

August 16th | 2010

Ryan Chouest daily data transmission and report

**Period covered: 0957hrs 08/15/2010 - 1729hrs 08/16/2010**

**43.943 - Nautical miles covered**

**Vessel science party:**

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**Cruise notes:**

The *Ryan Chouest* continued on the planned cruise 12 route, with the echo sounder and underway pump system, along the coastal transect towards and across the western coast of Florida rejoining the previous Cruise 2 track along the gulf coastlines of Alabama and west Florida. (Figure 1). Due to the forecast return of Tropical Depression 5 and strengthening seas, we removed the underway pump from the water and sailed back to Theodore.

**Science results and preliminary interpretation:**

**Fluorometry results**

The Chelsea and Trios sensors indicate baseline levels of inferred hydrocarbons concentrations through the reporting period (Figures 2 and 3). As previously discussed, the Contros data are not shown as the instrument needs servicing as the lamp reached the end of its useful life. We await a spare Contros sensor from the manufacturer.

**Surface Observations**

No surface observations were reported for the surveyed route.

**EK-60 Echosounder results**

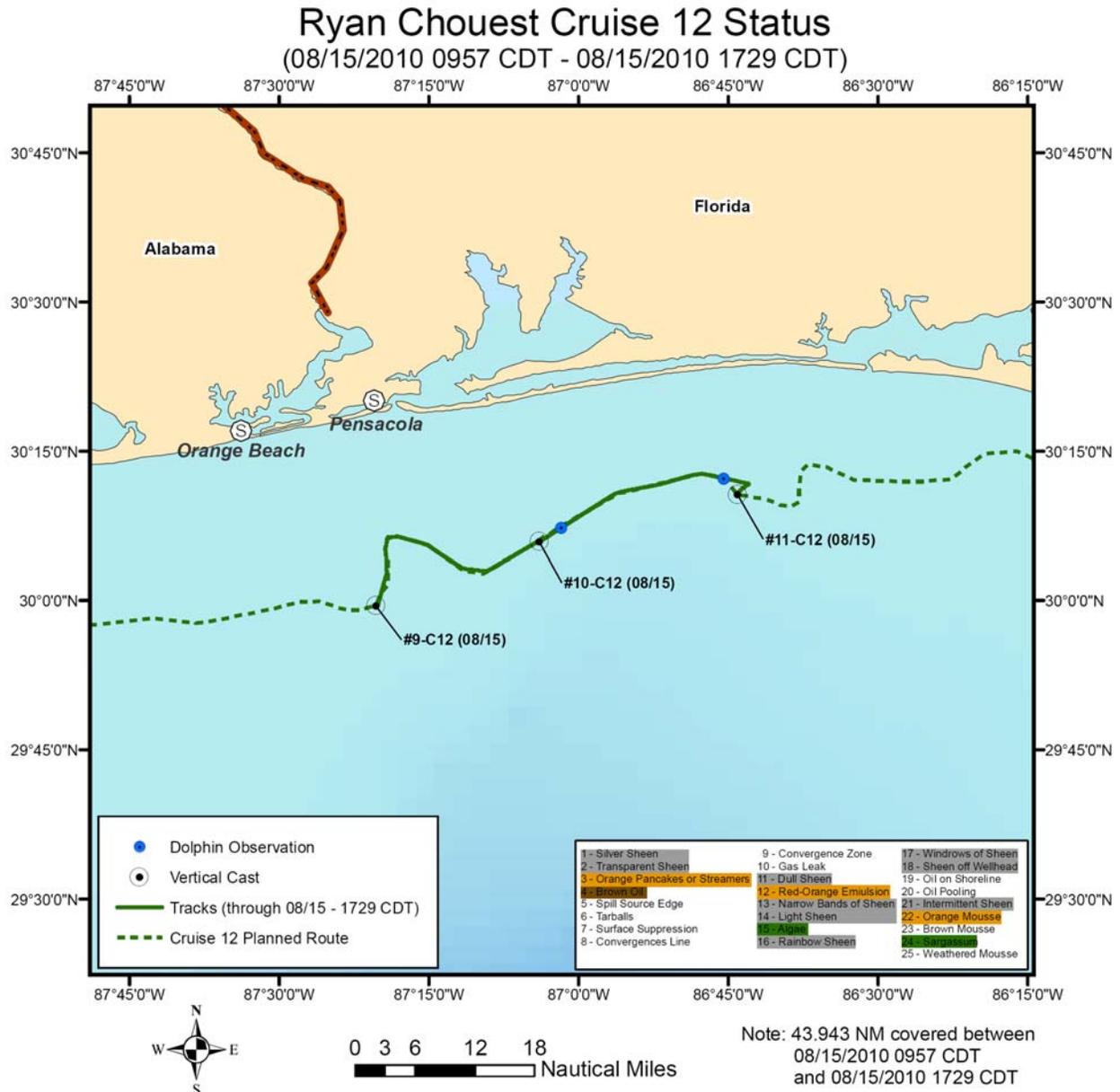
No echosounder contacts related to seabed seep activities were observed during this report period.

