

LARGE-VOLUME WOCE RADIOCARBON SAMPLING IN THE PACIFIC OCEAN

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ABSTRACT. At the University of Miami Tritium Laboratory and the University of Washington Quaternary Isotope Laboratory, more than 1000 large-volume Pacific Ocean radiocarbon samples were measured for the WOCE program. Here we present a comprehensive data set, and a brief discussion of our findings.

INTRODUCTION

An overview of the World Ocean Circulation Experiment (WOCE) Pacific Ocean radiocarbon program, and a rationale plus sampling strategy for large-volume (250-liter Gerard barrels) collection of deeper waters, is given by R. M. Key in this issue (Key 1997; Key, Quay and NOSAMS 1997). Here we report the sample radiocarbon activities, as measured by the University of Miami's Tritium Laboratory and the University of Washington's Quaternary Isotope Laboratory, through beta counting of CO₂ gas. These laboratories also produced the GEOSECS ¹⁴C data set (Stuiver and Östlund 1983, 1980; Östlund and Stuiver 1980).

CO₂ was extracted from acidified ocean water samples following the procedure established for GEOSECS samples (Stuiver *et al.* 1974). The reported $\Delta^{14}\text{C}$ values were calculated according to Stuiver and Polach (1977), with appropriate corrections for the decay of the NBS ¹⁴C standard (Stuiver 1980). The standard error (1 σ) is primarily counting error and ranges from 4‰ (rounded upwards) for Miami to 2.5–4.0‰ for Seattle. The standard error for "routine" operation (~2 days counting time) approaches 4‰, whereas the higher precision relates to samples counted for 4 days. Errors due to sample collection are not included. For the proper calculation of $\Delta^{14}\text{C}$ values, $\delta^{13}\text{C}$ was measured on the CO₂ gas prepared for ¹⁴C counting. These $\delta^{13}\text{C}$ determinations were all made in Seattle, for GEOSECS as well as for the large-volume (LV) WOCE samples. The GEOSECS and WOCE LV $\delta^{13}\text{C}$ measurements have long-term internal consistency in that they were all measured relative to a single CO₂ laboratory standard. The $\delta^{13}\text{C}$ value of the laboratory standard was calibrated early on against the PDB scale on a Nuclide mass spectrometer using isotope standards supplied by the NBS (National Bureau of Standards). Total Carbon $\delta^{13}\text{C}$ values, based on complete CO₂ recovery of acidified samples, were not determined by us. As the relatively slow CO₂ extraction of the 250-liter LV samples may not always have been taken to completion (100% yield) the reported sample gas $\delta^{13}\text{C}$ need not be identical to Total Carbon $\delta^{13}\text{C}$.

We report here the $\Delta^{14}\text{C}$ results for 1088 large-volume WOCE samples (Table A.1). A complete listing of the WOCE cruises can be found in Key (1997). Small-volume sample results obtained through accelerator mass spectrometry (AMS) are discussed in this issue by Key, Quay and NOSAMS (1997).

The transects and LV sampling stations are depicted in Figure 1. We also provide a plot of $\Delta^{14}\text{C}$ vs. depth for the individual station data (Fig. A.1). Profiles (splined) for stations along the ~151.0°W longitude trajectory are summarized in Figure 2. In Figure 2 the northernmost stations are to the left, the southernmost stations to the right. All stations north of the Antarctic circumpolar current have their oldest waters at mid-depth (~2500 m) and the gradual "aging" (loss of ¹⁴C) from south to north is evident. The pocket of "oldest" water at mid-depth between 10° and 30° N in the eastern Pacific

