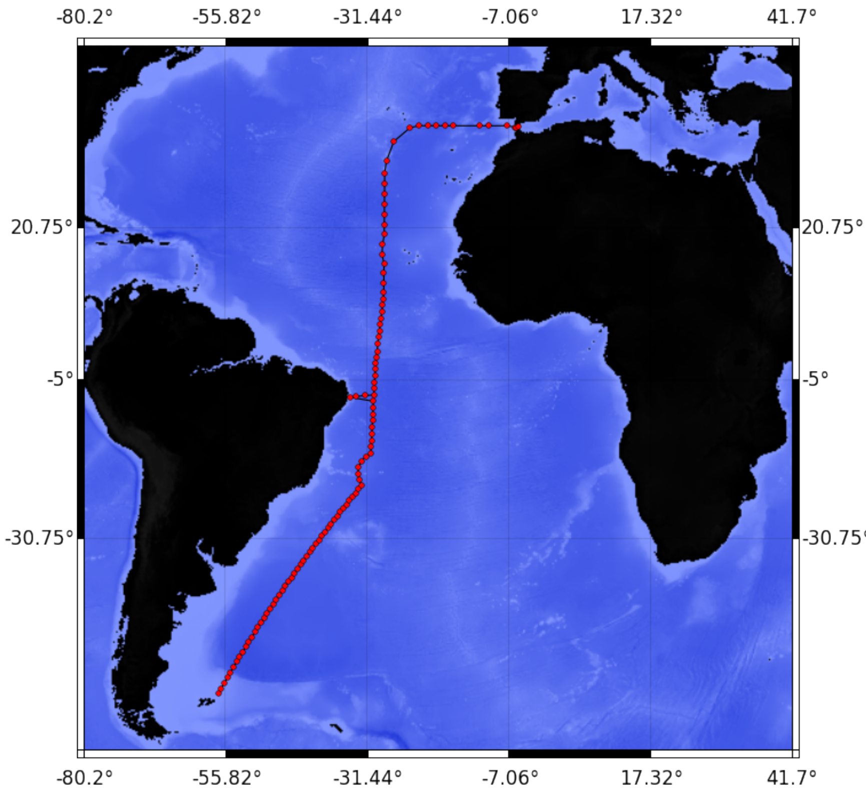
CRUISE REPORT: A17

(Updated DEC 2013)



Highlights

Cruise Summary Information

WOCE Section Designation	**A17**
Expedition designation (ExpoCodes)	29HE20130320
Chief Scientists	Aida Fernández Rios / CSIC-IIM - Leg 1 Celia Marrasé Peña / CSIC-IIM - Leg 2
Dates	2013 MAR 20 - 2013 MAY 22
Ship	*BIO Hespérides*
Ports of call	Punta Arenas, Chile - Recife, Brazil - Cartagena, Spain
Geographic Boundaries	36° 10' 15.6" N 57° 0' 7.2" W 5° 21' 18" W 0° 42' 32.4" S
Stations	108
Floats and drifters deployed	0
Moorings deployed or recovered	0

Contact Information
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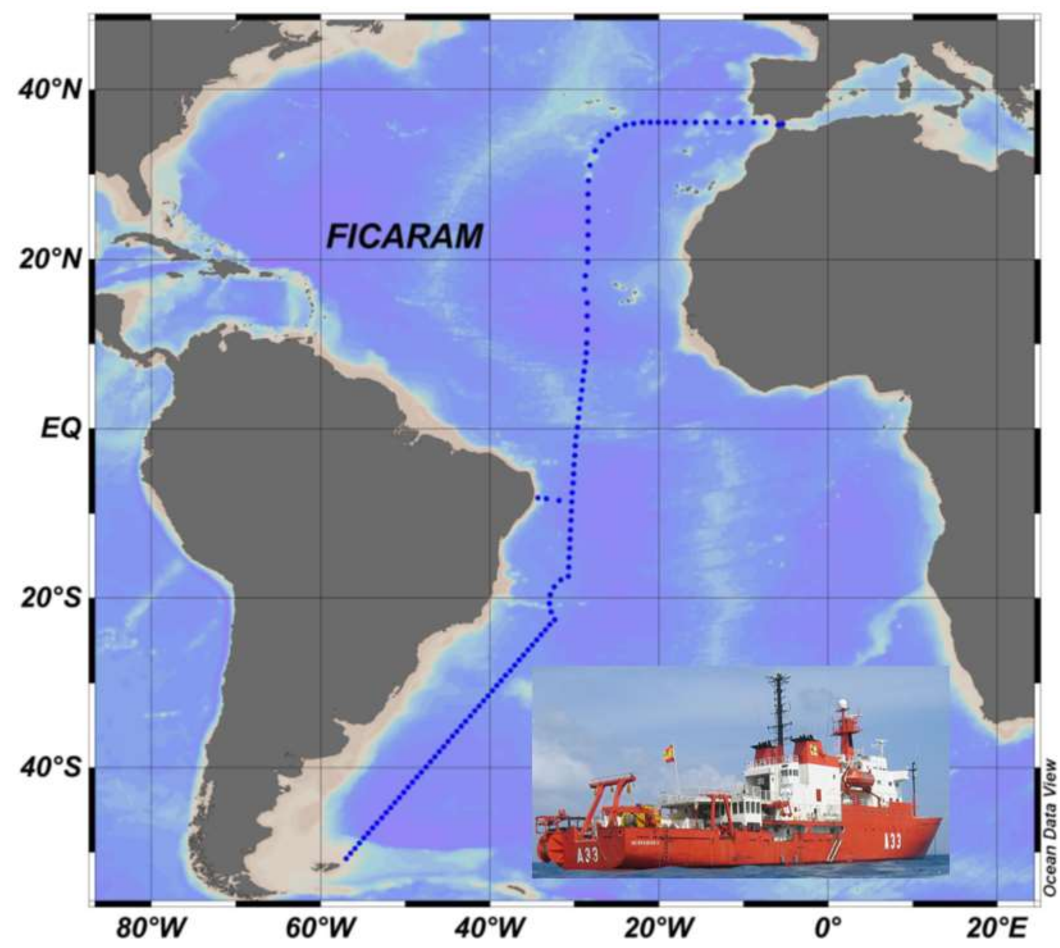
Links To Select Topics

Shaded sections are not relevant to this cruise or were not available when this report was compiled.

FICARAM-15 Cruise Report
20th March – 22nd May 2013
On board BIO Hespérides
by
The Group FICARAM



Cruise funded by MICINN, Ref. CTM2010-17141 and co-funded by FEDER

PREAMBLE

The FICARAM-15 is the fifteenth repetition of a section conducted in 1994. This section is part of the international program GOSHIP (http://www.go-ship.org/CruisePlans.html) to develop a globally coordinated network of sustained hydrographic sections as part of the global ocean/climate observing system.

The objective of the FICARAM-15 cruise is to investigate the temporal evolution of the anthropogenic carbon and evaluate the CO_2 absorption capacity of the South Atlantic region, the Equatorial zone, and the subtropical region of Azores-Gibraltar in the North Atlantic. This cruise is supported by the CATARINA project funded by the Ministry of Economy and Competitiveness (CTM2010-17141) and is part of the European Union FP7 project CARBOCHANGE (http://carbochange.b.uib.no/). The objective of FICARAM-15 cruise is framed in the CATARINA project conducted by the tasks I.2.1 (air-sea CO_2 exchange) I.3 (ventilation of water masses), I.4.1 (zonal variability of N_2O and CH_4), I.4.2 (anthropogenic carbon storage), I.4.4 (saturation horizon of calcium carbonate along the section) and I.5.4 (evolution of the acidification rates).

Another component of the FICARAM-15 cruise aims to examine the biological and biogeochemical mechanisms that hinder total dissolved organic carbon (DOC) remineralisation in marine systems, taking a multidisciplinary perspective and applying many different approaches. This is the global objective of the Spanish project DOREMI (CTM2012-34294) that joins this FICARAM-15 cruise.

During the FICARAM cruise the physical oceanography group was responsible for collecting the following data sets: CTD and XBT data; vessel-mounted ADCP and lowered ADCP; continuous thermosalinograph. Physical oceanographers participated in the cruise financed through Project "Tipping Corners in the Meridional Overturning Circulation" (TIC-MOC), CTM2011-28867.

The FICARAM-15 cruise was organized in two phases with a common sampling.

LEG 1: From Punta Arenas (Chile) to Recife (Brazil): 62 stations.
Chief Scientist: Aida F. Ríos, PI of CATARINA project

LEG 2: From Recife (Brazil) to Cartagena (Spain): 46 stations
Chief Scientist: Celia Marrasé, PI of DOREMI project

This report contains the sampling of all the variables at each station along the FICARAM section, as well as the analysis of the biogeochemical variables and the preliminary results. The principal investigator of the DOREMI project produced another report with the common sampling section, showing the analysis and results of the experiments on dissolved organic matter carried out on board.

PARTICIPANTS

35 scientist and technicians participated in the cruise FICARAM-15, 17 in the first leg and 18 in the second leg. The following list contains the team with the tasks developed by each participant.

LEG 1:

Nom	Sex	Organism	Task
Aida Fernández Rios	F	CSIC-IIM	Chief Scientists and PI CATARINA and CARBOCHANGE
Celia Marrasé Peña	F	CSIC-ICM	PI of DOREMI project
Rocío Rodríguez Marroyo	F	CSIC-ICM	Physical Coordinator
Mercedes de la Paz Arándiga	F	CSIC-IIM	Responsible of Nutrients
Xosé Antonio Padín Alvarez	M	CSIC-IIM	Responsible pH and pCO2
Antón Velo Lanchas	M	CSIC-IIM	Responsible oxygen and alkalinity
Maxim Galindo Lorente	M	U. Barcelona	Nutrients analysis
Marc Gasser Rubinat	M	CSIC-ICM	Physical measurements
Sergio Ramírez Garrido	M	CSIC-ICM	Physical measurements
Francisco Luis Aparicio Bernat	M	CSIC-ICM	Organic matter analysis (DOREMI)
Encarna Borrull Francesch	F	CSIC-ICM	Microbial analysis (DOREMI)
Caterina Rodríguez Giner	F	CSIC-ICM	Microbial analysis (DOREMI)
Joaquim Llinás del Torrent Casanovas	M	CSIC-UTM	Chief Technician and Chemical support
Gustavo Agudo González	M	CSIC-UTM	Technician CTD-physical
Javier Vallo Rodríguez	M	CSIC-UTM	Technician CTD-physical
Manuel Paredes Alonso	M	CSIC-UTM	Technician CTD-physical
Antonio Sandoval Díaz	M	CSIC-UTM	Technician Informatics

LEG 2:

Nom	Sex	Organism	Task
Celia Marrasé Peña	F	CSIC-IIM	Chief Scientists and PI DOREMI
Fiz Fernández Pérez	M	CSIC-ICM	Chemical Coordinator
Jesús Peña Izquierdo	M	CSIC-ICM	Physical Coordinator
Fernando Alonso Pérez	M	CSIC-IIM	Responsible of Nutrients
María Isabel García Ibáñez	F	CSIC-IIM	Alkalinity, oxygen and pH measurements
Elena Royo Moya	F	CSIC-IIM	Nutrients analysis
Miquel Rosell Fieschi	M	U. Barcelona	Physical measurements
Pedro Llanillo del Rio	M	CSIC-ICM	Physical measurements
Francisco Luis Aparicio Bernat	M	CSIC-ICM	Organic matter analysis (DOREMI)
Encarna Borrull Francesch	F	CSIC-ICM	Microbial analysis (DOREMI)
Caterina Rodríguez Giner	F	CSIC-ICM	Microbial analysis (DOREMI)
Estela Romero Sotoca	F	CSIC-ICM	Microbial analysis (DOREMI)
Dulce Afonso Rodríguez	F	CSIC-UTM	Chief Technician and Informatics support
Alberto Arias González-Anleo	M	CSIC-UTM	Technician CTD-physical
Gustavo Agudo González	M	CSIC-UTM	Technician CTD-physical
Alberto Hernández Jiménez	M	CSIC-UTM	Technician CTD-physical
Camilo José Gómez López	M	CSIC-UTM	Technician CTD-physical
Iago López Rodríguez	M	CSIC-UTM	Technician Chemical support

1. PHISICAL MEASUREMENTS

1.1. XBT Data

Rocío R. Marroyo, Jesús Peña-Izquierdo, Marc Gasser, Sergio Ramírez-Garrido, Miquel Rosell-Fieschi, Pedro Llanillo, Josep L. Pelegrí.

A total of 24 XBT's were launched: 12 units of T5 (down to about 2000 m) and 12 units of T4 (down to about 500 m). In all cases the software was programmed to acquire data until the copper wire breaks down. Processed XBT data is delivered as .edf files

Only three regions were sampled:

- Between the Magallanes Strait and the first cruise station: 8 units of T4 were launched at approximately equal distancess. The objective was to gather data in a region where no CTDs were done, in order to eventually have a closed box all along till Recife.

- Between Recife and the section: 2 units of T4 and 8 units of T5 were launched. Measurements were done after leaving Recife. The objective was to sample the North Brazil Under Current, running along the continental slope. To this end, profiles density increases in the slope and reduces deeper. A lack of reliable bathymetry and slope gradient marked the first XBT's are released at a depth slightly greater than desired.

- Inside the Gulf of Cádiz: 2 units of T4 and 4 units of T5 were launched. The objective was to sample the propagation of the Mediterranean water (MW) over the slope of the Gulf of Cádiz. The MW flows along the slope in the northern side of the Gulf of Cádiz, with two main cores centered at approximately 600 and 1100 m. The lack of a reliable bathymetry and the presence of small valleys and submarine mounds prevented us from obtaining a clear signal of the Mediterranean water vein.

File number	XBT type	Water depth (m)	latitude	longitude	Day	hour	DeltaT = Txbt–Tref
T400002	T4	41	52°34.55'S	67°52.83'W	21/03	06:18	0.04°C
T400006	T4	99	52°13.61'S	66°39.14'W	21/03	14:30	0.20
T400009	T4	156	51°29.35'S	64°07.45'W	22/03	02:30	0.24
T400011	T4	177	51°03.16'S	62°39.09'W	22/03	08:58	-0.02
T400013	T4	149	50°42.46'S	61°29.25'W	22/03	14:22	0.02
T400015	T4	147	50°42.41'S	60°16.91'W	22/03	19:56	0.10
T400017	T4	146	50°42.37'S	59°06.07'W	23/03	01:30	0.00
T400019	T4	138	50°42.33'S	58°04.43'W	23/03	06:23	-0.11

T400021	T4	380	07°57.71'S	34°29.40'W	23/04	22:43	-0.10
T400023	T4	595	07°57.00'S	34°27.08'W	23/04	23:08	0.00
T500025	T5	2208/2190	07°52.20'S	34°19.11'W	24/04	03:11	0.10
T500027	T5	2830/2195	07°52.03'S	34°00.03'W	24/04	04:38	0.18
T500029	T5	2876 (sea floor chart)	07°39.48'S	33°40.15'W	24/04	07:24	-0.18
T500031	T5	4635	07°44.39'S	32°54.96'W	24/04	17:30	0.36
T500033	T5	4923	07°42.37'S	32°32.59'W	24/04	20:08	0.35
T500035	T5	4956	07°40.46'S	32°11.50'W	25/04	04:00	0.21
T500037	T5	5291	07°35.78'S	31°18.51'W	25/04	08:54	0.35
T500039	T5	5360	07°33.22'S	30°48.89'W	25/04	11:53	0.26
T500041	T5	1306	36°10.06'N	08°00.73'W	19/05	07:21	0.30
T500043	T5	1052	36°09.99'	07°44.93'W	19/05	08:36	0.05
T500045	T5	755	36°08.19'	07°09.60'W	19/05	13:49	0.20
T500047	T5	634	36°05.18'N	06°40.20'W	19/05	15:20	0.20
T400049	T4	472	36°03.69'	06°38.62'W	19/05	16:00	0.1
T400051	T4	407	36°03.38'N	06°35.61'W	19/05	16:21	0.20

1.2. Vessel-mounted ADCP (SADCP)

Sergio Ramírez-Garrido, Marc Gasser, Pedro Llanillo, Jesús Peña-Izquierdo, Miquel Rosell-Fieschi, Josep L. Pelegrí

The configuration used to process the ship- or vessel-mounted ADCP (SADCP) is indicated in the configuration file .txt (Annex 1). The main characteristics of this configuration are:

Broad Band (high resolution) 50 bins, Long Range (narrow band) 45 bins, bins 16m, 8m blankingspace. The maximum depth sampled by the sADCP is 700 m.

The vessel-mounted ADCP data are delivered as Matlab files, .mat, generated by the winADCP software. The velocity profiles are 300 seconds averages (LongTermAverage, LTA). A .mat file has been generated (FICARAM15_ADCP_LTA.mat) which includes all profiles concatenated and interpolated every 5 m from the surface down to 800 m, excluding profiles when the boat speed was below 2 knots.

Several examples of the measured velocity field are illustrated in Figures 1, 2 and 3.

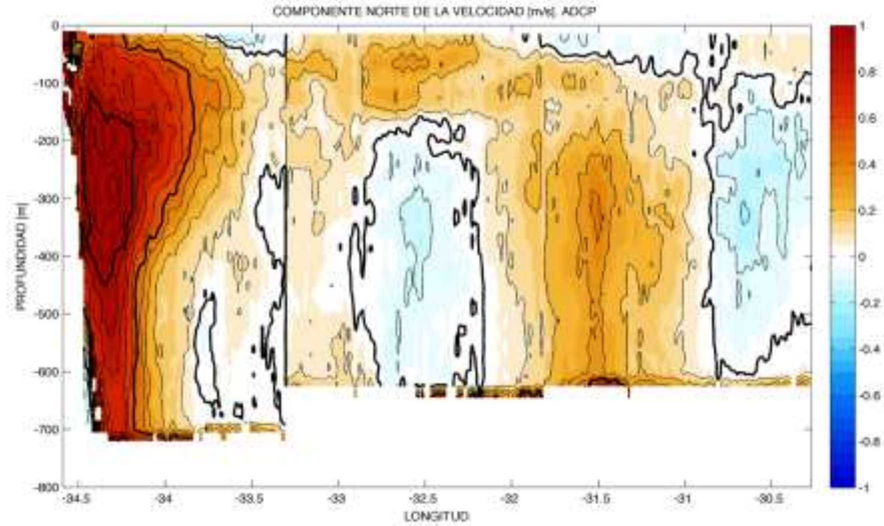


Figure 1: *Latitudinal velocity component (positive values represent northward flow, m s^{-1}) between Recife and the Meridional section, as obtained with the vessel-mounted ADCP. The intense northward slope flow illustrates the intensity of the North Brazil Undercurrent*.

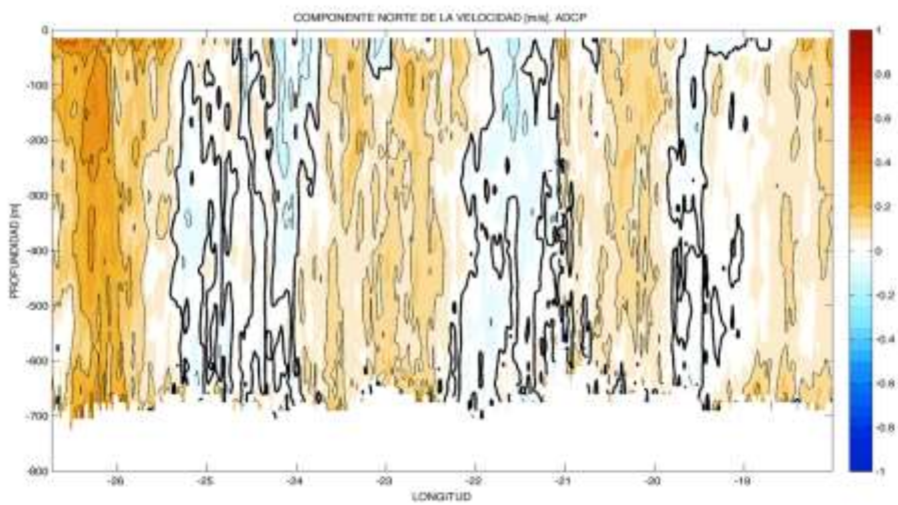


Figure 2: *Latitudinal velocity component (positive values represent northward flow, m s^{-1}) along 36°N, moving east from the Azores, as obtained with the vessel-mounted ADCP*.

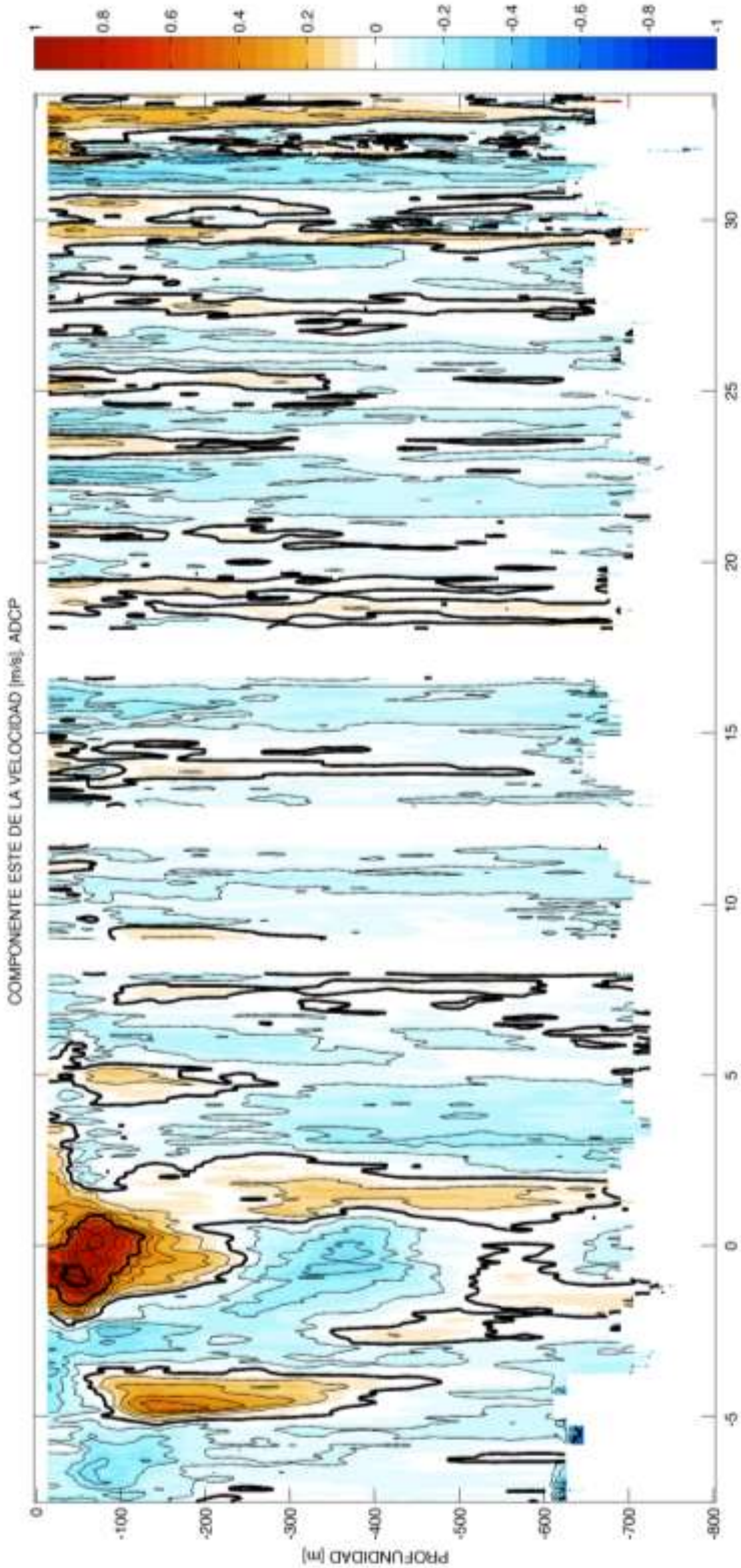


Figure 3: *Zonal velocity component (positive values represent northward flow, m s^{-1}) along the main meridional section, as obtained with the vessel-mounted ADCP. The EUC is clearly seen in the equator, centered at about 100 m, surrounded by the northern and southern equatorial undercurrents. Note the lack of data near 9, 12 and 17°N.*

1.3. Lowered ADCP (LADCP)

Sergio Ramírez-Garrido, Marc Gasser, Pedro Llanillo, Jesús Peña-Izquierdo, Miquel Rosell-Fieschi, Josep L. Pelegrí

The lowered ADCP (LADCP, with master and slave units mounted in the Rosette) allows obtaining velocity fields all along the water column. The LADCP worked fine during most of the cruise. Processing of these data uses the Matlab scripts LDEO_IX_v.8, developed philanthropically over two decades by M. Visbeck and A.M. Thurnherr. During the cruise we followed the instructions described in "How To Process LADCP Data With the LDEO Software "(Thurnherr, 2011; available at ftp://ftp.ldeo.columbia.edu/pub/LADCP/HOWTO/how-to.pdf)

We used the configuration files provided by the UTM. These files determine a constant rate ping every 1.04 s, with 8 m bins, and recording the dara on Earth Coordinates. Thurnherr (2011) recommends using Beam Coordinates, as it seems to give better results; it would be worthwhile to implement this change in the future.

Two problems appeared recurrently in the initial profiles:

- Instrument had no constant ping rate.

- Increased error due to shear inverse difference.

Figure 4 illustrates the zonal velocity field as obtained with the LADCP in the meridional section during leg 1. In this case the LADCP was processed using the option of assimilating the vessel-mounted ADCP data.

The velocity measurements obtained by the vessel-mounted ADCP (SADCP) have been compared with the velocities obtained by the LADCP. Processing of the LADCP data can be done including or not the SADCP data. To carry out this comparison, we used the velocities obtained with the LADCP without including the SADCP data. The average difference between the two profiles, for both velocity components, is typically very low, less than 0.03 m s^{-1}. The average error is less than the instrumental error for both SADCP as LADCP (approximately 0.1 m s^{-1}).

Figure 5 illustrates the velocity profiles as obtained using the LADCP, in this instance assimilating SADCP data. The deepest data is corrected to take into consideration velocities computed using bottom track, as shown in this figure. Figure 6 illustrates the sort of variability of the SADCP data while on station.

These results grant us confidence on the good behavior of both instruments during the cruise. The only exceptions were the top and bottom 100 m of the SADCP profile, where the instrumental noise increases.

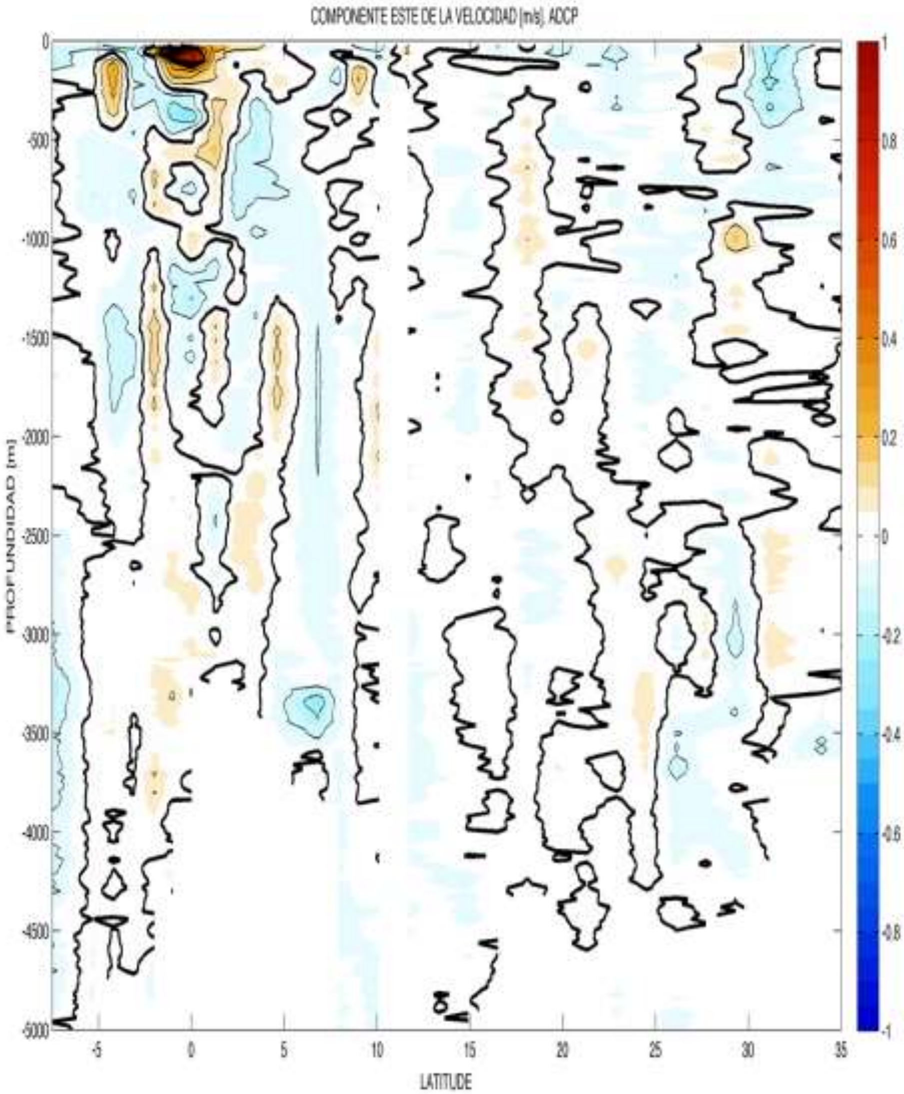


Figure 4: *Zonal velocity component (positive values represent northward flow, m s^{-1}) along the main meridional section, as obtained with the vessel-mounted ADCP (assimilating vessel-mounted ADCP data).*

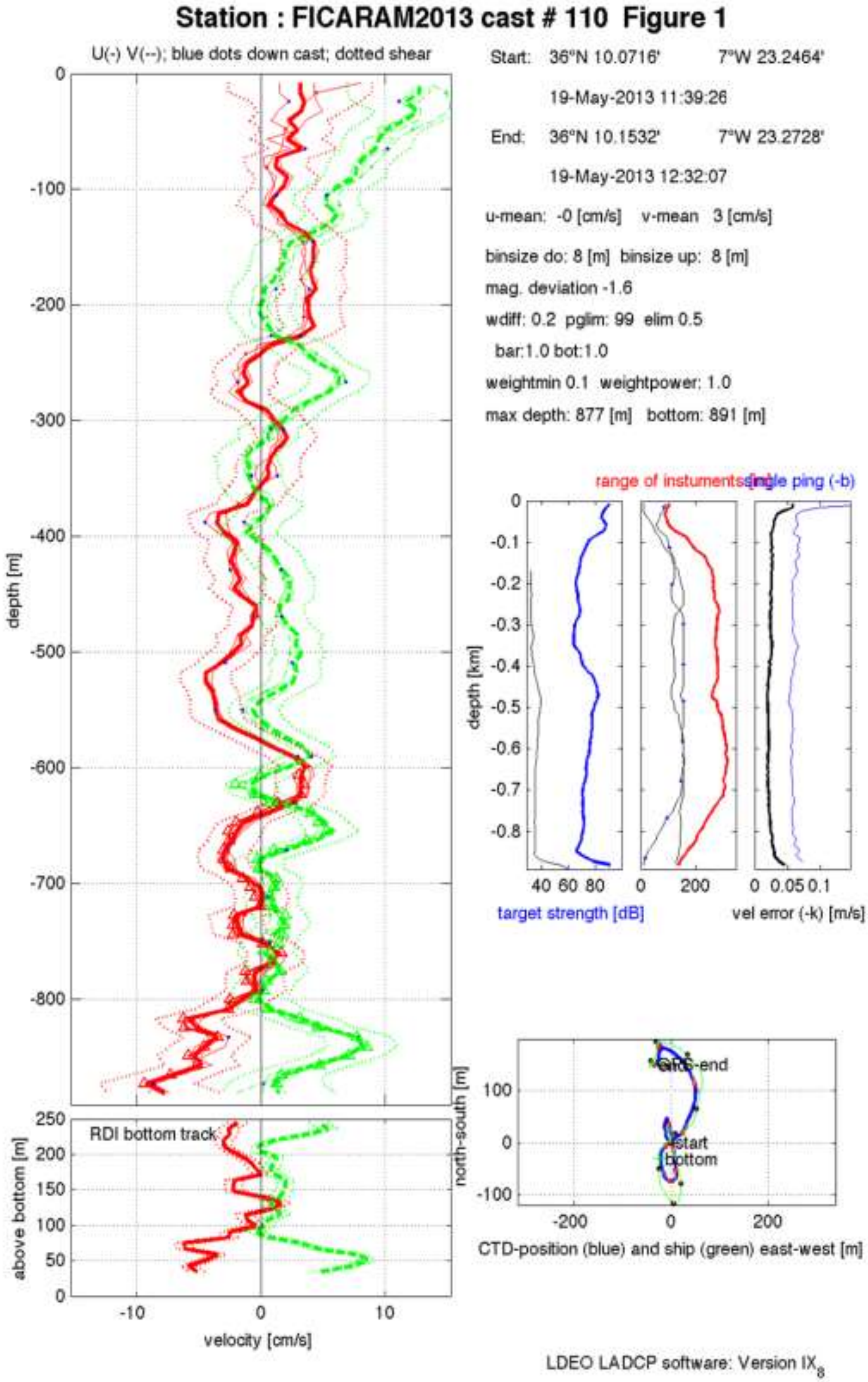


Figure 5: *Example of a velocity profile as determined using the lowered ADCP. Triangles deeper than 600 m indicate the bottom tracked velocities.*

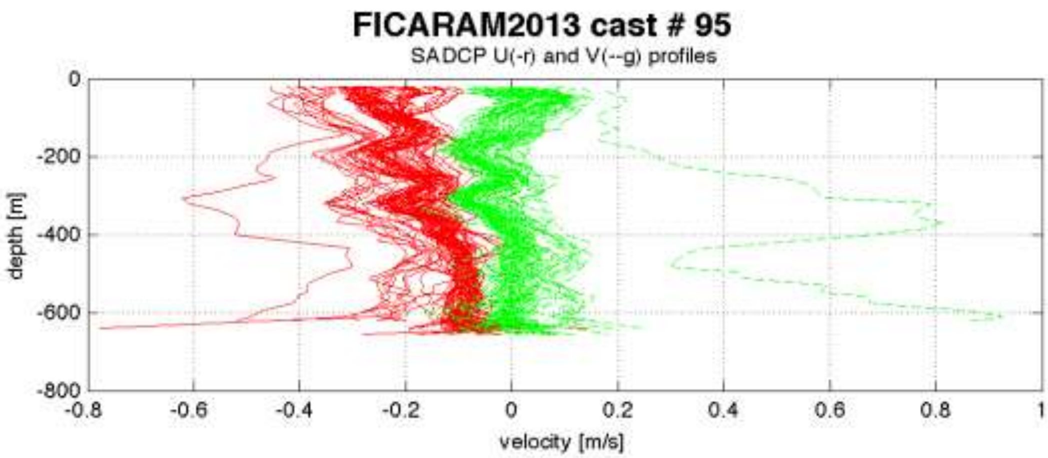


Figure 6: *Example of variability in velocity profiles as obtained with the vessel-mounted ADCP during a short transect.*

2. HYDROGRAPHIC STATIONS

2.1. CTD

Rocío R. Marroyo, Jesús Peña-Izquierdo, Marc Gasser, Sergio Ramírez-Garrido, Miquel Rosell-Fieschi, Pedro Llanillo, Manuel Paredes, Javier Vallo, Gustavo Agudo, Alberto Arias, Alberto Hernández, Camilo J. Gómez

To achieve the general objective of the cruise, 108 full depth CTD casts were completed in the FICARAM section from the Falkland Islands to Cartagena (Figure 7). At stations 5, 18, 38, 43, 53, 67 79, 83, and 89 two CTD casts were performed in order to obtain the seawater needed for the experiments of dissolved inorganic carbon included in the DOREMI project. Only 5 full depth CTD casts (stations 96, 98, 105, 106 and 109) of the 113 planned for the FICARAM section were not performed due to bad weather. Just at the beginning of the cruise, station 0 was carried out and all of the 24 Niskin bottles were fired at the same level (112 m) to check the equipments and to verify the precision of the different methods.

