Tank Barge DM 932 Spill
July 23, 2008
The Response from the Perspective of the "Environmental Unit"

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Environmental Science Services, Inc.

Presented at the Freshwater Spill Symposium,
St. Louis, MO – April 2009

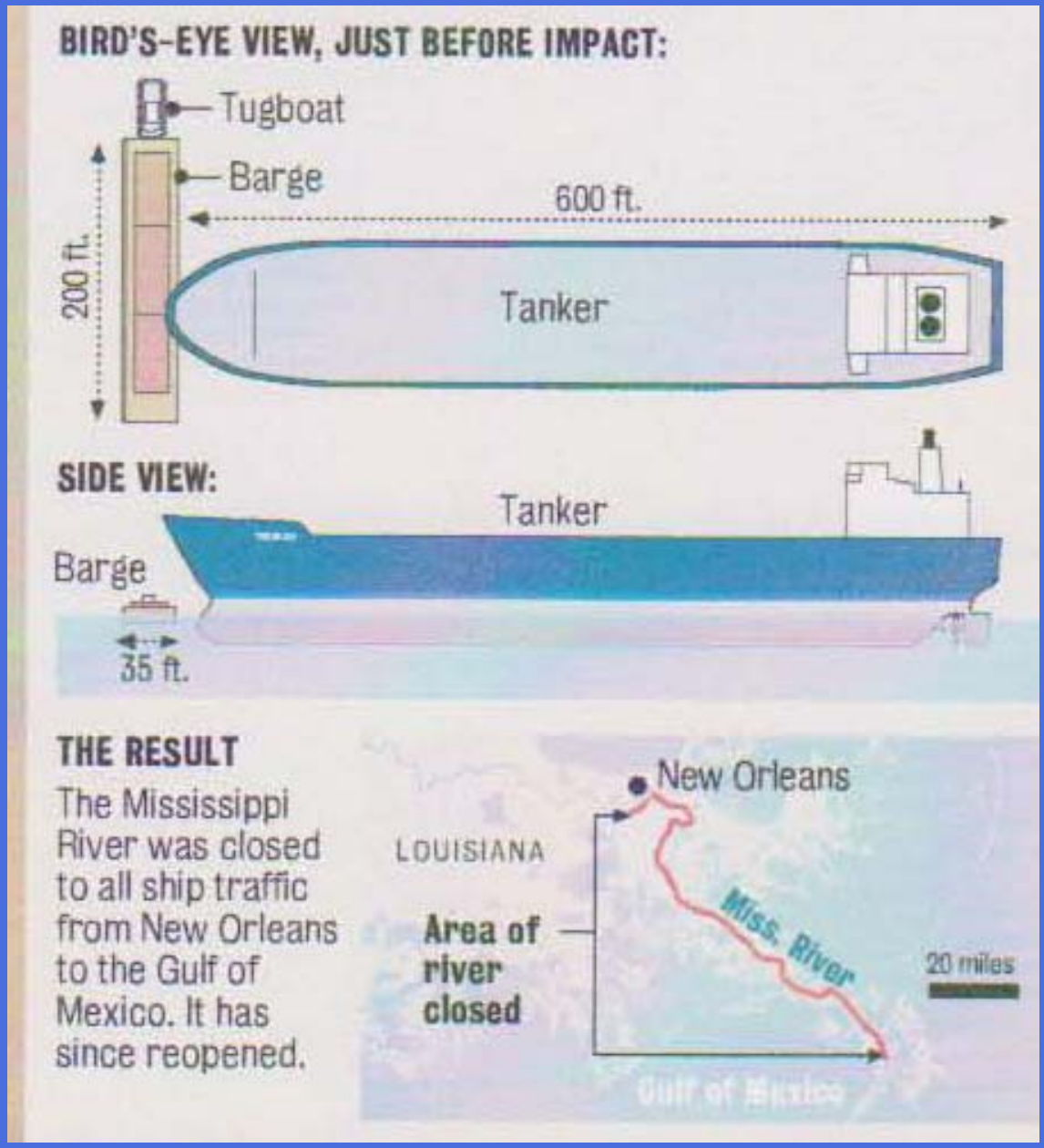
Introduction

- Robert Simmons, P.E., President of Es²
- Served as primary Environmental Unit (EU) consultant to RP during DM 932 response.
- Served as EU Leader and subsequently as Planning Section Chief during DM 932 response/cleanup.
- Es² also provided SCAT, “Zone Manager” and GIS/Mapping personnel during DM 932 response.

Incident Background

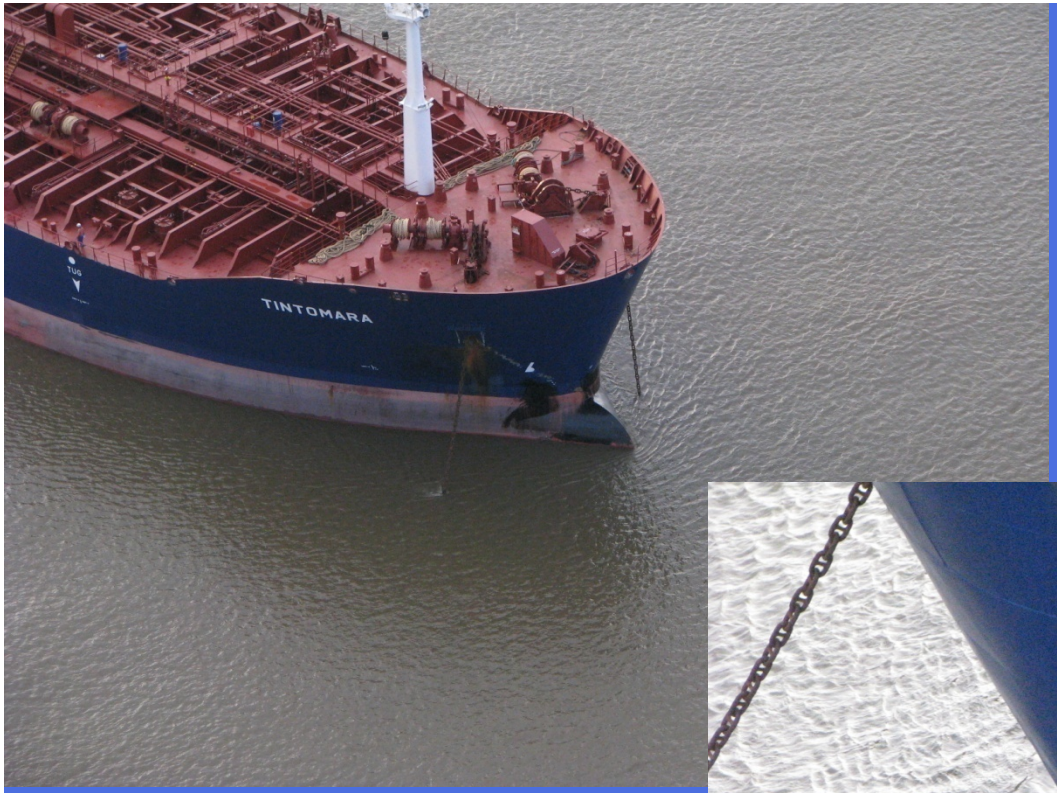
- July 23, 2008 @ 0130, downbound tankship TINTOMARA collides with tank barge DM 932.
- Occurred in Mississippi River ~2.5 miles above Greater New Orleans Bridge (downtown). (~MM 98.5)
- Catastrophic damage to DM 932; relatively insignificant damage to TINTOMARA.
- Initially assumed loss of entire cargo of 10,000 bbls of #6 oil from DM 932.
- Falling River/Fast Current
- DM 932 wreck winds up pinned against GNO Bridge

