

Ryan Chouest daily data transmission and report

Period covered: 0957 07/16/2010- 0823 07/17/2010

94.158- Nautical miles covered

Vessel science party:

Xiubin Qi (Xiubin.Qi@csiro.au)
Stephane Armand (Stephane.Armand@csiro.au)
Andy Revill (Andy.Revill@csiro.au)
Charlotte Stalvies (Charlotte.Stalvies@csiro.au)
Lawrence Febo (Lawrence.Febo@bp.com)
Guilherme de Almeida (gdealmeida@entrix.com)

Contact details:

+ 1 337 761 9830 – Sat phone
+ 1 337-761-9830 – Broadband phone ship office 1
+ 1 337-761-9827 – Broadband phone ship office 2
+ 1 337-761-9826 - Broadband phone ship bridge

Cruise notes:

We sailed on the modified cruise track of 5 NM radius circle shown in Figure 1. SIMOPS directed us to a course at least 7.5 NM away from the incident site.

Science results and preliminary interpretation:

Underway Fluorometry Results

Chelsea data show low values throughout the entire course (Figure 2), whereas the Trios and Contros show medium to high levels in segments within the potential oiling extent (Figures 3-4). The highest Trios and Contros sensor data are to the east and southwest along the circular route.

Surface Observations

Convergence lines with white particulates and dull sheen were noted on the way towards the 5 NM circular route (Figure 1 and Photographs 1-2). Surface sheens were observed throughout the track around the incident site (Figure 1 and Photograph 3). However, regions with brown mousse and brown oil were only observed in segments with medium to high fluorometry readings (Figures 3-4 and Photographs 4-5).

Vertical Cast Fluorometry Results

Three vertical casts were conducted in the vicinity of the well site.

The locations of cast #2 is outside the oil extent area, cast #3 is within the oil extent coverage and cast #4 lies close to the edge of the oil slick. Fluorometry results of the casts are shown in figure 5A-5C. The highest sensor responses were observed to the surface water of cast #3. All three vertical profiles show

maximum sensor readings close to sea surface and close to baseline readings below ~10m along the water columns. Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump. The missing conductivity and temperature values at certain depths in figure 5A and 5B are due to the problem with the internal logger of the CTD unit.

Science operations:

Fluorometer measurements were logged and observations of sea-surface conditions were made throughout the majority of the period. Vertical fluorometry casts and water samples were taken approximately every 45 degrees along the circular path. We continue to perform liquid-liquid extractions on seawater samples and analyze the extracted material by GCMS. We are also continuing to collect midwater echosounder contacts.

Planned versus actual route taken cruise 8:

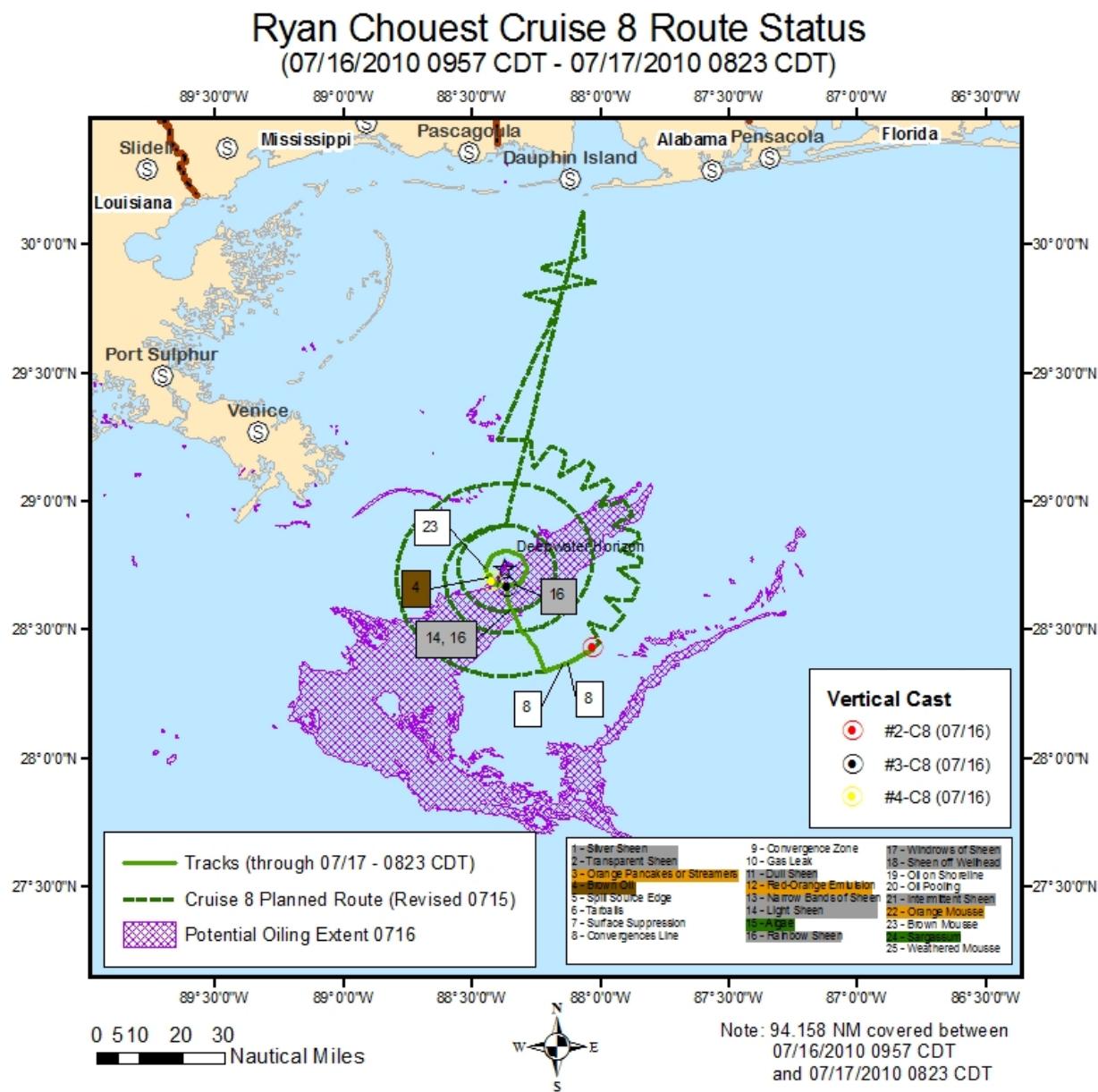


Figure 1: Planned versus actual route course plotted between 0957 07/16 – 0823 07/17. Purple shaded area represents outline extent of the slick from 07/15 ERMA composite.

Ryan Chouest Cruise 8 Data
Chelsea - Fluorometer
(07/16/2010 0957 CDT - 07/17/2010 0823 CDT)

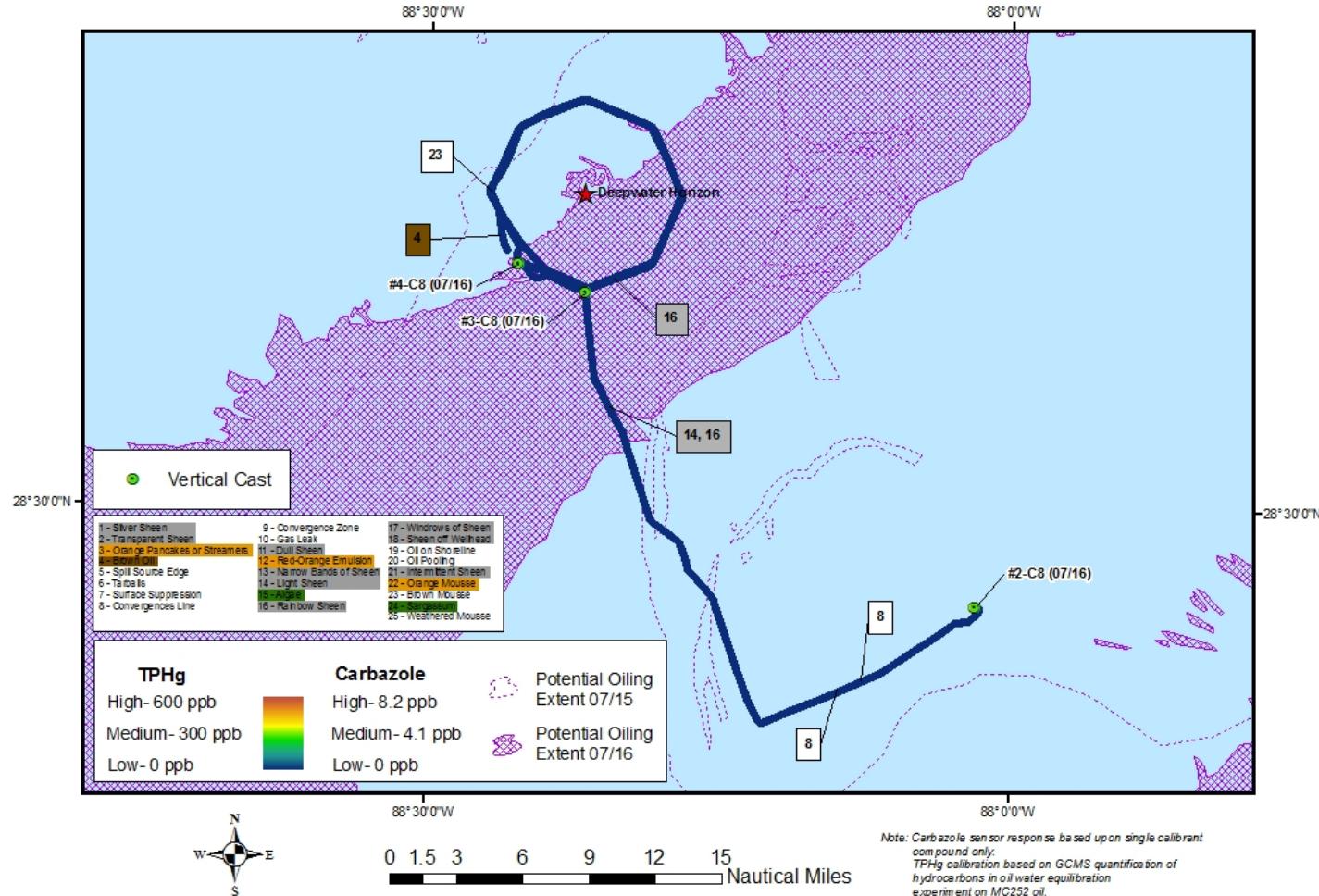


Figure 2. Chelsea fluorometer results plotted with location on cruise track 8. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

Ryan Chouest Cruise 8 Data Trios - Fluorometer

(07/16/2010 0957 CDT - 07/17/2010 0823 CDT)

