

Ryan Chouest daily data transmission and report

Period covered: 1551 07/18/2010 - 0951 07/19/2010

88.049 - Nautical miles covered

Vessel science party:

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Cruise notes:

We continued on our 5 statute route around the incident site collecting water samples and vertical casts (Figure 1). The course was deviated slightly to cover natural seeps reported by the NOAA R/V Gunter and Thomas Jefferson.

Science results and preliminary interpretation:

Underway fluorometry results

The Chelsea fluorometer did not detect values above baseline levels for the entire route (Figure 2). However, the Trios and Contros instruments recorded higher values. The Trios fluorometer noted low values over the southwestern quadrant and vertical cast #11, which was located directly over a seep (Figure 3). On the 5 mile loop, the Trios sensor recorded lower-medium levels of inferred hydrocarbon concentrations. Contros recorded low to medium values but also measured the highest inferred hydrocarbon concentrations possible over the northern part of the 5 mile circle followed by a sudden drop of sensor readings to close to baseline level. No brown mousse or oil was found in this region when the underway measurements were taken (Figure 4). The high Contros response may not truly reflect the concentration of PAH but instead be due to the temporal accumulation of thin oil film/ droplets on the sensor window.

Surface observations

Surface sheens dominated the route covered in this report. Many surface sheens were dull, but some locations included small pieces of brown mousse (Photographs 1-2). A waxier surface sheen was noted at one location and may not be genetically related to the dominant surface sheen (Photograph 3). At night, we observed foamy streamers of finely dispersed brown mousse and possibly oil droplets (Photographs 4-5). We collected mousse and surface water samples at that location.

Vertical cast fluorometry results

Four vertical casts (cast #9, cast #10, cast # 11 cast #12) were performed during the last 24hrs in the vicinity of the well site. The missing conductivity and temperature values at 80m depth in figure 5A are due to the problem with the internal logger of the CTD unit.

Cast #9 and cast #12, conducted on July 18th and July 19th respectively, are located at the same drop cast station. Their vertical profiles display similar features with sub surface waters showing higher PAH concentration compared to cast 10 and cast 11 and greatly reduced conductivity (figure 5A and figure 5D). Most PAH for cast #9 was still confined within the 0-5m water column while for cast #10 PAH gradually extended down to 10m depth of water.

Cast #10 (figure 5B) shows elevated PAH concentration starting from 10m.

Cast #11 is on top of a dense cluster of natural seeps. Fluorometry results of the casts are shown in figure 5C. All sensors display constant readings from the surface down to 10m of water and decrease to close to baseline level of PAH below 20m.

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 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 and deep echosounder contacts.

Planned versus actual route taken cruise 8:

Ryan Chouest Cruise 8 Route Status
(07/18/2010 1551 CDT - 07/19/2010 0951 CDT)

