

## MIRAI MR17-05C Bottle Sampling Water Chemical Analysis

Last Modified: 2019-10-01

**ReadMe** Observation Data Data Format Quality Information

Cruise ID: **MR17-05C**

Bottle Sampling Water Chemical Analysis : Processed (DMO/PI)

Data Policy: **JAMSTEC**

**Observation Items:** Pressure, Temperature, Practical salinity, Dissolved oxygen, Potential temperature, Density, Transmittance, Turbidity, Fluorescence, PAR, Nitrate, Nitrite, Phosphate, Ammonia, Total inorganic carbon, Alkalinity, Chlorophyll, Sound velocity

**Science Keywords:**

OCEANS	> OCEAN CHEMISTRY	> AMMONIA
OCEANS	> OCEAN CHEMISTRY	> INORGANIC CARBON
OCEANS	> OCEAN CHEMISTRY	> NITRATE
OCEANS	> OCEAN CHEMISTRY	> NUTRIENTS
OCEANS	> OCEAN CHEMISTRY	> OXYGEN
OCEANS	> OCEAN CHEMISTRY	> PHOSPHATE
OCEANS	> OCEAN CHEMISTRY	> SILICATE
OCEANS	> OCEAN CHEMISTRY	> SALINITY
BIOSPHERE	> VEGETATION	> CHLOROPHYLL
OCEANS	> OCEAN CHEMISTRY	> CHLOROPHYLL
OCEANS	> OCEAN TEMPERATURE	> WATER TEMPERATURE
OCEANS	> SALINITY/DENSITY	> SALINITY
OCEANS	> OCEAN OPTICS	> PHOTOSYNTHETICALLY ACTIVE RADIATION
OCEANS	> OCEAN CHEMISTRY	> ALKALINITY
OCEANS	> OCEAN ACOUSTICS	
OCEANS	> OCEAN CHEMISTRY	> CARBON
OCEANS	> OCEAN OPTICS	> FLUORESCENCE

**Cruise Report**

[http://www.godac.jamstec.go.jp/catalog/data/doc\\_catalog/media/MR17-05C\\_all.pdf](http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR17-05C_all.pdf)

### For Using Data

#### Principal Investigator

CTD/O2, SBE35, XMISS, FLUOR, TURB, PAR, CTDNRA : Shigeto Nishino (JAMSTEC)

Sound velocity : Hiroshi Uchida (JAMSTEC)

SALNTY, OXYGEN : Shigeto Nishino (JAMSTEC)

Nutrients : Michio Aoyama (JAMSTEC/Fukushima University)

TCARBON, ALKALI : Akihiko Murata (JAMSTEC)

CHLWEL, SIZECHL : Amane Fujiwara (JAMSTEC)

#### 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(5ch) (MR09-02 - )



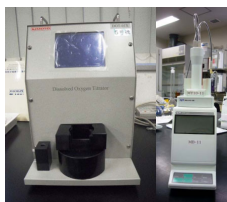
Instrument:

Total dissolved inorganic carbon measurement system (MR11-05 Leg1 -)



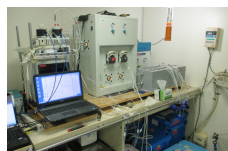
Instrument:

Titration for DO Dissolved oxygen titration equipment (MR11-06 - )



Instrument:

Titration for total alkalinity (MR14-03 - )



Instrument:

Fluorometer (TURNER DESIGNS)



### Data Citation

Please mention that this cruise was conducted under the Arctic Challenge for Sustainability (ArCS) Project, which was funded by the Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT).

### Information on CTD data

#### Pressure sensor

Model : SBE9plus, Sea-Bird Electronics, Inc.