**Vertical Casts**

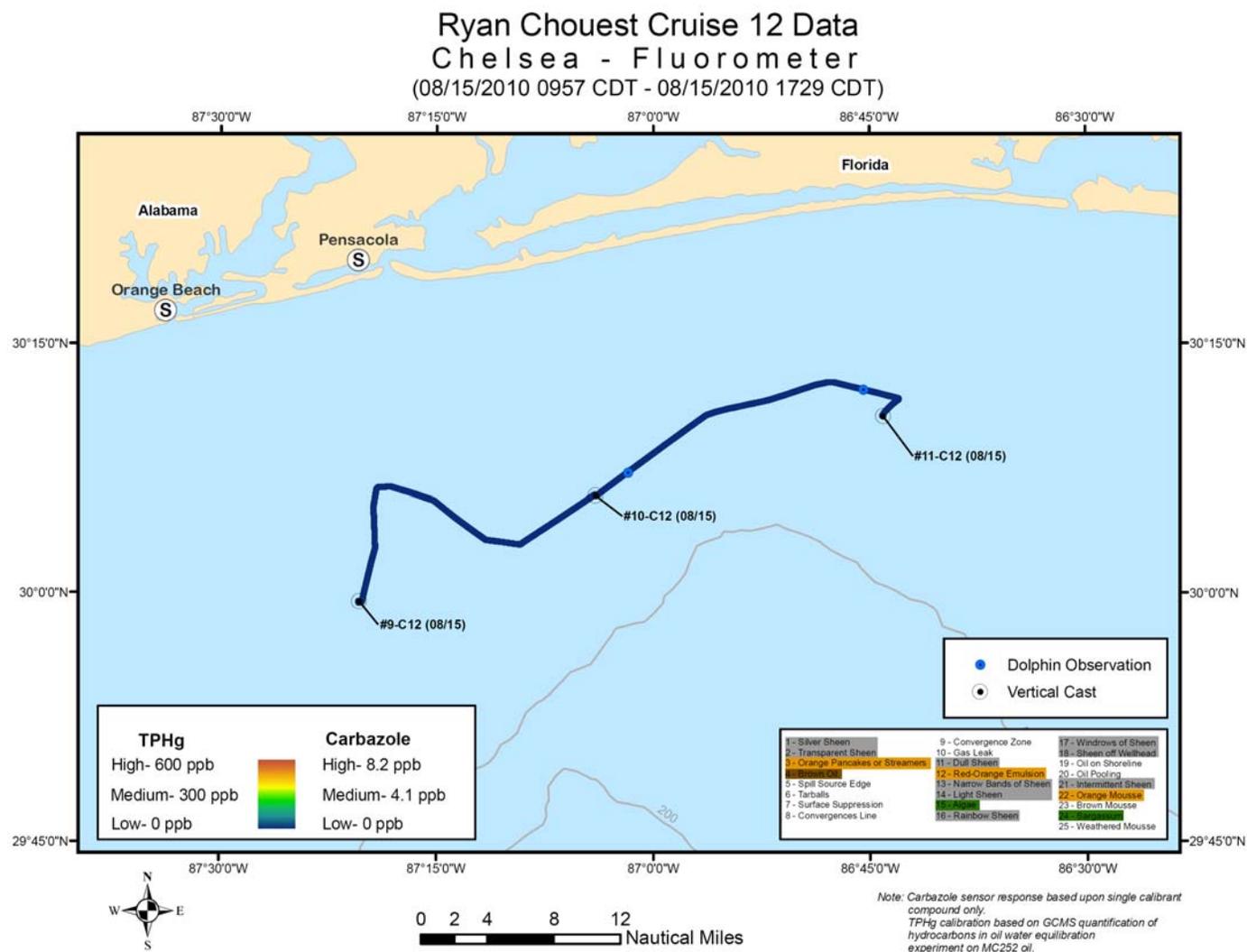
Three vertical fluorometry/CTD casts were taken during this report period (Figures 4 – 6). Five vertical fluorometry/CTD casts were taken during this report period (Figures 4– 9). As with the other casts along this cruise track the inferred hydrocarbon concentrations were within the low ppb levels for the Chelsea and Trios fluorometers. The Contros sensor results are included in the figures however due to the

