH LOOP 1604 WEST
SAN ANTONIO, TX 78248

Date Issued: 08/08/2007 **Prepared By:** LR

July 10, 2014

U.S. Coast Guard
Sector New Orleans (08-37150)
200 Hendee Street
New Orleans, Louisiana 70114
Attn: FRP Coordinator

Reference: NuStar Logistics L.P.
Integrated Contingency Plan Update – St. James Terminal
USCG FRP# NWF040

Dear FRP Coordinator:

NuStar Logistics L.P. (NuStar) has recently completed a five year update for the Integrated Contingency Plan (ICP) at the St. James Terminal. We have enclosed one complete copy for your files and review. Please accept this submittal for consideration of the five-year agency review, as required under Title 33 of the Code of Federal Regulations, Part 154, Section 1060(e).

If you have any questions or comments regarding this submittal, please contact me at (904) 450-4235.

Best Regards,

Lesley Toke
Health, Safety, and Environment Specialist

Enclosure

6531 Evergreen Avenue • Jacksonville, Florida 32208 • (904) 355-9675

FedEx

July 11,2014

Dear Customer:

The following is the proof-of-delivery for tracking number **770570472565**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	D.ANGELETY	**Delivery location:**	200 HENDEE ST NEW ORLEANS, LA 70114
Service type:	FedEx Priority Overnight	**Delivery date:**	Jul 11, 2014 09:09
Special Handling:	Deliver Weekday		

Shipping Information:

Tracking number:	770570472565	**Ship date:**	Jul 10, 2014
		Weight:	6.0 lbs/2.7 kg

Recipient:
ATTN: FRP Coordinator
US Coast Guard
Sector New Orleans (08-37150)
200 Hendee Street
NEW ORLEANS, LA 70114 US
Reference

Shipper:
Alexander Sheffield
C-K ASSOCIATES, LLC
17170 PERKINS RD
BATON ROUGE, LA 70810 US

10769

Thank you for choosing FedEx.

July 16, 2014

U.S. Coast Guard
Sector New Orleans (08-37150)
200 Hendee Street
New Orleans, Louisiana 70114
Attn: FRP Coordinator

Reference: NuStar Logistics L.P.
Integrated Contingency Plan Update – St. James Terminal
USCG FRP# NWF040

Dear FRP Coordinator:

NuStar Logistics L.P. (NuStar) has recently completed a five year update for the Integrated Contingency Plan (ICP) at the St. James Terminal. We have enclosed one complete electronic copy of the ICP for your files and review. Please accept this submittal for consideration of the five-year agency review, as required under Title 33 of the Code of Federal Regulations, Part 154, Section 1060(e).

If you have any questions or comments regarding this submittal, please contact me at (904) 450-4235.

Best Regards,

Lesley Toke
Health, Safety, and Environment Specialist

Enclosure

6531 Evergreen Avenue • Jacksonville, Florida 32208 • (904) 355-9675

FedEx

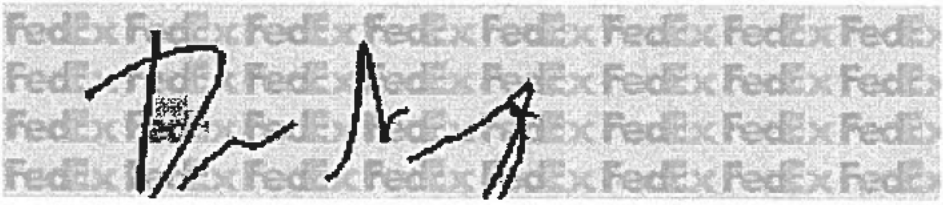
July 21,2014

Dear Customer:

The following is the proof-of-delivery for tracking number **770618876743**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	D.ANGELETY	**Delivery location:**	200 HENDEE ST NEW ORLEANS, LA 70114
Service type:	FedEx Priority Overnight	**Delivery date:**	Jul 17, 2014 09:50
Special Handling:	Deliver Weekday		



Shipping Information:

Tracking number:	770618876743	**Ship date:**	Jul 16, 2014
		Weight:	0.5 lbs/0.2 kg

Recipient:
ATTN: FRP Coordinator
US Coast Guard
Sector New Orleans (08-37150)
200 Hendee Street
NEW ORLEANS, LA 70114 US
Reference

Shipper:
Alexander Sheffield
C-K ASSOCIATES, LLC
17170 PERKINS RD
BATON ROUGE, LA 70810 US

10769

Thank you for choosing FedEx.

July 16, 2014

Mr. Donald P. Smith
U.S. Environmental Protection Agency
Region VI
1445 Ross Avenue
Suite 1200
Dallas, Texas 75202

Reference: NuStar Logistics L.P.
Integrated Contingency Plan Update – St. James Terminal
EPA FRP# FRP-06-LA-00104

Dear Mr. Smith:

NuStar Logistics L.P. (NuStar) has recently completed a five year update for the Integrated Contingency Plan (ICP) at the St. James Terminal. We have enclosed one complete electronic copy for your files and review. Please accept this submittal for consideration of the five-year agency review, as required under Title 40 of the Code of Federal Regulations, Part 112, Section 20(c)(4).

If you have any questions or comments regarding this submittal, please contact me at (904) 450-4235.

Best Regards,

Lesley Toke
Health, Safety, and Environment Specialist

Enclosure

FedEx

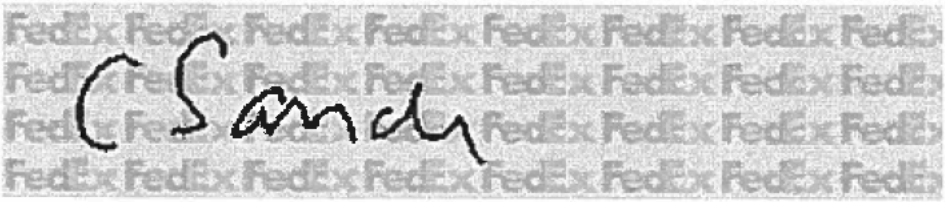
July 21,2014

Dear Customer:

The following is the proof-of-delivery for tracking number **770618934783**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	C.SANCHEZ	**Delivery location:**	1445 ROSS AVE DALLAS, TX 75202
Service type:	FedEx Priority Overnight	**Delivery date:**	Jul 17, 2014 10:05
Special Handling:	Deliver Weekday		



Shipping Information:

Tracking number:	770618934783	**Ship date:**	Jul 16, 2014
		Weight:	0.5 lbs/0.2 kg

Recipient:
Donald Smith
US Environmental Protection Agency
1445 ROSS AVE
STE 1200
DALLAS, TX 75202 US

Shipper:
Alexander Sheffield
C-K ASSOCIATES, LLC
17170 PERKINS RD
BATON ROUGE, LA 70810 US

Reference 10769

Thank you for choosing FedEx.

July 10, 2014

Mr. Bob Mayweather
Capital Regional Office Manager
Louisiana Department of Environmental Quality
P.O. Box 4312
Baton Rouge, Louisiana 70821-4312

Reference: NuStar Logistics L.P.
Integrated Contingency Plan Update – St. James Terminal
EPA FRP# FRP-06-LA-00104
Agency Interest No. 36538

Dear Mr. Mayweather:

NuStar Logistics L.P. (NuStar) has recently completed a five year update for the Integrated Contingency Plan (ICP) at the St. James Terminal. We have enclosed one complete copy for your files and review. Please accept this submittal for consideration of the five-year agency review, as required under Title 40 of the Code of Federal Regulations, Part 112, Section 20(c)(4).

If you have any questions or comments regarding this submittal, please contact me at (904) 450-4235.

Best Regards,

Lesley Toke
Health, Safety, and Environment Specialist

Enclosure

FedEx

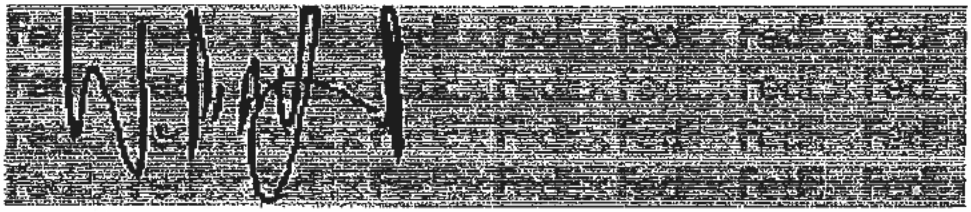
July 11,2014

Dear Customer:

The following is the proof-of-delivery for tracking number **770570557009**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Mailroom
Signed for by:	B.BEACOM	**Delivery location:**	602 N FIFTH STREET BATON ROUGE, LA 70802
Service type:	FedEx Priority Overnight	**Delivery date:**	Jul 11, 2014 09:14
Special Handling:	Deliver Weekday		



Shipping Information:

Tracking number:	770570557009	**Ship date:**	Jul 10, 2014
		Weight:	6.0 lbs/2.7 kg

Recipient:
Bob Mayweather
LA Dept of Environmental Quality
602 N. Fifth Street
BATON ROUGE, LA 70802 US

Shipper:
Alexander Sheffield
C-K ASSOCIATES, LLC
17170 PERKINS RD
BATON ROUGE, LA 70810 US

Reference 10769

Thank you for choosing FedEx.

July 16, 2014

Mr. David Lehman
Environmental Planning Officer
Office of Pipeline Safety
Department of Transportation
Room E22-321
1200 New Jersey Avenue
Washington, D.C. 20590-0001

Reference: NuStar Logistics L.P.
Integrated Contingency Plan Update – St. James Terminal
PHSMA FRP# NST1

Dear Mr. Lehman:

NuStar Logistics L.P. (NuStar) has recently completed a five year update for the Integrated Contingency Plan (ICP) at the St. James Terminal. We have enclosed two complete electronic copies for your files and review. Please accept this submittal for consideration of the five-year agency review, as required under Title 49 of the Code of Federal Regulations, Part 194, Section 121(a)(1).

If you have any questions or comments regarding this submittal, please contact me at (904) 450-4235.

Best Regards,

Lesley Toke
Health, Safety, and Environment Specialist

Enclosure

6531 Evergreen Avenue • Jacksonville, Florida 32208 • (904) 355-9675

FedEx

July 21,2014

Dear Customer:

The following is the proof-of-delivery for tracking number **770618178770**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	J.ROYE	**Delivery location:**	1200 N.J. AVE SE E22 321 WASHINGTON, DC 20590
Service type:	FedEx Priority Overnight	**Delivery date:**	Jul 17, 2014 10:13
Special Handling:	Deliver Weekday		

Shipping Information:

Tracking number:	770618178770	**Ship date:**	Jul 16, 2014
		Weight:	0.5 lbs/0.2 kg

Recipient:
David Lehman
Department of Transportation
1200 New Jersey Avenue
Room E22-321
WASHINGTON, DC 20590 US

Shipper:
Alexander Sheffield
C-K ASSOCIATES, LLC
17170 PERKINS RD
BATON ROUGE, LA 70810 US

Reference 10769

Thank you for choosing FedEx.

July 16, 2014

Mr. Eric Deroche
Director
St. James Parish Emergency Preparedness
P.O. Box 106
Convent, Louisiana 70723

Reference: NuStar Logistics L.P.
Integrated Contingency Plan Update – St. James Terminal
EPA FRP# FRP-06-LA-00104

Dear Mr. Deroche:

NuStar Logistics L.P. (NuStar) has recently completed a five year update for the Integrated Contingency Plan (ICP) at the St. James Terminal. As required by Title 40 of the Code of Federal Regulations, Part 265, Section 53(b), we are providing you an electronic copy of the ICP because you have been identified as an organization that may be called upon to provide emergency services in the unlikely event of an incident at this facility.

If you have any questions or comments regarding this submittal, please contact me at (904) 450-4235.

Best Regards,

Lesley Toke
Health, Safety, and Environment Specialist

Enclosure

6531 Evergreen Avenue • Jacksonville, Florida 32208 • (904) 355-9675

FedEx

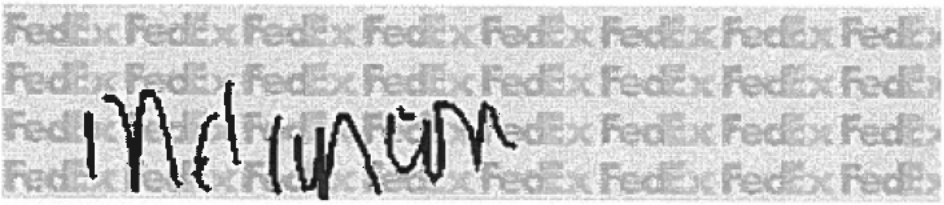
July 21,2014

Dear Customer:

The following is the proof-of-delivery for tracking number **770619959706**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	M.MELCON	**Delivery location:**	5153 CANATELLA ST CONVENT, LA 70723
Service type:	FedEx Priority Overnight	**Delivery date:**	Jul 17, 2014 13:31
Special Handling:	Deliver Weekday		



Shipping Information:

Tracking number:	770619959706	**Ship date:**	Jul 16, 2014
		Weight:	0.5 lbs/0.2 kg

Recipient:
Eric Deroche
St. James Parish Emergency Prepared
5153 CANATELLA ST
CONVENT, LA 70723 US

Shipper:
Alexander Sheffield
C-K ASSOCIATES, LLC
17170 PERKINS RD
BATON ROUGE, LA 70810 US

Reference 10769

Thank you for choosing FedEx.

July 16, 2014

St. James Parish Sheriff's Office
5800 Louisiana Highway 44
Convent, Louisiana 70723
Attn: St. James Parish Sheriff

Reference: NuStar Logistics L.P.
Integrated Contingency Plan Update – St. James Terminal
EPA FRP# FRP-06-LA-00104

Dear Sheriff:

NuStar Logistics L.P. (NuStar) has recently completed a five year update for the Integrated Contingency Plan (ICP) at the St. James Terminal. As required by Title 40 of the Code of Federal Regulations, Part 265, Section 53(b), we are providing you an electronic copy of the ICP because you have been identified as an organization that may be called upon to provide emergency services in the unlikely event of an incident at this facility.

If you have any questions or comments regarding this submittal, please contact me at (904) 450-4235.

Best Regards,

Lesley Toke
Health, Safety, and Environment Specialist

Enclosure

6531 Evergreen Avenue • Jacksonville, Florida 32208 • (904) 355-9675

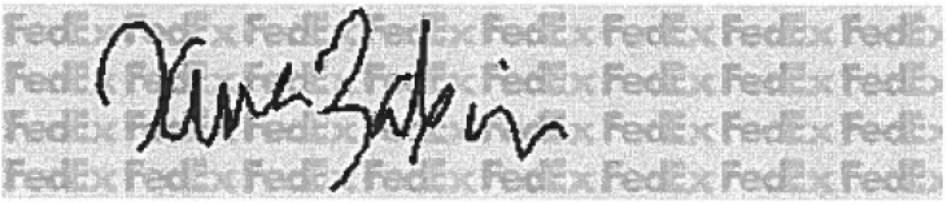
July 21,2014

Dear Customer:

The following is the proof-of-delivery for tracking number **770618461062.**

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	T.BABIN	**Delivery location:**	5800 LOUISIANA HIGHWAY 44 CONVENT, LA 70723
Service type:	FedEx Priority Overnight	**Delivery date:**	Jul 17, 2014 13:26
Special Handling:	Deliver Weekday		



Shipping Information:

Tracking number:	770618461062	**Ship date:**	Jul 16, 2014
		Weight:	0.5 lbs/0.2 kg

Recipient:
St. James Parish Sheriff
St. James Parish Sheriff's Office
5800 Louisiana Highway 44
CONVENT, LA 70723 US

Shipper:
Alexander Sheffield
C-K ASSOCIATES, LLC
17170 PERKINS RD
BATON ROUGE, LA 70810 US

Reference 10769

Thank you for choosing FedEx.

July 16, 2014

Vacherie Volunteer Fire Department
2433 Louisiana 18
Vacherie, Louisiana 70090
Attn: Fire Chief

Reference: NuStar Logistics L.P.
Integrated Contingency Plan Update – St. James Terminal
EPA FRP# FRP-06-LA-00104

Dear Sir or Madam:

NuStar Logistics L.P. (NuStar) has recently completed a five year update for the Integrated Contingency Plan (ICP) at the St. James Terminal. As required by Title 40 of the Code of Federal Regulations, Part 265, Section 53(b), we are providing you an electronic copy of the ICP because you have been identified as an organization that may be called upon to provide emergency services in the unlikely event of an incident at this facility.

If you have any questions or comments regarding this submittal, please contact me at (904) 450-4235.

Best Regards,

Lesley Toke
Health, Safety, and Environment Specialist

Enclosure

FedEx

July 21,2014

Dear Customer:

The following is the proof-of-delivery for tracking number **770618532816**.

Delivery Information:

Status:	Delivered	**Delivery location:**	2433 LOUISIANA 18 VACHERIE, LA 70090
Signed for by:	Signature release on file	**Delivery date:**	Jul 18, 2014 13:30
Service type:	FedEx Priority Overnight		
Special Handling:	Deliver Weekday		

Shipping Information:

Tracking number:	770618532816	**Ship date:**	Jul 16, 2014
		Weight:	0.5 lbs/0.2 kg

Recipient:
Fire Chief
Vacherie Volunteer Fire Department
2433 Louisiana 18
VACHERIE, LA 70090 US

Shipper:
Alexander Sheffield
C-K ASSOCIATES, LLC
17170 PERKINS RD
BATON ROUGE, LA 70810 US

Reference 10769

Thank you for choosing FedEx.

July 16, 2014

St. Elizabeth Hospital
2647 South St. Elizabeth Boulevard
Gonzales, Louisiana 70737
Attn: Disaster Preparedness Coordinator

Reference: NuStar Logistics L.P.
Integrated Contingency Plan Update – St. James Terminal
EPA FRP# FRP-06-LA-00104

Dear Sir or Madam:

NuStar Logistics L.P. (NuStar) has recently completed a five year update for the Integrated Contingency Plan (ICP) at the St. James Terminal. As required by Title 40 of the Code of Federal Regulations, Part 265, Section 53(b), we are providing you an electronic copy of the ICP because you have been identified as an organization that may be called upon to provide emergency services in the unlikely event of an incident at this facility.

If you have any questions or comments regarding this submittal, please contact me at (904) 450-4235.

Best Regards,

Lesley Toke
Health, Safety, and Environment Specialist

Enclosure

6531 Evergreen Avenue • Jacksonville, Florida 32208 • (904) 355-9675

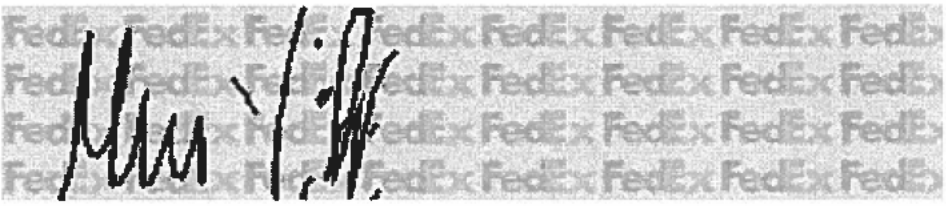
July 21,2014

Dear Customer:

The following is the proof-of-delivery for tracking number **770618592741**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	M.VERNER	**Delivery location:**	2647 S SAINT ELIZABETH 100 GONZALES, LA 70737
Service type:	FedEx Priority Overnight	**Delivery date:**	Jul 17, 2014 09:52
Special Handling:	Deliver Weekday		



Shipping Information:

Tracking number:	770618592741	**Ship date:**	Jul 16, 2014
		Weight:	0.5 lbs/0.2 kg

Recipient:
Disaster Preparedness Coordinator
St. Elizabeth Hospital
2647 South St. Elizabeth Blvd.
GONZALES, LA 70737 US

Shipper:
Alexander Sheffield
C-K ASSOCIATES, LLC
17170 PERKINS RD
BATON ROUGE, LA 70810 US

Reference 10769

Thank you for choosing FedEx.

SENSITIVE AREAS WITHIN PLANNING DISTANCE OF FACILITY

In order to determine specific vulnerable sites located within the planning distance of the Facility, various sources of information were reviewed, and a comprehensive listing of vulnerable sites was compiled. Sources include the U.S. Fish and Wildlife Service (USFWS), Louisiana Department of Wildlife and Fisheries (LDWF), U.S. Geological Survey (USGS), National Marine Fisheries Service (NMFS), National Park Service (NPS), Louisiana Natural Heritage Program (LNHP), Louisiana Geographic Information Center (LAGIC), and the Geographic Names Information System (GNIS) databases. The potential effect of an oil spill on each type of vulnerable site located within the planning distance is presented below. Additionally, the methods to prevent and/or minimize the impacts to the identified sensitive sites are discussed.

The specific actions considered to protect a vulnerable site, or to minimize the potential effects of a spill on a vulnerable site, would be tempered in a real spill event by the actual path of the spill and the actual hazards presented. For specific guidance on the actual hazards of a release, the MSDS and the DOT Emergency Response Guidebook can be consulted for hazards and recommended evacuation distances.