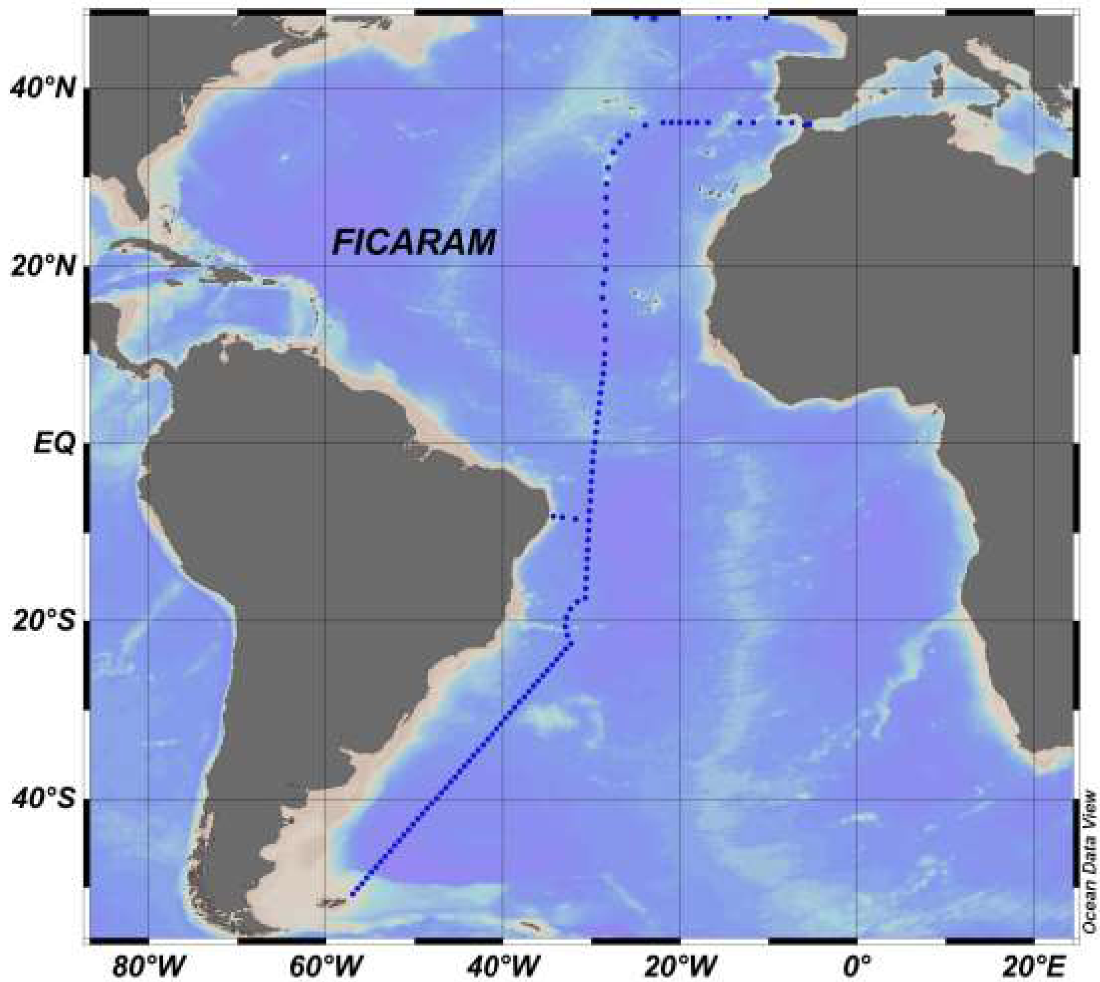


Figure 7: *Geographical positions of the stations*

A SBE911plus (Sea-Bird Electronics) CTD probe was used for the station-based profiling of the water column (from surface to a distance of ~15 meters from the bottom). The CTD unit was equipped with dual temperature and conductivity sensors, a Digiquartz with TC pressure sensor, a SBE-43 oxygen probe, a SeaPoint fluorometer, a SeaPoint turbidimeter and an altimeter. The rosette was equipped with 24 Niskin bottles (12 L). At each station and during the downcast, the speed of the cable was placed at 1 m/s (0.45 m/s or less for the first ~100 m). During the upcast, the winch was stopped at 24 depth levels for Niskin bottle sampling.

Several SBE filters were used to process CTD data: 1.datcnv, 2. wildedit, 3. wfilter, 4. filter, 5. alignctd, 6. celltm, 7. loopedit, 8. derive, 9. binavg and 10. rossum.

Data from CTD stations are delivered as .txt files with ODV format. Two versions, for both CTD and bottle data, have been produced. A folder with CTD data contains all the .cnv (CTD) and .btl (bottle) files. Finally, .pdf files have been produced, containing all scanned sheets as well as figures with temperature, salinity, oxygen and chlorophyll profiles for all the stations.

Pre-processed (SeaSoft®) potential temperature, salinity and oxygen downcast-CTD data are shown in Figures 8 and 9.

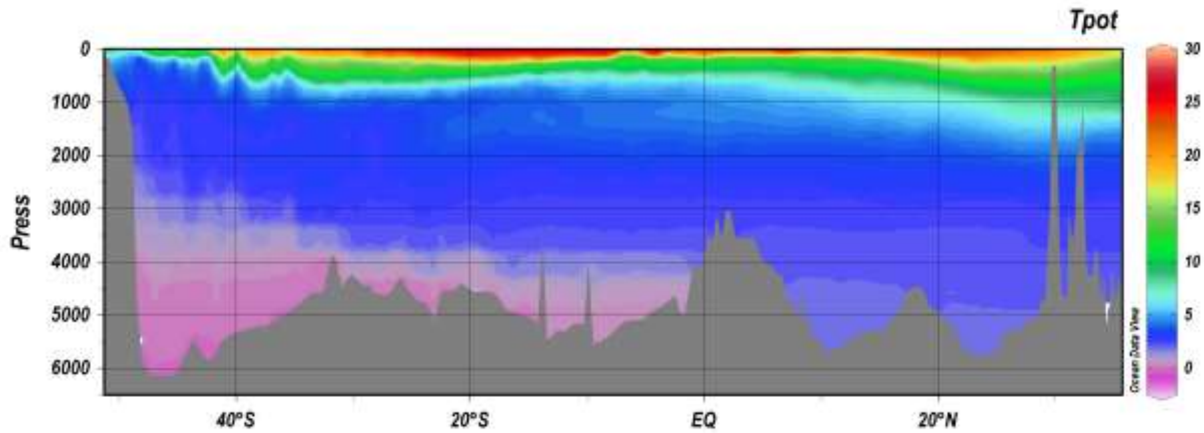


Figure 8: *Vertical distribution of CTD potential temperature along the FICARAM section*

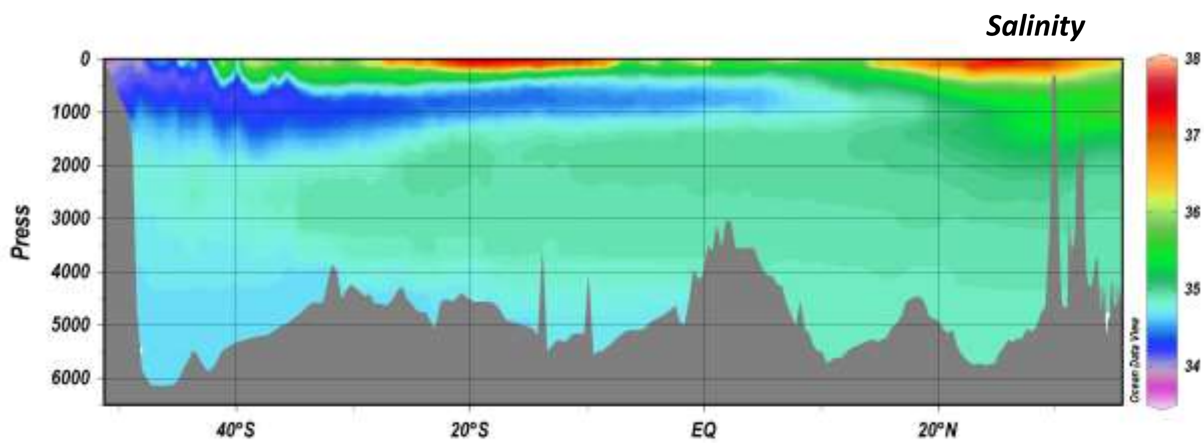


Figure 9: *Vertical distribution of CTD salinity along the FICARAM section*

3. CHEMICAL ANALYSIS

3.1. Seawater sampling

Mercedes de la Paz, Maxim Galindo, Xosé Antonio Padín, Celia Marrasé, Francisco Aparicio, Encarna Borrull, Caterina R. Giner, Fiz F. Pérez, Fernando Alonso, Elena Royo, Mª Isabel García-Ibáñez, Estela Romero, Rocío R. Marroyo, Marc Gasser, Sergio Ramírez-Garrido, Jesús Peña-Izquierdo, Miquel Rosell, Pedro Llanillo

A total of 12349 samples were collected during FICARAM-15 from the Niskin bottles of the CTD-rosette. The sampling of the different variables followed the strict order given in Table 1. The total number of samples collected for each variable during this cruise is also given in Table 1. The geographical positions of the stations sampled and the bottom depth are given in Table 2. The position of the stations 49 to 53 were moved to international waters because we did not yet received permission to work in Brazilian waters. The Table in Annex 2 gives details of the samples collected in each station and depth.

Variable	Number of samples
CFC	1443
Oxygen	2312
N_2O/CH_4	613
pH	2293
C_T	60
Alkalinity	1180
DOC	1080
Nutrients	2359
Salinity	271
Uranium 236	99
Chlorophyll	158
Microbiology	246
POC/PON	235

Table 1: *Number of samples collected during FICARAM-15.*

Table 2: *Geographical positions of the stations sampled.*

STATION	DATE	LATITUDE N	LONGITUDE W	BOTTOM DEPTH (m)
0	21/03/2013	-51.99383	-65.84950	112
1	23/03/2013	-50.70667	-57.00217	347
2	23/03/2013	-50.10250	-56.47633	501
3	23/03/2013	-49.50533	-55.95550	744
4	24/03/2013	-48.90617	-55.43267	1220
5.2	24/03/2013	-48.30517	-54.90983	4944
5.1	24/03/2013	-48.30967	-54.91200	4944
6	25/03/2013	-47.70517	-54.38183	5928
7	25/03/2013	-47.10533	-53.85900	6166
8	26/03/2013	-46.50717	-53.33700	6176
9	26/03/2013	-45.90350	-52.81017	6150
10	26/03/2013	-45.30483	-52.28500	6012
11	27/03/2013	-44.70483	-51.76417	5878
12	27/03/2013	-44.09967	-51.23917	5651
13	28/03/2013	-43.50467	-50.71533	5389
14	28/03/2013	-42.90483	-50.19233	5574
15	28/03/2013	-42.30517	-49.66717	5807
16	29/03/2013	-41.70467	-49.14117	5666
55	14/04/2013	-16.30350	-30.70567	4924
56	14/04/2013	-15.20567	-30.64200	4849
57	15/04/2013	-14.10633	-30.58417	4928
58	15/04/2013	-13.00383	-30.52967	5185
59	16/04/2013	-11.90383	-30.47167	5441
60	16/04/2013	-10.80400	-30.42217	5336
61	17/04/2013	-9.70367	-30.36667	4289
62	17/04/2013	-8.60667	-30.31483	5372
63	24/04/2013	-7.91050	-34.33317	874
64	24/04/2013	-7.77583	-33.31750	3892
65	25/04/2013	-7.64183	-31.82133	5084
66	25/04/2013	-7.50417	-30.26050	5412
67.1	26/04/2013	-6.40483	-30.20050	5103
67.2	26/04/2013	-6.40467	-30.20000	5103
67.3	26/04/2013	-6.40383	-30.20017	5097
68	26/04/2013	-5.30500	-30.13550	5062
69	27/04/2013	-4.20567	-30.06250	4773
70	27/04/2013	-3.10517	-29.98233	4884

17	29/03/2013	-41.10317	-48.65917	5525
18	30/03/2013	-40.50600	-48.09600	5309
18.2	30/03/2013	-40.50000	-48.09117	5309
19	30/03/2013	-39.90417	-47.56817	5265
20	31/03/2013	-39.30617	-47.04150	5213
21	31/03/2013	-38.70283	-46.51983	5180
22	31/03/2013	-38.10233	-45.99617	5148
23	01/04/2013	-37.50833	-45.47383	5098
24	01/04/2013	-36.90550	-44.96183	5056
25	02/04/2013	-36.30600	-44.42483	4951
26	02/04/2013	-35.70250	-43.90150	4911
27	02/04/2013	-35.10833	-43.37700	4834
28	03/04/2013	-34.50517	-42.85333	4679
29	03/04/2013	-33.90467	-42.33100	4529
30	03/04/2013	-33.31317	-41.80383	4578
31	04/04/2013	-32.70617	-41.28367	4488
32	04/04/2013	-32.10517	-40.75867	4183
33	04/04/2013	-31.50667	-40.23650	3671
34	05/04/2013	-30.90283	-39.71100	4376
35	06/04/2013	-30.30700	-39.18800	4178
36	06/04/2013	-29.70817	-38.66833	4294
37	07/04/2013	-29.10600	-38.14017	4360
38	07/04/2013	-28.50683	-37.61617	4439
38.2	07/04/2013	-28.50300	-37.61533	4439
39	07/04/2013	-27.90483	-37.09100	4676
40	08/04/2013	-27.30683	-36.56600	4610
41	08/04/2013	-26.70717	-36.04067	4533
42	08/04/2013	-26.10583	-35.51950	4233
43	09/04/2013	-25.50700	-34.99633	4334
43.2	09/04/2013	-25.50500	-34.99383	4334
44	09/04/2013	-24.90417	-34.47183	4572
45	10/04/2013	-24.30450	-33.94683	4612
46	10/04/2013	-23.70500	-33.42083	4597
47	10/04/2013	-23.10717	-32.90117	4767
48	11/04/2013	-22.50583	-32.37633	4536
49	11/04/2013	-21.61533	-32.78400	4407
50	12/04/2013	-20.61483	-32.99950	4264
51	12/04/2013	-19.58383	-32.86633	4100
52	12/04/2013	-18.63367	-32.39933	4279
53	13/04/2013	-17.83250	-31.63467	4676
53.2	13/04/2013	-17.83367	-31.63400	4674
54	13/04/2013	-17.40550	-30.76533	4877

71	28/04/2013	-2.00783	-29.89150	4918
72	28/04/2013	-1.00250	-29.78867	4333
73	29/04/2013	0.00000	-29.67817	4073
74	29/04/2013	1.29433	-29.55850	3278
75	30/04/2013	2.39700	-29.42933	3314
76	30/04/2013	3.49583	-29.29150	3446
77	30/04/2013	4.59550	-29.15100	3813
78	01/05/2013	5.69433	-29.00867	3446
79.1	01/05/2013	6.79500	-28.87133	4205
79.2	01/05/2013	6.79417	-28.87200	4207
80	02/05/2013	7.89500	-28.74133	5042
81	02/05/2013	8.99500	-28.62983	5284
82	03/05/2013	10.09467	-28.54267	5483
83.1	03/05/2013	11.69517	-28.52117	5465
83.2	04/05/2013	11.69583	-28.52017	5465
84	04/05/2013	13.29500	-28.50900	5455
85	05/05/2013	14.89667	-28.49483	5177
86	05/05/2013	16.49500	-28.83550	4893
87	06/05/2013	18.09550	-28.73117	4324
88	07/05/2013	19.69783	-28.45850	4881
89.1	07/05/2013	21.29567	-28.44600	5104
89.2	07/05/2013	21.30450	-28.44883	5100
90	08/05/2013	22.89667	-28.43050	5598
91	09/05/2013	24.49633	-28.42067	5631
92	09/05/2013	26.09617	-28.40767	5193
93	10/05/2013	27.69533	-28.39383	5187
94	11/05/2013	29.29633	-28.38067	4437
95	12/05/2013	31.10300	-28.07767	4195
97	13/05/2013	33.96250	-26.79767	3614
99	14/05/2013	35.88283	-24.00100	4398
100	15/05/2013	36.16633	-22.50150	4921
101	15/05/2013	36.16400	-20.99617	4843
102	16/05/2013	36.16633	-19.49900	5474
103	16/05/2013	36.16800	-17.99967	5403
104	17/05/2013	36.16467	-16.50233	4420
107	18/05/2013	36.16417	-12.10167	3938
108	18/05/2013	36.16700	-10.49833	4828
110	19/05/2013	36.16767	-7.38717	893
111	19/05/2013	35.97167	-5.97500	225
112	20/05/2013	35.95333	-5.74717	291
113	20/05/2013	36.00533	-5.36617	915

3.2. Chlorofluorocarbon (CFC)

Mercedes de la Paz, Elena Royo, Fernando Alonso

CFC samples were taken almost in every odd station during the first leg and in every station during the second leg (Table Annex 2). The analyses of these samples with respect to the CFC-11 and CFC-12 components will be performed after the cruise at the gas chromatography lab at the Centre for Oceanic and Atmospheric Sciences of the University of East Anglia, U.K. The sampling procedure involves filling the sample glass bottle in a beaker and capping simple glass bottles with special foil-lined caps under water. The bottle was place in a beaker. A tygon tubing connects the Niskin tap with the bottom of the glass bottle. Then, the bottle was filled with the Niskin seawater, which continues to overflow the bottle until the beaker overflows, allowing at least 2 L of seawater to flow through the bottle and out of the beaker. Later, the bottle was tightly capped underwater without allowing the water in the bottle to come in contact with air.

Altogether, 1443 CFC samples were taken during the cruise. Due to their time dependent input into the ocean, CFCs carry information on the age and ventilation of water masses. It is also possible to infer the concentration of anthropogenic carbon from the CFC/age-data.

3.3. Oxygen

Antón Velo, Mª Isabel García-Ibáñez, Elena Royo, Fiz F. Pérez

With the main purpose of calibrating the O_2 sensor of CTD, samples of O_2 were taken in all the stations at 24 depths in the FICARAM 2013 section. The O_2 samples were analyzed following the widely applied Winkler method.

O_2 samples were always the firsts to be taken from the Niskin bottles of the rosette, or they were taken after CFC samples when CFC was sampled. Samples were collected in calibrated flasks (~113 mL) with a silicone pipe avoiding bubble formation. Sample fixation (precipitation) was done by adding 0.6 mL of manganous salt ($MnCl_2 \cdot 4H_2O$) and 0.6 mL of alkali-iodide solution (NaOH + NaI). These samples were stored in darkness at least 24 hours before being measured. Then, 0.8 mL of sulphuric acid was added to dissolve the precipitate and to titrate the O_2 sample with thiosulfate using an automatic 5 mL burette “Titrando Metrohm”. Concentration of thiosulfate solution was periodically controlled by standardization with potassium iodate 0.02N for each session. Blanks were also measured periodically during the cruise. O_2 concentration was obtained in µmol kg^{-1} by recording sampling temperature and thus having the mass of pickled sea water.

O_2 concentration distribution of FICARAM section is represented using the Ocean Data View program (ODV) (Schlitzer, 2011) in Figure 10.

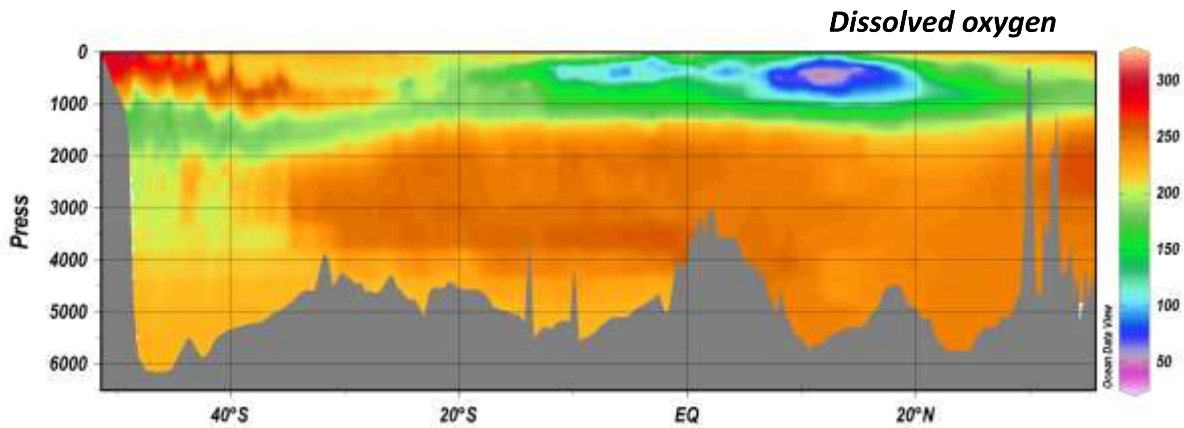


Figure 10: *O_2 distribution along the FICARAM section*

3.4. Dissolved N_2O/CH_4

Mercedes de la Paz Arándiga, Elena Royo,

Discrete samples from the water column were taken in 11 stations distributed between stations 74 to 89 in the North Equatorial Atlantic and 3 stations in the Strait of Gibraltar (Table Annex 2). For each water depth, three replicates were taken from the Niskin bottles after arrival on deck. The right sampling order (according to solubility of the different gases), should be after the CFC´s and oxygen sampling. Samples were taken in 120 mL vials for the simultaneous analysis of N_2O and CH_4. Vials were filled using a silicon tube squeezing air bubbles to assure air bubble free sampling. The silicon tube was placed on the bottom of the vial, and then left for seawater overflow for at least 2 times the vial volume, and finally the vials were closed with a rubber plug under running water. Close attention was paid when closing the vials in order to avoid trapping air bubbles in the sample. When all samples for one station were collected, the vials were closed with an aluminum capsule using a crimping tool. The samples were conserved right after sampling one station using saturated $HgCl_2$.

The N_2O and CH_4 concentration will be determined by gas chromatography in the laboratories of the IIM-CSIC. Gas trace samples can be stored up to 10 months without an effect on the N_2O and CH_4 concentration if stored properly. Samples will be analyzed with a static equilibration method: a headspace of 20 mL with a secondary standard will be added to the sample vial and left to equilibrate with the liquid phase for at least 2 h. Afterwards subsamples will be taken from the headspace and injected automatically into the gas chromatographic system. N_2O and CH_4 will be determined simultaneously by ECD and FID detectors, respectively.

3.5. pH

Xosé Antonio Padín, Mª Isabel García-Ibáñez, Fiz F. Pérez

Seawater pH samples were taken at 24 levels in all the stations along the FICARAM section. pH measurements were made using the spectrophotometric method described in Clayton and Byrne (1993). This method consists of adding 75 µL of m-cresol purple (mCP) to the seawater sample and measuring its absorbance at 3 wavelengths, i.e., λ_{HI} =434 nm; λ_I =578 nm and $\lambda_{non\text{-}abs}$=730 nm. The reaction of interest at seawater pH is the second dissociation $HI^{-}_{(aq)}=H^{+}_{(aq)}+I^{2-}_{(aq)}$ in which I is the indicator. Then, the total hydrogen ion concentration can be determined by $pH=pK_2+\log_{10}[I^{2-}]/[HI^{-}]$.

pH samples were taken directly from the Niskin bottles into special optical glass spectrophotometric cells of 28 mL of volume and 100 mm of path length. These cells were carefully stored in a thermostatic bath at 25.0ºC around one hour before the analysis. Absorbance measurements were performed with a Perkin Elmer Lambda 850 UV-VIS spectrophotometer on board the R/V Hespérides. pH values were given following the equations described in Dickson *et al.* (2007), who includes a correction due to the difference between the seawater and the acidity indicator (ΔR).

The complete FICARAM pH profile was plotted using ODV, as shown in Figure 11.

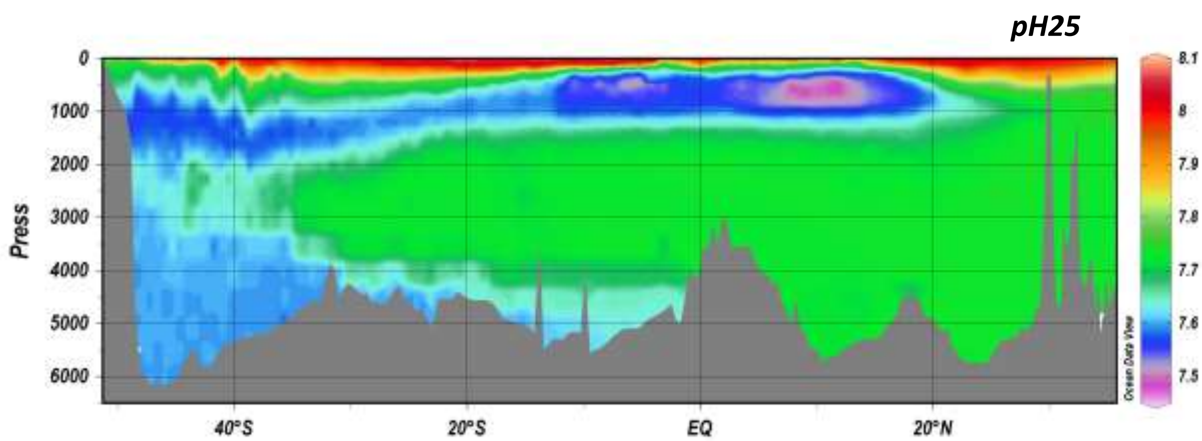


***Figure 11**: Vertical distribution of pH along the FICARAM section*

3.6. Total Inorganic Carbon (C_T)

Noelia M. Fajar, Mónica Castaño-Carrera, Elena Royo,

A total of 60 seawater samples for C_T were collected in clean borosilicate glass bottles (600 mL) Samples were rinsed and filled from the bottom, overflowing half a volume. A headspace of 1% of the bottle volume is left. Saturated aqueous solution of mercuric chloride (300 µL) was added to the sample as a preservative of fouling formation. The bottle was sealed with glass stoppers covered with Apiezon-L grease and stored in a dark box. These samples were analysed at the CO2 laboratory of the Instituto de Investigaciones Marinas (IIM) of CSIC in Vigo (Spain) using the SOMMA (Single-Operator Multiparameter Metabolic Analyzers) system connected to a model CM101_093 coulometer. The analysis consists on acidifying an aliquot of 20 mL with H_3PO_4 in a glass stripping chamber. Then, the resulting CO_2 gas is carried in the equipment by a free-CO_2 gas (N_2) into a coulometric cell, in which the coulometrical tritation is performed (Johnson *et al.*, 1993). Certified Reference Material (CRM) for CO_2 analyses were performed in order to control the accuracy of C_T measurements. In every C_T-analysis session, a CRM from batch 84 and 99 provided by Dr. Andrew Dickson was analysed.

These 60 C_T analyses were used to check the internal consistence with the C_T calculated from pH and alkalinity using the dissociation constants of the carbonate system of Mehrbach *et al.* (1973) refitted by Dickson and Millero (1987). Figures 12 and 13 show the distribution of the calculated C_T and the normalized C_T, respectively, along the FICARAM section.

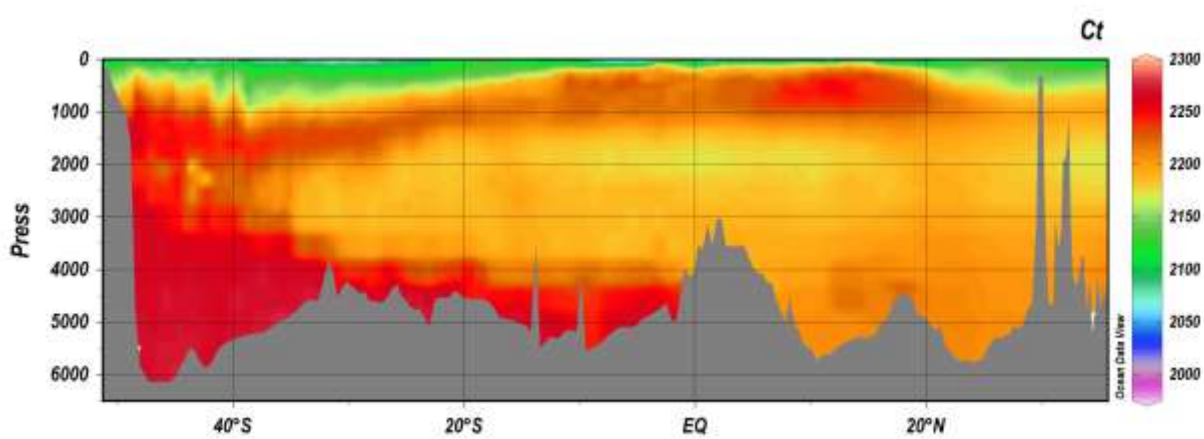


***Figure 12**: Vertical distribution of calculated C_T (µmol kg^{-1}) along the FICARAM section*

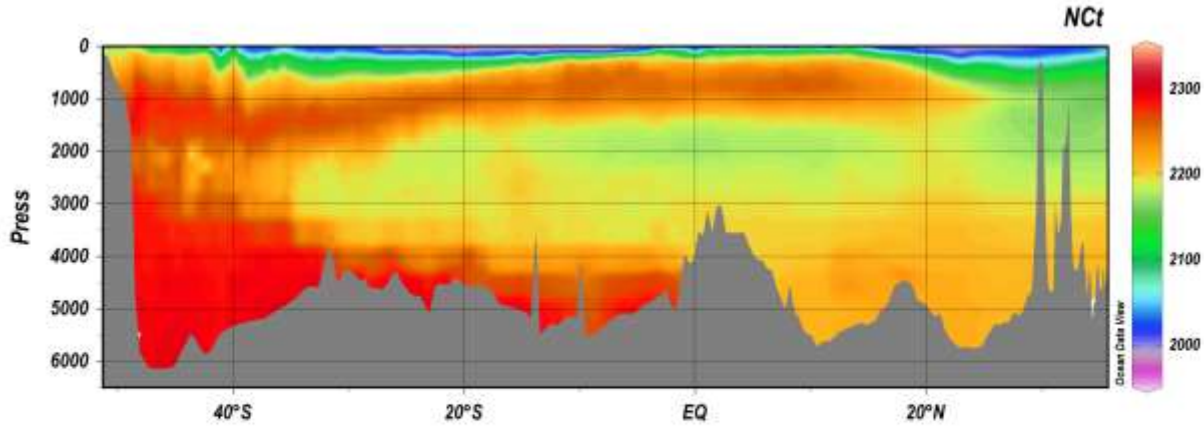


Figure 13*: Vertical distribution of normalized calculated C_T (µmol kg^{-1}) along FICARAM section*

3.7. Alkalinity (A_T)

Anton Velo, Mª Isabel García-Ibáñez, Elena Royo, Fiz F. Pérez

Samples of A_T were taken during the FICARAM section in 59 stations, almost half of the total stations. In order to analyze these A_T samples on board, the water was transferred directly from the Niskin bottle to 600 mL borosilicate glass bottles and stored for 24 hours before the analyses. Measurements of A_T were done by a one endpoint method using an automatic potentiometric titrator (Dosino 800 Metrohm) with a combined glass electrode (Perez and Fraga, 1987). A Knudsen pipette (~195 mL) was used to transfer the samples into an open Erlenmeyer flask in which the potentiometric titration was carried out with HCl (0.1 M). The final volume of titration was determined by means of two pH endpoints (Mintrop *et al*., 2000). These A_T measurements were done in 14 sets of analysis.

In order to estimate the accuracy of the A_T method, A_T measurements of certified reference material (CRM) for CO_2 from batch 100 provided by Dr. Andrew Dickson were analyzed. And in addition, an extra calibration (substandard) was made using a closed container of 75 L filled with open ocean surface water.

The distribution of A_T and normalized A_T concentrations in µmol·Kg^{-1} of the FICARAM section are shown in Figures 14 and 15, which were drawn using ODV.

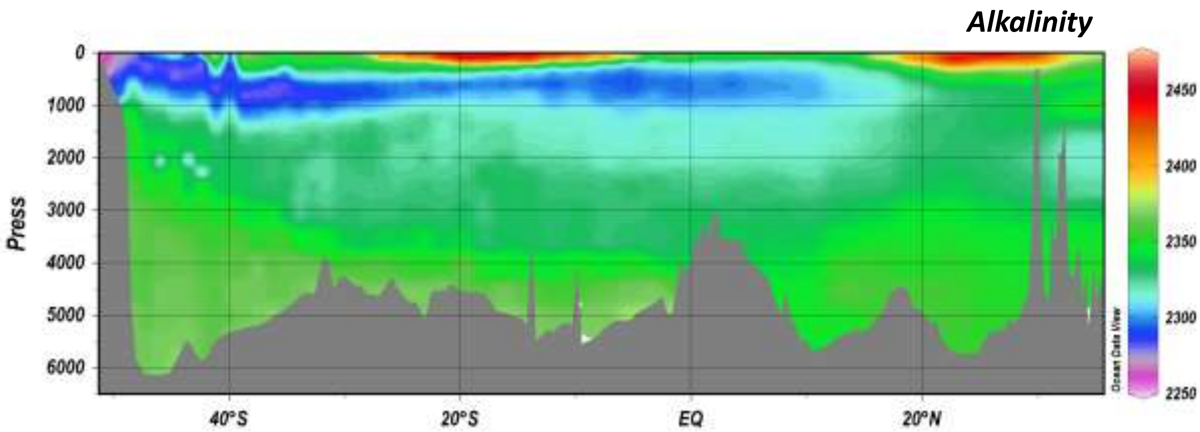


Figure 14: *Vertical distribution of A_T (µmol kg^{-1}) along the FICARAM section*

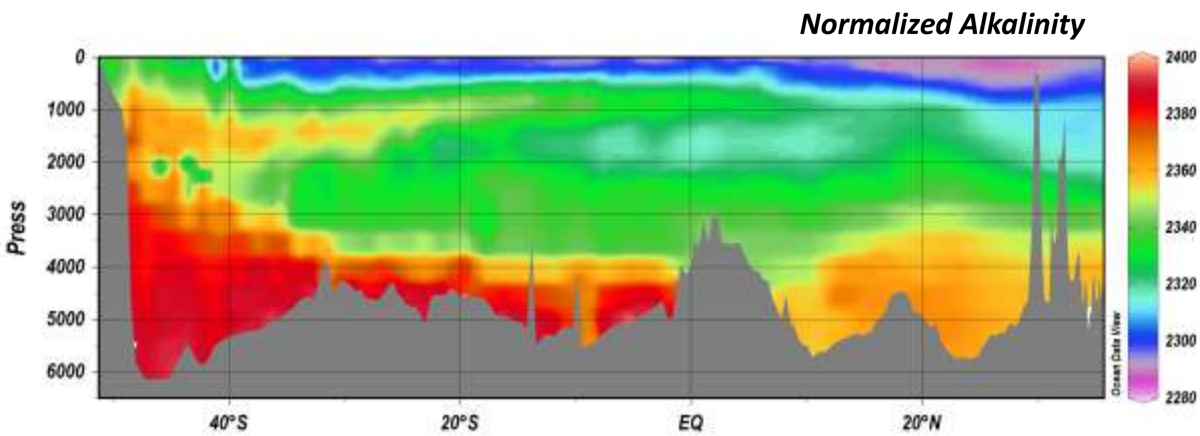


Figure 15: *Vertical distribution of normalized A_T (µmol kg^{-1}) along the FICARAM section*

3.8. Nutrients

Mercedes de la Paz, Maxim Galindo, Fernando Alonso-Pérez, Elena Royo

Dissolved nutrients were sampled in all stations and all depths after trace gases, dissolved oxygen, total inorganic carbon, pH and alkalinity. Samples were withdrawn to 30 mL solid-polyethylene containers after rinsing twice with the same water. Samples were preserved in the dark at 4ºC when analyses started more than one hour after collection, and they were analyzed no more than 24 hours after collection. Using a SKALAR segmented flow auto-analyzer nutrient analyses were performed. Nitrate + nitrite, phosphate and silicate were simultaneously determined. Determination procedure was settled as a pumping cycle of 120 seconds sucking the sample and 80 seconds sucking from a milli Q water reservoir. Every analysis spent ~8 mL of sample. Determinations of nitrate, phosphate and silicate were carried out following methods described by Hansen and Grassoff (1983) with some improvements (Mouriño and Fraga, 1985).