Measurement range : 0 to 10500 m

Accuracy :  $\pm 0.015\%$  of full scale range

Resolution : 0.001% of full scale

#### Temperature sensor

Model : SBE03-04/F, Sea-Bird Electronics, Inc.  
Measurement range : -5 to +35 °C  
Accuracy : ± 0.001 °C  
Resolution : 0.0002 °C

**Deep Ocean Standards Thermometer**

Model : SBE35, Sea-Bird Electronics, Inc.  
Measurement range : -5 to +35 °C  
Accuracy : 0.001 °C  
Resolution : 0.000025 °C

**Salinity sensor**

Model : SBE04C, Sea-Bird Electronics, Inc.  
Measurement range : 0 to 7 S/m  
Accuracy : ± 0.0003 S/m  
Resolution : 0.00004 S/m

**DO sensor**

Model : RINKO III JFE Advantech Co., Ltd.  
Measurement range : 0 - 200%  
Accuracy : ± 2% FS  
Model : SBE43, Sea-Bird Electronics, Inc.  
Measurement range : 120% of surface saturation  
Accuracy : ± 2% of saturation

**Transmissometer**

Model : C-Star, WET Labs, Inc.  
Linearity : 99% R<sup>2</sup>

**Fluorometer**

Model : Seapoint Chlorophyll Fluorometer, Seapoint Sensors, Inc.  
Measurement range : 0 - 5 µg/l  
Resolution : 0.02 µg/l

**Turbidity**

Model : Seapoint Turbidity Meter, Seapoint Sensors, Inc.

**PAR sensor**

Model : PAR-Log ICSW, Satlantic, Inc.  
Measurement range : 0 - 5000 µmol photons m<sup>-2</sup> s<sup>-1</sup>  
Accuracy : -

**UV Nitrate Sensor**

Model : Deep SUNA, Satlantic, Inc.

**Information on Chemical and Biological data**

**Salinity**

Instruments : Autosal salinometer model 8400B (Guildline Instruments Ltd.)  
Methods : -  
Precision : average of absolute difference 0.0008, standard deviation of absolute difference 0.0011 (252 pairs)  
Reference Material/Calibration : IAPSO Standard Sea Water P160 (Ocean Scientific International Ltd.)

**Dissolved Oxygen**

Instruments : Burette: APB-510/APB-620 manufactured by Kyoto Electronic Co. Ltd. /10 cm<sup>3</sup> of titration vessel  
Detector and Software: Automatic photometric titrator DOT-01X manufactured by Kimoto Electronic Co. Ltd  
Methods : Winkler method/photometric methods  
Precision : standard deviation of the replicate measurement was 0.33 µmol kg<sup>-1</sup>(228 pairs)  
Reference Material/Calibration : -

**Silicate**

Instruments : BL TEC K.K QuAAtro 2-HR  
Methods : Molybdenum blue method  
Precision : C.V. 0.13%  
Reference Material/Calibration : CRM produced by KANSO Co., Ltd., Silicon standard solution SiO<sub>2</sub> in NaOH 0.5 mol/L CertiPUR® (Merck KGaA)

**Nitrate**

Instruments : BL TEC K.K QuAAtro 2-HR  
Methods : Diazotization method (reduced to nitrite by Cd - Cu tube)  
Precision : C.V. 0.14%  
Reference Material/Calibration : CRM produced by KANSO Co., Ltd., potassium nitrate 99.995 suprapur® (Merck KGaA)

**Nitrite**

Instruments : BL TEC K.K QuAAtro 2-HR  
Methods : Diazotization method  
Precision : C.V. 0.16%  
Reference Material/Calibration : CRM produced by KANSO Co., Ltd., Nitrite ion standard solution (NO<sub>2</sub><sup>-</sup> 1000) (Wako Pure Chemical Industries, Ltd.)

