



# Barge MM 46 Response Natchez, MS Lower Mississippi River Mile Marker 363

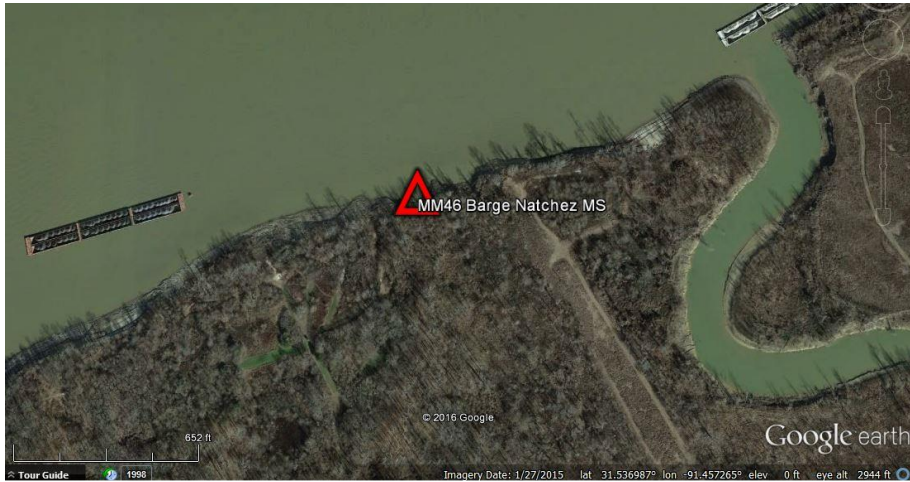


# Barge MM 46 Response, Natchez, MS

<b>RRT Activation:</b>	None
<b>Type of Product &amp; Amount spilled:</b>	Catalytic Cracked Clarified Oil (CCFB) Pends Final Investigation ~ 3,150 gallons
<b>Cause of Spill:</b>	UTV AMY FRANCES struck Natchez Highway 84 Bridge, #1 Port tank of lead port Barge MM 46 damaged
<b>Date of Spill:</b>	21 January 2016
<b>Responsible Party:</b>	Magnolia Marine Transport (MMT)
<b>Agencies Involved:</b>	MS DEQ, LA DEQ, NOAA, USACE, USFWS, MS SHPO, US EPA (R4 & R6)
<b>Key Operational Activities:</b>	Recovery of spilled oil Ongoing SCAT Barge lightering Transit of barge for final repairs
<b>Major Lessons Learned:</b>	River conditions affected ability to locate spilled CCFB; Use of USACE Side Scan Sonar equipment Consultation with SHPO & USFWS
<b>Other:</b>	USCG IMAT and GST assisted