Water Intakes

(b) (7)(F), (b) (3)

[redacted]

(b) (3), (b) (7)(F)

Residential Areas

A release of oil in the vicinity of a residential area may affect property, structures, and inhabitants. Specific effects may include oiled animals and vegetation, oiled homes and associated structures, and potential fire hazards. Should human contact result from the spill, the potential exposure routes might include skin contamination, inhalation, or accidental ingestion. If the spill has reached a waterway, or has been confined to a low area, vapor impingement is a potential problem downwind of the spill path.

Vapors can be flammable, irritating, or may only pose an odor problem. Air monitoring should be conducted downwind of the spill path to monitor for vapors, depending on the nature of the released material. Responses to these effects may include strategic booming immediately around the spill area, evacuation of residents, rerouting of traffic, excavation of contaminated soil, suppression of flammable vapors, and decontamination of oiled buildings, structures, pavement, etc. Potential effects and specific response actions will depend on the nature of the released material.

Residential Areas			
1	Chatman Town	76	Mount Airy Landing
2	Olga Landing	78	Willow Grove
4	Burton Lane	79	Angelina Landing
8	Burton (historical)	80	Whitney Landing
11	Uncle Sam Landing	81	Mount Airy
12	Convent	89	White Rose Landing
21	Convent Landing	92	Cooper Shop Landing
22	College Point Landing	93	Lions
24	Caribu Landing	94	Terre Haute Plantation
26	Saint James Landing	96	Columbia Plantation
30	Moonshine (historical)	106	Edgard Landing
31	Pikes Peak	108	Edgard
32	Chopin (historical)	113	Reserve
33	Home Place Plantation (historical)	114	St John the Baptist Parish
34	Batree	117	Tigerville
35	Welham Landing	119	Reserve Landing
36	Welham Plantation	123	Gold Mine Plantation
38	Oak Alley Landing	124	Belle Point Plantation (historical)
40	Hester Station (historical)	126	Lucy
42	Bend	129	Killona Landing
47	Remy	131	Killona
49	Armant Landing	133	Montz
50	Duprac Landing	134	Waterford
53	Vacherie	137	Taft
57	Magnolia Landing	140	Sellers
60	Oubre	145	Norco

Residential Areas			
61	Paulina	147	Good Hope Landing
64	Crescent Landing	148	Good Hope
72	Norma Landing	152	Hahnville Landing
74	Wallace	910	Uncle Sam Plantation
75	Sport		

Businesses

In the event that a spill impacts the property of a business, the effects may include: oiling of the facility, equipment, inventory, and property; interruption of traffic flow to/from the business; and potential fire hazards. A spill event that results in the closure of roads surrounding a business may also indirectly affect the business by the loss of revenue. Should human contact result from the spill, the potential exposure routes might include skin contamination, inhalation, or accidental ingestion. If the spill has reached a waterway, or has been confined to a low area, vapor impingement is a potential problem downwind of the spill path. Vapors can be flammable, irritating, or may only pose an odor problem. Responses to these effects may include strategic booming immediately around the spill area, protective booming of docks and marinas, evacuation of business owners, employees, and patrons, rerouting of traffic near the business, excavation of contaminated soil, suppression of flammable vapors, and decontamination of oiled buildings, structures, pavement, etc. Air monitoring should be conducted downwind of the spill path to monitor for vapors. Potential effects and specific response actions will depend on the nature of the released material.

Businesses			
5	Burton Lane Church	88	Saint Martin's Church
13	Saint James Church	101	Saint Peter Catholic Church
15	Sacred Heart Convent (historical)	111	Saint John the Baptist Catholic Church
19	Saint Michaels Church	112	Global Maritime Ministries
20	Saint Paul Church	116	New Jerusalem Baptist Church
29	Saint Luke Baptist Church	118	Bethlehem Baptist Church
43	Greater Evergreen Baptist Church	122	Our Lady of Grace Church
44	Vacherie Oil and Gas Field	130	Saint Isadore Church (historical)
45	Saint Matthew Baptist Church	135	Providence Baptist Church
46	Mount Olive Baptist Church	141	Greater Good Hope Baptist Church
54	Pilgrim Church	142	Good Hope Missionary Baptist Church
55	Highway Baptist Church	143	Faith Praise and Deliverance Church
69	Saint James Culture and Heritage Center	149	Good Hope Presbyterian Church
70	Riverlands Health Care Center	150	River of Life Church

Wetlands

The effects of a release of oil into a wetland area might include oiling of animals, vegetation, and sediment and the creation of an oil slick on areas of open water. Because water

movement within a wetland habitat is minimal, oil spilled in these areas may pool and may persist. Swamps and marshes often serve as nurseries for fish and shellfish, and exhibit high biodiversity. Due to the typically soft sediments that underlie wetland areas, the use of mechanized equipment for cleanup efforts may cause more harm than the initial oiling. Responses to these effects include strategic booming immediately around the spill area and protective booming around identified sensitive wetland areas, and will depend heavily on the nature of the wetlands and potential routes of access for collection equipment. Potential effects and specific response actions will depend on the nature of the released material.

Various, unnamed wetlands along the Mississippi River have been identified within the planning distance.

Fish and Wildlife

Fish and wildlife species may be impacted directly or indirectly by an oil spill. A direct impact on wildlife would include physical contact with the released oil (oiling of a bird's feathers or an otter's fur) and toxic contamination (inhalation of petroleum vapors or ingestion of oil). Indirect impacts on wildlife would include the destruction of a species' habitat or food source or the displacement of the species or food source.

Direct effects of oil on fish populations include fish kills, specifically the egg and larval stages, which are more vulnerable to oil pollution than those in the adult stage. Spills to rivers used for spawning or used for migration to spawning grounds can affect future populations. Fish that have been tainted by an oil spill may not be fit to eat, thus affecting animals higher in the food chain.

Depending on the life cycle, behavior, and physiology of a particular wildlife species, the effects of an oil spill can vary. Otters and beavers are vulnerable due to the structure of their fur as well as their swimming behaviors. Birds that utilize the water-surface interface are at risk of contamination. Heavily oiled birds typically die as a result of their contamination. The specific effects on wildlife will depend on the nature of the released material.

Responses to these effects include strategic booming immediately around the spill area, protective booming around identified fish and wildlife habitat, and cleaning of affected animals by properly trained professionals. The response efforts in the direct vicinity of the impacted habitat depend heavily on the nature of the habitat and potential routes of access for collection equipment. Potential effects and specific response actions will depend on the nature of the released material.

Wildlife Rehabilitation

In an oil spill incident, it is possible that birds, aquatic life, and/or other wildlife may come in contact with the spilled material. If wildlife becomes involved in the spilled material, it will be necessary to perform wildlife rescue and rehabilitation operations. The capture and treatment of wildlife, especially endangered species, is highly regulated by the U.S. Department of the Interior. To conduct these operations, it will be necessary to obtain assistance from properly trained, licensed, and permitted organizations and personnel. It is important to ensure that any personnel involved in

wildlife rescue and rehabilitation operations, including volunteers, have received the appropriate level of Hazardous Waste Operations and Emergency Response (HAZWOPER) training.

In the event that wildlife is impacted, advice and assistance from trained and experienced persons in the area of wildlife rescue and rehabilitation may be requested. The Qualified Individual (QI) will arrange for various rehabilitators to be available for this service, such as the Louisiana Wildlife Rehabilitators Association.

Various fish and wildlife may potentially be affected by a release. However, no wild or scenic rivers have been identified within the planning distance. Additionally, no designated natural areas, wilderness areas, wildlife refuges or sanctuaries, or conservation areas have been identified within the planning distance.

Endangered Flora and Fauna

Oil spills affect endangered flora and fauna by either directly impacting the individual or by destroying the habitat in which the species lives. Responses to these effects may include strategic booming immediately around the spill area, excavation of contaminated soil, suppression of flammable vapors, and cleaning of affected animals by properly trained professionals. Protective booming around vulnerable areas, as well as booming the mouths of creeks where sensitive species have been identified, should be conducted. Deflection boom can also be used to direct floating spills from vulnerable areas. Potential effects and specific response actions will depend on the nature of the released material.

The following threatened or endangered species have been identified within the parishes of the planning distance, although not necessary in the affected areas:

Threatened & Endangered Species	
Louisiana Black Bear	Alabama Heel splitter Mussel
Pallid Sturgeon	Gulf Sturgeon
Piping plover	West Indian Manatee
Brown Pelican	Bald Eagle
Red-Cockaded Woodpecker	

Lakes and Streams

Lakes are characterized by generally very low wave and current energy, although the surface may often become choppy. Water levels may fluctuate widely throughout the seasons and over time. Often other sensitive environments are in close proximity to lakes, such as wetlands, habitat for migratory birds, nesting birds and mammals, and fish nursery grounds. Lakes also often support various recreational activities. Depending on the severity of the spill, the effects may range from shoreline damages to fish and wildlife kills. Wind and tidal exchange will control the distribution of a slick, and can either hold the slick against a lee shore or spread it along shores or even into previously clean areas.

Small rivers and streams are characterized by shallow water (one to two meters in depth) and narrow channels. These systems are highly variable. The flow rates can range from fast-flowing to slow-moving. The channels may be free of debris or choked with log jams, mid-

channel sand bars, and islands. The shoreline may have a high slope or a low bank fringed with vegetation or wetlands. Slicks typically contaminate both banks. The oil may mix throughout the entire water column in shallower streams, thus potentially affecting both aquatic and benthic organisms.

Responses to these effects include strategic booming immediately around the spill area and protective booming around vulnerable areas such as the mouths of creeks and inlets, and will depend heavily on the nature of the habitat and potential routes of access for collection equipment. Deflection boom can also be used to direct floating spills from vulnerable areas. Potential effects and specific response actions will depend on the nature of the released material.

Lakes and Streams			
3	Mississippi River – Cantrelle Reach	85	Fortyeight Mile Point
9	St James Canal	86	Willow Bend
27	Rich Bend Revetment	90	Willow Bend Revetment
28	Rich Bend	100	Reserve Revetment
37	Belmont Crevasse	125	Lucy Revetment
38	Vacherie Revetment	127	Bonnet Carre Point
39	Belmont Revetment	128	Bonnet Carre Island
63	Mississippi River – Grandview Reach	132	Thirtyfive Mile Point
77	Angelina Revetment	138	Waterford Revetment

Recreational Areas

In the event that a spill impacts a recreational area, the effects may include: oiling of the area, structures, and property; interruption of traffic flow to/from the area; and potential fire hazards. Should human contact result from the spill, the potential exposure routes might include skin contamination, inhalation, or accidental ingestion. Responses to these effects may include strategic booming immediately around the spill area, evacuation of visitors and employees of the areas, rerouting of traffic near the recreational area, excavation of contaminated soil, suppression of flammable vapors, and decontamination of oiled structures, buildings, and pavement. Potential effects and specific response actions will depend on the nature of the released material.

Recreational Areas			
18	Montz Park	136	Saint Michaels Church Historic District

Transportation Routes

Transportation routes are typically indirectly affected by a spill event through the interruption of traffic flow. Other effects may include: oiling of pavement, vegetation, and soil; the creation of an oil slick on areas of open water; and potential fire hazards. Should human contact result from the spill, the potential route of exposure might include skin contamination, inhalation, or accidental ingestion. Responses to these effects may include strategic booming immediately around the spill area, evacuation of persons traveling the route, rerouting of traffic by authorized personnel, excavation of contaminated soil,

suppression of flammable vapors, and decontamination of oiled structures, buildings, pavement, etc. The halting of river traffic in the case of a spill to a major waterway or rerouting vehicular traffic from business areas would likely result in economic impacts. Potential effects and specific response actions will depend on the nature of the released material.

Transportation Routes		
68	Lutcher-Crescent Ferry	State Road 44
105	Reserve-Edgard Ferry	State Road 18
139	Bonnet Carre Spillway	State Road 628
		State Road 48

(b) (3), (b) (7)(F)

[redacted]

No utilities have been identified within the planning distance.

Others Areas of Economic Importance

In the event that a spill impacts an area of economic concern, the effects may include: oiling of vegetation, soil, and structures; interruption of traffic flow to/from the area; and potential fire hazards. Should human contact result from the spill, the potential exposure routes might include skin contamination, inhalation, or accidental ingestion. Responses to these effects depend heavily on the nature of the sensitive area and potential routes of access for collection equipment, but may include strategic booming immediately around the spill area, evacuation, rerouting of traffic, excavation of contaminated soil, suppression of flammable vapors, and decontamination of oiled equipment, buildings, pavement, etc. Potential effects and specific response actions will depend on the nature of the released material.

Other Areas of Economic Importance			
7	Celestin Cemetery	91	Saint John Westside Volunteer Fire Department
16	Saint James Cemetery	95	Saint John the Baptist Parish Library Edgard Branch

Other Areas of Economic Importance			
41	Paulina Grand Point Belmont Volunteer Fire Department Hester Station	98	Saint John the Baptist Parish Library Reserve Branch
48	Vacherie Volunteer Fire Department Station 1	107	Saint Charles Parish Police Jury
52	Paulina - Grand Point - Belmont Fire Department Paulina Station	109	Saint John Westside Volunteer Fire Department Station 95
66	Saint Phillips Cemetery	110	Saint John the Baptist Cemetery
71	Gramercy Volunteer Fire Department Station 2	115	Reserve Volunteer Fire Department Station 63
73	West Saint John Fire Department	151	Saint John Parish Police Jury
83	Garyville Volunteer Fire Department Station 72	153	East Saint Charles Volunteer Fire Department Station 1

ERAP

LINK FILES

(b) (7)(F), (b) (3)

[redacted]

LEGEND

- OF 007 — OUTFALL LOCATION
- WEIR VALVES

0 500 1000

SCALE: 1" = 500'

NUSTAR ENERGY L.P.
SAN ANTONIO, TEXAS

ST. JAMES TERMINAL

FACILITY SITE PLAN

ST. JAMES PARISH

CK ASSOCIATES
Environmental Consultants

Drawn:	CPL/ACAD
Checked:	SM
Approved:	AS
Date:	5/29/14
Dwg. No.:	B10769-01

FIGURE 1

(b) (7)(F), (b) (3)

LEGEND

- OF 007 — OUTFALL LOCATION
- FW — FIRE WATER PIPE
- WEIR VALVES
- SHUTOFF VALVE
- DIRECTION OF STORM WATER FLOW
- ST. JAMES PARISH FIRE HYDRANT

N

0 500 1000

SCALE: 1" = 500'

NUSTAR ENERGY L.P.
SAN ANTONIO. TEXAS

ST. JAMES TERMINAL

FACILITY DRAINAGE PLAN

ST. JAMES PARISH

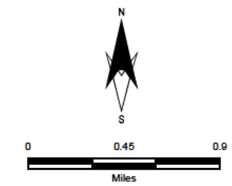
CK ASSOCIATES
Environmental Consultants

Drawn:	CAL/ACAD
Checked:	SM
Approved:	AS
Date:	4/30/14
Dwg. No.:	B10769-01

FIGURE 2

(b) (7)(F), (b) (3)

[redacted]



- St James Facility
- Mile Markers
- Sensitive Areas
- Water Intakes
- Flow Line
- Half Mile Buffer

Reference

U.S.G.S. 7 5 MINUTE SERIES QUAD MAP, SCOTLANDV LLE, LA,

NUSTAR ENERGY, LP
ST JAMES, LOUISIANA

ST JAMES TERMINAL FRP/SPCC

SENSITIVITY MAP

ST JAMES PARISH

CK ASSOCIATES
Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/20/2014
Dwg. No.:	B10769-07a

FIGURE 1

(b) (7)(F), (b) (3)

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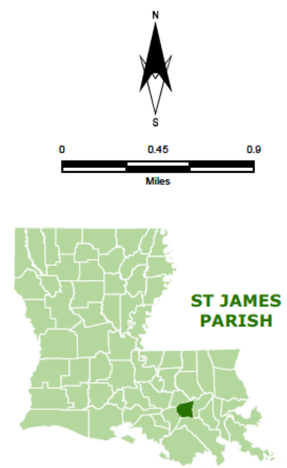

- St James Facility
- Mile Markers
- Sensitive Areas
- Water Intakes
- Flow Line
- Half Mile Buffer

Reference

U.S.G.S. 7 5 MINUTE SERIES QUAD MAP, SCOTLANDV LLE, LA,

NUSTAR ENERGY, LP
ST JAMES, LOUISIANA

ST JAMES TERMINAL FRP/SPCC

SENSITIVITY MAP

ST JAMES PARISH

CK ASSOCIATES
Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/20/2014
Dwg. No.:	B10769-07b

FIGURE 2

(b) (7)(F), (b) (3)

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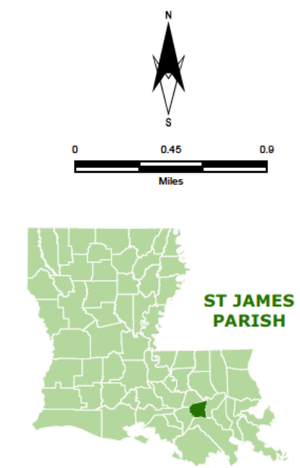

- St James Facility
- Mile Markers
- Sensitive Areas
- Water Intakes
- Flow Line
- Half Mile Buffer

Reference

U.S.G.S. 7 5 MINUTE SERIES QUAD MAP, SCOTLANDV LLE, LA,

NUSTAR ENERGY, LP
ST JAMES, LOUISIANA

ST JAMES TERMINAL FRP/SPCC

SENSITIVITY MAP

ST JAMES PARISH

CK ASSOCIATES Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/20/2014
Dwg. No.:	B10769-07c

FIGURE 3

(b) (7)(F), (b) (3)

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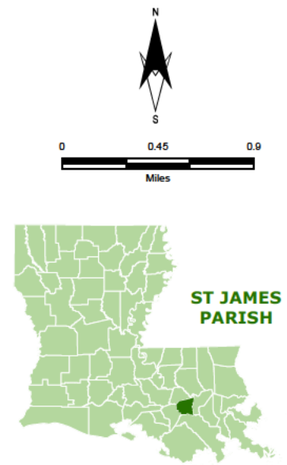


- St James Facility
- Mile Markers
- Sensitive Areas
- Water Intakes
- Flow Line
- Half Mile Buffer

Reference

U.S.G.S. 7 5 MINUTE SERIES QUAD MAP, SCOTLANDV LLE, LA,

NUSTAR ENERGY, LP
ST JAMES, LOUISIANA

ST JAMES TERMINAL FRP/SPCC

SENSITIVITY MAP

ST JAMES PARISH

CK ASSOCIATES
Environmental Consultants

Drawn:	SKM/AM10.2
Checked:	ABS
Approved:	ABS
Date:	5/20/2014
Dwg. No.:	B10769-07d

FIGURE 4

Feature ID	Name	Type	City
1	Chatman Town	Populated Place	Convent
2	Olga Landing	Locale	Convent
3	Cantrelle Reach	Channel	Convent
4	Burton Lane	Populated Place	Convent
5	Burton Lane Church	Church	Convent
6	(b) (3), (b) (7)(F)		
7	Celestin Cemetery	Cemetery	Convent
8	Burton (historical)	Populated Place	Convent
9	Saint James Canal	Canal	Madewood
10	Uncle Sam Plantation	Locale	Convent
11	Uncle Sam Landing	Locale	Convent
12	Convent	Populated Place	Convent
13	Saint James Church	Church	Convent
14	(b) (3), (b) (7)(F)		
15	Sacred Heart Convent (historical)	Church	Convent
16	Saint James Cemetery	Cemetery	Convent
17	Saint Michael School	School	Convent
18	Saint Michaels Church Historic District	Park	Convent
19	Saint Michaels Church	Church	Convent
20	Saint Paul Church	Church	Lagan
21	Convent Landing	Locale	Convent
22	College Point Landing	Locale	Lagan
23	(b) (3), (b) (7)(F)		
24	Caribu Landing	Locale	Lagan
25	Saint James Post Office	Post Office	Lagan
26	Saint James Landing	Locale	Lagan
27	Rich Bend Revetment	Levee	Lagan
28	Rich Bend	Bend	Lagan
29	Saint Luke Baptist Church	Church	Lagan
30	Moonshine (historical)	Locale	Lagan
31	Pikes Peak	Populated Place	Lagan
32	Chopin (historical)	Populated Place	Lagan
33	Home Place Plantation (historical)	Locale	Lagan
34	Batree	Populated Place	Lagan
35	Welham Landing	Locale	Convent
36	Welham Plantation	Locale	Convent
37	Belmont Crevasse	Basin	Convent
38	Oak Alley Landing	Locale	Convent
39	Belmont Revetment	Levee	Convent
40	Hester Station (historical)	Locale	Convent
41	Paulina Grand Point Belmont Volunteer Fire Department Hester Station	Building	Convent
42	Bend	Populated Place	Convent
43	Greater Evergreen Baptist Church	Church	Convent
44	Vacherie Oil and Gas Field	Oilfield	Lutcher
45	Saint Matthew Baptist Church	Church	Lutcher
46	Mount Olive Baptist Church	Church	Lutcher
47	Remy	Populated Place	Lutcher
48	Vacherie Volunteer Fire Department Station 1	Building	Lutcher
49	Armant Landing	Locale	Lutcher
50	Duprac Landing	Locale	Lutcher
51	(b) (3), (b) (7)(F)		
52	Paulina - Grand Point - Belmont Fire Department Paulina Station	Building	Lutcher
53	Vacherie	Populated Place	Lutcher
54	Pilgrim Church	Church	Lutcher
55	Highway Baptist Church	Church	Lutcher
56	(b) (3), (b) (7)(F)		
57	Magnolia Landing	Locale	Lutcher
58	Vacherie Revetment	Levee	Lutcher
59	(b) (3), (b) (7)(F)		
60	Oubre	Populated Place	Lutcher
61			
62	(b) (3), (b) (7)(F)		
63	Grandview Reach	Channel	Lutcher
64	Crescent Landing	Locale	Lutcher
65	Paulina Post Office	Post Office	Lutcher