forementioned problems with the lamp the results will not be interpreted. The trend in results for the Chelsea and Trios fluorometers and the AW40 volatile sensor are consistent with hydrocarbon concentrations increasing towards the surface. The conductivity and dissolved oxygen concentration through the water column is fairly constant. The temperature increases towards the surface are also reflect a similar trend to that of hydrocarbon concentration.

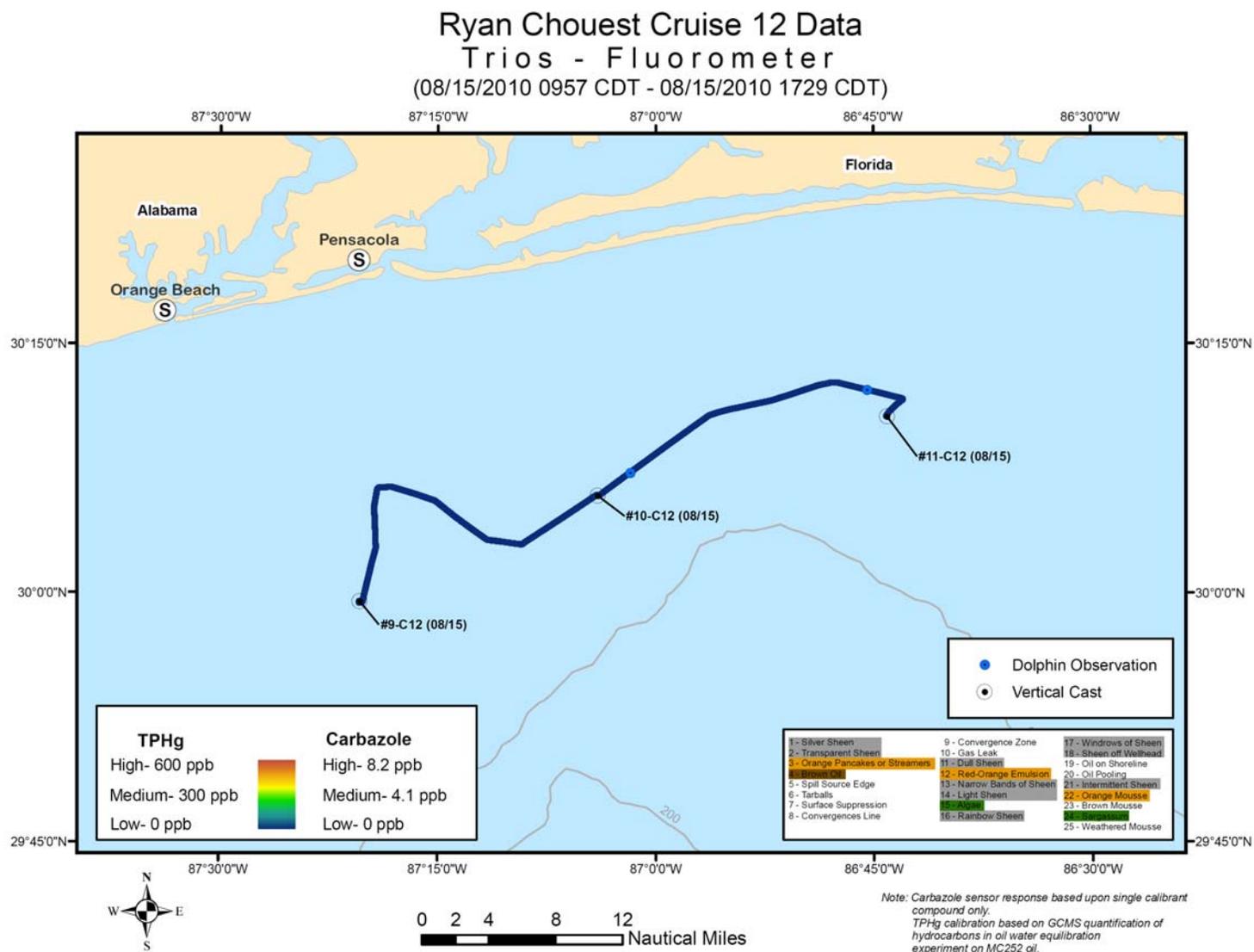
**Planned route for cruise 12:**



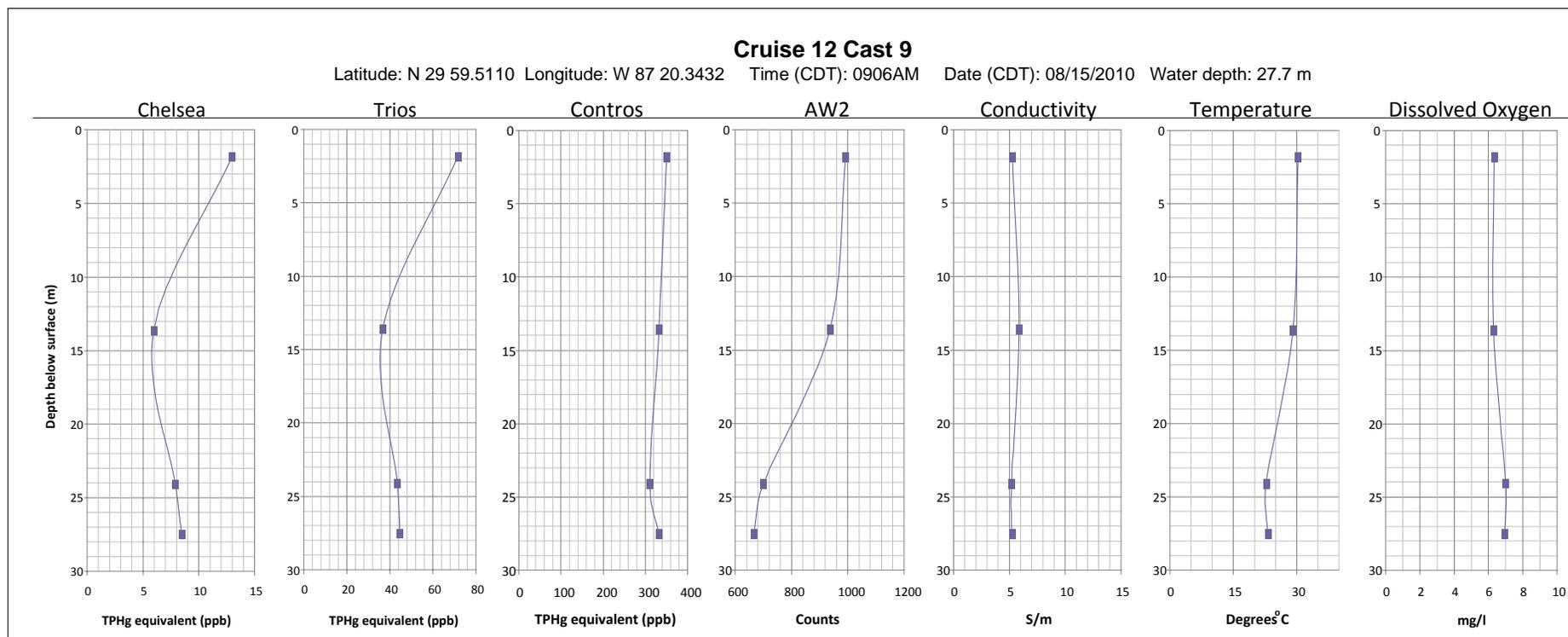
**Figure 1:** Planned route for cruise 12 versus the actual route plotted between 08/15/2010 – 08/16/2010.



