

MIRAI MR98-01 Bottle Sampling Water Chemical Analysis

Last Modified: 2015-05-29

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Cruise ID: [MR98-01](#)

Bottle Sampling Water Chemical Analysis: Processed (DMO)-QCed

Data Policy: [JAMSTEC](#)

Observation Items: Temperature, Salinity, Dissolved oxygen, Fluorescence, Phaeophytin, Chlorophyll, Transmittance, Silicate, Nitrate, Nitrite, Phosphate, Total inorganic carbon, pH, N2O, Density

Science Keywords:

OCEANS > OCEAN CHEMISTRY > INORGANIC CARBON
OCEANS > OCEAN CHEMISTRY > NITRITE
OCEANS > OCEAN CHEMISTRY > NITRATE
OCEANS > OCEAN CHEMISTRY > NUTRIENTS
OCEANS > OCEAN CHEMISTRY > OXYGEN
OCEANS > OCEAN CHEMISTRY > pH
OCEANS > OCEAN CHEMISTRY > PHOSPHATE
OCEANS > OCEAN CHEMISTRY > SILICATE
OCEANS > OCEAN CHEMISTRY > SALINITY
OCEANS > OCEAN CHEMISTRY > CHLOROPHYLL
OCEANS > OCEAN TEMPERATURE > WATER TEMPERATURE
OCEANS > SALINITY/DENSITY > SALINITY
OCEANS > OCEAN TEMPERATURE > SEA SURFACE TEMPERATURE
OCEANS > OCEAN CHEMISTRY > NITROGEN
OCEANS > OCEAN CHEMISTRY > CARBON
OCEANS > OCEAN OPTICS > FLUORESCENCE

For Using Data

Principal Investigator

CTDTMP : Michio Aoyama (Meteorological Research Institute)/Takeshi Kawano (JAMSTEC)
CTDSAL : Michio Aoyama (Meteorological Research Institute)/Takeshi Kawano (JAMSTEC)
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OXYGEN : Tomoyuki Tanaka (Nagoya University)
FLUOR : Michio Aoyama (Meteorological Research Institute)/Takeshi Kawano (JAMSTEC)
CHLORA : Kazuhiko Matsumoto (JAMSTEC)
PPHYTN : Kazuhiko Matsumoto (JAMSTEC)
CHLWELSH : Kazuhiko Matsumoto (JAMSTEC)
XMISS : Michio Aoyama (Meteorological Research Institute)/Takeshi Kawano (JAMSTEC)
SILCAT : Takeshi Kawano (JAMSTEC)
NITRAT : Takeshi Kawano (JAMSTEC)
NITRIT : Takeshi Kawano (JAMSTEC)
PHSPHT : Takeshi Kawano (JAMSTEC)
TCARBN : Takeshi Kawano (JAMSTEC)
PH_SWS : Kiminori Shitashima (CRIEPI)
N2O : Kiminori Shitashima (CRIEPI)

Use Constraints

See [Terms and Conditions](#) about constrain of use.

Data Citation

See [Terms and Conditions](#) about data citation.

Instrument

Instrument:

Salinity measurement system



Instrument:

Nutrient analyzer(4ch) (- MR09-01)



Instrument:

Total dissolved inorganic carbon measurement system (- MR11-E02)



Instrument:

pH meter (- MR03-K04 Leg6)



Instrument:

Titration for DO (- MR11-05 Leg2)



Instrument:

Fluorometer (TURNER DESIGNS)



Notice

- Temperature data measured by a mercury thermometer is listed in CTDTMP column at SAMPNO 0 which means sampled by bucket. Please notice that this data is different from other data in format (f9.1) and instrument.

Information on CTD data

- (1) Temperature sensor
Model: SBE3, Sea-Bird Electronics, Inc.
- (2) Salinity sensor
Model: SBE4, Sea-Bird Electronics, Inc.
- (3) Pressure sensor
Model: SBE9plus, Sea-Bird Electronics, Inc.
- (4) Fluorometer
Model : Sea Tech Fluorometer (Sea Tech, Inc.)
- (5) Transmissometer
Model : Sea Tech-25cm (Sea Tech, Inc.)