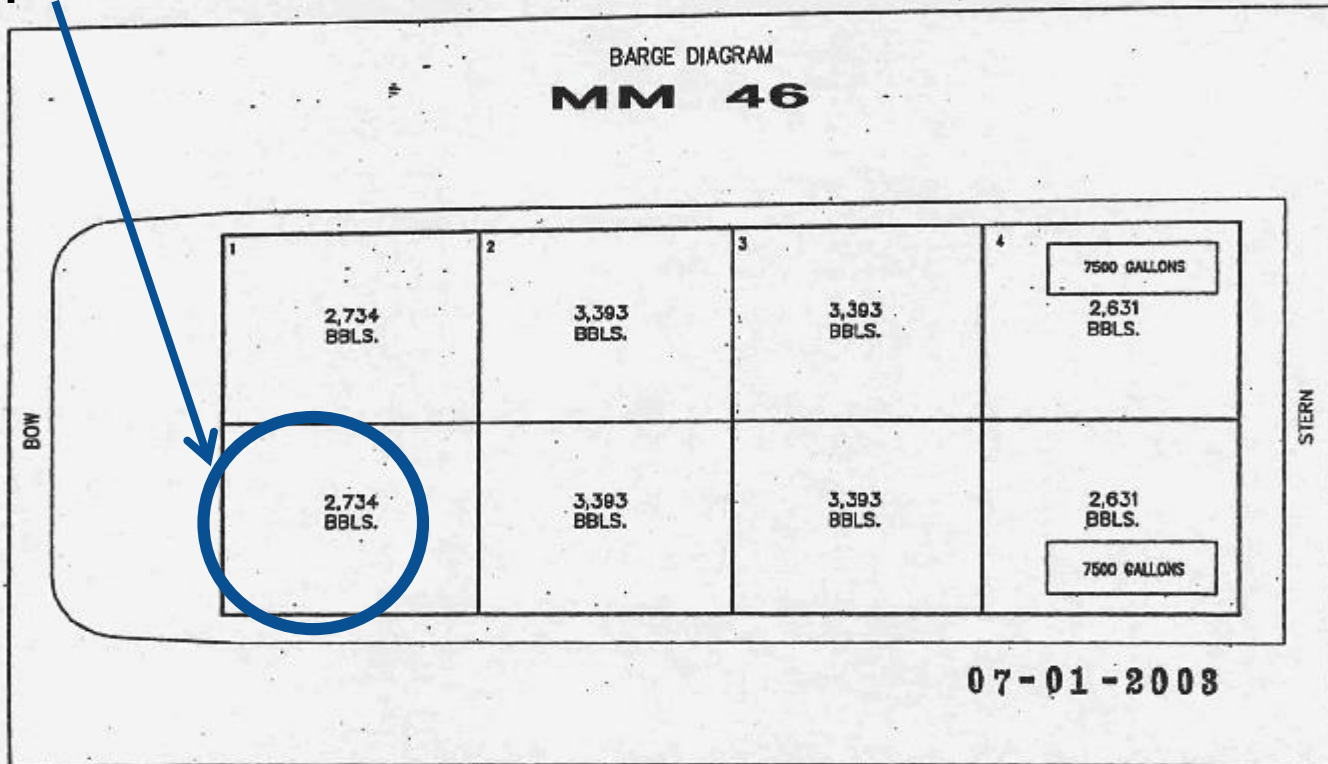
# Incident Location

Natchez HWY 84 Bridge



# Barge MM 46 Diagram

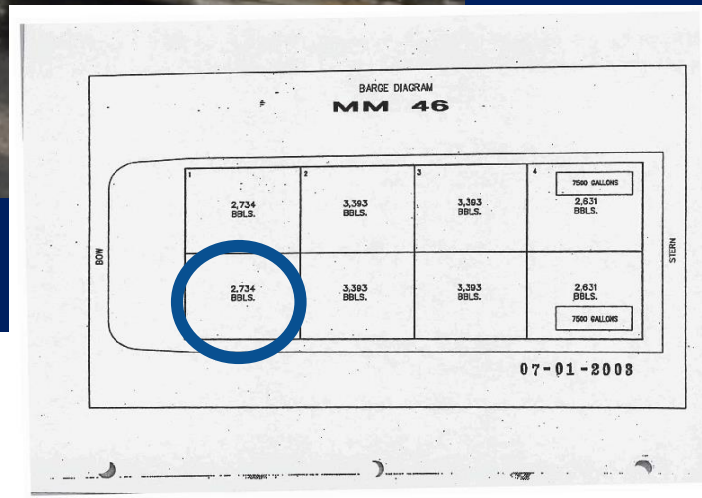
Compromised Tank





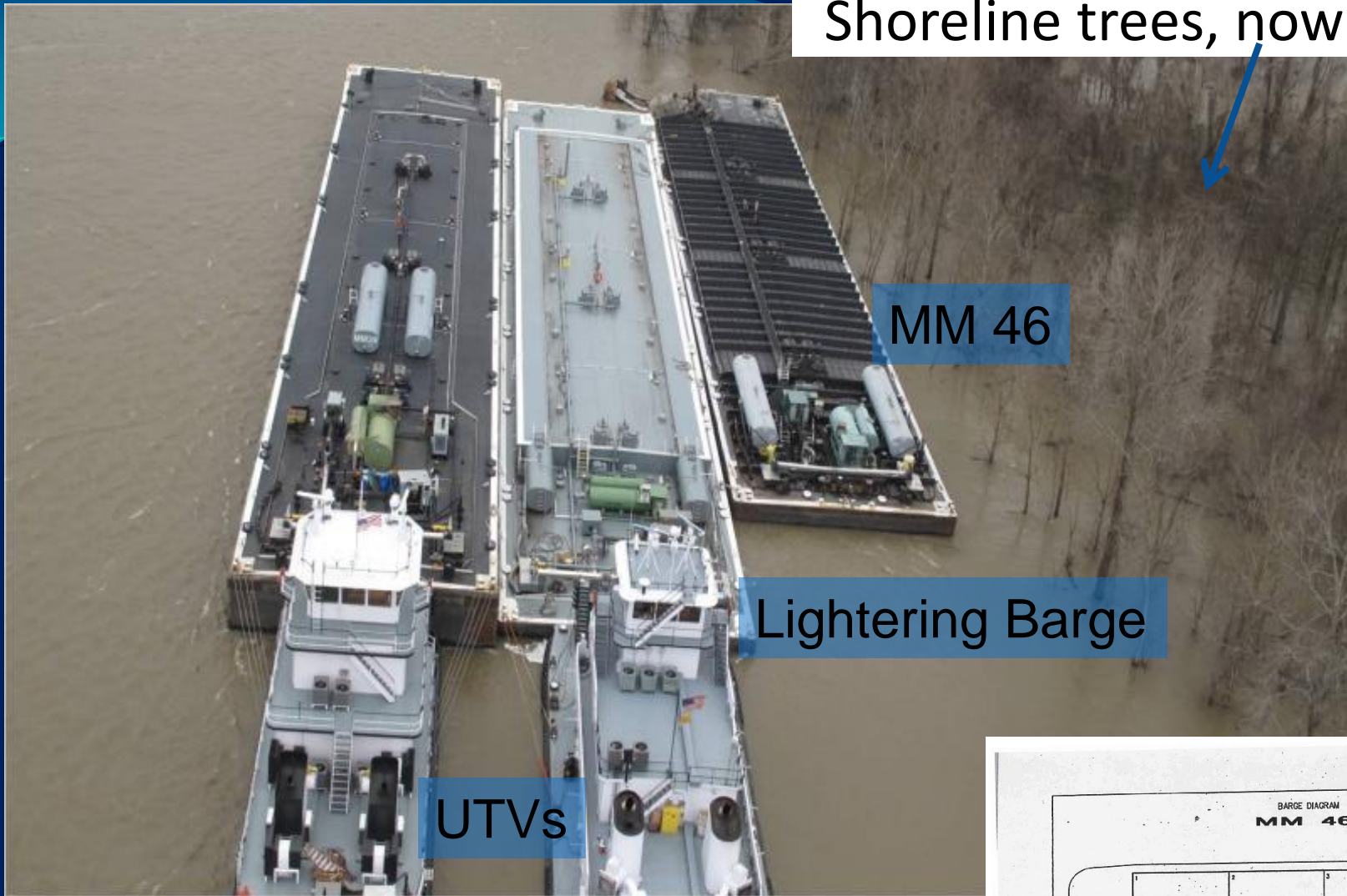


Front of the barge. Rake is collapsed and folded into the forward bulkhead.



