TITLE: Moran Th/U HLY0802

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DATA SET OVERVIEW:

The data in the accompanying file (Moran Th/U HLY0802.xls) includes data corresponding to samples collected by the Moran Geochemistry Lab on the spring leg of the BEST-BSIERP study from 31 March 2008 to 05 May 2008 aboard the USCGC HEALY (WAGB-20). Data are organized by station and sample depth, with station position (latitude and longitude) also included.

This dataset includes the following: Total ^{234}Th, and dissolved ^{238}U activities. These radionuclides are reported in units of dpm (disintegrations per minute) L^{-1}. In addition are the deployment and recovery dates and positions.

INSTRUMENT DESCRIPTION:

Samples were collected using 30-L Niskin bottles from the Healy's CTD-rosette.

DATA COLLECTION and PROCESSING:

Total ^{234}Th was measured on water samples collected from the Healy's CTD-rosette. Samples were typically collected from the 'hydro' cast, and bottles were sampled after gasses and nutrients were collected. Water samples were drained into graduated 4L bottles. 8-10 drops of ~30% $NH_4(OH)$ was then added to raise the pH to ~9. Then, 25 μl of 0.2M $KMnO_4$ and 11 μl of 1 M $MnCl_2$ were added to form a MnO_2 suspension. This suspension stood for one hour to scavenge dissolved ^{234}Th, and was subsequently filtered onto a 1 μm (nominal) GMF filter. The filters were then dried at 60°C overnight, and then mounted for beta counting. These samples were analyzed for ^{234}Th using a RISØ GM-25-5 beta counter at sea for the initial counts, and at URI-GSO for the subsequent

counts (up to 180 days after collection). Consult Buessler et al 1992 and Buessler et al 2001 for further details.

Dissolved ^{238}U was calculated using a known relationship with salinity:

^{238}U (dpm L^{-1}) = S x 0.069

This relationship was established in Chen et al 1986. Salinity values from the CTD's primary conductivity sensor recorded in the bottle data files were used for this calculation.

DATA FORMAT:

Data are presented as an excel file named Moran Th/U HLY0802.xls, as it includes the total thorium and dissolved uranium data from the spring cruise of the HEALY in 2008.

Data are organized by cruise ID, station number, station ID, collection date, collection position position (lat then long), and sample depth. Each column header indicates what information is in each column.

The following parameters (units in brackets) are reported in this dataset: Date of collection, Latitude of collection (Decimal Degrees N), Longitude of collection (Decimal Degrees E), Sample Depth (m), ^{234}Th (dpm L^{-1}), ^{234}Th error (dpm L^{-1}), ^{238}U (dpm L^{-1}), ^{238}U error (dpm L^{-1}).

No data flags were used in the dataset.

This is data version 1 and was compiled on 17 September 2009, and is classified as FINAL.

DATA REMARKS:

None

---REFERENCES:

Buesseler et al. 1992. Determination of thorium isotopes in seawater by non-destructive and radiochemical procedures. Deep Sea Research I. 39 (7/8): 1103-1114.

Buesseler et al. 2001. An intercomparison of small- and large-volume techniques for thorium-234 in seawater. Marine Chemistry. 74:15-28.

Chen et al. 1986. ^{238}U, ^{234}U, and ^{232}Th in seawater. Earth and Planetary Science Letters. 80: 241-251.