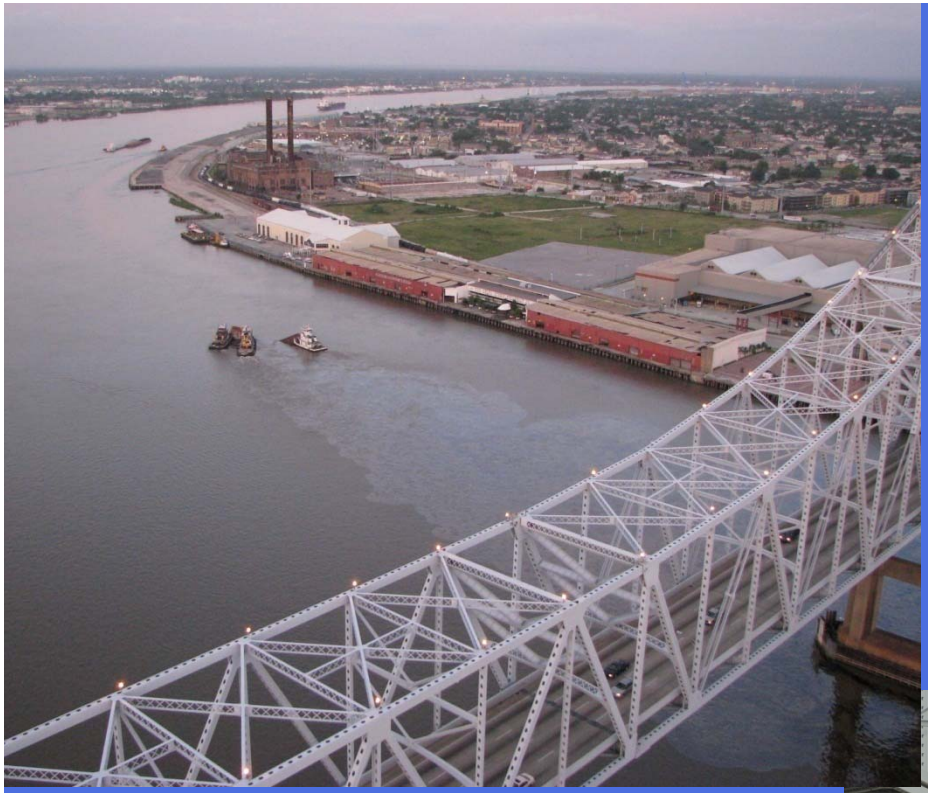
(Towing vessel was actually moving from left to right across the path of the tanker.)

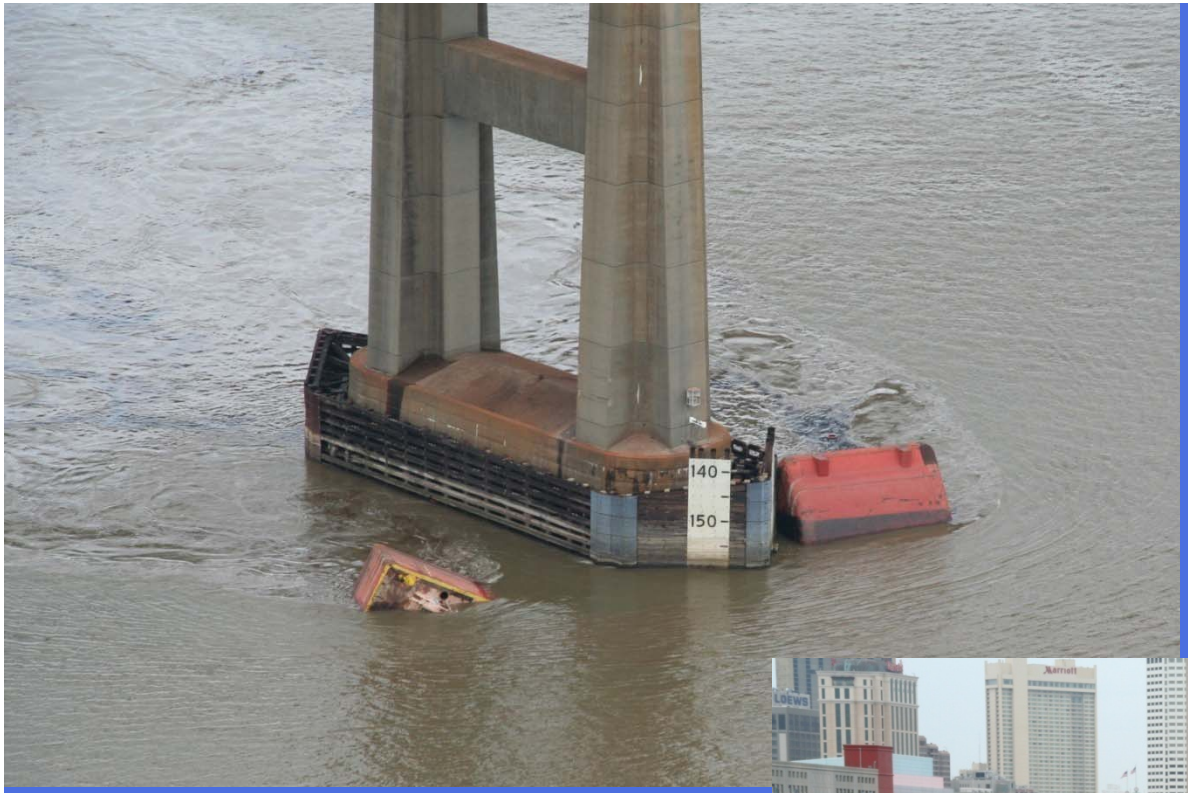


From article in Times Picayune

VTS Audio/Video


TINTOMARA




140
150


LOEWS
Marriott
140
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Peak Spill Response Resources
(per ICS 209s)

- >2300 Responders *****
- >130,000' of containment boom
- ~200 boats
- ~35 Skimmers
- Full engagement by USCG GST
- >250 Federal Agency Personnel

Barge Salvage & Lightering

- Complexity of Salvage (Times Picayune article)
- Duration of Salvage. (Completed day 18)
- Ongoing actual spillage & potential until salvage completed.
- 3250 bbls of 9983 bbl cargo successfully lightered.

Times Picayune Article

Barge Salvage / Recovery Operations

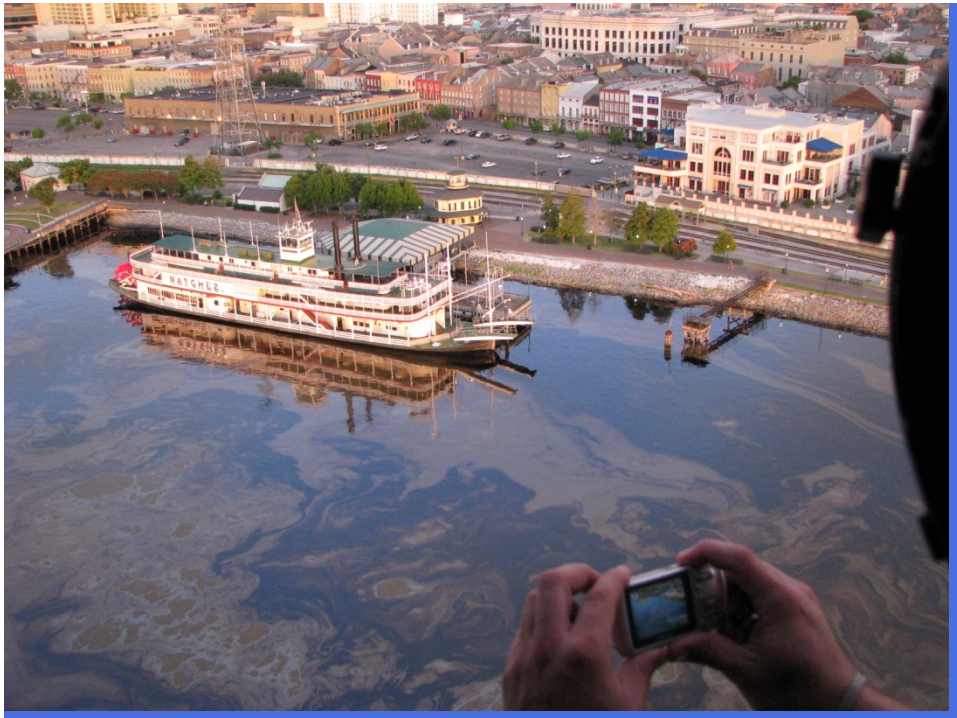
Recovering the bow.