Calibration

Primary standards for nitrate + nitrite, phosphate and silicate were performed from nutrient salt materials (KNO_3, KH_2PO_4 and Na_2SiF_6, respectively) dried 24 hours over silica gel prior to weigh. Primary solutions were performed with milli Q in calibrated volumetric flasks. A stock standard solution was prepared by mixing the three primary standards and preserved in the dark at 4ºC. Daily working standard solutions were produced dissolving different volumes of stock standard solution in low nutrient seawater (LNSW), filtered through 0.2 µm. These solutions were prepared every two days and preserved in the dark at 4ºC. Concentrations of each nutrient in the working standard solution are showed in Table 3.

Table 3: *Working calibration standards*

		Volume (mL)	Concentration (µmol kg^{-1})			
STD	**Stock STD**	**Final Volume**	**NO_3^-**	**NO_2^-**	**HPO_4^{2-}**	**SiO_2**
1	1	500	8.87		0.75	31.98
2	1	500	17.73		1.51	63.97
3	1	500	26.76		2.26	95.95
4	1	500	35.68		3.01	127.93
5	2	500		35.46		

Several LNSW sets were used in the cruise. Nutrient concentrations of these LNSWs are showed in Table 4. At station 14, water deeper than 5000 m, corresponding to Antarctic Bottom Water (AABW) was collected and filtered through 0.2 µm in order to have a high nutrient standard. Since then, AABW standard was measured every day of analysis; its nutrient concentration is showed in Table 4.

Table 4: *Nutrient concentrations ± standard deviation for Low Nutrient Sea Waters (LNSW) and Antarctic Bottom Water (AABW)*

	Concentration (µmol kg^{-1})			
	Stations	**NO_3^-**	**HPO_4^{2-}**	**SiO_2**
LNSW_1	0-14	0.18 ± 0.02	0.01 ± 0.01	0.69 ± 0.22
LNSW_2	15-28	0.12 ± 0.02	0.02 ± 0.02	1.01 ± 0.08
LNSW_3	29-62	0.05 ± 0.03	0.04 ± 0.01	0.54 ± 0.04
LNSW_4	63-113	0.05 ± 0.03	0.01 ± 0.01	1.07 ± 0.03
AABW	19-113	33.33 ± 0.20	2.28 ± 0.02	131.17 ± 0.64

Regarding linearity, the analytical system of nitrate showed a linear response over the working range. However, systems for phosphate and silicate deviated from linearity. For silicate, the results improve using a second order polynomial fitting and for phosphate, the concentration has been calculated interpolating linearly using its nearest higher and lower calibration standard values.

Precision

The WOCE (World Ocean Circulation Experiment) requirements for precision (Joyce *et al.*, 1991) are silicate 0.2 % full scale (150µmol kg^{-1}) nitrate 0.2 % full scale (40µmol kg^{-1}) and phosphate 0.4% full scale (2.5 µmol kg^{-1}).

Sampling error. Duplicate samples

In order to test sampling error, 57 pairs of bottles were fired at the same depth at different stations. Absolute differences average between samples pairs are showed in Table 5. Silicate and phosphate errors are within the WOCE requirements; however these errors are slightly higher in the case of nitrate.

Table 5: *Summary of differences between samples fired at the same depth*

	Nitrate	**Phosphate**	**Silicate**
Absolute differences average	0.11	0.01	0.12
C.V.fs (%)	0.27	0.39	0.07
WOCE requirements	0.20	0.40	0.20

Consistency of measurements. Quality control

At station 0, the 24 oceanographic bottles were fired at the same depth, 100 m. Results are showed in Table 6, standard deviation was 0.06 for nitrate, 0.08 for phosphate and 0.04 for silicate. Standard deviations referred to full scale were lower than WOCE requirements in the case of silicate and nitrate, and higher for phosphate.

Table 6: *Summary of differences between quality control measurements*

	Average	**S.D.**	**C.V. (%)**	**C.V. fs (%)**
Nitrate	12.58	0.06	0.45	0.14
Phosphate	NA	NA	NA	NA
Silicate	2.66	0.04	1.40	0.02

Preliminary Results

The vertical distribution in the concentration of nitrate, phosphate and silicate for the FICARAM section is showed in Figure 16.

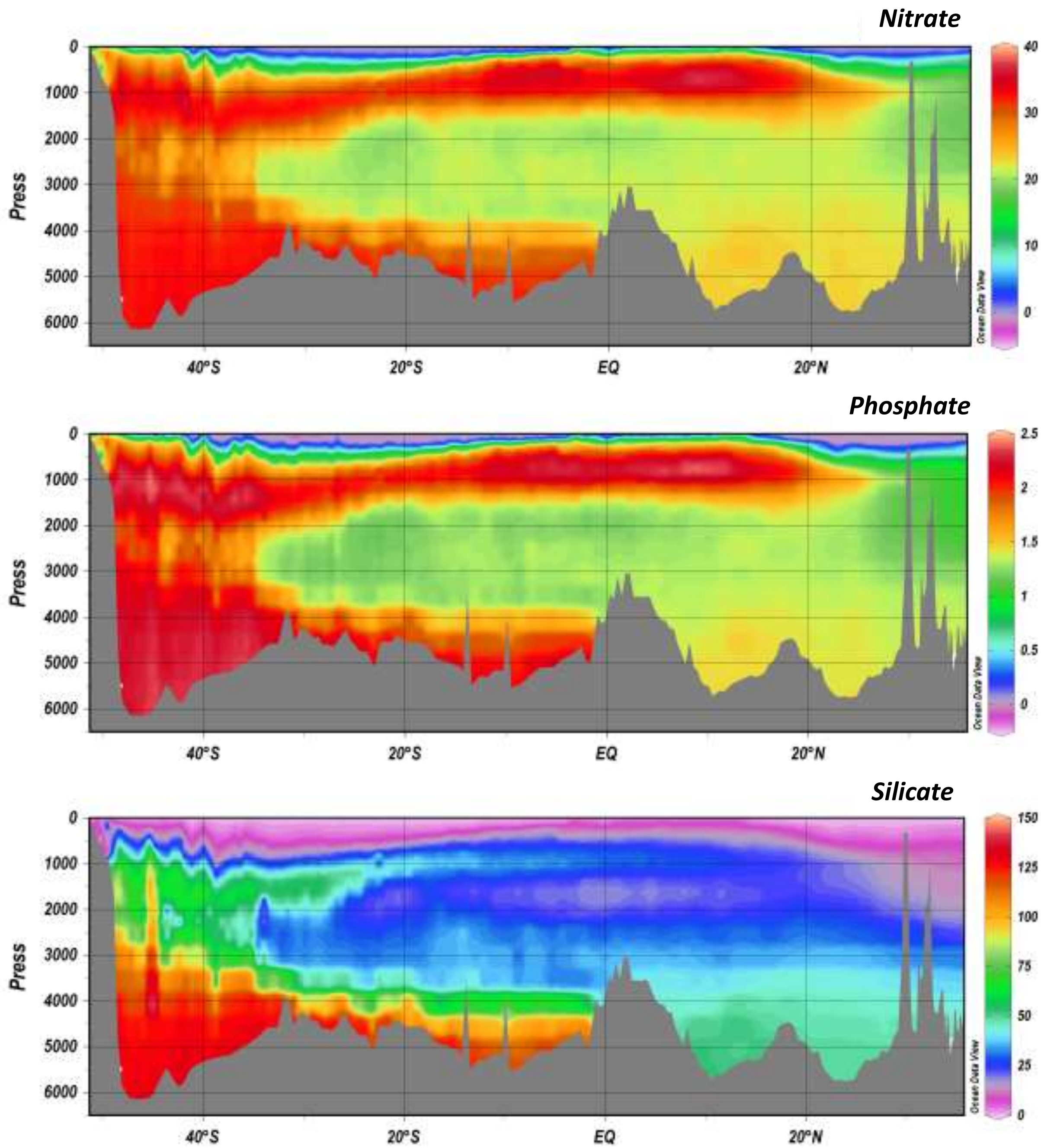


Figure 16: *Vertical distribution of nitrate, phospate and silicate (µmol kg^{-1}) along the FICARAM section.*

3.9. Salinity

Rocío R. Marroyo, Miquel Rosell

To calibrate the conductivity values we used the Portasal Guildline 8400B (SN: 69517) salinometer on board the research vessel. The instrument was maintained, as much as possible, in stable temperature conditions (keeping in mind that the laboratory enabled for this purpose did not have an air conditioning system). The salinometer has a nominal resolution of 0.002 PSU.

Both CTD and underway Thermosalinograph sensors were monitored continuously. Water samples were continuously taken throughout the campaign for calibration purposes. Samples were stored in the laboratory under controlled temperature before analysis. Then, samples were analyzed using the Portasal Guildline and calibrated with IAPSO standard seawater. We present below the calibration efforts carried out for both instruments.

CTD calibration

The CTD had duplicate sensors for conductivity (primary and secondary). Since the beginning of this campaign there was a constant difference between the two sensors. The difference remained throughout the campaign, with the secondary sensor showing results most consistent with those generated by the salinometer.

For calibration purposes the water samples were taken from the deepest bottle and, usually, also from the surface mixed layer. After removing erroneous values, a total of 96 measurements were available for comparison with the CTD data. The comparison was carried out for both the primary and secondary sensors.

Figure 17 illustrates the differences between the salinity values as inferred from each CTD sensor and the Autosal. The black triangles correspond to the primary sensor, the blues triangles to the secondary sensor. The red lines show the linear regression for each data set.

The primary sensor displayed an initial offset of 0.007 compared to the Autosal, to which we have to add a drift of 0.0020 throughout the campaign. The secondary sensor does not show a significant initial offset, but there was a 0.0013 drift during the campaign.

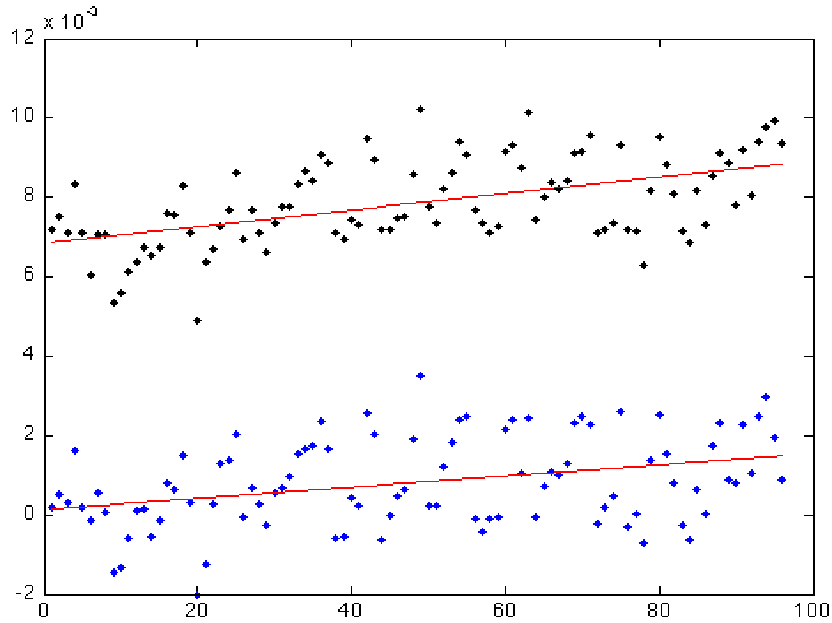


Figure 17: *Salinity differences between the CTD salinity sensor and the salinity values as inferred from the Autosal. Black and blue triangles respectively correspond to the primary and secondary CTD sensors. The red lines represent the linear fit to the data.*

Thermosalinograph

During leg 1 we carried out a calibration of the thermosalinograph (last calibration date is unknown). Samples were taken every day for two weeks. Once removed erroneous data, we had 25 values to perform the calibration exercise.

We find that the Thermosalinographer displays a constant offset of 0.036, which remains throughout the campaign without significant drift (Figure 18); therefore, the accuracy of the TSG is much lower than the CTD.

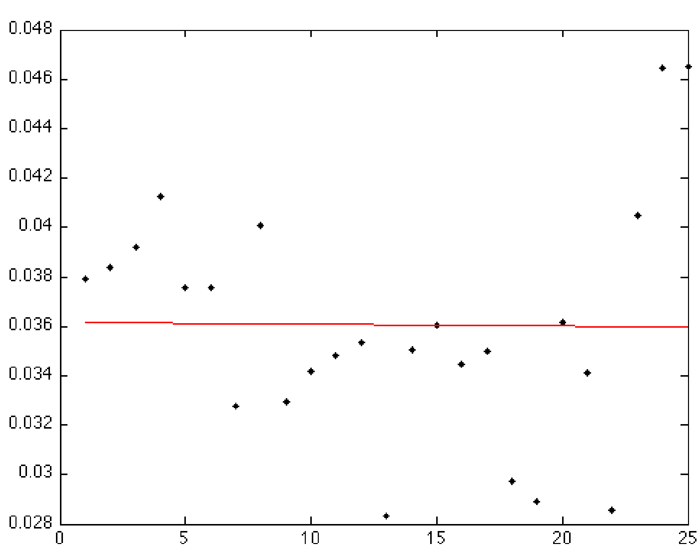


Figure 18: *Salinity differences between the salinity sensor of the Thermosalinographer and the salinity values as inferred from the Portasal. The red lines represent the linear fit to the data.*

3.10. Uranium-236

Rocío R. Marroyo, Sergio Ramírez, Jesús Peña, Miquel Rosell, Pedro Llanillo, Fernando Alonso, Maribel García-Ibáñez, Elena Royo, Fiz F. Pérez

The Uranium-236 is a new oceanographic tracer for water masses. Uranium-236 samples were taken in ten stations (St. 10, 22, 30, 40, 50, 60, 70, 79, 89, 100) along the FICARAM section at 10 levels (Table Annex 2), in plastic flask of 10 L after rinsing. The samples will be analyzed by Accelerator Mass Spectromety (AMS) at the Universitat Autònoma of Barcelona.

4. UNDERWAY MEASUREMENTS

4.3. Underway pCO_2 , O_2 and chlorophyll measurements

Xosé Antonio Padin, Anton Velo, Fiz F. Pérez

A continuous sea-surface underway sampling has been performed along the FICARAM cruise track (Figure 7) to determine the CO_2 exchange, the oxygen saturation and the chlorophyll concentration.

The underway measurements of sea-surface and atmospheric molar fractions of CO_2 were performed with a GASPAR apparatus, an autonomous device assembled at Instituto de Investigacions Mariñas (IIM-CSIC, Vigo-Spain). The analytical principle is based on the equilibration of atmospheric air with the seawater sample under analysis. The air–sea equilibrator system combines the advantages of a laminar flow system (Poisson et al., 1993) with a bubble-type system (Takahashi, 1961). The bubble equilibrator consists of a 1.5 L volume chamber through which surface seawater was being constantly pumped from 3m under the waterline into the ship's hull through the ships nontoxic seawater supply system at a rate of 1.5–2 L min^{-1}.

The molar fractions of CO_2 and H_2O were measured with a non-dispersive infrared Li-COR analyzer (model 6262). Three standards were used through this channel, namely: a CO_2-free air and a two CO_2 standard gas that were calibrated utilizing known NOAA standard gas bottle of known concentrations of 376.27 ppm (std: 0.194 ppm) and 455.28 ppm (0.079 ppm).

Gas inputs were introduced in the Li-COR analyser from various sources: atmospheric air, equilibrated air from the samples and the gas standards. A typical analytical cycle consisted of a calibration phase, which involved 20 measurements of each of the three gas standards. Immediately after calibration, the apparatus performs 24 uninterrupted sample measurements for about an hour, out of which 55 min were devoted to seawater equilibrated sample measurements and 5 min for atmospheric air records. The surface seawater observations were initially estimated with a 1-min frequency and averaged every 5-min cycle.

In parallel to this homemade fCO_2 analyzer, the uncontaminated seawater supply that was pumped in excess, around 10 L min^{-1}, in order to reduce the warming of the water on the way, also passed through an Aanderaa oxygen optode sensor at a rate of 0.5 L min^{-1}. Moreover a thermosalinograph and fluorometer located near the ship's keel that are part of the cruise equipment are connected to the same uncontaminated seawater supply. These measurements, those are surface temperature, salinity and chlorophyll, with other meteorological variables (wind, atmospheric pressure, air temperature) and geographical position (GPS) were gathered via the vessel-mounted oceanographic data acquisition system.

The preliminary distribution of sea-surface fugacity of CO_2 together with sea-surface temperature (SST), salinity (SSS) and oxygen along the latitude is shown in Figure 19.

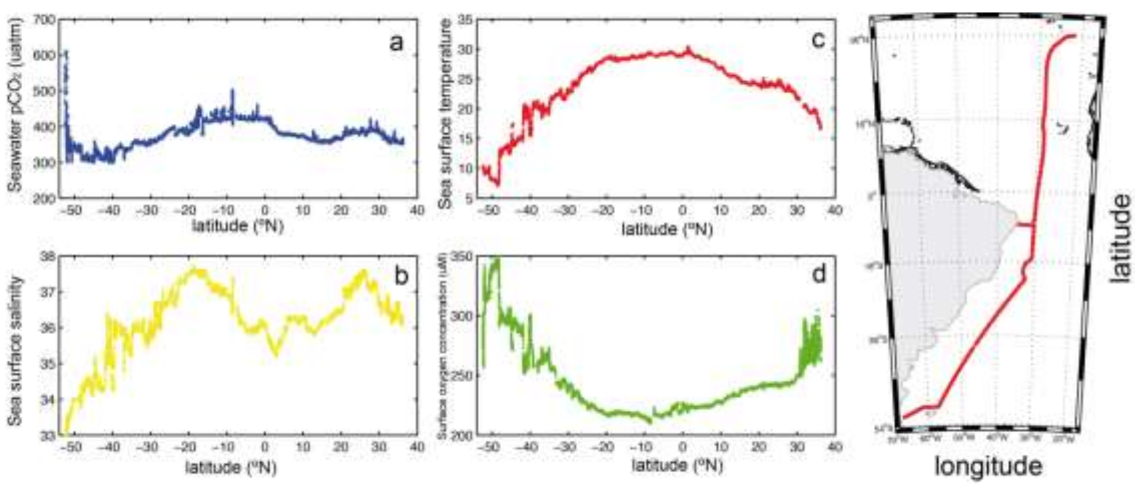


Figure 19: *Map showing the Ficaram XV track (right pannel) and the latitudinal distribution of seawater partial pressure of CO_2 (a), sea-surface salinity (b), sea-surface temperature (c) and the sea-surface oxygen concentration (d).*

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4. INTERNATIONALIZATION

In the frame of the cruise FICARAM-15, two collaborations were established:

-University of East Anglia (UEA), Centre for Oceanic and Atmospheric Sciences for the measurements of the CFC analysis. The 1443 samples for CFC collected during the cruise will be analyzed at the UEA by Dr. Marie Jose Messias.

-Establishment of a Memorandum of Understanding between the Laboratório de Oceanografia Física Estuarina e Costeira, Departamento de Oceanografía of the Universidade Federal de Pernambuco and the Instituto de Investigaciones Marinas from CSIC with a specific joint interest during the planned research project with data sharing for model validation and joint data analysis from cruise data, data from PIRATA Southern Extension, Brazilian National Institute of Science & Technology in Tropical Marine Environments, remote sensing and Argo data.

5. INCIDENCES OF THE CRUISE

5.1. CTD incidences

Leg 1: CTD stations from 1 to 62. We had 6 incidences during this leg, detailed next:

Station 5, 24/03/2013: Because of a SEASAVE software error, the descent was stopped at 14:42 at a depth of 1,100 m, data was saved on file 05. Resumption is recorded in file 05bis, starting on 14:48:22

Station 15, 28/03/2013: Problems with CTD cable, connection failed. Apparently water entered at 100 m. SeaBird was restarted (ficaram015b.hex file). Bottles 22, 23 and 24 did not close. No data at the restarting of the program due to problems with the cable connection of the rosette. After the sampling, the UTM technicians cut and spliced the cable and we had to wait for the resin to dry before launching the CTD again. This took about 4 hours which was the travel time between stations.

Station 18, 30/03/2013. During the first meters of CTD launching, the cable connection failed again. To follow the cable response, around 160 m of cable was released with the same result of failed connection. Then, the cable was recovered and when the CTD was on deck, the UTM technicians cut and spliced the cable and we had to wait for the resin to dry before launching the CTD again. This took about 5 hours before doing the cast 18.

Station 22, 31/03/2013: Several checks were done at the beginning of the profile, causing a possible effect on the ADCP

Station 35, 06/04/2013: Problems with the CTD cable, bottles 21, 22, 23 and 24 did not close. The cast stopped at 251 m. When the CTD reached the deck, we could see that the cable was twisted. The UTM technicians had to cut and splice the cable again. This maneuver was done while we moved to station 36.

Station 38, 07/04/2013: During the second cast of this station, 3 Niskin bottles became broken.

Station 39, 07/04/2013: Problems with the pulley so the CTD could not reach the bottom, went back up without stopping to close the CTD bottles to avoid the cable would break when de rosette stoped to close the Niskin bottles at the selected sampling depths.

Station 57, 15/04/2013: As in station 22, at the beginning of the profile several problems may have had an effect on the quality of the ADCP data.

Leg 2: CTD stations in this leg range from 63 to 113. An additional station, 114, was carried out exclusively for salinity sampling. Five stations of the original plan could not be implemented, so in total there were 46 full stations.

Stations 96, 98, 105 and 106 were canceled due to bad sea. After finishing station 108, it was decided to cut the CTD cable to prevent curling. The splice malfunctioned and connection was lost during station 109. The station was canceled and a new connection restarted. In station 111, connection with the CTD was lost, a new splice allowed to repeat this station few hours later.

5.2. SADCP incidences

Leg 1:

There was a general incidence with the winADCP computer. After re-starting, it generated some invalid files without data or incorrect data, or a lack in the correlated name of the generated files.

Between 29 March and 1 April there was a failure in the processing by the Software acquisition, with a correct Raw data acquisition, but there was no processing to *.SAT, and *.LAT files. As a consequence, the *.sat and *.lat files are missing for the 30 and 31 of March.

On 1 April the following files were generated: FICA_15004_000000.* and FICA_15004_000001.*

The computer had to be restarted and generated two bad files, FICA_15006_000000.* and FICA_15011_000000.*, during this operation. The good file is FICA_15012_000000.*

The next day, on 2 April, the side failed and was changed, interrupting the acquisition data for a lapse of time (about 30 minutes). The next files generated are FICA_15015_000000.* (without data) and FICA_15016_000000.*. There's a failure of the computer on these files, so it was restarted and generated files FICA_15019_000000. *. The same error appeared, the process was repeated and file FICA_15022_000000.* was generated.

Leg 2:

Several incidents impeded continuous data acquisition port to port. For some reason the boat transducer stopped sending receiver beams so no profile was generated at this time. The acquisition software gave no error signal, simply displayed the last ensemble generated, which indicated that was waiting for the next signal from the transducer. To retake the acquisition, a simple restart with data sampling software was needed. This incidence occurred on two occasions (between 7 and 15N) always at night, right after starting a CTD, so that until the next morning it was not possible to restart the acquisition.

- The SAI unit powering the computer seemed to have some type of intermittent malfunctioning during both legs. It usually showed a red light that in theory suggests a loading or poor loading process. In this way one morning we find the Doppler computer off and therefore no data could be recorded for this time. This incident coincided with a destabilization of the grid circuit in the boat and its subsequent restart and stabilization, this happened between 15 and 20N.

- From 18W (east of Azores) we found rough sea, wind force 5-6, causing the increasing heel of the boat and consequently, preventing the data acquisition with the Doppler. The situation remained for several days. When reaching the Gulf of Cádiz, protected from the North bad weather, the Doppler did not resume working. It was verified that the average speed of the ship (11 knots) was not a reason (at lower speeds it also failed) and various configurations were tested. For shallower waters we could use bottom tracking which allowed us to purchase some data, but still of poor quality. Attached is a print-screen of the software with the VmdaS signal received by the transducer (Annex 3).

5.3. LADCP incidences

Leg 1:

Station 24, 01/04/2013: The LADCP profile of this station was lost. The station 25 was overwrote in the file of station 24 by a failure in the protocol of UTM

Leg 2:

After many tests it was discovered that the first mistake was not due to the configuration file of the heads as we initially thought. Apparently, the Slave ADCP emitted a ping just awakening and waited a few seconds to receive the Master synchronized ping, from that moment both heads were still emitting pings at constant intervals of 1.04 seconds, as was specified in its configuration file. In a dry test, the order to awaken the heads was reversed and the problem disappeared. However, as a precaution it was decided to use the program to remove the first WinADCP ensemble of each slave station file and the modified file was saved for further processing by software LDEO_IX.

The second error occurred in shallower stations so we believe it can be caused either by the scarcity of reflectors at great depths (> 4000m) or by substantial drift boat during the deep casts (side-lobe interference).

CTD and GPS data generated at each station were processed as explained above but with an average bin every 1 second. These files are used in the solution of the method (improves the estimation of the sound speed in water and the analysis of the drift of the boat during the cast).

Velocity profiles were calculated with and without SADCP data to compare possible LADCP offsets relative to SADCP or vice versa. It is convenient to use the results that integrate the SADCP data to constrain the inverse model surface Visbeck, giving better overall results.

Incidents: At stations 78 and 79 the Slave failed. At station 103 Master failed.

Despite the incidences that were solved, the balance of the cruise was positive. We have achieved the posed objectives and a good database. We have had the best team of scientists and technicians on board and an excellent crew led by the Commander Jaime Cervera Valverde.

6. ACKNOWLEDGEMENTS

The obtained results are of great quality and the overall balance is very satisfying. Successful achievement of 100% of the objectives was possible due to the optimal coordination between the excellent crew of the BIO Hespérides led by the Commander Jaime Cervera Valverde and scientific-technical team. Therefore, we would like to thank the crew of the BIO Hespérides that positively surprised us by their willingness, skills and professionalism, providing us everything we needed and solving any problems that we had, always with enthusiasm. We appreciate the technicians of the UTM-CSIC for their professionalism and good availability to solve the problems that arose during the cruise, most of them by cutting and splicing wires. We thank the Group Physics of the Institute of Marine Sciences of CSIC that despite not being directly involved in the research projects have been implicated with great expertise as if they were involved, besides exerting as sampling secretary to place order in it. Acknowledgments to the CATARINA and DOREMI scientists group for their hard work and understanding by sharing common equipment, without weakening at any time. Especially to those who made the two phases of the cruise. They have demonstrated their competence, know-how and humanity. In addition, we have enjoyed a friendly time on board both at work and during leisure. All this has contributed to the success of the campaign. Thank you all!

Annex 1

ADCP Command File for use with VmDas software.

ADCP type: 75 Khz Ocean Surveyor
Setup name: default
Setup type: High resolution (broadband) and long range profile (narrowband)

NOTE: Any line beginning with a semicolon in the first column is treated as a comment and is ignored by the VmDas software.

NOTE: This file is best viewed with a fixed-point font (e.g. courier).
Modified Last: 12August2003
---/

Restore factory default settings in the ADCP
cr1

; set the data collection baud rate to 38400 bps,
; no parity, one stop bit, 8 data bits
; NOTE: VmDas sends baud rate change command after all other commands in this file, so that it is not made permanent by a CK command.
cb611

; Set for broadband single-ping profile mode (WP), 50 (WN) 16 meter bins (WS),
; 8 meter blanking distance (WF), 390 cm/s ambiguity vel (WV)
WP00001
WN050
WS1600
WF0800
WV390

; Set for narrowband single-ping profile mode (NP), forty-five (NN) 16 meter bins (NS), 8 meter blanking distance (NF)
NN045
NP00001
NS1600
NF0800

; Enable single-ping bottom track (BP),
; Set maximum bottom search depth to 1200 meters (BX)
BP000
BX12000

; output velocity, correlation, echo intensity, percent good
WD111100000

; One and a half seconds between bottom and water pings
TP000150

; Three seconds between ensembles
; Since VmDas uses manual pinging, TE is ignored by the ADCP.
; You must set the time between ensemble in the VmDas Communication options
TE00000300

; Set to calculate speed-of-sound, no depth sensor, external synchro heading sensor, no pitch or roll being used, no salinity sensor, use internal transducer temperature sensor
EZ1020001