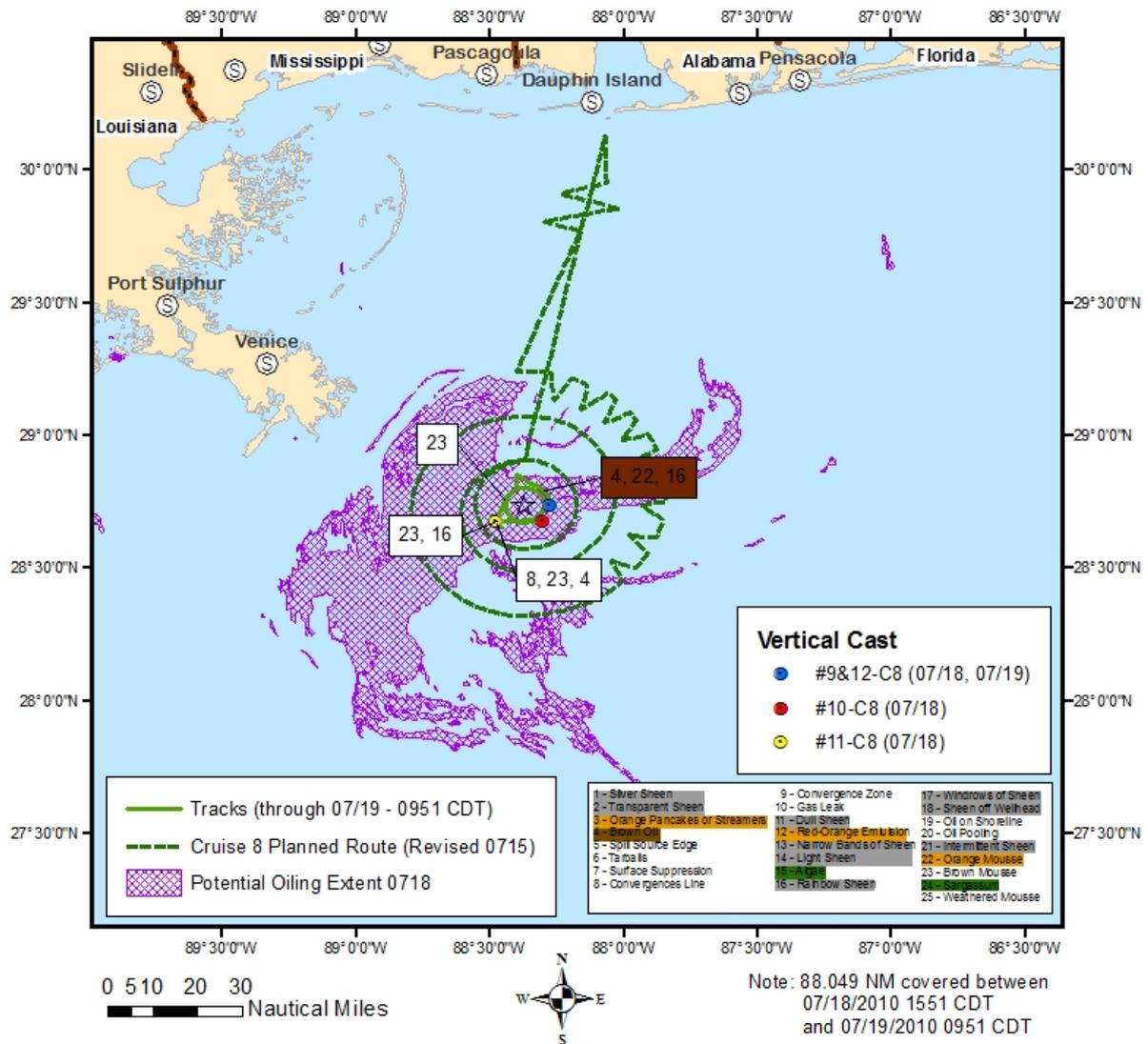


Figure 1: Planned versus actual route course plotted between 1551 07/18 – 0951 07/19. Purple shaded area represents outline extent of the slick from 07/18 ERMA composite.

Ryan Chouest Cruise 8 Data
 Chelsea - Fluorometer
 (07/18/2010 1551 CDT - 07/19/2010 0951 CDT)

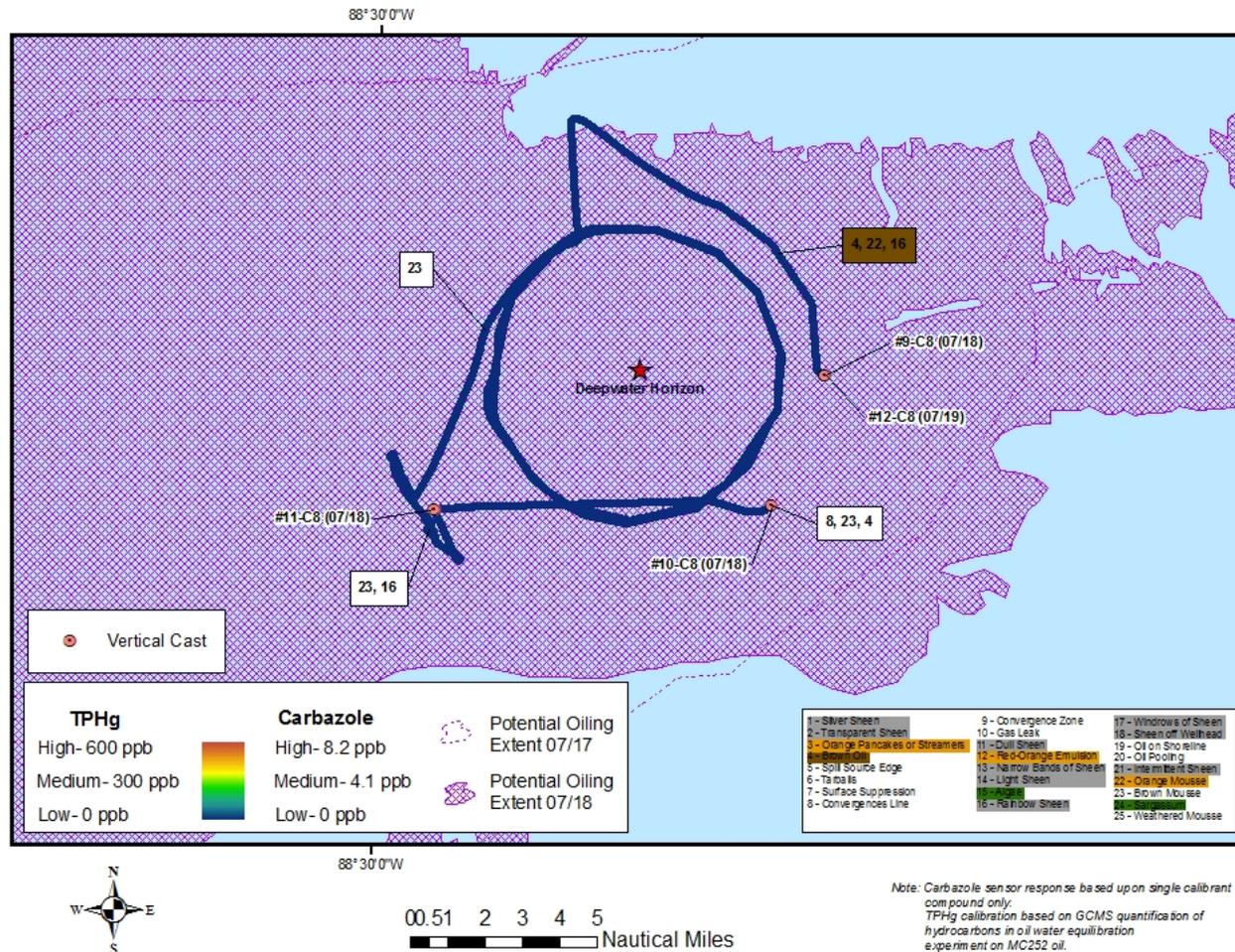


Figure 2. Chelsea fluorometer results plotted with location on cruise track 8. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

Ryan Chouest Cruise 8 Data
 Trios - Fluorometer
 (07/18/2010 1551 CDT - 07/19/2010 0951 CDT)

