

# Dissolved Trace Metals (Cd, Co, Cu, Fe, Ni, Pb, Zn) filtered at 0.4 um from cruises TT008, TT012 in the Equatorial Pacific in 1992 during the U.S. JGOFS Equatorial Pacific (EqPac) project

Website: <https://www.bco-dmo.org/dataset/2684>

Version: September 13, 1994

Version Date: 1994-09-13

## Project

» [U.S. JGOFS Equatorial Pacific](#) (EqPac)

## Program

» [U.S. Joint Global Ocean Flux Study](#) (U.S. JGOFS)

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## Dataset Description

Dissolved Trace Metals filtered at 0.4 µm (includes Cadmium, Cobalt, Copper, Iron, Nickel, Lead, and Zinc)

## Methods & Sampling

See Platform deployments for cruise specific documentation

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## Parameters

Parameter	Description	Units
event	event/operation number per event log	dimensionless
depth_n	depth of sample	meters
date	date reported as YYYYMMDD	YYYYMMDD
time	time of day reported as local ship time	hours and minutes
lat_n	nominal latitude; negative for south	whole degrees
lon_n	nominal longitude; negative for west	whole degrees
Cd	Cadmium	picomoles per kilogram of sea water
Co	Cobalt	picomoles per kilogram of sea water
Cu	Copper	nanomoles per kilogram of sea water
Fe	Iron	nanomoles per kilogram of sea water
Ni	Nickel	nanomoles per kilogram of sea water
Pb	Lead	picomoles per kilogram of sea water
Zn	Zinc ( ) indicates that sample is contaminated	nanomoles per kilogram of sea water

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## Instruments

<b>Dataset-specific Instrument Name</b>	Trace Metal Bottle
<b>Generic Instrument Name</b>	Trace Metal Bottle
<b>Dataset-specific Description</b>	Trace metal (TM) clean rosette bottles were used to collect water samples.
<b>Generic Instrument Description</b>	Trace metal (TM) clean rosette bottle used for collecting trace metal clean seawater samples.

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## Deployments

### TT008

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57729">https://www.bco-dmo.org/deployment/57729</a>
<b>Platform</b>	R/V Thomas G. Thompson
<b>Start Date</b>	1992-03-19
<b>End Date</b>	1992-04-15
<b>Description</b>	<p>Purpose: Spring Time Series; Equator, 140°W TT008 was one of five cruises conducted in 1992 in support of the U.S. Equatorial Pacific (EqPac) Process Study. The five EqPac cruises aboard R/V Thomas G. Thompson included two repeat meridional sections (12°N - 12°S), 2 equatorial surveys, and a benthic survey (all at 140° W). The scientific objectives of this study were to observe the processes in the Equatorial Pacific controlling the fluxes of carbon and related elements between the atmosphere, euphotic zone, and deep ocean. As luck would have it, the survey window coincided with an El Nino event. A bonus for the research team.</p> <p><b>Methods &amp; Sampling</b>  PI: John Martin of: Moss Landing Marine Laboratories dataset: Dissolved Trace Metals filtered at 0.4um dates: March 25, 1992 to April 09, 1992 location: N: 0.0282 S: -0.0338 W: -140.0533 E: -139.9317 project/cruise: EQPAC/TT008 - Spring Time Series ship: Thomas Thompson</p>

## TT012

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57731">https://www.bco-dmo.org/deployment/57731</a>
<b>Platform</b>	R/V Thomas G. Thompson
<b>Start Date</b>	1992-09-24
<b>End Date</b>	1992-10-21
<b>Description</b>	<p>Purpose: Fall Time Series; Equator, 140°W TT012 was one of five cruises conducted in 1992 in support of the U.S. Equatorial Pacific (EqPac) Process Study. The five EqPac cruises aboard R/V Thomas G. Thompson included two repeat meridional sections (12°N - 12°S), 2 equatorial surveys, and a benthic survey (all at 140° W). The scientific objectives of this study were to observe the processes in the Equatorial Pacific controlling the fluxes of carbon and related elements between the atmosphere, euphotic zone, and deep ocean. As luck would have it, the survey window coincided with an El Nino event. A bonus for the research team.</p> <p><b>Methods &amp; Sampling</b> PI: John Martin of: Moss Landing Marine Laboratories dataset: Dissolved Trace Metals filtered at 0.4um dates: September 25, 1992 to October 20, 1992 location: N: 0.079 S: -12 W: -145.4867 E: -139.94 project/cruise: EQPAC/TT012 - Fall Time Series ship: Thomas Thompson</p>

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## Project Information

### U.S. JGOFS Equatorial Pacific (EqPac)

**Website:** <http://usjgofs.whoi.edu/research/eqpac.html>

**Coverage:** Equatorial Pacific

The U.S. EqPac process study consisted of repeat meridional sections (12°N -12°S) across the equator in the central and eastern equatorial Pacific from 95°W to 170°W during 1992. The major scientific program was focused at 140° W consisting of two meridional surveys, two equatorial surveys, and a benthic survey aboard the R/V Thomas Thompson. Long-term deployments of current meter and sediment trap arrays augmented the survey cruises. NOAA conducted boreal spring and fall sections east and west of 140°W from the R/V Baldrige and R/V Discoverer. Meteorological and sea surface observations were obtained from NOAA's in place TOGA-TAO buoy network.

The scientific objectives of this study were to determine the fluxes of carbon and related elements, and the processes controlling these fluxes between the Equatorial Pacific euphotic zone and the atmosphere and deep ocean. A broad overview of the program at the 140°W site is given by Murray et al. (Oceanography, 5: 134-142, 1992). A full description of the Equatorial Pacific Process Study, including the international context and the scientific results, appears in a series of Deep-Sea Research Part II special volumes:

Topical Studies in Oceanography, A U.S. JGOFS Process Study in the Equatorial Pacific (1995), Deep-Sea Research Part II, Volume 42, No. 2/3.

Topical Studies in Oceanography, A U.S. JGOFS Process Study in the Equatorial Pacific. Part 2 (1996), Deep-Sea Research Part II, Volume 43, No. 4/6.

Topical Studies in Oceanography, A U.S. JGOFS Process Study in the Equatorial Pacific (1997), Deep-Sea Research Part II, Volume 44, No. 9/10.

Topical Studies in Oceanography, The Equatorial Pacific JGOFS Synthesis (2002), Deep-Sea Research Part II, Volume 49, Nos. 13/14.

## **Program Information**

### **U.S. Joint Global Ocean Flux Study (U.S. JGOFS)**

**Website:** <http://usjgofs.whoi.edu/>

**Coverage:** Global

The United States Joint Global Ocean Flux Study was a national component of international JGOFS and an integral part of global climate change research.

The U.S. launched the Joint Global Ocean Flux Study (JGOFS) in the late 1980s to study the ocean carbon cycle. An ambitious goal was set to understand the controls on the concentrations and fluxes of carbon and associated nutrients in the ocean. A new field of ocean biogeochemistry emerged with an emphasis on quality measurements of carbon system parameters and interdisciplinary field studies of the biological, chemical and physical process which control the ocean carbon cycle. As we studied ocean biogeochemistry, we learned that our simple views of carbon uptake and transport were severely limited, and a new "wave" of ocean science was born. U.S. JGOFS has been supported primarily by the U.S. National Science Foundation in collaboration with the National Oceanic and Atmospheric Administration, the National Aeronautics and Space Administration, the Department of Energy and the Office of Naval Research. U.S. JGOFS, ended in 2005 with the conclusion of the Synthesis and Modeling Project (SMP).