; Output beam data (rotations are done in software)
EX00000

; Set transducer misalignment (hundredths of degrees)
EA00000

; Set transducer depth (decimeters)
ED00045

; Set Salinity (ppt)
ES35

; save this setup to non-volatile memory in the ADCP
CK

x

ANNEX 2

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
1	1	347	332	x	x	x	x	x	√	x	x	x	x	x	x	x	x
1	2	347	332	√	√	√	x	√	x	√	√	√	x	√	x	x	x
1	3	347	300	√	√	√	x	√	x	√	√	√	x	x	x	x	x
1	4	347	301	x	x	x	x	x	√	x	x	x	x	x	√	x	√
1	5	347	203	√	√	√	x	√	x	√	√	√	x	x	x	x	x
1	6	347	202	x	x	x	x	x	√	x	x	x	x	x	√	√	√
1	7	347	153	√	√	√	x	√	x	√	√	√	x	x	x	x	x
1	8	347	153	x	x	x	x	x	√	x	x	x	x	x	√	√	x
1	9	347	102	√	√	√	x	√	x	√	√	√	x	x	x	x	x
1	10	347	102	x	x	x	x	x	√	x	x	x	x	x	x	√	x
1	11	347	37	√	√	√	x	√	x	√	√	√	x	√	x	x	x
1	12	347	36	x	x	x	x	x	√	x	x	x	x	x	√	√	√
1	13	347	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1	14	347	6	x	x	x	x	x	√	x	x	x	x	x	√	√	√
1	15	347	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1	16	347	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1	17	347	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1	18	347	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1	19	347	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1	20	347	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1	21	347	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1	22	347	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1	23	347	6	√	√	√	x	√	x	√	√	√	x	x	x	x	x
2	1	501	485	x	√	√	x	x	x	√	√	√	x	√	x	x	x
2	2	501	486	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	3	501	406	x	√	√	x	x	x	√	√	√	x	x	x	x	x
2	4	501	411	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	5	501	304	x	√	√	x	x	x	√	√	√	x	x	x	x	x
2	6	501	304	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	7	501	204	x	√	√	x	x	x	√	√	√	x	x	x	x	x
2	8	501	203	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	9	501	154	x	√	√	x	x	x	√	√	√	x	x	x	x	x
2	10	501	153	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	11	501	101	x	√	√	x	x	x	√	√	√	x	x	x	x	x
2	12	501	102	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	13	501	51	x	√	√	x	x	x	√	√	√	x	√	x	x	x
2	14	501	51	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	15	501	5	x	√	√	x	x	x	√	√	√	x	x	x	x	x
2	16	501	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	17	501	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	18	501	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	19	501	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	20	501	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	21	501	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	22	501	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	23	501	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	24	501	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	1	744	729	√	√	√	x	√	x	√	√	√	x	x	x	x	x
3	2	744	730	x	x	x	x	x	x	x	x	x	x	√	x	x	x
3	3	744	710	√	√	√	x	√	x	√	√	√	x	x	x	x	x
3	4	744	710	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	5	744	607	√	√	√	x	√	x	√	√	√	x	x	x	x	x
3	6	744	607	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	7	744	506	√	√	√	x	√	x	√	√	√	x	x	x	x	x
3	8	744	505	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	9	744	405	√	√	√	x	√	x	√	√	√	x	x	x	x	x
3	10	744	406	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	11	744	306	√	√	√	x	√	x	√	√	√	x	x	x	x	x
3	12	744	307	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	13	744	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
3	14	744	202	x	x	x	x	x	x	x	x	x	x	√	x	x	x
3	15	744	154	√	√	√	x	√	x	√	√	√	x	x	x	x	x
3	16	744	155	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	17	744	101	√	√	√	x	√	x	√	√	√	x	x	x	x	x
3	18	744	102	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	19	744	50	x	√	√	x	√	x	√	√	√	x	x	x	x	x
3	20	744	50	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	21	744	7	√	√	√	x	√	x	√	√	√	x	x	x	x	x
3	22	744	7	x	x	x	x	x	x	x	x	x	x	√	x	x	x
3	23	744	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	24	744	7	√	√	√	x	√	x	√	√	√	x	x	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
4	1	1220	1205	x	√	√	x	x	x	√	√	√	x	√	x	x	x
4	2	1220	1204	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	3	1220	1014	x	√	√	x	x	x	√	√	√	x	x	x	x	x
4	4	1220	1014	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	5	1220	909	x	√	√	x	x	x	√	√	√	x	x	x	x	x
4	6	1220	809	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	7	1220	809	x	√	√	x	x	x	√	√	√	x	x	x	x	x
4	8	1220	707	x	√	√	x	x	x	√	√	√	x	x	x	x	x
4	9	1220	604	x	√	√	x	x	x	√	√	√	x	x	x	x	x
4	10	1220	603	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	11	1220	505	x	√	√	x	x	x	√	√	√	x	x	x	x	x
4	12	1220	402	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	13	1220	402	x	√	√	x	x	x	√	√	√	x	x	x	x	x
4	14	1220	301	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	15	1220	302	x	√	√	x	x	x	√	√	√	x	x	x	x	x
4	16	1220	202	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	17	1220	203	x	√	√	x	x	x	√	√	√	x	√	x	x	x
4	18	1220	152	x	√	√	x	x	x	√	√	√	x	x	x	x	x
4	19	1220	100	x	√	√	x	x	x	√	√	√	x	x	x	x	x
4	20	1220	100	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	21	1220	50	x	√	√	x	x	x	√	√	√	x	x	x	x	x
4	22	1220	50	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	23	1220	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	24	1220	6	x	√	√	x	x	x	√	√	√	x	√	x	x	x
5-1	1	4944	4929	√	x	√	x	√	√	√	√	√	x	x	x	x	x
5-1	2	4944	4588	√	x	√	x	√	x	√	√	√	x	x	x	x	x
5-1	3	4944	4588	x	x	x	x	x	√	x	x	x	x	x	√	x	√
5-1	4	4944	4589	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-1	5	4944	4588	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-1	6	4944	4588	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-1	7	4944	4588	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-1	8	4944	4588	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-1	9	4944	4588	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-1	10	4944	4588	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-1	11	4944	4589	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-1	12	4944	4588	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-1	13	4944	4587	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-1	14	4944	4587	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-1	15	4944	4588	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-1	16	4944	4070	√	x	√	x	√	x	√	√	√	x	x	x	x	x
5-1	17	4944	3560	√	x	√	x	√	x	√	√	√	x	x	x	x	x
5-1	18	4944	3049	√	x	√	x	√	√	√	√	√	x	x	√	x	√
5-1	19	4944	2539	√	x	√	x	√	x	√	√	√	x	x	x	x	x
5-1	20	4944	2539	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-1	21	4944	2540	√	x	x	x	x	x	x	x	x	x	x	x	x	x
5-1	22	4944	2288	√	x	√	x	√	√	√	√	√	x	x	x	x	x
5-1	23	4944	2027	√	x	√	x	√	√	√	√	√	x	x	x	x	x
5-1	24	4944	1825	√	x	√	x	√	√	√	√	√	x	x	x	x	x
5-2	1	4944	2028	x	√	√	x	x	x	√	√	√	x	x	x	x	x
5-2	2	4944	1822	x	√	√	x	x	x	√	√	√	x	x	x	x	x
5-2	3	4944	1621	√	√	√	x	√	√	√	√	√	x	x	x	x	x
5-2	4	4944	1414	√	√	√	x	√	√	√	√	√	x	x	x	x	x
5-2	5	4944	1215	√	√	√	x	√	x	√	√	√	x	x	x	x	x
5-2	6	4944	1012	√	√	√	x	√	√	√	√	√	x	x	x	x	x
5-2	7	4944	1011	x	x	x	x	x	√	x	x	x	x	x	√	x	√
5-2	8	4944	808	√	√	√	x	√	x	√	√	√	x	x	x	x	x
5-2	9	4944	710	√	√	√	x	√	√	√	√	√	x	x	x	x	x
5-2	10	4944	609	√	√	√	x	√	√	√	√	√	x	x	x	x	x
5-2	11	4944	505	√	√	√	x	√	√	√	√	√	x	x	x	x	x
5-2	12	4944	403	√	√	√	x	√	√	√	√	√	x	x	x	x	x
5-2	13	4944	303	√	√	√	x	√	√	√	√	√	x	x	x	x	x
5-2	14	4944	303	x	x	x	x	x	√	x	x	x	x	x	√	x	x
5-2	15	4944	202	√	√	√	x	√	√	√	√	√	x	x	x	x	x
5-2	16	4944	202	x	x	x	x	x	√	x	x	x	x	x	√	√	√
5-2	17	4944	103	√	√	√	x	√	√	√	√	√	x	x	x	√	x
5-2	18	4944	37	√	√	√	x	√	√	√	√	√	x	x	x	x	x
5-2	19	4944	37	x	x	x	x	x	√	x	x	x	x	x	√	√	√
5-2	20	4944	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-2	21	4944	6	x	x	x	x	x	√	x	x	x	x	x	√	√	√
5-2	22	4944	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-2	23	4944	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5-2	24	4944	6	√	√	√	x	√	√	√	√	√	x	x	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
6	1	5928	5908	x	√	√	x	x	x	√	√	√	x	√	x	x	x
6	2	5928	5101	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	3	5928	4585	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	4	5928	4071	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	5	5928	3558	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	6	5928	3047	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	7	5928	2534	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	8	5928	2281	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	9	5928	2026	x	√	√	x	x	x	√	√	√	x	√	x	x	x
6	10	5928	1822	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	11	5928	1619	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	12	5928	1414	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	13	5928	1213	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	14	5928	1009	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	15	5928	808	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	16	5928	708	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	17	5928	608	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	18	5928	508	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	19	5928	403	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	20	5928	303	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	21	5928	203	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	22	5928	102	x	√	√	x	x	x	√	√	√	x	x	x	x	x
6	23	5928	36	x	√	x	x	x	x	√	√	√	x	x	x	x	x
6	24	5928	6	x	√	√	x	x	x	√	√	√	x	√	x	x	x
7	1	6166	6146	√	√	√	x	√	x	√	√	√	x	√	x	x	x
7	2	6166	5618	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	3	6166	5099	√	√	√	√	√	x	√	√	√	x	x	x	x	x
7	4	6166	4584	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	5	6166	4071	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	6	6166	3558	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	7	6166	3046	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	8	6166	2541	√	√	√	√	√	x	√	√	√	x	x	x	x	x
7	9	6166	2028	√	√	√	x	√	x	√	√	√	x	√	x	x	x
7	10	6166	1825	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	11	6166	1620	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	12	6166	1418	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	13	6166	1215	√	√	√	√	√	x	√	√	√	x	x	x	x	x
7	14	6166	1011	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	15	6166	809	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	16	6166	710	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	17	6166	608	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	18	6166	507	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	19	6166	403	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	20	6166	304	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	21	6166	204	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	22	6166	102	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	23	6166	51	√	√	√	x	√	x	√	√	√	x	x	x	x	x
7	24	6166	6	√	√	√	√	√	x	√	√	√	x	√	x	x	x
8	1	6176	6156	x	√	√	x	x	√	√	√	√	x	√	x	x	x
8	2	6176	5618	x	√	√	x	x	√	√	√	√	x	x	√	x	x
8	3	6176	5100	x	√	√	x	x	√	√	√	√	x	x	x	x	√
8	4	6176	4585	x	√	√	x	x	√	√	√	√	x	x	x	x	x
8	5	6176	4068	x	√	√	x	x	√	√	√	√	x	x	x	x	x
8	6	6176	3559	x	√	√	x	x	√	√	√	√	x	x	x	x	x
8	7	6176	3047	x	√	√	x	x	√	√	√	√	x	x	√	x	√
8	8	6176	2535	x	√	√	x	x	√	√	√	√	x	x	x	x	x
8	9	6176	2026	x	√	√	x	x	√	√	√	√	x	√	x	x	x
8	10	6176	1822	x	√	√	x	x	√	√	√	√	x	x	x	x	x
8	11	6176	1619	x	√	√	x	x	√	√	√	√	x	x	x	x	x
8	12	6176	1417	x	√	√	x	x	√	√	√	√	x	x	x	x	x
8	13	6176	1217	x	√	√	x	x	√	√	√	√	x	x	x	x	x
8	14	6176	1011	x	√	√	x	x	√	√	√	√	x	x	√	x	√
8	15	6176	809	x	√	√	x	x	√	√	√	√	x	x	x	x	x
8	16	6176	708	x	√	√	x	x	√	√	√	√	x	x	x	x	x
8	17	6176	607	x	√	√	x	x	√	√	√	√	x	x	x	x	x
8	18	6176	503	x	√	√	x	x	√	√	√	√	x	x	x	x	x
8	19	6176	404	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8	20	6176	303	x	√	√	x	x	√	√	√	√	x	x	x	x	x
8	21	6176	202	x	√	√	x	x	√	√	√	√	x	x	√	√	√
8	22	6176	102	x	√	√	x	x	√	√	√	√	x	x	x	√	x
8	23	6176	50	x	√	√	x	x	√	√	√	√	x	x	√	√	√
8	24	6176	5	x	√	√	x	x	√	√	√	√	x	√	√	√	√
9	1	6150	6130	√	√	√	x	√	x	x	x	x	x	√	x	x	x
9	2	6150	5616	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	3	6150	5106	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	4	6150	4586	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	5	6150	4073	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	6	6150	3560	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	7	6150	3048	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	8	6150	2542	√	√	x	x	√	x	√	√	√	x	x	x	x	x
9	9	6150	2028	√	√	√	x	√	x	√	√	√	x	√	x	x	x
9	10	6150	1823	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	11	6150	1624	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	12	6150	1415	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	13	6150	1221	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	14	6150	1013	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	15	6150	809	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	16	6150	714	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	17	6150	606	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	18	6150	506	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	19	6150	406	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	20	6150	307	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	21	6150	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	22	6150	104	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	23	6150	51	√	√	√	x	√	x	√	√	√	x	x	x	x	x
9	24	6150	6	√	√	√	x	√	x	√	√	√	x	√	x	x	x
10	1	6012	6108	x	√	√	x	x	x	√	√	√	x	√	x	x	x
10	2	6012	5615	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	3	6012	5099	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	4	6012	4584	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	5	6012	4067	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	6	6012	3554	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	7	6012	3047	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	8	6012	2536	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	9	6012	2030	x	√	√	x	x	x	√	√	√	x	√	x	x	x
10	10	6012	1819	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	11	6012	1621	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	12	6012	1421	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	13	6012	1206	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	14	6012	1010	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	15	6012	806	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	16	6012	714	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	17	6012	600	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	18	6012	510	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	19	6012	399	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	20	6012	310	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	21	6012	201	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	22	6012	102	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	23	6012	52	x	√	√	x	x	x	√	√	√	x	x	x	x	x
10	24	6012	6	x	√	√	x	x	x	√	√	√	x	√	x	x	x
11	1	5878	5989	√	√	√	x	√	√	√	√	√	x	√	x	x	x
11	2	5878	5612	√	√	√	x	√	√	√	√	√	x	x	√	x	√
11	3	5878	5102	√	√	√	x	√	√	√	√	√	x	x	x	x	x
11	4	5878	4586	√	√	√	x	√	√	√	√	√	x	x	x	x	x
11	5	5878	4074	√	√	√	x	√	√	√	√	√	x	x	x	x	x
11	6	5878	3559	√	√	√	x	√	√	√	√	√	x	x	x	x	x
11	7	5878	3047	√	√	√	x	√	√	√	√	√	x	x	√	x	√
11	8	5878	2536	√	√	√	x	√	√	√	√	√	x	x	x	x	x
11	9	5878	2284	√	√	√	x	√	√	√	√	√	x	x	x	x	x
11	10	5878	2026	√	√	√	x	√	√	√	√	√	x	x	x	x	x
11	11	5878	1824	√	√	√	x	√	√	√	√	√	x	x	x	x	x
11	12	5878	1620	√	√	√	x	√	x	√	√	√	x	x	x	x	x
11	13	5878	1417	x	x	x	x	x	x	x	x	x	x	x	x	x	x
11	14	5878	1213	√	√	√	x	√	√	√	√	√	x	x	x	x	x
11	15	5878	1014	√	√	√	x	√	√	√	√	√	x	x	√	x	√
11	16	5878	810	√	√	√	x	√	√	√	√	√	x	x	x	x	x
11	17	5878	606	√	√	√	x	√	√	√	√	√	x	x	x	x	x
11	18	5878	506	√	√	√	x	√	√	√	√	√	x	√	x	x	x
11	19	5878	405	√	√	√	x	√	√	√	√	√	x	x	x	x	x
11	20	5878	304	√	√	√	x	√	√	√	√	√	x	x	√	x	√
11	21	5878	202	√	√	√	x	√	√	√	√	√	x	x	x	√	x
11	22	5878	102	√	√	√	x	√	√	√	√	√	x	x	x	√	x
11	23	5878	30	√	√	√	x	√	√	√	√	√	x	x	√	√	√
11	24	5878	7	√	√	√	x	√	√	√	√	√	x	√	√	√	√
12	1	5651	5753	x	√	√	x	x	x	√	√	√	x	√	x	x	x
12	2	5651	5100	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	3	5651	4584	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	4	5651	4071	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	5	5651	3560	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	6	5651	3049	x	√	√	x	x	x	√	√	√	x	√	x	x	x
12	7	5651	2538	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	8	5651	2281	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	9	5651	2027	x	x	x	x	x	x	x	x	x	x	x	x	x	x
12	10	5651	1823	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	11	5651	1622	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	12	5651	1418	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	13	5651	1213	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	14	5651	1012	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	15	5651	809	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	16	5651	708	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	17	5651	607	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	18	5651	504	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	19	5651	404	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	20	5651	303	x	√	√	x	x	x	√	√	√	x	√	x	x	x
12	21	5651	204	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	22	5651	102	x	√	√	x	x	x	√	√	√	x	x	x	x	x
12	23	5651	51	x	√	√	x	x	x	x	x	x	x	x	x	x	x
12	24	5651	5	x	√	√	x	x	x	x	x	x	x	x	x	x	x
13	1	5389	5473	√	√	√	x	√	x	√	√	√	x	√	x	x	x
13	2	5389	5098	√	√	√	√	√	x	√	√	√	x	x	x	x	x
13	3	5389	4585	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	4	5389	4071	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	5	5389	3559	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	6	5389	3047	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	7	5389	2535	√	√	√	√	√	x	√	√	√	x	x	x	x	x
13	8	5389	2282	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	9	5389	2027	√	√	√	x	√	x	√	√	√	x	√	x	x	x
13	10	5389	1823	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	11	5389	1620	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	12	5389	1418	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	13	5389	1216	√	√	√	√	√	x	√	√	√	x	x	x	x	x
13	14	5389	1012	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	15	5389	809	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	16	5389	708	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	17	5389	607	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	18	5389	505	√	√	√	x	√	x	√	√	√	x	√	x	x	x
13	19	5389	402	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	20	5389	305	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	21	5389	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	22	5389	102	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	23	5389	50	√	√	√	x	√	x	√	√	√	x	x	x	x	x
13	24	5389	6	√	√	√	√	√	x	√	√	√	x	x	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
14	1	5574	5671	x	√	√	x	x	√	√	√	√	x	x	√	x	√
14	2	5574	5098	x	x	x	x	x	x	x	x	x	x	x	x	x	x
14	3	5574	4578	x	√	√	x	x	√	√	√	√	x	√	x	x	x
14	4	5574	4065	x	√	√	x	x	√	√	√	√	x	x	x	x	x
14	5	5574	3557	x	√	√	x	x	√	√	√	√	x	x	x	x	x
14	6	5574	3045	x	√	√	x	x	√	√	√	√	x	x	√	x	√
14	7	5574	2540	x	√	√	x	x	√	√	√	√	x	x	x	x	x
14	8	5574	2286	x	√	√	x	x	√	√	√	√	x	x	x	x	x
14	9	5574	2022	x	√	√	x	x	√	√	√	√	x	√	x	x	x
14	10	5574	1821	x	√	√	x	x	√	√	√	√	x	x	x	x	x
14	11	5574	1621	x	√	√	x	x	√	√	√	√	x	x	x	x	x
14	12	5574	1416	x	√	√	x	x	√	√	√	√	x	x	x	x	x
14	13	5574	1212	x	√	√	x	x	√	√	√	√	x	x	x	x	x
14	14	5574	1009	x	√	√	x	x	√	√	√	√	x	x	√	x	√
14	15	5574	807	x	√	√	x	x	√	√	√	√	x	x	x	x	x
14	16	5574	709	x	√	√	x	x	√	√	√	√	x	x	x	x	x
14	17	5574	609	x	√	√	x	x	√	√	√	√	x	x	x	x	x
14	18	5574	508	x	√	√	x	x	√	√	√	√	x	x	x	x	x
14	19	5574	406	x	√	√	x	x	√	√	√	√	x	x	x	x	x
14	20	5574	305	x	√	√	x	x	√	√	√	√	x	√	x	x	x
14	21	5574	202	x	√	√	x	x	√	√	√	√	x	x	√	√	√
14	22	5574	102	x	√	√	x	x	√	√	√	√	x	x	x	√	x
14	23	5574	26	x	√	√	x	x	√	√	√	√	x	x	√	√	√
14	24	5574	6	x	√	√	x	x	√	√	√	√	x	x	√	√	√
15	1	5807	5910	√	√	√	x	√	x	√	√	√	x	√	x	x	x
15	2	5807	5614	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	3	5807	5099	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	4	5807	4584	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	5	5807	4067	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	6	5807	3557	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	7	5807	3047	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	8	5807	2536	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	9	5807	2281	√	√	√	x	√	x	√	√	√	x	√	x	x	x
15	10	5807	2026	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	11	5807	1822	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	12	5807	1618	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	13	5807	1416	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	14	5807	1212	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	15	5807	1011	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	16	5807	807	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	17	5807	605	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	18	5807	505	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	19	5807	405	√	√	√	x	√	x	√	√	√	x	x	x	x	x
15	20	5807	303	√	√	√	x	√	x	√	√	√	x	√	x	x	x
15	21	5807	201	√	√	√	x	√	x	√	√	√	x	x	x	x	x
16	1	5666	5784	x	√	√	x	x	x	√	√	√	x	√	x	x	x
16	2	5666	5096	x	√	√	x	x	x	√	√	√	x	x	x	x	x
16	3	5666	4587	x	√	√	x	x	x	√	√	√	x	x	x	x	x
16	4	5666	4076	x	√	√	x	x	√	√	√	√	x	x	√	x	√
16	5	5666	3559	x	√	√	x	x	√	√	√	√	x	x	x	x	x
16	6	5666	3045	x	√	√	x	x	√	√	√	√	x	x	x	x	x
16	7	5666	2534	x	√	√	x	x	√	√	√	√	x	√	x	x	x
16	8	5666	2280	x	√	√	x	x	√	√	√	√	x	x	x	x	x
16	9	5666	2025	x	√	√	x	x	√	√	√	√	x	x	√	x	√
16	10	5666	1823	x	x	x	x	x	√	x	x	x	x	x	x	x	x
16	11	5666	1619	x	√	√	x	x	√	√	√	√	x	x	x	x	x
16	12	5666	1415	x	√	√	x	x	√	√	√	√	x	x	x	x	x
16	13	5666	1210	x	√	√	x	x	x	√	√	√	x	x	x	x	x
16	14	5666	1011	x	√	√	x	x	√	√	√	√	x	x	x	x	x
16	15	5666	811	x	√	√	x	x	√	√	√	√	x	x	x	x	x
16	16	5666	709	x	√	√	x	x	√	√	√	√	x	x	x	x	x
16	17	5666	608	x	√	√	x	x	√	√	√	√	x	x	√	x	√
16	18	5666	507	x	x	x	x	x	√	x	x	x	x	x	x	x	x
16	19	5666	406	x	x	x	x	x	√	x	x	x	x	x	x	x	x
16	20	5666	303	x	√	√	x	x	√	√	√	√	x	x	x	x	x
16	21	5666	204	x	√	√	x	x	x	√	√	√	x	x	x	x	x
16	22	5666	102	x	√	√	x	x	x	√	√	√	x	√	x	x	x
16	23	5666	22	x	√	√	x	x	√	√	√	√	x	x	√	x	x
16	24	5666	6	x	√	√	x	x	√	√	√	√	x	x	x	√	√
17	1	5525	5638	√	√	√	x	√	√	√	√	√	x	√	x	√	x
17	2	5525	5096	√	√	√	x	√	√	√	√	√	x	x	√	√	√
17	3	5525	4582	√	√	√	x	√	√	√	√	√	x	x	√	√	√
17	4	5525	4068	√	√	√	x	√	x	√	√	√	x	√	x	x	x
17	5	5525	3557	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	6	5525	3046	√	√	√	x	√	x	√	√	√	x	√	x	x	x
17	7	5525	2535	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	8	5525	2281	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	9	5525	2025	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	10	5525	1823	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	11	5525	1619	x	x	x	x	x	x	x	x	x	x	x	x	x	x
17	12	5525	1416	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	13	5525	1211	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	14	5525	1012	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	15	5525	810	√	√	√	x	x	x	x	x	x	x	x	x	x	x
17	16	5525	705	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	17	5525	603	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	18	5525	500	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	19	5525	410	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	20	5525	306	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	21	5525	199	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	22	5525	101	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	23	5525	53	√	√	√	x	√	x	√	√	√	x	x	x	x	x
17	24	5525	6	√	√	√	x	√	x	√	√	√	x	x	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
18	1	5309	5414	x	√	x	x	x	√	√	√	√	x	x	√	x	√
18	2	5309	5097	x	√	x	x	x	√	√	√	√	x	x	x	x	x
18	3	5309	5097	x	x	x	x	x	x	√	√	√	x	x	x	x	x
18	4	5309	4583	x	√	x	x	x	√	√	√	√	x	x	x	x	x
18	5	5309	4067	x	√	x	x	x	√	√	√	√	x	x	x	x	x
18	6	5309	3559	x	√	x	x	x	√	√	√	√	x	x	x	x	x
18	7	5309	3048	x	√	x	x	x	√	√	√	√	x	x	√	x	√
18	8	5309	3048	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	9	5309	3048	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	10	5309	3049	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	11	5309	3048	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	12	5309	3048	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	13	5309	3050	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	14	5309	3049	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	15	5309	3049	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	16	5309	3050	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	17	5309	3050	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	18	5309	3051	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	19	5309	3050	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	20	5309	3051	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	21	5309	3051	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	22	5309	3051	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	23	5309	3052	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18	24	5309	3052	x	x	x	x	x	x	x	x	x	x	x	x	x	x
18-2	1	5309	3050	x	√	√	x	x	x	√	√	√	x	√	x	x	x
18-2	2	5309	2536	x	√	√	x	x	√	√	√	√	x	x	x	x	x
18-2	3	5309	2280	x	√	√	x	x	√	√	√	√	x	x	x	x	x
18-2	4	5309	2026	x	√	√	x	x	√	√	√	√	x	x	x	x	x
18-2	5	5309	1823	x	√	√	x	x	√	√	√	√	x	x	x	x	x
18-2	6	5309	1619	x	√	√	x	x	√	√	√	√	x	x	x	x	x
18-2	7	5309	1417	x	√	√	x	x	√	√	√	√	x	x	x	x	x
18-2	8	5309	1211	x	√	√	x	x	√	√	√	√	x	x	x	x	x
18-2	9	5309	1011	x	√	√	x	x	x	√	√	√	x	x	x	x	x
18-2	10	5309	1010	x	x	x	x	x	√	x	x	x	x	x	√	x	√
18-2	11	5309	804	x	√	√	x	x	√	√	√	√	x	√	x	x	x
18-2	12	5309	704	x	√	√	x	x	√	√	√	√	x	x	x	x	x
18-2	13	5309	605	x	√	√	x	x	√	√	√	√	x	x	x	x	x
18-2	14	5309	499	x	√	√	x	x	√	√	√	√	x	x	x	x	x
18-2	15	5309	402	x	√	√	x	x	√	√	√	√	x	x	x	x	x
18-2	16	5309	303	x	√	√	x	x	x	√	√	√	x	x	x	x	x
18-2	17	5309	303	x	x	x	x	x	√	x	x	x	x	x	√	x	√
18-2	18	5309	205	x	√	√	x	x	x	√	√	√	x	x	x	x	x
18-2	19	5309	206	x	x	x	x	x	√	x	x	x	x	x	x	√	x
18-2	20	5309	101	x	√	√	x	x	√	√	√	√	x	√	x	√	x
18-2	21	5309	26	x	√	√	x	x	x	√	√	√	x	x	x	x	x
18-2	22	5309	26	x	x	x	x	x	√	x	x	x	x	x	√	√	√
18-2	23	5309	7	x	x	x	x	x	√	x	x	x	x	x	√	√	√
18-2	24	5309	6	x	√	√	x	x	x	√	√	√	x	x	x	x	x
19	1	5265	5352	√	√	√	x	√	x	√	√	√	x	√	x	x	x
19	2	5265	5098	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	3	5265	4583	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	4	5265	4067	√	√	√	√	√	x	√	√	√	x	x	x	x	x
19	5	5265	3557	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	6	5265	3046	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	7	5265	2532	√	√	√	√	√	x	√	√	√	x	x	x	x	x
19	8	5265	2281	√	√	√	x	√	x	√	√	√	x	√	x	x	x
19	9	5265	2026	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	10	5265	1823	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	11	5265	1619	√	√	√	√	√	x	√	√	√	x	x	x	x	x
19	12	5265	1416	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	13	5265	1213	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	14	5265	1005	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	15	5265	808	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	16	5265	708	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	17	5265	607	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	18	5265	506	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	19	5265	404	√	√	√	x	√	x	√	√	√	x	√	x	x	x
19	20	5265	302	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	21	5265	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	22	5265	101	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	23	5265	50	√	√	√	x	√	x	√	√	√	x	x	x	x	x
19	24	5265	6	√	√	√	√	√	x	√	√	√	x	x	x	x	x
20	1	5213	5318	√	√	√	x	x	√	√	√	√	x	√	√	x	√
20	2	5213	5098	√	√	√	x	x	√	√	√	√	x	x	x	x	x
20	3	5213	4585	√	√	√	x	x	√	√	√	√	x	x	x	x	x
20	4	5213	4070	√	√	√	x	x	√	√	√	√	x	x	x	x	x
20	5	5213	3557	√	√	√	x	x	√	√	√	√	x	x	x	x	x
20	6	5213	3045	√	√	√	x	x	√	√	√	√	x	x	√	x	√
20	7	5213	2535	√	√	√	x	x	√	√	√	√	x	x	x	x	x
20	8	5213	2280	√	√	√	x	x	√	√	√	√	x	x	x	x	x
20	9	5213	2026	√	√	√	x	x	√	√	√	√	x	x	x	x	x
20	10	5213	1822	√	√	√	x	x	√	√	√	√	x	x	x	x	x
20	11	5213	1617	√	√	√	x	x	√	√	√	√	x	x	x	x	x
20	12	5213	1416	√	√	√	x	x	√	√	√	√	x	x	x	x	x
20	13	5213	1214	√	√	√	x	x	√	√	√	√	x	x	x	x	x
20	14	5213	1011	√	√	√	x	x	√	√	√	√	x	x	√	x	√
20	15	5213	806	√	√	√	x	x	√	√	√	√	x	x	x	x	x
20	16	5213	701	√	√	√	x	x	√	√	√	√	x	√	x	x	x
20	17	5213	611	√	√	√	x	x	√	√	√	√	x	x	x	x	x
20	18	5213	503	√	√	√	x	x	√	√	√	√	x	x	x	x	x
20	19	5213	406	√	√	√	x	x	√	√	√	√	x	x	x	x	x
20	20	5213	305	√	√	√	x	x	√	√	√	√	x	x	√	x	√
20	21	5213	204	√	√	√	x	x	√	√	√	√	x	x	x	√	x
20	22	5213	101	√	√	√	x	x	√	√	√	√	x	x	x	√	x
20	23	5213	75	√	√	√	x	x	√	√	√	√	x	x	√	√	√
20	24	5213	5	√	√	√	x	x	√	√	√	√	x	√	√	√	√

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
21	1	5180	5280	√	√	√	x	√	x	√	√	√	x	√	x	x	x
21	2	5180	5280	√	x	x	x	x	x	√	√	√	x	x	x	x	x
21	3	5180	5095	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	4	5180	4585	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	5	5180	4072	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	6	5180	3557	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	7	5180	3046	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	8	5180	2534	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	9	5180	2280	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	10	5180	2025	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	11	5180	1822	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	12	5180	1620	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	13	5180	1416	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	14	5180	1215	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	15	5180	1006	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	16	5180	813	√	√	√	x	√	x	√	√	√	x	√	x	x	x
21	17	5180	606	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	18	5180	505	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	19	5180	404	√	√	x	x	√	x	x	x	x	x	x	x	x	x
21	20	5180	303	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	21	5180	203	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	22	5180	103	√	√	√	x	√	x	√	√	√	x	x	x	x	x
21	23	5180	51	√	√	√	x	√	x	√	√	√	x	√	x	x	x
21	24	5180	5	√	√	√	x	√	x	√	√	√	x	x	x	x	x
22	1	5148	5223	x	√	√	x	x	x	√	√	√	x	√	x	x	x
22	2	5148	5223	x	x	x	x	x	x	x	x	x	x	x	x	x	x
22	3	5148	5095	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	4	5148	4582	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	5	5148	4068	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	6	5148	3556	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	7	5148	3044	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	8	5148	2534	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	9	5148	2280	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	10	5148	2025	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	11	5148	1821	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	12	5148	1619	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	13	5148	1416	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	14	5148	1212	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	15	5148	1011	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	16	5148	807	x	√	√	x	x	x	√	√	√	x	√	x	x	x
22	17	5148	607	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	18	5148	506	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	19	5148	404	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	20	5148	303	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	21	5148	203	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	22	5148	101	x	√	√	x	x	x	√	√	√	x	√	x	x	x
22	23	5148	54	x	√	√	x	x	x	√	√	√	x	x	x	x	x
22	24	5148	6	x	√	√	x	x	x	√	√	√	x	x	x	x	x
23	1	5098	5200	√	√	√	x	√	√	√	√	√	x	√	√	x	√
23	2	5098	5094	√	√	√	x	√	√	√	√	√	x	x	x	x	x
23	3	5098	4581	√	√	√	x	√	√	√	√	√	x	x	x	x	x
23	4	5098	4067	√	√	√	x	√	√	√	√	√	x	x	x	x	x
23	5	5098	3557	√	√	√	x	√	√	√	√	√	x	x	x	x	x
23	6	5098	3044	√	√	√	x	√	√	√	√	√	x	x	√	x	√
23	7	5098	2533	√	√	√	x	√	√	√	√	√	x	√	x	x	x
23	8	5098	2282	√	√	√	x	√	√	√	√	√	x	√	x	x	x
23	9	5098	2023	√	√	√	x	√	√	√	√	√	x	x	x	x	x
23	10	5098	1822	√	√	√	x	√	√	√	√	√	x	x	x	x	x
23	11	5098	1618	√	√	√	x	√	√	√	√	√	x	x	x	x	x
23	12	5098	1415	√	√	√	x	√	√	√	√	√	x	x	x	x	x
23	13	5098	1216	√	√	√	x	√	√	√	√	√	x	x	x	x	x
23	14	5098	1011	√	√	√	x	√	√	√	√	√	x	x	√	x	√
23	15	5098	809	√	√	√	x	√	√	√	√	√	x	x	x	x	x
23	16	5098	708	√	√	√	x	√	√	√	√	√	x	x	x	x	x
23	17	5098	606	√	√	√	x	√	√	√	√	√	x	x	x	x	x
23	18	5098	503	√	√	√	x	√	√	√	√	√	x	x	x	x	x
23	19	5098	401	√	√	√	x	√	√	√	√	√	x	x	x	x	x
23	20	5098	305	√	√	√	x	√	√	√	√	√	x	x	√	x	√
23	21	5098	201	√	√	√	x	√	√	√	√	√	x	x	x	√	x
23	22	5098	104	√	√	√	x	√	√	√	√	√	x	x	√	√	√
23	23	5098	51	√	√	√	x	√	√	√	√	√	x	x	x	√	x
23	24	5098	5	√	√	√	x	√	√	√	√	√	x	x	√	√	√
24	1	5056	5127	√	√	√	x	x	x	√	√	√	x	√	x	x	x
24	2	5056	4581	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	3	5056	4066	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	4	5056	3558	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	5	5056	3042	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	6	5056	2790	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	7	5056	2533	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	8	5056	2280	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	9	5056	2028	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	10	5056	1825	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	11	5056	1617	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	12	5056	1416	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	13	5056	1212	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	14	5056	1010	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	15	5056	809	√	√	√	x	x	x	√	√	√	x	√	x	x	x
24	16	5056	710	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	17	5056	606	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	18	5056	503	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	19	5056	402	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	20	5056	304	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	21	5056	203	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	22	5056	101	√	√	√	x	x	x	√	√	√	x	x	x	x	x
24	23	5056	35	√	√	√	x	x	x	√	√	√	x	√	x	x	x
24	24	5056	6	√	√	√	x	x	x	√	√	√	x	x	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
25	1	4951	5014	√	√	√	x	√	x	√	√	√	x	√	x	x	x
25	2	4951	4578	√	√	x	x	√	x	√	√	√	x	x	x	x	x
25	3	4951	4579	√	x	√	x	x	x	x	x	x	x	x	x	x	x
25	4	4951	4065	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	5	4951	3556	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	6	4951	3043	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	7	4951	2789	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	8	4951	2535	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	9	4951	2279	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	10	4951	2026	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	11	4951	1822	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	12	4951	1619	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	13	4951	1417	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	14	4951	1213	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	15	4951	1010	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	16	4951	806	√	√	√	x	√	x	√	√	√	x	√	x	x	x
25	17	4951	605	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	18	4951	506	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	19	4951	404	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	20	4951	302	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	21	4951	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	22	4951	102	√	√	√	x	√	x	√	√	√	x	√	x	x	x
25	23	4951	50	√	√	√	x	√	x	√	√	√	x	x	x	x	x
25	24	4951	5	√	√	√	x	√	x	√	√	√	x	x	x	x	x
26	1	4911	4961	x	x	x	x	x	√	x	x	x	x	x	√	x	√
26	2	4911	4960	x	√	√	x	x	x	√	√	√	x	√	x	x	x
26	3	4911	4581	x	√	√	x	x	√	√	√	√	x	x	x	x	x
26	4	4911	4068	x	√	√	x	x	√	√	√	√	x	x	x	x	x
26	5	4911	3556	x	√	√	x	x	√	√	√	√	x	x	x	x	x
26	6	4911	3033	x	√	√	x	x	x	√	√	√	x	x	x	x	x
26	7	4911	3033	x	x	x	x	x	√	x	x	x	x	x	√	x	√
26	8	4911	2532	x	√	√	x	x	√	√	√	√	x	x	x	x	x
26	9	4911	2279	x	√	√	x	x	√	√	√	√	x	x	x	x	x
26	10	4911	2024	x	√	√	x	x	√	√	√	√	x	x	x	x	x
26	11	4911	1821	x	√	√	x	x	x	√	√	√	x	x	x	x	x
26	12	4911	1618	x	√	√	x	x	√	√	√	√	x	x	x	x	x
26	13	4911	1411	x	√	√	x	x	√	√	√	√	x	x	x	x	x
26	14	4911	1211	x	√	√	x	x	√	√	√	√	x	x	x	x	x
26	15	4911	1011	x	√	√	x	x	√	√	√	√	x	x	√	x	√
26	16	4911	810	x	√	√	x	x	√	√	√	√	x	x	x	x	x
26	17	4911	606	x	√	√	x	x	√	√	√	√	x	x	x	x	x
26	18	4911	504	x	√	√	x	x	√	√	√	√	x	x	x	x	x
26	19	4911	404	x	√	√	x	x	√	√	√	√	x	x	x	x	x
26	20	4911	303	x	√	√	x	x	√	√	√	√	x	x	√	x	√
26	21	4911	202	x	√	√	x	x	x	√	√	√	x	x	x	√	x
26	22	4911	102	x	√	√	x	x	√	√	√	√	x	x	x	√	x
26	23	4911	77	x	√	√	x	x	√	√	√	√	x	x	√	√	√
26	24	4911	6	x	√	√	x	x	√	√	√	√	x	x	√	√	√
27	1	4834	4906	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	2	4834	4581	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	3	4834	4066	√	√	√	√	√	x	√	√	√	x	x	x	x	x
27	4	4834	4067	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	5	4834	3554	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	6	4834	3045	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	7	4834	2532	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	8	4834	2278	√	√	√	√	√	x	√	√	√	x	x	x	x	x
27	9	4834	2027	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	10	4834	1819	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	11	4834	1617	√	√	√	√	√	x	√	√	√	x	x	x	x	x
27	12	4834	1415	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	13	4834	1214	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	14	4834	1010	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	15	4834	807	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	16	4834	704	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	17	4834	605	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	18	4834	403	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	19	4834	302	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	20	4834	201	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	21	4834	100	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	22	4834	49	√	√	√	x	√	x	√	√	√	x	x	x	x	x
27	23	4834	5	√	√	√	√	√	x	√	√	√	x	x	x	x	x
28	1	4679	4738	x	√	√	x	x	√	√	√	√	x	x	√	x	√
28	2	4679	4582	x	√	√	x	x	√	√	√	√	x	√	x	x	x
28	3	4679	4069	x	√	√	x	x	√	√	√	√	x	x	x	x	x
28	4	4679	3558	x	√	√	x	x	√	√	√	√	x	x	x	x	x
28	5	4679	3042	x	√	√	x	x	√	√	√	√	x	x	√	x	√
28	6	4679	2789	x	√	√	x	x	√	√	√	√	x	x	x	x	x
28	7	4679	2532	x	√	√	x	x	√	√	√	√	x	x	x	x	x
28	8	4679	2278	x	√	√	x	x	√	√	√	√	x	x	x	x	x
28	9	4679	2027	x	√	√	x	x	√	√	√	√	x	x	x	x	x
28	10	4679	1820	x	√	√	x	x	√	√	√	√	x	x	x	x	x
28	11	4679	1622	x	√	√	x	x	√	√	√	√	x	x	x	x	x
28	12	4679	1416	x	√	√	x	x	√	√	√	√	x	x	x	x	x
28	13	4679	1214	x	√	√	x	x	√	√	√	√	x	x	x	x	x
28	14	4679	1011	x	√	√	x	x	√	√	√	√	x	x	√	x	√
28	15	4679	807	x	√	√	x	x	√	√	√	√	x	√	x	x	x
28	16	4679	707	x	√	√	x	x	√	√	√	√	x	x	x	x	x
28	17	4679	604	x	√	√	x	x	√	√	√	√	x	x	x	x	x
28	18	4679	504	x	√	√	x	x	√	√	√	√	x	x	x	x	x
28	19	4679	404	x	√	√	x	x	√	√	√	√	x	x	x	x	x
28	20	4679	304	x	√	√	x	x	√	√	√	√	x	x	√	√	√
28	21	4679	201	x	√	√	x	x	√	√	√	√	x	x	x	√	x
28	22	4679	101	x	√	√	x	x	√	√	√	√	x	x	√	√	√
28	23	4679	51	x	√	√	x	x	√	√	√	√	x	√	x	√	x
28	24	4679	6	x	√	√	x	x	√	√	√	√	x	x	√	√	√