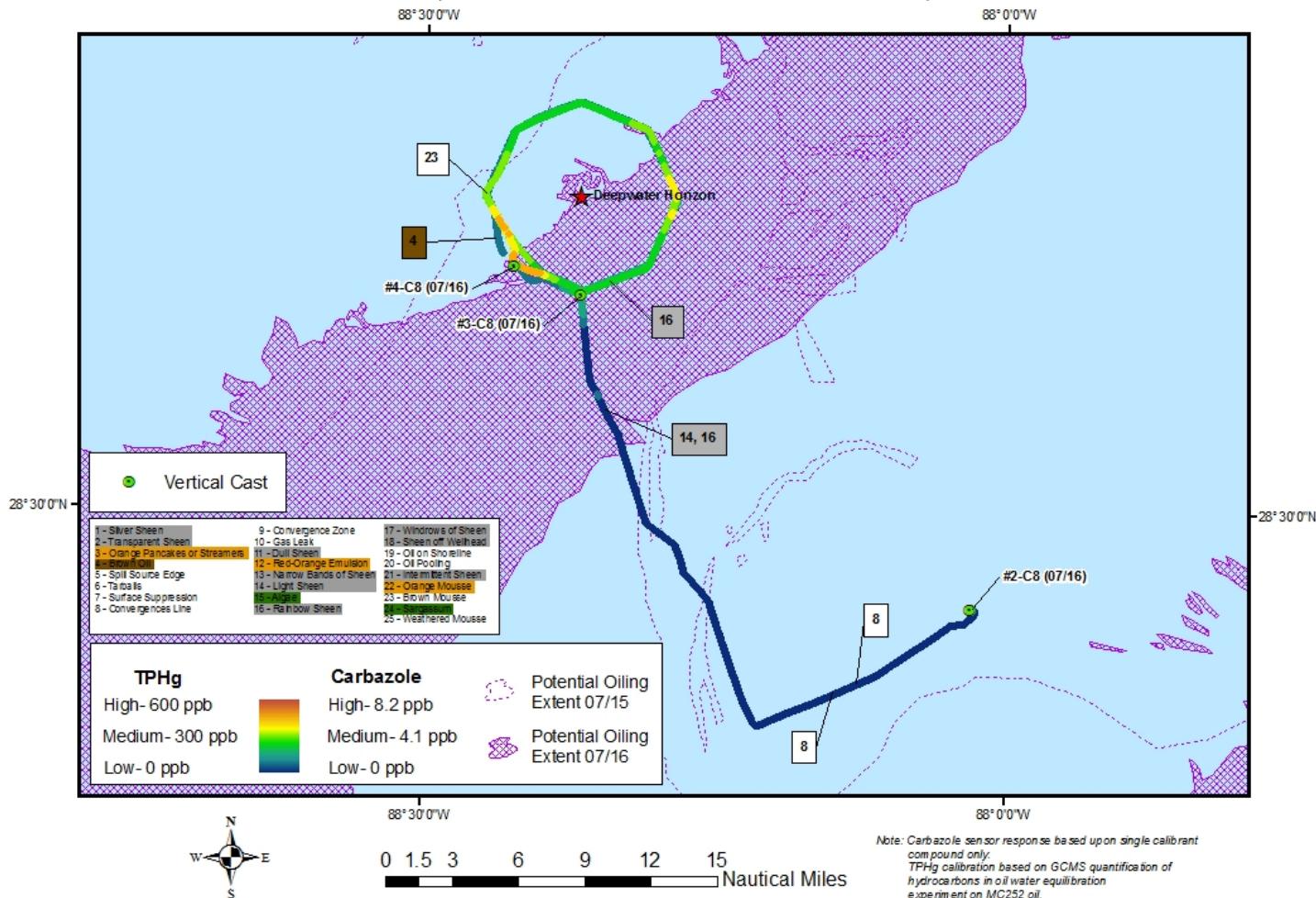


Figure 3. Trios fluorometer results plotted with location on cruise track 8. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