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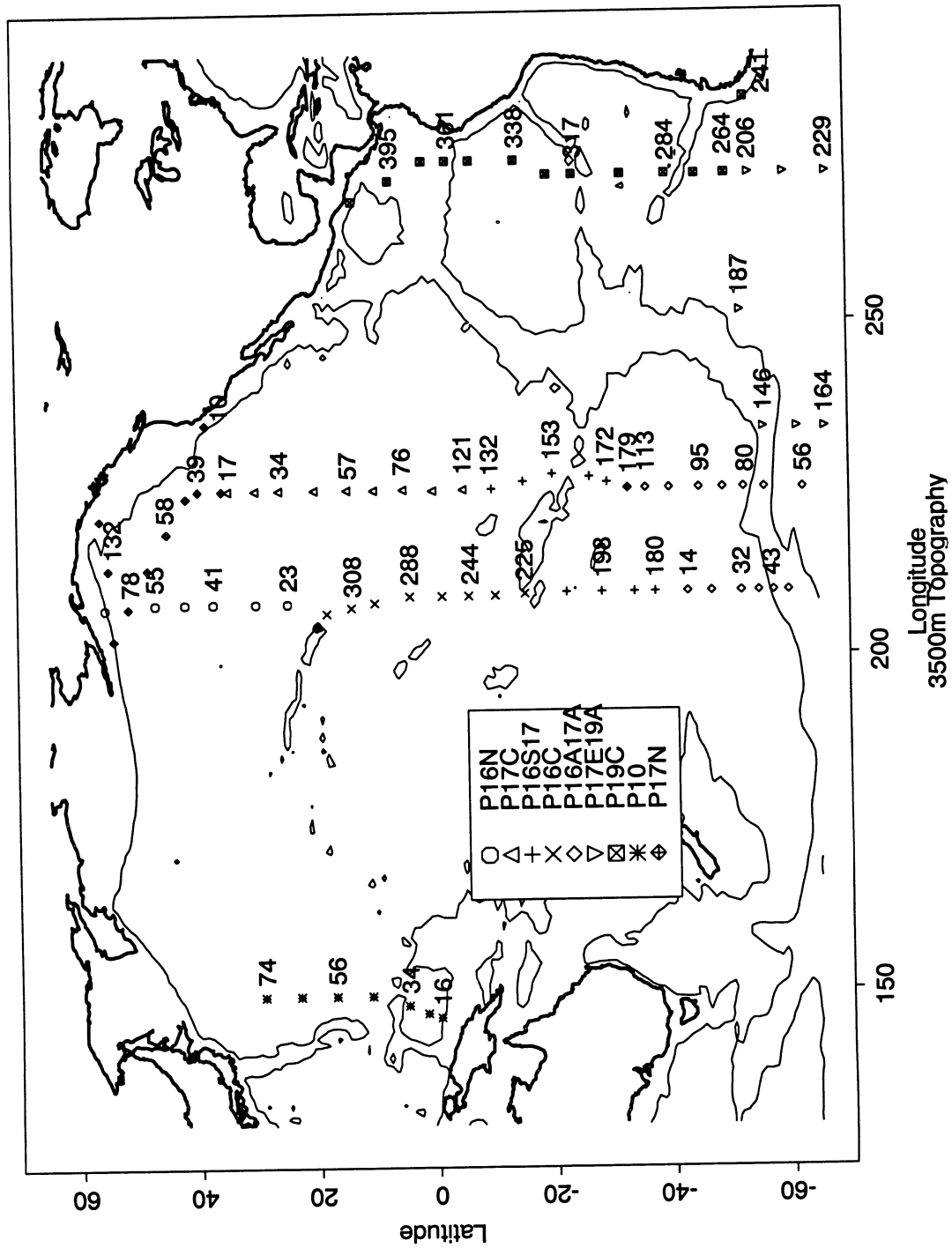


Fig. 1. WOCE LV stations and cruise nomenclature

(Östlund and Stuiver, 1980, Plate 2) with $\Delta^{14}\text{C}$ values of $\sim -250\text{‰}$ now extends to 42°N . The “wavy” splines of the northernmost sections point toward more complex ocean circulation patterns. Composite vertical $\Delta^{14}\text{C}$ cross-sections are not reported here; they will be discussed by Key and co-workers in a future paper (Key *et al.*, ms.). Ocean circulation and time-dependent ^{14}C change relative to the GEOSECS $\Delta^{14}\text{C}$ baseline also will be discussed in that paper.

The data set given below represents the main body of LV WOCE $\Delta^{14}\text{C}$ measurements. The WOCE $\Delta^{14}\text{C}$ measurements of Miami are now complete. The Seattle deepwater samples of the Western Pacific P10 track still have to be measured.

THE TABLES AND FIGURES

In the Appendix, data are presented in Tables A.1 and Figure A.1. Accompanying the $\Delta^{14}\text{C}$ values (in ‰, relative to age-corrected NBS Oxalic Acid ^{14}C activity and normalized on $\delta^{13}\text{C}_{\text{PDB}} = -25\text{‰}$) in the tables are the standard deviation ($\sigma^{14}\text{C}$ in ‰), depth (in meters, calculated from pressure data), potential temperature (θ in $^\circ\text{C}$), Quaternary Isotope Laboratory (QL) numbers, Miami Tritium Laboratory (ML) numbers (marked with asterisks in the table), salinity (in ‰, relative to the Practical Salinity Scale) and $\delta^{13}\text{C}$ (‰, relative to the PDB standard) of the CO_2 counting gas. The order in which the stations are given in the table follows the Fig. 1 north-south and south-north trajectories. Quality control warnings (flags) that apply to a small fraction of the measurements have not been included. The reader is referred to a more comprehensive data set that will be available in electronic format through the various WOCE data distribution centers via the Internet once the $\Delta^{14}\text{C}$ measurements are all completed and the hydrographic data released (<http://whpo.whoi.edu>).

Depth- $\Delta^{14}\text{C}$ relationships are plotted for each station, with cruise and station information in the lower right-hand corner of each quadrant (Fig. A.1).