View: from starboard bow to port bow

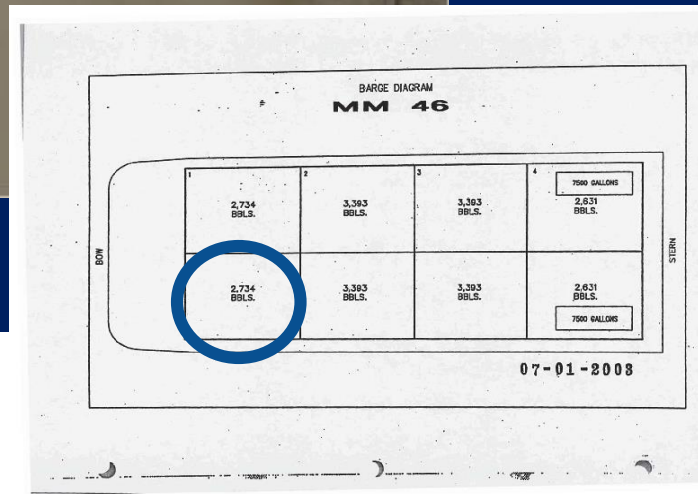
Shoreline trees, now in River



MM 46

Lightering Barge

UTVs



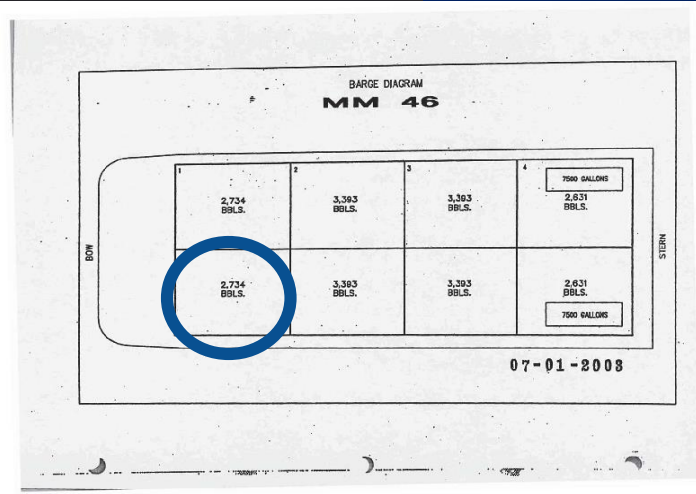
View: Overflight from stern to bow





Lightering Barge

MM 46

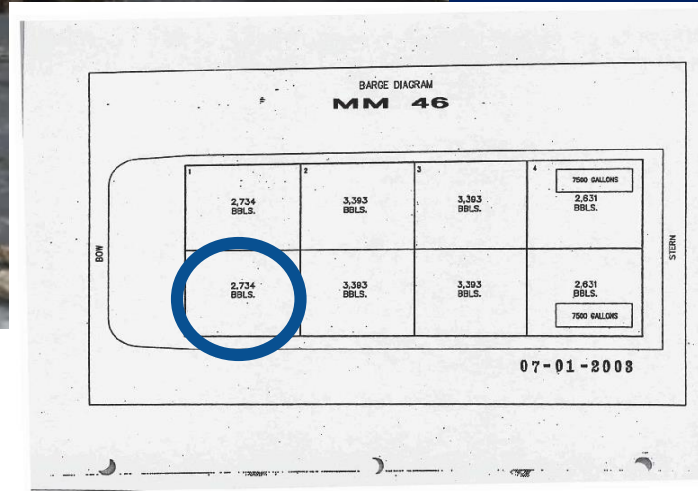


View: from small boat to port bow

# Lightering Barge

UTV

MM 46



View: from starboard bow to port bow



# Operations

<b>Response Resources:</b>	200' Feet Containment Boom
<b>Response Equipment:</b>	05 OSRO Vessels
<b>SCAT Resources:</b>	SCAT Assessments Conducted on 01 Feb, 03 Feb, 10 Feb, & 25 Feb Recovery conducted on 4-5 Feb & 11 Feb & 26 Feb
<b>Future Plans:</b>	Continue to conduct SCAT assessments & oil recovery as river level recedes and more shoreline is exposed; Gain Unified Command concurrence on completion of recovery when appropriate

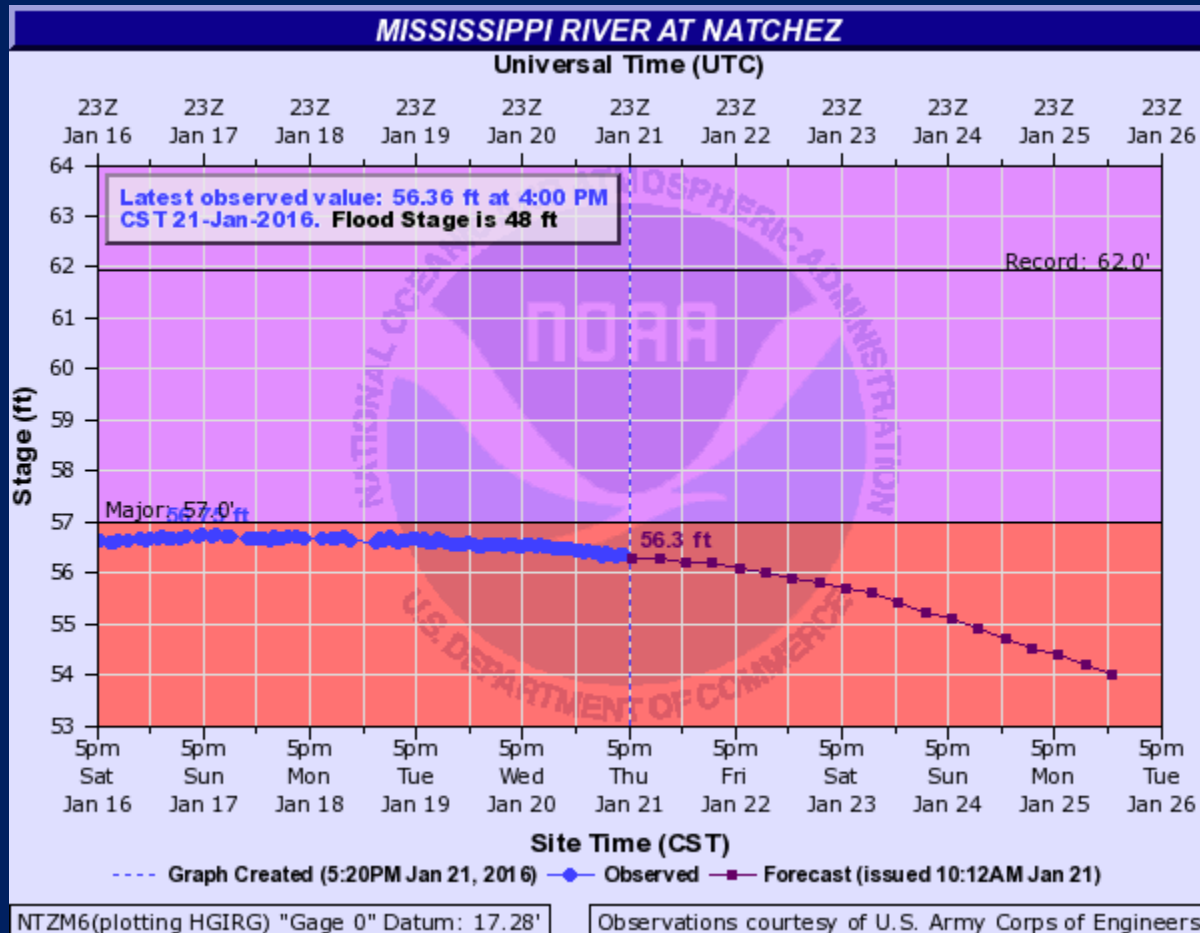
# Lessons Learned:

## River Conditions & Use of USACE Survey Equipment

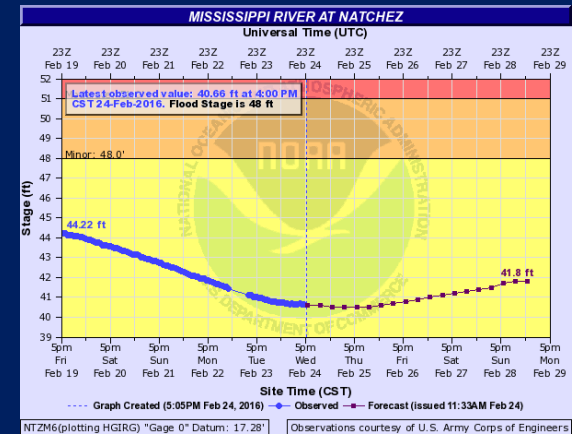
- River conditions affected ability to locate spilled CCFB
  - Different than APEX 3508 slurry oil spill near Paducah, KY
- Use of USACE Side Scan Sonar equipment
- Consultation with SHPO & USFWS

# River Info – 21 Jan 2016

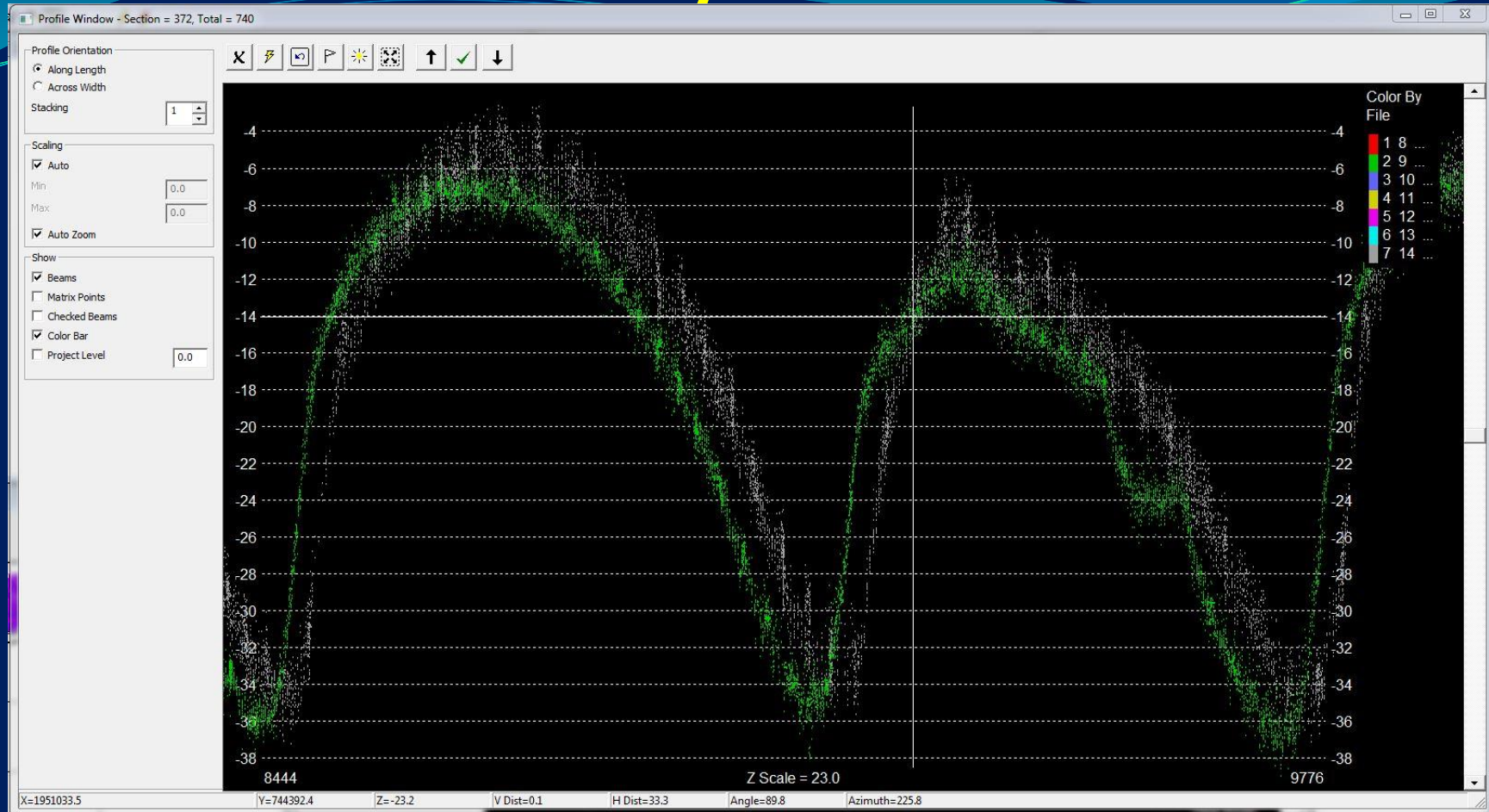
- Discharge near Natchez: 1.77 million cfs
- Based on cross-sectional area of river this represents an AVERAGE velocity of 4.6 knots
- Mid channel currents are likely stronger, on the order of 6 kts