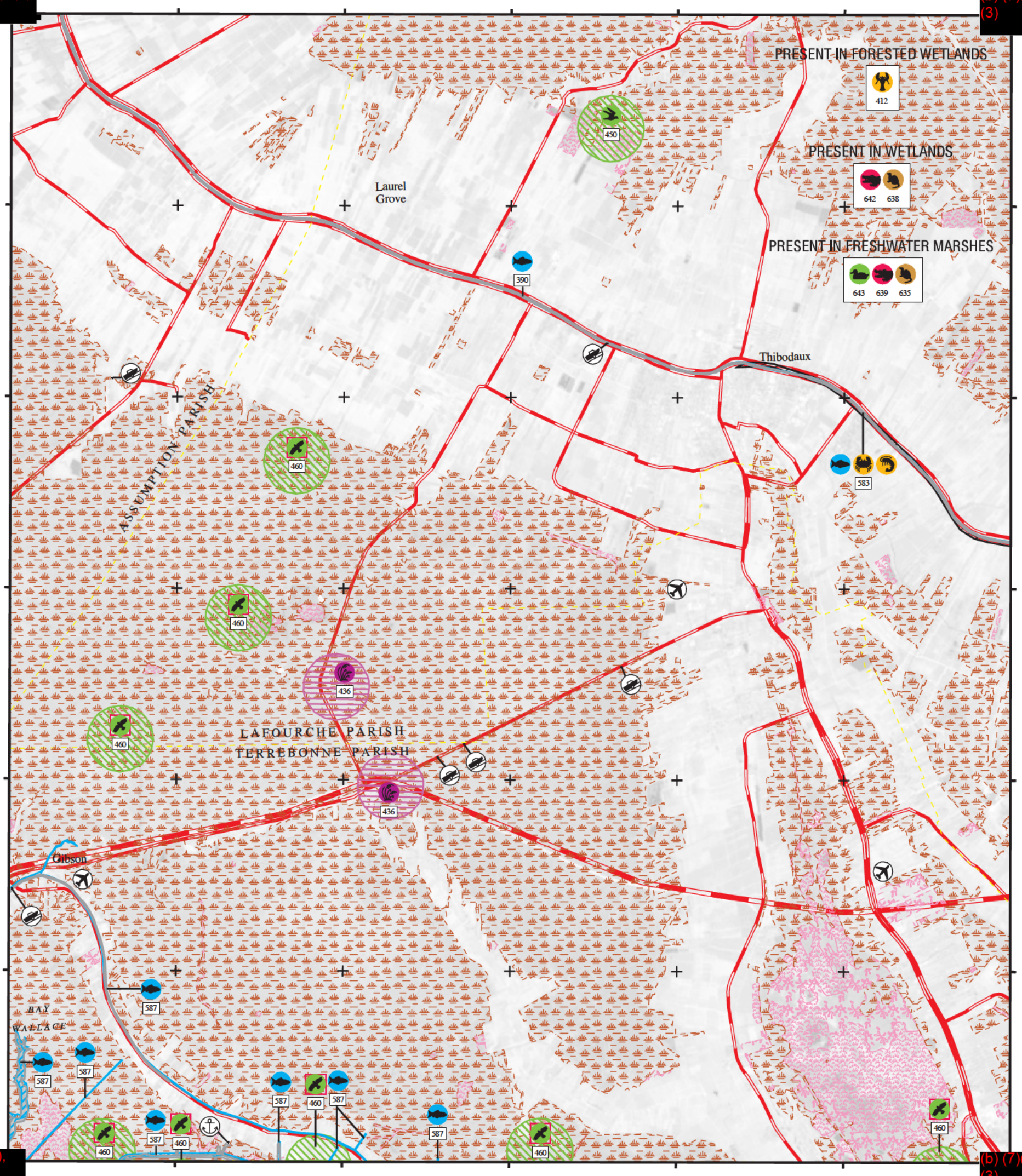
Feature ID	Name	Type	City
66	Saint Phillips Cemetery	Cemetery	Lutcher
67	Saint Philip Catholic Church	Church	Lutcher
68	Lutcher-Cresent Ferry	Crossing	Lutcher
69	Saint James Culture and Heritage Center	Building	Lutcher
70	Riverlands Health Care Center	Building	Lutcher
71	Gramercy Volunteer Fire Department Station 2	Building	Lutcher
72	Norma Landing	Locale	Lutcher
73	West Saint John Fire Department	Building	Lutcher
74	Wallace	Populated Place	Lutcher
75	Sport	Populated Place	Lutcher
76	Mount Airy Landing	Locale	Lutcher
77	Angelina Revetment	Levee	Lutcher
78	Willow Grove	Populated Place	Lutcher
79	Angelina Landing	Locale	Lutcher
80	Whitney Landing	Locale	Lutcher
81	Mount Airy	Populated Place	Lutcher
82	Mount Airy Post Office	Post Office	Lutcher
83	Garyville Volunteer Fire Department Station 72	Building	Lutcher
84	Wallace Post Office (historical)	Post Office	Reserve
85	Fortyeight Mile Point	Cape	Reserve
86	Willow Bend	Bend	Reserve
87	(b) (3), (b) (7)(F)		
88	Saint Martins Church	Church	Reserve
89	White Rose Landing	Locale	Reserve
90	Willow Bend Revetment	Levee	Reserve
91	Saint John Westside Volunteer Fire Department	Building	Reserve
92	Cooper Shop Landing	Locale	Reserve
93	Lions	Populated Place	Reserve
94	Terre Haute Plantation	Locale	Reserve
95	Saint John the Baptist Parish Library Edgard Branch	Building	Reserve
96	Columbia Plantation	Locale	Reserve
97	(b) (3), (b) (7)(F)		
98	Saint John the Baptist Parish Library Reserve Branch	Building	Reserve
99	(b) (3), (b) (7)(F)		
100	Reserve Revetment	Levee	Reserve
101	Saint Peter Catholic Church	Church	Reserve
102	(b) (3), (b) (7)(F)		
103			
104	Reserve Post Office	Post Office	Reserve
105	Reserve-Edgard Ferry	Crossing	Reserve
106	Edgard Landing	Locale	Reserve
107	Saint John Parish Police Jury	Building	Reserve
108	Edgard	Populated Place	Reserve
109	Saint John Westside Volunteer Fire Department Station 95	Building	Reserve
110	Saint John the Baptist Cemetery	Cemetery	Reserve
111	Saint John the Baptist Catholic Church	Church	Reserve
112	Global Maritime Ministries	Church	Reserve
113	Reserve	Populated Place	Reserve
114	Saint John the Baptist Parish	Civil	Reserve
115	Reserve Volunteer Fire Department Station 63	Building	Reserve
116	New Jerusalem Baptist Church	Church	Reserve
117	Tigerville	Populated Place	Reserve
118	Bethlehem Baptist Church	Church	Reserve
119	Reserve Landing	Locale	Reserve
120	(b) (3), (b) (7)(F)		
121			
122	Our Lady of Grace Church	Church	Reserve
123	Gold Mine Plantation	Locale	Reserve
124	Belle Point Plantation (historical)	Locale	Reserve
125	Lucy Revetment	Levee	Reserve
126	Lucy	Populated Place	Reserve
127	Bonnet Carre Point	Cape	Laplace

Feature ID	Name	Type	City
128	Bonnet Carre Island	Island	Laplace
129	Killona Landing	Locale	Laplace
130	Saint Isadore Church (historical)	Church	Laplace
131	Killona	Populated Place	Laplace
132	Thirtyfive Mile Point	Cape	Laplace
133	Montz	Populated Place	Laplace
134	Waterford	Populated Place	Hahnville
135	Providence Baptist Church	Church	Laplace
136	Montz Park	Park	Laplace
137	Taft	Populated Place	Hahnville
138	Waterford Revetment	Levee	Hahnville
139	(b) (3), (b) (7)(F) [redacted]		
140	Sellers	Populated Place	Hahnville
141	Greater Good Hope Baptist Church	Church	Laplace
142	Good Hope Missionary Baptist Church	Church	Hahnville
143	Faith Praise and Deliverance Church	Church	Hahnville
144	(b) (3), (b) (7)(F) [redacted]		
145	Norco	Populated Place	Hahnville
146	Norco Post Office	Post Office	Hahnville
147	Good Hope Landing	Locale	Hahnville
148	Good Hope	Populated Place	Hahnville
149	Good Hope Presbyterian Church	Church	Hahnville
150	River of Life Church	Church	Hahnville
151	Saint Charles Parish Police Jury	Building	Hahnville
152	Hahnville Landing	Locale	Hahnville
153	East Saint Charles Volunteer Fire Department Station 1	Building	Hahnville
154	New Sarpy Post Office	Post Office	Hahnville

ENVIRONMENTAL SENSITIVITY INDEX MAP

(b) (7)(F), (b) (3) [redacted]

(b) (7)(F), (b) (3) [redacted]



(b) (7)(F), (b) (3) [redacted]

(b) (7)(F), (b) (3) [redacted]

SHORELINE

1988 SHORELINE

2001 SHORELINE

NOTE FOR COASTAL MAPS:

Due to the dynamic nature of the Louisiana coastline, biological resources may represent historical locations that do not correspond with the depicted shoreline.

SHORELINE HABITATS (ESI)

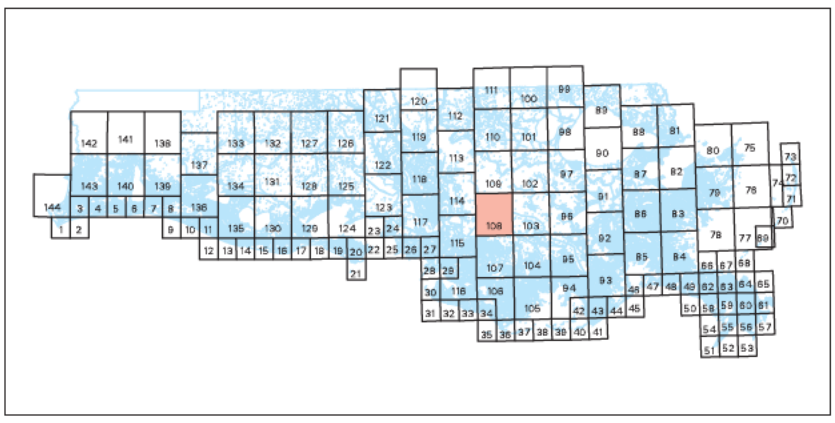
2001 ESI Shoreline Classification

- 1B EXPOSED, SOLID MAN-MADE STRUCTURES
- 2A EXPOSED WAVE-CUT PLATFORMS IN CLAY
  2B EXPOSED SCARPS AND STEEP SLOPES IN CLAY
- 3A FINE- TO MEDIUM-GRAINED SAND BEACHES
  3B SCARPS AND STEEP SLOPES IN SAND
- 4 COARSE-GRAINED SAND BEACHES
- 5 MIXED SAND AND GRAVEL BEACHES
- 6A GRAVEL BEACHES
- 6B RIPRAP
- 7 EXPOSED TIDAL FLATS
- 8A SHELTERED ROCKY SHORES AND SHELTERED SCARPS IN MUD OR CLAY
- 8B SHELTERED, MAN-MADE STRUCTURES
- 8C SHELTERED RIPRAP
- 9A SHELTERED TIDAL FLATS
  9B SHELTERED, VEGETATED LOW BANKS
- 10A SALT- AND BRACKISH-WATER MARSHES
- 10B FRESHWATER MARSHES
- 10C FRESHWATER SWAMPS
- 10D SCRUB-SHRUB WETLANDS

COASTAL HABITATS

Based on 1988 Digital Shoreline

- 10A SALT MARSH
- 10A BRACKISH MARSH
- 10A INTERMEDIATE MARSH
- 10B FRESHWATER MARSH
- 10C FORESTED WETLAND
- 10D SCRUB- SHRUB WETLAND
- SEAGRASS



N W E S

SCALE 1:100000

1 .5 0 1 KILOMETER

1 .5 0 1 MILE

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December 2003

Published at Seattle, Washington
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Response and Restoration
Hazardous Materials Response Division

NEW ORLEANS LA-108

ENVIRONMENTAL SENSITIVITY INDEX MAP

(b) (7)(F), (b) (3)

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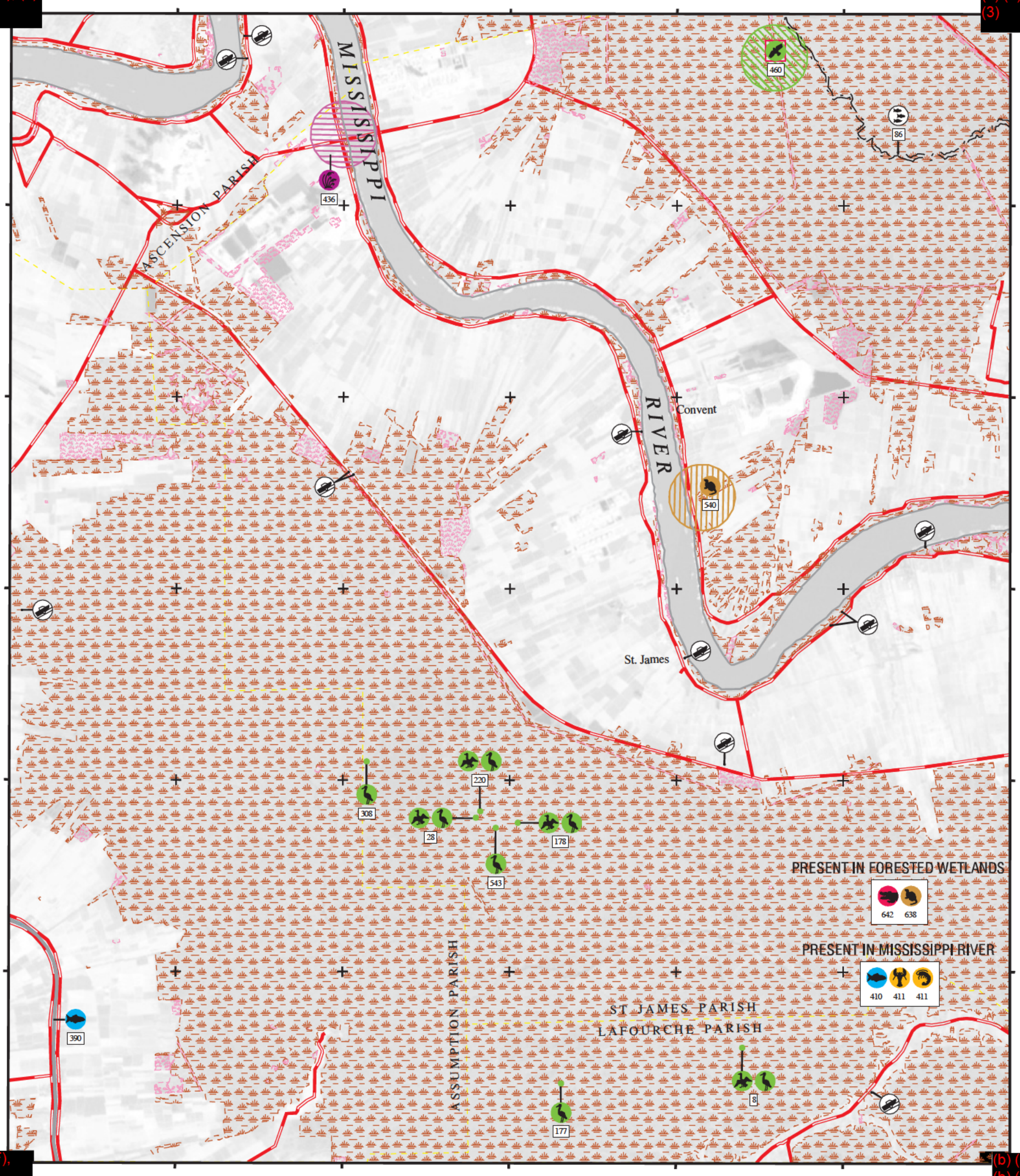


(b) (7)(F), (b) (3)

(b) (7)(F), (b) (3)

SHORELINE

1988 SHORELINE

2001 SHORELINE

NOTE FOR COASTAL MAPS:

Due to the dynamic nature of the Louisiana coastline, biological resources may represent historical locations that do not correspond with the depicted shoreline.

SHORELINE HABITATS (ESI)

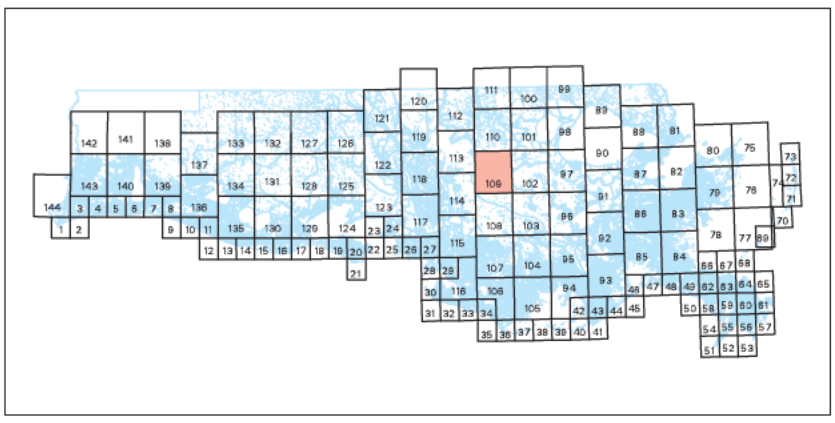
2001 ESI Shoreline Classification

- 1B EXPOSED, SOLID MAN-MADE STRUCTURES
- 2A EXPOSED WAVE-CUT PLATFORMS IN CLAY
  2B EXPOSED SCARPS AND STEEP SLOPES IN CLAY
- 3A FINE- TO MEDIUM-GRAINED SAND BEACHES
  3B SCARPS AND STEEP SLOPES IN SAND
- 4 COARSE-GRAINED SAND BEACHES
- 5 MIXED SAND AND GRAVEL BEACHES
- 6A GRAVEL BEACHES
- 6B RIPRAP
- 7 EXPOSED TIDAL FLATS
- 8A SHELTERED ROCKY SHORES AND SHELTERED SCARPS IN MUD OR CLAY
- 8B SHELTERED, MAN-MADE STRUCTURES
- 8C SHELTERED RIPRAP
- 9A SHELTERED TIDAL FLATS
  9B SHELTERED, VEGETATED LOW BANKS
- 10A SALT- AND BRACKISH-WATER MARSHES
- 10B FRESHWATER MARSHES
- 10C FRESHWATER SWAMPS
- 10D SCRUB-SHRUB WETLANDS

COASTAL HABITATS

Based on 1988 Digital Shoreline

- 10A SALT MARSH
- 10A BRACKISH MARSH
- 10A INTERMEDIATE MARSH
- 10B FRESHWATER MARSH
- 10C FORESTED WETLAND
- 10D SCRUB- SHRUB WETLAND
- SEAGRASS



N W E S

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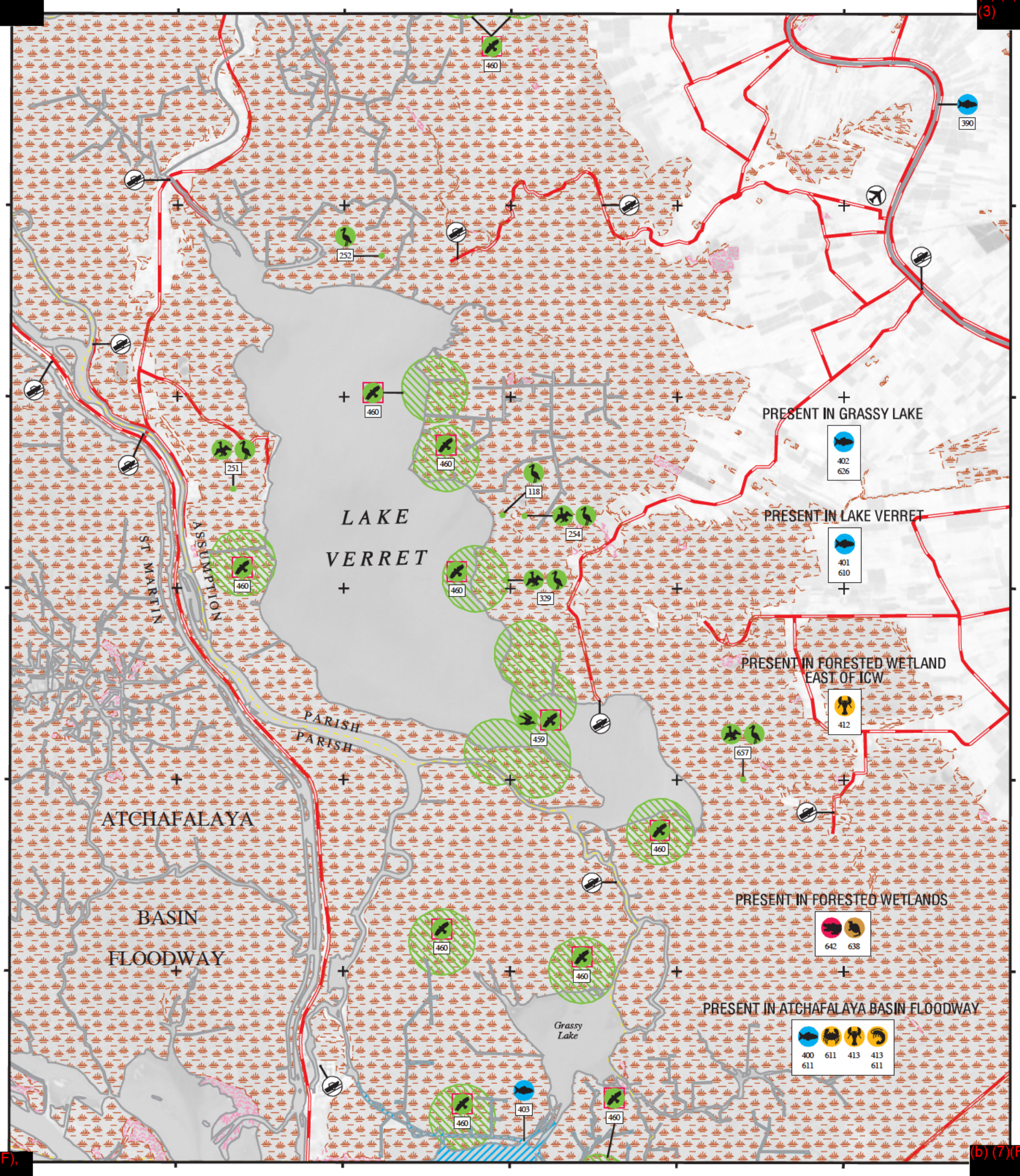
Office of Response and Restoration
Hazardous Materials Response Division

PONCHATOULA LA-109

ENVIRONMENTAL SENSITIVITY INDEX MAP

(b) (7)(F), (b) (3)

(b) (7)(F), (b) (3)



(b) (7)(F), (b) (3)

(b) (7)(F), (b) (3)

SHORELINE

1988 SHORELINE

2001 SHORELINE

NOTE FOR COASTAL MAPS:

Due to the dynamic nature of the Louisiana coastline, biological resources may represent historical locations that do not correspond with the depicted shoreline.

