**Cruise:** RB10-07, Gulf of Mexico

**Ship:**  NOAA ship Ronald H Brown

**Dates:** October 14 – November 4, 2010

**Chief Scientist:** **Erik Cordes**  Assistant Professor *Temple University*??

**Equipment**: Niskin and underway sampling

**Total number of stations:** 3 stations and rest underway

**General information about cruise:** http://oceanexplorer.noaa.gov/explorations/10lophelia/background/plan/plan.html

***Sample Collection***

The discrete samples were collected by Chief Survey technician, Jonathan Shannahoff Surface samples were collected from a 6-m intake from the underway line (scientific seawater supply) at a sink in the hydro lab.

Sampling collection followed SOP 1 in Dickson et al.,(2007).

**DIC:**

20 locations, 3 stations, 40 samples each 500-ml, 12 sets of duplicate samples

PI: Dr. Rik Wanninkhof

Analyzed by: Robert Castle

**TAlk:**

20 locations, 3 stations, 40 samples each 500-ml, 12 sets of duplicate samples

PI: Dr. Rik Wanninkhof

Analyzed by: Dr. Leticia Barbero

***Sample Analysis***

**DIC:**

Analysis date: 2/4/2011 to 2/7/2011

Coulometer used: AOML2 (SOMMA #2)

Blank: min=12 counts/min; max = 20 counts/min; average = 15 counts/min

CRM # used and assigned value (include both DIC and salinity):

Meas CRM cert CRM meas sal cert sal batch

1984.45 2005.36 33.381 33.142 96

1983.74 2005.36 33.496 33.142 96

Run time: min=8 min; max = 14 min; average = 10 min

Reproducibility: (# samples and average difference): 12 sets of duplicate samples, average difference 0.8 umol/kg +- 0.5 umol/kg

CRM, salinity and HgCl2 correction applied: Salinity correction was applied using TSG salinity

Remarks-

The volume correction was applied due to added HgCl2 (Measured DIC\*1.00037).

The first CRM of each cell was used for a CRM correction.

match up with the underway DIC and TA samples

**TAlk:**

The results posted are duplicate analyses from the same DIC sample bottles.

Analysis date: 08/08/2011 to 08/12/2011

Titration system used: Open cell

CRM # used and assigned value:

Meas CRM cert CRM batch

2152.98 2184.03 85

2145.88 2184.03 85

2172.61 2212.40 96

2175.90 2212.40 96

Reproducibility: (# samples and average difference): 12 sets of duplicate samples, 6 of them were discarded (see remarks below); the average difference was 1.6 umol/kg ± 0.8 umol/kg.

CRM correction applied. CRMs ran at start and end of the analyses were used for the CRM correction.

Remarks-

There was an issue with the reproducibility of the samples from station GC852. All of the duplicates show large differences. Several of these bottles (51, 52, 53) were analyzed twice to discard an error in the measurement with similar alkalinity results. There might have been a problem with the way the samples were stored. Possible evaporation? All the samples in this station have been flagged 3. Bottles 197 and 192 were stored for an undetermined period of time in undetermined conditions, separate from the rest of the samples. Based on all this, all the bottles stored together in the same conditions (bottles 51-60 and 188-197) have been flagged 3 for alkalinity.

***Comments***