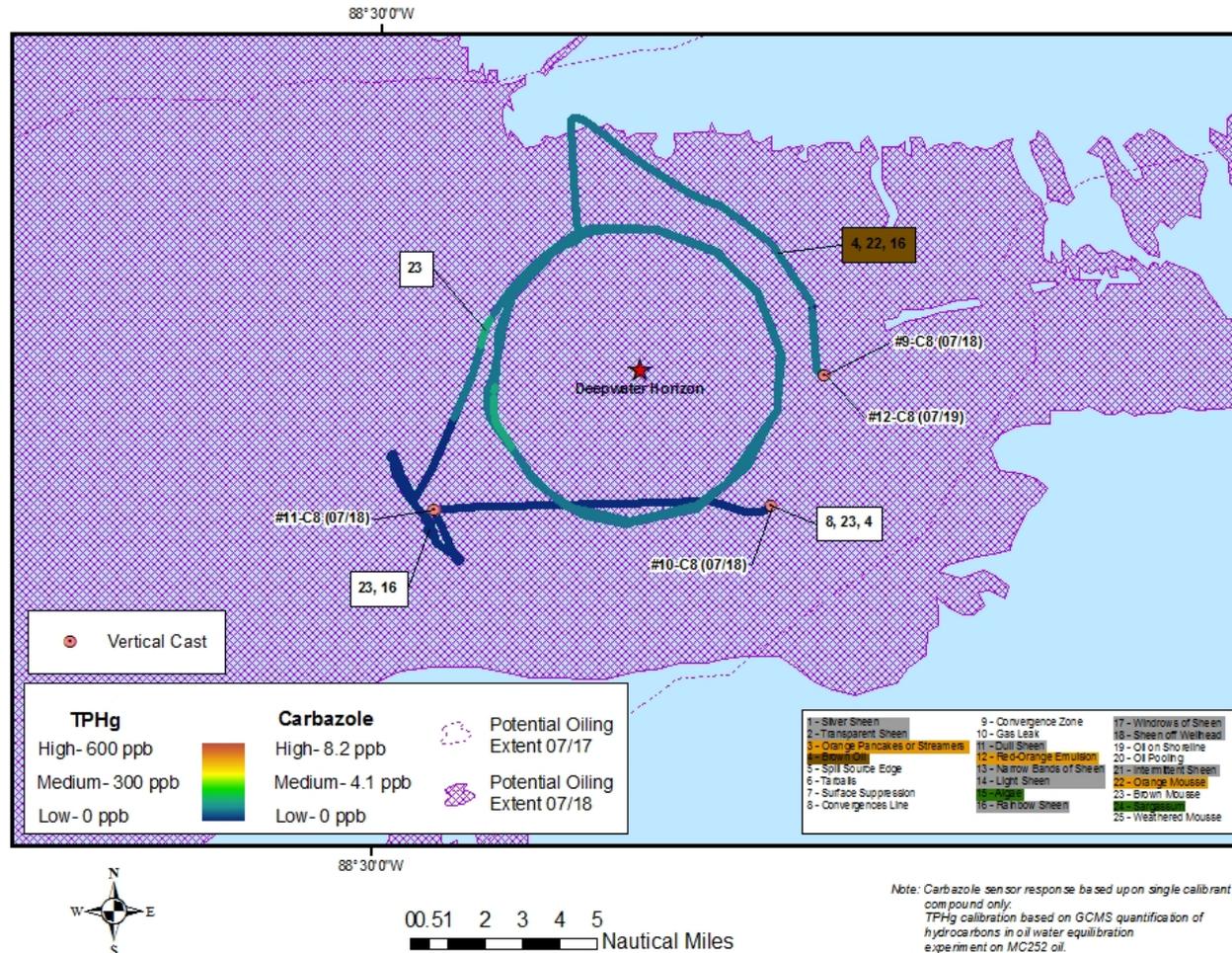


Figure 3. Trios fluorometer results plotted with location on cruise track 8. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

Ryan Chouest Cruise 8 Data
 Contros - Fluorometer
 (07/18/2010 1551 CDT - 07/19/2010 0951 CDT)