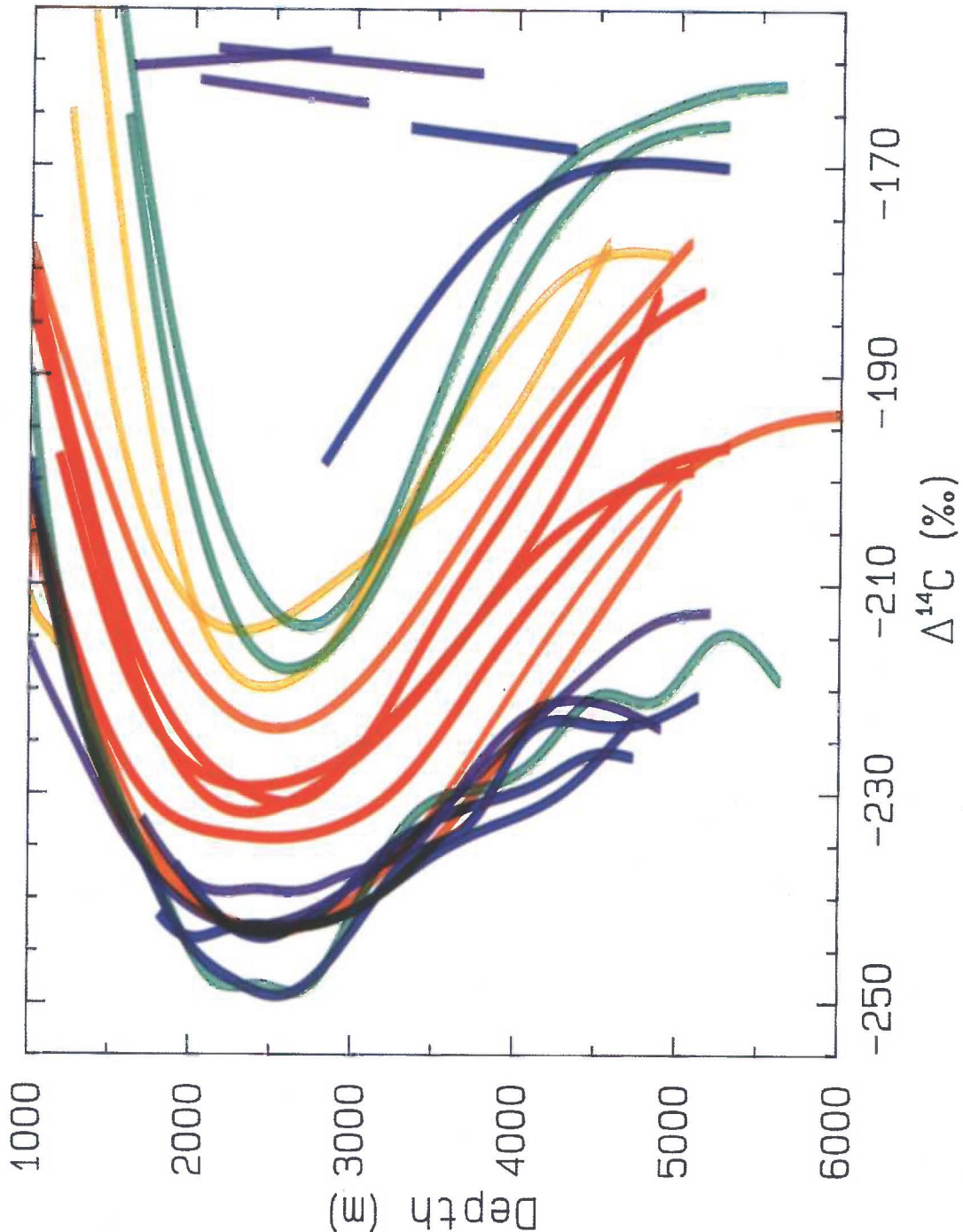
ACKNOWLEDGMENTS

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REFERENCES

- Key, R. M. 1997 WOCE Pacific Ocean Radiocarbon Program. *Radiocarbon*, this issue.
- Key *et al.* (ms. in preparation, to be submitted to *Global Biogeochemical Cycles*).
- Key, R. M., Quay, P. D. and NOSAMS 1997 WOCE AMS Radiocarbon I: Pacific Ocean results; P6, P16 & P17. *Radiocarbon*, this issue.
- Östlund, H. G. and Stuiver, M. 1980 GEOSECS Pacific radiocarbon. *Radiocarbon* 22(1): 25–53.
- Reinsch, C. H. 1967 Smoothing by spline functions. *Numerische Mathematik* 10: 177–183.
- Stuiver, M. 1980 Workshop on ^{14}C data reporting. In Stuiver, M. and Kra, R., eds, Proceedings of the 10th International ^{14}C Conference. *Radiocarbon* 22(3): 964–966.
- Stuiver, M. and Östlund, H. G. 1980 GEOSECS Atlantic radiocarbon. *Radiocarbon* 22(1): 1–24.
- _____ 1983 GEOSECS Indian Ocean and Mediterranean radiocarbon. *Radiocarbon* 25(1): 1–29.
- Stuiver, M. and Polach, H. A. 1977 Discussion: Reporting of ^{14}C data. *Radiocarbon* 19: 355–363.
- Stuiver, M., Robinson, S. W., Östlund, H. G. and Dorsey, H. G. 1974 Carbon-14 calibration between the University of Washington and the University of Miami GEOSECS laboratories. *Earth and Planetary Science Letters* 23: 65–68.