Information on Chemical and Biological data

- 1. Dissolved Oxygen
 - (1)Instruments: Titrator: Model 716 Titrimo (Metrohm)
Detector: Pt electrode
 - (2)Methods: Winkler method/potentiometric method
 - (3)Precision: Standard deviation (2 sigma) of 0.2umol/l (0.1% of D.O. max., 202.9umol/l in this cruise)
 - (4)Reference Material/Calibration: 5l batch of 0.07N thiosulfate solution and 0.0100N KIO₃ solution
- 2. Salinity
 - (1)Instruments: Autosol salinometer model 8400B (Guildline Instruments Ltd.)
 - (2)Methods: -
 - (3)Precision: -
 - (4)Reference Material/Calibration: IAPSO Standard Sea Water batch P128 (Ocean Scientific International Ltd.)
- 3. Silicate
 - (1)Instruments: TRAACS800 (Bran+Luebbe)
 - (2)Methods: Molybdenum blue method
 - (3)Precision: From 0.4 to 1.7% (CV%)
 - (4)Reference Material/Calibration: -
- 4. Nitrate
 - (1)Instruments: TRAACS800 (Bran+Luebbe)
 - (2)Methods: Diazotization method (reduced to nitrite by Cd - Cu tube)
 - (3)Precision: From 0.3 to 2.8% (CV%)
 - (4)Reference Material/Calibration: -
- 5. Nitrite
 - (1)Instruments: TRAACS800 (Bran+Luebbe)
 - (2)Methods: Diazotization method
 - (3)Precision: -
 - (4)Reference Material/Calibration: -
- 6. Phosphate
 - (1)Instruments: TRAACS800 (Bran+Luebbe)
 - (2)Methods: Molybdenum blue method
 - (3)Precision: From 0.3 to 2.3% (CV%)
 - (4)Reference Material/Calibration: -
- 7. Total inorganic carbon
 - (1)Instruments: Carbon coulometer 5012(UIC Inc.)
 - (2)Methods: coulometry
 - (3)Precision: 0.08%(cv)
 - (4)Reference Material/Calibration: Na₂CO₃ solution and the CRMs supplied by Dr. Dickson in Scripps Institute of Oceanography
- 8. pH
 - (1)Instruments: Radiometer Analytical A/S PHM93
 - (2)Methods: potentiometric methods at 25deg-C
 - (3)Precision: -
 - (4)Reference Material/Calibration: Tris and 2-Aminopyridine Buffers
- 9.Chlorophyll-a(Welschmeyer method)
 - (1)Instruments : Spectrofluorophotometer SHIMADZU RF-5300PC (SHIMADZU), Fluorophotometer model 10-AU-005 (Turner design)
 - (2)Methods : extract in N,N-dimethylformamide /fluorometric determination (Welschmeyer non-acidification method)
 - (3)Precision : -
 - (4)Reference Material/Calibration : -

Related Information



MR98-01
Ship Name: MIRAI
Period: 1998-01-24 - 1998-02-26

Update History	
2015-05-29	An observation data was registerd.
2013-08-09	An observation data was registerd.
2013-02-07	An observation data was registerd.

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Bottle Sampling Water Chemical Analysis: Processed (DMO)-QCed

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Exchange Format

Provided in the Exchange Format of CCHDO (CLIVAR and Carbon Hydrographic Data Office).

Please see the following link for details of Exchange Format.

[CCHDO | CLIVAR & Carbon Hydrographic Data Office](#)

Format Information

Column No.	Column Heading Mnemonic	Units Mnemonic	Reporting Precision FORTRAN Format	Comments
1	EXPCODE		A14	Expedition code
2	SECT		A6	For WOCE data the WHP section identifier
3	STNNBR		A6	Station number
4	CASTNO		I3	Cast number
5	SAMPNO		A7	Sample number
6	BTLNBR		A7	Bottle identification number
7	BTLNBR_FLAG_W		I1	Bottle quality flag
8	DATE		I8	Cast date(UTC)
9	TIME	UTC	I4	Cast time (UTC)
10	LATITUDE	DEG	F8.3	LATITUDE
11	LONGITUDE	DEG	F9.3	LONGITUDE
12	DEPTH	M	I5	Reported depth to bottom.
13	CTDPRS	DBAR	F9.1	Pressure
14	CTDPRS_FLAG_W		I1	Quality flag for CTD data
15	CTDTMP	ITS-90	F9.4	Temperature
16	CTDTMP_FLAG_W		I1	Quality flag for CTD data
17	CTDSAL	PSS-78	F9.4	CTD Salinity sensor
18	CTDSAL_FLAG_W		I1	Quality flag for CTD data
19	SALNTY	PSS-78	F9.3	Salinity
20	SALNTY_FLAG_W		I1	Quality flags for water samples
21	OXYGEN	UMOL/L	F9.2	Oxygen
22	OXYGEN_FLAG_W		I1	Quality flags for water samples
23	FLUOR	UG/L	F9.4	Fluorometer
24	FLUOR_FLAG_W		I1	Quality flag for CTD data
25	CHLORA	MG/CUM	F9.2	Chlorophyll a
26	CHLORA_FLAG_W		I1	Quality flags for water samples
27	PPHYTN	MG/CUM	F9.2	Phaeophytin
28	PPHYTN_FLAG_W		I1	Quality flags for water samples
29	CHLWELSH	MG/CUM	F9.2	Chlorophyll a (Welschmeyer method)
30	CHLWELSH_W		I1	Quality flags for water samples
31	XMISS	%TRANS	F9.2	Transmissometer
32	XMISS_FLAG_W		I1	Quality flag for CTD data
33	SILCAT	UMOL/L	F9.2	Silicate
34	SILCAT_FLAG_W		I1	Quality flags for water samples
35	NITRAT	UMOL/L	F9.2	Nitrate
36	NITRAT_FLAG_W		I1	Quality flags for water samples
37	NITRIT	UMOL/L	F9.2	Nitrite
38	NITRIT_FLAG_W		I1	Quality flags for water samples
39	PHSPHT	UMOL/L	F9.2	Phosphate
40	PHSPHT_FLAG_W		I1	Quality flags for water samples
41	TCARBN	UMOL/L	F9.1	Total carbon
42	TCARBN_FLAG_W		I1	Quality flags for water samples
43	PH_SWS	-	F9.3	pH(Seawater scale)
44	PH_SWS_FLAG_W		I1	Quality flags for water samples
45	N2O	UMOL/L	F9.2	Nitrous oxide
46	N2O_FLAG_W		I1	Quality flags for water samples
47	SIG0	KG/CUM	F9.4	Density

