Ryan Chouest Cruise 9 report and daily report for 07/24/2010

Cruise 9 period covered: 2013 07/21/2010 - 0551 07/23/2010

Nautical miles covered: 237.15

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

Vessel science party:

Andrew Ross (Andrew.Ross@csiro.au)
David Fuentes(David.Fuentes@csiro.au)
Emma Crooke (Emma.Crooke@csiro.au)
Charlotte Stalvies (Charlotte.Stalvies@csiro.au)
Asrar Talukder (Asrar.Talukder@csiro.au)
Lawrence Febo (Lawrence.Febo@bp.com)
Guilherme de Almeida (gdealmeida@entrix.com)

Cruise notes:

The Ryan Chouest cruise 9 was intended to sail from Port Theodore to Port Fourchon via the MC252 site and the Green Canyon area. At the MC 252 site it was intended that a number of vertical casts around a 4.34 nautical mile and 5 nautical mile perimeter were to be performed (a partial planned route is shown in figure 1). In addition the underway hydrocarbon sensor array and echosounder were to be operated. Once this area had been surveyed the cruise plan was to attempt to survey the seeps to the west of the MC252 site in block MC 294 once again through the use of echosounder, hydrocarbon sensor array and also several vertical casts in the surface waters over the seep sites. If time permitted further brief hydrocarbon seep investigations to the west in the Green Canyon area were to be performed in order to establish the hydrocarbon concentration in the surface waters caused by natural seep occurrence. The vessel left port Theodore at ??? on Wednesday 21st July arriving at the survey area at 10am on Thursday 22nd July. One vertical cast was performed and a several water samples were taken for subsequent GCMS analysis. After the cast and on worsening weather predictions we were advised to return to Port Theodore until the tropical storm had passed. The vessel arrived back in port at 5am on Friday 23rd July. We are currently on standby in port awaiting more favorable sea conditions.

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 in certain sections of the cruise track. For the Trios fluorometer elevated values partially correlated with the ERMA oiling extent for the same day and there was also an enhanced response towards the entrance and within Mobile Bay (Figure 3). The Contros fluorometer showed an elevated response throughout the cruise track with higher values only experienced in one part of the potential oiling extent (Figure 4). As with the Trios instrument the response of the Contros increased as the vessel approached the Mobile Bay entrance and within the bay it's self.

Surface observations

Only one surface observation was made during the cruise track of a convergence line.

Vertical cast fluorometry results

One vertical cast (cast #1) was performed during the cruise in the vicinity (within 5 nautical miles) of the well site. The vertical profile shows that the surface waters as with many of the shallow water casts performed to date appear to have the greatest concentration of hydrocarbons as shown by the fluorometer responses. The thermocline appears to perhaps stretch between 20-80 m although it is not a defined boundary. Within this possible boundary zone the Contros and Trios show inverse trends to one another this is difficult to explain but many represent the influences of biological matter on the sensor response.

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 at the cast 1 cruise 9 position. 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 9:

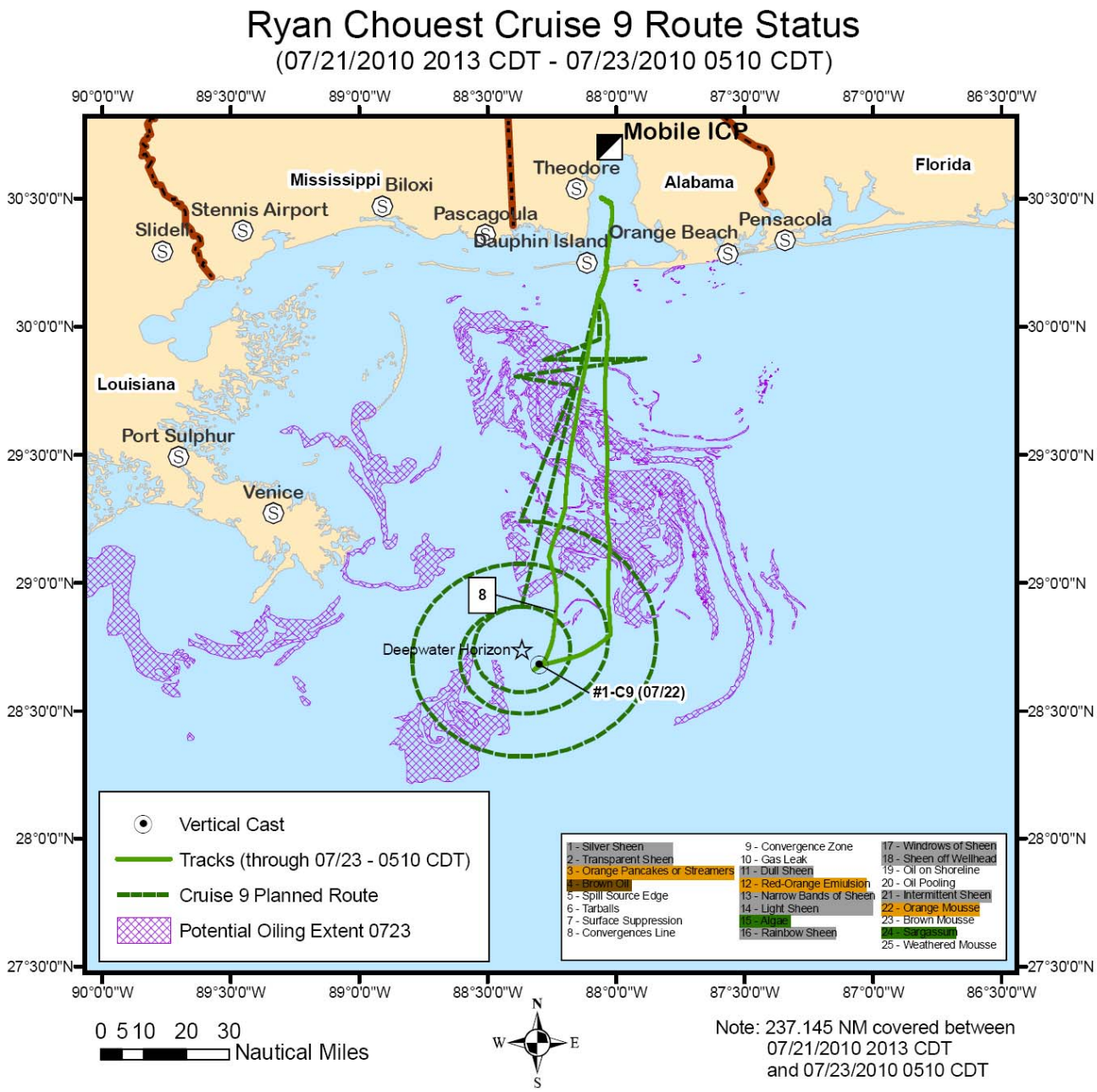

Figure 1: Planned versus actual route course plotted between 2010 07/21 – 0510 07/23. Purple shaded area represents outline extent of the slick from 07/23 ERMA composite.