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
29	1	4529	4583	√	√	√	x	√	x	√	√	√	x	√	x	x	x
29	2	4529	4065	√	√	√	x	√	x	√	√	√	x	x	x	x	x
29	3	4529	3554	√	√	√	x	√	x	√	√	x	x	x	x	x	x
29	4	4529	3553	√	x	x	x	x	x	√	√	x	x	x	x	x	x
29	5	4529	3043	√	√	√	x	√	x	√	√	x	x	x	x	x	x
29	6	4529	2788	√	√	√	x	√	x	√	√	x	x	x	x	x	x
29	7	4529	2532	√	√	√	x	√	x	√	√	x	x	x	x	x	x
29	8	4529	2278	√	√	√	x	√	x	√	√	x	x	x	x	x	x
29	9	4529	2024	√	√	√	x	√	x	√	√	√	x	x	x	x	x
29	10	4529	1821	√	√	√	x	√	x	√	x	√	x	x	x	x	x
29	11	4529	1617	√	√	√	x	√	x	√	√	√	x	x	x	x	x
29	12	4529	1415	√	√	√	x	√	x	√	√	√	x	x	x	x	x
29	13	4529	1211	√	√	√	x	√	x	√	√	√	x	x	x	x	x
29	14	4529	1010	√	√	√	x	√	x	√	√	√	x	√	x	x	x
29	15	4529	808	√	√	√	x	√	x	√	√	√	x	x	x	x	x
29	16	4529	707	√	√	√	x	√	x	√	√	√	x	x	x	x	x
29	17	4529	604	√	√	√	x	√	x	√	√	√	x	x	x	x	x
29	18	4529	504	√	√	√	x	√	x	√	√	√	x	x	x	x	x
29	19	4529	403	√	√	√	x	√	x	√	√	√	x	x	x	x	x
29	20	4529	302	√	√	√	x	√	x	√	√	√	x	x	x	x	x
29	21	4529	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
29	22	4529	102	√	√	√	x	√	x	√	√	√	x	x	x	x	x
29	23	4529	49	√	√	√	x	√	x	√	√	√	x	x	x	x	x
29	24	4529	6	√	√	√	x	√	x	√	√	√	x	√	x	x	x
30	1	4578	4637	x	√	√	x	x	x	√	√	√	x	√	x	x	x
30	2	4578	4580	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	3	4578	4580	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	4	4578	4066	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	5	4578	3556	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	6	4578	3042	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	7	4578	2787	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	8	4578	2533	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	9	4578	2279	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	10	4578	2024	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	11	4578	1821	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	12	4578	1619	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	13	4578	1409	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	14	4578	1213	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	15	4578	1011	x	√	√	x	x	x	√	√	√	x	√	x	x	x
30	16	4578	810	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	17	4578	606	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	18	4578	505	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	19	4578	403	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	20	4578	304	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	21	4578	201	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	22	4578	104	x	√	√	x	x	x	√	√	√	x	x	x	x	x
30	23	4578	52	x	√	√	x	x	x	√	√	√	x	√	x	x	x
30	24	4578	7	x	√	√	x	x	x	√	√	√	x	x	x	x	x
31	1	4488	4546	√	√	√	x	√	√	√	√	√	x	√	x	x	x
31	2	4488	4545	x	x	x	x	x	x	x	x	x	x	x	√	x	√
31	3	4488	4067	√	√	√	x	√	√	√	√	√	x	x	x	x	x
31	4	4488	3554	√	√	√	x	√	√	√	√	√	x	x	x	x	x
31	5	4488	3044	√	√	√	x	√	√	√	√	√	x	x	√	x	√
31	6	4488	3045	x	x	x	x	x	x	x	x	x	x	x	x	x	x
31	7	4488	2533	√	√	√	x	√	√	√	√	√	x	x	x	x	x
31	8	4488	2279	√	√	√	x	√	√	√	√	√	x	x	x	x	x
31	9	4488	2028	√	√	√	x	√	√	√	√	√	x	x	x	x	x
31	10	4488	1821	√	√	√	x	√	√	√	√	√	x	x	x	x	x
31	11	4488	1618	√	√	√	x	√	√	√	√	√	x	x	x	x	x
31	12	4488	1415	√	√	√	x	√	√	√	√	√	x	x	x	x	x
31	13	4488	1212	√	√	√	x	√	√	√	√	√	x	x	x	x	x
31	14	4488	1009	√	√	√	x	√	√	√	√	√	x	x	x	x	x
31	15	4488	1010	x	x	x	x	√	x	x	x	x	x	x	√	x	√
31	16	4488	807	√	√	√	x	√	√	√	√	√	x	√	x	x	x
31	17	4488	603	√	√	√	x	√	√	√	√	√	x	x	x	x	x
31	18	4488	506	√	√	√	x	√	√	√	√	√	x	x	x	x	x
31	19	4488	404	√	√	√	x	√	√	√	√	√	x	x	x	x	x
31	20	4488	303	√	√	√	x	√	√	√	√	√	x	x	√	x	√
31	21	4488	202	√	√	√	x	√	√	√	√	√	x	x	x	√	x
31	22	4488	96	√	√	√	x	√	√	√	√	√	x	x	√	√	√
31	23	4488	51	√	√	√	x	√	√	√	√	√	x	√	x	√	x
31	24	4488	7	√	√	√	x	√	√	√	√	√	x	x	√	√	√
32	1	4183	4237	x	√	√	x	x	x	√	√	√	x	√	x	x	x
32	2	4183	4064	x	√	√	x	x	x	√	√	√	x	x	x	x	x
33	3	4183	3554	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	4	4183	3041	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	5	4183	2781	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	6	4183	2533	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	7	4183	2277	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	8	4183	2025	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	9	4183	1818	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	10	4183	1618	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	11	4183	1414	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	12	4183	1210	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	13	4183	1009	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	14	4183	909	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	15	4183	807	x	√	√	x	x	x	√	√	√	x	√	x	x	x
32	16	4183	707	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	17	4183	606	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	18	4183	502	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	19	4183	404	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	20	4183	303	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	21	4183	202	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	22	4183	100	x	√	√	x	x	x	√	√	√	x	x	x	x	x
32	23	4183	51	x	√	√	x	x	x	√	√	√	x	√	x	x	x
32	24	4183	5	x	√	√	x	x	x	√	√	√	x	x	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
33	1	3671	3655	√	√	√	x	√	x	√	√	√	x	√	x	x	x
33	2	3671	3554	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	3	3671	3044	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	4	3671	2786	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	5	3671	2786	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	6	3671	2531	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	7	3671	2279	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	8	3671	2025	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	9	3671	1822	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	10	3671	1618	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	11	3671	1518	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	12	3671	1416	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	13	3671	1212	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	14	3671	1010	√	√	√	x	√	x	√	√	√	x	√	x	x	x
33	15	3671	807	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	16	3671	709	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	17	3671	608	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	18	3671	503	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	19	3671	405	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	20	3671	304	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	21	3671	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	22	3671	104	√	√	√	x	√	x	√	√	√	x	x	x	x	x
33	23	3671	51	√	√	√	x	√	x	√	√	√	x	√	x	x	x
33	24	3671	11	√	√	√	x	√	x	√	√	√	x	x	x	x	x
34	1	4376	4456	x	√	√	x	x	x	√	√	√	x	√	x	x	x
34	2	4376	4457	x	x	x	x	x	√	x	x	x	x	x	√	x	√
34	3	4376	4057	x	√	√	x	x	√	√	√	√	x	x	x	x	x
34	4	4376	3554	x	√	√	x	x	√	√	√	√	x	x	x	x	x
34	5	4376	3041	x	√	√	x	x	x	√	√	√	x	x	x	x	x
34	6	4376	3041	x	x	x	x	x	√	x	x	x	x	x	√	x	√
34	7	4376	2531	x	√	√	x	x	√	√	√	√	x	x	x	x	x
34	8	4376	2279	x	√	√	x	x	√	√	√	√	x	x	x	x	x
34	9	4376	2025	x	√	√	x	x	√	√	√	√	x	x	x	x	x
34	10	4376	1821	x	√	√	x	x	√	√	√	√	x	x	x	x	x
34	11	4376	1613	x	√	√	x	x	√	√	√	√	x	x	x	x	x
34	12	4376	1415	x	√	√	x	x	√	√	√	√	x	x	x	x	x
34	13	4376	1212	x	√	√	x	x	√	√	√	√	x	x	x	x	x
34	14	4376	1011	x	x	x	x	x	√	x	x	x	x	x	√	x	√
34	15	4376	1009	x	√	√	x	x	x	√	√	√	x	√	x	x	x
34	16	4376	805	x	√	√	x	x	√	√	√	√	x	x	x	x	x
34	17	4376	606	x	√	√	x	x	√	√	√	√	x	x	x	x	x
34	18	4376	402	x	√	√	x	x	√	√	√	√	x	x	x	x	x
34	19	4376	301	x	√	√	x	x	x	√	√	√	x	x	x	x	x
34	20	4376	300	x	x	x	x	x	√	x	x	x	x	x	√	x	√
34	21	4376	200	x	√	√	x	x	√	√	√	√	x	x	x	√	x
34	22	4376	110	x	√	√	x	x	√	√	√	√	x	x	√	√	√
34	23	4376	49	x	√	√	x	x	√	√	√	√	x	√	x	√	x
34	24	4376	13	x	√	√	x	x	√	√	√	√	x	x	√	√	√
35	1	4178	4231	√	√	√	x	√	√	√	√	√	x	x	√	x	√
35	2	4178	4065	√	√	√	√	√	√	√	√	√	x	x	x	x	x
35	3	4178	3554	√	√	√	x	√	√	√	√	√	x	√	x	x	x
35	4	4178	3043	√	√	√	x	√	√	√	√	√	x	x	√	x	√
35	5	4178	2789	√	√	√	x	√	√	√	√	√	x	x	x	x	x
35	6	4178	2534	√	x	√	x	x	x	√	√	√	x	√	x	x	x
35	7	4178	2534	√	√	√	√	√	√	√	√	√	x	x	x	x	x
35	8	4178	2278	√	√	√	x	√	√	√	√	√	x	x	x	x	x
35	9	4178	2023	√	√	√	x	√	√	√	√	√	x	x	x	x	x
35	10	4178	1820	√	√	√	x	√	√	√	√	√	x	x	x	x	x
35	11	4178	1618	√	√	√	x	√	√	√	√	√	x	x	x	x	x
35	12	4178	1414	√	√	√	√	√	√	√	√	√	x	x	x	x	x
35	13	4178	1211	√	√	√	x	√	√	√	√	√	x	x	x	x	x
35	14	4178	1013	√	√	√	x	√	√	√	√	√	x	x	√	x	√
35	15	4178	808	√	√	√	x	√	√	√	√	√	x	x	x	x	x
35	16	4178	705	√	√	√	x	√	√	√	√	√	x	x	x	x	x
35	17	4178	607	√	√	√	x	√	√	√	√	√	x	x	x	x	x
35	18	4178	503	√	√	√	x	√	√	√	√	√	x	x	x	x	x
35	19	4178	405	√	√	√	x	√	√	√	√	√	x	√	x	x	x
35	20	4178	302	√	√	√	√	√	√	√	√	√	x	x	√	x	√
36	1	4294	4352	x	√	√	x	x	x	√	√	√	x	√	x	x	x
36	2	4294	4064	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	3	4294	3553	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	4	4294	3043	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	5	4294	2787	x	√	√	x	x	x	√	√	√	x	√	x	x	x
36	6	4294	2533	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	7	4294	2279	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	8	4294	2025	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	9	4294	1819	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	10	4294	1618	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	11	4294	1415	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	12	4294	1213	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	13	4294	1011	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	14	4294	909	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	15	4294	807	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	16	4294	707	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	17	4294	607	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	18	4294	505	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	19	4294	404	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	20	4294	303	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	21	4294	203	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	22	4294	101	x	√	√	x	x	x	√	√	√	x	√	x	x	x
36	23	4294	51	x	√	√	x	x	x	√	√	√	x	x	x	x	x
36	24	4294	11	x	√	√	x	x	x	√	√	√	x	x	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
37	1	4360	4389	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	2	4360	4064	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	3	4360	3556	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	4	4360	3042	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	5	4360	2786	√	√	√	x	√	x	√	√	√	x	√	x	x	x
37	6	4360	2534	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	7	4360	2278	√	x	√	x	x	x	√	√	√	x	x	x	x	x
37	8	4360	2277	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	9	4360	2025	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	10	4360	1821	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	11	4360	1618	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	12	4360	1418	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	13	4360	1212	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	14	4360	1007	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	15	4360	807	√	√	√	x	√	x	√	√	√	x	√	x	x	x
37	16	4360	711	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	17	4360	607	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	18	4360	505	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	19	4360	404	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	20	4360	304	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	21	4360	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	22	4360	100	√	√	√	x	√	x	√	√	√	x	x	x	x	x
37	23	4360	49	√	√	√	x	√	x	√	√	√	x	√	x	x	x
37	24	4360	7	√	√	√	x	√	x	√	√	√	x	x	x	x	x
38	1	4439	4499	x	√	x	x	x	x	√	√	√	x	√	x	x	x
38	2	4439	4499	x	x	x	x	x	√	x	x	x	x	x	√	x	√
38	3	4439	4063	x	√	x	x	x	√	√	√	√	x	x	x	x	x
38	4	4439	3552	x	√	x	x	x	√	√	√	√	x	x	x	x	x
38	5	4439	3043	x	√	x	x	x	x	√	√	√	x	x	x	x	x
38	6	4439	3044	x	x	x	x	x	√	x	x	x	x	x	√	x	√
38	7	4439	2532	x	√	x	x	x	√	√	√	√	x	x	x	x	x
38	8	4439	2262	x	√	x	x	x	√	√	√	√	x	x	x	x	x
38	9	4439	2024	x	√	x	x	x	√	√	√	√	x	x	x	x	x
38	10	4439	1820	x	√	x	x	x	√	√	√	√	x	x	x	x	x
38	11	4439	1617	x	√	x	x	x	√	√	√	√	x	x	x	x	x
38	12	4439	1413	x	√	x	x	x	√	√	√	√	x	x	x	x	x
38	13	4439	1212	x	√	x	x	x	√	√	√	√	x	x	x	x	x
38	14	4439	1010	x	x	x	x	x	√	x	x	x	x	x	√	x	√
38	15	4439	1009	x	√	x	x	x	x	√	√	√	x	√	x	x	x
38	16	4439	808	x	√	x	x	x	√	√	√	√	x	x	x	x	x
38	17	4439	604	x	√	x	x	x	√	√	√	√	x	x	x	x	x
38	18	4439	503	x	√	x	x	x	√	√	√	√	x	x	x	x	x
38	19	4439	402	x	√	x	x	x	√	√	√	√	x	x	x	x	x
38	20	4439	302	x	√	x	x	x	x	√	√	√	x	x	x	x	x
38	21	4439	199	x	√	x	x	x	x	√	√	√	x	x	x	x	x
38	22	4439	102	x	√	x	x	x	x	√	√	√	x	x	x	x	x
38	23	4439	51	x	√	x	x	x	x	√	√	√	x	√	x	x	x
38	24	4439	6	x	√	x	x	x	x	√	√	√	x	x	x	x	x
38-2	1	4439	305	x	x	x	x	x	√	x	x	x	x	x	√	x	√
38-2	2	4439	305	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	3	4439	302	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	4	4439	303	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	5	4439	304	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	6	4439	202	x	x	x	x	x	√	x	x	x	x	x	x	√	x
38-2	7	4439	95	x	x	x	x	x	√	x	x	x	x	x	√	√	√
38-2	8	4439	51	x	x	x	x	x	√	x	x	x	x	x	x	√	x
38-2	9	4439	7	x	x	x	x	x	√	x	x	x	x	x	√	√	√
38-2	10	4439	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	11	4439	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	12	4439	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	13	4439	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	14	4439	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	15	4439	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	16	4439	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	17	4439	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	18	4439	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	19	4439	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	20	4439	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	21	4439	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	22	4439	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	23	4439	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
38-2	24	4439	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
39	3	4676	4122	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	4	4676	3554	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	5	4676	3041	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	6	4676	2531	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	7	4676	2276	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	8	4676	2023	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	9	4676	2021	x	x	x	x	x	x	x	x	x	x	x	x	x	x
39	10	4676	1820	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	11	4676	1616	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	12	4676	1414	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	13	4676	1213	x	x	x	x	x	x	x	x	x	x	x	x	x	x
39	14	4676	1010	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	15	4676	807	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	16	4676	704	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	17	4676	604	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	18	4676	503	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	19	4676	403	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	20	4676	302	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	21	4676	200	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	22	4676	101	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	23	4676	51	√	√	√	x	√	x	√	√	√	x	x	x	x	x
39	24	4676	4	√	√	√	x	√	x	√	√	√	x	x	x	x	x
40	1	4610	4680	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	2	4610	4578	x	√	√	x	x	x	√	√	√	x	√	x	x	x
40	3	4610	4064	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	4	4610	3554	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	5	4610	3041	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	6	4610	2786	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	7	4610	2531	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	8	4610	2277	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	9	4610	2022	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	10	4610	1819	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	11	4610	1617	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	12	4610	1415	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	13	4610	1212	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	14	4610	1009	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	15	4610	808	x	√	√	x	x	x	√	√	√	x	√	x	x	x
40	16	4610	607	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	17	4610	504	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	18	4610	403	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	19	4610	301	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	20	4610	202	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	21	4610	101	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	22	4610	51	x	√	√	x	x	x	√	√	√	x	√	x	x	x
40	23	4610	7	x	√	√	x	x	x	√	√	√	x	x	x	x	x
40	24	4610	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x
41	1	4533	4593	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	2	4533	4593	x	x	x	x	x	x	x	x	x	x	√	x	x	x
41	3	4533	4064	√	√	√	√	√	√	√	x	√	x	x	x	x	x
41	4	4533	3552	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	5	4533	3042	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	6	4533	3041	x	x	x	x	x	x	x	x	x	x	√	x	x	x
41	7	4533	2532	√	√	√	√	√	√	√	x	√	x	x	x	x	x
41	8	4533	2280	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	9	4533	2023	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	10	4533	1820	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	11	4533	1617	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	12	4533	1414	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	13	4533	1210	√	√	√	√	√	√	√	x	√	x	x	x	x	x
41	14	4533	1011	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	15	4533	1010	x	x	x	x	x	x	x	x	x	x	√	x	x	x
41	16	4533	807	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	17	4533	605	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	18	4533	503	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	19	4533	403	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	20	4533	302	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	21	4533	202	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	22	4533	110	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	23	4533	51	√	√	√	x	√	√	√	x	√	x	x	x	x	x
41	24	4533	5	√	√	√	√	√	√	√	x	√	x	x	x	x	x
42	1	4233	4276	x	√	√	x	x	x	√	√	√	x	√	x	x	x
42	2	4233	4062	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	3	4233	3554	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	4	4233	3040	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	5	4233	2787	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	6	4233	2530	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	7	4233	2277	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	8	4233	2023	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	9	4233	1820	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	10	4233	1618	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	11	4233	1414	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	12	4233	1212	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	13	4233	1009	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	14	4233	907	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	15	4233	808	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	16	4233	706	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	17	4233	603	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	18	4233	505	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	19	4233	403	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	20	4233	302	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	21	4233	203	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	22	4233	100	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	23	4233	51	x	√	√	x	x	x	√	√	√	x	x	x	x	x
42	24	4233	6	x	√	√	x	x	x	√	√	√	x	x	x	x	x
43	1	4334	304	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	2	4334	303	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	3	4334	304	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	4	4334	305	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	5	4334	304	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	6	4334	305	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	7	4334	304	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	8	4334	304	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	9	4334	305	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	10	4334	305	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	11	4334	304	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	12	4334	304	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	13	4334	305	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	14	4334	304	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	15	4334	304	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	16	4334	305	x	x	x	x	x	√	x	x	x	x	x	√	x	√
43	17	4334	202	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	18	4334	202	x	x	x	x	x	√	x	x	x	x	x	x	√	x
43	19	4334	125	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	20	4334	125	x	x	x	x	x	√	x	x	x	x	x	√	√	√
43	21	4334	50	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	22	4334	50	x	x	x	x	x	√	x	x	x	x	x	x	√	x
43	23	4334	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
43	24	4334	5	x	x	x	x	x	√	x	x	x	x	x	√	√	√

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
43-2	1	4334	4383	√	√	√	x	√	x	√	√	√	x	√	x	x	x
43-2	2	4334	4383	x	x	x	x	x	√	x	x	x	x	x	√	x	√
43-2	3	4334	4064	√	√	√	x	√	√	√	√	√	x	x	x	x	x
43-2	4	4334	3553	√	√	√	x	√	√	√	√	√	x	x	x	x	x
43-2	5	4334	3042	√	√	√	x	√	x	√	√	√	x	x	x	x	x
43-2	6	4334	3043	x	x	x	x	x	√	x	x	x	x	x	√	x	√
43-2	7	4334	2530	√	√	√	x	√	√	√	√	√	x	x	x	x	x
43-2	8	4334	2278	√	√	√	x	√	√	√	√	√	x	x	x	x	x
43-2	9	4334	2023	√	√	√	x	√	√	√	√	√	x	x	x	x	x
43-2	10	4334	1819	√	√	√	x	√	√	√	√	√	x	x	x	x	x
43-2	11	4334	1617	√	√	√	x	√	√	√	√	√	x	x	x	x	x
43-2	12	4334	1414	√	√	√	x	√	√	√	√	√	x	x	x	x	x
43-2	13	4334	1213	√	√	√	x	√	√	√	√	√	x	x	x	x	x
43-2	14	4334	1010	√	√	√	x	√	√	√	√	√	x	√	√	x	√
43-2	15	4334	807	√	√	√	x	√	√	√	√	√	x	x	x	x	x
43-2	16	4334	605	√	√	√	x	√	√	√	√	√	x	x	x	x	x
43-2	17	4334	504	√	√	√	x	√	√	√	√	√	x	x	x	x	x
43-2	18	4334	404	√	√	√	x	√	√	√	√	√	x	x	x	x	x
43-2	19	4334	303	√	√	√	x	√	x	√	√	√	x	x	x	x	x
43-2	20	4334	201	√	√	√	x	√	x	√	√	√	x	x	x	x	x
43-2	21	4334	101	√	√	√	x	√	x	√	√	√	x	x	x	x	x
43-2	22	4334	52	√	√	√	x	√	x	√	√	√	x	x	x	x	x
43-2	23	4334	8	√	√	√	x	√	x	√	√	√	x	√	x	x	x
43-2	24	4334	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x
44	1	4572	4579	x	√	√	x	x	x	√	√	√	x	√	x	x	x
44	2	4572	4062	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	3	4572	3551	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	4	4572	3040	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	5	4572	2785	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	6	4572	2531	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	7	4572	2278	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	8	4572	2022	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	9	4572	1818	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	10	4572	1618	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	11	4572	1416	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	12	4572	1211	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	13	4572	1012	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	14	4572	907	x	√	√	x	x	x	√	√	√	x	√	x	x	x
44	15	4572	806	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	16	4572	707	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	17	4572	605	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	18	4572	505	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	19	4572	401	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	20	4572	302	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	21	4572	201	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	22	4572	102	x	√	√	x	x	x	√	√	√	x	x	x	x	x
44	23	4572	50	x	√	√	x	x	x	√	√	√	x	√	x	x	x
44	24	4572	7	x	√	√	x	x	x	√	√	√	x	x	x	x	x
45	1	4612	4678	√	√	√	x	√	√	√	√	√	x	x	√	x	√
45	2	4612	4578	√	√	√	x	√	√	√	√	√	x	x	x	x	x
45	3	4612	4063	√	√	√	x	√	√	√	√	√	x	x	x	x	x
45	4	4612	3551	√	√	√	x	√	√	√	√	√	x	x	x	x	x
45	5	4612	3041	√	√	√	x	√	√	√	√	√	x	x	√	x	√
45	6	4612	2785	√	√	√	x	√	√	√	√	√	x	√	x	x	x
45	7	4612	2531	√	√	√	x	√	√	√	√	√	x	x	x	x	x
45	8	4612	2278	√	√	√	x	√	√	√	√	√	x	x	x	x	x
45	9	4612	2024	√	√	√	x	√	√	√	√	√	x	x	x	x	x
45	10	4612	2024	√	x	x	x	x	x	√	√	√	x	x	x	x	x
45	11	4612	1820	√	√	√	x	√	√	√	√	√	x	x	x	x	x
45	12	4612	1617	√	√	√	x	√	√	√	√	√	x	x	x	x	x
45	13	4612	1414	√	√	√	x	√	√	√	√	√	x	x	x	x	x
45	14	4612	1212	√	√	√	x	√	√	√	√	√	x	x	x	x	x
45	15	4612	1009	√	√	√	x	√	√	√	√	√	x	x	√	x	√
45	16	4612	805	√	√	√	x	√	√	√	√	√	x	x	x	x	x
45	17	4612	606	√	√	√	x	√	√	√	√	√	x	x	x	x	x
45	18	4612	506	√	√	√	x	√	√	√	√	√	x	x	x	x	x
45	19	4612	405	√	√	√	x	√	√	√	√	√	x	√	x	x	x
45	20	4612	302	√	√	√	x	√	√	√	√	√	x	x	√	x	√
45	21	4612	203	√	√	√	x	√	√	√	√	√	x	x	x	√	x
45	22	4612	112	√	√	√	x	√	√	√	√	√	x	x	√	√	√
45	23	4612	50	√	√	√	x	√	√	√	√	√	x	√	x	√	x
45	24	4612	6	√	√	√	x	√	√	√	√	√	x	x	√	√	√
46	1	4597	4659	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	2	4597	4575	x	x	x	x	x	x	x	x	x	x	x	x	x	x
46	3	4597	4062	x	√	√	x	x	x	√	√	√	x	√	x	x	x
46	4	4597	3549	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	5	4597	3041	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	6	4597	2785	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	7	4597	2528	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	8	4597	2276	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	9	4597	2024	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	10	4597	1820	x	√	√	x	x	x	√	√	√	x	√	x	x	x
46	11	4597	1617	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	12	4597	1414	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	13	4597	1212	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	14	4597	1010	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	15	4597	808	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	16	4597	707	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	17	4597	605	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	18	4597	505	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	19	4597	402	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	20	4597	303	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	21	4597	203	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	22	4597	100	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	23	4597	51	x	√	√	x	x	x	√	√	√	x	x	x	x	x
46	24	4597	7	x	√	√	x	x	x	√	√	√	x	√	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
47	1	4767	4810	√	√	√	√	√	x	√	√	√	x	√	x	x	x
47	2	4767	4579	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	3	4767	4063	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	4	4767	3551	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	5	4767	3042	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	6	4767	2782	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	7	4767	2532	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	8	4767	2276	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	9	4767	2022	√	√	√	√	√	x	√	√	√	x	x	x	x	x
47	10	4767	1819	√	√	√	x	√	x	√	√	√	x	√	x	x	x
47	11	4767	1818	√	x	√	x	x	x	√	√	√	x	x	x	x	x
47	12	4767	1619	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	13	4767	1417	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	14	4767	1212	√	√	√	√	√	x	√	√	√	x	x	x	x	x
47	15	4767	1009	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	16	4767	807	√	√	√	x	√	x	x	x	x	x	x	x	x	x
47	17	4767	605	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	18	4767	504	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	19	4767	404	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	20	4767	302	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	21	4767	203	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	22	4767	102	√	√	√	x	√	x	√	√	√	x	x	x	x	x
47	23	4767	52	√	√	√	x	√	x	√	√	√	x	√	x	x	x
47	24	4767	9	√	√	√	√	√	x	√	√	√	x	x	x	x	x
48	1	4536	4597	x	√	√	x	x	x	√	√	√	x	√	x	x	x
48	2	4536	4597	x	x	x	x	x	√	x	x	x	x	x	√	x	√
48	3	4536	4063	x	√	√	x	x	√	√	√	√	x	x	x	x	x
48	4	4536	3550	x	√	√	x	x	√	√	√	√	x	x	x	x	x
48	5	4536	3042	x	√	√	x	x	x	√	√	√	x	√	x	x	x
48	6	4536	3041	x	x	x	x	x	√	x	x	x	x	x	√	x	√
48	7	4536	2530	x	√	√	x	x	√	√	√	√	x	x	x	x	x
48	8	4536	2278	x	√	√	x	x	√	√	√	√	x	x	x	x	x
48	9	4536	2023	x	√	√	x	x	√	√	√	√	x	x	x	x	x
48	10	4536	1820	x	√	√	x	x	√	√	√	√	x	x	x	x	x
48	11	4536	1618	x	√	√	x	x	√	√	√	√	x	x	x	x	x
48	12	4536	1414	x	√	√	x	x	√	√	√	√	x	x	x	x	x
48	13	4536	1212	x	√	√	x	x	√	√	√	√	x	x	x	x	x
48	14	4536	1009	x	x	x	x	x	√	x	x	x	x	x	√	x	√
48	15	4536	1009	x	√	√	x	x	x	√	√	√	x	√	x	x	x
48	16	4536	807	x	√	√	x	x	√	√	√	√	x	x	x	x	x
48	17	4536	606	x	√	√	x	x	√	√	√	√	x	x	x	x	x
48	18	4536	506	x	√	√	x	x	√	√	√	√	x	x	x	x	x
48	19	4536	403	x	√	√	x	x	√	√	√	√	x	x	x	x	x
48	20	4536	303	x	√	√	x	x	√	√	√	√	x	x	√	x	√
48	21	4536	202	x	√	√	x	x	√	√	√	√	x	x	x	√	x
48	22	4536	122	x	√	√	x	x	√	√	√	√	x	x	√	√	√
48	23	4536	52	x	√	√	x	x	√	√	√	√	x	x	x	√	x
48	24	4536	6	x	√	√	x	x	√	√	√	√	x	x	√	√	√
49	1	4407	4462	√	√	√	x	√	x	√	√	√	x	√	x	x	x
49	2	4407	4062	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	3	4407	3552	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	4	4407	3041	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	5	4407	2785	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	6	4407	2530	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	7	4407	2277	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	8	4407	2023	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	9	4407	1819	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	10	4407	1616	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	11	4407	1615	√	x	x	x	x	x	√	√	√	x	x	x	x	x
49	12	4407	1414	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	13	4407	1211	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	14	4407	1009	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	15	4407	806	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	16	4407	705	√	√	√	x	√	x	√	√	√	x	√	x	x	x
49	17	4407	605	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	18	4407	504	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	19	4407	403	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	20	4407	302	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	21	4407	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	22	4407	101	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	23	4407	52	√	√	√	x	√	x	√	√	√	x	x	x	x	x
49	24	4407	5	√	√	√	x	√	x	√	√	√	x	√	x	x	x
50	1	4264	4316	x	√	√	x	x	x	√	√	√	x	√	x	x	x
50	2	4264	4061	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	3	4264	3549	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	4	4264	3041	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	5	4264	2785	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	6	4264	2530	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	7	4264	2276	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	8	4264	2023	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	9	4264	1820	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	10	4264	1618	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	11	4264	1414	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	12	4264	1211	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	13	4264	1008	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	14	4264	908	x	√	√	x	x	x	√	√	√	x	√	x	x	x
50	15	4264	807	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	16	4264	705	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	17	4264	605	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	18	4264	504	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	19	4264	402	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	20	4264	302	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	21	4264	202	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	22	4264	101	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	23	4264	50	x	√	√	x	x	x	√	√	√	x	x	x	x	x
50	24	4264	6	x	√	√	x	x	x	√	√	√	x	√	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
51	1	4100	4125	√	√	√	x	√	x	√	√	√	x	√	x	x	x
51	2	4100	4125	x	x	x	x	x	√	x	x	x	x	x	√	x	√
51	3	4100	4063	√	√	√	x	√	√	√	√	√	x	x	x	x	x
51	4	4100	3552	√	√	√	x	√	√	√	√	√	x	x	x	x	x
51	5	4100	3040	√	√	√	x	√	x	√	√	√	x	x	x	x	x
51	6	4100	3040	x	x	x	x	x	√	x	x	x	x	x	√	x	√
51	7	4100	2531	√	√	√	x	√	√	√	√	√	x	x	x	x	x
51	8	4100	2271	√	√	√	x	√	√	√	√	√	x	x	x	x	x
51	9	4100	2023	√	√	√	x	√	√	√	√	√	x	x	x	x	x
51	10	4100	1819	√	√	√	x	√	√	√	√	√	x	x	x	x	x
51	11	4100	1617	√	√	√	x	√	√	√	√	√	x	x	x	x	x
51	12	4100	1413	√	√	√	x	√	√	√	√	√	x	x	x	x	x
51	13	4100	1212	√	√	√	x	√	√	√	√	√	x	x	x	x	x
51	14	4100	1008	x	x	x	x	x	√	x	x	x	x	x	√	x	√
51	15	4100	1008	√	√	√	x	√	√	√	√	√	x	√	x	x	x
51	16	4100	807	√	√	√	x	√	√	√	√	√	x	x	x	x	x
51	17	4100	606	√	√	√	x	√	√	√	√	√	x	x	x	x	x
51	18	4100	404	√	√	√	x	√	√	√	√	√	x	x	x	x	x
51	19	4100	304	√	√	√	x	√	x	√	√	√	x	x	x	x	x
51	20	4100	304	x	x	x	x	x	√	x	x	x	x	x	√	x	√
51	21	4100	202	√	√	√	x	√	√	√	√	√	x	x	x	√	x
51	22	4100	112	√	√	√	x	√	√	√	√	√	x	x	√	√	√
51	23	4100	51	√	√	√	x	√	√	√	√	√	x	√	x	√	x
51	24	4100	6	√	√	√	x	√	√	√	√	√	x	x	√	√	√
52	1	4279	4317	x	√	√	x	x	x	√	√	√	x	√	x	x	x
52	2	4279	4061	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	3	4279	3551	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	4	4279	3037	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	5	4279	2785	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	6	4279	2531	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	7	4279	2276	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	8	4279	2023	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	9	4279	1821	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	10	4279	1615	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	11	4279	1414	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	12	4279	1212	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	13	4279	1010	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	14	4279	908	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	15	4279	808	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	16	4279	706	x	√	√	x	x	x	√	√	√	x	√	x	x	x
52	17	4279	605	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	18	4279	505	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	19	4279	404	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	20	4279	304	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	21	4279	203	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	22	4279	102	x	√	√	x	x	x	√	√	√	x	x	x	x	x
52	23	4279	52	x	√	√	x	x	x	√	√	√	x	√	x	x	x
52	24	4279	7	x	√	√	x	x	x	√	√	√	x	x	x	x	x
53	1	4676	4738	√	√	x	x	√	x	√	√	√	x	x	x	x	x
53	2	4676	4738	x	x	x	x	x	√	x	x	x	x	x	√	x	√
53	3	4676	4573	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	4	4676	4061	√	√	x	x	√	√	√	√	√	x	x	x	x	x
53	5	4676	3552	√	√	x	x	√	√	√	√	√	x	x	x	x	x
53	6	4676	3040	√	√	x	x	√	√	√	√	√	x	x	x	x	x
53	7	4676	3041	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	8	4676	3040	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	9	4676	3039	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	10	4676	3040	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	11	4676	3040	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	12	4676	3040	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	13	4676	3040	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	14	4676	3040	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	15	4676	3039	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	16	4676	3040	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	17	4676	3040	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	18	4676	3039	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	19	4676	3039	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	20	4676	3040	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	21	4676	3039	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	22	4676	3039	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53	23	4676	3039	x	x	x	x	x	√	x	x	x	x	x	√	x	√
53	24	4676	2784	√	√	x	x	√	√	√	√	√	x	x	x	x	x
53-2	1	4674	3044	x	√	√	x	x	x	√	√	√	x	√	x	x	x
53-2	2	4674	2785	√	√	√	x	x	x	√	√	√	x	x	x	x	x
53-2	3	4674	2529	x	x	x	x	x	x	x	x	x	x	x	x	x	x
53-2	4	4674	2275	√	√	√	x	√	x	√	√	√	x	x	x	x	x
53-2	5	4674	2022	√	√	√	x	√	x	√	√	√	x	x	x	x	x
53-2	6	4674	1819	√	√	√	x	√	x	√	√	√	x	x	x	x	x
53-2	7	4674	1615	√	√	√	x	√	x	√	√	√	x	x	x	x	x
53-2	8	4674	1413	√	√	√	x	√	x	√	√	√	x	x	x	x	x
53-2	9	4674	1211	√	√	√	x	√	x	√	√	√	x	x	x	x	x
53-2	10	4674	1009	x	x	x	x	x	√	x	x	x	x	x	√	x	√
53-2	11	4674	1009	√	√	√	x	√	x	√	√	√	x	x	x	x	x
53-2	12	4674	807	√	√	√	x	√	x	√	√	√	x	√	x	x	x
53-2	13	4674	807	√	x	x	x	x	x	x	x	x	x	x	x	x	x
53-2	14	4674	605	√	√	√	x	√	x	√	√	√	x	x	x	x	x
53-2	15	4674	503	√	√	√	x	√	x	√	√	√	x	x	x	x	x
53-2	16	4674	403	√	√	√	x	√	x	√	√	√	x	x	x	x	x
53-2	17	4674	302	√	√	√	x	√	x	√	√	√	x	x	x	x	x
53-2	18	4674	302	x	x	x	x	x	x	x	x	x	x	x	√	x	√
53-2	19	4674	203	√	√	√	x	√	x	√	√	√	x	x	x	x	x
53-2	20	4674	146	√	√	√	x	√	x	√	√	√	x	x	√	√	√
53-2	21	4674	101	√	√	√	x	√	x	√	√	√	x	x	x	√	x
53-2	22	4674	52	√	√	√	x	√	x	√	√	√	x	x	x	√	x
53-2	23	4674	6	x	x	√	x	x	x	x	x	x	x	x	√	√	√
53-2	24	4674	6	√	√	√	x	√	x	√	√	√	x	√	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
54	1	4877	4937	x	√	√	x	x	x	√	√	√	x	√	x	x	x
54	2	4877	4575	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	3	4877	4065	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	4	4877	3549	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	5	4877	3041	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	6	4877	2785	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	7	4877	2530	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	8	4877	2277	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	9	4877	2023	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	10	4877	1819	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	11	4877	1617	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	12	4877	1413	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	13	4877	1211	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	14	4877	1011	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	15	4877	807	x	√	√	x	x	x	√	√	√	x	√	x	x	x
54	16	4877	708	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	17	4877	606	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	18	4877	506	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	19	4877	403	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	20	4877	303	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	21	4877	202	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	22	4877	102	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	23	4877	52	x	√	√	x	x	x	√	√	√	x	x	x	x	x
54	24	4877	7	x	√	√	x	x	x	√	√	√	x	√	x	x	x
55	1	4924	4982	√	√	√	x	√	√	√	√	√	x	√	x	x	x
55	2	4924	4573	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	3	4924	4063	√	√	√	√	√	√	√	√	√	x	x	x	x	x
55	4	4924	3548	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	5	4924	3039	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	6	4924	2785	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	7	4924	2530	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	8	4924	2275	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	9	4924	2021	√	√	√	√	√	√	√	√	√	x	√	x	x	x
55	10	4924	1819	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	11	4924	1616	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	12	4924	1412	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	13	4924	1211	√	√	√	x	√	x	√	√	√	x	x	x	x	x
55	14	4924	1211	√	x	x	x	x	√	√	√	√	x	x	x	x	x
55	15	4924	1009	√	√	√	√	√	√	√	√	√	x	x	x	x	x
55	16	4924	805	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	17	4924	605	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	18	4924	504	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	19	4924	404	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	20	4924	303	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	21	4924	202	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	22	4924	129	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	23	4924	52	√	√	√	x	√	√	√	√	√	x	x	x	x	x
55	24	4924	7	√	√	√	√	√	√	√	√	√	x	√	x	x	x
56	1	4849	4912	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	2	4849	4574	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	3	4849	4062	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	4	4849	3550	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	5	4849	3040	x	√	√	x	x	x	√	√	√	x	√	x	x	x
56	6	4849	2785	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	7	4849	2529	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	8	4849	2275	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	9	4849	2022	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	10	4849	1818	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	11	4849	1616	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	12	4849	1413	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	13	4849	1210	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	14	4849	1008	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	15	4849	808	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	16	4849	706	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	17	4849	606	x	√	√	x	x	x	√	√	√	x	√	x	x	x
56	18	4849	505	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	19	4849	404	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	20	4849	303	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	21	4849	202	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	22	4849	102	x	√	√	x	x	x	√	√	√	x	x	x	x	x
56	23	4849	51	x	√	√	x	x	x	√	√	√	x	√	x	x	x
56	24	4849	7	x	√	√	x	x	x	√	√	√	x	x	x	x	x
57	1	4928	5338	√	√	√	x	√	x	√	√	√	x	√	x	x	x
57	2	4928	5338	x	x	x	x	x	√	x	x	x	x	x	√	x	√
57	3	4928	5088	√	√	√	x	√	√	√	√	√	x	x	x	x	x
57	4	4928	4574	√	√	√	x	√	√	√	√	√	x	x	x	x	x
57	5	4928	4062	√	√	√	x	√	√	√	√	√	x	x	x	x	x
57	6	4928	3550	√	√	√	x	√	√	√	√	√	x	x	x	x	x
57	7	4928	3040	√	√	√	x	√	x	√	√	√	x	√	x	x	x
57	8	4928	3041	x	x	x	x	x	√	x	x	x	x	x	√	x	√
57	9	4928	2527	√	√	√	x	√	√	√	√	√	x	x	x	x	x
57	10	4928	2276	√	√	√	x	√	√	√	√	√	x	x	x	x	x
57	11	4928	2023	√	√	√	x	√	√	√	√	√	x	x	x	x	x
57	12	4928	1819	√	√	√	x	√	√	√	√	√	x	x	x	x	x
57	13	4928	1617	√	√	√	x	√	√	√	√	√	x	x	x	x	x
57	14	4928	1414	√	√	√	x	√	√	√	√	√	x	x	x	x	x
57	15	4928	1208	√	√	√	x	√	√	√	√	√	x	x	x	x	x
57	16	4928	1008	x	x	x	x	x	√	x	x	x	x	x	√	x	√
57	17	4928	806	√	√	√	x	√	√	√	√	√	x	x	x	x	x
57	18	4928	604	√	√	√	x	√	√	√	√	√	x	x	x	x	x
57	19	4928	403	√	√	√	x	√	√	√	√	√	x	x	x	x	x
57	20	4928	300	√	√	√	x	√	√	√	√	√	x	x	√	x	√
57	21	4928	159	√	√	√	x	√	√	√	√	√	x	x	x	√	√
57	22	4928	101	√	√	√	x	√	√	√	√	√	x	x	x	√	x
57	23	4928	50	√	√	√	x	√	√	√	√	√	x	√	x	√	x
57	24	4928	6	√	√	√	x	√	√	√	√	√	x	x	√	√	√