SHORELINE HABITATS (ESI)

2001 ESI Shoreline Classification

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- 3B SCARPS AND STEEP SLOPES IN SAND
- 4 COARSE-GRAINED SAND BEACHES
- 5 MIXED SAND AND GRAVEL BEACHES
- 6A GRAVEL BEACHES
- 6B RIPRAP
- 7 EXPOSED TIDAL FLATS
- 8A SHELTERED ROCKY SHORES AND SHELTERED SCARPS IN MUD OR CLAY
- 8B SHELTERED, MAN-MADE STRUCTURES
- 8C SHELTERED RIPRAP
- 9A SHELTERED TIDAL FLATS
- 9B SHELTERED, VEGETATED LOW BANKS
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COASTAL HABITATS

Based on 1988 Digital Shoreline

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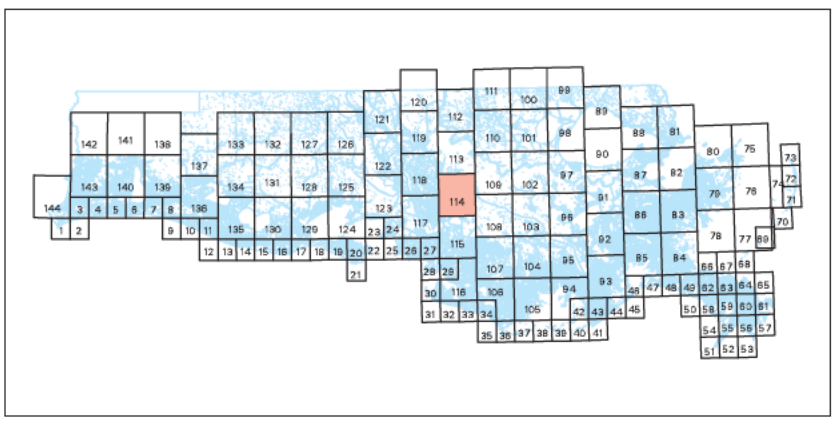
- SEAGRASS



N W E S

SCALE 1:100000

1 .5 0 1 KILOMETER

1 .5 0 1 MILE

Not For Navigation

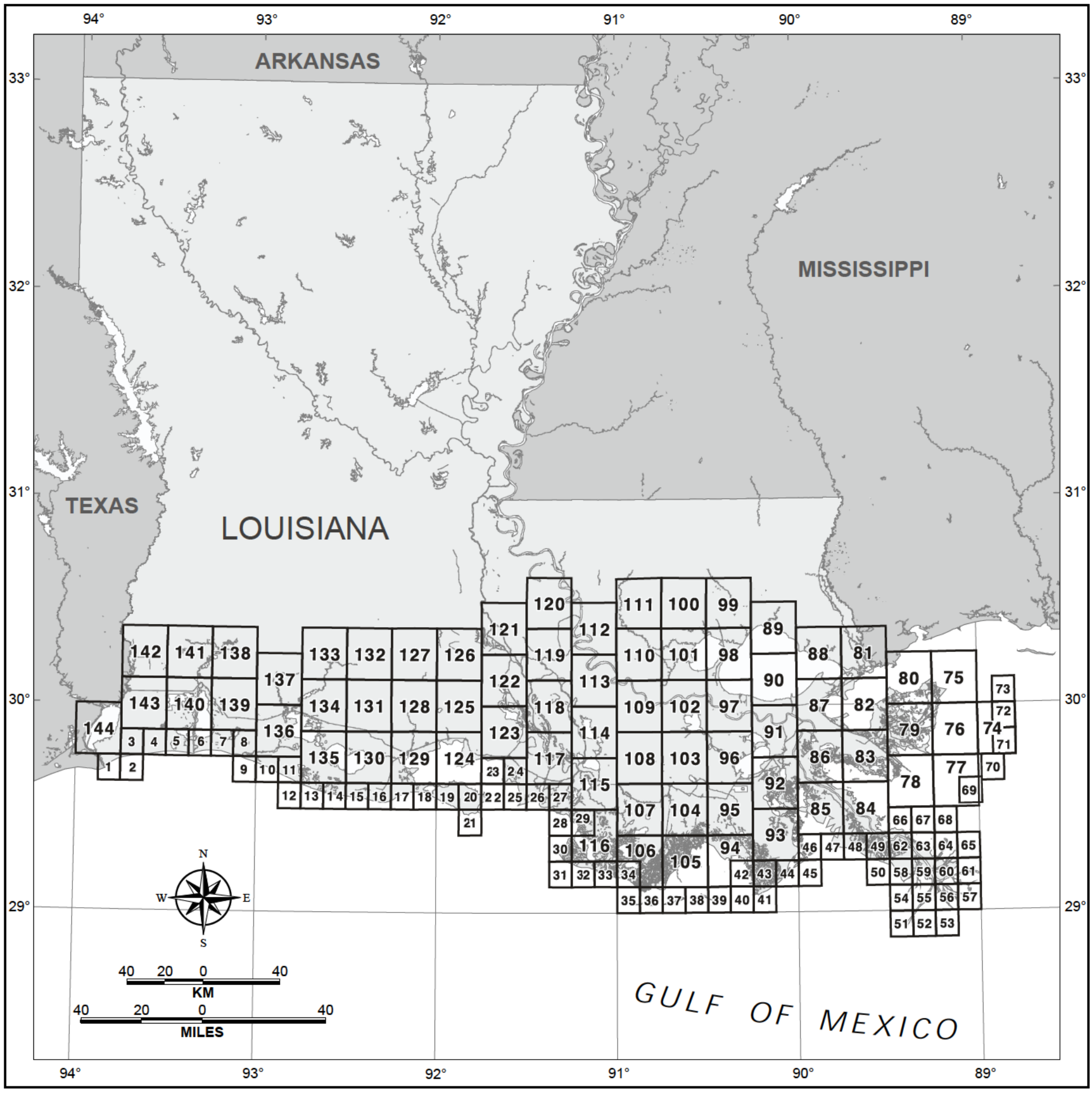
December 2003

Published at Seattle, Washington
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Response and Restoration
Hazardous Materials Response Division

MORGAN CITY LA-114

Sensitivity of Coastal Environments and Wildlife to Spilled Oil

LOUISIANA



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Louisiana Department of Wildlife and Fisheries (LDWF)
Baton Rouge, Louisiana

Louisiana Department of Natural Resources (LDNR)
Baton Rouge, Louisiana

DEC 2003

SENSITIVITY OF COASTAL ENVIRONMENTS AND WILDLIFE TO SPILLED OIL: LOUISIANA

INTRODUCTION

Environmental Sensitivity Index (ESI) maps have been developed for marine and coastal areas of Louisiana. The maps extend inland to Interstate 10. ESI maps are a compilation of information for three main categories: shoreline habitats, sensitive biological resources, and human-use resources.

The maps are plotted at two scales. The outer coast maps (map numbers 1-73) are divided according to the 1:24,000 U.S. Geological Survey (USGS) topographic quadrangle index and plotted at a size of 11 x 17 inches and a scale of 1:50,000. Grey-scale Digital Orthophoto Quarter Quadrangles (DOQQ) are used as backdrops for the outer coast maps. Maps for the interior area (map numbers 74-144) are divided according to a group of 1:24,000 USGS topographic quadrangles that are plotted at a size of 11x17 inches and a scale of 1:100,000. The Landsat thematic mapper satellite imagery was used as a backdrop for these inland maps.

SHORELINE HABITAT MAPPING

The shoreline was primarily digitized from the 1998 DOQQs and represents the high-tide line as visible in the photography. In the case of wetlands, this line was digitized as the seaward extent of vegetation. Areas digitized included the shoreline of all barrier islands from the Chandeleur Islands west, as well as the outer coast of the Mississippi River Delta, the Wax Lake and Main Atchafalaya River Deltas, a portion of the coast of Vermilion Bay, and the Chenier Plain coast from Marsh Island west to Sabine Pass. This shoreline was initially classified by a geomorphologist (Dr. Miles O. Hayes) performing on-screen photointerpretation of the DOQQs using the standard ESI classification scheme. The coastal geomorphological classification data of Ramsey and Penland (1999), interpreted from geo-referenced oblique aerial videography flown in 1999, were used during this process to help differentiate among shoreline types that were visually similar and difficult to photo-interpret. Hardcopy maps of this attributed shoreline were plotted at 1:24,000 scale for field verification of the ESI attributes.

The shoreline ESI classifications were field checked during helicopter overflights conducted in May 2001. The surveys were conducted at elevations of 100-500 feet and slow air speed. All shoreline attributed by photointerpretation was surveyed. A coastal geologist edited the ESI classifications on 1:24,000 scale maps during the overflights. Where appropriate, multiple habitats were assigned for each shoreline segment. In some areas, drastic change in shoreline position occurred between the dates of the 1998 DOQQs and the 2001 field surveys due to erosion or active delta building. These areas included, but were not limited to: 1) The Chandaleur Islands; 2) Several marsh restoration sites in the Isles Derniers and Timbalier Islands; and 3) both the Wax Lake and Main Atchafalaya Deltas. In areas of major shoreline change, the new shoreline position was sketched in and assigned a shoreline type(s) based on field sketches and oblique aerial photography acquired during the field surveys. The field maps were then scanned and registered and edits were made using on-screen digitizing. The variety of wetland plant communities in coastal Louisiana made it difficult to classify marsh shorelines by ESI marsh type during the field surveys. As such, the 1997 Louisiana Department of Wildlife and Fisheries Marsh Type data were used to update all shoreline segments with the appropriate ESI code, via a GIS overlay operation.

To determine the sensitivity of a particular intertidal shoreline habitat, the following factors are integrated:

1) Shoreline type (substrate, grain size, tidal elevation, origin)
2) Exposure to wave and tidal energy
3) Biological productivity and sensitivity
4) Ease of cleanup

Prediction of the behavior and persistence of oil in intertidal habitats is based on an understanding of the dynamics of the coastal environments, not just the substrate type and grain size. The intensity of energy expended upon a shoreline by wave action, tidal currents, and river currents directly affects the persistence of stranded oil. The need for shoreline cleanup activities is determined, in part, by the slowness of natural processes in removal of oil stranded on the shoreline. The potential for biological injury and ease of cleanup of spilled oil are also important factors in the ESI ranking. Generally speaking, areas exposed to high levels of physical energy, such as wave action and tidal currents, and low biological activity rank low on the scale, whereas sheltered areas with associated high biological activity have the highest ranking. The list below includes the shoreline habitats delineated for Louisiana ordered by increasing sensitivity to spilled oil.

1B) Exposed, Solid Man-made Structures
2A) Exposed Wave-cut Platforms in Clay
2B) Exposed Scarps and Steep Slopes in Clay
3A) Fine- to Medium-grained Sand Beaches
3B) Scarps and Steep Slopes in Sand
4) Coarse-grained Sand Beaches
5) Mixed Sand and Gravel Beaches
6A) Gravel Beaches
6B) Riprap
7) Exposed Tidal Flats
8A) Sheltered Rocky Shores and Sheltered Scarps in Mud or Clay
8B) Sheltered, Man-made Structures
8C) Sheltered Riprap
9A) Sheltered Tidal Flats
9B) Sheltered, Vegetated Low Banks
10A) Salt- and Brackish-water Marshes
10B) Freshwater Marshes
10C) Freshwater Swamps
10D) Scrub-Shrub Wetlands, including Black Mangroves

Each of the shoreline habitats is described on pages 9-15, in terms of their physical description, predicted oil behavior, and response considerations.

SENSITIVE BIOLOGICAL RESOURCES

Biological information presented in this atlas was collected, compiled, and reviewed with the assistance of biologists and resource managers from the U.S. Fish and Wildlife Service (USFWS), Louisiana Department of Wildlife and Fisheries (LDWF), U.S. Geological Survey (USGS), National Marine Fisheries Service (NMFS), National Park Service (NPS), and the Louisiana Natural Heritage Program (LNHP). Information collected and depicted on the maps denotes the key biological resources that are most likely at risk in the event of an oil spill. Six major categories of biological resources are included in this atlas: terrestrial mammals, reptiles, birds, fish, invertebrates, and benthic and wetland habitats.

Certain portions of the Louisiana Natural Heritage Program Element Occurrence Record (EOR) database were included as part of the biological resources mapped. The data were processed to filter records of concern. In general, records were preserved for species with a Global or State Conservation Status Rank of 1-3 or that are federally threatened or endangered species. Historical records and records for extirpated species and occurrences were removed from the database. Records describing the location of animal specimens or marine mammal strandings were also removed from the database. Rather than use actual common and scientific species names, species for all records, except ecological communities, were converted to generic sub-element descriptor (e.g., Rare wading bird). The prefix "Rare" was attached to all generic sub-element descriptors, except federally threatened or endangered species. For these species, the prefix "Threatened" or "Endangered" was used. The LNHP EOR database contained point locations collected over time from a variety of sources with varying degrees of spatial precision, ranging from seconds to "general". Point locations that were obviously incorrect (e.g., located far offshore or far outside the boundary of the state) were removed from the data. The remaining point locations were buffered by 800 meters (m) to create circular polygons. Overlapping polygons were dissolved such that the resulting polygons contain information describing all species found in the original overlapping polygons. The LNHP EOR database contains information describing the spatial precision of each record, but this information was not included in the attribute data associated with this layer. Also, note that the EOR database is continually updated and maintained by the LNHP. For the most up to date, specific, and complete version of this dataset, please contact the Louisiana Natural Heritage Program at 225/765-2823.

Polygons, points, and arcs represent the spatial distribution of biological resources on the maps. Associated with each of these representations is an icon depicting the types of species that are present. Species have been divided into groups and subgroups, based on their behavior, morphology, taxonomic classification, and spill vulnerability and sensitivity. The icons below reflect this grouping scheme. Please note that benthic marine habitats are displayed on the maps using “simplified-wetland” patterns rather than the hatched patterns used for the other species groups, and no icons are used (see legend). For all other species, the groups are color coded, and different icons represent the subgroups:

TERRESTRIAL MAMMALS

- Bats
- Bears
- Small Mammals

BIRDS

- Diving Birds
- Gulls and Terns
- Passerine Birds
- Raptors
- Shorebirds
- Wading Birds
- Waterfowl

FISH

- Fish

REPTILES

- Alligators
- Turtles
- Other Reptiles / Amphibians

INVERTEBRATES

- Bivalves
- Cephalopods
- Crabs
- Crayfish
- Insects
- Shrimp

HABITATS

- Plants
- Seagrasses

The polygon color and pattern are generally the same for all species in each major group (e.g., birds are green), and match the icon colors. Also associated with each biological polygon or point feature on the map is a Resources at Risk identification number (RAR#), located under each icon or group of icons. The RAR# references a table on the reverse side of the map with a complete list of species associated with the polygon, point, or line feature, and the state and federal protected status as threatened, endangered (T&E), or species of special concern (C), concentration, seasonality, and life-history information for each species.

There are some species that are found throughout specific geographical areas or habitat types on certain maps. Displaying the polygons for these species would cover large areas or would obscure the shoreline, ESI classification, or other biological features, making the maps very difficult to read. Thus, species that occur over the majority of certain geographic areas or habitats are often identified in a small box on the maps which states that they are “Present in ...” (e.g., “Present in Terrebonne Bay” or “Present in Salt Marsh”). The use of this strategy is implemented on a map per map basis, depending on the location, size, and number of polygons present on each map.

TERRESTRIAL MAMMALS

Louisiana black bear concentration areas are depicted in the Louisiana atlas. LDWF wildlife biologists provided the names of the 1:24,000 USGS topographic maps representing the distribution of Louisiana black bear in the state. Based upon these data, expert habitat information from LDWF biologists, and additional habitat and distribution information from the 1995 USFWS Louisiana Black Bear Recovery Plan, polygons representing occupied habitat for the Louisiana black bear were developed. The primary sources used to create polygons depicting Louisiana black bear habitat areas were: 1) the 1988 USGS Coastal Louisiana Habitat data; and 2) the 1997 LDWF Louisiana Coastal Marsh Vegetative Type data. The 1988 USGS Coastal Habitat data represent the actual habitat polygons used to create bear polygons. Habitats used in the development of this layer included forested wetlands, agricultural fields (mainly sugarcane), and certain marsh types adjacent to forested wetlands. Integration of the 1988 USGS and 1997 LDWF Marsh Type data was performed using a GIS overlay operation to reattribute the more spatially explicit USGS marsh polygons with marsh type values from the more recent 1997 LDWF marsh type data.

Small semi-aquatic, fur-bearing mammal areas with harvest density values by habitat zone are also shown on the maps. These species include nutria, muskrat, raccoon, mink, and river otter. The primary sources used to create polygons depicting small semi-aquatic, fur-bearing mammal areas were: 1) the 1988 USGS Coastal Louisiana Habitat data; 2) the 1997 LDWF Louisiana Coastal Marsh Vegetative Type data; and 3) the 2000 LOSCO Louisiana Parish Boundaries data. Polygons representing semi-aquatic fur-bearing mammal distributions and densities are based on habitat type "zones" comprised of land and adjacent water. Major habitat zones include fresh marsh, intermediate marsh, brackish marsh, salt marsh, and forested wetlands. The 1988 USGS Coastal Habitat data represent the actual wetland polygons used for this atlas. Integration of the 1988 USGS and 1997 LDWF Marsh Type data was performed using a GIS overlay operation to reattribute the more spatially explicit USGS marsh polygons with marsh type values from the more recent 1997 LDWF marsh type data. Wetland polygons adjacent to water features were buffered to create polygons that included small waterbodies and extended out into coastal lakes and bays by either 100 or 500 m depending on the location and the complexity of the shoreline. In addition, larger coastal lakes were either included or excluded from the semi-aquatic fur-bearing mammal polygons based on the expert opinion of LDWF wildlife biologists. Small (area <3 km^2) polygons of a particular marsh or other habitat type that were isolated in an upland area were excluded from the coverage. Similarly, small "inclusion" polygons of one wetland type occurring within another wetland type were dissolved into the surrounding "matrix" habitat type. Finally, physiographic province boundaries were used to further divide semi-aquatic fur-bearing mammal habitat polygons. LDWF fur harvest distribution data for coastal Louisiana from 1972-1985 were used to develop density values for semi-aquatic fur-bearing mammals in each combination of habitat zone (four marsh types, forested wetland areas) and physiographic province. Mean densities were recorded and were rounded to the nearest whole acre per individual. In addition to quantitative density, a categorical description of population status has been assigned to these species. This categorical description (HIGH/MED/LOW) was developed by LDWF biologists and indicates the relative population status by region and habitat of each species described. The LDWF survey effort did not include salt marsh. However, because semi-aquatic fur-bearing mammal are present in salt marsh, concentrations are listed as either 'TRANSIENT' or 'RESIDENT' for polygons representing this habitat type, depending on the behavior of each particular species.