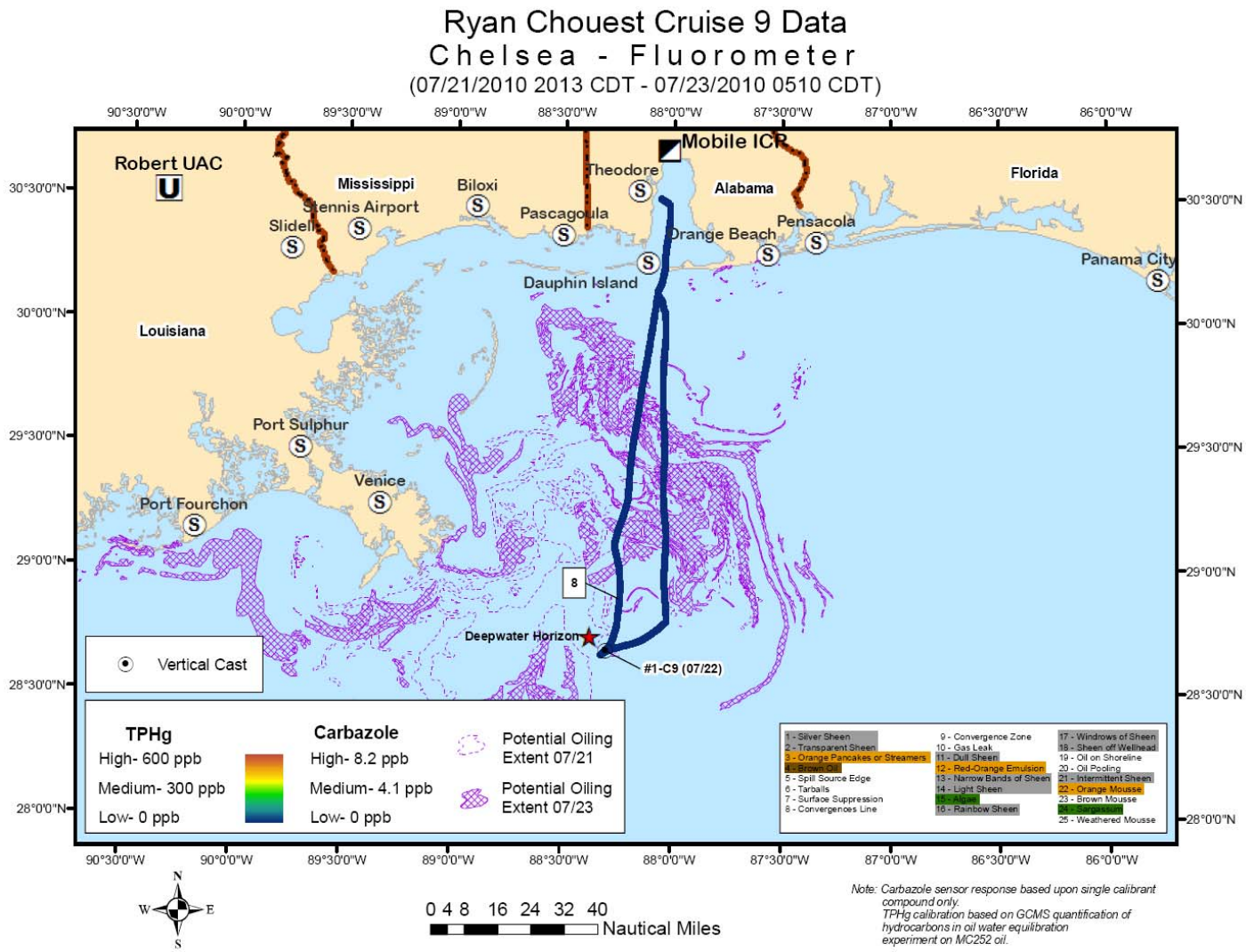

Figure 2. Chelsea fluorometer results plotted with location on cruise track 9. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