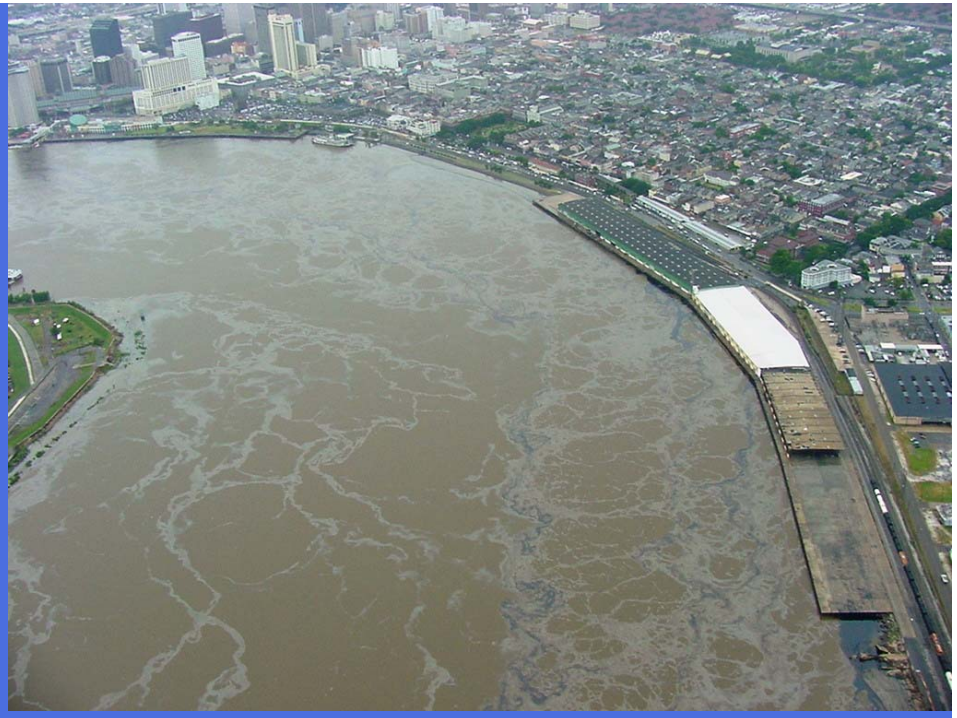
Recovering the stern

Es²

Initial Protection/Response / Cleanup Concerns
(partial list)

- Municipal Water Intakes
- Locks
- Freshwater Diversions / Siphons
- Cruise Line, River Boat, and Ferry Terminals
- Commercial Traffic in River, vessel cleaning
- Shoreline impact in public/industrial areas
- Shoreline / batture impact in remote areas
- Underneath docks / wharves Port of New Orleans
- Rocks along RiverWalk in New Orleans
- Delta Wildlife Refuge (USFWS) – Protective booming
- Wildlife / birds





Examples of various oiling conditions or habitats.

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SCAT Process

- Initially decided separation of SCAT and NRDA
- SCAT initially setup and coordinated by NOAA
  - SCAT Team Participants (NOAA, USCG, LDEQ, RP Consultants)
  - Segmentation Methodology
    - 5 river miles per Divisions (A-S)
    - 10 (1) mile segments (LDB & RDB) in each Division
  - Shoreline Access Issues
    - Boat Teams
    - Landside Teams
    - Helicopter (not official SCAT)
  - Large geographic area vs SCAT resolution needed
  - Initially "target rich" environment
  - Significance of Oil mapping methodology

SCAT Process, continued

- SCAT reports
  - Individual Data sheets
  - Summary Maps
  - Tabular report from NOAA database
  - Segment "dot" maps
    - Used in ICS 204s in IAP
- Transition from NOAA to Es² after initial round of SCAT.

SHORT SHORELINE ASSESSMENT FORM for New Orleans DM932 Spill Page 1 of 1

1. GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h standard/daylight)
Segment ID: B91L	04/08/08	1223 to 1245
Survey By: Foot / (Boat) / Helicopter / Car /		Sun / (Clouds) / Fog / Rain / Windy

2. SURVEY TEAM No. 6	Name	Organization	Phone Number
	Josh Slater	NOAA	
	Don Brandin	LDEQ	
	Bridgette Todd	Entrix	
	David Wagner	USCG	
	Clifton Hendry	USCG	

3. SEGMENT	(ALL) or PART (Circle One)	Length Surveyed 1 m ile
	Reason:	

4. OPERATIONAL FEATURES		
Direct Backshore Access? (Yes)/No	Oiled Debris? (Yes)/ No	Type Veg Amount bags
Access Restrictions? Piers, Residences	Shore Access? (Yes)/No	Suitable Backshore Staging? (Yes)/No

5. SHORELINE TYPE REFERENCE NUMBERS:

1	Batture: Scrub/Shrub/Trees	5	Rip/Rap/Concrete Revetment
2	Batture: Mud/Sand	6	Canal/Lock Entrance
3	Man-made Structures: Piers/Pilings	7	Wharves
4	Man-made Structures: Bulkheads/Walls	8	Other:

6. SURFACE OILING CONDITIONS: Check "P" for Primary Oiled Zone in Zone ID

Zone ID	Oil Cover Length m	Width m	Distr. %	Oil Thickness PO	CV	CT	ST	FL	Oil Character FR	MS	TB	TC	SR	AP	No
B91L-001	1 mile	3	40	X					X						
	Wpt#: 035			Lat: 29.95024°N					Lon: 090.01359°W				SL Type	8 Pilings	
P: ☐	Comment: Pier with pilings and Rip-Rap have thick, wide band of weathered sticky oil. ~~Some areas~~ use Pom-Poms and flush.												Cleanup Concern: (Y) N		
B91L-002	1 mile	10	55		X				X						
	Wpt#: 035			Lat: 29.95024°N					Lon: 090.01359°W				SL Type		
P: ☒	Comment: Oiled vegetation. ~ 3ft band of oil on leaves and trunks of vegetation. Oiled sediment. Use shovels & cut or bag-ass												Cleanup Concern: (Y) N		
B91L-003	1 mile	1	80		X				X						
	Wpt#: 035			Lat: 29.95024°N					Lon: 090.01359°W				SL Type	8 levee	
P: ☐	Comment: Oil band on levee, clean-up crew on site use pom-poms												Cleanup Concern: (Y) N		
	Wpt#:			Lat:					Lon:				SL Type		
P: ☐	Comment												Cleanup Concern: Y / N		

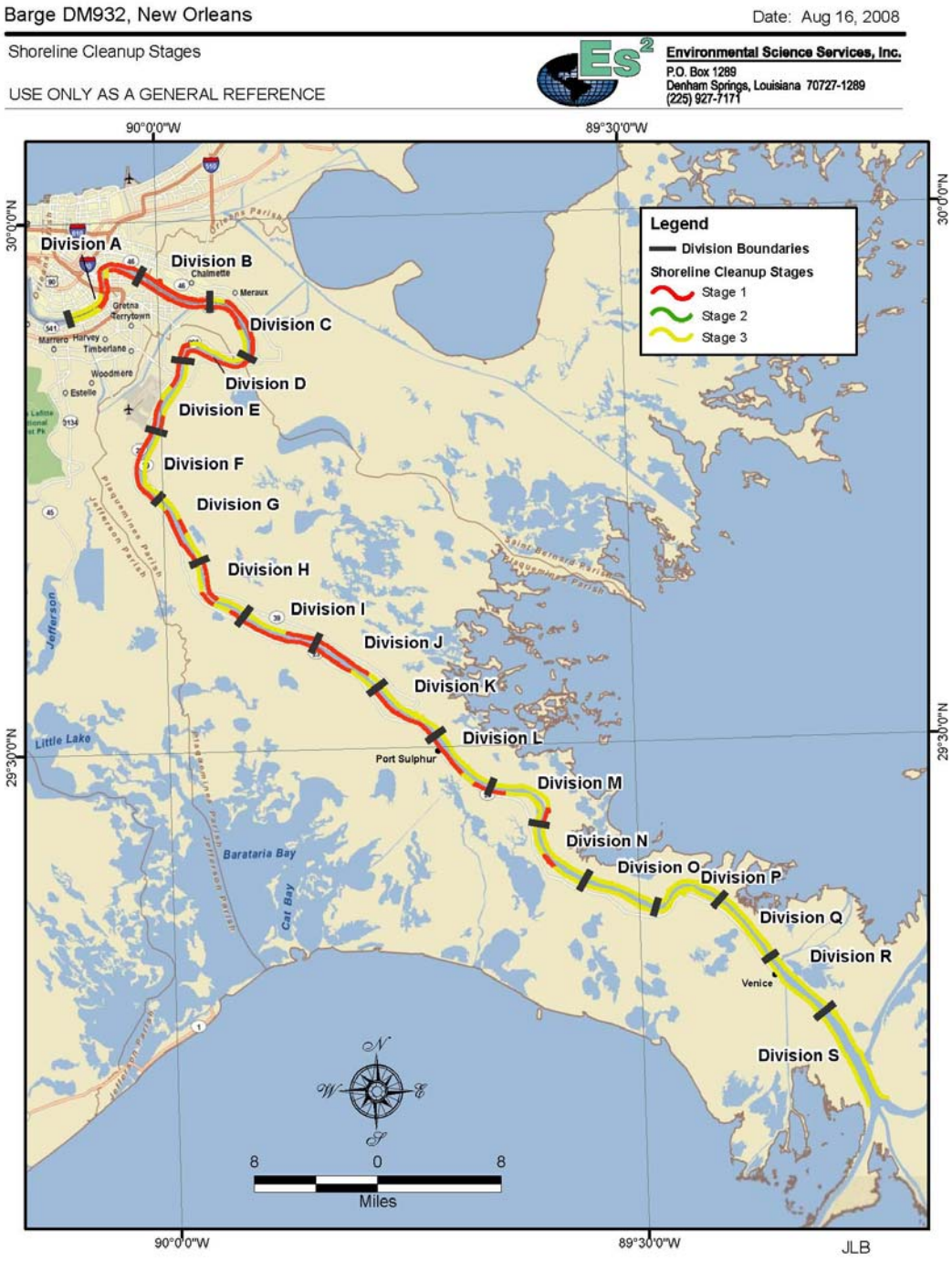
Comments: *Cleanup Recommendations; Ecological/Recreational/Cultural Issues; Wildlife Obs.*
Active Cleaning - Cut vegetation, shovel remove tar patches and flush & pom-pom Rip-Rap. Shoreline is a historic/cultural landmark (Chalmette Battle ground) Dirty boom out. Reposition Snare. No oiled wildlife observed.