**Ryan Chouest Cruise 8 Data
Contros - Fluorometer**
(07/16/2010 0957 CDT - 07/17/2010 0823 CDT)

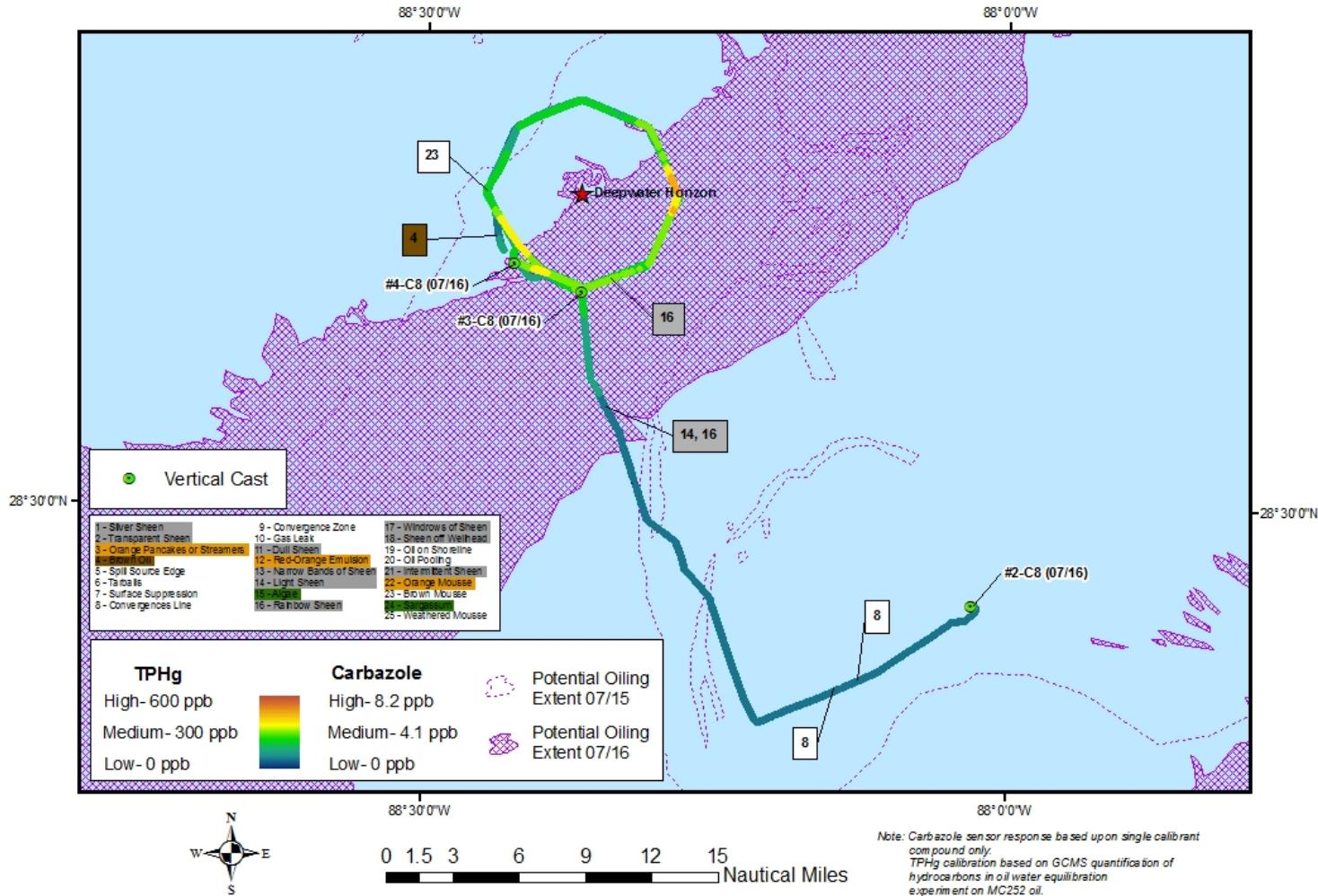


Figure 4. Contros fluorometer results plotted with location on cruise track 8. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

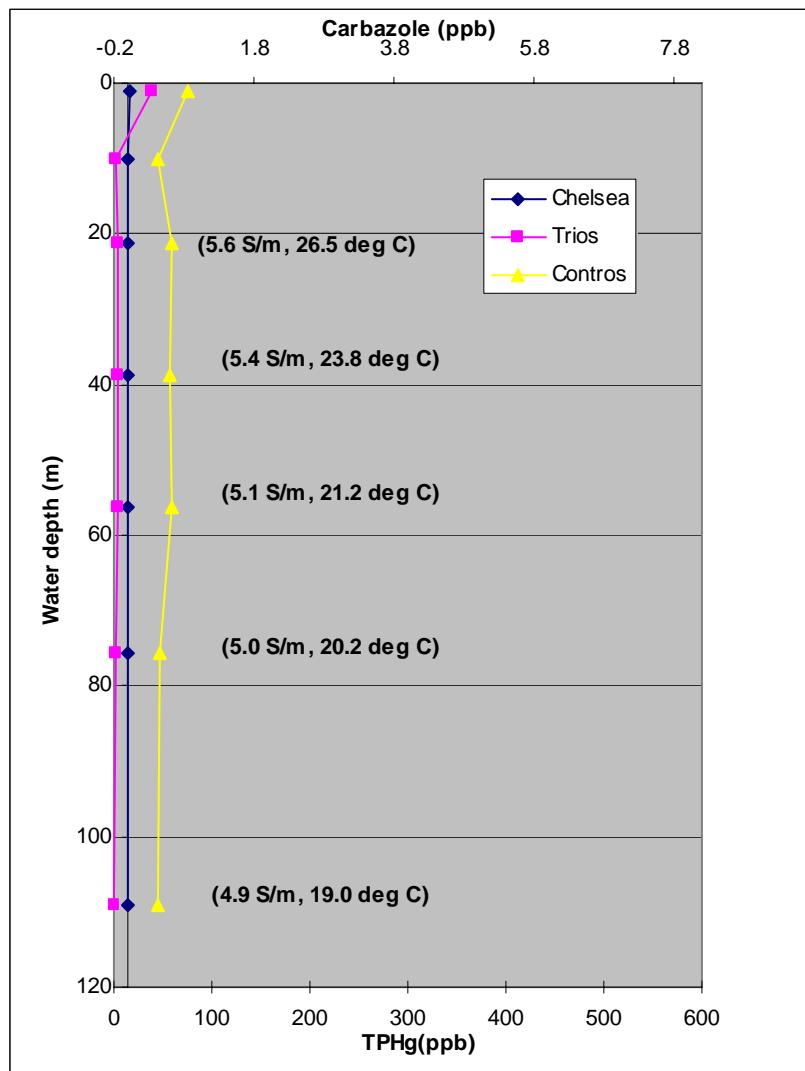


Figure 5A Fluorometer response vs. water depth for vertical cast # 2 / Cruise 8 conducted on 2010/07/16 at N 28 25.6954, W 088 01.7758. (Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump.)