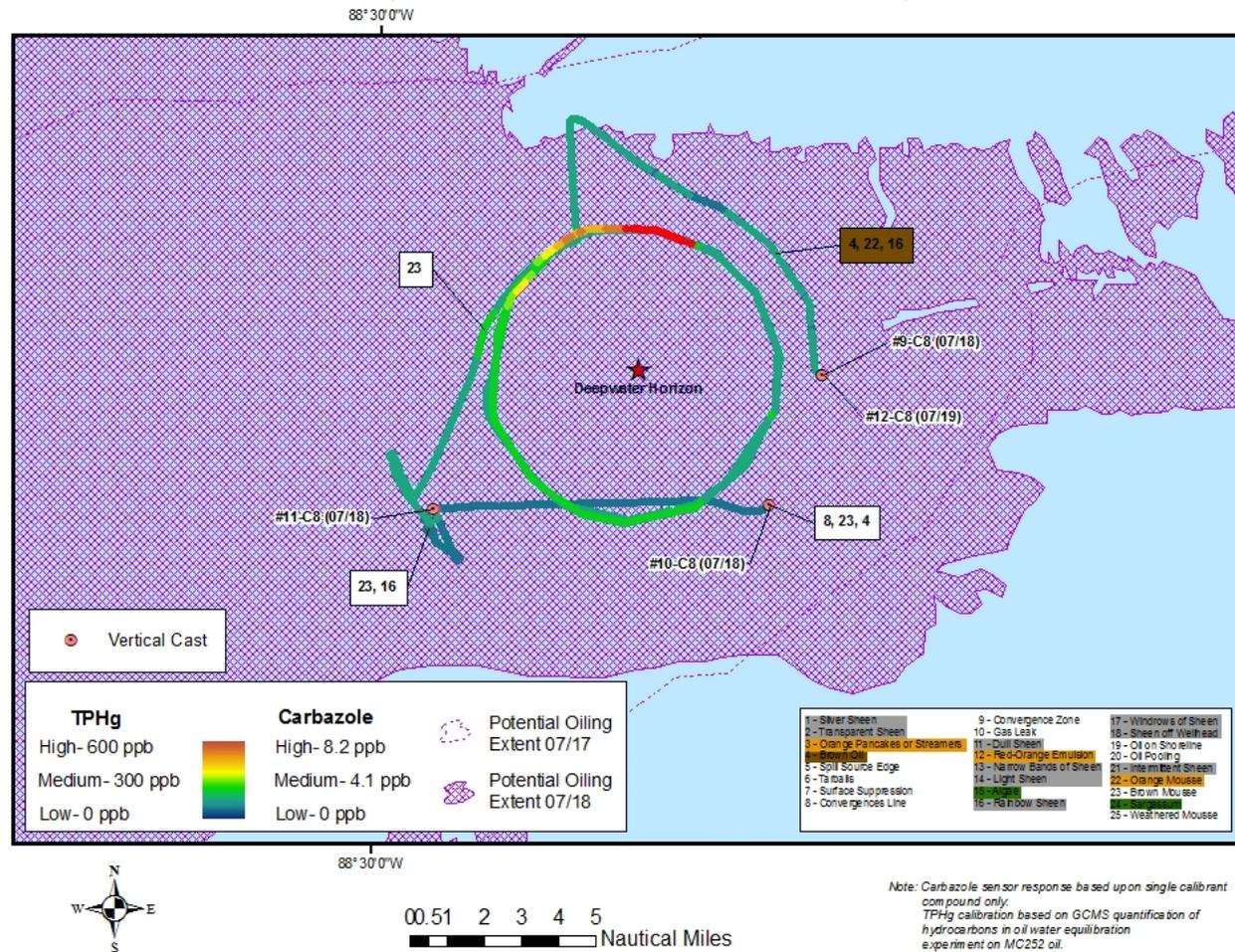


Figure 4. Contros fluorometer results plotted with location on cruise track 8. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

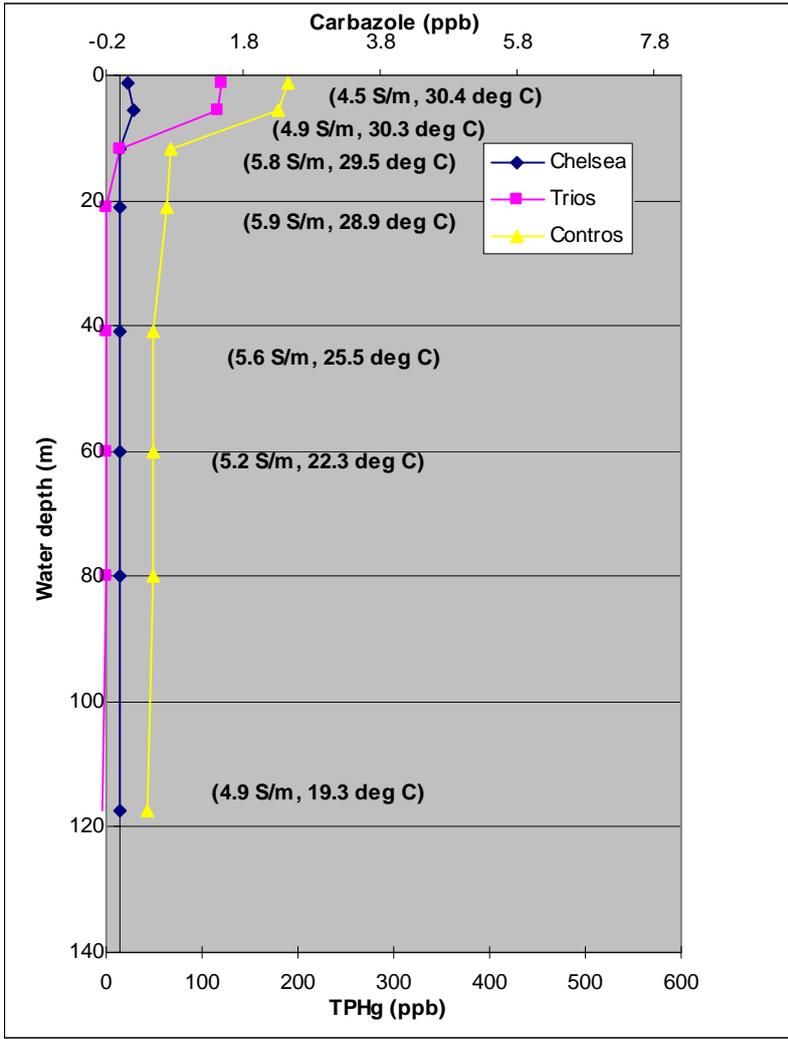


Figure 5A Fluorometer response vs. water depth for vertical cast # 9 / Cruise 8 conducted on 2010/07/18 at N 28 44.2068, W 088 16.3142. (Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump.)