Example Tabular Report from Database

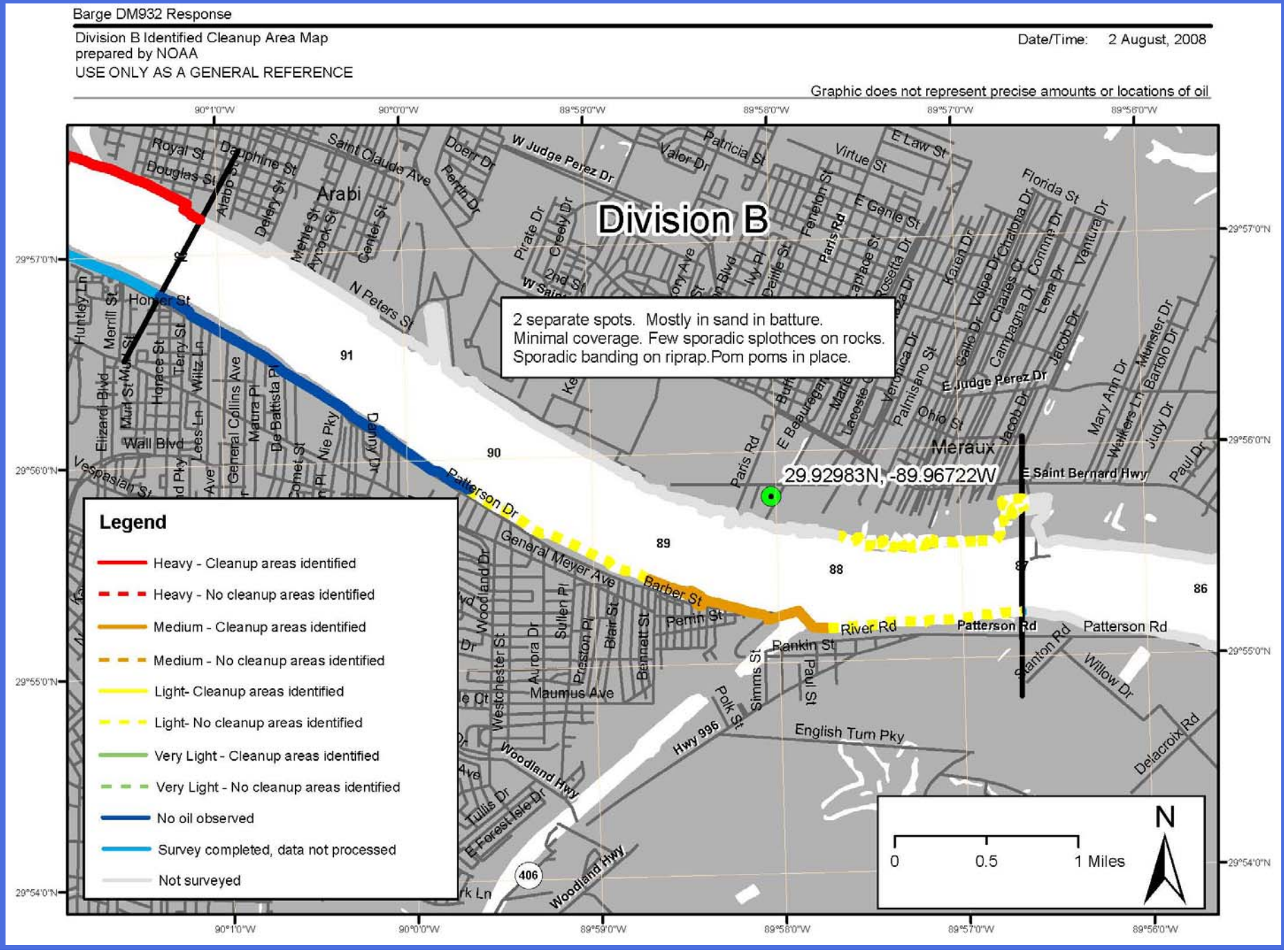
Division: B

	Oil Degree	Location	Length	Width	Distribution	Thickness	Character	Platform	Shoreline
1.	Moderate	29.95024, -90.01359	1609x3 m		40%	Pooled Oil	Fresh Oil	Boat	Other
	91-L	8/4/2008 *Comment:* Pier with pilings and riprap have thick band of weathered sticky oil. Use pompoms and flush							Zone Name 1
	Stage: 1								*Zone20080805100200106 4*
2.	Heavy	29.95024, -90.01359	1609x10 m		55%	Cover	Fresh Oil	Boat	Batture: Scrub/Shrub
	91-L	8/4/2008 *Comment:* oiled veg ~3ft band of oil on leaves and trunks Oiled sediment use shovels and cut or bag-ass veg.							Zone Name 2
	Stage: 1								*Zone20080805100404999 4*
3.	Light	29.93714, -89.99091	50x2 m		40%	Coat	Fresh Oil	Boat	Batture: Scrub/Shrub
	90-L	8/4/2008 *Comment:* cut oiled veg band of oil on veg							Zone Name 2
	Stage: 1								*Zone20080805095752824 6*
4.	Very Light	29.93933, -89.99428	100x1 m		10%	Coat	Surface Oil Residue	Boat	Batture: Scrub/Shrub
	90-L	8/7/2008 *Comment:* steam walls and ripraps, trim veg							Zone Name P10
	Highly Sensitive								
	Stage: 1								*Zone20080807214102886*
5.	Moderate	29.9341, -89.97919	150x3 m		35%	Cover	Fresh Oil	Boat	Batture: Scrub/Shrub
	89-L	8/4/2008 *Comment:* oil on veg. cut veg and shovel oil off mud/sand							Zone Name 2
	Stage: 1								*Zone20080805094734949 5*
6.	Light	29.93537, -89.98767	40x2 m		30%	Coat	Fresh Oil	Boat	Rip-Rap/Concrete Revetment
	89-L	8/4/2008 *Comment:* Oil on riprap before and after barges pompoms, shovels and flushing							Zone Name 1
	Stage: 1								*Zone20080805094508790 5*
7.	Moderate	29.92517, -89.94958	300x20 m		10%	Pooled Oil	Fresh Oil	Boat	Batture: Scrub/Shrub
	87-L	8/4/2008 *Comment:* Oil pooled on sediments and vegetation. Tar patties with veg. debris. Shovel to remove. Cut some vegetation Sample collected (B87L-003)							Zone Name 3
	Stage: 1								*Zone20080805085401141*