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
58	1	5185	5256	x	√	√	x	x	x	√	√	√	x	√	x	x	x
58	2	5185	5087	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	3	5185	4574	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	4	5185	4061	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	5	5185	3548	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	6	5185	3038	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	7	5185	2783	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	8	5185	2529	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	9	5185	2276	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	10	5185	2022	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	11	5185	1818	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	12	5185	1616	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	13	5185	1412	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	14	5185	1208	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	15	5185	1010	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	16	5185	806	x	√	√	x	x	x	√	√	√	x	√	x	x	x
58	17	5185	606	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	18	5185	504	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	19	5185	403	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	20	5185	302	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	21	5185	203	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	22	5185	102	x	√	√	x	x	x	√	√	√	x	x	x	x	x
58	23	5185	50	x	√	√	x	x	x	√	√	√	x	√	x	x	x
58	24	5185	8	x	√	√	x	x	x	√	√	√	x	x	x	x	x
59	1	5441	5521	√	√	√	x	√	√	√	√	√	x	√	√	x	√
59	2	5441	5521	x	x	x	x	x	x	x	x	x	x	x	x	x	x
59	3	5441	5089	√	√	√	x	√	√	√	√	√	x	x	x	x	x
59	4	5441	4574	√	√	√	x	√	√	√	√	√	x	x	x	x	x
59	5	5441	4039	√	√	√	x	√	√	√	√	√	x	x	x	x	x
59	6	5441	3550	√	√	√	x	√	√	√	√	√	x	x	x	x	x
59	7	5441	3039	√	√	√	x	√	x	√	√	√	x	√	x	x	x
59	8	5441	3040	x	x	x	x	x	√	x	x	x	x	x	√	x	√
59	9	5441	2530	√	√	√	x	√	√	√	√	√	x	x	x	x	x
59	10	5441	2274	√	√	√	x	√	√	√	√	√	x	x	x	x	x
59	11	5441	2020	√	√	√	x	√	√	√	√	√	x	x	x	x	x
59	12	5441	1819	√	√	√	x	√	√	√	√	√	x	x	x	x	x
59	13	5441	1618	√	√	√	x	√	√	√	√	√	x	x	x	x	x
59	14	5441	1413	√	√	√	x	√	√	√	√	√	x	x	x	x	x
59	15	5441	1212	√	√	√	x	√	√	√	√	√	x	x	x	x	x
59	16	5441	1009	√	√	√	x	√	√	√	√	√	x	x	√	x	√
59	17	5441	804	√	√	√	x	√	√	√	√	√	x	x	x	x	x
59	18	5441	605	√	√	√	x	√	√	√	√	√	x	x	x	x	x
59	19	5441	404	√	√	√	x	√	√	√	√	√	x	x	x	x	x
59	20	5441	304	√	√	√	x	√	√	√	√	√	x	x	√	x	√
59	21	5441	203	√	√	√	x	√	√	√	√	√	x	x	x	√	x
59	22	5441	132	√	√	√	x	√	√	√	√	√	x	x	√	√	√
59	23	5441	52	√	√	√	x	√	√	√	√	√	x	√	x	√	x
59	24	5441	7	√	√	√	x	√	√	√	√	√	x	x	√	√	√
60	1	5336	5420	x	√	√	x	x	x	√	√	√	x	√	x	x	x
60	2	5336	5084	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	3	5336	4575	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	4	5336	4062	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	5	5336	3549	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	6	5336	3039	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	7	5336	2529	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	8	5336	2276	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	9	5336	2023	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	10	5336	1818	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	11	5336	1615	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	12	5336	1414	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	13	5336	1210	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	14	5336	1009	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	15	5336	807	x	√	√	x	x	x	√	√	√	x	√	x	x	x
60	16	5336	705	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	17	5336	605	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	18	5336	502	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	19	5336	403	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	20	5336	303	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	21	5336	203	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	22	5336	101	x	√	√	x	x	x	√	√	√	x	x	x	x	x
60	23	5336	51	x	√	√	x	x	x	√	√	√	x	√	x	x	x
60	24	5336	7	x	√	√	x	x	x	√	√	√	x	x	x	x	x
61	1	4289	4268	√	√	√	√	√	√	√	√	√	x	√	x	x	x
61	2	4289	4267	√	√	x	x	x	√	x	x	x	x	x	√	x	√
61	3	4289	4061	√	√	√	x	√	√	√	√	√	x	x	x	x	x
61	4	4289	3547	√	√	√	x	√	√	√	√	√	x	x	x	x	x
61	5	4289	3040	√	√	√	x	√	√	√	√	√	x	x	x	x	x
61	6	4289	3038	x	x	x	x	x	x	x	x	x	x	x	√	x	√
61	7	4289	2521	√	√	√	x	√	√	√	√	√	x	x	x	x	x
61	8	4289	2274	√	√	√	x	√	√	√	√	√	x	x	x	x	x
61	9	4289	2021	√	√	√	√	√	√	√	√	√	x	x	x	x	x
61	10	4289	1816	√	√	√	x	√	√	√	√	√	x	x	x	x	x
61	11	4289	1615	√	√	√	x	√	√	√	√	√	x	x	x	x	x
61	12	4289	1416	√	√	√	x	√	√	√	√	√	x	x	x	x	x
61	13	4289	1210	√	√	√	x	√	√	√	√	√	x	x	x	x	x
61	14	4289	1009	x	x	x	x	x	√	x	x	x	x	x	√	x	√
61	15	4289	1009	√	√	√	x	√	x	√	√	√	x	√	x	x	x
61	16	4289	806	√	√	√	√	√	√	√	√	√	x	x	x	x	x
61	17	4289	605	√	√	√	x	√	√	√	√	√	x	x	x	x	x
61	18	4289	404	√	√	√	x	√	√	√	√	√	x	x	x	x	x
61	19	4289	301	√	√	√	x	√	x	√	√	√	x	x	x	x	x
61	20	4289	301	x	x	x	x	x	√	x	x	x	x	x	√	x	√
61	21	4289	203	√	√	√	x	√	x	√	√	√	x	x	x	x	x
61	22	4289	132	√	√	√	x	√	x	√	√	√	x	x	√	x	√
61	23	4289	51	√	√	√	x	√	x	√	√	√	x	√	x	x	x
61	24	4289	7	√	√	√	√	√	x	√	√	√	x	x	x	x	x
62	1	5372	5399	x	√	√	x	x	x	√	√	√	x	√	x	x	x
62	2	5372	5086	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	3	5372	4573	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	4	5372	4059	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	5	5372	3548	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	6	5372	3040	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	7	5372	2527	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	8	5372	2274	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	9	5372	2021	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	10	5372	1818	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	11	5372	1615	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	12	5372	1413	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	13	5372	1212	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	14	5372	1010	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	15	5372	807	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	16	5372	706	x	√	√	x	x	x	√	√	√	x	√	x	x	x
62	17	5372	606	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	18	5372	505	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	19	5372	403	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	20	5372	302	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	21	5372	202	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	22	5372	101	x	√	√	x	x	x	√	√	√	x	x	x	x	x
62	23	5372	51	x	√	√	x	x	x	√	√	√	x	√	x	x	x
62	24	5372	6	x	√	√	x	x	x	√	√	√	x	x	x	x	x
63	1	874	864	x	x	x	x	x	√	x	x	x	x	x	x	x	x
63	2	874	864	x	√	√	x	x	x	√	√	√	x	x	x	x	x
63	3	874	799	x	x	x	x	x	√	x	x	x	x	x	x	x	x
63	4	874	800	x	√	√	x	x	x	√	√	√	x	x	x	x	x
63	5	874	701	x	x	x	x	x	√	x	x	x	x	x	x	x	x
63	6	874	701	x	√	√	x	x	x	√	√	√	x	x	x	x	x
63	7	874	605	x	x	x	x	x	√	x	x	x	x	x	x	x	x
63	8	874	605	x	√	√	x	x	x	√	√	√	x	x	x	x	x
63	9	874	504	x	x	x	x	x	√	x	x	x	x	x	x	x	x
63	10	874	504	x	√	√	x	x	x	√	√	√	x	x	x	x	x
63	11	874	403	x	x	x	x	x	√	x	x	x	x	x	x	x	x
63	12	874	403	x	√	√	x	x	x	√	√	√	x	x	x	x	x
63	13	874	301	x	x	x	x	x	√	x	x	x	x	x	x	x	x
63	14	874	301	x	√	√	x	x	x	√	√	√	x	x	x	x	x
63	15	874	202	x	x	x	x	x	√	x	x	x	x	x	x	x	x
63	16	874	202	x	√	√	x	x	x	√	√	√	x	x	x	x	x
63	17	874	153	x	x	x	x	x	√	x	x	x	x	x	x	x	x
63	18	874	152	x	√	√	x	x	x	√	√	√	x	x	x	x	x
63	19	874	99	x	x	x	x	x	√	x	x	x	x	x	x	x	x
63	20	874	100	x	√	√	x	x	x	√	√	√	x	x	x	x	x
63	21	874	51	x	x	x	x	x	√	x	x	x	x	x	x	x	x
63	22	874	51	x	√	√	x	x	x	√	√	√	x	x	x	x	x
63	23	874	7	x	x	x	x	x	√	x	x	x	x	x	x	x	x
63	24	874	7	x	√	√	x	x	x	√	√	√	x	x	x	x	x
64	1	3892	4066	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	2	3892	3753	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	3	3892	3550	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	4	3892	3039	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	5	3892	2532	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	6	3892	2276	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	7	3892	2023	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	8	3892	1819	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	9	3892	1616	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	10	3892	1413	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	11	3892	1212	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	12	3892	1008	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	13	3892	806	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	14	3892	705	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	15	3892	604	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	16	3892	503	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	17	3892	403	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	18	3892	303	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	19	3892	202	x	x	x	x	x	√	x	x	x	x	x	x	x	x
64	20	3892	202	x	√	√	x	√	x	√	√	√	x	x	x	x	x
64	21	3892	101	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	22	3892	50	x	√	√	x	√	√	√	√	√	x	x	x	x	x
64	23	3892	7	x	x	x	x	x	√	x	x	x	x	x	x	x	x
64	24	3892	8	x	√	√	x	√	x	√	√	√	x	x	x	x	x
65	1	5084	5150	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	2	5084	5086	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	3	5084	4574	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	4	5084	4061	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	5	5084	3549	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	6	5084	3039	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	7	5084	2530	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	8	5084	2275	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	9	5084	2021	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	10	5084	1818	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	11	5084	1616	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	12	5084	1414	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	13	5084	1211	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	14	5084	1008	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	15	5084	807	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	16	5084	706	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	17	5084	605	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	18	5084	504	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	19	5084	403	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	20	5084	304	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	21	5084	203	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	22	5084	102	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	23	5084	42	x	√	√	x	x	√	√	√	√	x	x	x	x	x
65	24	5084	6	x	√	√	x	x	√	√	√	√	x	x	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
66	1	5412	5077	√	√	√	x	√	√	√	√	√	x	x	√	x	√
66	2	5412	5079	√	√	√	x	√	x	√	√	√	x	x	x	x	x
66	3	5412	4572	√	√	√	x	√	√	√	√	√	x	x	x	x	x
66	4	5412	4061	√	√	√	x	√	√	√	√	√	x	√	x	x	x
66	5	5412	3549	√	√	√	x	√	√	√	√	√	x	√	x	x	x
66	6	5412	3040	√	√	√	x	√	x	√	√	√	x	√	x	x	x
66	7	5412	3041	x	x	x	x	x	√	x	x	x	x	x	√	x	√
66	8	5412	2532	√	√	√	x	√	√	√	√	√	x	√	x	x	x
66	9	5412	2025	√	√	√	x	√	√	√	√	√	x	x	x	x	x
66	10	5412	1818	√	√	√	x	√	√	√	√	√	x	x	x	x	x
66	11	5412	1617	√	√	√	x	√	√	√	√	√	x	x	x	x	x
66	12	5412	1414	√	√	√	x	√	√	√	√	√	x	x	x	x	x
66	13	5412	1207	√	√	√	x	√	√	√	√	√	x	x	x	x	x
66	14	5412	1006	x	√	√	x	x	√	√	√	√	x	x	√	x	√
66	15	5412	808	√	√	√	x	√	√	√	√	√	x	x	x	x	x
66	16	5412	702	√	√	√	x	√	√	√	√	√	x	x	x	x	x
66	17	5412	600	√	√	√	x	√	√	√	√	√	x	x	x	x	x
66	18	5412	507	√	√	√	x	√	√	√	√	√	x	x	x	x	x
66	19	5412	400	√	√	√	x	√	√	√	√	√	x	x	x	x	x
66	20	5412	303	√	√	√	x	√	√	√	√	√	x	x	√	x	√
66	21	5412	204	√	√	√	x	√	√	√	√	√	x	x	x	√	x
66	22	5412	101	√	√	√	x	√	√	√	√	√	x	x	√	√	√
66	23	5412	41	√	√	√	x	√	√	√	√	√	x	x	x	√	x
66	24	5412	7	√	√	√	x	√	√	√	√	√	x	x	√	√	√
67-1	1	5103	302	x	x	x	x	x	√	x	x	x	x	x	x	x	x
67-1	2	5103	302	x	√	√	x	x	x	√	√	√	x	x	x	x	x
67-1	3	5103	202	x	√	√	x	x	x	√	√	√	x	x	x	√	x
67-1	4	5103	163	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-1	5	5103	161	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-1	6	5103	162	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-1	7	5103	162	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-1	8	5103	161	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-1	9	5103	162	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-1	10	5103	162	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-1	11	5103	162	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-1	12	5103	162	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-1	13	5103	162	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-1	14	5103	162	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-1	15	5103	162	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-1	16	5103	162	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-1	17	5103	162	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-1	18	5103	162	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-1	19	5103	114	x	x	x	x	x	√	x	x	x	x	x	√	√	x
67-1	20	5103	113	x	√	√	x	x	x	√	√	√	x	x	x	x	x
67-1	21	5103	51	x	x	x	x	x	√	x	x	x	x	x	√	√	x
67-1	22	5103	51	x	√	√	x	x	x	√	√	√	x	x	x	x	x
67-1	23	5103	5	x	x	x	x	x	√	x	x	x	x	x	√	√	x
67-1	24	5103	5	x	√	√	x	x	x	√	√	√	x	x	x	x	x
67-2	1	5103	202	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	2	5103	202	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	3	5103	201	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	4	5103	200	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	5	5103	200	x	x	x	x	x	√	x	x	x	x	x	√	x	x
67-2	6	5103	201	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	7	5103	201	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	8	5103	201	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	9	5103	200	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	10	5103	200	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	11	5103	200	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	12	5103	201	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	13	5103	201	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	14	5103	201	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	15	5103	201	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	16	5103	200	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	17	5103	200	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	18	5103	201	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	19	5103	201	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	20	5103	201	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	21	5103	201	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	22	5103	200	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	23	5103	200	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-2	24	5103	201	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-3	1	5097	5174	x	√	√	x	x	x	√	√	√	x	x	x	x	x
67-3	2	5097	5174	x	x	x	x	x	√	x	x	x	x	x	√	x	√
67-3	3	5097	5085	x	√	√	x	x	√	√	√	√	x	x	x	x	x
67-3	4	5097	4576	x	√	√	x	x	√	√	√	√	x	x	x	x	x
67-3	5	5097	4061	x	√	√	x	x	√	√	√	√	x	x	x	x	x
67-3	6	5097	3548	x	√	√	x	x	√	√	√	√	x	x	x	x	x
67-3	7	5097	3042	x	√	√	x	x	x	√	√	√	x	x	x	x	x
67-3	8	5097	3041	x	x	x	x	x	√	x	x	x	x	x	√	x	√
67-3	9	5097	3041	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-3	10	5097	3041	x	x	x	x	x	x	x	x	x	x	x	x	x	x
67-3	11	5097	2532	x	√	√	x	x	√	√	√	√	x	x	x	x	x
67-3	12	5097	2276	x	√	√	x	x	√	√	√	√	x	x	x	x	x
67-3	13	5097	2022	x	√	√	x	x	√	√	√	√	x	x	x	x	x
67-3	14	5097	1756	x	√	√	x	x	√	√	√	√	x	x	x	x	x
67-3	15	5097	1616	x	√	√	x	x	√	√	√	√	x	x	x	x	x
67-3	16	5097	1415	x	√	√	x	x	√	√	√	√	x	x	x	x	x
67-3	17	5097	1210	x	√	√	x	x	√	√	√	√	x	x	x	x	x
67-3	18	5097	1009	x	√	√	x	x	√	√	√	√	x	x	√	x	√
67-3	19	5097	807	x	√	√	x	x	√	√	√	√	x	x	√	x	√
67-3	20	5097	706	x	√	√	x	x	√	√	√	√	x	x	x	x	x
67-3	21	5097	604	x	√	√	x	x	√	√	√	√	x	x	x	x	x
67-3	22	5097	505	x	√	√	x	x	√	√	√	√	x	x	√	x	√
67-3	23	5097	403	x	√	√	x	x	√	√	√	√	x	x	x	x	x
67-3	24	5097	302	x	x	x	x	x	√	x	x	x	x	x	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
68	1	5062	5133	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	2	5062	5089	√	√	√	x	√	x	√	√	√	x	x	x	x	x
68	3	5062	4574	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	4	5062	4061	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	5	5062	3548	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	6	5062	3039	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	7	5062	2532	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	8	5062	2275	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	9	5062	2018	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	10	5062	1819	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	11	5062	1618	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	12	5062	1412	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	13	5062	1210	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	14	5062	1009	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	15	5062	1008	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	16	5062	807	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	17	5062	705	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	18	5062	604	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	19	5062	504	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	20	5062	403	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	21	5062	302	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	22	5062	201	√	√	√	x	√	√	√	√	√	x	x	x	x	x
68	23	5062	100	√	√	√	x	√	x	√	√	√	x	x	x	x	x
68	24	5062	6	√	√	√	x	√	√	√	√	√	x	x	x	x	x
69	1	4773	4840	x	√	√	x	x	x	x	x	x	x	x	√	x	√
69	2	4773	4840	x	√	√	x	x	x	√	√	√	x	√	x	x	x
69	3	4773	4573	x	√	√	x	x	x	√	√	√	x	x	x	x	x
69	4	4773	4060	x	√	√	x	x	x	√	√	√	x	x	x	x	x
69	5	4773	3550	x	√	√	x	x	x	√	√	√	x	x	x	x	x
69	6	4773	3037	x	√	√	x	x	x	√	√	√	x	√	√	x	√
69	7	4773	2528	x	√	√	x	x	x	√	√	√	x	√	x	x	x
69	8	4773	2020	x	√	√	x	x	x	√	√	√	x	x	x	x	x
69	9	4773	1819	x	√	√	x	x	x	√	√	√	x	x	x	x	x
69	10	4773	1616	x	√	√	x	x	x	√	√	√	x	x	x	x	x
69	11	4773	1413	x	√	√	x	x	x	√	√	√	x	x	x	x	x
69	12	4773	1210	x	√	√	x	x	x	√	√	√	x	x	x	x	x
69	13	4773	1007	x	√	√	x	x	x	√	√	√	x	x	√	x	√
69	14	4773	806	x	√	√	x	x	x	√	√	√	x	x	x	x	x
69	15	4773	705	x	√	√	x	x	x	√	√	√	x	x	x	x	x
69	16	4773	602	x	√	√	x	x	x	√	√	√	x	x	x	x	x
69	17	4773	501	x	√	√	x	x	x	√	√	√	x	x	x	x	x
69	18	4773	403	x	√	√	x	x	x	√	√	√	x	x	x	x	x
69	19	4773	302	x	√	√	x	x	x	√	√	√	x	x	x	x	x
69	20	4773	202	x	√	√	x	x	x	√	√	√	x	x	√	√	√
69	21	4773	81	x	√	√	x	x	x	√	√	√	x	x	√	√	√
69	22	4773	41	x	√	√	x	x	x	√	√	√	x	x	x	√	x
69	23	4773	6	x	√	x	x	x	x	x	x	x	x	x	x	x	x
69	24	4773	7	x	x	√	x	x	x	√	√	√	x	x	√	√	√
70	1	4884	4950	x	x	x	x	x	x	√	√	√	x	x	x	x	x
70	2	4884	4949	√	√	√	x	√	x	√	√	√	x	x	x	x	x
70	3	4884	4573	√	√	√	x	√	x	√	√	√	x	x	x	x	x
70	4	4884	4062	x	x	x	x	x	x	√	√	√	x	x	x	x	x
70	5	4884	3549	√	√	√	x	√	x	√	√	√	x	x	x	x	x
70	6	4884	3038	x	x	√	x	x	x	√	√	√	x	x	x	x	x
70	7	4884	2531	x	x	x	x	x	x	√	√	√	x	x	x	x	x
70	8	4884	2530	√	√	√	x	√	x	√	√	√	x	x	x	x	x
70	9	4884	2021	x	x	√	x	x	x	√	√	√	x	x	x	x	x
70	10	4884	2021	√	√	√	x	√	x	√	√	√	x	x	x	x	x
70	11	4884	1818	√	√	√	x	√	x	√	√	√	x	x	x	x	x
70	12	4884	1614	x	x	√	x	x	x	√	√	√	x	x	x	x	x
70	13	4884	1411	√	√	√	x	√	x	√	√	√	x	x	x	x	x
70	14	4884	1210	√	√	√	x	√	x	√	√	√	x	x	x	x	x
70	15	4884	1007	x	√	√	x	x	x	√	√	√	x	x	x	x	x
70	16	4884	806	√	√	√	x	√	x	√	√	√	x	x	x	x	x
70	17	4884	706	√	√	√	x	√	x	√	√	√	x	x	x	x	x
70	18	4884	605	x	√	√	x	x	x	√	√	√	x	x	x	x	x
70	19	4884	503	√	√	√	x	√	x	√	√	√	x	x	x	x	x
70	20	4884	403	√	√	√	x	√	x	√	√	√	x	x	x	x	x
70	21	4884	302	x	√	√	x	x	x	√	√	√	x	x	x	x	x
70	22	4884	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
70	23	4884	101	x	√	√	x	x	x	√	√	√	x	x	x	x	x
70	24	4884	6	√	√	√	x	√	x	√	√	√	x	x	x	x	x
71	1	4918	4987	x	√	√	x	x	√	√	√	√	x	√	√	x	√
71	2	4918	4571	x	√	√	x	x	√	√	√	√	x	√	x	x	x
71	3	4918	4060	x	√	√	x	x	√	√	√	√	x	x	x	x	x
71	4	4918	3550	x	√	√	x	x	√	√	√	√	x	√	x	x	x
71	5	4918	3040	x	x	x	x	x	√	√	√	√	x	√	√	x	√
71	6	4918	3041	x	√	√	x	x	x	√	√	√	x	x	x	x	x
71	7	4918	2528	x	√	√	x	x	√	√	√	√	x	√	x	x	x
71	8	4918	2021	x	√	√	x	x	√	√	√	√	x	√	x	x	x
71	9	4918	1815	x	√	√	x	x	√	√	√	√	x	x	x	x	x
71	10	4918	1616	x	√	√	x	x	√	√	√	√	x	x	x	x	x
71	11	4918	1412	x	√	√	x	x	√	√	√	√	x	x	x	x	x
71	12	4918	1210	x	√	√	x	x	√	√	√	√	x	x	x	x	x
71	13	4918	1008	x	x	x	x	x	√	√	√	√	x	x	√	x	√
71	14	4918	1008	x	√	√	x	x	x	√	√	√	x	x	x	x	x
71	15	4918	805	x	√	√	x	x	√	√	√	√	x	x	x	x	x
71	16	4918	705	x	√	√	x	x	√	√	√	√	x	x	x	x	x
71	17	4918	606	x	√	√	x	x	√	√	√	√	x	x	x	x	x
71	18	4918	504	x	√	√	x	x	√	√	√	√	x	x	x	x	x
71	19	4918	403	x	√	√	x	x	√	√	√	√	x	x	x	x	x
71	20	4918	302	x	√	√	x	x	√	√	√	√	x	x	x	x	x
71	21	4918	202	x	√	√	x	x	√	√	√	√	x	x	√	√	√
71	22	4918	100	x	√	√	x	x	√	√	√	√	x	x	x	√	x
71	23	4918	61	x	√	√	x	x	√	√	√	√	x	x	√	√	√
71	24	4918	5	x	√	√	x	x	√	√	√	√	x	x	√	√	√