Fig. 2 (next page). Splined WOCE $\Delta^{14}\text{C}$ profiles along *ca.* 151.0°W longitude. The color code relates to latitude: violet = >50°S or >50°N (Stations 48, 43, 38, 32 or 78, 60), blue = 40–50°S or °N (22, 14 or 48, 55, 68), green = 30–40°S or °N (180, 187 or 41), yellow = 20–30°S or °N (198, 210 or 23), orange = 10–20°S or °N (225, 235 or 308, 317) and red = 10°S–10°N (244, 259, 288, 300). The $\Delta^{14}\text{C}$ data of stations 31 and 225 have more scatter than those of the other stations and were not plotted in Fig. 2. The ^{14}C data were smoothed using a spline function (Reinsch 1967) with a smoothing parameter, *S*, equal to the number of data points for the station.



APPENDIX

Table A.1

Cruise: P16N		Station: 60	55°27'N	152°38'W	31 Mar 1991		
Cast/Bottle	Depth	QL/ML(*)	Δ ¹⁴ C	σ ¹⁴ C	θ	Salinity	δ ¹³ C
181	6	5190*	12.8	4.0	3.080	32.860	-0.4
182	306	5189*	-132.0	4.0	3.869	34.050	-2.1
183	611	5188*	-186.7	4.0	3.309	34.265	-2.0
184	918	5187*	-210.5	4.0	2.839	34.378	-2.0
185	1225	5186*	-221.8	4.0	2.350	34.471	-1.5
194	1525	5183*	-230.3	4.0	2.060	34.535	-1.7
187	1533	5185*	-234.4	4.0	2.040	34.536	-1.6
281	3006	5182*	-238.9	4.0	1.322	34.661	-2.9
282	3952	5181*	-225.5	4.0	1.157	34.681	-0.4
283	4474	5180*	-218.3	4.0	1.111	34.686	-0.3
284	4887	5179*	-212.9	4.0	1.089	34.689	-1.1
285	5195	5178*	-212.9	4.0	1.080	34.690	-2.2

Cruise: P16N		Station: 55	47°0'N	152°0'W	27 Mar 1991		
Cast/Bottle	Depth	QL/ML(*)	Δ ¹⁴ C	σ ¹⁴ C	θ	Salinity	δ ¹³ C
381	7	5199*	39.2	4.0	7.609	32.845	-0.4
382	152	5198*	27.2	4.0	6.347	33.523	0.1
383	304	5197*	-47.0	4.0	4.877	33.850	-1.2
384	509	5196*	-118.9	4.0	4.033	34.049	-2.1
385	766	5195*	-181.0	4.0	3.437	34.247	-2.1
387	1024	5194*	-203.5	4.0	2.940	34.358	-1.0
390	1280	5193*	-223.8	4.0	2.534	34.446	-1.5
393	1535	5192*	-231.0	4.0	7.309	34.504	-1.8
394	1786	5191*	-243.0	4.0	2.019	34.553	-1.7
281	1826	5208*	-240.0	4.0	2.006	34.553	-1.6
294	2028	5200*	-244.3	4.0	1.832	34.584	-1.4
282	2230	5207*	-242.3	4.0	1.696	34.603	-1.4
283	2640	5206*	-242.7	4.0	1.520	34.636	-1.2
284	3053	5205*	-240.8	4.0	1.347	34.658	-1.4
285	3472	5204*	-236.1	4.0	1.247	34.672	-1.8
287	3894	5203*	-232.8	4.0	1.163	34.680	-1.4
290	4313	5202*	-229.7	4.0	1.156	34.683	-0.6
293	4731	5201*	-222.9	4.0	1.127	34.683	-0.4

Cruise: P16N		Station: 48	42°0'N	151°59'W	23 Mar 1991		
Cast/Bottle	Depth	QL/ML(*)	Δ ¹⁴ C	σ ¹⁴ C	θ	Salinity	δ ¹³ C
281	6	5237*	56.8	4.0	10.089	33.239	-0.5
282	262	5236*	27.6	4.0	7.774	33.985	-0.7
283	523	5235*	-81.0	4.0	4.869	33.975	-2.3
284	786	5233*	-169.7	4.0	3.773	34.196	-1.4
285	1052	5234*	-200.5	4.0	3.077	34.338	-2.7
287	1318	5232*	-222.7	4.0	2.591	34.438	-2.6
290	1636	5220*	-232.3	4.0	2.199	34.518	-3.0
293	1952	5219*	-244.1	4.0	1.887	34.579	-1.5
294	2264	5218*	-249.0	4.0	1.654	34.617	-1.0
381	2273	5217*	-245.7	4.0	1.683	34.615	-1.3