24 Feb  
remains above normal



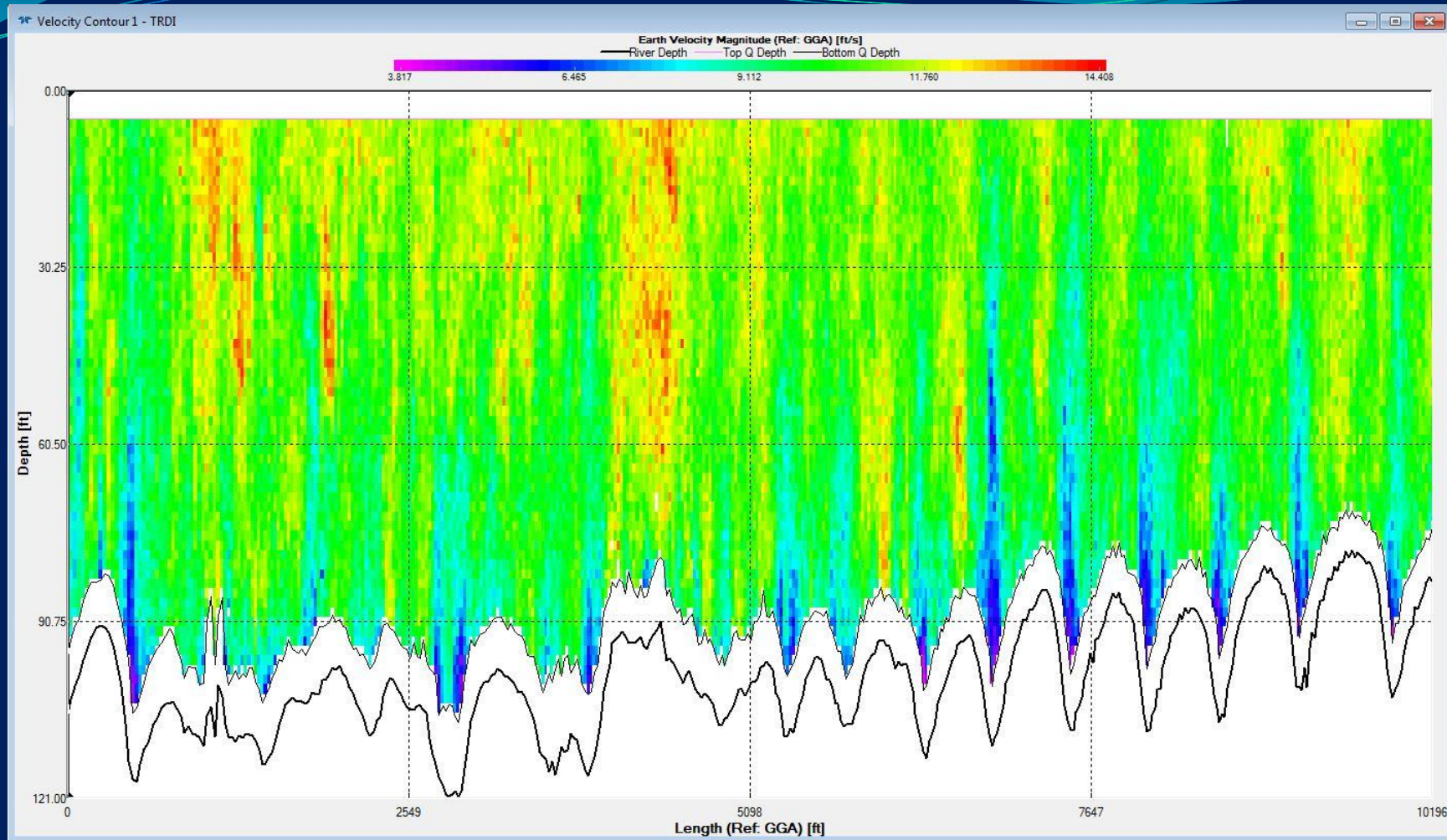
# USACE Survey - River Bottom



The gray line is a longitudinal profile from the multibeam starting near the bridge. The green line started near the bridge 2 hours later. The sand waves are moving from right to left, 30 feet tall and 600 feet long. The downstream face of the sand waves moved about 30 feet in 2 hours.

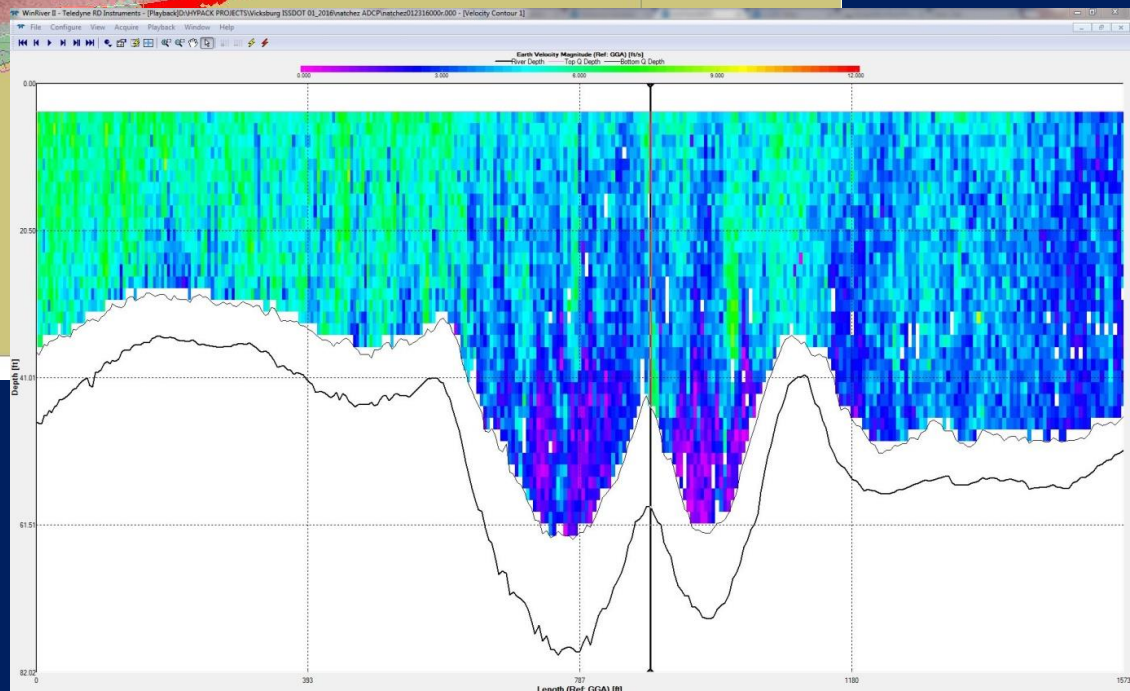
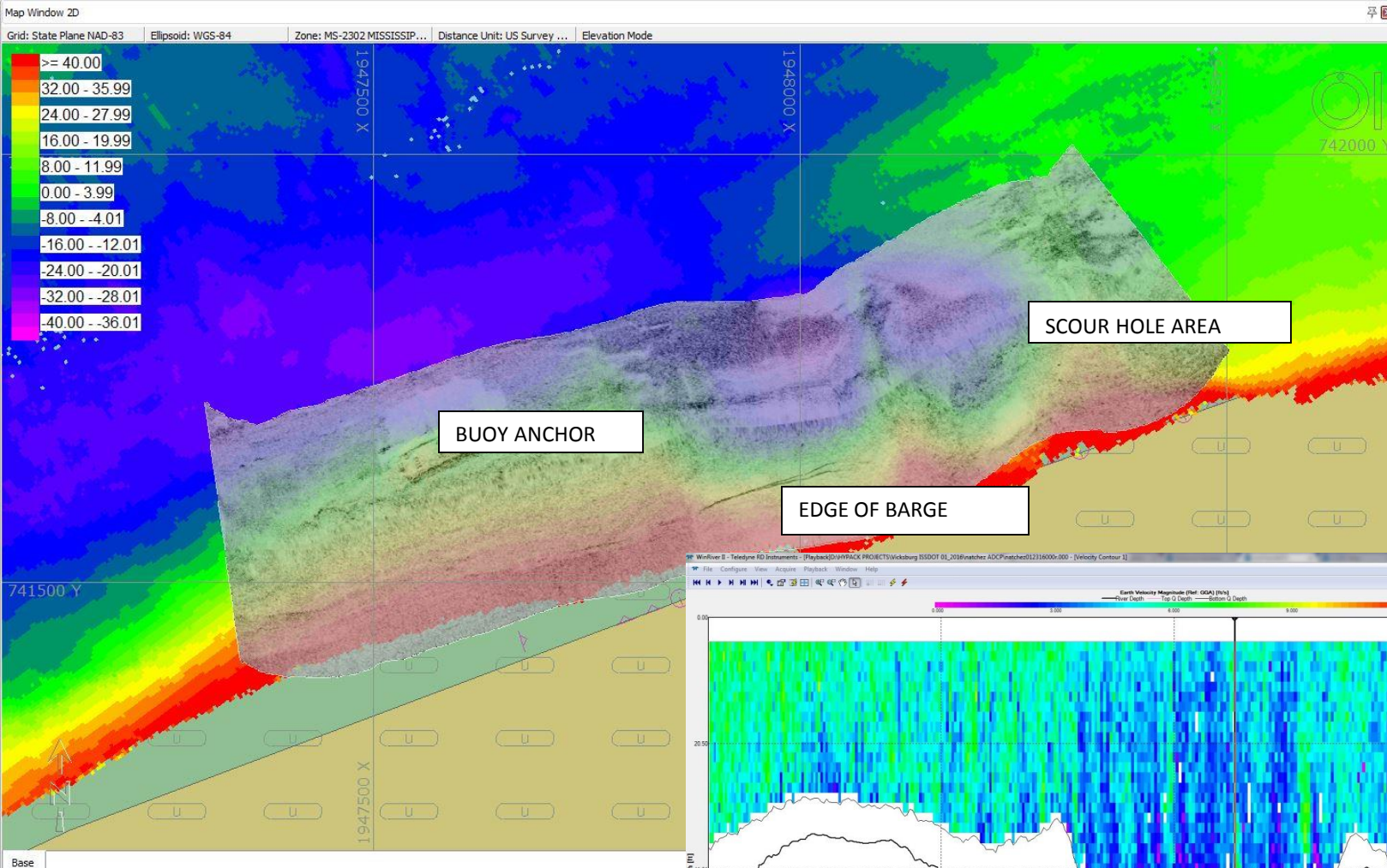