**Phosphate**

Instruments : BL TEC K.K QuAAtro 2-HR  
Methods : Molybdenum blue method  
Precision : C.V. 0.13%  
Reference Material/Calibration : CRM produced by KANSO Co., Ltd., potassium dihydrogen phosphate anhydrous 99.995 suprapur® (Merck KGaA)

**Ammonia**

Instruments : BL TEC K.K QuAAtro 2-HR  
Methods : Indophenol method  
Precision : C.V. 0.22%  
Reference Material/Calibration : Ammonium chloride (NMIJ)

**Total inorganic carbon**

Instruments : TCO<sub>2</sub> measuring system (Nihon ANS, Inc.) equipped with coulometer Model 3000 (Nihon ANS, Inc.)  
Methods : coulometry  
Precision : average of the differences 1.04 umol kg<sup>-1</sup>, standard deviation of the differences 0.93 umol kg<sup>-1</sup>  
Reference Material/Calibration : -

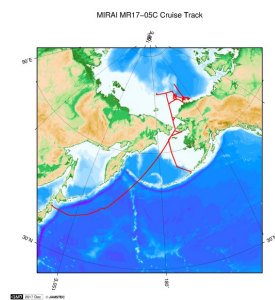
**Total alkalinity**

Instruments : Spectrophotometric system(Nihon ANS, Inc.). The system comprises of a spectrophotometer (TM-UV/VIS C10082CAH (Hamamatsu Photonics, Japan))  
Methods : Single step acid additional procedure/spectrophotometry  
Precision : average of the differences 1.72 umol kg<sup>-1</sup>, standard deviation of the differences 1.57 umol kg<sup>-1</sup>  
Reference Material/Calibration : -

**Chlorophyll a**

Instruments : Fluorophotometer model 10-AU-005 (Turner design)  
Methods : Extract in N, N-dimethylformamide //fluorometric determination (Welschmeyer non-acidification method)  
Precision : Standard deviation 0.09 mg/CUM  
Reference Material/Calibration : Pure chlorophyll a (Merck Sigma-Aldrich)

#### Related Information



[Enlarge Image](#)

#### MR17-05C

Ship Name: MIRAI  
Period: 2017-08-24 - 2017-10-01  
Chief Scientist: Shigeto Nishino (JAMSTEC)  
Project Name: [Arctic Ocean Climate System Research]  
Proposal ▶ Arctic Challenge for Sustainability (ArCS)  
Title:

#### Update History

Update Date	Update Content
2019-10-01	An observation data was registered.

#### JAMSTEC

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Feeds

#### Lists

Publication List  
Amount of Public Info.  
Data  
Map Search  
Data Tree  
Detailed Search

#### Information of the Ships

NATSUSHIMA  
KAIYO  
YOKOSUKA  
MIRAI  
KAIREI  
CHIKYU  
KAIMEI  
SHINSEI MARU  
HAKUHO MARU

#### Information of the Submersibles

KAIKO  
SHINKAI 2000  
SHINKAI 6500  
DEEP TOW  
HYPER-DOLPHIN  
URASHIMA  
YOKOSUKA DEEP TOW  
6K Camera DEEP TOW  
6K Sonar DEEP TOW  
KM-ROV  
POWER GRAB SAMPLER (SHELL)  
POWER GRAB SAMPLER (CLOW)  
BMS

#### Go to a Cruise Information

Cruise ID:

#### Go to a Dive Information

Dive ID:

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## MIRAI MR17-05C Bottle Sampling Water Chemical Analysis

Last Modified: 2019-10-01

[ReadMe](#)   [Observation Data](#)   [Data Format](#)   [Quality Information](#)

 Cruise ID: [MR17-05C](#)

Bottle Sampling Water Chemical Analysis: Processed (DMO/PI)

 Data Policy: [JAMSTEC](#)