*QL = Quaternary Isotope Laboratory; ML = Miami Tritium Laboratory (ML codes are marked with an * in table)

382	2594	5216*	-249.7	4.0	1.527	34.637	-1.7
383	2907	5215*	-245.3	4.0	1.390	34.653	-1.8
384	3372	5214*	-235.0	4.0	1.266	34.659	-1.4
385	3785	5213*	-233.8	4.0	1.204	34.679	-2.0
387	4041	5212*	-223.2	4.0	1.167	34.682	-0.8
390	4505	5211*	-223.8	4.0	1.134	34.685	-1.3
393	4817	5210*	-223.1	4.0	1.146	34.684	-1.4
394	5134	5209*	-220.4	4.0	1.156	34.690	-1.2

Cruise: P16N		Station: 41	37°11'N	151°58'W	21 Mar 1991		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
181	5	3136	88.4	3.2	14.429	33.878	0.2
182	310	3137	57.9	2.8	9.455	34.068	0.2
183	614	3138	-71.7	2.3	5.369	33.986	-0.6
184	918	3139	-176.6	2.4	3.594	34.218	-1.0
185	1222	3140	-212.3	2.3	2.905	34.402	-3.2
187	1528	3141	-228.8	2.3	2.455	34.512	-2.1
190	1834	3142	-238.9	2.1	2.065	34.577	-0.9
193	2141	3143	-248.5	2.3	1.783	34.612	-0.9
194	2451	3144	-245.8	3.6	1.579	34.633	-0.7
281	2717	3145	-249.7	2.4	1.437	34.649	-0.6
282	3075	3146	-239.2	2.4	1.325	34.663	-0.4
283	3434	3147	-231.2	2.2	1.241	34.673	-0.5
284	3795	3148	-229.6	2.3	1.174	34.680	-0.5
285	4157	3149	-226.7	2.4	1.164	34.684	-0.4
287	4522	3150	-219.6	2.4	1.122	34.687	-0.5
290	4889	3151	-221.9	2.3	1.108	34.688	-0.5
293	5259	3152	-214.4	1.6	1.101	34.690	-0.9
294	5633	3153	-219.5	2.2	1.092	34.689	-0.2

Cruise: P16N		Station: 31	30°0'N	152°1'W	16 Mar 1991		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1003				3.537	34.369	
382	1312	3121	-222.7	2.2	2.918	34.506	-2.2
383	1622	3122	-240.4	2.2	2.330	34.566	-1.2
384	1933	3123	-244.8	2.1	1.938	34.606	-1.2
389	2194				1.699	34.651	
385	2242	3124	-247.0	2.2	1.749	34.632	-1.9
387	2548	3125	-242.9	2.2	1.511	34.649	-2.6
481	2805	3126	-238.1	2.0	1.390	34.661	-0.9
482	3220	3127	-228.8	2.2	1.272	34.673	-2.0
483	3739	3128	-225.6	1.5	1.176	34.674	-0.6
484	4053	3129	-237.8	1.6	1.142	34.685	-0.9
485	4367	3130	-219.7	2.2	1.130	34.688	-0.8
487	4681	3131	-217.6	2.1	1.104	34.689	-0.6
490	4996	3132	-215.4	2.3	1.086	34.690	-0.5
493	5312	3133	-212.8	1.7		34.691	-0.9

Cruise: P16N		Station: 23	24°40'N	152°0'W	12 Mar 1991		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
281	504	3112	-41.2	2.6	6.743	34.018	-1.7
282	812	3113	-187.9	2.3	4.266	34.326	-2.0
283	1120	3114	-213.0	2.2	3.419	34.507	-2.2
285	1231	3116	-215.8	2.2	3.169	34.532	-3.4

289	1341	3118	-219.9	2.2	2.950	34.534	-1.7
284	1381	3115	-227.8	2.1	2.879	34.559	-2.9
287	1521	3117	-231.0	2.3	2.624	34.576	-1.9
290	1671	3119	-234.3	1.7	2.423	34.587	-1.5
291	1947	3120	-239.0	2.2	2.016	34.612	-2.2