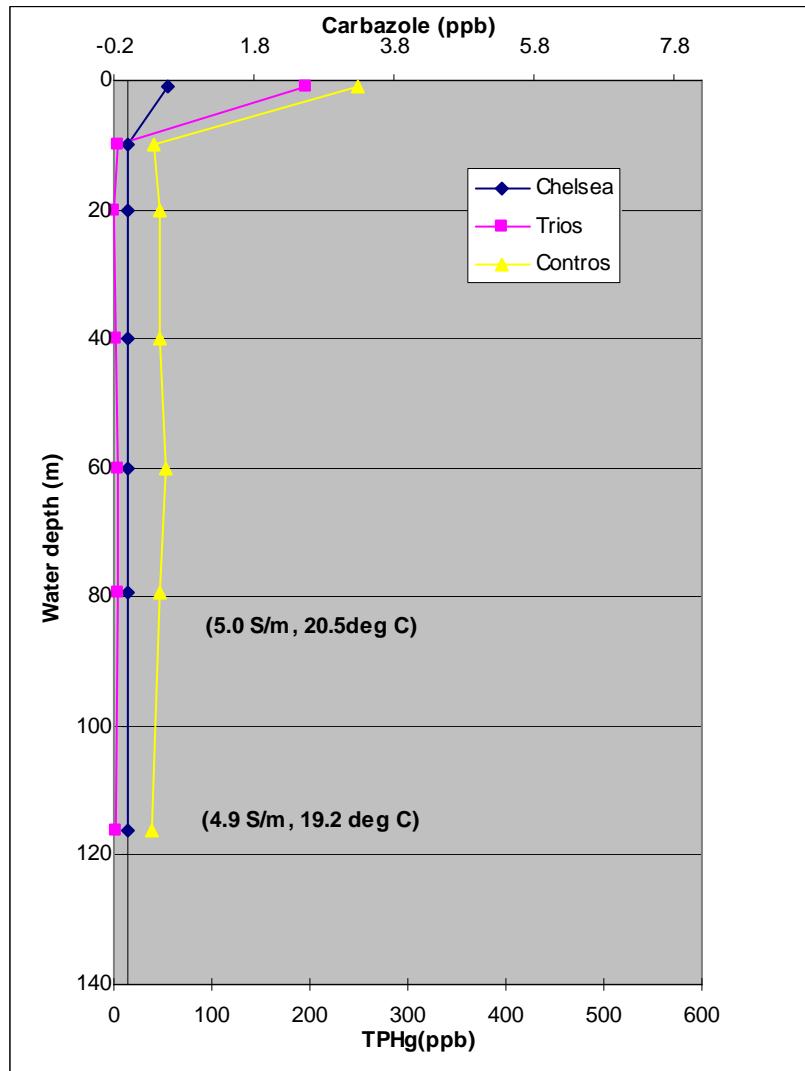


Figure 5B Fluorometer response vs. water depth for vertical cast # 3 / Cruise 8 conducted on 2010/07/16 at N 28 39.8432, W 088 21.9242. (Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump.)

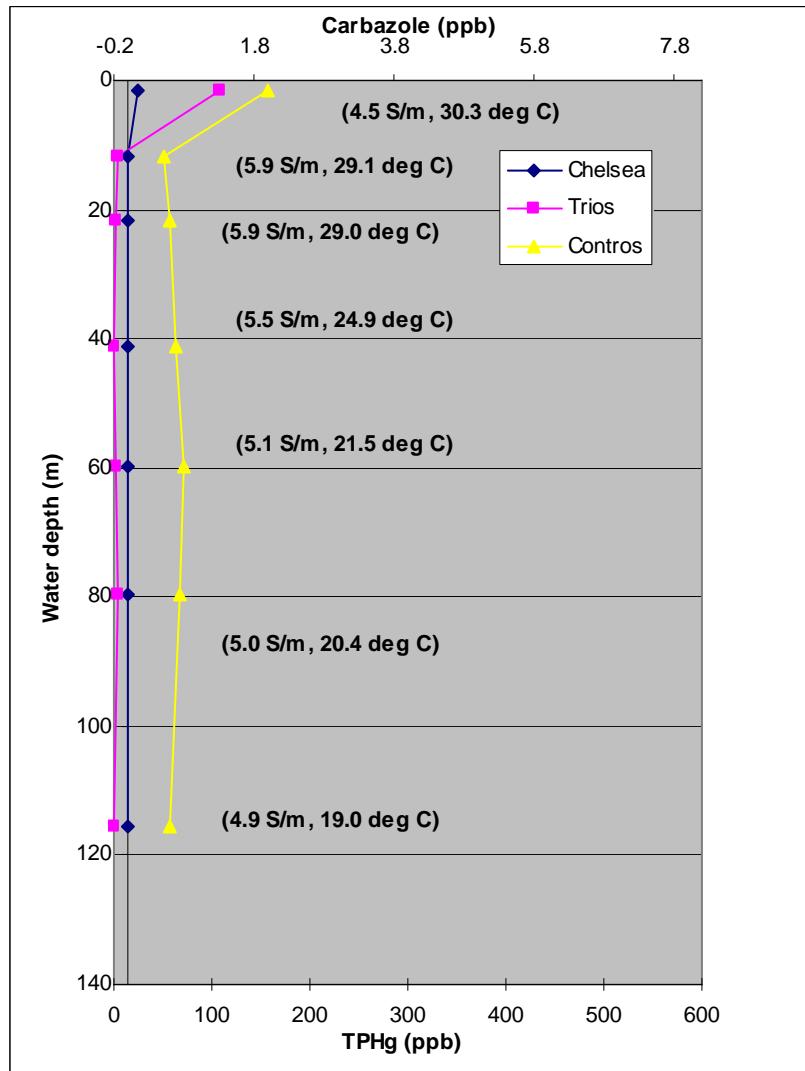


Figure 5C Fluorometer response vs. water depth for vertical cast # 4 / Cruise 8 conducted on 2010/07/16 at N 28 41.1172, W 088 25.4235. (Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump.)