### 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	ExpoCode
2	SECT_ID		A6	Section ID
3	CRUISE		A8	Cruise
4	STNNBR		A6	Station Number
5	TYPE		A4	Type
6	CASTNO		I3	Cast Number
7	SAMPNO		A7	Sample Number
8	BTLNBR		A7	Bottle Number (S/N fixed to the sampling device)
9	BTLNBR_FLAG_W		I1	Bottle quality flags
10	DATE		I8	Cast date
11	TIME	UTC	A4	Cast time
12	LATITUDE	DEG	F8.4	Latitude
13	LONGITUDE	DEG	F9.4	Longitude
14	DEPTH	METERS	I5	Bottom depth
15	CTDDPT	METERS	F9.1	Depth
16	CTDDPT_FLAG_W		I1	Quality flags for CTD data
17	CTDPRS	DBAR	F9.1	Pressure
18	CTDPRS_FLAG_W		I1	Quality flags for CTD data
19	CTDTMP	ITS-90	F9.4	Temperature (primary sensor)
20	CTDTMP_FLAG_W		I1	Quality flags for CTD data
21	SBE35	ITS-90	F10.5	Temperature from Deep Ocean Standards Thermometer
22	SBE35_FLAG_W		I1	Quality flags for CTD data
23	SVEL	M/S	F9.3	Sound velocity
24	SVEL_FLAG_W		I1	Quality flags for CTD data
25	CTDSAL	PSS-78	F9.4	Salinity (primary sensor)
26	CTDSAL_FLAG_W		I1	Quality flags for CTD data
27	CTDCND	S/M	F11.6	Conductivity (primary sensor)
28	CTDCND_FLAG_W		I1	Quality flags for CTD data
29	CTDOXY	UMOL/KG	F9.2	CTD-oxygen (primary sensor)
30	CTDOXY_FLAG_W		I1	Quality flags for CTD data
31	CTDOXV	V	F9.4	CTD-oxygen voltage (primary sensor)
32	CTDOXV_FLAG_W		I1	Quality flags for CTD data
33	THETA	DEG C	F9.4	Potential temperature (primary sensor)
34	THETA_FLAG_W		I1	Quality flags for CTD data
35	SIG0	KG/CUM	F9.4	Density (primary sensor)
36	SIG0_FLAG_W		I1	Quality flags for CTD data
37	XMISS	%TRANS	F9.3	Transmissometer
38	XMISS_FLAG_W		I1	Quality flags for CTD data
39	XMISSCP	/METER	F9.4	Beam attenuation coefficient
40	XMISSCP_FLAG_W		I1	Quality flags for CTD data
41	XMISSV	V	F9.4	Transmissometer voltage
42	XMISSV_FLAG_W		I1	Quality flags for CTD data
43	FLUOR	MG/CUM	F9.3	Fluorescence
44	FLUOR_FLAG_W		I1	Quality flags for CTD data
45	PAR	UE/SQM/S	F9.3	PAR
46	PAR_FLAG_W		I1	Quality flags for CTD data
47	TURB	FTU	F9.3	Turbidity
48	TURB_FLAG_W		I1	Quality flags for CTD data
49	CTDNRA	UMOL/KG	F9.2	CTD_Nitrate
50	CTDNRA_FLAG_W		I1	Quality flags for CTD data
51	CTDNRAV	V	F9.2	CTD_Nitrate voltage
52	CTDNRAV_FLAG_W		I1	Quality flags for CTD data
53	SALNTY	PSS-78	F9.4	Bottle Salinity
54	SALNTY_FLAG_W		I1	Quality flags for water samples
55	SALNTY_1	PSS-78	F9.4	Bottle Salinity (duplicate)
56	SALNTY_1_FLAG_W		I1	Quality flags for water samples
57	OXYGEN	UMOL/KG	F9.2	Bottle Oxygen
58	OXYGEN_FLAG_W		I1	Quality flags for water samples
59	OXYGEN_1	UMOL/KG	F9.2	Bottle Oxygen (duplicate)
60	OXYGEN_1_FLAG_W		I1	Quality flags for water samples
61	SILCAT	UMOL/KG	F9.2	Silicate
62	SILCAT_FLAG_W		I1	Quality flags for water samples
63	SILUNC	UMOL/KG	F9.2	Uncertainty of Silicate data