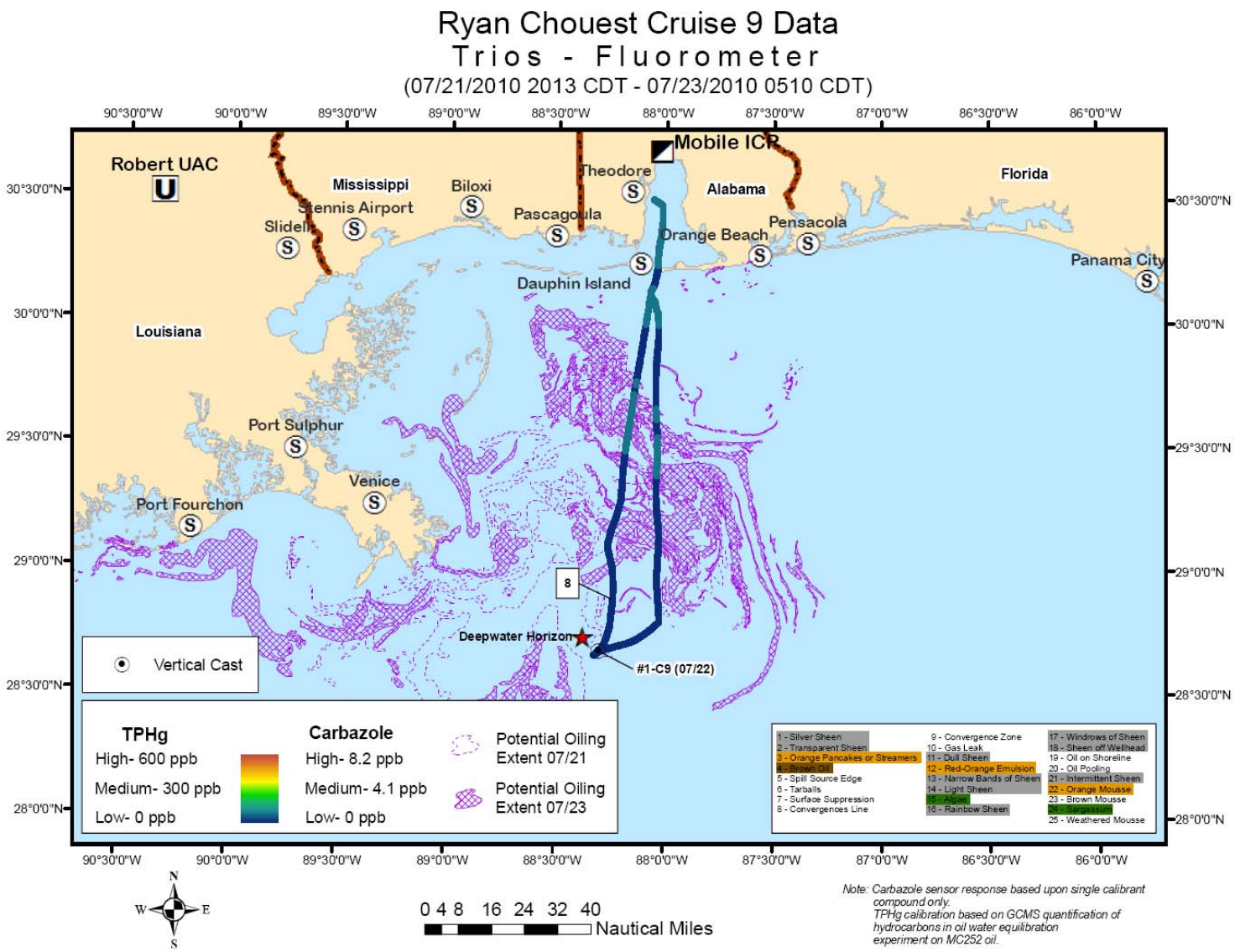

Figure 3. Trios fluorometer results plotted with location on cruise track 9. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