Cruise: P16C Station: 317 18°1'N 153°29'W 28 Sep 1991

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
184	816	5990*	-183.1	4.0	4.893	34.483	-1.7
481	1002	5989*	-205.0	4.0	4.083	34.518	-1.3
483	1252	5988*	-224.4	4.0	3.348	34.558	-0.7
484	1503	5987*	-232.3	4.0	2.793	34.583	-0.5
487	1753	5596*	-241.5	4.0	2.328	34.605	-1.5
489	2005	5595*	-237.6	4.0	2.001	34.626	1.8
494	2257	5598*	-240.4	4.0	1.782	34.640	-0.7
485	2508	5597*	-240.0	4.0	1.603	34.653	-0.8
493	2759	5599*	-240.2	4.0	1.492	34.682	-1.2
181	2973	5986*	-242.7	4.0	1.413	34.670	-0.9
183	3225	5985*	-241.6	4.0	1.320	34.673	-0.9
490	3457	5984*	-245.9	4.0	1.268	34.663	-1.1
187	3732	5983*	-230.3	4.0	1.200	34.677	-1.0
189	3987	5982*	-224.6	4.0	1.124	34.681	-1.1
194	4241	5981*	-218.9	4.0	1.096	34.688	-0.1
185	4496	5980*	-209.7	4.0	1.058	34.690	-0.5
190	4753	5979*	-211.3	4.0	1.008	34.692	0.4
193	5009	5978*	-199.4	4.0	0.987	34.690	-1.4

Cruise: P16C Station: 308 13°52'N 152°41'W 25 Sep 1991

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
481	1003	5578*	-195.7	4.0	4.232	34.540	-1.5
483	1301	5591*	-222.5	4.0	3.285	34.578	-0.8
484	1599	5594*	-232.3	4.0	2.518	34.606	-0.9
487	1897	5575*	-242.1	4.0	2.059	34.629	-1.5
489	2197	5574*	-243.3	4.0	1.778	34.648	-1.6
494	2495	5564*	-239.5	4.0	1.614	34.661	-1.3
485	2797	5573*	-243.9	4.0	1.498	34.668	-1.5
490	3097	5566*	-236.3	4.0	1.381	34.674	-1.0
493	3397	5565*	-237.5	4.0	1.313	34.678	-0.7
181	3690	5563*	-230.9	4.0	1.214	34.682	-1.2
183	3993	5311*	-213.0	4.0	1.123	34.687	-0.1
184	4298	5310*	-214.3	4.0	1.051	34.686	-1.4
187	4604	5561*	-208.1	4.0	0.997	34.690	0.2
189	4918	5560*	-195.2	4.0	0.960	34.692	-1.2
194	5220	5592*	-198.4	4.0	0.961	34.697	-0.1
185	5530	5562*	-195.1	4.0	0.932	34.696	-0.8
190	5842	5590*	-191.0	4.0	0.930	34.695	-0.1
193	6156	5593*	-196.9	4.0	0.946	34.692	-0.3

Cruise: P16C Station: 300 9°56'N 151°56'W 23 Sep 1991

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
481	1006	5309*	-194.4	4.0	4.311	34.556	-1.7
483	1255	5308*	-219.1	4.0	3.407	34.582	-2.7
484	1504	5244*	-226.8	4.0	2.842	34.603	-2.0
487	1754	5242*	-235.0	4.0	2.407	34.626	-1.8

489	2003	5241*	-230.8	4.0	2.050	34.640	-1.8
494	2253	5238*	-229.6	4.0	1.861	34.652	-1.5
485	2504	5243*	-234.8	4.0	1.682	34.662	-1.2
490	2754	5240*	-234.1	4.0	1.600	34.675	-1.7
493	3005	5239*	-230.4	4.0	1.508	34.671	-0.8
281	3285	5307*	-233.5	4.0	1.412	34.676	-1.4
283	3547	5306*	-226.7	4.0	1.288	34.681	-0.2
284	3788	5305*	-213.9	4.0	1.184	34.684	-0.9
287	4045	5230*	-210.7	4.0	1.089	34.689	0.2
289	4292	5228*	-211.8	4.0	1.013	34.693	-1.3
294	4547	5227*	-206.5	4.0	0.984	34.695	-0.5
285	4789	5259*	-190.9	4.0	0.975	34.696	-1.2
290	5061	5231*	-200.3	4.0	0.952	34.696	-1.2
293	5317	5229*	-198.0	4.0	0.959	34.694	-1.2

Cruise: P16C Station: 288 4°0'N 151°1'W 19 Sep 1991

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
383	1184	5552*	-189.1	4.0	4.077	34.569	-0.9
384	1383	5551*	-216.2	4.0	3.325	34.591	-2.2
387	1581	5558*	-217.4	4.0	2.796	34.610	-1.1
389	1782	5557*	-228.9	4.0	2.454	34.625	-0.7
394	1982	5554*	-224.0	4.0	2.229	34.637	-1.2
385	2234	5559*	-237.5	4.0	1.932	34.652	-1.1
390	2486	5556*	-227.6	4.0	1.713	34.663	-1.6
393	2739	5555*	-237.7	4.0	1.621	34.667	-0.9
181	3017				1.467	34.674	
183	3268	5545*	-224.0	4.0	1.306	34.681	-0.3
184	3520				1.222	34.683	
187	3772	5546*	-212.4	4.0	1.147	34.688	-1.4
189	4024				1.071	34.692	
194	4277	5548*	-203.5	4.0	1.034	34.693	-0.3
185	4531	5547*	-203.3	4.0	1.005	34.696	-0.8
190	4786	5550*	-197.4	4.0	0.995	34.695	-0.6
193	5091	5549*	-200.8	4.0	0.939	34.696	-0.3