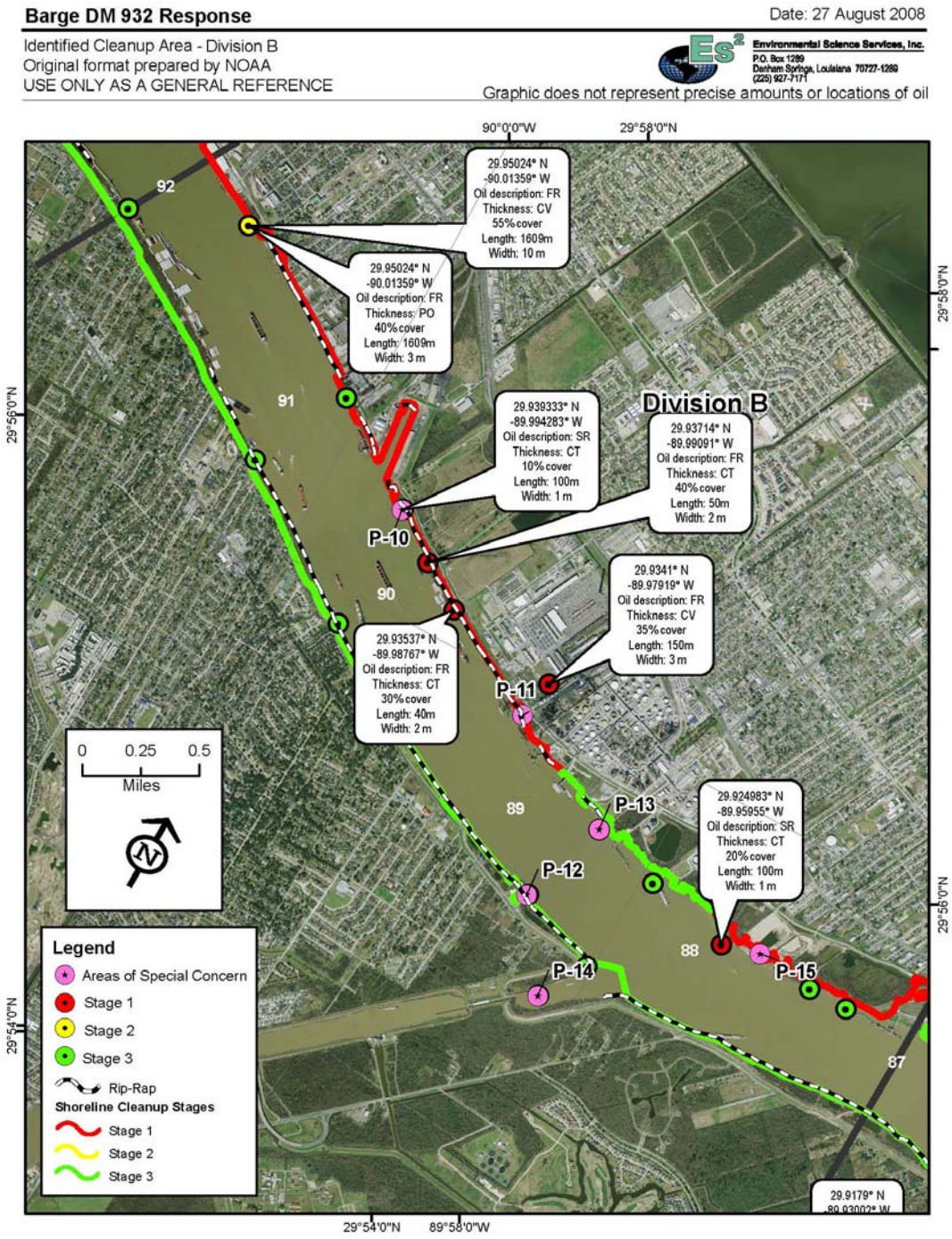
Example Segment Status Summary Map



Example of initial maps prepared by NOAA



Example "Dot Map"



Cleanup Endpoint Criteria

- Development and Unified Command Approval of Cleanup Endpoint Criteria (CEC) coordinated by NOAA SSC.
- Dissemination of CEC to field
  - Laminated pages distributed to field
  - Revisions
- Calibration and Training Sessions with Field Supervisors
- Evolution of EU Leadership Meetings.
  - Ops Section participation in these meetings
  - Role within ICS
  - Shoreline cleanup calibrations Issues
- Evolution of "Help Teams" to deal with "calibration" issues
- Transition to Sign Off Teams.
  - Sign off team members
    - USCG/NOAA, LDEQ, RP Consultant
  - Role / relation of USCG field monitors in each Division to sign off teams

Laminated Guidance Document Provided to Field Supervisors

Addendum 1
August 7, 2008

Cleanup Method Guidance

Overall Cleanup Endpoints

- No mobile heavy oil or heavy oil that can be remobilized
- No heavily oiled debris
- No appreciable contact risk to wildlife (if it comes off on your hands then it's a risk)
- No activity that will cause more environmental harm than leaving the oil in place
- No sheens greater than "nuisance" or very light sheens
- No vegetation cutting unless specifically called out in the method guidance below

Highly Sensitive Area Cleanup Endpoints

- No visible oil or oil stains in locations that the public can see
- Visible oil with little or no accumulations on wood pilings

If the area does not meet the specified Cleanup Endpoints, than the appropriate cleanup method(s) from the following listing should be applied:

Vegetation having oil which will come off on your hand if rubbed – *Does Not Meet Overall Cleanup Endpoints*		
	Oiled willow branches (see photo)	Cut - *Photo 2*
	Oiled adventitious willow roots - the "shaggy beard"	Cut / Remove - *Photo 1*
	Other oiled vegetation will only be cut if given site specific approval from LADEQ.	Case by case consideration
Manmade and natural debris having oil which will come off on your hand if rubbed – *Does Not Meet Overall Cleanup Endpoints*		
	All oiled debris that can be placed in bags.	Remove - *Photo 3*
	Oiled debris that is too large to be bagged.	Wipe with sorbent pads *or rags*
	Oiled debris already placed in piles	Remove
Riprap having oil which will come off on your hand if rubbed – *Does Not Meet Overall Cleanup Endpoints*		
	Oiled surfaces	Wipe with sorbent pads
	Oil in cracks /crevices	Wipe thoroughly with sorbent pads and/or pom-poms **No rocks should be moved**
Surface oil layer – batture - *Does Not Meet Overall Cleanup Endpoints*		
	Batture surface sediments with thin layer of weathered oil on top	Use flat side of garden rake to scrape the weathered oil. Rake into piles, bag, remove. Minimize removal of underlying sediment. **Remove any surface oil first.** - *Photo 4*
Riprap in Highly Sensitive Areas with visible oil/staining - *Does Not Meet Highly Sensitive Area Cleanup Endpoints*		
	Surfaces/cracks/crevices	Steam clean (hotsee) starting with areas farthest from shore (bank to water)
Pilings in Highly Sensitive Areas with visible oil/staining – *Does Not Meet Highly Sensitive Area Cleanup Endpoints*		
	Outer rows	Clean visible faces
	Inner rows	No action necessary
	Steel / concrete	Steam clean (hotsee)
	Wood / creosote	Wipe with sorbent pads

Addendum 1
August 7, 2008

Photo Examples

#1
When these thin shaggy willow roots are a contact risk (oil will come off on your hands) they should be cut.

#2
When willow boughs/branches have been oiled they should be cut.

#3
Most of the smaller material in the middle of this photo can be bagged. Items that can't be easily broken and bagged will be wiped and left in place.

#4
When there is a surface oil layer in the batture use the back side of a garden rake to remove it. Remove minimal underlying sediment.

Recovery/Cleanup Techniques

- On water skimming
- Manual recovery using “snare” / “pom-poms”
- Manual recovery with hand tools
- Some vegetation cutting
- Some rock “scraping”
- Some use of sphag sorbant
- Some high pressure/hot water washing of rocks
- Low pressure flushing of rocks was tested but not effective due to oil characteristics and proximity to water.