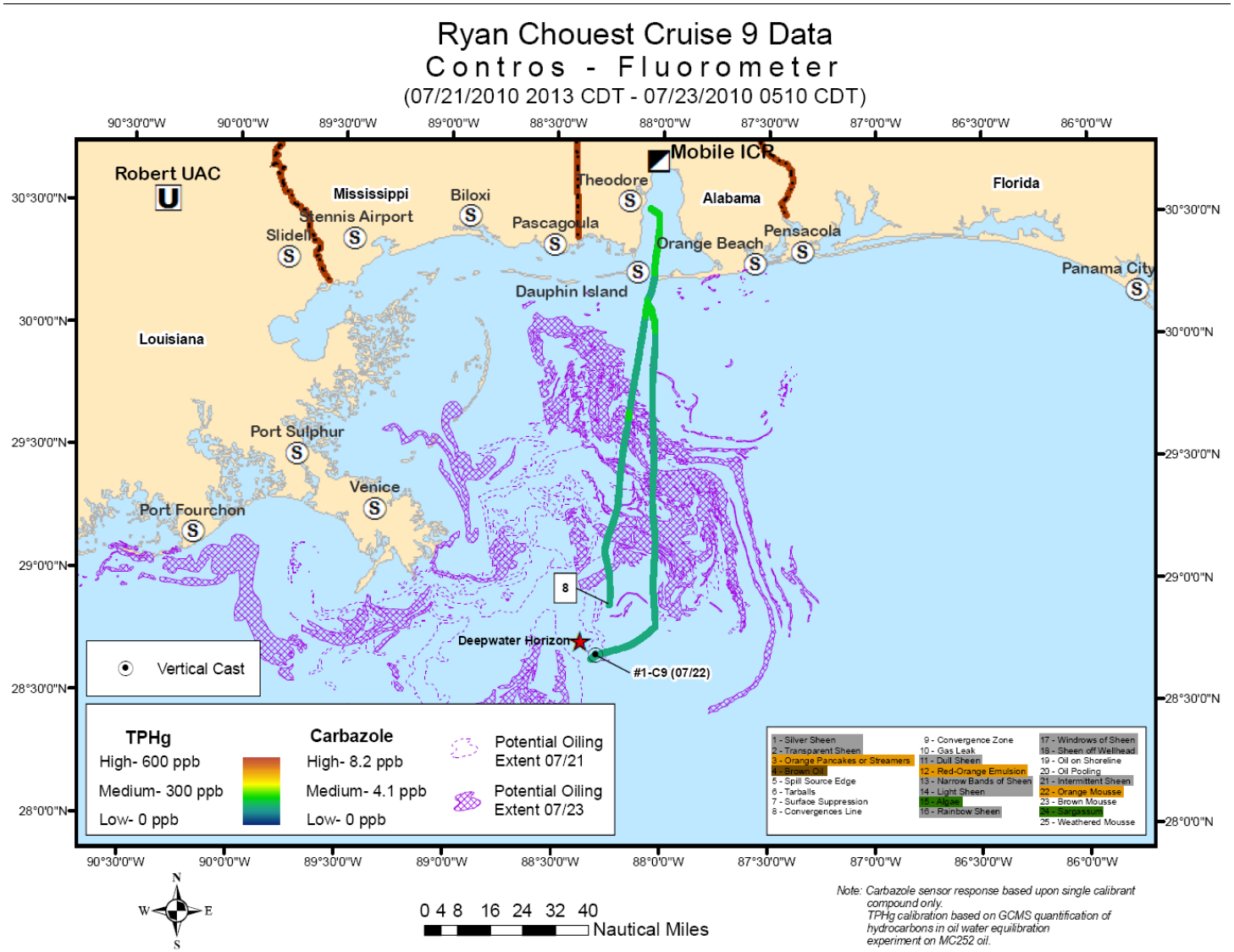

Figure 4. Contros fluorometer results plotted with location on cruise track 9. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

Cruise 9 Cast 1

Latitude : N 28 40.7188 Longitude: W 088 17.9276 Time (CDT): 10:42:00 AM Date(CDT): 2/07/2010