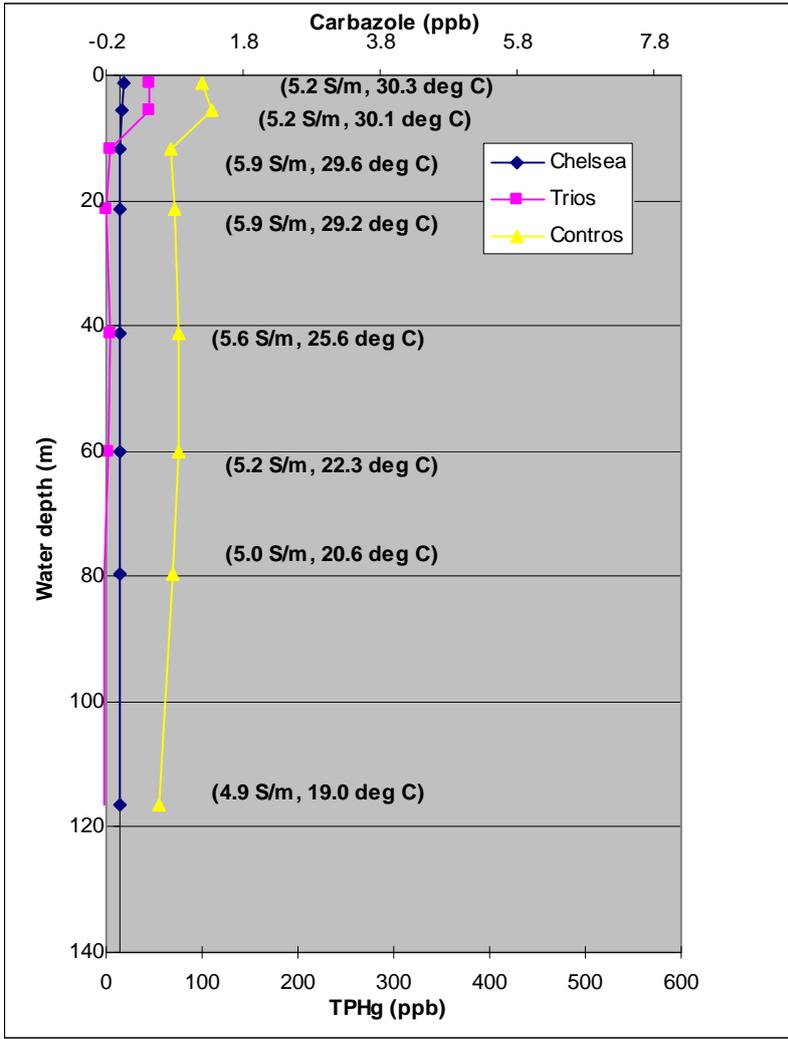


Figure 5B Fluorometer response vs. water depth for vertical cast # 10 / Cruise 8 conducted on 2010/07/18 at N 28 40.7040, W 088 17.8963. (Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump.)

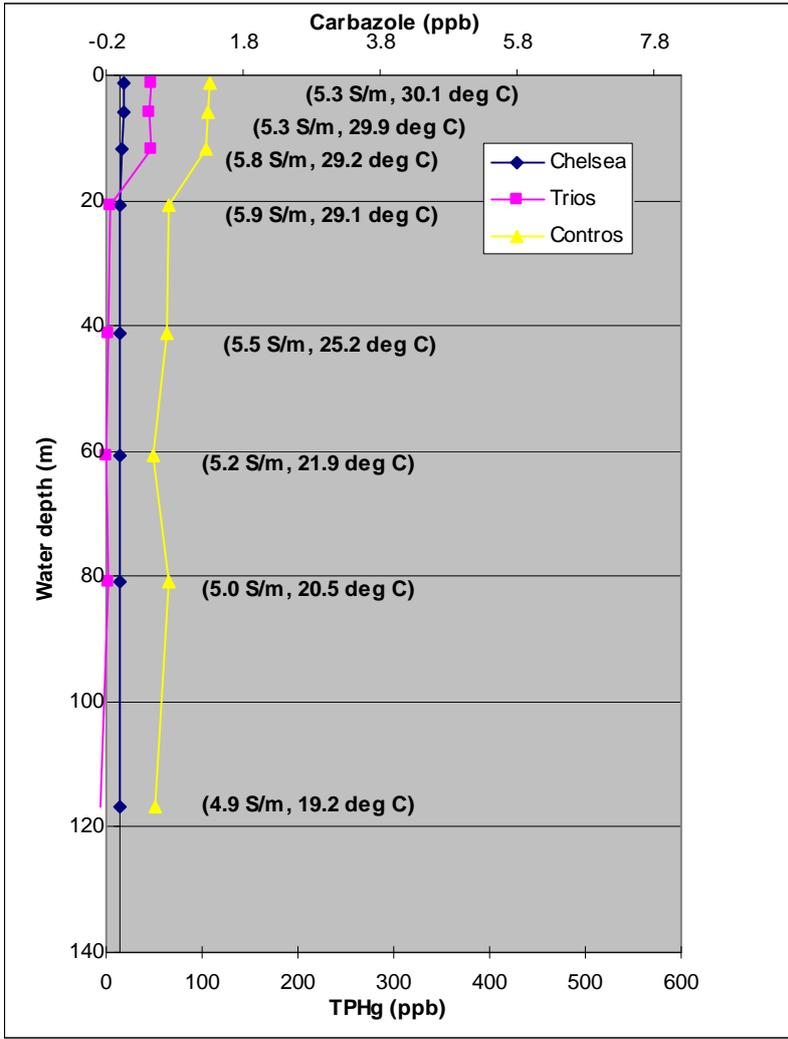


Figure 5C Fluorometer response vs. water depth for vertical cast # 11 / Cruise 8 conducted on 2010/07/18 N 28 40.4922, W 088 28.2010. (Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump.)