ST	BTL	BOTTOM DEPTH (m)	Prs (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
72	1	4333	4358	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	2	4333	4061	√	√	√	√	√	x	√	√	√	x	x	x	x	x
72	3	4333	3548	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	4	4333	3040	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	5	4333	2782	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	6	4333	2532	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	7	4333	2276	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	8	4333	2022	√	√	√	√	√	x	√	√	√	x	x	x	x	x
72	9	4333	1818	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	10	4333	1613	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	11	4333	1412	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	12	4333	1211	√	√	√	√	√	x	√	√	√	x	x	x	x	x
72	13	4333	1008	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	14	4333	807	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	15	4333	706	√	x	√	x	√	x	√	√	√	x	x	x	x	x
72	16	4333	705	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	17	4333	604	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	18	4333	504	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	19	4333	404	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	20	4333	304	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	21	4333	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	22	4333	102	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	23	4333	75	√	√	√	x	√	x	√	√	√	x	x	x	x	x
72	24	4333	6	√	√	√	√	√	x	√	√	√	x	x	x	x	x
73	1	4073	3981	x	√	√	x	x	x	√	√	√	x	√	x	x	x
73	2	4073	3981	x	x	x	x	x	√	√	√	√	x	x	√	x	√
73	3	4073	3550	x	√	√	x	x	√	√	√	√	x	√	x	x	x
73	4	4073	3039	x	√	√	x	x	x	√	√	√	x	√	x	x	x
73	5	4073	2972	x	x	x	x	x	√	x	x	x	x	x	√	x	√
73	6	4073	2531	x	√	√	x	x	√	√	√	√	x	x	x	x	x
73	7	4073	2021	x	√	√	x	x	√	√	√	√	x	√	x	x	x
73	8	4073	1818	x	√	√	x	x	√	√	√	√	x	√	x	x	x
73	9	4073	1616	x	√	√	x	x	√	√	√	√	x	√	x	x	x
73	10	4073	1414	x	√	√	x	x	√	√	√	√	x	x	x	x	x
73	11	4073	1209	x	√	√	x	x	√	√	√	√	x	x	x	x	x
73	12	4073	1006	x	√	√	x	x	x	√	√	√	x	x	x	x	x
73	13	4073	1007	x	x	x	x	x	√	x	x	x	x	x	√	x	√
73	14	4073	805	x	√	√	x	x	√	√	√	√	x	x	x	x	x
73	15	4073	705	x	√	√	x	x	√	√	√	√	x	x	x	x	x
73	16	4073	603	x	√	√	x	x	√	√	√	√	x	x	x	x	x
73	17	4073	502	x	√	√	x	x	√	√	√	√	x	x	x	x	x
73	18	4073	400	x	√	√	x	x	√	√	√	√	x	x	x	x	x
73	19	4073	305	x	√	√	x	x	√	√	√	√	x	x	x	x	x
73	20	4073	203	x	√	√	x	x	√	√	√	√	x	x	√	√	√
73	21	4073	100	x	√	√	x	x	√	√	√	√	x	x	x	√	x
73	22	4073	73	x	√	√	x	x	√	√	√	√	x	x	√	√	√
73	23	4073	55	x	√	√	x	x	√	√	√	√	x	x	x	√	x
73	24	4073	6	x	√	√	x	x	√	√	√	√	x	x	√	√	√
74	1	3278	3299	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	2	3278	3299	√	√	√	x	x	x	√	√	√	x	x	x	x	x
74	3	3278	3039	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	4	3278	2786	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	5	3278	2530	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	6	3278	2275	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	7	3278	2022	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	8	3278	1818	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	9	3278	1615	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	10	3278	1413	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	11	3278	1210	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	12	3278	1010	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	13	3278	808	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	14	3278	704	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	15	3278	606	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	16	3278	504	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	17	3278	504	√	√	√	x	x	x	√	√	√	x	x	x	x	x
74	18	3278	403	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	19	3278	303	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	20	3278	253	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	21	3278	201	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	22	3278	100	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	23	3278	51	√	√	√	x	√	x	√	√	√	x	x	x	x	x
74	24	3278	7	√	√	√	x	√	x	√	√	√	x	x	x	x	x
75	1	3314	3335	x	x	x	x	x	√	x	x	x	x	x	√	x	√
75	2	3314	3335	x	√	√	x	x	x	x	x	x	x	√	x	x	x
75	3	3314	3039	x	x	x	x	x	√	√	√	√	x	x	√	x	√
75	4	3314	3040	x	√	√	x	x	x	x	x	x	x	x	x	x	x
75	5	3314	2528	x	√	√	x	x	√	√	√	√	x	√	x	x	x
75	6	3314	2272	x	√	√	x	x	√	√	√	√	x	x	x	x	x
75	7	3314	2021	x	√	√	x	x	√	√	√	√	x	√	x	x	x
75	8	3314	1818	x	√	√	x	x	√	√	√	√	x	√	x	x	x
75	9	3314	1615	x	√	√	x	x	√	√	√	√	x	√	x	x	x
75	10	3314	1410	x	√	√	x	x	√	√	√	√	x	√	x	x	x
75	11	3314	1211	x	√	√	x	x	√	√	√	√	x	x	x	x	x
75	12	3314	1007	x	√	√	x	x	x	√	√	√	x	x	x	x	x
75	13	3314	1006	x	x	x	x	x	√	x	x	x	x	x	√	x	√
75	14	3314	803	x	√	√	x	x	√	√	√	√	x	x	x	x	x
75	15	3314	703	x	√	√	x	x	√	√	√	√	x	x	x	x	x
75	16	3314	605	x	√	√	x	x	√	√	√	√	x	x	x	x	x
75	17	3314	503	x	√	√	x	x	√	√	√	√	x	x	x	x	x
75	18	3314	403	x	√	√	x	x	√	√	√	√	x	x	x	x	x
75	19	3314	300	x	√	√	x	x	√	√	√	√	x	x	x	x	x
75	20	3314	201	x	√	√	x	x	x	√	√	√	x	x	x	x	x
75	21	3314	200	x	x	x	x	x	√	√	√	√	x	x	√	√	√
75	22	3314	100	x	√	√	x	x	√	√	√	√	x	x	x	√	x
75	23	3314	61	x	√	√	x	x	√	√	√	√	x	x	√	√	√
75	24	3314	5	x	√	√	x	x	√	√	√	√	x	x	√	√	√

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
76	1	3446	3481	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	2	3446	3040	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	3	3446	3038	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	4	3446	2784	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	5	3446	2529	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	6	3446	2276	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	7	3446	2023	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	8	3446	1819	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	9	3446	1617	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	10	3446	1412	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	11	3446	1209	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	12	3446	1009	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	13	3446	806	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	14	3446	706	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	15	3446	605	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	16	3446	503	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	17	3446	404	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	18	3446	404	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	19	3446	302	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	20	3446	252	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	21	3446	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	22	3446	101	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	23	3446	50	√	√	√	x	√	x	√	√	√	x	x	x	x	x
76	24	3446	6	√	√	√	x	√	x	√	√	√	x	x	x	x	x
77	1	3813	3838	x	x	x	x	x	√	√	√	√	x	√	√	x	x
77	2	3813	3838	x	√	√	x	x	x	√	√	√	x	x	x	x	√
77	3	3813	3543	x	√	√	x	x	√	√	√	√	x	√	x	x	x
77	4	3813	3040	x	√	√	x	x	x	√	√	√	x	√	x	x	x
77	5	3813	3039	x	x	x	x	x	√	x	x	x	x	x	√	x	√
77	6	3813	2530	x	√	√	x	x	√	√	√	√	x	√	x	x	x
77	7	3813	2021	x	√	√	x	x	√	√	√	√	x	x	x	x	x
77	8	3813	1817	x	√	√	x	x	√	√	√	√	x	√	x	x	x
77	9	3813	1615	x	√	√	x	x	√	√	√	√	x	√	x	x	x
77	10	3813	1414	x	√	√	x	x	√	√	√	√	x	x	x	x	x
77	11	3813	1210	x	√	√	x	x	√	√	√	√	x	x	x	x	x
77	12	3813	1005	x	√	√	x	x	x	x	x	x	x	x	x	x	x
77	13	3813	1008	x	x	x	x	x	√	x	x	x	x	x	√	x	√
77	14	3813	806	x	√	√	x	x	√	√	√	√	x	x	x	x	x
77	15	3813	706	x	√	√	x	x	√	√	√	√	x	x	x	x	x
77	16	3813	604	x	√	√	x	x	√	√	√	√	x	x	x	x	x
77	17	3813	504	x	√	√	x	x	√	√	√	√	x	x	x	x	x
77	18	3813	402	x	√	√	x	x	√	√	√	√	x	x	x	x	x
77	19	3813	306	x	√	√	x	x	√	√	√	√	x	x	x	x	x
77	20	3813	203	x	√	√	x	x	√	√	√	√	x	x	x	x	x
77	21	3813	202	x	x	x	x	x	√	x	x	x	x	x	√	√	√
77	22	3813	102	x	√	√	x	x	√	√	√	√	x	x	x	√	x
77	23	3813	44	x	√	√	x	x	√	√	√	√	x	x	√	√	√
77	24	3813	6	x	√	√	x	x	√	√	√	√	x	x	√	√	√
78	1	3446	3482	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	2	3446	3483	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	3	3446	3039	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	4	3446	2783	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	5	3446	2529	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	6	3446	2275	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	7	3446	2021	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	8	3446	1818	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	9	3446	1616	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	10	3446	1413	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	11	3446	1209	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	12	3446	1009	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	13	3446	806	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	14	3446	705	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	15	3446	606	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	16	3446	500	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	17	3446	404	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	18	3446	300	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	19	3446	299	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	20	3446	252	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	21	3446	204	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	22	3446	101	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	23	3446	58	√	√	√	x	√	x	√	√	√	x	x	x	x	x
78	24	3446	7	√	√	√	x	√	x	√	√	√	x	x	x	x	x
79-1	1	4205	505	x	√	√	x	x	√	√	√	√	x	x	x	x	x
79-1	2	4205	505	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	3	4205	402	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	4	4205	302	x	√	√	x	x	√	√	√	√	x	x	√	x	x
79-1	5	4205	202	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	6	4205	203	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	7	4205	202	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	8	4205	202	x	√	√	x	x	√	√	√	√	x	x	√	√	x
79-1	9	4205	202	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	10	4205	99	x	√	√	x	x	√	√	√	√	x	x	√	√	x
79-1	11	4205	99	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	12	4205	70	x	√	√	x	x	√	√	√	√	x	x	√	√	x
79-1	13	4205	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	14	4205	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	15	4205	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	16	4205	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	17	4205	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	18	4205	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	19	4205	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	20	4205	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	21	4205	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	22	4205	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	23	4205	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-1	24	4205	6	x	√	√	x	x	x	√	√	√	x	x	√	√	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
79-2	1	4207	4254	x	√	√	x	x	√	√	√	√	x	x	√	x	√
79-2	2	4207	4255	x	x	x	x	x	x	x	x	x	x	x	x	x	x
79-2	3	4207	4061	x	√	√	x	x	√	√	√	√	x	x	x	x	x
79-2	4	4207	3550	x	√	√	x	x	√	√	√	√	x	√	x	x	x
79-2	5	4207	3039	x	x	x	x	x	√	x	x	x	x	x	√	x	√
79-2	6	4207	3039	x	√	√	x	x	x	√	√	√	x	x	x	x	x
79-2	7	4207	2531	x	x	x	x	x	√	x	x	x	x	√	x	x	x
79-2	8	4207	2532	x	√	√	x	x	x	√	√	√	x	x	x	x	x
79-2	9	4207	2275	x	√	√	x	x	√	√	√	√	x	√	x	x	x
79-2	10	4207	2022	x	√	√	x	x	x	√	√	√	x	x	x	x	x
79-2	11	4207	2021	x	x	x	x	x	√	x	x	x	x	√	x	x	x
79-2	12	4207	1819	x	√	√	x	x	√	√	√	√	x	√	x	x	x
79-2	13	4207	1615	x	√	√	x	x	√	√	√	√	x	x	x	x	x
79-2	14	4207	1411	x	√	√	x	x	√	√	√	√	x	√	x	x	x
79-2	15	4207	1210	x	√	√	x	x	√	√	√	√	x	x	x	x	x
79-2	16	4207	1009	x	x	x	x	x	√	x	x	x	x	x	√	x	√
79-2	17	4207	1009	x	√	√	x	x	x	√	√	√	x	x	x	x	x
79-2	18	4207	806	x	√	√	x	x	√	√	√	√	x	x	x	x	x
79-2	19	4207	706	x	√	√	x	x	√	√	√	√	x	x	x	x	x
79-2	20	4207	604	x	√	√	x	x	√	√	√	√	x	x	x	x	x
79-2	21	4207	503	x	x	x	x	x	√	x	x	x	x	x	x	x	x
79-2	22	4207	203	x	x	x	x	x	√	x	x	x	x	x	x	x	√
79-2	23	4207	65	x	x	x	x	x	√	x	x	x	x	x	x	x	√
79-2	24	4207	5	x	x	x	x	x	√	x	x	x	x	x	x	x	√
80	1	5042	5120	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	2	5042	4570	√	√	√	√	√	x	√	√	√	x	x	x	x	x
80	3	5042	4061	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	4	5042	3549	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	5	5042	3039	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	6	5042	2530	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	7	5042	2024	√	√	√	√	√	x	√	√	√	x	x	x	x	x
80	8	5042	1819	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	9	5042	1615	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	10	5042	1413	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	11	5042	1212	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	12	5042	1010	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	13	5042	807	√	√	√	√	√	x	√	√	√	x	x	x	x	x
80	14	5042	706	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	15	5042	606	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	16	5042	503	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	17	5042	404	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	18	5042	302	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	19	5042	252	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	20	5042	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	21	5042	151	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	22	5042	102	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	23	5042	51	√	√	√	x	√	x	√	√	√	x	x	x	x	x
80	24	5042	5	√	√	√	√	√	x	√	√	√	x	x	x	x	x
81	1	5284	5373	x	√	√	x	x	√	√	√	√	x	√	x	x	x
81	2	5284	4575	x	√	√	x	x	√	√	√	√	x	√	x	x	x
81	3	5284	4059	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	4	5284	3549	x	√	√	x	x	√	√	√	√	x	√	x	x	x
81	5	5284	3040	x	√	√	x	x	√	√	√	√	x	√	x	x	x
81	6	5284	2784	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	7	5284	2530	x	√	√	x	x	√	√	√	√	x	√	x	x	x
81	8	5284	2274	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	9	5284	2024	x	√	√	x	x	√	√	√	√	x	√	x	x	x
81	10	5284	1819	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	11	5284	1616	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	12	5284	1414	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	13	5284	1210	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	14	5284	1005	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	15	5284	807	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	16	5284	706	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	17	5284	605	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	18	5284	502	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	19	5284	405	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	20	5284	303	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	21	5284	202	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	22	5284	123	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	23	5284	100	x	√	√	x	x	√	√	√	√	x	x	x	x	x
81	24	5284	6	x	√	√	x	x	√	√	√	√	x	x	x	x	x
82	1	5483	5590	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	2	5483	5089	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	3	5483	4574	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	4	5483	4061	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	5	5483	3550	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	6	5483	3039	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	7	5483	2529	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	8	5483	2277	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	9	5483	2022	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	10	5483	1819	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	11	5483	1615	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	12	5483	1413	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	13	5483	1211	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	14	5483	1009	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	15	5483	808	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	16	5483	705	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	17	5483	605	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	18	5483	504	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	19	5483	403	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	20	5483	303	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	21	5483	201	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	22	5483	100	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	23	5483	69	√	√	√	x	√	x	√	√	√	x	x	x	x	x
82	24	5483	6	√	√	√	x	√	x	√	√	√	x	x	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
83-1	1	5465	206	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	2	5465	206	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	3	5465	205	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	4	5465	204	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	5	5465	205	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	6	5465	206	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	7	5465	204	x	x	x	x	x	√	x	x	x	x	x	√	√	√
83-1	8	5465	204	√	√	√	x	x	x	√	√	√	x	x	x	x	x
83-1	9	5465	101	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	10	5465	101	x	x	x	x	x	√	x	x	x	x	x	x	√	x
83-1	11	5465	101	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	12	5465	101	√	√	√	x	x	x	√	√	√	x	x	x	x	x
83-1	13	5465	100	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	14	5465	51	√	√	√	x	x	x	√	√	√	x	x	x	x	x
83-1	15	5465	51	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	16	5465	51	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	17	5465	51	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	18	5465	51	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	19	5465	6	x	x	x	x	x	√	x	x	x	x	x	√	√	√
83-1	20	5465	6	√	√	√	x	x	x	√	√	√	x	x	x	x	x
83-1	21	5465	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	22	5465	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	23	5465	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-1	24	5465	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-2	1	5465	5562	x	√	√	x	x	√	√	√	√	x	x	√	x	√
83-2	2	5465	5089	√	√	√	x	x	√	√	√	√	x	x	x	x	x
83-2	3	5465	4061	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-2	4	5465	3551	√	√	√	x	x	√	√	√	√	x	x	x	x	x
83-2	5	5465	3039	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-2	6	5465	3039	x	x	x	x	x	√	x	x	x	x	x	√	x	√
83-2	7	5465	3038	√	√	√	x	x	x	√	√	√	x	x	x	x	x
83-2	8	5465	2530	√	√	√	x	x	√	√	√	√	x	x	x	x	x
83-2	9	5465	2022	√	√	√	x	x	√	√	√	√	x	x	x	x	x
83-2	10	5465	1818	√	√	√	x	x	√	√	√	√	x	x	x	x	x
83-2	11	5465	1617	√	√	√	x	x	√	√	√	√	x	x	x	x	x
83-2	12	5465	1414	√	√	√	x	x	√	√	√	√	x	x	x	x	x
83-2	13	5465	1211	√	√	√	x	x	√	√	√	√	x	x	x	x	x
83-2	14	5465	1009	√	√	√	x	x	√	√	√	√	x	x	√	x	x
83-2	15	5465	807	√	√	√	x	x	√	√	√	√	x	x	x	x	x
83-2	16	5465	707	√	√	√	x	x	√	√	√	√	x	x	x	x	x
83-2	17	5465	604	√	√	√	x	x	√	√	√	√	x	x	x	x	x
83-2	18	5465	503	√	√	√	x	x	x	√	√	√	x	x	x	x	x
83-2	19	5465	503	x	√	√	x	x	√	√	√	√	x	x	x	x	x
83-2	20	5465	427	x	x	x	x	x	x	x	x	x	x	x	x	x	x
83-2	21	5465	427	x	x	x	x	x	√	√	√	√	x	x	√	x	√
83-2	22	5465	427	√	√	√	x	x	x	x	x	x	x	x	x	x	x
83-2	23	5465	301	√	√	√	x	x	√	√	√	√	x	x	x	x	x
83-2	24	5465	69	x	x	x	x	x	√	√	√	√	x	x	√	√	√
84	1	5455	5555	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	2	5455	5088	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	3	5455	4575	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	4	5455	4061	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	5	5455	3550	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	6	5455	3037	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	7	5455	2531	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	8	5455	2277	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	9	5455	2021	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	10	5455	1820	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	11	5455	1617	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	12	5455	1414	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	13	5455	1211	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	14	5455	1008	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	15	5455	808	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	16	5455	704	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	17	5455	603	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	18	5455	505	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	19	5455	406	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	20	5455	302	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	21	5455	201	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	22	5455	100	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	23	5455	81	√	√	√	x	√	√	√	√	√	x	x	x	x	x
84	24	5455	6	√	√	√	x	√	√	√	√	√	x	x	x	x	x
85	1	5177	5266	x	x	x	x	x	√	x	x	x	x	x	√	x	√
85	2	5177	5265	√	√	√	x	x	x	√	√	√	x	√	x	x	x
85	3	5177	4883	x	x	x	x	x	x	x	x	x	x	x	x	x	x
85	4	5177	4062	√	√	√	x	x	√	√	√	√	x	√	x	x	x
85	5	5177	3552	√	√	√	x	x	√	√	√	√	x	x	x	x	x
85	6	5177	3040	x	x	x	x	x	√	x	x	x	x	x	√	x	√
85	7	5177	3041	√	√	√	x	x	x	√	√	√	x	√	x	x	x
85	8	5177	2529	√	√	√	x	x	√	√	√	√	x	x	x	x	x
85	9	5177	2022	√	√	√	x	x	√	√	√	√	x	√	x	x	x
85	10	5177	1717	√	√	√	x	x	√	√	√	√	x	√	x	x	x
85	11	5177	1411	√	√	√	x	x	√	√	√	√	x	x	x	x	x
85	12	5177	1209	√	√	√	x	x	√	√	√	√	x	x	x	x	x
85	13	5177	1009	√	√	√	x	x	√	√	√	√	x	x	√	x	√
85	14	5177	812	√	√	√	x	x	√	√	√	√	x	x	x	x	x
85	15	5177	706	√	√	√	x	x	√	√	√	√	x	x	x	x	x
85	16	5177	607	√	√	√	x	x	√	√	√	√	x	x	x	x	x
85	17	5177	504	√	√	√	x	x	√	√	√	√	x	x	x	x	x
85	18	5177	403	√	√	√	x	x	√	√	√	√	x	x	x	x	x
85	19	5177	324	x	x	x	x	x	√	x	x	x	x	x	√	x	√
85	20	5177	324	√	√	√	x	x	x	√	√	√	x	x	x	x	x
85	21	5177	202	√	√	√	x	x	√	√	√	√	x	x	x	√	x
85	22	5177	101	√	√	√	x	x	√	√	√	√	x	x	x	√	x
85	23	5177	61	√	√	√	x	x	√	√	√	√	x	x	√	√	√
85	24	5177	6	√	√	√	x	x	√	√	√	√	x	x	√	√	√

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
86	1	4893	5003	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	2	4893	4575	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	3	4893	4063	x	x	x	x	x	x	x	x	x	x	x	x	x	x
86	4	4893	3807	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	5	4893	3549	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	6	4893	3040	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	7	4893	2531	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	8	4893	2277	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	9	4893	2022	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	10	4893	1819	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	11	4893	1616	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	12	4893	1414	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	13	4893	1210	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	14	4893	1010	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	15	4893	806	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	16	4893	706	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	17	4893	605	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	18	4893	503	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	19	4893	403	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	20	4893	302	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	21	4893	201	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	22	4893	102	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	23	4893	50	√	√	√	x	√	√	√	√	√	x	x	x	x	x
86	24	4893	6	√	√	√	x	√	√	√	√	√	x	x	x	x	x
87	1	4324	4369	x	x	x	x	x	√	x	x	x	x	x	√	x	√
87	2	4324	4368	√	√	√	x	x	x	√	√	√	x	x	x	x	x
87	3	4324	4063	√	√	√	x	x	√	√	√	√	x	x	x	x	x
87	4	4324	3551	√	√	√	x	x	√	√	√	√	x	x	x	x	x
87	5	4324	3041	x	x	x	x	x	√	x	x	x	x	x	√	x	√
87	6	4324	3041	√	√	√	x	x	x	√	√	√	x	x	x	x	x
87	7	4324	2529	√	√	√	x	x	√	√	√	√	x	x	x	x	x
87	8	4324	2022	√	√	√	x	x	√	√	√	√	x	x	x	x	x
87	9	4324	1714	√	√	√	x	x	√	√	√	√	x	x	x	x	x
87	10	4324	1415	√	√	√	x	x	√	√	√	√	x	x	x	x	x
87	11	4324	1210	√	√	√	x	x	√	√	√	√	x	x	x	x	x
87	12	4324	1008	√	√	√	x	x	x	√	√	√	x	x	x	x	x
87	13	4324	1008	x	x	x	x	x	√	x	x	x	x	x	√	x	√
87	14	4324	808	√	√	√	x	x	√	√	√	√	x	x	x	x	x
87	15	4324	706	√	√	√	x	x	√	√	√	√	x	x	x	x	x
87	16	4324	606	√	√	√	x	x	√	√	√	√	x	x	x	x	x
87	17	4324	507	√	√	√	x	x	√	√	√	√	x	x	x	x	x
87	18	4324	404	√	√	√	x	x	√	√	√	√	x	x	x	x	x
87	19	4324	404	x	x	x	x	x	√	√	√	√	x	x	√	x	√
87	20	4324	302	√	√	√	x	x	√	√	√	√	x	x	x	x	x
87	21	4324	201	√	√	√	x	x	√	√	√	√	x	x	x	√	x
87	22	4324	91	√	√	√	x	x	√	√	√	√	x	x	√	√	√
87	23	4324	51	√	√	√	x	x	√	√	√	√	x	x	x	√	x
87	24	4324	6	√	√	√	x	x	√	√	√	√	x	x	√	√	√
88	1	4881	4959	√	√	√	x	√	√	√	√	√	x	√	x	x	x
88	2	4881	4578	√	√	√	x	√	√	√	√	√	x	x	x	x	x
88	3	4881	4063	√	√	√	√	√	√	√	√	√	x	√	x	x	x
88	4	4881	3552	√	√	√	x	√	√	√	√	√	x	x	x	x	x
88	5	4881	3040	√	√	√	x	√	√	√	√	√	x	√	x	x	x
88	6	4881	2786	√	√	√	x	√	√	√	√	√	x	x	x	x	x
88	7	4881	2530	√	√	√	x	√	√	√	√	√	x	√	x	x	x
88	8	4881	2276	√	√	√	x	√	√	√	√	√	x	√	x	x	x
88	9	4881	2022	√	√	√	√	√	√	√	√	√	x	x	x	x	x
88	10	4881	1819	√	√	√	x	√	√	√	√	√	x	x	x	x	x
88	11	4881	1615	√	√	√	x	√	√	√	√	√	x	√	x	x	x
88	12	4881	1414	√	√	√	x	√	√	√	√	√	x	x	x	x	x
88	13	4881	1211	√	√	√	x	√	√	√	√	√	x	x	x	x	x
88	14	4881	1009	√	√	√	√	√	√	√	√	√	x	x	x	x	x
88	15	4881	806	√	√	√	x	√	√	√	√	√	x	x	x	x	x
88	16	4881	706	√	√	√	x	√	√	√	√	√	x	x	x	x	x
88	17	4881	605	√	√	√	x	√	√	√	√	√	x	x	x	x	x
88	18	4881	503	√	√	√	x	√	√	√	√	√	x	x	x	x	x
88	19	4881	403	√	√	√	x	√	√	√	√	√	x	x	x	x	x
88	20	4881	301	√	√	√	x	√	√	√	√	√	x	x	x	x	x
88	21	4881	201	√	√	√	x	√	√	√	√	√	x	x	x	√	x
88	22	4881	100	√	√	√	x	√	√	√	√	√	x	x	x	√	x
88	23	4881	52	√	√	√	x	√	√	√	√	√	x	x	x	√	x
88	24	4881	5	√	√	√	√	√	√	√	√	√	x	x	x	√	x
89-1	1	5104	303	√	√	√	x	x	√	√	√	√	x	x	x	x	x
89-1	2	5104	253	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	3	5104	253	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	4	5104	254	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	5	5104	254	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	6	5104	253	√	√	√	x	x	x	√	√	√	x	x	x	x	x
89-1	7	5104	253	x	x	x	x	x	√	x	x	x	x	x	√	√	√
89-1	8	5104	90	√	√	√	x	x	x	√	√	√	x	x	x	x	x
89-1	9	5104	90	x	x	x	x	x	√	x	x	x	x	x	√	√	√
89-1	10	5104	51	x	x	x	x	x	√	x	x	x	x	x	x	√	x
89-1	11	5104	6	x	x	x	x	x	√	x	x	x	x	x	√	√	√
89-1	12	5104	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	13	5104	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	14	5104	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	15	5104	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	16	5104	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	17	5104	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	18	5104	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	19	5104	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	20	5104	7	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	21	5104	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	22	5104	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	23	5104	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-1	24	5104	6	√	√	√	x	x	x	√	√	√	x	x	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
89-2	1	5100	5189	x	√	√	x	x	√	√	√	√	x	x	√	x	√
89-2	2	5100	5190	√	x	x	x	x	x	x	x	x	x	x	x	x	x
89-2	3	5100	4578	√	√	√	x	x	√	√	√	√	x	x	x	x	x
89-2	4	5100	4065	x	√	√	x	x	√	√	√	√	x	x	x	x	x
89-2	5	5100	3552	√	√	√	x	x	√	√	√	√	x	x	x	x	x
89-2	6	5100	3042	x	√	√	x	x	√	√	√	√	x	x	√	x	√
89-2	7	5100	3040	√	x	x	x	x	x	x	x	x	x	x	x	x	x
89-2	8	5100	2532	x	√	√	x	x	√	√	√	√	x	x	x	x	x
89-2	9	5100	2531	√	x	x	x	x	x	x	x	x	x	x	x	x	x
89-2	10	5100	2276	x	√	√	x	x	√	√	√	√	x	x	x	x	x
89-2	11	5100	2023	x	√	√	x	x	√	√	√	√	x	x	x	x	x
89-2	12	5100	2022	√	x	x	x	x	x	x	x	x	x	x	x	x	x
89-2	13	5100	1820	√	√	√	x	x	√	√	√	√	x	x	x	x	x
89-2	14	5100	1617	x	√	√	x	x	√	√	√	√	x	x	x	x	x
89-2	15	5100	1413	√	√	√	x	x	√	√	√	√	x	x	x	x	x
89-2	16	5100	1212	√	√	√	x	x	√	√	√	√	x	x	x	x	x
89-2	17	5100	1010	x	√	√	x	x	√	√	√	√	x	x	√	x	√
89-2	18	5100	1010	√	x	x	x	x	x	x	x	x	x	x	x	x	x
89-2	19	5100	807	√	√	√	x	x	√	√	√	√	x	x	x	x	x
89-2	20	5100	707	√	√	√	x	x	√	√	√	√	x	x	√	x	√
89-2	21	5100	707	x	x	x	x	x	x	x	x	x	x	x	x	x	x
89-2	22	5100	605	√	√	√	x	x	√	√	√	√	x	x	x	x	x
89-2	23	5100	504	√	√	√	x	x	√	√	√	√	x	x	x	x	x
89-2	24	5100	404	√	√	√	x	x	√	√	√	√	x	x	x	x	x
90	1	5598	5680	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	2	5598	5091	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	3	5598	4577	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	4	5598	4064	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	5	5598	3552	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	6	5598	3041	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	7	5598	2531	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	8	5598	2278	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	9	5598	2022	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	10	5598	1818	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	11	5598	1616	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	12	5598	1414	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	13	5598	1211	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	14	5598	1007	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	15	5598	807	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	16	5598	705	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	17	5598	607	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	18	5598	503	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	19	5598	403	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	20	5598	302	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	21	5598	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
90	22	5598	127	√	√	√	x	√	x	√	√	√	x	x	x	√	x
90	23	5598	93	√	√	√	x	√	x	√	√	√	x	x	x	√	x
90	24	5598	6	√	√	√	x	√	x	√	√	√	x	x	x	√	x
91	1	5631	5757	√	√	√	x	x	√	√	√	√	x	√	x	x	x
91	2	5631	5093	√	√	√	x	x	√	√	√	√	x	√	x	x	x
91	3	5631	4577	√	√	√	x	x	√	√	√	√	x	x	x	x	x
91	4	5631	4065	√	√	√	x	x	√	√	√	√	x	√	x	x	x
91	5	5631	3553	√	√	√	x	x	√	√	√	√	x	√	x	x	x
91	6	5631	3042	x	√	√	x	x	√	√	√	√	x	x	x	x	x
91	7	5631	2531	√	√	√	x	x	√	√	√	√	x	√	x	x	x
91	8	5631	2277	√	√	√	x	x	√	√	√	√	x	x	x	x	x
91	9	5631	2022	√	√	√	x	x	√	√	√	√	x	√	x	x	x
91	10	5631	1821	√	√	√	x	x	√	√	√	√	x	x	x	x	x
91	11	5631	1616	√	√	√	x	x	√	√	√	√	x	x	x	x	x
91	12	5631	1414	√	√	√	x	x	√	√	√	√	x	x	x	x	x
91	13	5631	1212	√	√	√	x	x	√	√	√	√	x	x	x	x	x
91	14	5631	1010	x	√	√	x	x	√	√	√	√	x	x	x	x	x
91	15	5631	808	√	√	√	x	x	√	√	√	√	x	x	x	x	x
91	16	5631	706	√	√	√	x	x	√	√	√	√	x	x	x	x	x
91	17	5631	606	√	√	√	x	x	√	√	√	√	x	x	x	x	x
91	18	5631	503	√	√	√	x	x	√	√	√	√	x	x	x	x	x
91	19	5631	402	√	√	√	x	x	√	√	√	√	x	x	x	x	x
91	20	5631	304	√	√	√	x	x	√	√	√	√	x	x	x	x	x
91	21	5631	202	√	√	√	x	x	√	√	√	√	x	x	x	√	x
91	22	5631	105	√	√	√	x	x	√	√	√	√	x	x	x	√	x
91	23	5631	51	√	√	√	x	x	√	√	√	√	x	x	x	√	x
91	24	5631	6	√	√	√	x	x	√	√	√	√	x	x	x	√	x
92	1	5193	5267	√	√	√	x	√	√	√	√	√	x	√	x	x	x
92	2	5193	5093	√	√	√	x	√	√	√	√	√	x	√	x	x	x
92	3	5193	4579	√	√	√	x	√	√	√	√	√	x	√	x	x	x
92	4	5193	4065	√	√	√	x	√	√	√	√	√	x	√	x	x	x
92	5	5193	3552	√	√	√	x	√	√	√	√	√	x	√	x	x	x
92	6	5193	3042	√	√	√	x	√	√	√	√	√	x	√	x	x	x
92	7	5193	2533	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	8	5193	2278	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	9	5193	2024	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	10	5193	1822	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	11	5193	1617	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	12	5193	1415	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	13	5193	1212	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	14	5193	1009	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	15	5193	808	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	16	5193	707	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	17	5193	605	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	18	5193	505	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	19	5193	405	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	20	5193	303	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	21	5193	202	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	22	5193	122	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	23	5193	51	√	√	√	x	√	√	√	√	√	x	x	x	x	x
92	24	5193	6	√	√	√	x	√	√	√	√	√	x	x	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
93	1	5187	5292	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	2	5187	5094	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	3	5187	4578	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	4	5187	4065	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	5	5187	3554	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	6	5187	3044	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	7	5187	2533	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	8	5187	2279	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	9	5187	2024	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	10	5187	1821	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	11	5187	1619	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	12	5187	1415	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	13	5187	1211	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	14	5187	1011	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	15	5187	807	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	16	5187	707	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	17	5187	606	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	18	5187	505	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	19	5187	405	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	20	5187	305	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	21	5187	205	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	22	5187	129	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	23	5187	72	√	√	√	x	x	√	√	√	√	x	x	x	x	x
93	24	5187	6	√	√	√	x	x	√	√	√	√	x	x	x	x	x
94	1	4437	4511	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	2	4437	4067	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	3	4437	3553	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	4	4437	3044	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	5	4437	2534	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	6	4437	2279	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	7	4437	2024	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	8	4437	1821	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	9	4437	1617	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	10	4437	1416	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	11	4437	1212	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	12	4437	1010	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	13	4437	807	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	14	4437	706	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	15	4437	606	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	16	4437	505	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	17	4437	404	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	18	4437	353	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	19	4437	351	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	20	4437	303	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	21	4437	203	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	22	4437	161	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	23	4437	82	√	√	√	x	√	x	√	√	√	x	x	x	x	x
94	24	4437	7	√	x	√	x	√	x	√	√	√	x	x	x	x	x
95	1	4195	4454	√	√	√	x	x	x	√	√	√	x	x	x	x	x
95	2	4195	4455	√	x	x	x	x	√	√	√	√	x	x	√	x	√
95	3	4195	4066	√	√	√	x	x	√	√	√	√	x	x	x	x	x
95	4	4195	3554	√	√	√	x	x	√	√	√	√	x	x	x	x	x
95	5	4195	3042	√	√	√	x	x	√	√	√	√	x	x	x	x	x
95	6	4195	2533	√	√	√	x	x	x	√	√	√	x	x	x	x	x
95	7	4195	2533	x	x	x	x	x	√	√	√	√	x	x	√	x	√
95	8	4195	2027	√	√	√	x	x	√	√	√	√	x	x	x	x	x
95	9	4195	1822	√	√	√	x	x	√	√	√	√	x	x	x	x	x
95	10	4195	1616	√	√	√	x	x	√	√	√	√	x	x	x	x	x
95	11	4195	1414	√	√	√	x	x	√	√	√	√	x	x	x	x	x
95	12	4195	1212	√	√	√	x	x	√	√	√	√	x	x	x	x	x
95	13	4195	1011	x	√	√	x	x	x	√	√	√	x	x	x	x	x
95	14	4195	1011	√	x	x	x	x	√	√	√	√	x	x	√	x	√
95	15	4195	806	√	√	√	x	x	√	√	√	√	x	x	x	x	x
95	16	4195	706	√	√	√	x	x	√	√	√	√	x	x	x	x	x
95	17	4195	606	√	√	√	x	x	√	√	√	√	x	x	x	x	x
95	18	4195	506	√	√	√	x	x	√	√	√	√	x	x	x	x	x
95	19	4195	404	√	√	√	x	x	√	√	√	√	x	x	x	x	x
95	20	4195	302	√	√	√	x	x	√	√	√	√	x	x	√	x	√
95	21	4195	201	√	√	√	x	x	√	√	√	√	x	x	x	√	x
95	22	4195	112	√	√	√	x	x	√	√	√	√	x	x	√	√	√
95	23	4195	53	√	√	√	x	x	√	√	√	√	x	x	x	√	x
95	24	4195	6	√	√	√	x	x	√	√	√	√	x	x	√	√	√
97	1	3614	3653	√	√	x	x	√	x	√	√	√	x	x	√	x	x
97	2	3614	3556	√	√	√	√	√	x	√	√	√	x	√	x	x	x
97	3	3614	3045	x	x	x	x	x	x	x	x	x	x	x	x	x	x
97	4	3614	3044	x	√	√	x	x	x	√	√	√	x	x	√	x	√
97	5	3614	2536	√	√	√	x	√	x	√	√	√	x	√	x	x	x
97	6	3614	2280	√	√	√	x	√	x	√	√	√	x	x	x	x	x
97	7	3614	2025	√	√	√	√	√	x	√	√	√	x	√	x	x	x
97	8	3614	2025	x	x	x	x	x	x	√	√	√	x	x	√	x	√
97	9	3614	1820	√	√	√	x	√	x	√	√	√	x	x	x	x	x
97	10	3614	1619	√	√	√	x	√	x	√	√	√	x	x	x	x	x
97	11	3614	1416	√	√	√	x	√	x	√	√	√	x	x	x	x	x
97	12	3614	1213	√	√	√	x	√	x	√	√	√	x	x	x	x	x
97	13	3614	1012	√	√	√	√	√	x	√	√	√	x	x	x	x	x
97	14	3614	1012	x	x	x	x	x	x	√	√	√	x	x	√	x	√
97	15	3614	809	√	√	√	x	√	x	√	√	√	x	x	x	x	x
97	16	3614	606	√	√	√	x	√	x	√	√	√	x	x	x	x	x
97	17	3614	402	√	√	√	x	√	x	√	√	√	x	x	x	x	x
97	18	3614	303	x	x	x	x	x	x	√	√	√	x	x	√	x	√
97	19	3614	304	√	√	√	x	√	x	√	√	√	x	x	x	x	x
97	20	3614	203	√	√	√	x	√	x	√	√	√	x	x	x	√	x
97	21	3614	100	√	√	√	x	√	x	√	√	√	x	x	x	x	x
97	22	3614	101	x	x	x	x	x	x	√	√	√	x	x	√	√	√
97	23	3614	6	√	√	√	√	√	x	√	√	√	x	x	x	√	x
97	24	3614	6	x	x	√	x	x	x	√	√	√	x	x	√	√	√