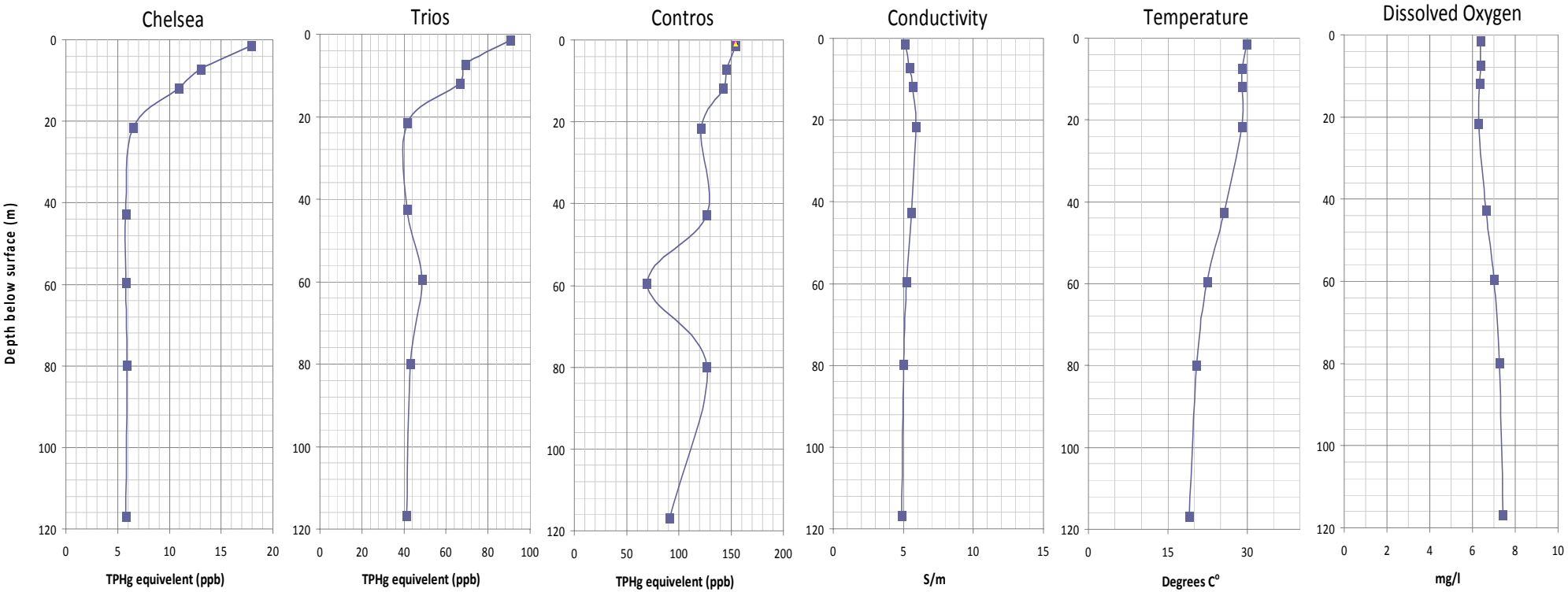

Figure 5. The results obtained for Cruise 9 vertical cast 1 down to 120 m. The sensor fluorometry results for the Chelsea, Trios and Contros sensors were obtained from waters pumped to the surface. Conductivity, temperature, depth and dissolved oxygen measurements were obtained from a SBE 19+ system and oxygen sensor attached to the submersible pump used to draw the water into the sensor tank on the surface.