Examples of various recovery and cleanup techniques

Examples of various recovery and cleanup techniques

Examples of various recovery and cleanup techniques

Examples of various recovery and cleanup techniques

Sign Off Process

- Organizational Sign off levels
  - Segment: UC reps, field inspection
  - Sensitive Site: UC reps + Parish rep, field inspection
  - Division: Sr. UC reps, at Command Post
- Process & Organization
  - Field Monitors, initial request
  - Pre sign off inspection if necessary
  - Schedule sign off team inspection
- Sign Off Categories
  - Stage 1 – Active
  - Stage 2 – "Passive"
  - Stage 3 - Natural Recovery
- Progress Charts

DM 932 INCIDENT: DIVISION/SEGMENT INSPECTION FORM

1. Site Name	Date (mm/dd/yy)
Division B Segment/Zone 91-L	10/24/08

2. Inspection Team

Name (Print)	Organization	Signature
John Calvin	LaDEQ	John Calvin
Bryan Klostermeyer	USCG	Bryan Klostermeyer FOSCR
Todd Farrar	ES² (RP REP)	Todd Farrar

3. Segment/Zone Description

91 Left descending Bank

4. Shoreline/Habitat Types Select Primary (P) and Secondary (S) Types Present

	Marsh		Wooded Batture
	Tidal Flats/Mud Flats	S	Riprap
	Sand, Shell or Mixed Sand & Shell		Gravel/ small stones
	Open Batture (little or no woody vegetation)	P	Other: Dock Structures

5. Cleanup Endpoints

☐ Yes ☒ No	Floating or potentially heavy oil present that is substantial secondary pollution threat? If yes, describe:	
☐ Yes ☒ No	Oily debris present that is a pollution risk and should be removed? If yes, describe:	
☐ Yes ☒ No	Oil coat or stain present that is a substantial risk to the public or wildlife? If yes, describe:	
☐ Yes ☒ No	Observed sheening at site that is a source of secondary pollution and a risk to wildlife? If yes describe:	

Other oiling conditions or observations:

Light Stairing - No further cleanup required

6. Recommendations

☐ Yes ☒ No	Recommend additional active cleanup (stage 1). Comments:
☐ Yes ☒ No	Recommend continued maintenance of passive sorben recovery for sheens (Stage 2). Comments:
☒ Yes ☐ No	Site meets the cleanup endpoints (Stage 3). Recommend natural recovery for residual pollution.

DM 932 INCIDENT: DIVISION INSPECTION FORM

1. Site Name		Date (dd/mm/yy)
Division B	Segment/Zone 87-91 L & R	12/22/2008

2. Inspection Team

Name (Print)	Organization	Signature
Jeff Dauzat	LDEQ	
~~Kim Keel~~ Jason M Spence	USCG	MST1 FOSCR
Robert Simmons	Es² (RP Rep)	

3. Segment/Zone Description

Divisional Sign-off: Segments 87-91 L & R
Divisional Sign-off: Sensitive Sites P10,P12-15

4. Shoreline/Habitat Types Select Primary (P) and Secondary (S) Types Present

See individual sign-off sheets for Shoreline/Habitat Types

5. Cleanup Endpoints

☐	Yes	■ No	Floating or potentially heavy oil present that is substantial secondary pollution threat? If yes, describe:
☐	Yes	■ No	Oily debris present that is a pollution risk and should be removed? If yes, describe:
☐	Yes	■ No	Oil coat or stain present that is a substantial risk to the public or wildlife? If yes, describe:
☐	Yes	■ No	Observed sheening at site that is a source of secondary pollution and a risk to wildlife? If yes describe:

Other oiling conditions or observations:

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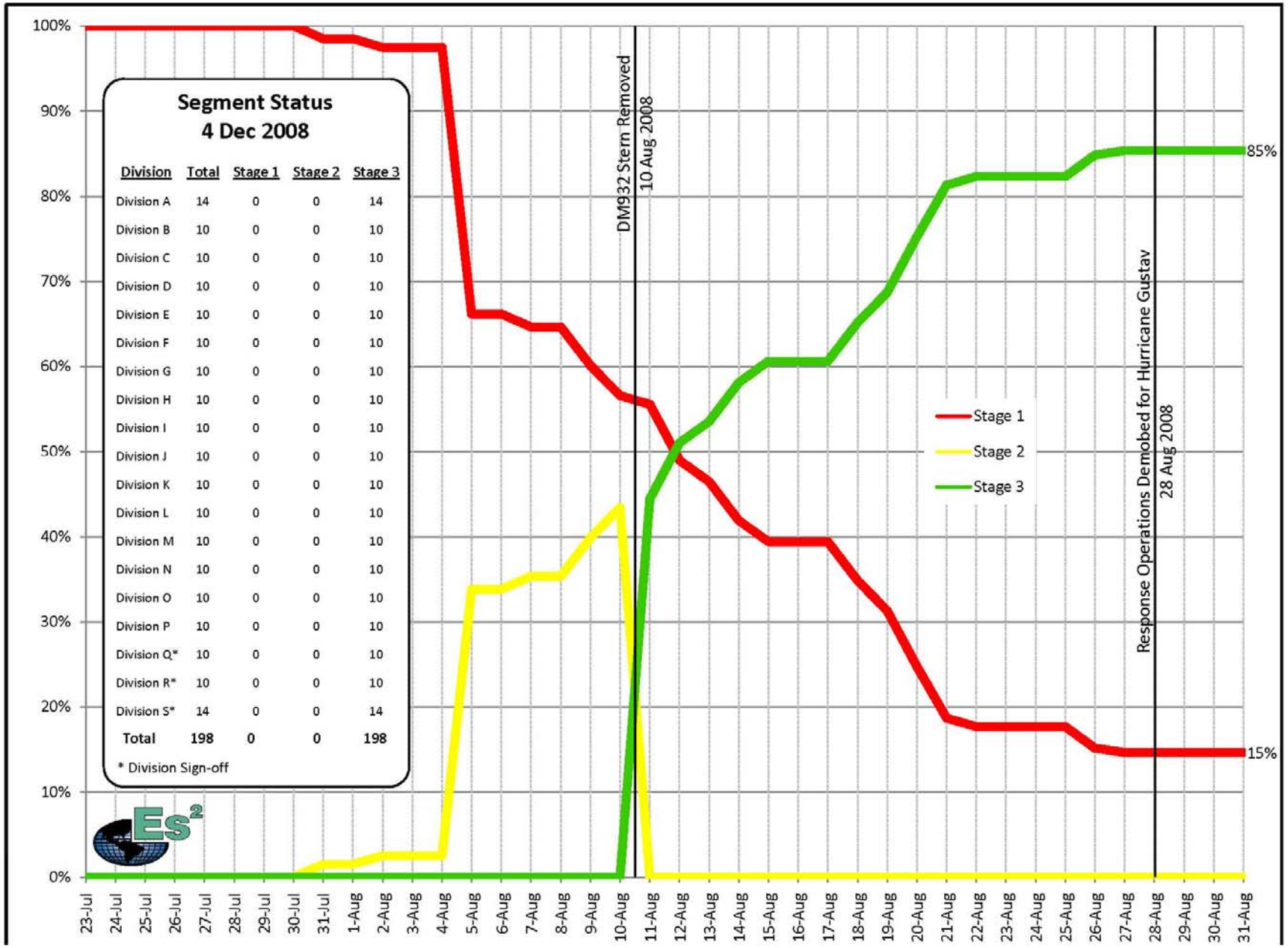
Sign off Progress Chart



Segment Status
4 Dec 2008

Division	Total	Stage 1	Stage 2	Stage 3
Division A	14	0	0	14
Division B	10	0	0	10
Division C	10	0	0	10
Division D	10	0	0	10
Division E	10	0	0	10
Division F	10	0	0	10
Division G	10	0	0	10
Division H	10	0	0	10
Division I	10	0	0	10
Division J	10	0	0	10
Division K	10	0	0	10
Division L	10	0	0	10
Division M	10	0	0	10
Division N	10	0	0	10
Division O	10	0	0	10
Division P	10	0	0	10
Division Q*	10	0	0	10
Division R*	10	0	0	10
Division S*	14	0	0	14
Total	**198**	**0**	**0**	**198**