Additional terrestrial mammal species (including rare bats) are included in this atlas as part of the LNHP Element Occurrence Record (EOR) database. See the above description of these data and their preparation for details. Note that the EOR database is continually updated and maintained by the LNHP. For the most up to date, specific, and complete version of this data set, please contact the Louisiana Natural Heritage Program at 225/765-2823.

Terrestrial mammal areas are shown on the maps as polygons with a brown-hatched pattern. A brown icon with a bear silhouette is used to indicate the presence of black bears and is associated with all polygons containing this species. A brown icon with a small mammal silhouette is used to indicate the presence of furbearing mammal species and is associated with all polygons containing these species.

The RAR# under an icon (or icon group) on the maps references a table on the reverse side of the map. In this table, the first column gives the species name. The next column provides an estimate of the concentration of the species at the site. The seasonality for each species or resource is shown in the next twelve columns, corresponding to the months of the year. If a species is present at a location in a particular month, an “X” is placed in the month column.

Expert contacts are: Gary Lester (LNHP), 225/765-2823, and Greg Linscombe (LDWF), 337/373-0032, and Noel Kinler (LDWF), 337/373-0032.

MARINE MAMMALS

No marine mammals are included in this atlas. Note that West Indian manatees may be found infrequently throughout the coastal waters of Louisiana.

REPTILES

Reptiles depicted in this atlas primarily include the American alligator. Polygons represent American alligator habitats with nest density values by habitat zone and management unit. The primary sources used to create polygons depicting alligator habitat areas were: 1) the 1988 USGS Coastal Louisiana Habitat data; 2) the 1997 LDWF Louisiana Coastal Marsh Vegetative Type data; and 3) the 2000 USGS stewardship areas. Polygons representing alligator distributions and densities are based on a combination of habitat type "zones," comprised of land and adjacent water, and management unit boundaries. Major habitat zones include fresh marsh, intermediate marsh, brackish marsh, salt marsh, and forested wetlands. The 1988 USGS Coastal Habitat data represent the actual wetland polygons used for this atlas. Integration of the 1988 USGS and 1997 LDWF Marsh Type data was performed using a GIS overlay operation to reattribute the more spatially explicit USGS marsh polygons with marsh type values from the more recent 1997 LDWF marsh type data. Wetland polygons adjacent to water features were buffered to create polygons that included small waterbodies and extended out into coastal lakes and bays by either 100 or 500 m depending on the location and the complexity of the shoreline. In addition, larger coastal lakes were either included or excluded from the alligator polygons based on the expert opinion of LDWF wildlife biologists. Small (area <3 km^2) polygons of a particular marsh or other habitat type that were isolated in an upland area were excluded from the coverage. Similarly, small "inclusion" polygons of one wetland type occurring within another wetland type were dissolved into the surrounding "matrix" habitat

type. Management unit boundaries were used to further divide alligator habitat polygons. In addition, marsh impoundment areas inside some management units were digitized, creating an additional habitat type.

LDWF Alligator Nest Survey data from 1996-2000 were used to develop density values for alligators in each combination of habitat zone (four marsh types, forested wetland areas) and management unit. Nest density values for management units were given higher priority because sampling effort is greater in these areas and/or because theses areas are managed for wildlife, typically resulting in different nest densities than marsh areas in the surrounding parishes. Maximum mean nest densities were recorded as concentrations and rounded to the nearest whole acre per nest. In addition to quantitative density, a categorical description of population status has been assigned to these species. This categorical description was developed by LDWF biologists as follows: HIGH - less than 125 acres per nest; MEDIUM - between 125 and 250 acres per nest; and LOW - greater that 250 acres per nest. American alligators do not typically nest in salt marsh, and the LDWF survey effort did not include this habitat. However, because alligators are sometimes present in salt marsh, concentrations are listed as either 'TRANSIENT' or 'RESIDENT' for polygons representing this habitat type.

Additional reptile species (including sea turtles, aquatic turtles, and terrestrial turtles) are included in this atlas as part of the LNHP Element Occurrence Record (EOR) database. Although sea turtle nesting is a rare event in Louisiana, multiple species of sea turtles may be present in nearshore and onshore waters. See the above description of these data and their preparation for details. Note that the EOR database is continually updated and maintained by the LNHP. For the most up to date, specific, and complete version of this data set, please contact the Louisiana Natural Heritage Program at 225/765-2823.

Reptile areas are displayed on the maps as polygons with a red-hatched pattern. A red icon with an alligator silhouette is used to indicate the presence of alligators. This icon is associated with all polygons containing this species.

The RAR# under an icon (or icon group) on the maps references a table on the reverse side of the map. In this table, the first column gives the species name. The next column provides an estimate of the concentration of the species at the site. The seasonality for each species or resource is shown in the next twelve columns, corresponding to the months of the year. If a species is present at a location in a particular month, an “X” is placed in the month column.

Expert contact for alligators is: Noel Kinler (LDWF), 337/373-0032.

BIRDS

Birds included in this atlas are divided into subgroups based on taxonomy, morphology, behavior, and oil spill vulnerability and sensitivity. The species table lists all birds included on the maps, sorted by subgroup. These species are included either because of their likelihood of direct or indirect impact by an oil spill or similar incident, their general rarity or imperilment, or their special protection status as threatened or endangered.

The atlas includes colonial waterbird nesting colonies, waterfowl concentration areas, and shorebird critical habitat. Nesting sites are of particular concern due to high concentrations of birds in adjacent waters, contamination of eggs and young by oiled adults and prey, and the potential for disturbance from response activities.

Colonial waterbird nesting sites – Three sources of data were used to depict waterbird nesting colonies for this atlas: 1) the 1990-1999 LDWF Colonial Waterbird data set; 2) the 1997 LSU CCEER Seabird Colonies data set; and 3) selected waterbird colony records from the 2001 LNHP Element Occurrence Record (EOR) Database. The 1990-1999 LDWF data set was used as the primary source. These data included records for active seabird and wading bird nesting colonies for the eastern two-thirds (approximate) of coastal Louisiana. The western portion of the study area not covered by this source corresponded approximately to the following four USGS 1:100,000 topographic maps: Crowley, LA; Lake Charles, LA; Port Arthur, LA; and White Lake, LA. Records in the LDWF data set included the mean number of individuals for each species recorded at each colony during LDWF surveys between 1990 and 1999. These mean abundance values are included in this atlas. The 1997 LSU seabird colony data set covered the entire study area and was used to obtain seabird colony information for the western portion of the coastal zone that was not included in the LDWF data set (note that the LSU data covered seabirds only, not wading bird colonies). All seabird colonies from the LSU data set that were active for at least one year during 1990-1997 were included for the western portion of the study area. In addition, all colonies documented during LSU's 1997 field surveys that were not also recorded in the LDWF data set (colonies not identified or tracked by LDWF) were retained for the entire study area. All records from the LSU data set corresponding to colonies that were present in the LDWF data set were omitted from the layer described here. Records from the LSU data set included 1997 counts of individuals for each species occurring at each colony. These values were retained for the attribute tables associated with the layer described here. For the LSU data set, colonies active during 1990 or later that had no nests recorded during the 1997 field surveys were entered as "0" counts. Since colonies may be active in some years but not others, this does not imply that a colony site is no longer active or no longer present, or that the colony is small or unimportant. Finally, the 2001 LNHP data set was used to obtain wading bird colony locations for the western portion of the study area not covered by the LDWF data set. Only colonies that were active during or since 1990 were considered. For the LNHP data, counts of individuals or nests from the latest survey period were included.

Migratory waterfowl concentration areas – Polygons in this atlas represent waterfowl habitats with density values by marsh habitat zone and watershed, or by nearshore survey zone. Waterfowl in these data include several species of ducks and American coot. Geese were not part of the survey data available when this atlas was created, although migratory geese occur in the study area. Waterfowl represented in this dataset fall into two major groups: 1) marsh waterfowl distributions and peak monthly densities for multiple species (including lesser scaup); and 2) separate lesser scaup distributions and peak densities in nearshore Gulf of Mexico waters and coastal lakes and bays. The geographic area, habitat type, species, type of survey, and volume of survey data (number surveys, months surveyed, and years surveyed) differ substantially between these two groups.

The primary sources used to create polygons depicting marsh waterfowl habitat areas were: 1) the USGS 1988 Coastal Louisiana Habitat data; and 2) the 1997 LDWF Louisiana Coastal Marsh Vegetative Type Map data. For the marsh waterfowl polygons, LDWF Marsh Waterfowl Transect Survey data from 1988-1998 were used to develop density values for each species in each combination of habitat zone (four marsh types, selected agriculture areas), for each surveyed month. For all species, density values were rounded to the nearest whole individual per square mile. Mean monthly densities less than 0.5 were rounded to zero. For areas where the peak mean monthly density for a species was not sampled, concentrations were listed as 'PRESENT'. In cases where the peak mean monthly density was zero, concentrations were listed as 'PRESENT'. Because waterfowl are present in coastal Louisiana outside the months when surveys were conducted, seasonalities reflect when migratory concentrations (for most species) and major resident populations (mottled duck) are present in the study area.

Lesser scaup distributions and densities in nearshore Gulf of Mexico waters and coastal lakes and bays were developed from hardcopy maps depicting lesser scaup survey zones and transect lines which were distinct and separate from the more extensive marsh waterfowl transect surveys. Lesser scaup is the major diving duck species using nearshore Gulf waters and coastal lakes and bays, hence the separate survey effort and polygons depicting this species, in addition to the marsh waterfowl areas.

Shorebird concentration areas – Polygons in this atlas represent concentration areas and "hotspots" for migratory shorebird species. Nesting locations for certain resident species are also depicted. LDWF wildlife biologists identified areas considered important for migratory shorebirds based upon expert knowledge. The primary sources used to create polygons depicting migratory shorebird habitat areas were: 1) the USGS 1988 Coastal Louisiana Habitat data; 2) the 2001 Outer Coast Environmental Sensitivity Index (ESI) data; 3) the 2000 USGS managed lands boundaries; and 4) the 2001 mini-refuge boundaries. Both the 1988 USGS Coastal Habitat data and the 2001 ESI shoreline classification were used to delineate shorebird concentration areas. In some cases, polygons represent a 100 m buffer of the shoreline. Some coastal management areas were identified as concentration areas for migratory shorebirds. Mini-refuge boundaries, describing boundaries of private properties managed for shorebirds and waterfowl, were also used to delineate shorebird concentration areas. In addition, digitized marsh impoundment areas inside some management units were used to delineate shorebird concentration areas.

Additional bird species, including raptor-nesting sites, are included in this atlas as part of the LNHP Element Occurrence Record (EOR) database. See the above description of these data and their preparation for details. Because historical and inactive waterbird colony locations can become active, all records describing waterbird colonies were retained, regardless of the age of the record. The waterbird colony records from the LNHP EOR database and mapped as buffer polygons that were duplicated in the LDWF Colonial waterbird nesting colonies were deleted. Note that the EOR database is continually updated and maintained by the LNHP. For the most up to date, specific, and complete version of this data set,

please contact the Louisiana Natural Heritage Program at 225/765-2823.

Expert contacts are: Gary Lester (LNHP), 225/765-2823, Robert Helm (LDWF), and William Vermillion (LDWF).

Birds are shown on the maps as polygons with a green-hatched pattern. Waterbird nesting colonies are shown as green points. Users should be aware that waterfowl may be feeding and rafting in nearshore and offshore areas in the vicinity and up to several kilometers (km) away from their nests.

The RAR# under an icon (or icon group) on the maps references a table on the reverse side of the map. In this table, the first column contains the species common name. The second column indicates whether the species is listed as threatened (T), endangered (E), or special concern (C) on either the state (S) and/or federal (F) lists. The next column provides an estimate of the concentration of the species at the site. See the descriptions of the species groups mapped and the sources of data used (above) for information on how numeric concentration values and descriptive terms were generated. In some cases, concentration values have not been used if the information was not available. Note that concentration should not be interpreted as the "level of concern" or "importance" associated with a certain site or particular resource.

The seasonality for each species or resource is shown in the next twelve columns, corresponding to months of the year. If a species or resource is present at a location in a particular month, an "X" is placed in the month column. The last three columns denote the migratory, nesting, and molting time-periods for each species.

Fish

Finfish depicted in this atlas include selected marine, estuarine, and freshwater species. Species of commercial, subsistence, recreational, ecological, and/or conservation interest are emphasized.

Freshwater fish – Polygons in this atlas represent waterbodies and other fish habitats with similar species composition and relative abundance summarized from groups of sampling stations and grouped by waterbody. LDWF fisheries biologists delineated representative waterbodies for each major group of sampling stations. In some cases, such as the Atchafalaya and Pearl River Basins, polygons represent both waterbodies and areas of regularly flooded wetlands. When these areas are flooded, fish species identified as present in waterbodies may be present in adjacent flooded habitats. The Mississippi and Atchafalaya Rivers were delineated as the boundary of the river itself as well as any connecting waterbody that fell within a 1 km buffer of the approximate centerline of the river. The primary source of data used to map inland fisheries for this atlas was the 1965-1997 LDWF inland fisheries sampling data set. In many locations, only electro-fishing was used to sample largemouth bass, a species of significant recreational importance. In some larger waterbodies, other gear, such as gillnets and rotenone sampling, was used, resulting in data for a larger variety of fish species. Gillnetting typically targets catfish, carp, drum, crappie, buffalo, gar, and bowfin. Rotenone typically results in data for the largest variety of species, including many smaller forage species. Data for each major waterbody were applied to the waterbody polygon delineated by LDWF fisheries biologists. A categorical description of the abundance values calculated by LDWF fisheries biologists was recorded as concentration. For largemouth bass, data from 1987 to 1997 were combined to derive average catch rates. For species sampled with rotenone or other gear, all data from 1965 to 1997 were combined to derive average catch rates. Categorical descriptors of relative abundance values for each species are based on percentile breaks in catch rates for that species, across waterbodies sampled in Louisiana, including waterbodies outside this atlas. In some cases, species were identified as present in certain waterbodies without a relative concentration. These species were assigned a concentration of 'PRESENT'. Note that all species identified as present in the Mississippi and Atchafalaya Rivers were not sampled and are based on expert knowledge. These species were assigned a concentration of 'PRESENT'. Many inland freshwater areas in coastal Louisiana are not sampled by the LDWF. Though not documented in this atlas, species such as catfish, carp, minnow and silverside are typically present in these areas.

Marine/estuarine fish – Polygons for marine/estuarine fish were obtained from NOAA Estuarine Living Marine Resources (ELMR) fish data. The ELMR data contained polygons of identified groups of fish based on the seasonality and salinity regime. The ELMR data were generalized to combine all regions that had the same species composition, regardless of lifestage and concentration, into one region. The variability was usually +/- 2 months on the seasonality information. The maximum relative abundance and sum of the seasonal range were used in creating the generalized distributions. Relative abundances are listed by month in the BREED data table. For each month where an ELMR species is present, a number code indicates the species abundance (1 = no information, 2 = rare, 3 = common, 4 = abundant, 5 = highly abundant). The maximum abundance during the year is shown. The ELMR abundance codes usually refer to juvenile life stages, even though other life stages may be present. If juveniles are not present, the abundances refer to adults, or to larvae if adults and juveniles are not present. Various life-history stages or activities associated with the ELMR fish data include: spawning (parturition for sharks); eggs; larvae; juveniles; and adults.

To prevent conflict with the LDWF Inland fisheries data, duplicate species in the ELMR dataset were removed.

Additional freshwater and marine/estuarine fish species are included in this atlas as part of the LNHP Element Occurrence Record (EOR) database. See the above description of these data and their preparation for details. Note that the EOR database is continually updated and maintained by the LNHP. For the most up to date, specific, and complete version of this data set, please contact the Louisiana Natural Heritage Program at 225/765-2823.

The resource experts listed below should be contacted for additional information on any of these or other finfish species that may occur in the area. Expert contacts are: Inland Fisheries Department (LDWF), 225/765-2330 and for ELMR Mark Monaco (NOAA), 301/713-3000.

Fish are shown on the maps as polygons with a blue-hatched pattern. In cases where multiple resource types occupy the same polygon (such as fish and invertebrates), a black-hatched, multi-group pattern is used rather than a blue-hatched polygon. A blue icon with a fish silhouette is used to indicate the presence of fish. This icon is associated with all polygons containing fish.

The RAR# under an icon (or icon group) on the maps references a table on the reverse side of the map. In this table, the first column contains the species common name. The second column indicates whether the species is listed as threatened (T), endangered (E), or special concern (C) on either the state (S) and/or federal (F) lists. The next column provides an estimate of the concentration of the species at the site. Concentration values were not used for fish because concentration is often quite variable from year to year or not well known.

Seasonality for each species or resource is shown in the next twelve columns, corresponding to the months of the year. If a species or resource is present at a location in a particular month, an "X" is placed in the month column. If the species is from ELMR data then a value of 1-5 is placed in the month column to indicate relative abundance. The last columns denote different life-history time-periods for fish including spawning, eggs, larvae, juveniles, and adults.

Invertebrates

Invertebrates depicted in this atlas include crawfish and freshwater shrimp, which are species of commercial interest. Distribution and density information were derived from the 1965-1997 LDWF inland fisheries sampling data set used to map freshwater fish.

Polygons for marine/estuarine invertebrates were obtained from NOAA ELMR invertebrate data. The ELMR data contained polygons of identified groups of invertebrates based on the seasonality and salinity regime. The ELMR data were generalized to combine all regions that had the same species composition, regardless of life-history stage and concentration, into one region. The variability was usually +/- 2 months on the seasonality information. The maximum relative abundance and sum of the seasonal range were used in creating the generalized distributions. Relative abundances are listed by month in the BREED data table. For each month where an ELMR species is present, a number code indicates the species abundance (1 = no information, 2 = rare, 3 = common, 4 = abundant, 5 = highly abundant). The maximum abundance during the year is shown. The ELMR abundance codes usually refer to juvenile life stages, even though other life stages may be present. If juveniles are not present, the abundances refer to adults, or to larvae if adults and juveniles are not present. Various life-history stages or activities associated with the ELMR invertebrate data include: spawning; eggs; larvae; juveniles; and adults. Expert contacts are: Inland Fisheries Department (LDWF), 225/765-2330 and for ELMR Mark Monaco (NOAA), 301/713-3000.

Additional invertebrate species may be included in this atlas as part of the LNHP Element Occurrence Record (EOR) database. See the above description of these data and their preparation for details. Note that the EOR database is continually updated and maintained by the LNHP. For the most up to date, specific, and complete version of this data set, please contact the Louisiana Natural Heritage Program at 225/765-2823.

Invertebrates are shown on the maps as polygons with an orange-hatched pattern. An orange icon with a crab or bivalve silhouette is used to indicate the presence of these species. This icon

is associated with all polygons or point features containing invertebrates.

The RAR# under an icon (or icon group) on the maps references a table on the reverse side of the map. In this table, the first column contains the species common name. The second column indicates whether the species is listed as threatened (T), endangered (E), or special concern (C) on either the state (S) and/or federal (F) lists. The next column provides an estimate of the concentration of the species at the site. Concentration values were not used for invertebrates because concentration is often quite variable from year to year or not well known.

The seasonality for each species or resource is shown in the next twelve columns, corresponding to the months of the year. If a species or resource is present at a location in a particular month, an "X" is placed in the month column. If the species is from ELMR data then a value of 1-5 is placed in the month column to indicate relative abundance. The last columns denote different life-history time-periods for invertebrates including spawning, eggs, larvae, juveniles, and adults.

BENTHIC AND WETLAND MARINE HABITATS

Three primary sources of data were used to map benthic and wetland habitats for this atlas: 1) 1988 USGS Coastal Louisiana Habitat data; 2) 1997 LDWF Louisiana Coastal Marsh Vegetative Type data; and 3) 1992 USGS Submerged Aquatic Vegetation data. Data for habitat types, particularly marsh types (saline, brackish, intermediate, and fresh), are critical to the entire Louisiana ESI atlas, in that most of the other biological data sets are based fully or in part on wetland habitats. The 1988 USGS Coastal Habitat data represent the actual wetland polygons used for this atlas. Integration of the 1988 USGS Coastal Habitat and 1997 LDWF Marsh Type data was performed using a GIS overlay operation to reattribute the more spatially explicit USGS marsh polygons with marsh type values from the more recent 1997 LDWF Marsh Type data.

In addition to the four marsh types, other habitats from the USGS data used in this atlas include forested wetlands, scrub-shrub wetlands, mangroves, and seagrasses. The 1992 USGS Submerged Aquatic Vegetation data were used to delineate seagrass beds in the Chandeleur Islands. Polygons representing seagrass beds from both the 1992 USGS data set and the 1988 USGS data set were merged to develop polygons representing seagrass in this data layer.