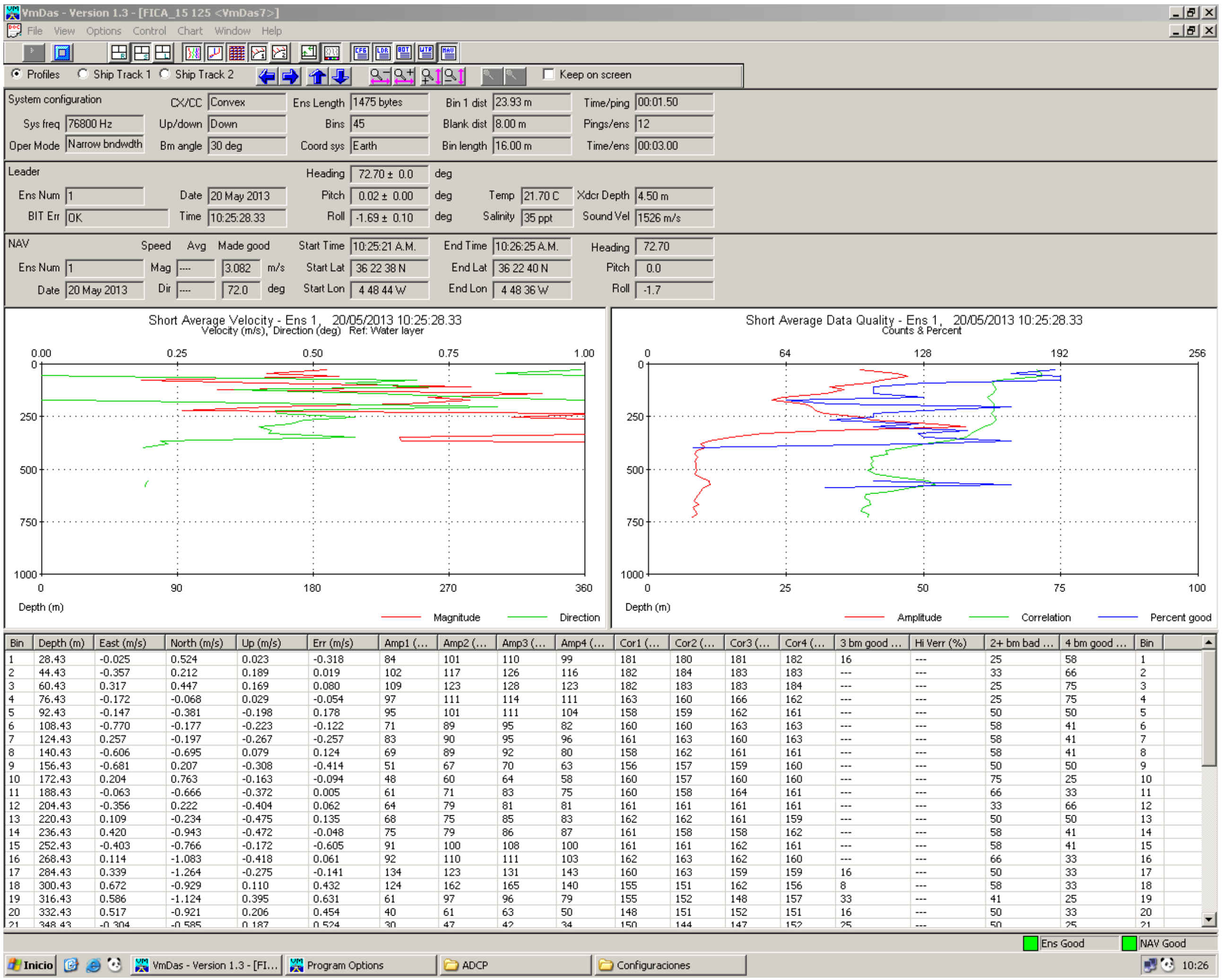
ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
99	1	4398	4438	√	√	√	x	√	√	√	√	√	x	√	√	x	x
99	2	4398	4068	√	√	√	x	√	√	√	√	√	x	√	x	x	x
99	3	4398	3556	√	√	√	x	√	√	√	√	√	x	√	x	x	x
99	4	4398	3043	x	x	x	x	x	√	√	√	√	x	x	√	x	√
99	5	4398	3043	√	√	√	x	√	x	√	√	√	x	√	x	x	x
99	6	4398	2534	√	√	√	x	√	√	√	√	√	x	√	x	x	x
99	7	4398	2278	√	√	√	x	√	√	√	√	√	x	x	x	x	x
99	8	4398	2022	x	x	x	x	x	√	√	√	√	x	x	√	x	√
99	9	4398	2021	√	√	√	x	√	x	√	√	√	x	x	x	x	x
99	10	4398	1819	√	√	√	x	√	√	√	√	√	x	x	x	x	x
99	11	4398	1619	√	√	√	x	√	√	√	√	√	x	x	x	x	x
99	12	4398	1415	√	√	√	x	√	√	√	√	√	x	x	x	x	x
99	13	4398	1110	x	x	x	x	x	x	x	x	x	x	x	x	x	x
99	14	4398	910	x	x	x	x	x	√	√	√	√	x	x	√	x	√
99	15	4398	910	√	√	√	x	√	x	√	√	√	x	x	x	x	x
99	16	4398	710	√	√	√	x	√	√	√	√	√	x	x	x	x	x
99	17	4398	610	√	√	√	x	√	√	√	√	√	x	x	x	x	x
99	18	4398	405	√	√	√	x	√	√	√	√	√	x	x	x	x	x
99	19	4398	302	√	√	√	x	√	x	√	√	√	x	x	x	x	x
99	20	4398	303	x	x	x	x	x	√	√	√	√	x	x	√	x	√
99	21	4398	202	√	√	√	x	√	√	√	√	√	x	x	x	√	x
99	22	4398	100	√	√	√	x	√	√	√	√	√	x	x	x	√	x
99	23	4398	66	√	√	√	x	√	√	√	√	√	x	x	√	√	√
99	24	4398	7	√	√	√	x	√	√	√	√	√	x	x	√	√	√
100	1	4921	5007	√	√	√	x	√	x	√	√	√	x	√	x	x	x
100	2	4921	4067	x	√	√	x	√	x	√	√	√	x	x	x	x	x
100	3	4921	3558	√	√	√	x	√	x	√	√	√	x	√	x	x	x
100	4	4921	3038	x	x	x	x	x	x	√	√	√	x	x	x	x	x
100	5	4921	3040	√	√	√	x	√	x	√	√	√	x	√	x	x	x
100	6	4921	2535	√	√	√	x	√	x	√	√	√	x	x	x	x	x
100	7	4921	2280	√	√	√	x	√	x	√	√	√	x	√	x	x	x
100	8	4921	2028	x	x	x	x	x	x	√	√	√	x	x	x	x	x
100	9	4921	2028	√	√	√	x	√	x	√	√	√	x	√	x	x	x
100	10	4921	1823	√	√	√	x	√	x	√	√	√	x	x	x	x	x
100	11	4921	1620	√	√	√	x	x	x	√	√	√	x	x	x	x	x
100	12	4921	1419	√	√	√	x	√	x	√	√	√	x	x	x	x	x
100	13	4921	1212	√	√	√	x	√	x	√	√	√	x	x	x	x	x
100	14	4921	1011	x	x	x	x	x	x	√	√	√	x	x	x	x	x
100	15	4921	1011	√	√	√	x	√	x	√	√	√	x	x	x	x	x
100	16	4921	808	√	√	√	x	√	x	√	√	√	x	x	x	x	x
100	17	4921	606	√	√	√	x	x	x	√	√	√	x	x	x	x	x
100	18	4921	404	√	√	√	x	√	x	√	√	√	x	x	x	x	x
100	19	4921	303	x	x	x	x	x	x	x	x	x	x	x	x	x	x
100	20	4921	302	√	√	√	x	√	x	√	√	√	x	x	x	x	x
100	21	4921	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
100	22	4921	102	√	√	√	x	√	x	√	√	√	x	x	x	x	x
100	23	4921	103	x	x	x	x	x	x	√	√	√	x	x	x	x	x
100	24	4921	6	√	√	√	x	√	x	√	√	√	x	√	x	x	x
101	1	4843	4831	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	2	4843	4583	√	√	√	x	x	√	√	√	√	x	x	√	x	√
101	3	4843	4583	x	x	x	x	x	x	x	x	x	x	√	x	x	x
101	4	4843	4583	x	x	x	x	x	x	√	√	√	x	√	x	x	x
101	5	4843	4067	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	6	4843	3556	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	7	4843	3044	√	√	√	x	x	√	√	√	√	x	x	√	x	√
101	8	4843	2533	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	9	4843	2278	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	10	4843	2027	√	√	√	x	x	√	√	√	√	x	x	√	x	√
101	11	4843	1821	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	12	4843	1617	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	13	4843	1414	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	14	4843	1211	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	15	4843	1008	√	√	√	x	x	√	√	√	√	x	x	√	x	√
101	16	4843	808	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	17	4843	706	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	18	4843	604	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	19	4843	504	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	20	4843	402	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	21	4843	307	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	22	4843	202	√	√	√	x	x	√	√	√	√	x	x	x	x	x
101	23	4843	92	√	√	√	x	x	√	√	√	√	x	x	√	x	√
101	24	4843	6	√	√	√	x	x	√	√	√	√	x	x	√	x	√
102	1	5474	5585	√	√	√	x	√	√	√	√	√	x	x	x	x	x
102	2	5474	5096	x	x	x	x	x	x	x	x	x	x	x	x	x	x
102	3	5474	5096	√	√	√	x	√	√	√	√	√	x	x	√	x	√
102	4	5474	5095	x	x	x	x	x	x	x	x	x	x	x	x	x	x
102	5	5474	5095	x	x	x	x	x	x	x	x	x	x	x	x	x	x
102	6	5474	4583	√	√	√	x	√	√	√	√	√	x	x	x	x	x
102	7	5474	4069	√	√	√	x	√	√	√	√	√	x	x	x	x	x
102	8	5474	3554	√	√	√	x	√	√	√	√	√	x	x	x	x	x
102	9	5474	3045	√	√	√	x	√	√	√	√	√	x	x	x	x	x
102	10	5474	2535	√	√	√	x	√	√	√	√	√	x	x	x	x	x
102	11	5474	2278	√	√	√	x	√	√	√	√	√	x	x	√	x	√
102	12	5474	2023	√	√	√	x	√	√	√	√	√	x	x	x	x	x
102	13	5474	1823	√	√	√	x	√	√	√	√	√	x	x	x	x	x
102	14	5474	1517	√	√	√	x	√	√	√	√	√	x	x	x	x	x
102	15	5474	1215	√	√	√	x	√	√	√	√	√	x	x	x	x	x
102	16	5474	808	√	√	√	x	√	√	√	√	√	x	x	√	x	√
102	17	5474	705	√	√	√	x	√	√	√	√	√	x	x	x	x	x
102	18	5474	607	√	√	√	x	√	√	√	√	√	x	x	x	x	x
102	19	5474	505	√	√	√	x	√	√	√	√	√	x	x	x	x	x
102	20	5474	406	√	√	√	x	√	√	√	√	√	x	x	x	x	x
102	21	5474	302	√	√	√	x	√	√	√	√	√	x	x	√	x	√
102	22	5474	202	√	√	√	x	√	√	√	√	√	x	x	x	x	x
102	23	5474	52	√	√	√	x	√	√	√	√	√	x	x	√	x	√
102	24	5474	6	√	√	√	x	√	√	√	√	√	x	x	√	x	√

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
103	1	5403	5475	√	√	√	x	x	x	√	√	√	x	√	x	x	x
103	2	5403	5097	x	x	x	x	x	x	x	x	x	x	x	x	x	x
103	3	5403	5097	√	√	√	x	x	x	√	√	√	x	√	x	x	x
103	4	5403	5097	x	x	x	x	x	x	x	x	x	x	x	x	x	x
103	5	5403	5097	x	x	x	x	x	x	√	√	√	x	x	x	x	x
103	6	5403	4586	√	√	√	x	x	x	√	√	√	x	√	x	x	x
103	7	5403	3556	√	√	√	x	x	x	√	√	√	x	√	x	x	x
103	8	5403	3043	√	√	√	x	x	x	√	√	√	x	√	x	x	x
103	9	5403	2536	√	√	√	x	x	x	√	√	√	x	x	x	x	x
103	10	5403	2280	√	√	√	x	x	x	√	√	√	x	x	x	x	x
103	11	5403	2025	√	√	√	x	x	x	√	√	√	x	x	x	x	x
103	12	5403	1720	√	√	√	x	x	x	√	√	√	x	x	x	x	x
103	13	5403	1517	x	x	x	x	x	x	x	x	x	x	x	x	x	x
103	14	5403	1314	√	√	√	x	x	x	√	√	√	x	x	x	x	x
103	15	5403	1112	√	√	√	x	x	x	√	√	√	x	x	x	x	x
103	16	5403	906	√	√	√	x	x	x	√	√	√	x	x	x	x	x
103	17	5403	708	√	√	√	x	x	x	√	√	√	x	x	x	x	x
103	18	5403	604	√	√	√	x	x	x	√	√	√	x	x	x	x	x
103	19	5403	504	√	√	√	x	x	x	√	√	√	x	x	x	x	x
103	20	5403	406	√	√	√	x	x	x	√	√	√	x	x	x	x	x
103	21	5403	305	√	√	√	x	x	x	√	√	√	x	x	x	x	x
103	22	5403	203	√	√	√	x	x	x	√	√	√	x	x	x	x	x
103	23	5403	102	√	√	√	x	x	x	√	√	√	x	x	x	x	x
103	24	5403	7	√	√	√	x	x	x	√	√	√	x	√	x	x	x
104	1	4420	4064	√	√	√	√	√	x	√	√	√	x	x	x	x	x
104	2	4420	3551	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	3	4420	3043	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	4	4420	2534	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	5	4420	2278	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	6	4420	2021	√	√	√	√	√	x	√	√	√	x	x	x	x	x
104	7	4420	1817	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	8	4420	1616	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	9	4420	1419	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	10	4420	1215	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	11	4420	1109	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	12	4420	1005	√	√	√	√	√	x	√	√	√	x	x	x	x	x
104	13	4420	798	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	14	4420	710	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	15	4420	607	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	16	4420	506	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	17	4420	406	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	18	4420	304	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	19	4420	201	√	√	√	x	√	x	√	√	√	x	x	x	x	x
104	20	4420	201	√	√	x	x	x	x	√	√	√	x	x	x	x	x
104	21	4420	104	√	√	√	√	√	x	√	√	√	x	x	x	x	x
104	22	4420	105	√	x	x	x	x	x	√	√	√	x	x	x	x	x
104	23	4420	6	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	1	3938	4009	√	√	√	x	√	x	√	√	√	x	√	x	x	x
107	2	3938	3557	√	√	√	x	√	x	√	√	√	x	√	x	x	x
107	3	3938	3044	√	√	√	x	√	x	√	√	√	x	√	x	x	x
107	4	3938	2532	√	√	√	x	√	x	√	√	√	x	√	x	x	x
107	5	3938	2278	√	√	√	x	√	x	√	√	√	x	√	x	x	x
107	6	3938	2025	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	7	3938	1823	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	8	3938	1618	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	9	3938	1416	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	10	3938	1213	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	11	3938	1112	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	12	3938	1013	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	13	3938	910	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	14	3938	809	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	15	3938	709	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	16	3938	607	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	17	3938	505	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	18	3938	405	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	19	3938	303	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	20	3938	200	x	x	x	x	x	x	x	x	x	x	x	x	x	x
107	21	3938	201	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	22	3938	101	√	√	√	x	√	x	√	√	√	x	x	x	x	x
107	23	3938	101	√	x	x	x	x	x	√	√	√	x	x	x	x	x
107	24	3938	7	√	√	√	x	√	x	√	√	√	x	√	x	x	x
108	1	4828	4916	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	2	4828	4579	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	3	4828	4069	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	4	4828	3557	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	5	4828	3043	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	6	4828	2535	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	7	4828	2278	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	8	4828	2025	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	9	4828	1820	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	10	4828	1615	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	11	4828	1416	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	12	4828	1287	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	13	4828	1113	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	14	4828	1013	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	15	4828	810	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	16	4828	706	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	17	4828	604	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	18	4828	505	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	19	4828	403	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	20	4828	305	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	21	4828	305	√	√	x	x	x	x	√	√	√	x	x	x	x	x
108	22	4828	203	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	23	4828	101	√	√	√	x	x	x	√	√	√	x	x	x	x	x
108	24	4828	5	√	√	√	x	x	x	√	√	√	x	x	x	x	x

ST	BTL	BOTTOM DEPTH (m)	Press (dbar)	CFC	O_2 Winkler	pH 25	CT	AT	DOC	SiO_2	NO_3^-	PO_4^{3-}	U-236	SALINITY	MICRO	Chla	POC/PON
110	1	893	885	√	√	√	x	√	x	√	√	√	x	x	x	x	x
110	2	893	885	x	x	x	x	x	x	√	√	√	x	x	x	x	x
110	3	893	885	x	x	x	x	x	x	x	x	x	x	x	x	x	x
110	4	893	809	√	√	√	x	√	x	√	√	√	x	x	x	x	x
110	5	893	809	x	x	x	x	x	x	x	x	x	x	x	x	x	x
110	6	893	809	x	x	x	x	x	x	√	√	√	x	x	x	x	x
110	7	893	708	√	√	√	x	√	x	√	√	√	x	x	x	x	x
110	8	893	708	x	x	x	x	x	x	x	x	x	x	x	x	x	x
110	9	893	707	x	x	x	x	x	x	x	x	x	x	x	x	x	x
110	10	893	606	√	√	√	x	√	x	√	√	√	x	x	x	x	x
110	11	893	606	x	x	x	x	x	x	x	x	x	x	x	x	x	x
110	12	893	606	x	x	x	x	x	x	x	x	x	x	x	x	x	x
110	13	893	505	√	√	√	x	√	x	√	√	√	x	x	x	x	x
110	14	893	505	x	x	x	x	x	x	√	√	√	x	x	x	x	x
110	15	893	405	√	√	√	x	√	x	√	√	√	x	x	x	x	x
110	16	893	405	x	x	x	x	x	x	x	x	x	x	x	x	x	x
110	17	893	305	√	√	√	x	√	x	√	√	√	x	x	x	x	x
110	18	893	305	x	x	x	x	x	x	x	x	x	x	x	x	x	x
110	19	893	202	√	√	√	x	√	x	√	√	√	x	x	x	x	x
110	20	893	202	x	x	x	x	x	x	x	x	x	x	x	x	x	x
110	21	893	101	√	√	√	x	√	x	√	√	√	x	x	x	x	x
110	22	893	101	x	x	x	x	x	x	x	x	x	x	x	x	x	x
110	23	893	101	x	x	x	x	x	x	x	x	x	x	x	x	x	x
110	24	893	7	√	√	√	x	√	x	√	√	√	x	x	x	x	x
111	1	225	214	x	x	x	x	x	√	x	x	x	x	x	x	x	x
111	2	225	214	x	x	x	x	x	x	x	x	x	x	x	x	x	x
111	3	225	214	x	x	x	x	x	x	x	x	x	x	x	x	x	x
111	4	225	214	√	√	√	√	√	x	√	√	√	x	x	x	x	x
111	5	225	169	x	x	x	x	x	√	x	x	x	x	x	x	x	x
111	6	225	169	√	√	√	x	√	x	√	√	√	x	x	x	x	x
111	7	225	169	x	x	x	x	x	x	x	x	x	x	x	x	x	x
111	8	225	147	x	x	x	x	x	√	x	x	x	x	x	x	x	x
111	9	225	147	x	x	x	x	x	x	x	x	x	x	x	x	x	x
111	10	225	147	x	x	x	x	x	x	x	x	x	x	x	x	x	x
111	11	225	147	√	√	√	x	√	x	√	√	√	x	x	x	x	x
111	12	225	130	x	x	x	x	x	√	x	x	x	x	x	x	x	x
111	13	225	130	√	√	√	x	√	x	√	√	√	x	x	x	x	x
111	14	225	130	x	x	x	x	x	x	x	x	x	x	x	x	x	x
111	15	225	130	x	x	x	x	x	x	x	x	x	x	x	x	x	x
111	16	225	47	x	x	x	x	x	x	x	x	x	x	x	x	x	x
111	17	225	48	x	x	x	x	x	x	x	x	x	x	x	x	x	x
111	18	225	48	√	√	√	√	√	x	√	√	√	x	x	x	x	x
111	19	225	48	x	x	x	x	x	x	x	x	x	x	x	x	x	x
111	20	225	48	x	x	x	x	x	√	x	x	x	x	x	x	x	x
111	21	225	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
111	22	225	6	√	√	√	x	√	√	√	√	√	x	x	x	x	x
111	23	225	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
111	24	225	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
112	1	291	276	x	x	x	x	x	√	x	x	x	x	x	x	x	x
112	2	291	275	x	x	x	x	x	x	x	x	x	x	x	x	x	x
112	3	291	276	√	√	√	x	√	x	√	√	√	x	x	x	x	x
112	4	291	276	x	x	x	x	x	x	x	x	x	x	x	x	x	x
112	5	291	276	x	x	x	x	x	x	x	x	x	x	x	x	x	x
112	6	291	182	x	x	x	x	x	√	x	x	x	x	x	x	x	x
112	7	291	182	√	√	√	x	√	x	√	√	√	x	x	x	x	x
112	8	291	182	x	x	x	x	x	x	x	x	x	x	x	x	x	x
112	9	291	133	x	x	x	x	x	√	x	x	x	x	x	x	x	x
112	10	291	133	x	x	x	x	x	x	x	x	x	x	x	x	x	x
112	11	291	133	√	√	√	x	√	x	√	√	√	x	x	x	x	x
112	12	291	133	x	x	x	x	x	x	x	x	x	x	x	x	x	x
112	13	291	133	x	x	x	x	x	x	x	x	x	x	x	x	x	x
112	14	291	105	x	x	x	x	x	√	x	x	x	x	x	x	x	x
112	15	291	105	√	√	√	x	√	x	√	√	√	x	x	x	x	x
112	16	291	105	x	x	x	x	x	x	x	x	x	x	x	x	x	x
112	17	291	23	x	x	x	x	x	√	x	x	x	x	x	x	x	x
112	18	291	23	x	x	x	x	x	x	x	x	x	x	x	x	x	x
112	19	291	24	√	√	√	x	√	x	√	√	√	x	x	x	x	x
112	20	291	23	x	x	x	x	x	x	x	x	x	x	x	x	x	x
112	21	291	24	x	x	x	x	x	x	x	x	x	x	x	x	x	x
112	22	291	5	x	x	x	x	x	√	x	x	x	x	x	x	x	x
112	23	291	5	√	x	√	x	√	x	√	√	√	x	x	x	x	x
112	24	291	5	x	x	x	x	x	x	x	x	x	x	x	x	x	x
113	1	915	859	x	x	x	x	x	√	x	x	x	x	x	x	x	x
113	2	915	859	√	√	√	√	√	x	√	√	√	x	x	x	x	x
113	3	915	366	x	x	x	x	x	x	x	x	x	x	x	x	x	x
113	4	915	366	x	x	x	x	x	x	x	x	x	x	x	x	x	x
113	5	915	366	x	x	x	x	x	√	x	x	x	x	x	x	x	x
113	6	915	367	√	√	√	x	√	x	√	√	√	x	x	x	x	x
113	7	915	367	x	x	x	x	x	x	x	x	x	x	x	x	x	x
113	8	915	245	x	x	x	x	x	√	x	x	x	x	x	x	x	x
113	9	915	246	√	√	√	x	√	x	√	√	√	x	x	x	x	x
113	10	915	246	x	x	x	x	x	x	x	x	x	x	x	x	x	x
113	11	915	113	x	x	x	x	x	√	x	x	x	x	x	x	x	x
113	12	915	113	√	√	√	x	√	x	√	√	√	x	x	x	x	x
113	13	915	114	x	x	x	x	x	x	x	x	x	x	x	x	x	x
113	14	915	61	x	x	x	x	x	x	x	x	x	x	x	x	x	x
113	15	915	61	x	x	x	x	x	x	x	x	x	x	x	x	x	x
113	16	915	61	√	√	√	x	√	√	√	√	√	x	x	x	x	x
113	17	915	61	x	x	x	x	x	x	x	x	x	x	x	x	x	x
113	18	915	61	x	x	x	x	x	x	x	x	x	x	x	x	x	x
113	19	915	22	x	x	x	x	x	x	x	x	x	x	x	x	x	x
113	20	915	22	x	x	x	x	x	√	x	x	x	x	x	x	x	x
113	21	915	22	√	√	√	√	√	x	√	√	√	x	x	x	x	x
113	22	915	22	x	x	x	x	x	x	x	x	x	x	x	x	x	x
113	23	915	22	x	x	x	x	x	x	x	x	x	x	x	x	x	x
113	24	915	22	x	x	x	x	x	x	x	x	x	x	x	x	x	x

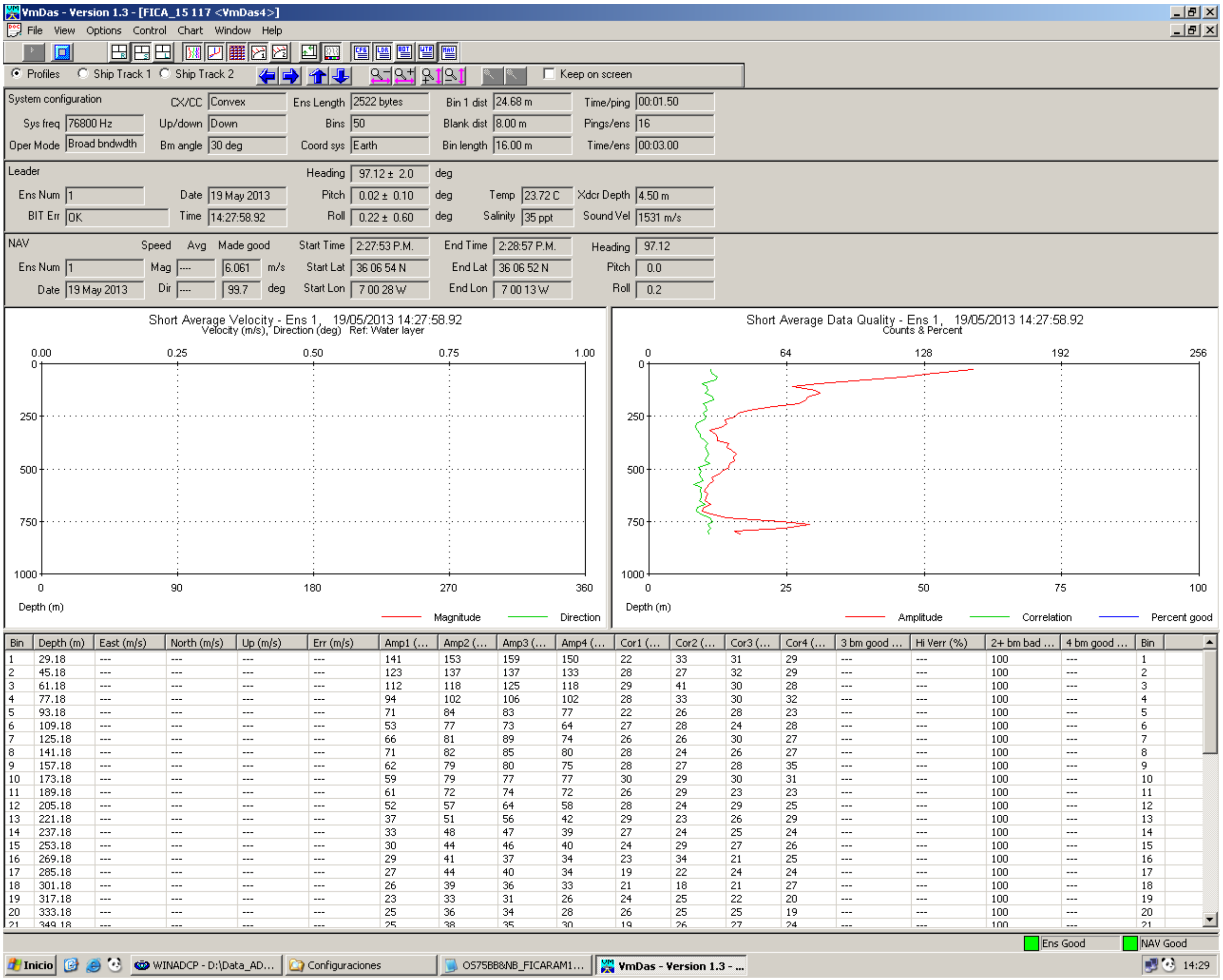
Annex 3

VmdaS signal received by the transducer



Bin	Depth (m)	East (m/s)	North (m/s)	Up (m/s)	Err (m/s)	Amp1 (…	Amp2 (…	Amp3 (…	Amp4 (…	Cor1 (…	Cor2 (…	Cor3 (…	Cor4 (…	3 bm good …	Hi Verr (%)	2+ bm bad …	4 bm good …	Bin
1	28.43	-0.025	0.524	0.023	-0.318	84	101	110	99	181	180	181	182	16	---	25	58	1
2	44.43	-0.357	0.212	0.189	0.019	102	117	126	116	182	184	183	183	---	---	33	66	2
3	60.43	0.317	0.447	0.169	0.080	109	123	128	123	182	183	183	184	---	---	25	75	3
4	76.43	-0.172	-0.068	0.029	-0.054	97	111	114	111	163	160	166	162	---	---	25	75	4
5	92.43	-0.147	-0.381	-0.198	0.178	95	101	111	104	158	159	162	161	---	---	50	50	5
6	108.43	-0.770	-0.177	-0.223	-0.122	71	89	95	82	160	160	163	163	---	---	58	41	6
7	124.43	0.257	-0.197	-0.267	-0.257	83	90	95	96	161	163	160	163	---	---	58	41	7
8	140.43	-0.606	-0.695	0.079	0.124	69	89	92	80	158	162	161	161	---	---	58	41	8
9	156.43	-0.681	0.207	-0.308	-0.414	51	67	70	63	156	157	159	160	---	---	50	50	9
10	172.43	0.204	0.763	-0.163	-0.094	48	60	64	58	160	157	160	160	---	---	75	25	10
11	188.43	-0.063	-0.666	-0.372	0.005	61	71	83	75	160	158	164	161	---	---	66	33	11
12	204.43	-0.356	0.222	-0.404	0.062	64	79	81	81	161	161	161	161	---	---	33	66	12
13	220.43	0.109	-0.234	-0.475	0.135	68	75	85	83	162	162	161	159	---	---	50	50	13
14	236.43	0.420	-0.943	-0.472	-0.048	75	79	86	87	161	158	158	162	---	---	58	41	14
15	252.43	-0.403	-0.766	-0.172	-0.605	91	100	108	100	161	161	162	161	---	---	58	41	15
16	268.43	0.114	-1.083	-0.418	0.061	92	110	111	103	162	163	162	160	---	---	66	33	16
17	284.43	0.339	-1.264	-0.275	-0.141	134	123	131	143	160	163	159	159	16	---	50	33	17
18	300.43	0.672	-0.929	0.110	0.432	124	162	165	140	155	151	162	156	8	---	58	33	18
19	316.43	0.586	-1.124	0.395	0.631	61	97	96	79	155	152	148	157	33	---	41	25	19
20	332.43	0.517	-0.921	0.206	0.454	40	61	63	50	148	151	152	151	16	---	50	33	20
21	348.43	-0.304	-0.585	0.187	0.524	30	47	42	34	150	144	147	152	25	---	50	25	21

sADCP Bottom tracking



sADCP Navigator

CCHDO Data Processing Notes

Date	Person	Data Type	Action	Summary
2013-11-14	Key, Bob	BTL	Submitted	to go online

No cruise report yet, but some additional information in the metadata file.

2013-11-15	Staff, CCHDO	BTL	Website Update	Available under 'Files as received'

The following files are now available online under 'Files as received', unprocessed by the CCHDO.

Metadata_discrete_measurements_FICARAM-XV-2013.xls
29HE20130320.exc.csv

2013-11-15	Lee, Rox	maps	Website Update	Maps created

```
==============================
29HE20130320 processing - Maps
==============================

2013-11-15

R Lee

.. contents:: :depth: 2

Process
=======

Changes
-------
- Maps created from 29HE20130320.exc.csv

Merge
-----


Directories
===========
:working directory:

/data/co2clivar/atlantic/a17/a17_29HE20130320/original/2013.11.15_maps_RJL
:cruise directory:
  /data/co2clivar/atlantic/a17/a17_29HE20130320

Updated Files Manifest
======================
- 29HE20130320_trk.gif
- 29HE20130320_trk.jpg
```

2013-12-17	Kappa, Jerry	CrsRpt	Website Update	PDF version online

I've placed a new PDF version of the cruise report: 29HE20130320_do.pdf
into the directory: /data/co2clivar/atlantic/a17/a17_29HE20130320/.

It includes all the reports provided by the cruise PIs, summary pages and CCHDO data processing notes, as well as a linked Table of Contents and links to figures, tables and appendices.