ODV Format

Please see the following link for details of ODV Format and ODV Software.

[Ocean Data View \(ODV\)](#)

Format Information

td>NITRIT[UMOL/L]

Column No.	Column Heading	Comments
1	Cruise	Cruise Label
2	Station	Station number_Cast number
3	Type	Station type
4	mon/day/yr	Cast date(UTC)
5	hh:mm	Cast time (UTC)
6	Latitude [degrees_north]	LATITUDE
7	Longitude [degrees_east]	LONGITUDE
8	Bot. Depth [m]	Reported depth to bottom.
9	CTDDPT[M]	Depth(Calculate from CTDPRS and LATITUDE)
10	QF	Quality flag for CTD data
11	CTDPRS[DBAR]	Pressure

Column No.	Column Heading	Comments
		Comments for CTD data
13	CTDTMP[ITS-90]	Temperature
14	QF	Quality flag for CTD data
15	CTDSAL[PSS-78]	CTD Salinity sensor
16	QF	Quality flag for CTD data
17	SALNTY[PSS-78]	Salinity
18	QF	Quality flags for water samples
19	OXYGEN[UMOL/L]	Oxygen
20	QF	Quality flags for water samples
21	FLUOR[UG/L]	Fluorometer
22	QF	Quality flag for CTD data
23	CHLORA[MG/CUM]	Chlorophyll a
24	QF	Quality flags for water samples
25	PPHYTN[MG/CUM]	Phaeophytin
26	QF	Quality flags for water samples
27	CHLWELSH[MG/CUM]	Chlorophyll a (Welschmeyer method)
28	QF	Quality flags for water samples
29	XMISS[%TRANS]	Transmissometer
30	QF	Quality flag for CTD data
31	SILCAT[UMOL/L]	Silicate
32	QF	Quality flags for water samples
33	NITRAT[UMOL/L]	Nitrate
34	QF	Quality flags for water samples
35	Nitrite	
36	QF	Quality flags for water samples
37	PHSPHT[UMOL/L]	Phosphate
38	QF	Quality flags for water samples
39	TCARBN[UMOL/L]	Total carbon
40	QF	Quality flags for water samples
41	PH_SWS	pH(Seawater scale)
42	QF	Quality flags for water samples
43	N2O[UMOL/L]	Nitrous oxide
44	QF	Quality flags for water samples
45	SIG0[KG/CUM]	Density
46	QF	Quality flag for CTD data
47	SAMPNO	Sample number
48	QF	Bottle quality flag

Related Information



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POWER GRAB
SAMPLER (CLOW)
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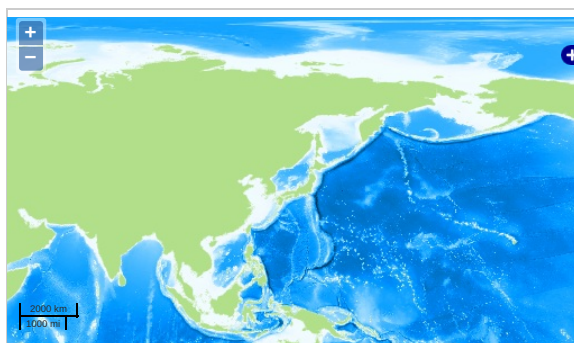
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Science Keywords:

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OCEANS > OCEAN CHEMISTRY > NITROGEN
OCEANS > OCEAN CHEMISTRY > CARBON
OCEANS > OCEAN OPTICS > FLUORESCENCE

Observation Map



... Observation Line ... Navigation ... Observation, Dive Point, Hole Imagery reproduced from ...

Data List

☐ File names

☐ MR980100_ex_bot.csv

☐ MR980100_odv_bot.txt

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