Cruise: P16C Station: 259 1°30'S 150°59'W 13 Sep 1991

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	984	3365	-179.1	2.0	4.442	34.556	-0.3
383	1182	3366	-192.7	2.4	3.800	34.571	-0.2
384	1381	3367	-205.5	2.4	3.159	34.592	-0.3
387	1581	3369	-215.1	2.7	2.668	34.613	-0.2
389	1781	3370	-229.1	2.3	2.424	34.629	-0.2
393	1983	3372	-230.0	2.3		34.644	-0.4
394	2186	3373	-232.3	3.0	1.917	34.651	-0.4
385	2389	3368	-232.1	2.3	1.751	34.663	-0.2
390	2594	3371	-228.3	2.6	1.556	34.665	-0.3
281	2813	3356	-226.5	2.1	1.516	34.670	-0.6
283	3156	3357	-226.4	2.0	1.395	34.676	-0.1
284	3459	3358	-218.6	2.3	1.238	34.683	-0.1
287	3762	3360	-212.1	2.1	1.119	34.692	-0.3
289	4067	3361	-205.3	2.4	1.086	34.693	-0.1
293	4270	3363	-203.8	2.4	1.054	34.694	0.0
294	4474	3364	-197.4	2.0	0.992	34.696	-0.1
285	4678	3359	-186.8	2.4	0.949	34.699	-0.1
290	4883	3362	-180.0	2.5	0.848	34.701	0.1

Cruise: P16C Station: 244 6°1'S 151°0'W 9 Sep 1991

Cast/Bottle	Depth	QL/ML(*)	Δ ¹⁴ C	σ ¹⁴ C	θ	Salinity	δ ¹³ C
481	1086	3347	-183.4	2.1	3.907	34.557	-0.2
483	1283	3348	-195.9	2.2	3.355	34.578	-0.3
484	1482	3349	-210.6	2.1	2.973	34.596	-0.4
487	1681	3351	-218.8	2.1	2.679	34.609	0.0
489	1880	3352	-219.8	2.2	2.347	34.625	-0.3
493	2130	3354	-229.5	2.1	2.030	34.643	-0.3
494	2380	3355	-225.6	2.2	1.801	34.657	-0.3
485	2632	3350	-234.6	2.3	1.641	34.671	-0.2
490	2886	3353	-227.8	2.1		34.671	-0.4
281	3133	3338	-226.2	2.2	1.417	34.678	-0.3
283	3389	3339	-214.3	2.4	1.304	34.684	-0.2
284	3644	3340	-208.7	2.3	1.219	34.690	-0.1
287	3898	3342	-205.5	2.2	1.114	34.692	-0.2
289	4151	3343	-199.3	2.2	1.028	34.696	-0.1
293	4403	3345	-189.4	2.1	0.981	34.697	0.0
294	4654	3346	-188.1	2.2	0.942	34.700	-1.2
285	4903	3341	-183.4	2.2	0.913	34.701	-0.1
290	5150	3344	-182.7	2.2		34.701	0.1

Cruise: P16C Station: 235 10°31'S 150°58'W 5 Sep 1991

Cast/Bottle	Depth	QL/ML(*)	Δ ¹⁴ C	σ ¹⁴ C	θ	Salinity	δ ¹³ C
381	984	3329	-167.7	3.3	4.362	34.527	-0.4
383	1233	3330	-189.6	3.0	3.459	34.560	-0.3
384	1482	3331	-200.6	2.5	2.785	34.600	-0.3
387	1728	3333	-211.1	2.4	2.350	34.615	-2.9
385	1813	3332	-215.1	2.2			-0.2
390	1988	3337	-220.8	2.5			-0.2
389	1993	3334	-218.3	2.0	1.992	34.640	-0.2
393	2231	3335	-219.4	2.2	1.824	34.653	-0.2
394	2484	3336	-226.4	2.2	1.664	34.666	-0.3
181	3293	3321	-214.9	2.0	1.362	34.682	-0.9
184	3543	3322	-209.0	2.1	1.249	34.684	-0.4
187	3793	3324	-202.6	2.7	1.164	34.691	-0.4
189	4044	3325	-192.7	2.6	1.060	34.693	-0.8
193	4297	3327	-188.3	3.7	0.973	34.706	-0.3
194	4552	3328	-188.2	3.8	0.925	34.703	-0.3
185	4807	3323	-182.2	2.4	0.886	34.704	-0.2
190	5067	3326	-178.8	4.1	0.826	34.705	-0.3