Column No.	SILCAT Mnemonic	UMOL/KG Mnemonic	Reporting Precision	FORTRAN Format	Silicate Comments
65	SILCAT1_FLAG_W				Quality flags for water samples
66	SILCAT2	UMOL/KG	F9.2		Silicate (duplicate)
67	SILCAT2_FLAG_W		I1		Quality flags for water samples
68	NITRAT	UMOL/KG	F9.2		Nitrate
69	NITRAT_FLAG_W		I1		Quality flags for water samples
70	NRAUNC	UMOL/KG	F9.2		Uncertainty of Nitrate data
71	NITRAT1	UMOL/KG	F9.2		Nitrate
72	NITRAT1_FLAG_W		I1		Quality flags for water samples
73	NITRAT2	UMOL/KG	F9.2		Nitrate (duplicate)
74	NITRAT2_FLAG_W		I1		Quality flags for water samples
75	NITRIT	UMOL/KG	F9.2		Nitrite
76	NITRIT_FLAG_W		I1		Quality flags for water samples
77	NRIUNC	UMOL/KG	F9.2		Uncertainty of Nitrite data
78	NITRIT1	UMOL/KG	F9.2		Nitrite
79	NITRIT1_FLAG_W		I1		Quality flags for water samples
80	NITRIT2	UMOL/KG	F9.2		Nitrite (duplicate)
81	NITRIT2_FLAG_W		I1		Quality flags for water samples
82	PHSPHT	UMOL/KG	F9.3		Phosphate
83	PHSPHT_FLAG_W		I1		Quality flags for water samples
84	PHPUNC	UMOL/KG	F9.3		Uncertainty of Phosphate data
85	PHSPHT1	UMOL/KG	F9.3		Phosphate
86	PHSPHT1_FLAG_W		I1		Quality flags for water samples
87	PHSPHT2	UMOL/KG	F9.3		Phosphate (duplicate)
88	PHSPHT2_FLAG_W		I1		Quality flags for water samples
89	NH4	UMOL/KG	F9.2		Ammonium
90	NH4_FLAG_W		I1		Quality flags for water samples
91	NH4UNC	UMOL/KG	F9.2		Uncertainty of Ammonium data
92	NH41	UMOL/KG	F9.2		Ammonium
93	NH41_FLAG_W		I1		Quality flags for water samples
94	NH42	UMOL/KG	F9.2		Ammonium (duplicate)
95	NH42_FLAG_W		I1		Quality flags for water samples
96	TCARBN	UMOL/KG	F9.1		Total Carbon CT
97	TCARBN_FLAG_W		I1		Quality flags for water samples
98	TCARBN_1	UMOL/KG	F9.1		Total Carbon CT (duplicate)
99	TCARBN_1_FLAG_W		I1		Quality flags for water samples
100	ALKALI	UMOL/KG	F9.1		Total alkalinity
101	ALKALI_FLAG_W		I1		Quality flags for water samples
102	ALKALI_1	UMOL/KG	F9.1		Total alkalinity (duplicate)
103	ALKALI_1_FLAG_W		I1		Quality flags for water samples
104	CHLWEL	MG/CUM	F9.2		Chlorophyll a
105	CHLWEL_FLAG_W		I1		Quality flags for water samples
106	CHLWEL_1	MG/CUM	F9.2		Chlorophyll a (duplicate)
107	CHLWEL_1_FLAG_W		I1		Quality flags for water samples
108	SIZECHL>20um	MG/CUM	F9.2		Chlorophyll a > 20um
109	SIZECHL>20um_FLAG_W		I1		Quality flags for water samples
110	SIZECHL<2um	MG/CUM	F9.2		Chlorophyll a < 2um
111	SIZECHL<2um_FLAG_W		I1		Quality flags for water samples
112	SIZECHL2-20um	MG/CUM	F9.2		Chlorophyll a 2-20um
113	SIZECHL2-20um_FLAG_W		I1		Quality flags for water samples