# USACE Survey - River Bottom



Velocity magnitude for 10000 feet of a longitudinal transect. The heavy black line at the bottom of the profile shows the sand waves on the channel bottom.

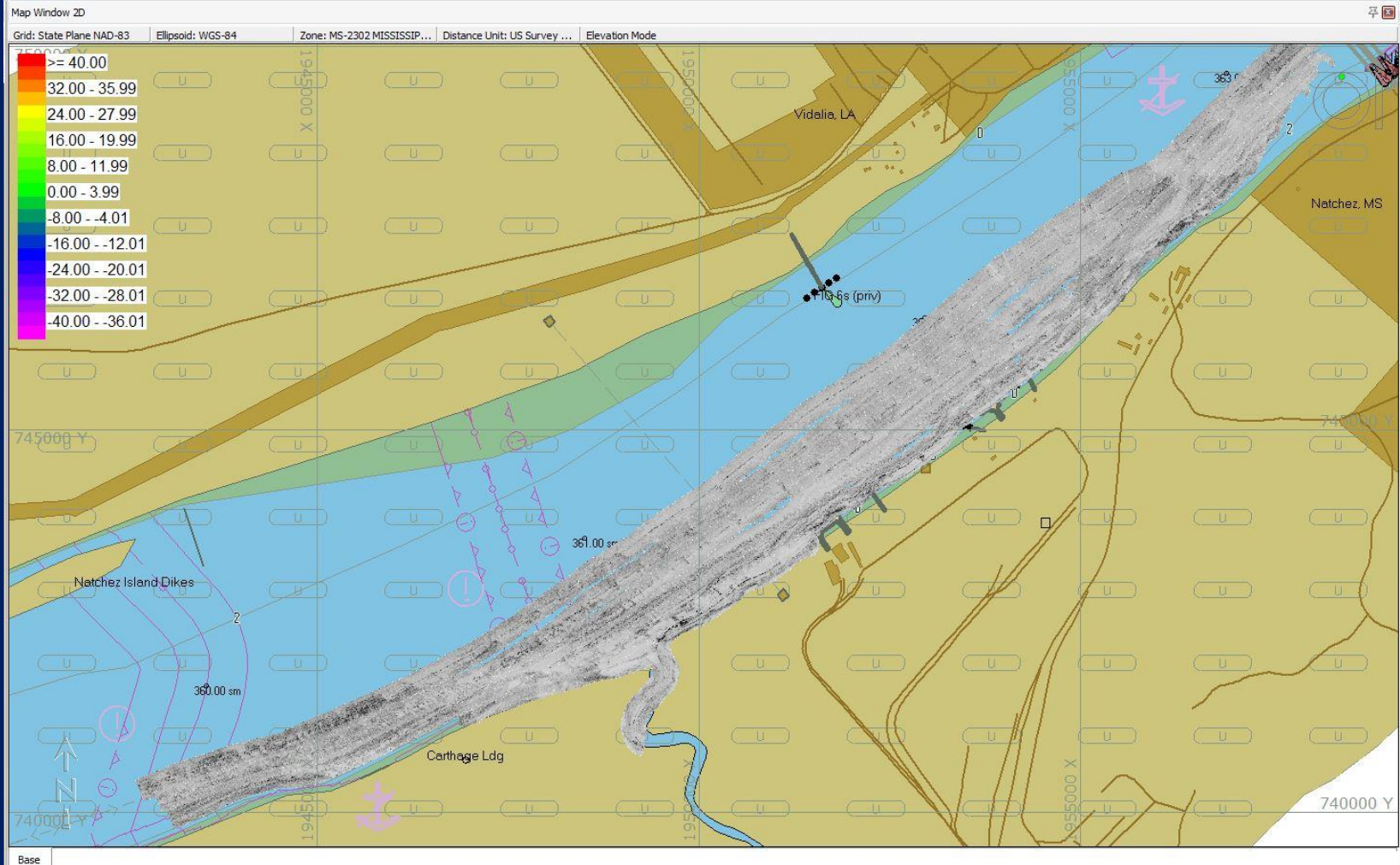
# USACE Survey – Multi-beam Imagery



Area of Low Velocity near the barge in the 2 deep scour holes



# USACE Survey – Side Scan Sonar



No anomalies noted.



