

Cruise: RB10-07, Gulf of Mexico

Ship: NOAA ship Ronald H Brown

Dates: October 14 – November 4, 2010

Expocode: 33RO20101014

Chief Scientist: Erik Cordes

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

UPDATE:

Between March and June of 2021, all of the data for the discrete samples was put into a uniform format. The supporting information was checked for accuracy, especially the expocode, date, time, and positions.