In summary, the wetland habitats added to the maps from the integration of USGS and LDWF data are listed below with their corresponding ESI shoreline code. (Also see legend for patterns shown on the maps).

10A) Salt Marsh	10B) Freshwater Marsh
10A) Brackish Marsh	10C) Forested Wetland
10A) Intermediate Marsh	10D) Scrub-Shrub Wetland (including black mangroves)
	Seagrass (no ESI code)

Additional habitats and community occurrences may be included in this atlas as part of the LNHP Element Occurrence Record (EOR) database. See the above description of these data and their preparation for details. Note that all occurrences of seagrass and mangrove habitat occurrences were removed from the EOR database. The EOR database is continually updated and maintained by the LNHP. For the most up to date, specific, and complete version of this data set, please contact the Louisiana Natural Heritage Program at 225/765-2823.

Rare plants are shown on the maps as polygons with a purple-hatched pattern. A purple icon with a plant silhouette is used to indicate the presence of these species. This icon is associated with all polygons or point features containing rare plants.

The RAR# under an icon (or icon group) on the maps references a table on the reverse side of the map. In this table, the first column contains the species common name. The second column indicates whether the species is listed as threatened (T), endangered (E), or special concern (C) on either the state (S) and/or federal (F) lists. The next column provides an estimate of the concentration of the species at the site. Concentration values were not used for plants because concentration is not available.

HUMAN-USE RESOURCES

Most human-use resources in this atlas are mapped as point features, indicated by a black and white icon (see legend). Management areas such as wildlife refuges, national parks, and scenic rivers, are mapped as polygons, with the boundaries indicated as a black dot-dash line with the corresponding icon placed near the center of the polygon. Where the feature is a known point location (e.g., airport), the exact location is shown as a small black dot and a leader line is drawn from it to the icon. The types of human-use features included in the atlas are described below:

Airport / Heliport

National Park / Nature Conservancy

Boat Ramp

Scenic River

Indian Reservation

State Park

Marina

Wildlife Refuge

Airports/Heliport: Locations of airports, airfields, landing strips, helipads etc., whether they are manned or unmanned, are shown as point features.

Boat Ramps: Locations of boat ramps, improved and unimproved, are shown as point features.

Indian Reservations: Tribal lands are depicted using dashed lines to indicate site boundaries. Site names are provided on the data tables for each map.

Marinas: Locations of marinas are shown as point features.

National Parks: Areas managed by the National Park Service are depicted using dashed lines to indicate site boundaries. Site names are provided on the data tables for each map.

Nature Conservancy Preserves: Areas managed by the Nature Conservancy are depicted using dashed lines to indicate site boundaries. Site names are provided on the data tables for each map.

Scenic Rivers: National Wild and Scenic Rivers are depicted using dashed lines to indicate designation boundaries.

State Parks: Areas managed by state and local authorities are depicted using dashed lines to indicate site boundaries. Site names are provided on the data tables for each map.

Wildlife Refuges: Areas managed by the USFWS as National Wildlife Refuges and Wilderness Areas are depicted using dashed lines to indicate site boundaries. Site names are provided on the data tables for each map.

GEOGRAPHIC INFORMATION SYSTEM

The entire atlas product is stored in digital form in a Geographic Information System (GIS) as spatial data layers and associated databases. Format for the data varies depending on the type of information or features for which the data are being stored.

Under separate cover is a metadata document that details the data dictionary, processing techniques, data lineage, and other descriptive information for the digital data sets and maps that were used to create this atlas. Below is a brief synopsis of the information contained in the digital version. Refer to the metadata file for a full explanation of the data and its structure.

SHORELINE CLASSIFICATIONS

The ESI shoreline habitat classification is stored as lines and polygons with associated attributes. In many cases, a shoreline may have two or three different classifications. These multiple classifications are represented on the maps by double and triple line patterns and in the database by ESI#1/ESI#2, where ESI#1 is the landward-most classification and ESI#2 is the seaward-most classification. In addition to the line features, exposed wave-cut platforms (ESI = 2A) and tidal flats (ESI = 7, ESI = 9A) are also stored as polygons.

SENSITIVE BIOLOGICAL RESOURCES

Biological resources are stored as polygons, points, or arcs. Associated with each feature is a unique identification number that is linked to a series of data tables that further identify the resources. The main biological resource table consists of a list of species identification numbers for each site, the concentration of each species at each site, and identification codes for seasonality and source information. This data table is linked to other tables that describe the seasonality and life-history time-periods for each species (at month resolution) for the specified map feature. Other data tables linked to the first table include: the species identification table, that includes common and scientific names; the species status table, that gives information for state and/or federal threatened or endangered listings; and the source database, that provides source metadata at the feature-species level (specific sources are listed for each species occurring at each mapped feature in the biology coverages).

HUMAN-USE FEATURES

Human-use features are represented as lines, points, or polygons. The resource name, the owner/manager, a contact person, and phone number are included in the database for management areas when available. All metadata sources are documented at the feature level.

REFERENCES

The major hardcopy reference materials used in this project are listed below. In some instances, reference materials were not directly used as source materials, but were instead used or interpreted by scientists or resource managers who provided expert knowledge or personal communication for the resources depicted in the atlas.

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At Research Planning, Inc., Scott Zengel was the LA G-WIS Project Manager. Colin Plank and Miles Hayes performed the shoreline classification. William Holton was responsible for atlas production. Zach Nixon was the GIS Coordinator. Jeff Dahlin, Jon Whitlock, Chris Locke, and Jennifer Rainman performed data processing under the direction of Mark White, GIS Manager. Vermell Simon prepared the final metadata. Joe Holmes provided cartographic design, text, and graphics production.

APPROPRIATE USE OF ATLAS AND DATA

This atlas and the associated database were developed to provide summary information on sensitive natural and human-use resources for the purposes of oil and chemical spill planning and response. Although the atlas and database should be very useful for other environmental and natural resource planning purposes, it should not be used in place of data held by the USFWS, NPS, USGS, LDWF, NMFS, or other agencies. Likewise, information contained in the atlas and database cannot be used in place of consultations with natural and cultural resource agencies, or in place of field surveys. Also, this atlas should not be used for navigation.

SPECIES LIST

Common Name	* Species Name
BIRDS	
DIVING BIRDS	
Anhinga	*Anhinga anhinga*
Brown pelican	*Pelecanus occidentalis*
Neotropic cormorant	*Phalacrocorax brasilianus*
GULLS AND TERNS	
Black skimmer	*Rynchops niger*
Caspian tern	*Sterna caspia*
Colonial waterbirds	-
Endangered seabird	-
Forster's tern	*Sterna forsteri*
Gull-billed tern	*Sterna nilotica*
Laughing gull	*Larus atricilla*
Least tern	*Sterna antillarum*
Rare seabird	-
Royal tern	*Sterna maxima*
Sandwich tern	*Sterna sandvicensis*
PASSERINE BIRDS	
Endangered passerine-like bird	-
Rare passerine-like bird	-
Raptors	-
Rare raptor	-
Threatened raptor	-
SHOREBIRDS	
Piping plover	*Charadrius melodus*
Rare shorebird	-
Shorebirds	-
Snowy plover	*Charadrius alexandrinus*
Threatened shorebird	-
Wilson's plover	*Charadrius wilsonia*
WADING BIRDS	
Black-crowned night-heron	*Nycticorax nycticorax*
Cattle egret	*Bubulcus ibis*
Great blue heron	*Ardea herodias*
Great egret	*Ardea alba*
Little blue heron	*Egretta caerulea*
Rare wading bird	-
Reddish egret	*Egretta rufescens*
Roseate spoonbill	*Ajaia ajaja*
Snowy egret	*Egretta thula*
Tricolored heron	*Egretta tricolor*
White ibis	*Eudocimus albus*
White-faced or Glossy ibis	*Plegadis spp.*
Yellow-crowned night-heron	*Nyctanassa violacea*
WATERFOWL	
American coot	*Fulica americana*
American wigeon	*Anas americana*
Blue-winged teal	*Anas discors*
Canvasback	*Aythya valisineria*
Gadwall	*Anas strepera*
Green-winged teal	*Anas crecca*
Hooded merganser	*Lophodytes cucullatus*
Lesser scaup	*Aythya affinis*
Mallard	*Anas platyrhynchos*
Mottled duck	*Anas fulvigula*
Northern pintail	*Anas acuta*
Northern shoveler	*Anas clypeata*
Ring-necked duck	*Aythya collaris*
FISH	
FISH	
Endangered fish	-
Rare fish	-
Threatened fish	-
Diadromous fish	-
American eel	*Anguilla rostrata*
Gizzard shad	*Dorosoma cepedianum*
Gulf sturgeon	*Acipenser oxyrinchus desotoi*
Hybrid striped bass	*Morone sp.*
Skipjack herring	*Alosa chrysochloris*
Striped bass	*Morone saxatilis*
Estuarine nursery fish	-
Atlantic croaker	*Micropogonias undulatus*
Bay anchovy	*Anchoa mitchilli*
Black drum	*Pogonias cromis*
Gray snapper	*Lutjanus griseus*
Gulf menhaden	*Brevoortia patronus*
Hogchoker	*Trinectes maculatus*
Ladyfish	*Elops saurus*
Red drum	*Sciaenops ocellatus*
Sand seatrout	*Cynoscion arenarius*
Sheepshead	*Archosargus probatocephalus*
Southern flounder	*Paralichthys lethostigma*
Spot	*Leiostomus xanthurus*
Spotted seatrout	*Cynoscion nebulosus*
Striped mullet	*Mugil cephalus*
Tarpon	*Megalops atlanticus*

Common Name	* Species Name
FISH cont.	
Estuarine resident fish	-
Gulf pipefish	*Syngnathus scovelli*
Inland silverside	*Menidia beryllina*
Lined sole	*Achirus lineatus*
Roughtail stingray	*Dasyatis centroura*
Silver perch	*Bairdiella chrysoura*
Violet goby	*Gobioides broussoneti*
Freshwater fish	-
Alligator gar	*Lepisosteus spatula*
Bantam sunfish	*Lepomis symmetricus*
Bighead carp	*Hypopthalmichthys nobilis*
Bigmouth buffalo	*Ictiobus cyprinellus*
Black buffalo	*Ictiobus niger*
Black bullhead	*Ameiurus melas*
Black crappie	*Pomoxis nigromaculatus*
Blue catfish	*Ictalurus furcatus*
Blue sucker	*Cycleptus elongatus*
Bluegill	*Lepomis macrochirus*
Bowfin	*Amia calva*
Catfish	-
Channel catfish	*Ictalurus punctatus*
Chubsucker	*Erimyzon sp.*
Common carp	*Cyprinus carpio*
Darters	-
Flathead catfish	*Pylodictis olivaris*
Flier	*Centrarchus macropterus*
Freshwater drum	*Aplodinotus grunnieus*
Golden shiner	*Notemigonus crysoleucas*
Goldfish	*Carassius auratus*
Grass carp	*Ctenopharyngodon idella*
Green sunfish	*Lepomis cyanellus*
Hybrid sunfish	*Lepomis spp.*
Largemouth bass	*Micropterus salmoides*
Logperch	*Percina caprodes*
Longear sunfish	*Lepomis megalotis*
Longnose gar	*Lepisosteus osseus*
Madtoms	*Noturus spp.*
Minnows	-
Orangespotted sunfish	*Lepomis humilis*
Paddlefish	*Polyodon spathula*
Pirate perch	*Aphredoderus sayanus*
Quillback	*Carpiodes cyprinus*
Redear sunfish	*Lepomis microlophus*
River carpsucker	*Carpiodes carpio*
Shiners	*Notropis spp.*
Shortnose gar	*Lepisosteus platostomus*
Shovelnose sturgeon	*Scaphirhynchus platorynchus*
Silver carp	*Hypopthalmichthys molitrix*
Smallmouth buffalo	*Ictiobus bubalus*
Spotted bass	*Micropterus punctulatus*
Spotted gar	*Lepisosteus oculatus*
Spotted sucker	*Minytrema melanops*
Spotted sunfish	*Lepomis punctatus*
Threadfin shad	*Dorosoma petenense*
Warmouth	*Lepomis gulosus*
White bass	*Morone chrysops*
White crappie	*Pomoxis annularis*
Yellow bass	*Morone mississippiensis*
Yellow bullhead	*Ameiurus natalis*
Marine Benthic	-
Bay whiff	*Citharichthys spilopterus*
Florida pompano	*Trachinotus carolinus*
Fringed flounder	*Etropus crossotus*
Gobies	-
Speckled worm eel	*Myrophis punctatus*
Marine pelagic fish	-
Atlantic needlefish	*Strongylura marina*
Crevalle jack	*Caranx hippos*
Spanish mackerel	*Scomberomorus maculatus*
HABITAT	
PLANTS	
Endangered plant	-
Rare plant	-
Seagrass	-
Submersed aquatic vegetation	-
Upland	-
Coastal dune grassland	-
Coastal dune scrub thicket	-
Coastal live oak-hackberry forest	-
Coastal prairie	-
Hardwood slope forest	-
Live oak forest	-
Longleaf pine savannah	-
Pine flatwoods	-
Pine savannah	-

*** Threatened and endangered species are designated by underlining.**

Common Name	* Species Name

HABITAT cont.

PLANTS cont.	
Prairie terrace loess forest	-
Salt dome	-
Slash pine/post oak forest	-
Spruce pine-hardwood mesic flatwood	-
Wetland	-
Brackish marsh	-
Forested wetland	-
Freshwater marsh	-
Intermediate marsh	-
Salt marsh	-
Scrub-shrub wetland, including black mangroves	-
Slash pine-cypress/hardwood forest	-

INVERTEBRATES

BIVALVES	
Rare freshwater mussel	-
Threatened freshwater mussel	-
CEPHALOPOD	
Bay squid	*Lolliguncula brevis*
CRABS	
Blue crab	*Callinectes sapidus*
Gulf stone crab	*Menippe adina*
CRAYFISH	
Rare crayfish	-
Red swamp crawfish	*Procambarus clarkii*
White river crawfish	*Procambarus acutus*
INSECTS	
Rare insect	-
SHRIMP	
Brown shrimp	*Penaeus aztecus*
Florida stone crab	*Menippe mercenaria*
Pink shrimp	*Penaeus duorarum*
River shrimp	*Macrobrachium sp.*
White shrimp	*Penaeus setiferus*

REPTILES

ALLIGATORS	
American alligator	*Alligator mississippiensis*
OTHER REPTILES/AMPHIBIANS	
Rare amphibian	-
Rare lizard	-
Rare snake	-
TURTLES	
Rare terrestrial/aquatic turtle	-
Threatened aquatic turtle	-
Threatened sea turtle	-

TERRESTRIAL MAMMALS

BATS	
Rare bat	-
BEARS	
Louisiana black bear	*Ursus americanus luteolus*
Threatened bear	-
SMALL MAMMALS	
Common raccoon	*Procyon lotor*
Mink	*Mustela vison*
Muskrat	*Ondatra zibethicus*
Northern river otter	*Lutra canadensis*
Nutria	*Myocastor coypus*
Rare small mammal	-

*** Threatened and endangered species are designated by underlining.**

SHORELINE DESCRIPTIONS

EXPOSED, SOLID MAN-MADE STRUCTURES **ESI = 1B**

DESCRIPTION

- Typically composed of concrete or metal bulkheads
- Organisms, such as barnacles and algae, may be common on the lower levels, whereas biota along the upper intertidal zone are sparse
- Attached organisms are hardy and accustomed to strong hydraulic impacts and pressures
- Found only in small areas usually on the barrier islands to provide protection to residential and industrial developments where these structures are threatened by beach erosion

PREDICTED OIL BEHAVIOR

- Much of the oil will be held offshore by wave reflection
- Oil could percolate between the joints of the structures
- Under heavy accumulations, oil may coat the intertidal area and biota present would be impacted

RESPONSE CONSIDERATIONS

- High-pressure spraying may be required in order to:
  - remove oil
  - prepare substrate for re-colonization of epifaunal communities
  - minimize aesthetic damage
  - prevent the chronic leaching of oil from the structure

EXPOSED WAVE-CUT PLATFORMS IN CLAY **ESI = 2A**
EXPOSED SCARPS AND STEEP SLOPES IN CLAY **ESI = 2B**

DESCRIPTION

- Regular exposure to high wave energy, with strong wave reflection patterns
- Intertidal zone is a flat muddy bench of variable width
- The mud may incorporate a high percentage of organic material and root masses from older salt marsh vegetation
- May be backed by a shell berm (considered a gravel beach)
- Substrate is relatively impermeable though potential for deep subsurface penetration exists where burrowed by organisms or where root cavities are exposed
- Surface is irregular and tidal pools may be present
- Small accumulations of gravel or shells can be found in the tidal pools and crevices in the platform
- May support large populations of encrusting animals and plants, with rich tidal pool communities
- Common throughout the more exposed shorelines of the delta

PREDICTED OIL BEHAVIOR

- Oil will not adhere to the muddy substrate, but rather be transported across the platform and accumulate along the high-tide line, where it can penetrate in beach sediments, if present. Oil may also adhere to any relict plant material (root masses, etc.)
- Persistence of oiled sediments is usually short-term, except in burrows or larger sediment accumulations at the landward edge of the platform, where oil can persist for up to several weeks to months
- Biological impacts can be immediate and severe, particularly if fresh oil slicks cover tidal pool communities or penetrate burrows

- Where oil penetrates burrows it can be expected to persist in relatively unweathered condition for long periods of time

RESPONSE CONSIDERATIONS

- Cleanup is usually not required, because oil is quickly removed by wave action
- Access may be difficult and dangerous; minimize trampling to avoid increased penetration
- Where the high-tide area is accessible, it may be feasible to remove heavy oil accumulations and oiled debris in areas of high recreational use or in order to protect a nearshore marine resource, such as marine birds

FINE- TO MEDIUM-GRAINED SAND BEACHES **ESI = 3A**
SCARPS AND STEEP SLOPES IN SAND **ESI = 3B**

DESCRIPTION

- Generally flat, wide, and hard-packed
- Rate of sediment mobility is relatively low, thus rapid, dramatic changes in the beach profile are not common
- Surface sediments subject to regular reworking by waves
- Beach fauna can vary in type and density; mobile surface, burrowing, and interstitial forms are typical
- Shorebird nests, eggs, and hatchlings can be expected on nearly all outer coast sand beaches
- Extensive fine- to medium-grained sand beaches are found on the barrier islands of the outer coast

PREDICTED OIL BEHAVIOR

- Light oil accumulations are deposited as oily swashes or bands along the upper intertidal zone
- Heavy oil accumulations, can cover entire beach surface; the oil will be lifted off the lower beach with the rising tide

- Maximum penetration of oil is about 10 cm into fine-grained sand and 15 cm into medium-grained sand
- Burial of oiled layers by clean sand can occur within hours on these microtidal beaches, but the maximum burial will typically occur along the upper beach face to depths less than 30 cm
- Organisms living in the beach may be killed by smothering or lethal oil concentrations in interstitial water
- There can be direct and indirect impacts to bird nests, eggs, and hatchlings

RESPONSE CONSIDERATIONS

- The easiest beach type to clean, because hard substrate can support vehicular and foot traffic and depths of oil burial and penetration are minimal
- After all oil has come ashore, cleanup activities should concentrate on the removal of oil from the upper swash zone
- Vehicular traffic and walking through oiled areas and dunes should be limited to prevent contamination of clean areas and disturbance of dune vegetation
- Vehicular and foot traffic, and mechanical or manual beach cleanup, should be carefully planned and monitored in shorebird nesting areas to avoid disturbance and destruction of nests, eggs, and young
- Manual cleanup, rather than road graders and front-end loaders, is advised where feasible to minimize the volume of sand removed from the shore
- Prevent the mixture of oil deeper into the sediments by vehicular and foot traffic

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COARSE-GRAINED SAND BEACHES — ESI = 4

DESCRIPTION

- Moderate to steep beachface slopes. Sediments are soft and permeable with low trafficability
- The rate of sediment mobility is relatively high, with the vertical accumulation of up to 20 cm of sediments possible within a single tidal cycle
- Beach fauna can vary in type and density; mobile surface, burrowing, and interstitial forms are typical
- Not quite as common as fine-to-medium grained sand beaches, they are found on transgressive portions of the barrier islands, usually grading into mixed sand and gravel beaches
- In places, they occur at the upper intertidal zone on wave-cut platforms

PREDICTED OIL BEHAVIOR

- During small spills, oil may be deposited primarily as a band along the high-tide line
- Under very heavy accumulations, oil may spread across the entire intertidal zone, though it will be lifted off the lower part of the beach during the rising tide
- Penetration up to 25 cm possible
- Burial of oiled layers by clean sand can be rapid, to depths of 1 m or more if the oil comes ashore at the start of a depositional period
- Organisms living in the beach may be killed by smothering or lethal oil concentrations in interstitial water
- There can be direct and indirect impacts to bird nests, eggs, and hatchlings