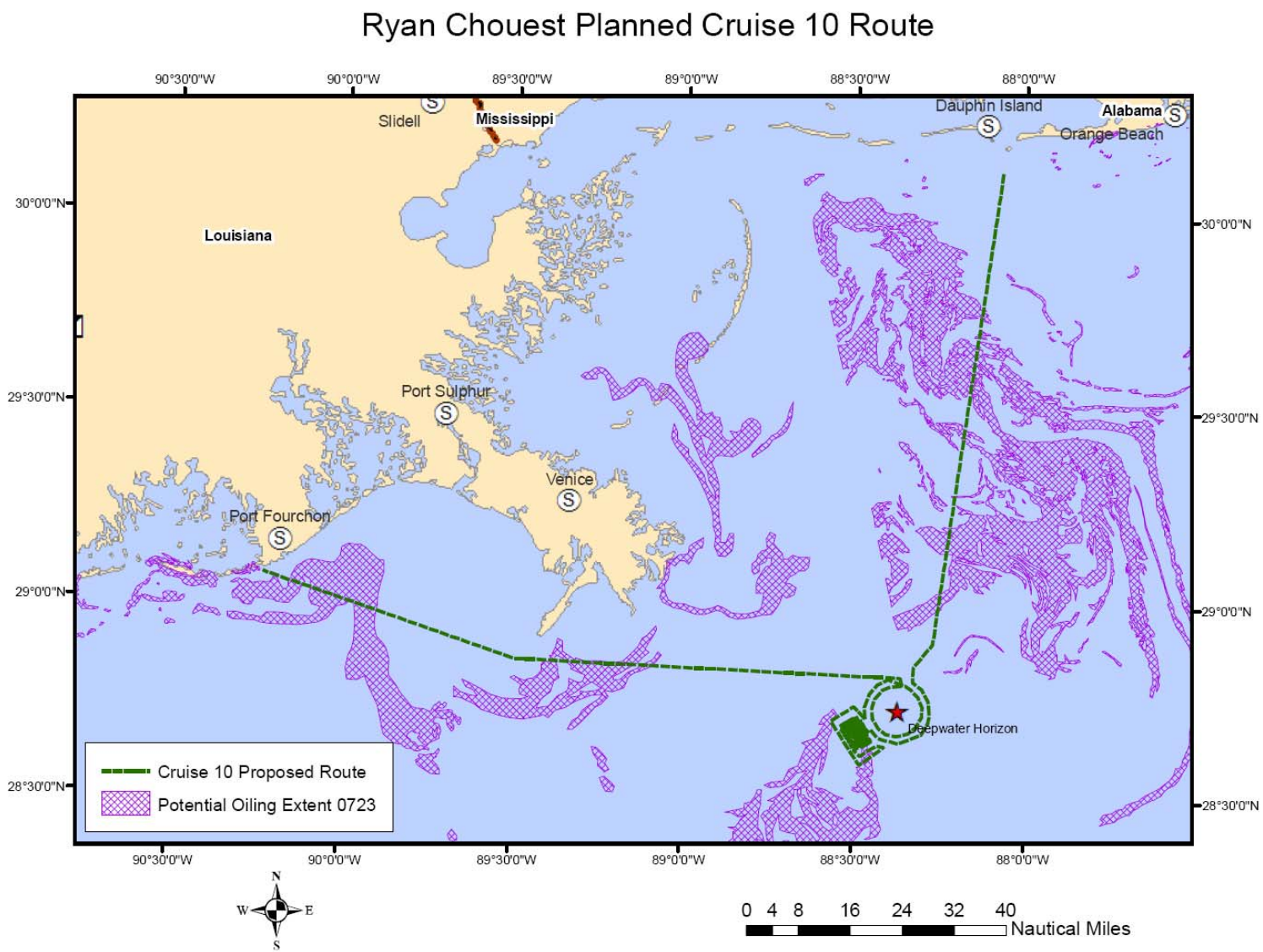

Figure 6. Planned route between 07/25/2010 _07/28/2010 of the Ryan Chouest.

Problems/operational issues:

(Includes items up to report submission time)

There are no problems or operational issues at this time. The science crew have been using the port time to work on maintenance of equipment and installation of new apparatus.

Planned activities for next 24 hours:

The intention is for the Ryan Chouest to leave Port Theodore mid afternoon Sunday (07/25/2010) and follow the route set out in figure 6. The route circles the MC252 site twice once at 5 nautical miles and a second time at 4.34 nautical miles. In addition the science crew will undertake a high density survey of the reported hydrocarbon seeps to the west of the MC252 site in block MC 294 using echosounder, the hydrocarbon sensor array and where appropriate taking surface water samples for geochemical analysis. After the high both of these activities the vessel will transit to Port Fourchon for a crew change on Wednesday afternoon (07/28/2010). Due to the time constraints limit if any vertical casts will be performed.

Selected Photos:

No photographs were taken over the cruise period.

Full Crew List:

William A. Smith	MASTER	Brian Corley	Mate
Robert Thompson	ENG	Craig Lyons	ENG
Eduardo Zepeda	A/B	Patrick Cousin	A/B
Mark Harmon	A/B	Arthur Triggs	O/S
Steven Morgan	OS/Cook	Roderick Baker	OS/Cook
Lawrence Febo	BP	Gui DeAlmeida	Entrix
Andrew Ross	CSIRO	David Fuentes	CSIRO
Emma Crooke	CSIRO	Asrar Talukder	CSIRO
Charlotte Stalvies	CSIRO	Tim MacEwen	C&C
Ryan Larsen	C&C	Kelly Bates	C&C
Jen Carlson	C&C	Mathew Baham	C&C
Greg Richard	C&C	Jay Ridgeway	C&C
Braden Wilson	C-Port	Ben Autin	C-Port