# USACE Survey – River Velocities



Longer arrows indicating faster velocity in center channel  
Shorter arrows indicating slower velocity along barge location



# USACE Survey Info

- Coastal Hydraulic Laboratory (CHL) from US Army Engineer Research and Development Center (ERDC)
- 25' workboat:
  - Geoswath 250 kHz interferometric sonar
  - 600 kHz RD Instruments Acoustic Doppler Current Profiler (ADCP)



# USACE Survey Info

- Although side scan sonar did not identify areas with anomalies that could be investigated as sunken oil...
- It was critical in characterizing river conditions to identify areas of potential sunken oil (scour areas and shoreline) to be targeted for further investigation and recovery.
- Was best tool for assessing bottom conditions; Confirmed significant bottom sediment transport and allowed UC to focus efforts on recovering oil from shoreline

# Lessons Learned:

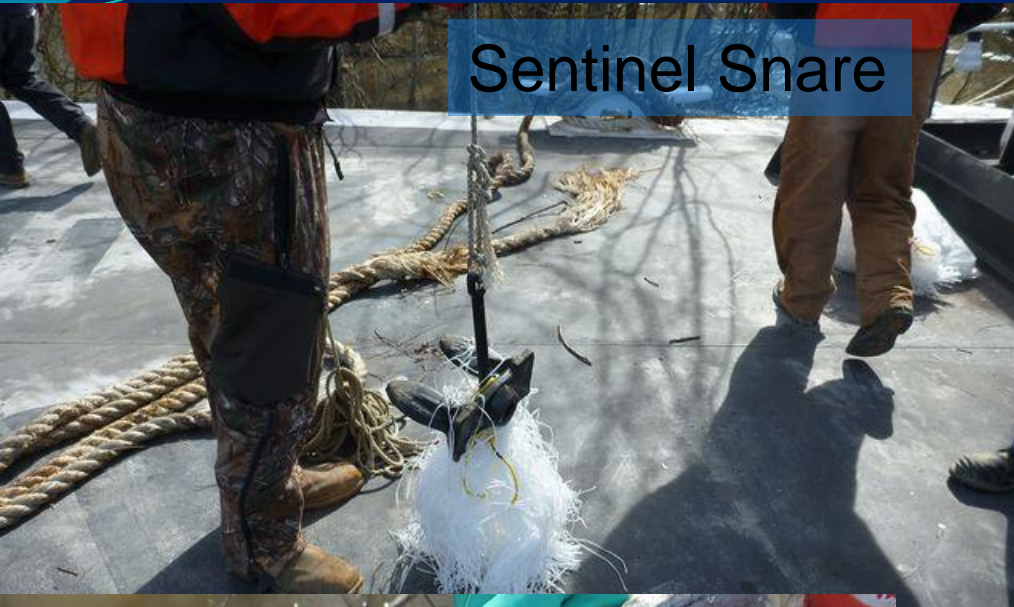
## River Conditions & Submerged Shoreline Oil

- Vessel Submerged Oil Recovery System (VSORS)
  - “Q-Tip”
  - Sentinel Snare
- VSORS mapping



# VSORS

Sentinel Snare



Q-Tip





# VSORS

Jan 24 & Jan 25 VSORS Results



White filled dots were Non Detect, Yellow filled dots were trace, Red filled were the Q-Tip Method



How do we check  
for submerged oil  
after damaged  
barge has  
departed?

What are the risks  
in this area?





# RIVER BOTTOM SUNKEN OIL ASSESSMENT PLAN FOR 25JAN16

**Objective: 25 grab snare samples total, 5 per transect.**

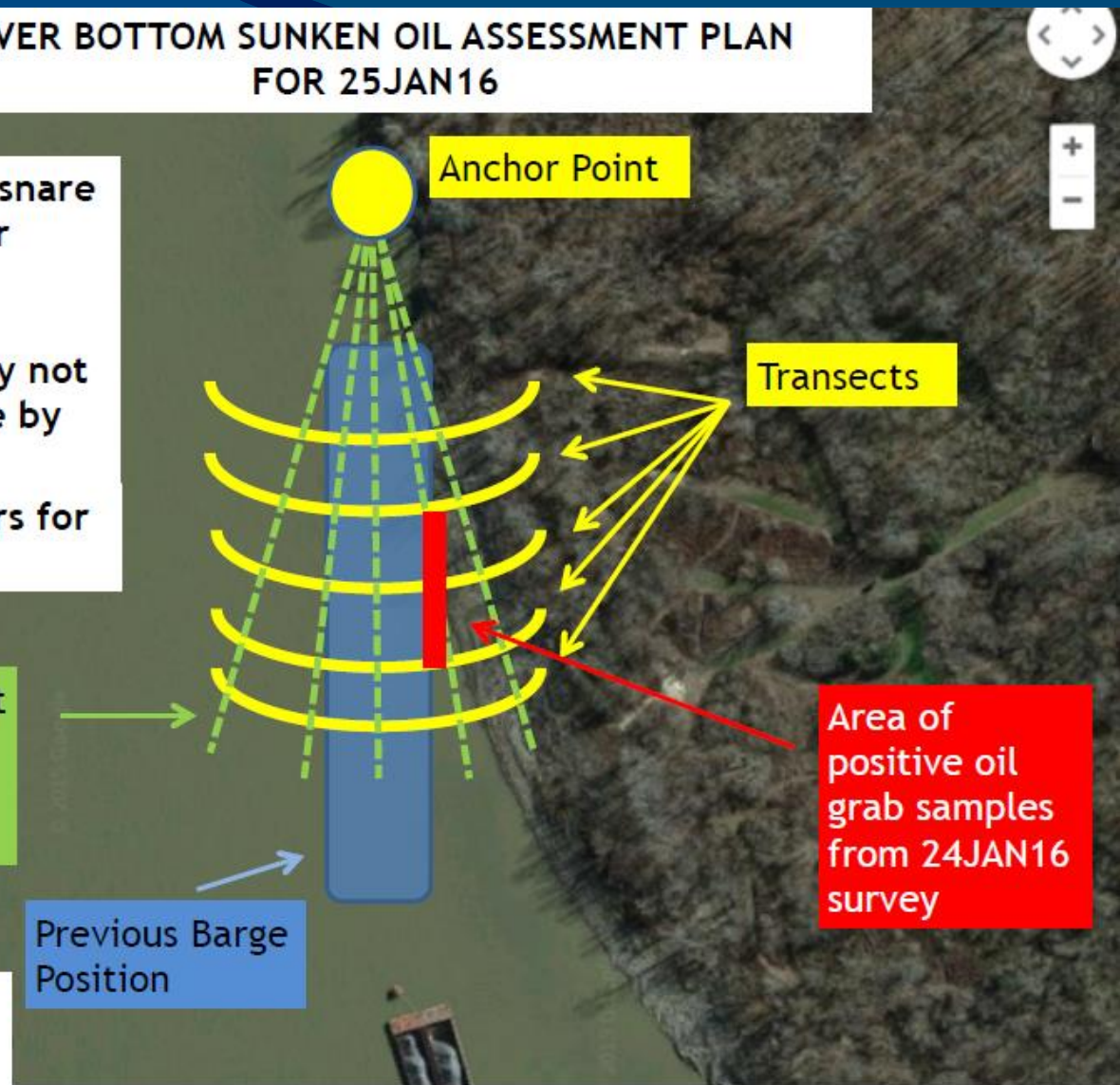
**(some positions may not be safely accessible by boat)**