RESPONSE CONSIDERATIONS

- Cleanup is more difficult than for finer-grained beaches because equipment tends to grind oil into the substrate due to the loosely packed and permeable nature of these coarser-grained sediments; therefore, special care must be exercised at all times while using heavy equipment in order to prevent mixing oil deeper into the beach sediment

- Use of heavy equipment for oil/sand removal may also result in the removal of excessive amounts of sand; therefore, where feasible and for smaller amounts of oil, manual cleanup may be desirable
- Vehicular traffic and walking through oiled areas and dunes should be limited, to prevent contamination of clean areas and disturbance of dune vegetation
- Vehicular and foot traffic, and mechanical or manual beach cleanup, should be carefully planned and monitored in shorebird nesting areas to avoid disturbance and destruction of nests, eggs, and young
- Removal of sediment should be limited as much as possible to avoid erosion problems on the beach in the future; however, the common occurrence of multiple buried oil layers in these types of beaches increases the amount of sediment to be handled and disposed of
- Mechanical reworking of the sand into the surf zone (surf washing) may be used under optimal conditions as a polishing step for lightly oiled sediments without sediment removal

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MIXED SAND AND GRAVEL BEACHES — ESI = 5

DESCRIPTION

- Moderately sloping beach composed of a mixture of sand and at least 20 percent gravel
- Soft sediments with low trafficability
- Sediment mobility is very high during storms, but considerably less than sand beaches during normal conditions
- Spatial variations in the distribution of grain sizes may be significant, with separate zones of pure sand, pebbles, or cobbles, in addition to the mixed zones
- Gravel can be composed of a variety of materials, including shells and other calcium carbonate materials
- Substrate has medium-to-high permeability
- Beach fauna can vary in type and density; mobile surface, burrowing, and interstitial forms are typical
- Though relatively uncommon they are found where the barrier islands are undergoing long-term erosion and as berms perched at the landward edge of mud platforms

PREDICTED OIL BEHAVIOR

- During small spills, oil may be deposited along the high-tide swash line
- During large spills, oil may be spread across the entire intertidal area
- Oil penetration into the beach sediments may be up to 50 cm; however, the sand fraction can be quite mobile, and if the sand fraction exceeds about 40 percent, oil behavior is similar to that described for sand beaches
- Significant amounts of oil can be eroded away during storms
- Burial of oil may be deep (up to 1 m) if oil comes ashore while the beach is recovering from storm conditions
- Organisms living in the beach may be killed by smothering or lethal oil concentrations in interstitial water

RESPONSE CONSIDERATIONS

- Remove heavy accumulations of pooled oil as quickly as possible
- All oiled debris should be removed
- Vehicular traffic and walking through oiled areas should be limited, to prevent contamination of clean areas
- Vehicular and foot traffic, and mechanical or manual beach cleanup, should be carefully planned and monitored in shorebird nesting areas to avoid disturbance and destruction of nests, eggs, and young
- Mechanical reworking of oiled sediments from the high-tide zone to the upper intertidal zone for wave reworking (berm relocation) can be effective in areas subject to significant wave action
- In-place tilling may be used to expose deeply buried oil layers to wave reworking in areas subject to significant wave action
- In-place Mechanical reworking of the sediments into the surf zone (surf washing) may be used under optimal conditions as a polishing step for lightly oiled sediments without sediment removal

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GRAVEL BEACHES **ESI = 6A**

DESCRIPTION

- Composed of sediments larger than 2 mm (granules, pebbles, cobbles and boulders) made up of shell fragments
- Most permeable of all beach sediments
- Lowest trafficability of all beach types
- Slope is intermediate to steep with multiple, wave-built berms and washovers usually forming the upper beach (see arrow)
- Sediment replenishment rates are lowest of all beach types
- Attached animals and plants are usually restricted to lowest parts of the beach, where the sediments are less mobile
- Common throughout the delta as perched berms and washovers atop wave-cut mud scarps

PREDICTED OIL BEHAVIOR

- Deep penetration and rapid burial of stranded oil is likely; penetration of tens of cm (over 1 m possible) can extend oil to depths below where it cannot be reworked by any natural process except extreme storms
- Therefore, long-term persistence will be controlled by the depth of penetration versus the depth of routine reworking by storm waves
- Oil may be carried over the normal high-tide line and storm berms during high-water events, where it can pool and persist above the normal zone of wave wash
- In more sheltered areas, formation of asphalt pavements is likely if oil accumulations are heavy

RESPONSE CONSIDERATIONS

- Because of the low trafficability, the rapid rates of burial, and deep penetration of the oil, this is the most difficult of all the beach types to clean

- Sediment removal should be limited as much as possible, because of potential beach erosion problems in the future
- Low-pressure flushing can be used to remove heavy oil where collection of the flushed oil is feasible, but high-pressure flushing should be avoided since the shell fragments are likely to be blown away by the water pressure

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RIPRAP **ESI = 6B**

DESCRIPTION

- Composed of cobble- to boulder-sized rock fragments
- Used for shoreline protection and inlet stabilization
- Attached low-intertidal zone biota may be plentiful and varied
- Relatively common in all the developed areas of the barrier islands and in small amounts associated with industrial sites

PREDICTED OIL BEHAVIOR

- Oil can penetrate deeply into the highly permeable riprap
- Oil adheres readily to the rough rock surfaces
- If left uncleaned, oil may cause chronic leaching (weeks to months) until it hardens
- Resident fauna and flora may be killed by the oil

RESPONSE CONSIDERATIONS

- Flushing can be effective for removing mobile oil, but large amounts of residue can remain after flushing, particularly for heavy oil

EXPOSED TIDAL FLATS **ESI = 7**

DESCRIPTION

- Flat intertidal areas, composed primarily of sand and mud, that vary in width from a few to hundreds of meters
- The presence of sand indicates that tidal or wind-driven currents and waves are strong enough to mobilize the sediments
- Usually associated with another shoreline type on the landward side of the flat
- Sediments usually remain water-saturated, with only the topographically higher ridges drying out during low tide
- Sediments are generally too soft for vehicular traffic
- Biological utilization can be very high, with large numbers of infauna and heavy use by birds for roosting and foraging
- Common in the study area, associated with inlets and washovers of barrier islands and the chenier west of the deltas

PREDICTED OIL BEHAVIOR

- Oil does not usually adhere to the surface of exposed tidal flats, but rather moves across the flat and accumulates at the high-tide line
- Deposition of oil on the flat may occur on a falling tide if concentrations are heavy
- Oil does not typically penetrate these water-saturated sediments, except on the top of sand bars and into animal burrows if they dry out at low tide; thus, oil penetration is limited to a maximum of a few cm
- Because of the high biological use, impacts can be significant to benthic invertebrates that are smothered or exposed to the water-accommodated fraction of the oil

RESPONSE CONSIDERATIONS

- In most cases, the best response is to let the oil, which is primarily on the surface of the flat, be removed naturally
- Natural removal tends to happen rather quickly in this habitat, because of its exposure to waves and tidal currents
- Cleanup is very difficult, because of the potential for mixing the oil deeper into the sediments
- If cleanup is attempted, the use of heavy machinery should be restricted in order to prevent contamination of the subsurface sediments, with manual removal being preferred; however, heavy foot traffic can also result in mixing the oil deeper

SHELTERED ROCKY SHORES AND SHELTERED SCARPS IN MUD OR CLAY **ESI = 8A**

DESCRIPTION

- Mud and clay shores of variable slope (from vertical cliffs to wide, rocky ledges) that are sheltered from exposure to most wave and tidal energy
- Attached biota may be plentiful and varied, especially in lower and mid-intertidal zones
- Sheltered muddy scarps are relatively rare on the outer coast and are usually associated with man-made cuts through salt marsh, occurring naturally in only a few bays and coves

PREDICTED OIL BEHAVIOR

- Oil will be found along the high-tide line, forming a distinct oil band
- Oil can persist because of the low energy setting
- Where burrowing is present, oil can penetrate deeply, causing long-term contamination of the subsurface
- Impacts to attached organisms can be severe

RESPONSE CONSIDERATIONS

- Cleanup is often required because natural removal rates are slow
- Water flushing at ambient water temperatures is most effective when the oil is fresh

- All pooled oil and oiled debris should be removed as soon as possible
- Pockets of liquid oil can be removed manually or with sorbents

SHELTERED, MAN-MADE STRUCTURES **ESI = 8B**

DESCRIPTION

- Include revetments, seawalls, piers, and docks typically constructed of impermeable materials such as concrete and wood
- Commonly found inside harbors and bays in highly developed areas sheltered from direct exposure to waves
- Attached biota may be plentiful and varied, especially in lower tidal zones

PREDICTED OIL BEHAVIOR

- On impermeable surfaces, the oil will form a band at the high-tide line
- If the oil is not removed, it may cause chronic leaching until the oil hardens
- Impacts to attached organisms can be severe

RESPONSE CONSIDERATIONS

- Cleanup is frequently required, because natural removal rates are slow and these features are located in populated areas
- High-pressure spraying may be required to remove oil for aesthetic reasons and to prevent oil leaching from the structure
- Cleanup crews should make sure to recover all released oil
- All pooled oil and oiled debris should be removed as soon as possible

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SHELTERED RIPRAP **ESI = 8C**

DESCRIPTION

- Composed of cobble- to boulder-sized rock fragments, similar to exposed riprap but sheltered from wave energy
- Commonly found inside harbors and bays in highly developed areas sheltered from direct exposure to waves
- Attached biota may be plentiful and varied, especially in lower tidal zones

PREDICTED OIL BEHAVIOR

- On impermeable surfaces, the oil will form a band at the high-tide line; oil will adhere readily to the rough rock surfaces
- Deep penetration of oil possible because of the high permeability of the riprap
- If the oil is not removed, it may cause chronic leaching (weeks to months) until the oil hardens
- Impacts to attached organisms can be severe

RESPONSE CONSIDERATIONS

- Cleanup is frequently required, because natural removal rates are slow and these features are located in populated areas
- Flushing can be effective for removing mobile oil, but large amounts of residue can remain after flushing, particularly for heavy oil. Clean up is often difficult and intrusive

- High-pressure spraying and/or scraping may be required to remove oil for aesthetic reasons and to prevent leaching of oil from the structure
- Cleanup crews should make sure to recover all released oil
- All pooled oil and oiled debris should be removed quickly

SHELTERED TIDAL FLATS **ESI = 9A**

DESCRIPTION

- Sheltered tidal flats are composed primarily of mud with minor amounts of sand and shell
- They are present in calm-water habitats, sheltered from major wave activity, frequently in unvegetated areas within back-barrier portions of the islands and inner regions of the delta
- The sediments are very soft and cannot support even light foot traffic in many areas
- They can have heavy wrack deposits along the upper fringe
- There can be large concentrations of invertebrates on and in the sediments

PREDICTED OIL BEHAVIOR

- Oil does not usually adhere to the surface of sheltered tidal flats, but rather moves across the flat and accumulates at the high-tide line
- Deposition of oil on the flat may occur on a falling tide if concentrations are heavy
- Oil will not penetrate the water-saturated sediments, but could penetrate burrows and desiccation cracks or other crevices in muddy sediments

RESPONSE CONSIDERATIONS

- These are high-priority areas necessitating the use of spill protection devices to limit oil-spill impact; deflection or sorbent booms and open water skimmers should be used

- Cleanup of the flat surface is very difficult because of the soft substrate; many methods may be restricted
- Care should be taken to limit foot traffic during any cleanup operations, to avoid mixing oil into the sediments
- Low-pressure flushing and deployment of sorbents from shallow-draft boats may be helpful
- Oiled wrack should be removed without sediment disturbance

SHELTERED, VEGETATED LOW BANKS **ESI = 9B**

DESCRIPTION

- Sheltered banks of stream channels, canals, and other waterways
- Calm-water habitats that are typically muddy, soft, and highly vegetated
- Wave energy is very low, although there may be some tidal and/or riverine currents along the banks
- Present but not abundant throughout the delta, usually along man-made cuts or areas flooded during surveys

PREDICTED OIL BEHAVIOR

- Oil adheres readily to vegetation
- Natural removal rates very slow because of low energy and dense vegetation

- The band of oil coating on the vegetation will vary widely, depending upon the tidal stage at the time of oiling; there may be multiple bands
- If the vegetation is thick, heavy oil coating will be restricted to the outer fringe, with penetration and lighter oiling to the limit of tidal influence
- In areas of high suspended sediments, sorption of oil can result in deposition of contaminated sediments on the channel banks and bottoms

RESPONSE CONSIDERATIONS

- These are high-priority areas necessitating the use of spill protection devices to limit oil-spill impact; most are along channels that have a opening to the open ocean close by; therefore, deflection booming should be used to prevent the oil from entering the channel mouth
- Cleanup of the banks is very difficult because of the soft substrate
- Manual operations and deployment of sorbents from shallow-draft boats may be helpful
- Under light oiling, the best practice is to let the area recover naturally
- Heavy accumulations of pooled oil can be removed by vacuum, sorbents, or low-pressure flushing
- Any cleanup activity must not mix the oil deeper into the sediments; trampling of the plant roots must be minimized
- Cutting of oiled vegetation should only be considered when other resources present (such as birds) are at great risk from leaving the oiled vegetation in place

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SALT- AND BRACKISH-WATER MARSHES **ESI = 10A**

DESCRIPTION

- Intertidal wetlands consisting of emergent, herbaceous vegetation
- Marshes vary in extent from extensive areas to narrow fringes
- Sediments in the substrate range from fine sands to silts and organically rich muds

PREDICTED OIL BEHAVIOR

- Oil adheres readily to intertidal vegetation
- Oil coating typically takes the form of a band of varying width; multiple bands are possible
- Large slicks will persist through multiple tidal cycles and coat vegetation from high tide line to the base of the stem
- If the vegetation is thick, the heaviest oil coating will be restricted to the outer fringe of the marsh. However, the lighter the oil, the further into the marsh it may penetrate
- Heavy and weathered oils do not readily adhere to or penetrate the fine sediments, but can pool in surface depressions or collect in burrows
- Light oils can penetrate the top few centimeters of sediment and deeply into burrows and cracks (up to one meter)

RESPONSE CONSIDERATIONS

- Extent of oiling and natural removal processes and rates should be evaluated prior to conducting cleanup
- Under light oiling, allow the area time to recover naturally

- Sorbents should be deployed to contain oil as it is naturally removed
- Cleanup crews and activities must be carefully monitored to avoid unnecessary vegetation damage
- Any cleanup activity must not mix the oil deeper into the sediments. Trampling of the roots must be minimized
- Cutting of oiled vegetation should only be considered when other resources present (such as birds) are at great risk from leaving the oiled vegetation in place
- In-situ burning may be considered for removal of free oil pooled in the marsh

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FRESHWATER MARSHES **ESI = 10B**

DESCRIPTION

- Consist of emergent, herbaceous freshwater vegetation
- Marshes vary in extent from extensive areas to narrow fringes
- Sediments are composed of fine sand, silt, organic-rich mud, and potentially thick accumulations of peat

PREDICTED OIL BEHAVIOR

- Oil adheres readily to vegetation
- Oil coating typically takes the form of a band of varying width; multiple bands are possible
- If the vegetation is thick, the heaviest oil coating will be restricted to the outer fringe of the marsh. However, the lighter the oil, the further into the marsh it may penetrate
- Medium to heavy oils do not readily adhere to or penetrate the fine sediments, but can pool in surface depressions or collect in burrows
- Light oils can penetrate the top few centimeters of sediment and deeply into burrows and cracks (up to one meter)

RESPONSE CONSIDERATIONS

- Extent of oiling and natural removal processes and rates should be evaluated prior to conducting cleanup
- Under light oiling, allow the area time to recover naturally
- Heavy accumulations of pooled oil can be removed by vacuum, sorbents, or low-pressure flushing taking care to prevent oiling of sensitive areas down slope or along shore
- Sorbents should be deployed to contain oil as it is naturally removed

- Cleanup crews and activities must be carefully monitored to avoid unnecessary vegetation damage
- Any cleanup activity must not mix the oil deeper into the sediments. Trampling of the roots must be minimized
- Cutting of oiled vegetation should only be considered when other resources present (such as birds) are at great risk from leaving the oiled vegetation in place
- In-situ burning may be considered for removal of free oil pooled in the marsh

FRESHWATER SWAMPS **ESI = 10C**

DESCRIPTION

- Freshwater swamps consist of shrubs and forested wetlands
- The sediment tends to be silty clay with large amounts of organic debris
- They may be seasonally flooded, though there are many low, permanently flooded areas
- Resident flora and fauna are abundant with numerous species
- They occur along freshwater drainages, often adjacent to freshwater marshes

PREDICTED OIL BEHAVIOR

- Oiled woody vegetation is less sensitive than marshes to oil coating
- Some oil can be trapped and pooled on the swamp flood plain as water levels drop
- Penetration into the floodplain soils is usually limited because of high water levels, muddy composition, surface organic debris, and vegetation cover
- Large amounts of oily debris can be sources of chronic sheening
- During dry periods, terrestrial spills flow downhill and accumulate in depressions or reach waterbodies

RESPONSE CONSIDERATIONS

- Under light oiling, the best practice is to let the area recover naturally
- Heavy accumulations of pooled oil can be removed by vacuum, sorbents, or low-pressure flushing. During flushing, care must be taken to prevent transporting oil to sensitive areas down slope or along shore

- Cleanup crews and activities must be carefully monitored to avoid unnecessary vegetation damage
- Any cleanup activity must not mix the oil deeper into the sediments. Trampling of the roots must be minimized
- Cutting of oiled herbaceous vegetation should only be considered when other resources present (such as birds) are at great risk from leaving the oiled vegetation in place; trees should not be cut
- Under stagnant water conditions, herding of oil with water spray may be needed to push oil to collection areas
- Oily debris can be removed where there is access

SCRUB-SHRUB WETLANDS, INCLUDING BLACK MANGROVES **ESI = 10D**

DESCRIPTION

- Roots and trunks are submerged in water, with only the lowest leaves inundated at high water levels
- Includes black mangroves along the outer coast, which increase in occurrence during years of mild winters; black mangroves tend to occur along the outer fringe of salt marshes
- Relatively sheltered from waves and strong tidal currents
- The width of the forest can range from one tree to a many kilometers
- The substrate generally consists of muds and/or hydric soils
- Important feeding and nesting areas for wildlife (such as birds)
- Occur along sheltered shorelines and estuarine areas throughout the delta

PREDICTED OIL BEHAVIOR

- Oil can wash through vegetation if it comes ashore at high tide
- Heavy and emulsified oil can be trapped in and adhere to thickets of roots or pneumatophores
- Re-oiling from resuspended or released oil residues may cause additional injury over time
- Oiled trees may start to show evidence of effects (leaf yellowing) days to weeks after oiling; tree mortality may take months, especially for heavy oils
- Oil that penetrates the substrate or gets mixed into the sediments can cause long-term contamination of sediments and severe plant injury and mortality

RESPONSE CONSIDERATIONS

- Wrack may protect the trees from oiling, so wait until the threat of oiling has passed before removing it

- Sorbent boom can be placed in front of oiled forests to recover oil released naturally
- In most cases, no other cleanup activities are recommended
- Where thick oil accumulations are not being naturally removed, low-pressure flushing or vacuum may be attempted at the outer fringe
- It is extremely important to prevent disturbance of soft substrates by foot traffic, which can mix oil into the sediments

LOUISIANA

SHORELINE HABITATS (ESI)
2001 ESI Shoreline Classification

- 1B) EXPOSED, SOLID MAN-MADE STRUCTURES
- 2A) EXPOSED WAVE-CUT PLATFORMS IN CLAY
- 2B) EXPOSED SCARPS AND STEEP SLOPES IN CLAY
- 3A) FINE- TO MEDIUM-GRAINED SAND BEACHES
- 3B) SCARPS AND STEEP SLOPES IN SAND
- 4) COARSE-GRAINED SAND BEACHES
- 5) MIXED SAND AND GRAVEL BEACHES
- 6A) GRAVEL BEACHES
- 6B) RIPRAP
- 7) EXPOSED TIDAL FLATS
- 8A) SHELTERED ROCKY SHORES AND SHELTERED SCARPS IN MUD OR CLAY
- 8B) SHELTERED MAN-MADE STRUCTURES
- 8C) SHELTERED RIPRAP
- 9A) SHELTERED TIDAL FLATS
- 9B) SHELTERED, VEGETATED LOW BANKS
- 10A) SALT- AND BRACKISH-WATER MARSHES
- 10B) FRESHWATER MARSHES
- 10C) FRESHWATER SWAMPS
- 10D) SCRUB-SHRUB WETLANDS

COASTAL HABITATS
From 1988 Digital Shoreline

- 10A) SALT MARSH
- 10A) BRACKISH MARSH
- 10A) INTERMEDIATE MARSH
- 10B) FRESHWATER MARSH
- 10C) FORESTED WETLAND
- 10D) SCRUB-SHRUB WETLAND
- SEAGRASS

SENSITIVE BIOLOGICAL RESOURCES

BIRD
- DIVING BIRD
- GULL / TERN
- PASSERINE
- RAPTOR
- SHOREBIRD
- WADING BIRD
- WATERFOWL
- NESTING SITE

FISH
- FISH

TERRESTRIAL MAMMAL
- BAT
- BEAR
- SMALL MAMMAL

INVERTEBRATE
- BIVALVE
- CEPHALOPOD
- CRAB
- CRAYFISH
- INSECT
- SHRIMP

REPTILE / AMPHIBIAN
- ALLIGATOR
- TURTLE
- OTHER REPTILE / AMPHIBIAN

HABITAT
- PLANT
- SEAGRASS

MUTIPLE ELEMENTS
- THREATENED / ENDANGERED
- 123 RAR NUMBER

HUMAN-USE FEATURES

- AIRPORT / HELIPORT
- BOAT RAMP
- INDIAN RESERVATION
- MARINA
- NATIONAL PARK / NATURE CONSERVANCY
- SENIC RIVER
- STATE PARK
- WILDLIFE REFUGE
- 123 HUMAN-USE NUMBER
- PARISH BOUNDARY
- MANAGEMENT BOUNDARY
- MAJOR ROAD
- MINOR ROAD
- SHORELINE FROM 2001 PHOTO INTERPRETATION
- SHORELINE FROM 1988 DIGITAL DATA

Guidelines for Interpreting ESI Maps

To help users interpret the ESI maps and tabular data, we offer the following guidelines for use in addition to the map legend:

• Shoreline Habitats. The "shoreline," representing the boundary between land and water, is color-coded with the ESI classification. Most shoreline habitats are shown as a line, with no areal dimension. Where there is more than one shoreline type (e.g., a beach in front of a seawall), the colors for each habitat are shown, with the color for the landward habitat on the land side of the shoreline and the color for the seaward habitat on the water side. In areas where the intertidal zone is wide (e.g., wide tidal flats, wave-cut rocky platforms), the habitat from high to low water is filled with the ESI classification color. When data are available, the entire extent of wetlands are filled with colored patterns. The seaward edge of the wetland is color-coded with the ESI classification; the landward extent of the wetland is indicated by a dashed, colored line.