* Division Sign-off

Sensitive Site List / Process

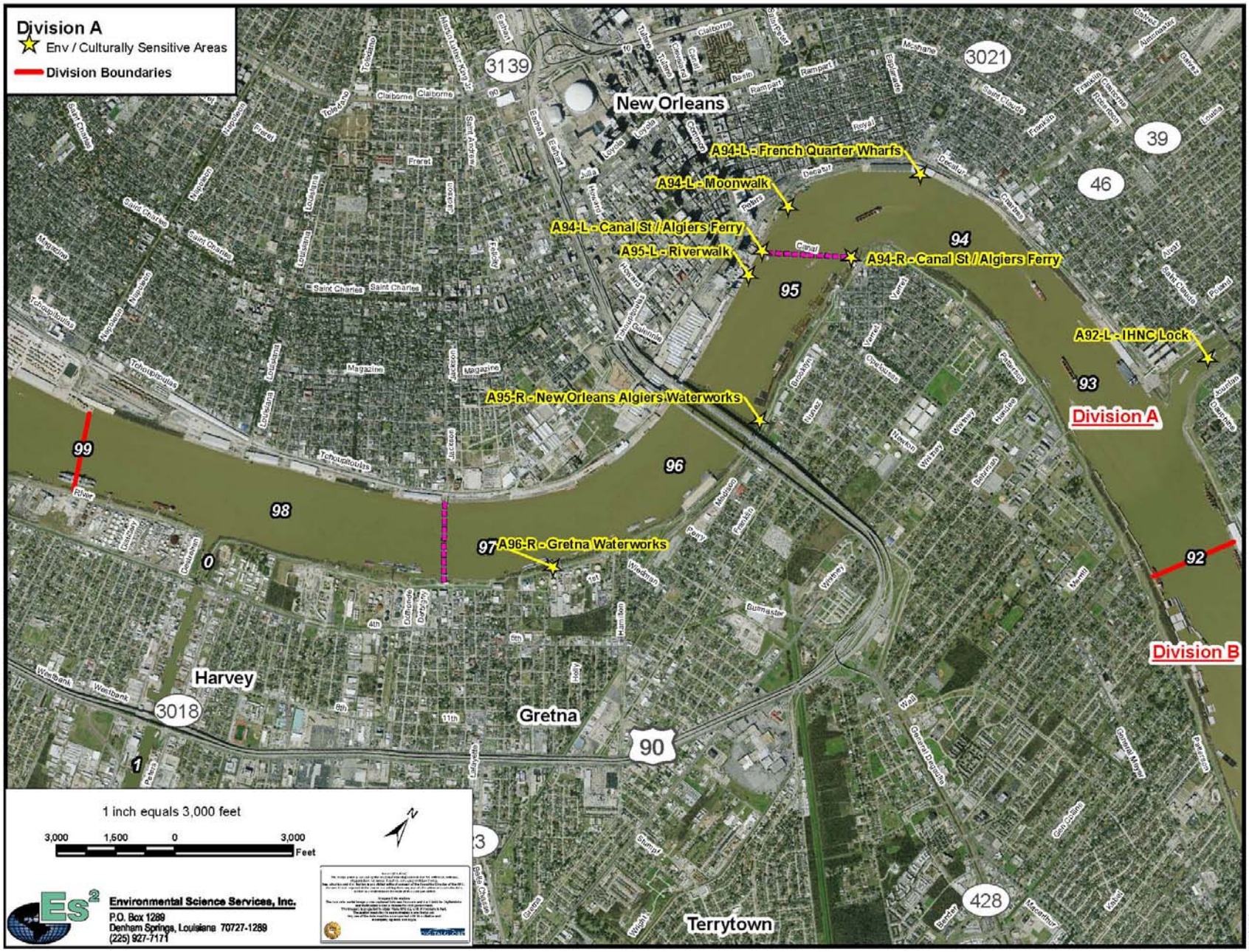
- Input from respective Parishes; not all sites oiled; part of liaison process.
- Coordinated by Sr. LDEQ representative.
- Discrete areas within segments
- Separate sensitive site list; merged into SCAT database.
- Included things like water intakes, freshwater diversions/siphons, locks, ferry landings, high public use areas, cultural/archaeological……..
- Would require local Parish representative for sign off.

Example of Sensitive Site List

High Sensitivity Sites

	Name	Lat	Long	Mile	Seg.	Zone	Parish	Bank
1	Gretna Waterworks	29.9234	-90.0609	96.7	A96-R	P-01	Jeff	RDB
2	New Orleans Algiers Waterworks	29.9402	-89.0543	96.5	A95-R	P-02	Orl	RDB
3	Riverwalk *	29.9480	-90.0619	95.1	A95-L	P-03	Orl	LDB
4	Canal St / Algiers Ferry *	29.9499	-90.0622	94.9	A94-L	P-04	Orl	LDB
5	Canal St / Algiers Ferry *	29.9532	-90.0561	94.7	A94-R	P-05	Orl	RDB
6	Moonwalk *	29.9535	-90.0626	94.6	A94-L	P-06	Orl	LDB
7	Governor Nicolls Wharf *	29.9595	-90.0577	94.3	A94-L	P-41	Orl	LDB
8	French Quarter Wharfs	29.9607	-90.0555	94.2	A94-L	P-07	Orl	LDB
9	IHNC Lock	29.9621	-90.0281	92.7	A92-L	P-08	Orl	LDB
10	Chalmette Battlefield	29.9393	-89.9943	90.3	B90-L	P-10	St. Ber	LDB
11	Lower Algiers / Chalmette Ferry *	29.9277	-89.9711	88.7	B88-L	P-13	St. Ber	LDB
12	Lower Algiers / Chalmette Ferry *	29.9220	-89.9734	88.7	B88-R	P-12	Orl	RDB
13	GIWW Lock, Algiers Lock *	29.9168	-89.9693	88.2	B88-R	P-14	Orl	RDB
14	St. Bernard Parish Waterworks	29.9257	-89.9568	87.7	B87-L	P-15	St. Ber	LDB
15	Violet Canal Siphon	29.8983	-89.9030	83.9	C83-L	P-16	St. Ber	LDB
16	Caernarvon Diversion	29.8627	-89.9119	81.4	D81-L	P-18	Plaq	LDB
17	Dalcour Waterworks	29.8623	-89.9227	80.9	D80-L	P-19	Plaq	LDB
18	Belle Chasse Ferry *	29.8554	-89.9809	76.0	E75-R	P-20	Plaq	RDB
19	Belle Chasse Ferry *	29.8481	-89.9779	75.6	E75-L	P-22	Plaq	LDB
20	Belle Chasse Water District *	29.8523	-89.9833	75.6	E75-R	P-21	Plaq	RDB
21	White's Ditch Siphon	29.7117	-89.9787	64.3	G64-L	P-37	Plaq	LDB
22	Naomi Siphon *	29.7011	-89.9839	63.8	G63-R	P-38	Plaq	RDB
23	Poverty Point *	29.6520	-89.9529	59.8	H59-L	P-25	Plaq	LDB
24	High Interest Riprap *	29.5984	-89.8457	52.2	I52-R	P-26	Plaq	RDB
25	Woodland Plantation *	29.5866	-89.8262	50.7	J50-R	P-27	Plaq	RDB
26	Point a la Hache Water District *	29.5808	-89.8016	49.3	J49-L	P-28	Plaq	LDB
27	Port Sulphur/a La Hache Water Dist. *	29.5730	-89.8026	49.0	J49-R	P-29	Plaq	RDB
28	West Point a la Hache Siphon	29.5723	-89.8011	48.9	J48-R	P-39	Plaq	RDB
29	Point a la Hache Ferry *	29.5755	-89.7939	48.7	J48-L	P-30	Plaq	LDB
30	Point a la Hache Ferry *	29.5701	-89.7972	48.6	J48-R	P-31	Plaq	RDB
31	Bohemia Spillway (no car access)	29.4865	-89.6883	39.7	L39-L	P-32	Plaq	LDB
32	Bayou Lamoque * (no car access)	29.4371	-89.5960	33.0	M32-L	P-40	Plaq	LDB
33	Riverside Marina	29.3599	-89.5343	25.0	O25-R	P-33	Plaq	RDB
34	Fort Saint Philip + (no car access)	29.3621	-89.4644	20.1	P20-L	P-35	Plaq	LDB
35	Fort Jackson +	29.3578	-89.4564	20.1	P19-R	P-34	Plaq	RDB
36	Boothville-Venice Waterworks +	29.3558	-89.4376	18.6	P18-R	P-36	Plaq	RDB