#### ODV Format

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

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

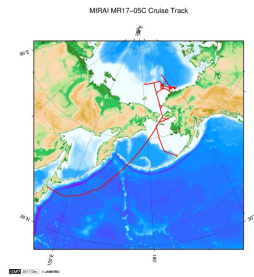
Format Information

Column No.	Column Heading	Comments
1	EXPOCODE	Cruise Label
2	Cruise	Cruise
3	Station	Station number_Cast number
4	Type	Station type
5	mon/day/yr	Cast date
6	hh:mm	Cast time
7	Latitude[degrees_north]	Latitude
8	Longitude[degrees_east]	Longitude
9	Bot. Depth[METERS]	Bottom depth
10	CTDDPT[METERS]	Depth
11	QF	Quality flags for CTD data
12	CTDPRS[DBAR]	Pressure
13	QF	Quality flags for CTD data
14	CTDTMP[ITS-90]	Temperature (primary sensor)
15	QF	Quality flags for CTD data
16	SBE35[ITS-90]	Temperature from Deep Ocean Standards Thermometer
17	QF	Quality flags for CTD data
18	SVEL[M/S]	Sound velocity
19	QF	Quality flags for CTD data
20	CTDSAL[PSS-78]	Salinity (primary sensor)
21	QF	Quality flags for CTD data
22	CTDCND[S/M]	Conductivity (primary sensor)
23	QF	Quality flags for CTD data
24	CTDOXY[UMOL/KG]	CTD-oxygen (primary sensor)
25	QF	Quality flags for CTD data
26	CTDOXYM	CTD-oxygen values (primary sensor)

Column No.	Column Heading	Comments
27	QF	Quality flags for CTD data
28	THETA[DEG C]	Potential temperature (primary sensor)
29	QF	Quality flags for CTD data
30	SIG0[KG/CUM]	Density (primary sensor)
31	QF	Quality flags for CTD data
32	XMISS[%TRANS]	Transmissometer
33	QF	Quality flags for CTD data
34	XMISSCP[METER]	Beam attenuation coefficient
35	QF	Quality flags for CTD data
36	XMISSV[V]	Transmissometer voltage
37	QF	Quality flags for CTD data
38	FLUOR[MG/CUM]	Fluorescence
39	QF	Quality flags for CTD data
40	PAR[UE/SQM/S]	PAR
41	QF	Quality flags for CTD data
42	TURB[FTU]	Turbidity
43	QF	Quality flags for CTD data
44	CTDNRA[UMOL/KG]	CTD_Nitrate
45	QF	Quality flags for CTD data
46	CTDNRAV[V]	CTD_Nitrate voltage
47	QF	Quality flags for CTD data
48	SALNTY[PSS-78]	Bottle Salinity
49	QF	Quality flags for water samples
50	SALNTY_1[PSS-78]	Bottle Salinity (duplicate)
51	QF	Quality flags for water samples
52	OXYGEN[UMOL/KG]	Bottle Oxygen
53	QF	Quality flags for water samples
54	OXYGEN_1[UMOL/KG]	Bottle Oxygen (duplicate)
55	QF	Quality flags for water samples
56	SILCAT[UMOL/KG]	Silicate
57	QF	Quality flags for water samples
58	SILUNC	Uncertainty of Silicate data
59	QF	Quality flags for water samples
60	SILCAT1[UMOL/KG]	Silicate
61	QF	Quality flags for water samples
62	SILCAT2[UMOL/KG]	Silicate (duplicate)
63	QF	Quality flags for water samples
64	NITRAT[UMOL/KG]	Nitrate
65	QF	Quality flags for water samples
66	NRAUNC	Uncertainty of Nitrate data
67	QF	Quality flags for water samples
68	NITRAT1[UMOL/KG]	Nitrate
69	QF	Quality flags for water samples
70	NITRAT2[UMOL/KG]	Nitrate (duplicate)
71	QF	Quality flags for water samples
72	NITRIT[UMOL/KG]	Nitrite
73	QF	Quality flags for water samples
74	NRIUNC	Uncertainty of Nitrite data
75	QF	Quality flags for water samples
76	NITRIT1[UMOL/KG]	Nitrite
77	QF	Quality flags for water samples
78	NITRIT2[UMOL/KG]	Nitrite (duplicate)
79	QF	Quality flags for water samples
80	PHSPHT[UMOL/KG]	Phosphate
81	QF	Quality flags for water samples
82	PHPUNC	Uncertainty of Phosphate data
83	QF	Quality flags for water samples
84	PHSPHT1[UMOL/KG]	Phosphate
85	QF	Quality flags for water samples
86	PHSPHT2[UMOL/KG]	Phosphate (duplicate)
87	QF	Quality flags for water samples
88	NH4[UMOL/KG]	Ammonium
89	QF	Quality flags for water samples
90	NH4UNC	Uncertainty of Ammonium data
91	QF	Quality flags for water samples
92	NH41[UMOL/KG]	Ammonium
93	QF	Quality flags for water samples
94	NH42[UMOL/KG]	Ammonium (duplicate)
95	QF	Quality flags for water samples
96	TCARB[UMOL/KG]	Total Carbon CT
97	QF	Quality flags for water samples
98	TCARB_1[UMOL/KG]	Total Carbon CT (duplicate)
99	QF	Quality flags for water samples
100	ALKALI[UMOL/KG]	Total alkalinity
101	QF	Quality flags for water samples
102	ALKALI_1[UMOL/KG]	Total alkalinity (duplicate)
103	QF	Quality flags for water samples
104	CHLWEL[MG/CUM]	Chlorophyll a
105	QF	Quality flags for water samples
106	CHLWEL_1[MG/CUM]	Chlorophyll a (duplicate)
107	QF	Quality flags for water samples