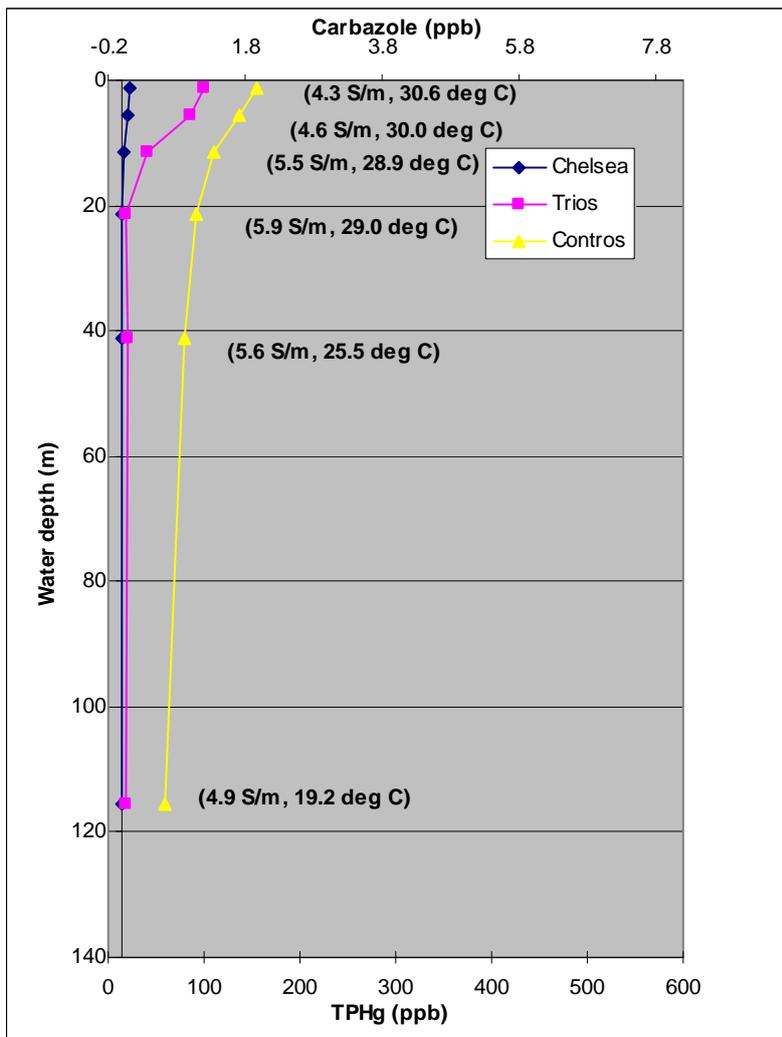


Figure 5D Fluorometer response vs. water depth for vertical cast # 12 / Cruise 8 conducted on 2010/07/19 at N 28 44.2035, W 088 16.3146. (Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump.)

Problems/operational issues:

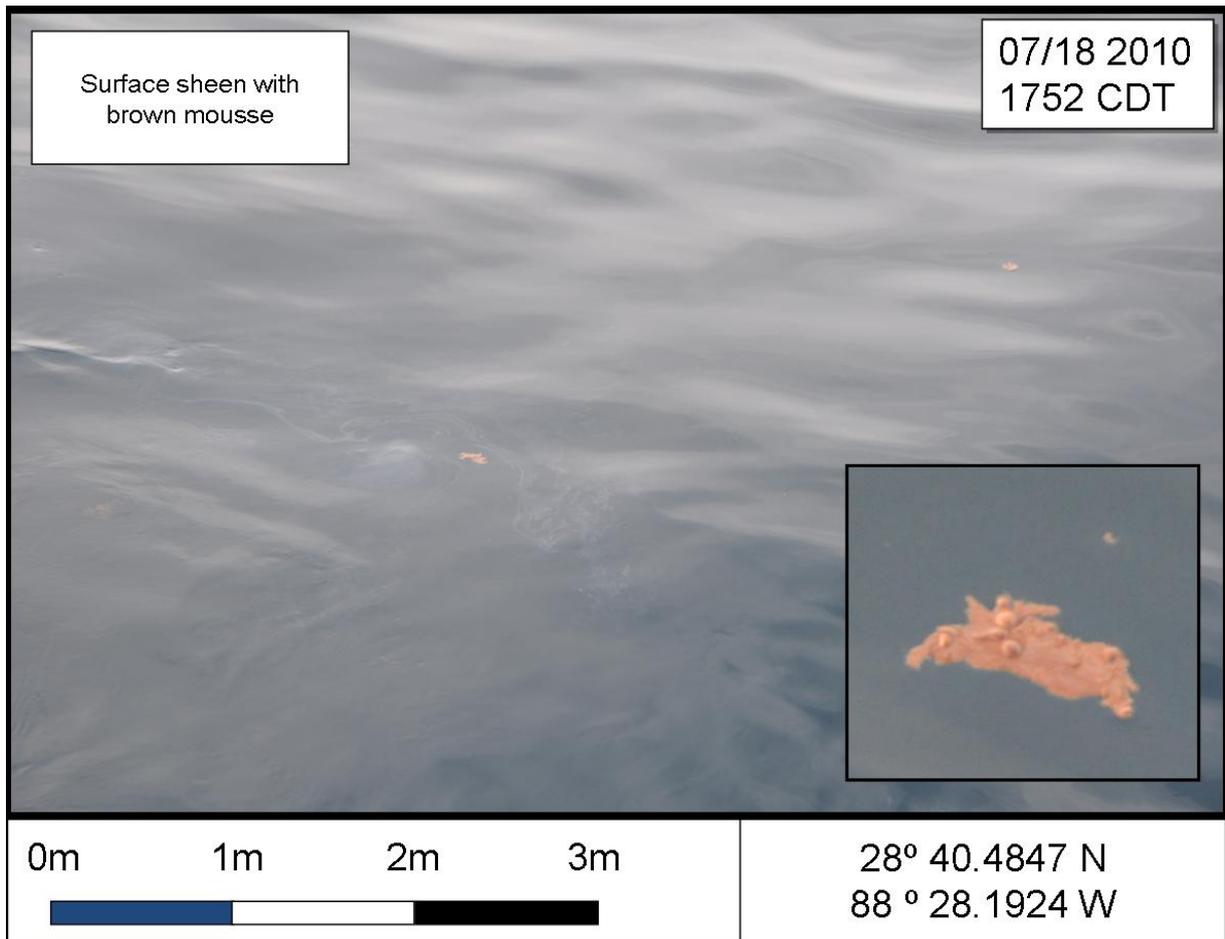
(Includes items up to report submission time)

The C&C generator remains inoperable.