Example Sensitive Site Map

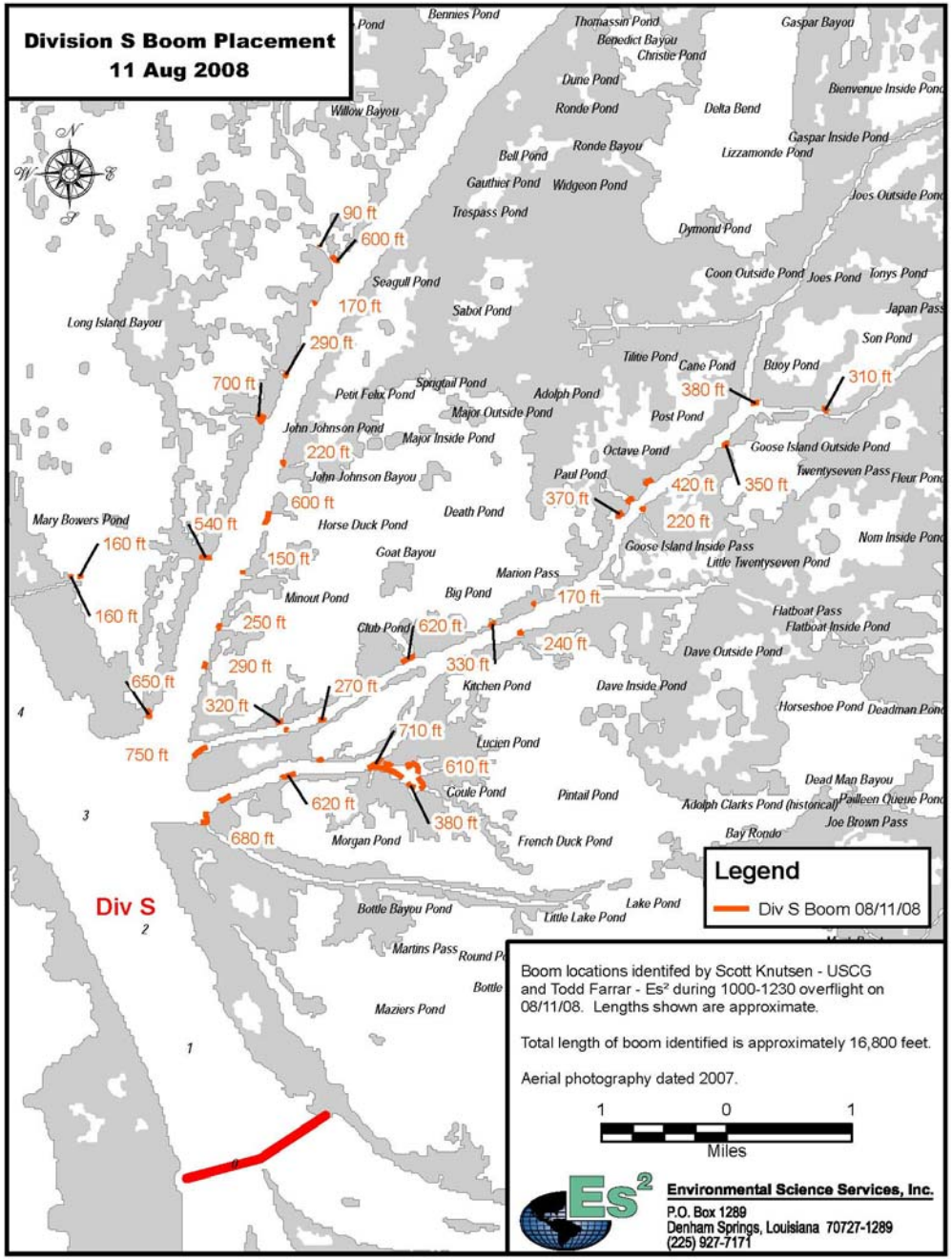


Wildlife Impact and Response

(see 2009 FSS Presentation by Buddy Goatcher & Anthony Velasco-USFWS during oiled wildlife session)

- Recon & Captures handled by USFWS personnel.
- CGA Wildlife cleanup trailer deployed and set up at facility in Venice.
- Hazing techniques deployed.
- ~15,000’ of boom deployed at Delta Refuge as a precaution.


UTC 2008:08:11 16:16:02
W:089 13'31.56"
N:029 11'42.68"


Division S Boom Placement
11 Aug 2008
Bennies Pond
Thomassin Pond
Gaspar Bayou
Benedict Bayou
Christie Pond
Dune Pond
Bienvenue Inside Pond
Willow Bayou
Ronde Pond
Delta Bend
Gaspar Inside Pond
Ronde Bayou
Bell Pond
Lizzamonde Pond
Gauthier Pond
Widgeon Pond
Joes Outside Pond
Trespass Pond
Dymond Pond
Coon Outside Pond
Joes Pond
Tonys Pond
Seagull Pond
Sabot Pond
Japan Pass
Long Island Bayou
Son Pond
Tillie Pond
Cane Pond
Buoy Pond
Spigtail Pond
Petit Felix Pond
Adolph Pond
Major Outside Pond
Post Pond
John Johnson Pond
Major Inside Pond
Octave Pond
Goose Island Outside Pond
John Johnson Bayou
Paul Pond
Twentyseven Pass
Fleur Pond
Death Pond
Mary Bowers Pond
Horse Duck Pond
Goose Island Inside Pass
Nom Inside Pond
Goat Bayou
Little Twentyseven Pond
Marion Pass
Minout Pond
Big Pond
Flatboat Pass
Club Pond
Flatboat Inside Pond
Dave Outside Pond
Kitchen Pond
Dave Inside Pond
Horseshoe Pond
Deadman Pond
Lucien Pond
Dead Man Bayou
Coule Pond
Pintail Pond
Adolph Clarks Pond (historical)
Pailleen Queue Pond
Joe Brown Pass
Bay Rondo
Morgan Pond
French Duck Pond
Div S
Bottle Bayou Pond
Lake Pond
Little Lake Pond
Martins Pass
Maziers Pond
90 ft
600 ft
170 ft
290 ft
700 ft
380 ft
310 ft
220 ft
420 ft
350 ft
370 ft
600 ft
540 ft
160 ft
150 ft
160 ft
170 ft
250 ft
620 ft
240 ft
290 ft
330 ft
650 ft
270 ft
320 ft
710 ft
610 ft
750 ft
620 ft
380 ft
680 ft
Legend
Div S Boom 08/11/08
Boom locations identifed by Scott Knutsen - USCG and Todd Farrar - Es² during 1000-1230 overflight on 08/11/08. Lengths shown are approximate.
Total length of boom identified is approximately 16,800 feet.
Aerial photography dated 2007.
1 0 1
Miles
Environmental Science Services, Inc.
P.O. Box 1289
Denham Springs, Louisiana 70727-1289
(225) 927-7171

Wildlife Impacts

Report prepared by USFWS as of 8/20/08

Species	captured (live)	recovered (dead)	cleaned	died in rehab.	released
great egret	4		4		4
snowy egret	4		2		4
cattle egret	1		1		1
little blue heron	1		1		1
b-c night heron	1		1	1	
white ibis	4		2		4
wood duck	6	6	6	2	3
mottled duck	3	2	3		2
b-b whistling duck	2				2
barn owl	1		1		
laughing gull	2	2	2		
mourning dove	1	2	1		1
rock dove	3		3	2	1
unknown songbird	1		1	1	
American alligator	4		4		4
water snake	2		2		2
red-eared slider turtle	1		1		1
three-toed box turtle	1		1		1
Raccoon	1		1		1
TOTAL	43	12	37	6	32

Hurricane Demobilization

- Rapid demobilization for Hurricane Gustav due to requirements by Plaquemines Parish.
- Unified Command ordered shut down on Aug 27, 2008.
- No remaining free floating oil; but shoreline cleanup not complete.
- Entire operation shut down and secured by Aug 29 in roughly a 2 day period.

Regroup After Hurricane

- Regrouped with much smaller "footprint" and in "Project" mode after storm during first week of September 2008.
- Developed and worked under a Project Management Plan rather than an IAP.
- Reassessment of all remaining un-signed off segments began first week of Sept 2008; Walked "*every foot*".
- Oil character different after storms (Gustav & Ike). Required cleanup method changed.
- Cleanup operations completed per forecast by end of October 2008.