Column No.	Column Heading	Comments
108	SIZECHL<20um[MG/CUM]	Chlorophyll a > 20um
109	QF	Quality flags for water samples
110	SIZECHL<2um[MG/CUM]	Chlorophyll a < 2um
111	QF	Quality flags for water samples
112	SIZECHL2-20um[MG/CUM]	Chlorophyll a 2-20um
113	QF	Quality flags for water samples
114	SAMPNO	Sample Number
115	QF	Bottle quality flags

#### Related Information



[Enlarge Image](#)

#### MR17-05C

Ship Name: MIRAI  
Period: 2017-08-24 - 2017-10-01  
Chief Scientist: Shigeto Nishino (JAMSTEC)  
Project Name: [Arctic Ocean Climate System Research]  
Proposal ▶ Arctic Challenge for Sustainability (ArCS)  
Title:

#### Update History

2019-10-01 An observation data was registered.

JAMSTEC  
Site Policy  
Privacy Policy  
Application for Data and Samples  
Data Policy  
What's New  
Update History  
Feeds

Lists  
Publication List  
Amount of Public Info.  
Data  
Map Search  
Data Tree  
Detailed Search

Information of the Ships  
NATSUSHIMA  
KAIYO  
YOKOSUKA  
MIRAI  
KAIREI  
CHIKYU  
KAIMEI  
SHINSEI MARU  
HAKUHO MARU

Information of the Submersibles  
KAIKO  
SHINKAI 2000  
SHINKAI 6500  
DEEP TOW  
HYPER-DOLPHIN  
URASHIMA  
YOKOSUKA DEEP TOW  
6K Camera DEEP TOW  
6K Sonar DEEP TOW  
KM-ROV  
POWER GRAB  
SAMPLER (SHELL)  
POWER GRAB  
SAMPLER (CLOW)  
BMS

#### Go to a Cruise Information

Cruise ID:

#### Go to a Dive Information

Dive ID:

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JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

## MIRAI MR17-05C Bottle Sampling Water Chemical Analysis

Last Modified: 2019-10-01

[ReadMe](#) [Observation Data](#) [Data Format](#) [Quality Information](#)

Cruise ID: [MR17-05C](#)

Bottle Sampling Water Chemical Analysis: Processed (DMO/PI)