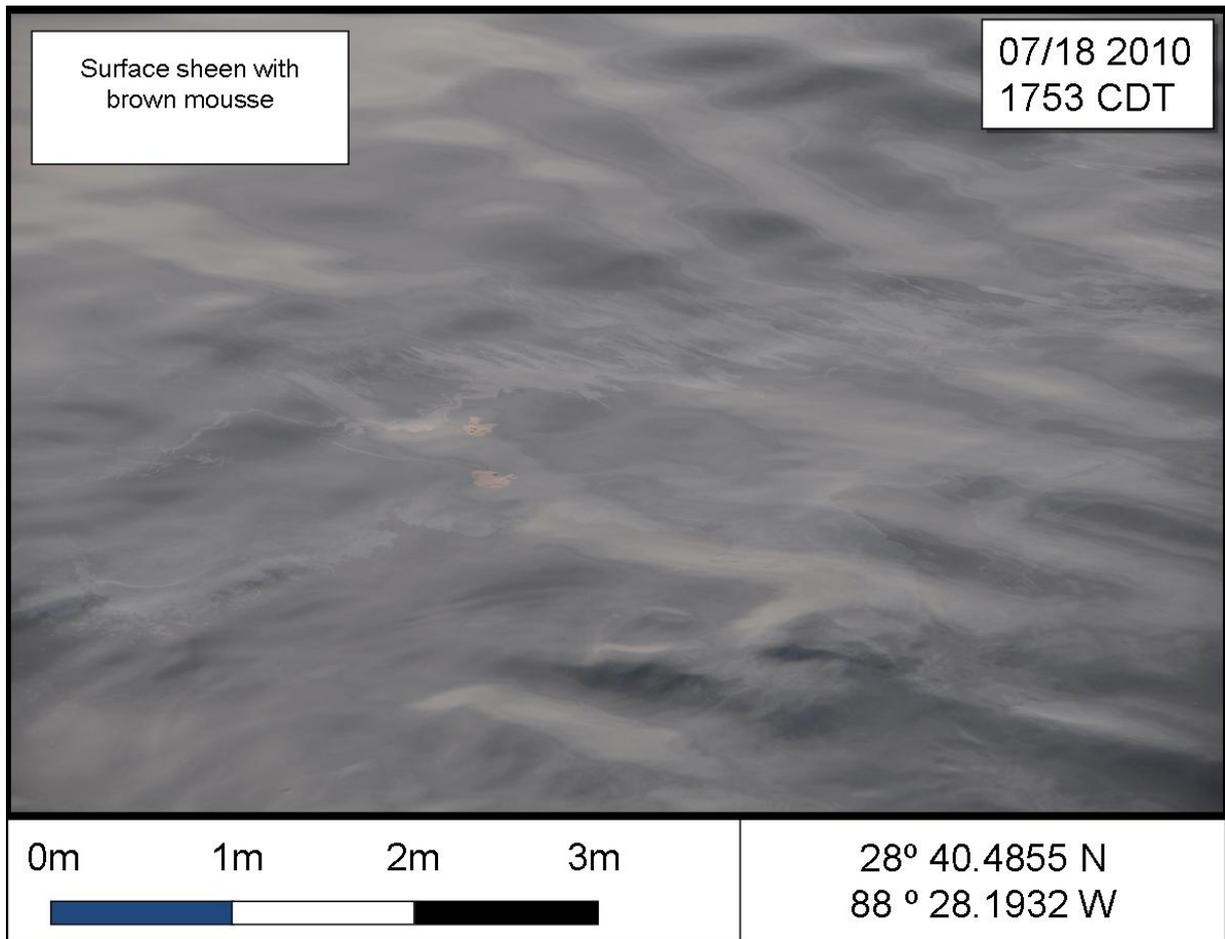
Planned activities for next 24 hours:

We are returning to Theodore early to pick up a VOC monitoring gauge, gas masks, and marine generator. We will proceed with a crew change Wednesday morning and then set sail as soon as possible Wednesday afternoon.

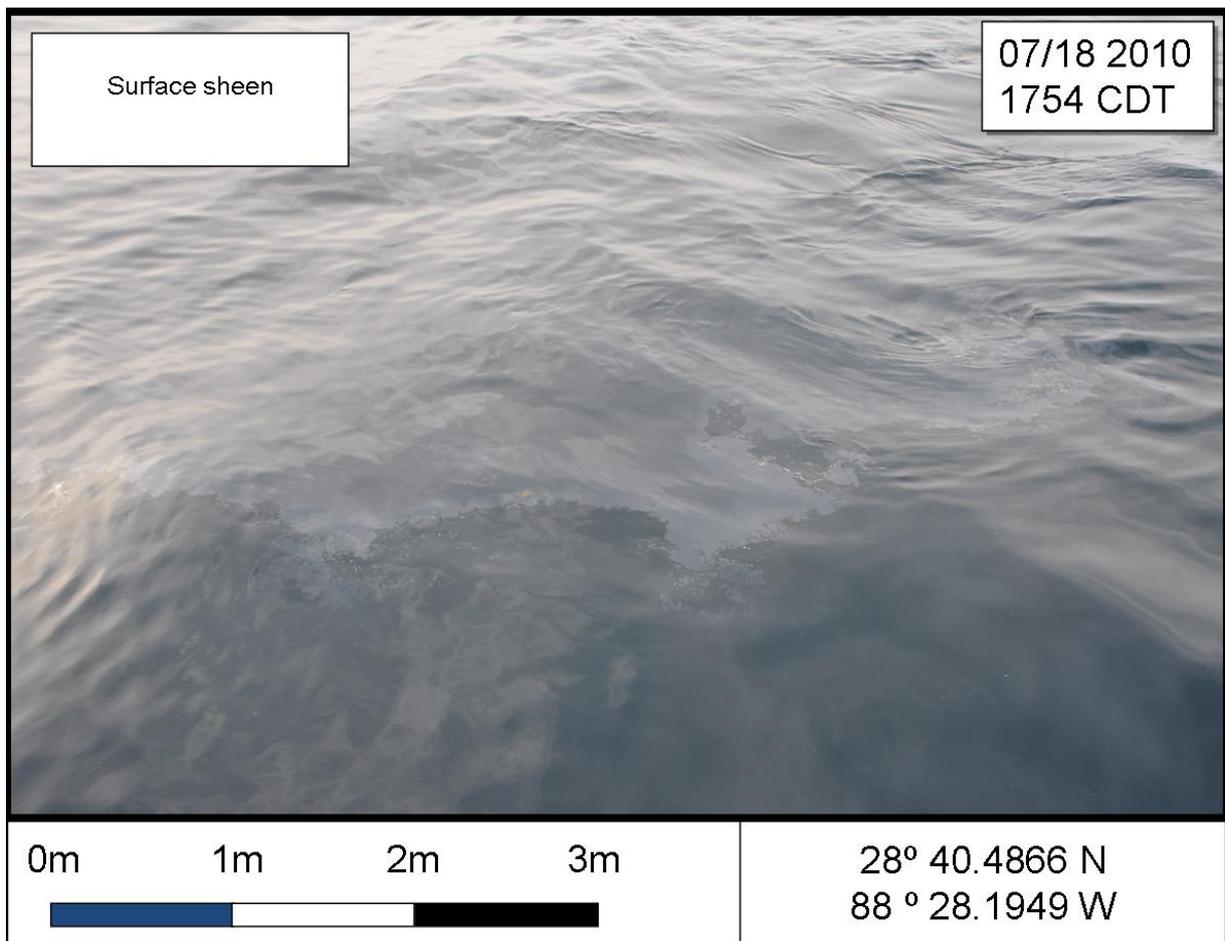
Selected Photos:



Photograph 1. Surface sheen with small pieces of brown mousse.



Photograph 2. Surface sheen with slight rainbow tint and pieces of brown mousse.



Photograph 3. Unusual surface sheen with a waxy appearance.

Streamers of brown
mousse

07/18 2010
2107 CDT

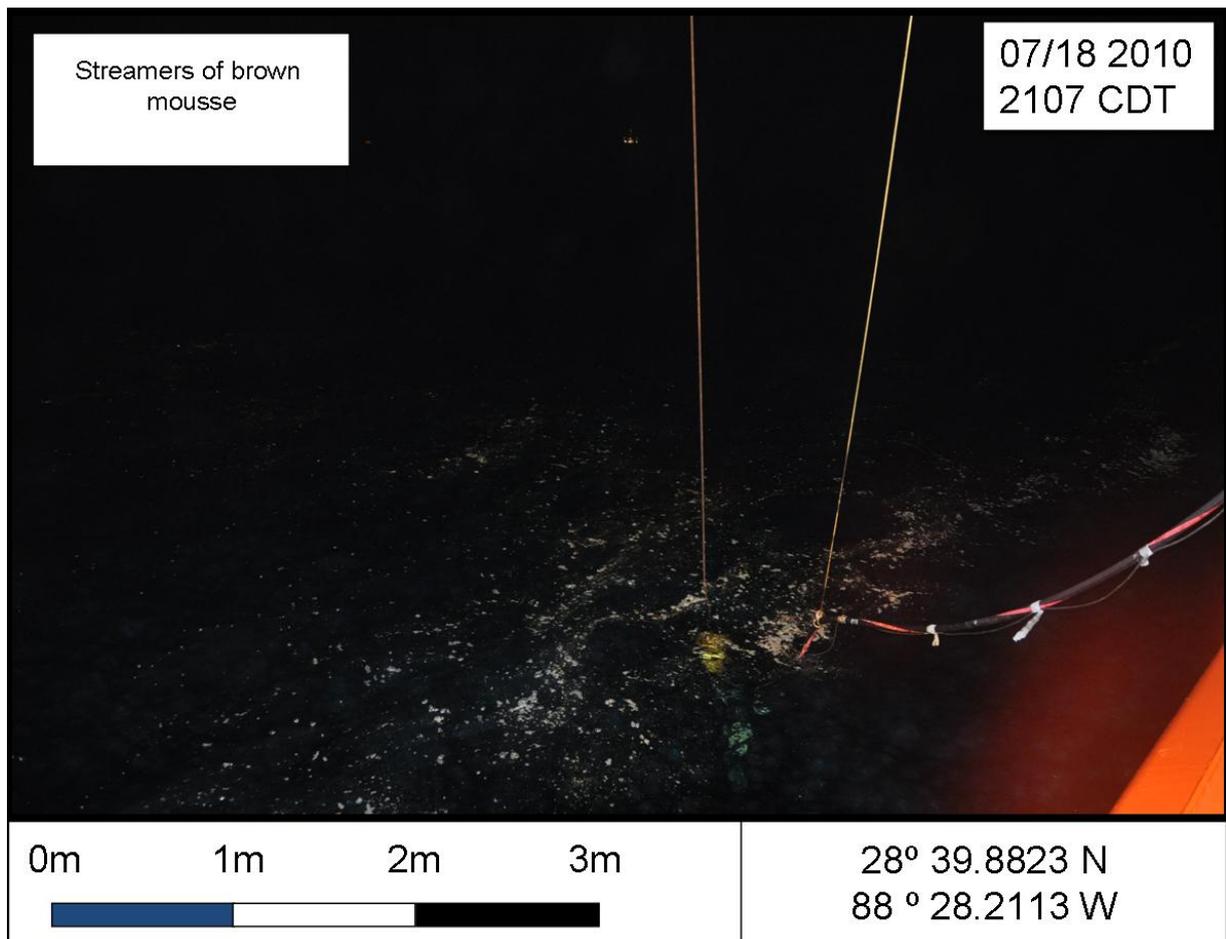


0m 1m 2m 3m



28° 39.8823 N
88 ° 28.2113 W

Photograph 4. Foamy streamers of brown mousse and possible brown oil droplets. Foam may have originated from dispersants.



Photograph 5. Foamy streamers of brown mousse and possible brown oil droplets. The underway pump is seen along side the ship. Water samples and mousse were collected here.