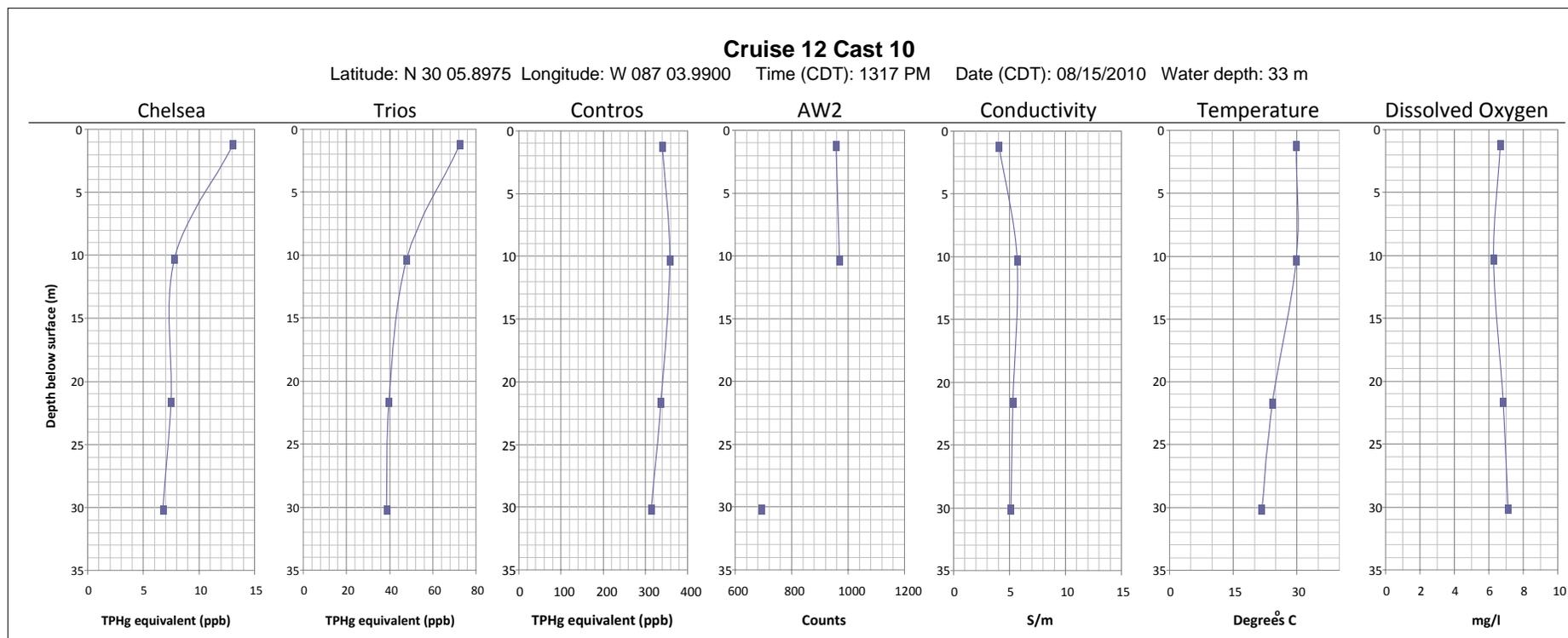
**Figure 2.** Chelsea fluorometer results plotted with location on cruise track 12. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems. Purple lines represent depth contours of 100 m intervals.