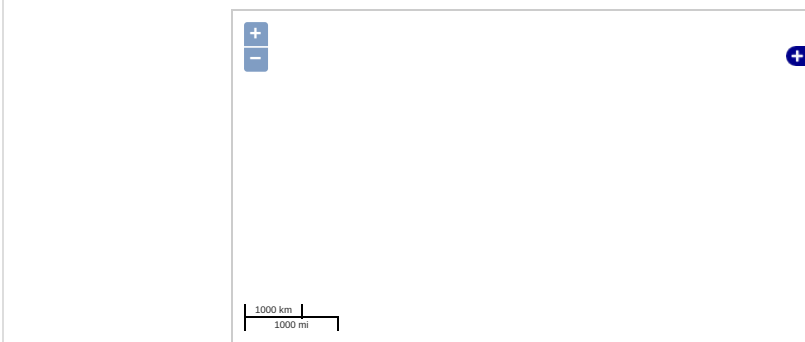
Data Policy: [JAMSTEC](#)

**Observation Items:** Pressure, Temperature, Practical salinity, Dissolved oxygen, Potential temperature, Density, Transmittance, Turbidity, Fluorescence, PAR, Nitrate, Silicate, Nitrite, Phosphate, Ammonia, Total inorganic carbon, Alkalinity, Chlorophyll, Sound velocity

**Science Keywords:**

OCEANS	> OCEAN CHEMISTRY	> AMMONIA
OCEANS	> OCEAN CHEMISTRY	> INORGANIC CARBON
OCEANS	> OCEAN CHEMISTRY	> NITRATE
OCEANS	> OCEAN CHEMISTRY	> NUTRIENTS
OCEANS	> OCEAN CHEMISTRY	> OXYGEN
OCEANS	> OCEAN CHEMISTRY	> PHOSPHATE
OCEANS	> OCEAN CHEMISTRY	> SILICATE
OCEANS	> OCEAN CHEMISTRY	> SALINITY
BIOSPHERE	> VEGETATION	> CHLOROPHYLL
OCEANS	> OCEAN CHEMISTRY	> CHLOROPHYLL
OCEANS	> OCEAN TEMPERATURE	> WATER TEMPERATURE
OCEANS	> SALINITY/DENSITY	> SALINITY
OCEANS	> OCEAN OPTICS	> PHOTOSYNTHETICALLY ACTIVE RADIATION
OCEANS	> OCEAN CHEMISTRY	> ALKALINITY
OCEANS	> OCEAN ACOUSTICS	
OCEANS	> OCEAN CHEMISTRY	> CARBON
OCEANS	> OCEAN OPTICS	> FLUORESCENCE

### Observation Map



— ... Observation Line — ... Navigation ● ... Observation, Dive Point, Hole

Imagery reproduced from ...

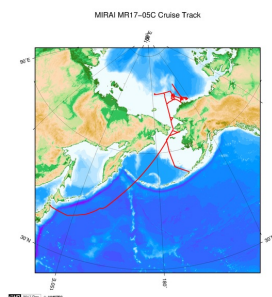
### Data List

☐ File names

☐ MR1705C00\_ex\_bot.csv

☐ MR1705C00\_odv\_bot.txt

### Related Information



[Enlarge Image](#)

#### MR17-05C

Ship Name: MIRAI

Period: 2017-08-24 - 2017-10-01

Chief Scientist: Shigeto Nishino (JAMSTEC)

Project Name: [Arctic Ocean Climate System Research]

Proposal ▶ Arctic Challenge for Sustainability (ArCS)

Title:

### Update History

2019-10-01 An observation data was registered.



Application for Data and  
Samples  
Data Policy

What's New  
Update History  
Feeds

Data  
Map Search  
Data Tree  
Detailed Search

YOKOSUKA  
MIRAI  
KAIREI  
CHIKYU  
KAIMEI  
SHINSEI MARU  
HAKUHO MARU

SHINKAI 6500  
DEEP TOW  
HYPER-DOLPHIN  
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KM-ROV  
POWER GRAB SAMPLER  
(SHELL)  
POWER GRAB SAMPLER  
(CLOW)  
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