Problems/operational issues:

(Includes items up to report submission time)

The C&C generator remains inoperable.

Planned activities for next 24 hours:

We are permitted now to proceed to a course at least 5 NM away from the incident site. We will circumnavigate the Deepwater Horizon incident site at that distance until further notice.

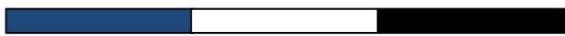
Selected Photos:

Convergence line
containing white
particulates

07/16 2010
1502 CDT

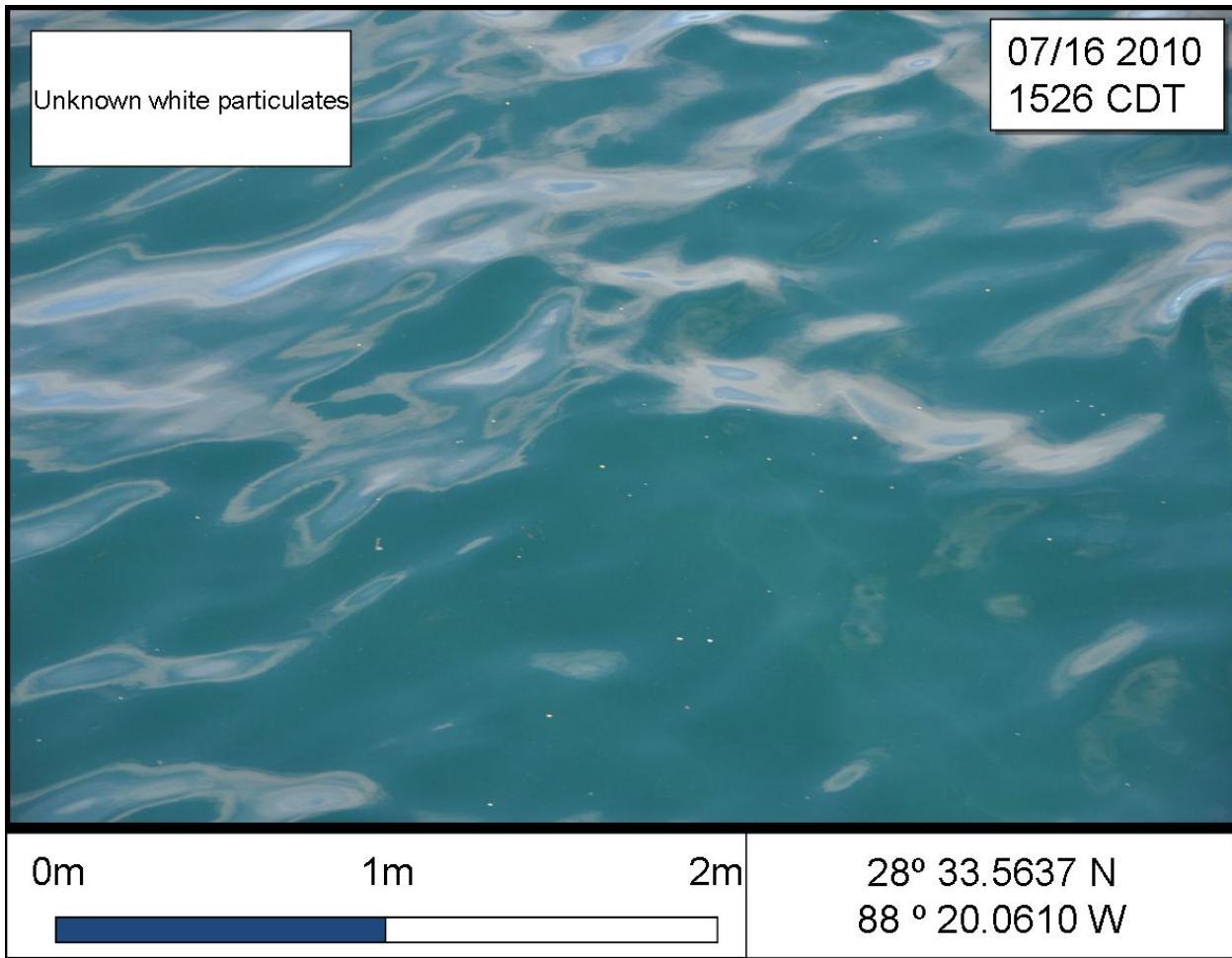


0m 1m 2m 3m

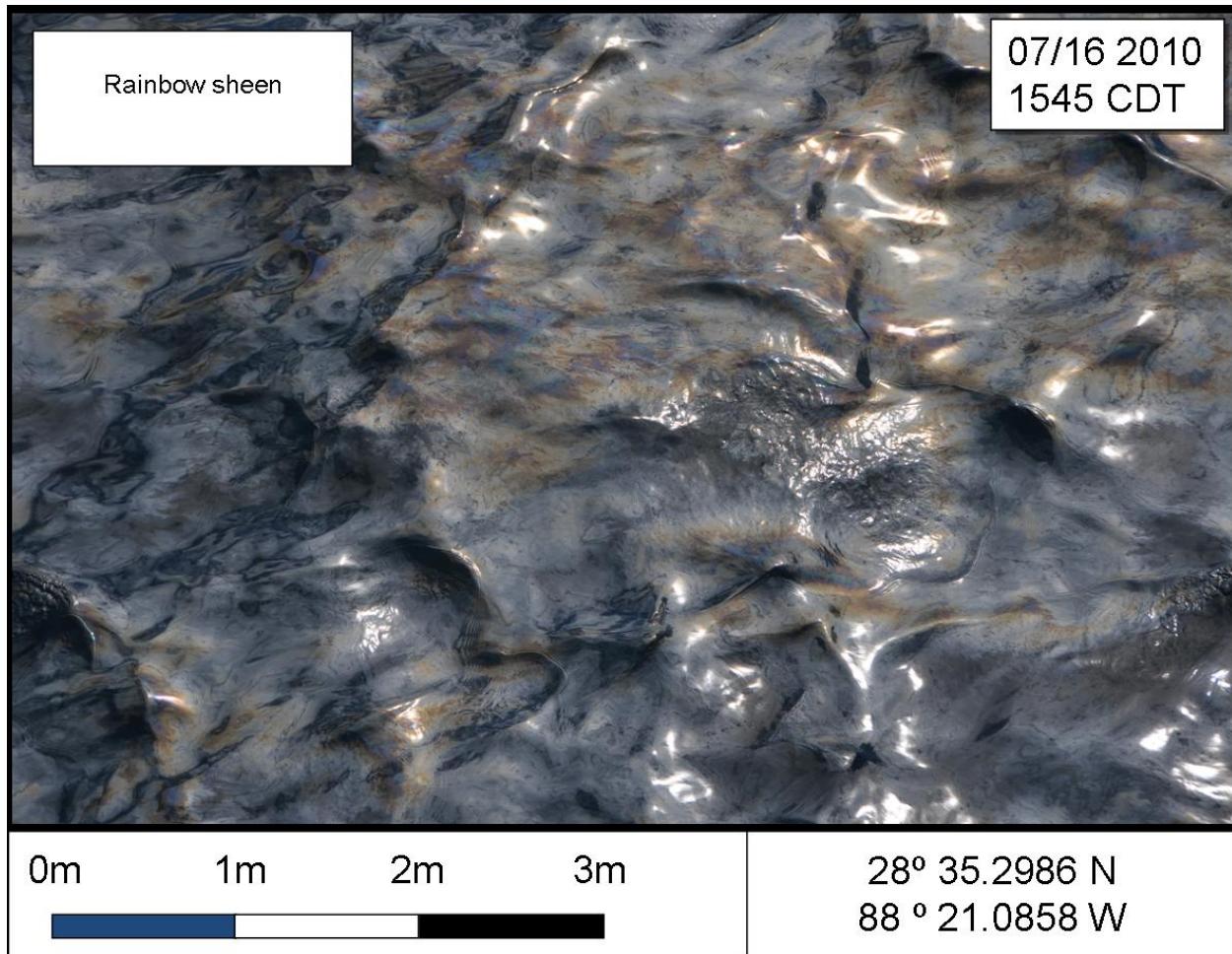


28° 30.7271 N
88° 19.0005 W

Photograph 1. Dull surface sheen with unknown white particulates forming a convergence line.



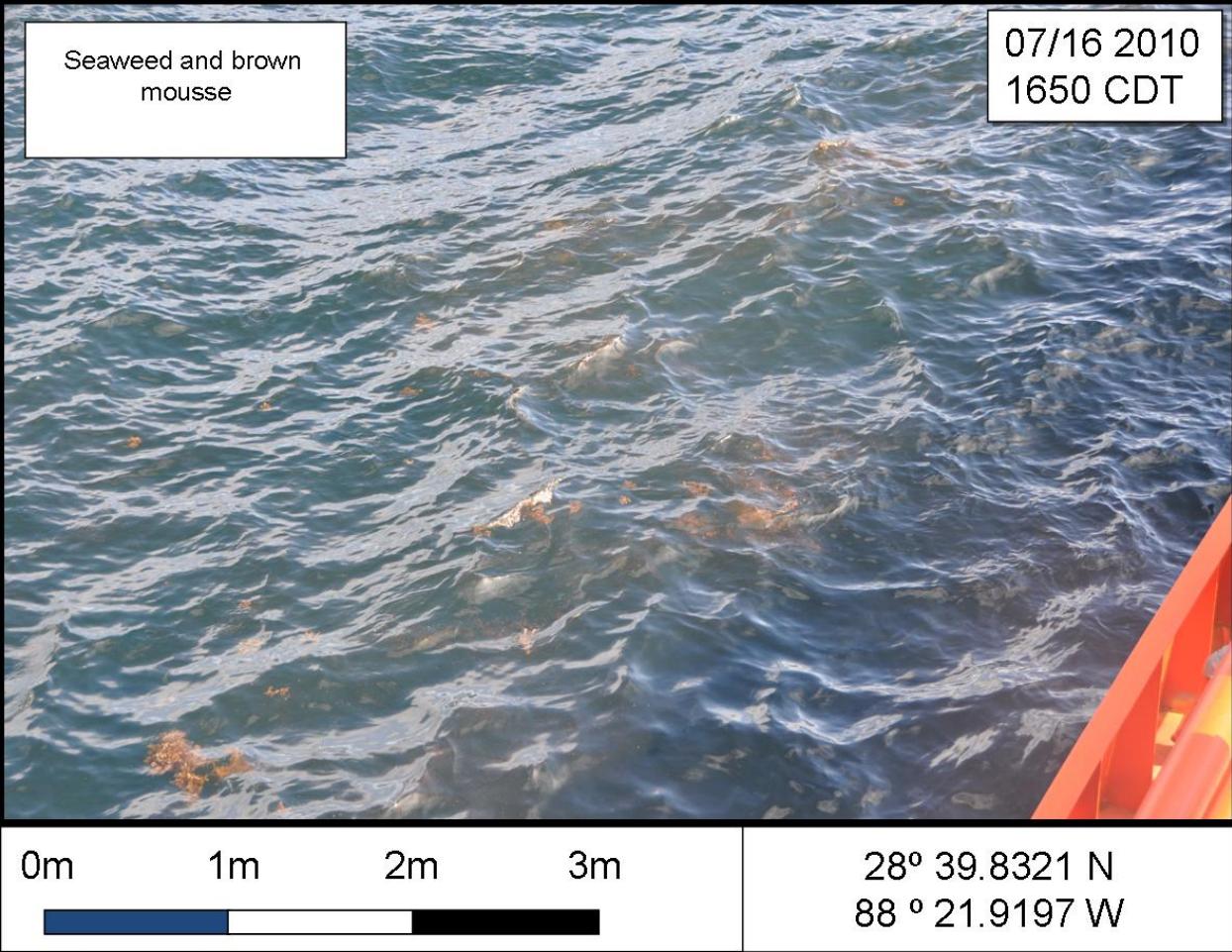
Photograph 2. Dull surface sheen with white particulates.