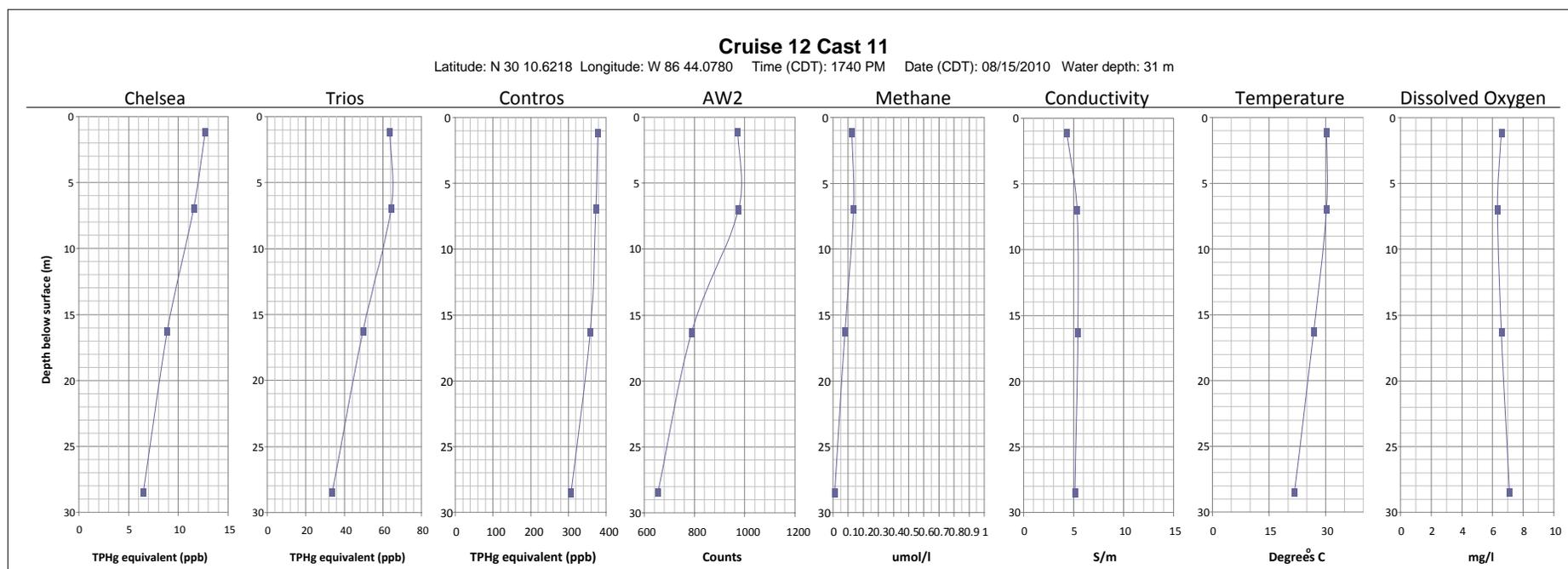
**Figure 3.** Trios fluorometer results plotted with location on cruise track 12. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems. Purple lines represent depth contours of 100 m intervals.



**Figure 4.** The results obtained for Cruise 12 vertical cast 9 (#9-C12) down to 27 m. The sensor fluorometry results for the Chelsea, Trios and Contros sensors and water samples were obtained from waters pumped to the surface. Conductivity, temperature, depth and dissolved oxygen measurements were obtained from a SBE 19+ system and oxygen sensor attached to the submersible pump used to draw the water into the sensor tank on the surface.



**Figure 5.** The results obtained for Cruise 12 vertical cast 10 (#10-C12) down to 27 m. The sensor fluorometry results for the Chelsea, Trios and Contros sensors and water samples were obtained from waters pumped to the surface. Conductivity, temperature, depth and dissolved oxygen measurements were obtained from a SBE 19+ system and oxygen sensor attached to the submersible pump used to draw the water into the sensor tank on the surface.



**Figure 6.** The results obtained for Cruise 12 vertical cast 11 (#11-C12) down to 27 m. The sensor fluorometry results for the Chelsea, Trios and Contros sensors and water samples were obtained from waters pumped to the surface. Conductivity, temperature, depth and dissolved oxygen measurements were obtained from a SBE 19+ system and oxygen sensor attached to the submersible pump used to draw the water into the sensor tank on the surface.

**Science Operations:**

Fluorometer measurements were logged for the majority of the period and observations of sea-surface conditions were made throughout. Vertical fluorometry and CTD casts are taken approximately every 20 nautical miles and sample the upper 30m. The EK-60 echo sounder is continuously collecting data to evaluate the seabed and water column for possible seeps. We continue to analyse water samples using the GCMS.

**Problems/operational issues:**

No additional problems occurred during the period covered.

**Selected Photographs:**

No photographs were taken during the reporting period.

**Planned activities for next 24 hours:**

The *Ryan Chouest* will remain in Theodore for a handover meeting between the two science teams and then crew change will commence on Wednesday August 18<sup>th</sup>. We will likely depart in the evening on Wednesday.

**Full Crew List:**

William A. Smith	MASTER	Brian Corley	Mate
Craig Lyons	ENG	Robert Thompson	ENG
Elijah Benjamin	O/S	Arthur Triggs	O/S
Roderick Baker	OS/Cook	Patrick Anderson	A/B
Kile Blunt	A/B/Cook	Guilherme de Almeida	Entrix
Lawrence Febo	BP	David Fuentes	CSIRO
Andrew Ross	CSIRO	Asrar Talukder	CSIRO
Emma Crooke	CSIRO	Kelly Bates	C&C
Tim MacEwan	C&C	Mathew Baham	C&C
Brett Bundick	C&C	David Duplechain	C&C
Bobby Patrick	C&C	Ben Autin	C-Port
Braden Wilson	C-Port		

**Important Disclaimer**

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