• Biological Resources. The distribution of biological resources is shown using many different conventions. The major convention is an icon associated with a point, line, or polygon that shows the species' areal distribution. The icon's reference number corresponds to a data table with details on species and life history. Biological resource data are organized into six major groups, each with a reference color: birds (green), mammals (brown), fish (blue), shellfish (orange), reptiles (red), and rare/endangered plants and special habitats (purple). These colors are used to fill hatched polygons and the icons. Each major group has subgroups with unique icons to visually indicate the type of organism or feature present. The icon or group of icons is usually located inside the polygon it represents; however, sometimes a line is connected between the icon and the polygon or point to make it easier to relate the two. Note that icons are used to indicate the types of resources present, but the actual data are the points and polygons. A red box around an icon indicates the presence of a species on the state or Federal list of threatened or endangered species.

The number listed below each icon refers to the first column of a data table for each map. The data tables, organized by group (birds, fish, etc.), include the following information: species name, status as threatened or endangered on state and Federal lists, concentration (specifically for each point or polygon), presence by month, and special life-history time periods. When a polygon contains multiple groups, the one number under the group of icons is listed under each group heading in the data tables. Where possible, the same number is used on multiple maps. For example, all bald eagle nests with the same seasonality could have the same number throughout the atlas, or the same assemblage of fish would have the same number wherever it occurred.

A data table has a separate listing for every unique combination of species, concentration, seasonality, life-history stage, and source. By looking at the monthly seasonality data in the table for each map, the species present at the time of concern can be easily identified. An 'X' or number is placed under each month in which any life stage of the species is present in the area represented by the point or polygon. Numbers are used typically for fish and shellfish where data on relative abundance are available. The final columns in the data tables include the months when reproductive activities occur or early life stages are present. Users should pay close attention to the data tables because they contain much of the information needed to identify the most sensitive resources at different times of the year.

Points, lines, and polygons on a map represent the distribution of the resources. Green points show bird nesting sites, including bald eagle nests and dense colonial nesters (e.g., heron rookeries and seabird nesting colonies). Animals and habitats are also represented as: 1) hatched polygons in the color for the animal group (e.g., green for birds); 2) black hatched polygons which contain multiple groups of resources (birds and fish in the same tidal channels); 3) solid lines (usually used for fish in small streams); or 4) in "common in ..." boxes. When showing the biological resource polygons would make the maps too difficult to read (usually when multiple polygons cover a large area), the polygons are not plotted and the presence of the resource is indicated by placing the icon in a box labeled "common in ..." The box contains an appropriate geographic reference. Different boxes can be used on the same map when, for example: "common in Winyah Bay" or "common in tidal creeks." The data for these resources are still fully present in the database but are not shown to make the maps more readable.

- Human-use Resources. Most of the human-use resources are point features indicated by a black-and-white icon. Managed lands, such as refuges and sanctuaries, have their boundaries shown as a dot-dash line with an icon and name placed inside. Where the feature is a known point location (e.g., a drinking water intake, boat ramp, marina), the exact location is shown as a small black dot and a line is drawn from it to the icon. Activities such as commercial and recreational fishing and areas such as recreational beaches are also indicated by an icon placed in the general area without any lines to points or polygons since the boundaries are not readily defined.

Some features, like historic and archaeological sites, are location-sensitive: the agency managing the resource believes the exact location should not be shown in order to protect the site. In these cases, the icon is placed in the general area of the resource, but the exact location is not shown.

(b) (7)(F), (b) (3)

LEGEND

- OF 007 — OUTFALL LOCATION
- FW — FIRE WATER PIPE
- WEIR VALVES
- SHUTOFF VALVE
- DIRECTION OF STORM WATER FLOW
- ST. JAMES PARISH FIRE HYDRANT

N

0 500 1000

SCALE: 1" = 500'

NUSTAR ENERGY L.P.
SAN ANTONIO. TEXAS

ST. JAMES TERMINAL

FACILITY DRAINAGE PLAN

ST. JAMES PARISH

CK ASSOCIATES Environmental Consultants

Drawn:	CAL/ACAD
Checked:	SM
Approved:	AS
Date:	4/30/14
Dwg. No.:	B10769-01

FIGURE 2

(b) (7)(F), (b) (3)

NOTES:
1) CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO FABRICATION AND INSTALLATION.

REFERENCE DRAWINGS:

NO.	REVISION	BY	DATE	APR

NuStar Energy L.P.

2330 Loop 1604 N
San Antonio, Texas 78248
Tel: (210) 345-2000
1-800-531-7911

PROJECT LOCATION: St. James, Louisiana	
DRAWN BY:	DATE:
CHECKED:	DATE:
APPROVED:	DATE:
SCALE: As shown	

ST. JAMES TERMINAL
EVACUATION PLAN

ORIGINAL PROJECT NO.

DRAWING NO. | REV.

SENSITIVE AREAS WITHIN PLANNING DISTANCE OF FACILITY

In order to determine specific vulnerable sites located within the planning distance of the Facility, various sources of information were reviewed, and a comprehensive listing of vulnerable sites was compiled. Sources include the U.S. Fish and Wildlife Service (USFWS), Louisiana Department of Wildlife and Fisheries (LDWF), U.S. Geological Survey (USGS), National Marine Fisheries Service (NMFS), National Park Service (NPS), Louisiana Natural Heritage Program (LNHP), Louisiana Geographic Information Center (LAGIC), and the Geographic Names Information System (GNIS) databases. The potential effect of an oil spill on each type of vulnerable site located within the planning distance is presented below. Additionally, the methods to prevent and/or minimize the impacts to the identified sensitive sites are discussed.

The specific actions considered to protect a vulnerable site, or to minimize the potential effects of a spill on a vulnerable site, would be tempered in a real spill event by the actual path of the spill and the actual hazards presented. For specific guidance on the actual hazards of a release, the MSDS and the DOT Emergency Response Guidebook can be consulted for hazards and recommended evacuation distances.

Water Intakes

(b) (7)(F), (b) (3)

[redacted]

(b) (3), (b) (7)(F)

Residential Areas

A release of oil in the vicinity of a residential area may affect property, structures, and inhabitants. Specific effects may include oiled animals and vegetation, oiled homes and associated structures, and potential fire hazards. Should human contact result from the spill, the potential exposure routes might include skin contamination, inhalation, or accidental ingestion. If the spill has reached a waterway, or has been confined to a low area, vapor impingement is a potential problem downwind of the spill path.

Vapors can be flammable, irritating, or may only pose an odor problem. Air monitoring should be conducted downwind of the spill path to monitor for vapors, depending on the nature of the released material. Responses to these effects may include strategic booming immediately around the spill area, evacuation of residents, rerouting of traffic, excavation of contaminated soil, suppression of flammable vapors, and decontamination of oiled buildings, structures, pavement, etc. Potential effects and specific response actions will depend on the nature of the released material.

Residential Areas			
1	Chatman Town	76	Mount Airy Landing
2	Olga Landing	78	Willow Grove
4	Burton Lane	79	Angelina Landing
8	Burton (historical)	80	Whitney Landing
11	Uncle Sam Landing	81	Mount Airy
12	Convent	89	White Rose Landing
21	Convent Landing	92	Cooper Shop Landing
22	College Point Landing	93	Lions
24	Caribu Landing	94	Terre Haute Plantation
26	Saint James Landing	96	Columbia Plantation
30	Moonshine (historical)	106	Edgard Landing
31	Pikes Peak	108	Edgard
32	Chopin (historical)	113	Reserve
33	Home Place Plantation (historical)	114	St John the Baptist Parish
34	Batree	117	Tigerville
35	Welham Landing	119	Reserve Landing
36	Welham Plantation	123	Gold Mine Plantation
38	Oak Alley Landing	124	Belle Point Plantation (historical)
40	Hester Station (historical)	126	Lucy
42	Bend	129	Killona Landing
47	Remy	131	Killona
49	Armant Landing	133	Montz
50	Duprac Landing	134	Waterford
53	Vacherie	137	Taft
57	Magnolia Landing	140	Sellers
60	Oubre	145	Norco

Residential Areas			
61	Paulina	147	Good Hope Landing
64	Crescent Landing	148	Good Hope
72	Norma Landing	152	Hahnville Landing
74	Wallace	910	Uncle Sam Plantation
75	Sport		

Businesses

In the event that a spill impacts the property of a business, the effects may include: oiling of the facility, equipment, inventory, and property; interruption of traffic flow to/from the business; and potential fire hazards. A spill event that results in the closure of roads surrounding a business may also indirectly affect the business by the loss of revenue. Should human contact result from the spill, the potential exposure routes might include skin contamination, inhalation, or accidental ingestion. If the spill has reached a waterway, or has been confined to a low area, vapor impingement is a potential problem downwind of the spill path. Vapors can be flammable, irritating, or may only pose an odor problem. Responses to these effects may include strategic booming immediately around the spill area, protective booming of docks and marinas, evacuation of business owners, employees, and patrons, rerouting of traffic near the business, excavation of contaminated soil, suppression of flammable vapors, and decontamination of oiled buildings, structures, pavement, etc. Air monitoring should be conducted downwind of the spill path to monitor for vapors. Potential effects and specific response actions will depend on the nature of the released material.

Businesses			
5	Burton Lane Church	88	Saint Martin's Church
13	Saint James Church	101	Saint Peter Catholic Church
15	Sacred Heart Convent (historical)	111	Saint John the Baptist Catholic Church
19	Saint Michaels Church	112	Global Maritime Ministries
20	Saint Paul Church	116	New Jerusalem Baptist Church
29	Saint Luke Baptist Church	118	Bethlehem Baptist Church
43	Greater Evergreen Baptist Church	122	Our Lady of Grace Church
44	Vacherie Oil and Gas Field	130	Saint Isadore Church (historical)
45	Saint Matthew Baptist Church	135	Providence Baptist Church
46	Mount Olive Baptist Church	141	Greater Good Hope Baptist Church
54	Pilgrim Church	142	Good Hope Missionary Baptist Church
55	Highway Baptist Church	143	Faith Praise and Deliverance Church
69	Saint James Culture and Heritage Center	149	Good Hope Presbyterian Church
70	Riverlands Health Care Center	150	River of Life Church

Wetlands

The effects of a release of oil into a wetland area might include oiling of animals, vegetation, and sediment and the creation of an oil slick on areas of open water. Because water

movement within a wetland habitat is minimal, oil spilled in these areas may pool and may persist. Swamps and marshes often serve as nurseries for fish and shellfish, and exhibit high biodiversity. Due to the typically soft sediments that underlie wetland areas, the use of mechanized equipment for cleanup efforts may cause more harm than the initial oiling. Responses to these effects include strategic booming immediately around the spill area and protective booming around identified sensitive wetland areas, and will depend heavily on the nature of the wetlands and potential routes of access for collection equipment. Potential effects and specific response actions will depend on the nature of the released material.

Various, unnamed wetlands along the Mississippi River have been identified within the planning distance.

Fish and Wildlife

Fish and wildlife species may be impacted directly or indirectly by an oil spill. A direct impact on wildlife would include physical contact with the released oil (oiling of a bird's feathers or an otter's fur) and toxic contamination (inhalation of petroleum vapors or ingestion of oil). Indirect impacts on wildlife would include the destruction of a species' habitat or food source or the displacement of the species or food source.

Direct effects of oil on fish populations include fish kills, specifically the egg and larval stages, which are more vulnerable to oil pollution than those in the adult stage. Spills to rivers used for spawning or used for migration to spawning grounds can affect future populations. Fish that have been tainted by an oil spill may not be fit to eat, thus affecting animals higher in the food chain.

Depending on the life cycle, behavior, and physiology of a particular wildlife species, the effects of an oil spill can vary. Otters and beavers are vulnerable due to the structure of their fur as well as their swimming behaviors. Birds that utilize the water-surface interface are at risk of contamination. Heavily oiled birds typically die as a result of their contamination. The specific effects on wildlife will depend on the nature of the released material.

Responses to these effects include strategic booming immediately around the spill area, protective booming around identified fish and wildlife habitat, and cleaning of affected animals by properly trained professionals. The response efforts in the direct vicinity of the impacted habitat depend heavily on the nature of the habitat and potential routes of access for collection equipment. Potential effects and specific response actions will depend on the nature of the released material.

Wildlife Rehabilitation

In an oil spill incident, it is possible that birds, aquatic life, and/or other wildlife may come in contact with the spilled material. If wildlife becomes involved in the spilled material, it will be necessary to perform wildlife rescue and rehabilitation operations. The capture and treatment of wildlife, especially endangered species, is highly regulated by the U.S. Department of the Interior. To conduct these operations, it will be necessary to obtain assistance from properly trained, licensed, and permitted organizations and personnel. It is important to ensure that any personnel involved in

wildlife rescue and rehabilitation operations, including volunteers, have received the appropriate level of Hazardous Waste Operations and Emergency Response (HAZWOPER) training.

In the event that wildlife is impacted, advice and assistance from trained and experienced persons in the area of wildlife rescue and rehabilitation may be requested. The Qualified Individual (QI) will arrange for various rehabilitators to be available for this service, such as the Louisiana Wildlife Rehabilitators Association.

Various fish and wildlife may potentially be affected by a release. However, no wild or scenic rivers have been identified within the planning distance. Additionally, no designated natural areas, wilderness areas, wildlife refuges or sanctuaries, or conservation areas have been identified within the planning distance.

Endangered Flora and Fauna

Oil spills affect endangered flora and fauna by either directly impacting the individual or by destroying the habitat in which the species lives. Responses to these effects may include strategic booming immediately around the spill area, excavation of contaminated soil, suppression of flammable vapors, and cleaning of affected animals by properly trained professionals. Protective booming around vulnerable areas, as well as booming the mouths of creeks where sensitive species have been identified, should be conducted. Deflection boom can also be used to direct floating spills from vulnerable areas. Potential effects and specific response actions will depend on the nature of the released material.

The following threatened or endangered species have been identified within the parishes of the planning distance, although not necessary in the affected areas:

Threatened & Endangered Species	
Louisiana Black Bear	Alabama Heel splitter Mussel
Pallid Sturgeon	Gulf Sturgeon
Piping plover	West Indian Manatee
Brown Pelican	Bald Eagle
Red-Cockaded Woodpecker	

Lakes and Streams

Lakes are characterized by generally very low wave and current energy, although the surface may often become choppy. Water levels may fluctuate widely throughout the seasons and over time. Often other sensitive environments are in close proximity to lakes, such as wetlands, habitat for migratory birds, nesting birds and mammals, and fish nursery grounds. Lakes also often support various recreational activities. Depending on the severity of the spill, the effects may range from shoreline damages to fish and wildlife kills. Wind and tidal exchange will control the distribution of a slick, and can either hold the slick against a lee shore or spread it along shores or even into previously clean areas.

Small rivers and streams are characterized by shallow water (one to two meters in depth) and narrow channels. These systems are highly variable. The flow rates can range from fast-flowing to slow-moving. The channels may be free of debris or choked with log jams, mid-

channel sand bars, and islands. The shoreline may have a high slope or a low bank fringed with vegetation or wetlands. Slicks typically contaminate both banks. The oil may mix throughout the entire water column in shallower streams, thus potentially affecting both aquatic and benthic organisms.

Responses to these effects include strategic booming immediately around the spill area and protective booming around vulnerable areas such as the mouths of creeks and inlets, and will depend heavily on the nature of the habitat and potential routes of access for collection equipment. Deflection boom can also be used to direct floating spills from vulnerable areas. Potential effects and specific response actions will depend on the nature of the released material.

Lakes and Streams			
3	Mississippi River – Cantrelle Reach	85	Fortyeight Mile Point
9	St James Canal	86	Willow Bend
27	Rich Bend Revetment	90	Willow Bend Revetment
28	Rich Bend	100	Reserve Revetment
37	Belmont Crevasse	125	Lucy Revetment
38	Vacherie Revetment	127	Bonnet Carre Point
39	Belmont Revetment	128	Bonnet Carre Island
63	Mississippi River – Grandview Reach	132	Thirtyfive Mile Point
77	Angelina Revetment	138	Waterford Revetment

Recreational Areas

In the event that a spill impacts a recreational area, the effects may include: oiling of the area, structures, and property; interruption of traffic flow to/from the area; and potential fire hazards. Should human contact result from the spill, the potential exposure routes might include skin contamination, inhalation, or accidental ingestion. Responses to these effects may include strategic booming immediately around the spill area, evacuation of visitors and employees of the areas, rerouting of traffic near the recreational area, excavation of contaminated soil, suppression of flammable vapors, and decontamination of oiled structures, buildings, and pavement. Potential effects and specific response actions will depend on the nature of the released material.

Recreational Areas			
18	Montz Park	136	Saint Michaels Church Historic District

Transportation Routes

Transportation routes are typically indirectly affected by a spill event through the interruption of traffic flow. Other effects may include: oiling of pavement, vegetation, and soil; the creation of an oil slick on areas of open water; and potential fire hazards. Should human contact result from the spill, the potential route of exposure might include skin contamination, inhalation, or accidental ingestion. Responses to these effects may include strategic booming immediately around the spill area, evacuation of persons traveling the route, rerouting of traffic by authorized personnel, excavation of contaminated soil,

suppression of flammable vapors, and decontamination of oiled structures, buildings, pavement, etc. The halting of river traffic in the case of a spill to a major waterway or rerouting vehicular traffic from business areas would likely result in economic impacts. Potential effects and specific response actions will depend on the nature of the released material.

Transportation Routes		
68	Lutcher-Crescent Ferry	State Road 44
105	Reserve-Edgard Ferry	State Road 18
139	Bonnet Carre Spillway	State Road 628
		State Road 48

(b) (3), (b) (7)(F)

[redacted]

Others Areas of Economic Importance

In the event that a spill impacts an area of economic concern, the effects may include: oiling of vegetation, soil, and structures; interruption of traffic flow to/from the area; and potential fire hazards. Should human contact result from the spill, the potential exposure routes might include skin contamination, inhalation, or accidental ingestion. Responses to these effects depend heavily on the nature of the sensitive area and potential routes of access for collection equipment, but may include strategic booming immediately around the spill area, evacuation, rerouting of traffic, excavation of contaminated soil, suppression of flammable vapors, and decontamination of oiled equipment, buildings, pavement, etc. Potential effects and specific response actions will depend on the nature of the released material.

Other Areas of Economic Importance			
7	Celestin Cemetery	91	Saint John Westside Volunteer Fire Department
16	Saint James Cemetery	95	Saint John the Baptist Parish Library Edgard Branch

Other Areas of Economic Importance			
41	Paulina Grand Point Belmont Volunteer Fire Department Hester Station	98	Saint John the Baptist Parish Library Reserve Branch
48	Vacherie Volunteer Fire Department Station 1	107	Saint Charles Parish Police Jury
52	Paulina - Grand Point - Belmont Fire Department Paulina Station	109	Saint John Westside Volunteer Fire Department Station 95
66	Saint Phillips Cemetery	110	Saint John the Baptist Cemetery
71	Gramercy Volunteer Fire Department Station 2	115	Reserve Volunteer Fire Department Station 63
73	West Saint John Fire Department	151	Saint John Parish Police Jury
83	Garyville Volunteer Fire Department Station 72	153	East Saint Charles Volunteer Fire Department Station 1