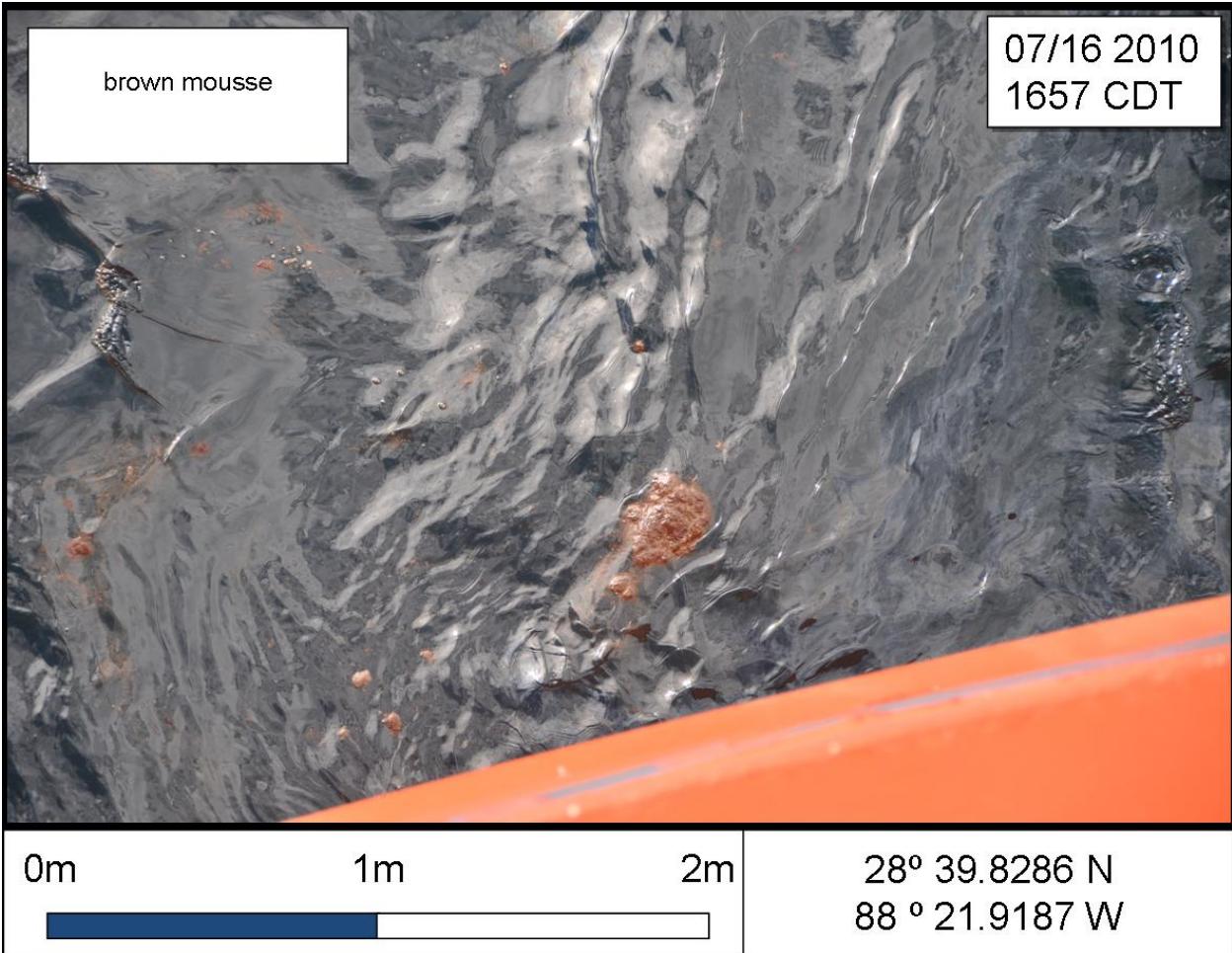
Photograph 3. Rainbow surface sheen.

Seaweed and brown mousse

07/16 2010
1650 CDT



Photograph 4. Brown oil and seaweed co-occurring making it difficult to discern the differences. Note surface sheen.



Photograph 5. Brown mousse amid surface sheen.