**Time Estimate: 3 hrs for 25 points**

**Tie Line (pay out line to move downstream to next transect)**

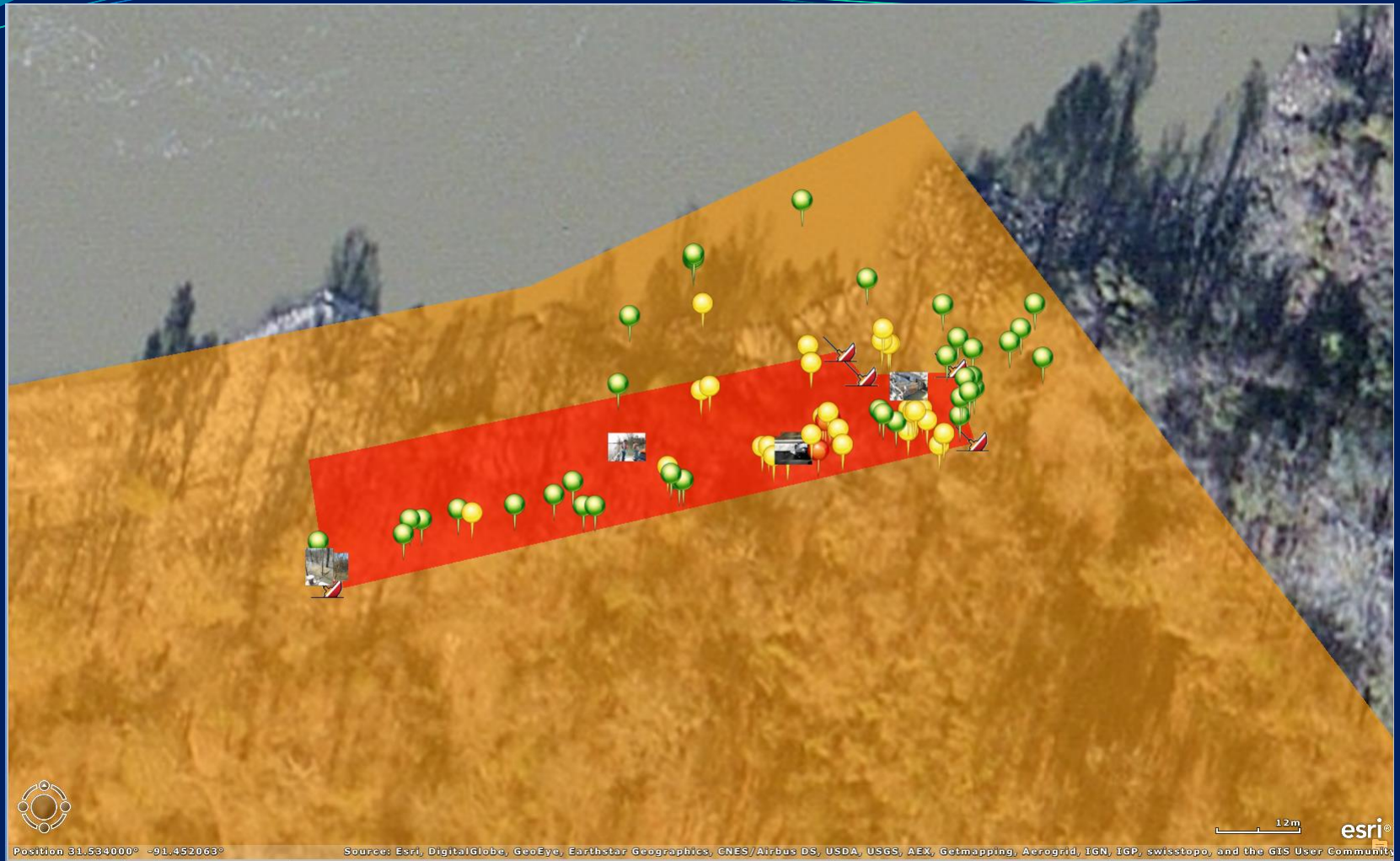
**Previous Barge Position**

**\*Not to scale, positions approximate**



This slide looks really complicated, but...  
the takeaway is that if you have the right people at the response, you can mitigate risks and develop safe response options

# VSORS- Bottom Sampling 25 Jan



Green – Non Detect, weighted sorbent snare  
Yellow – Non Detect, weighted sorbent snare  
Red – Detect using “Q-tip”



# Lessons Learned:

## Historic/Tribal Consultations & Endangered Species Act Consultation

- Consultation with MS State Historic Preservation Office (SHPO) rep (MS Dept of Archives & History) indicated possible resource concerns in the response area
- Consultation with USFWS
- Representatives from both were present during SCAT on 03 Feb and reported no particular resources at risk and no opposition to proposed response techniques
- NOAA SSC facilitated this process on behalf of USCG FOSC

# Final Stages - SCAT