Cruise: P16C Station: 225 15°31'S 150°40'W 2 Sep 1991

Cast/Bottle	Depth	QL/ML(*)	Δ ¹⁴ C	σ ¹⁴ C	θ	Salinity	δ ¹³ C
381	988	3313	-164.5	2.5	3.893	34.515	-0.2
383	1240	3314	-184.7	2.2			-0.2
384	1491	3315	-193.8	1.9	2.653	34.590	-0.5
387	1738	3316	-203.3	1.7	2.302	34.612	-0.4
389	1983	3317	-189.9	1.7	2.026	34.633	-0.3
490	2234	3318	-203.1	3.0			0.0
493	2484	3319	-210.5	3.2			-0.3
494	2738	3320	-211.8	3.3			-0.1
189	3285	3309	-201.8	2.2	1.295	34.689	-0.6
190	3535	3310	-191.0	2.2	1.198	34.691	-0.5
193	3788	3311	-190.7	2.3	1.152	34.692	-0.9

194	4044	3312	-191.8	2.3	1.131	34.692	-0.7
185	4270	3308	-191.6	2.2	1.057	34.694	-0.5

Cruise: P16S17			Station: 210		22°30'S 150°30'W		22 Aug 1991	
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$	
490	2	3307	117.5	3.1	23.558	35.924	1.1	
381	1237	3299	-170.4	3.7	3.062	34.517	0.0	
383	1386	3300	-188.4	3.2	2.772	34.553	0.1	
384	1586	3301	-197.9	2.7	2.430	34.585	-0.2	
387	1790	3303	-201.4	3.5	2.187	34.610	-0.3	
389	1987	3304	-209.8	3.1	2.003	34.631	-0.2	
393	2239	3305	-214.5	3.5	1.814	34.647	-0.3	
394	2490	3306	-213.8	3.1	1.698	34.656	-0.2	
385	2791	3302	-210.1	2.3	1.538	34.666	-0.1	
181	3156	3292	-206.3	3.5	1.405	34.676	-0.2	
183	3409	3293	-200.8	3.1	1.302	34.682	-0.1	
184	3662	3294	-203.0	3.5	1.207	34.689	-0.2	
187	3915	3295	-198.3	3.5	1.142	34.692	-0.3	
189	4169	3296	-185.3	3.2	1.075	34.695	-0.3	
193	4372	3297	-185.0	3.2	1.014	34.698	-0.4	
194	4575	3298	-175.5	3.5	0.981	34.700	0.0	

Cruise: P16S17			Station: 198		28°30'S 150°30'W		18 Aug 1991	
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$	
490	2	3291	127.9	2.9	19.432	35.584	1.1	
381	1234	3283	-140.1	3.3	3.489	34.415	0.3	
383	1486	3284	-165.2	3.0	3.091	34.522	0.1	
384	1736	3285	-193.9	3.0	2.300	34.598	-0.2	
299	1852				2.135	34.619		
387	1987	3287	-215.6	2.9	2.032	34.629	-0.3	
389	2239	3288	-217.1	3.0	1.843	34.659	-0.4	
393	2541	3289	-216.1	2.5	1.679	34.659	-0.4	
394	2868	3290	-218.9	2.3	1.521	34.669	-0.2	
385	3194	3286	-202.4	3.3	1.391	34.678	-0.3	
181	3430	3276	-200.0	2.9	1.280	34.686	-0.3	
183	3683	3277	-191.9	3.3	1.166	34.692	-0.2	
184	3937	3278	-188.2	3.0	1.052	34.698	-0.3	
187	4189	3279	-180.6	3.1	0.995	34.700	-0.5	
189	4443	3280	-177.9	3.3	0.957	34.703	-0.6	
193	4695	3281	-176.7	3.0	0.947	34.704	-0.4	
194	4947	3282	-180.9	3.1	0.944	34.703	-0.4	

Cruise: P16S17			Station: 187		34°0'S 150°30'W		14 Aug 1991	
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$	
490	4	3275	124.1	3.8		35.091	1.1	
381	1591	3267	-166.9	3.0		34.545	0.1	
383	1786	3268	-189.5	3.0	2.315	34.601	-0.1	
384	1982	3269	-202.4	3.2	2.101	34.627	-0.2	
387	2227	3271	-213.6	3.0	1.903	34.643	-0.3	
389	2474	3272	-219.0	2.6	1.763	34.655	-0.4	
393	2728	3273	-213.7	2.3	1.642	34.663	-0.5	
394	2983	3274	-216.7	2.5	1.529	34.671	-0.2	
385	3244	3270	-208.3	2.9	1.425	34.680	-0.2	
181	3464	3260	-197.6	3.1	1.306	34.692	-0.3	

183	3768	3261	-187.7	2.8	1.157	34.702	0.1
184	4071	3262	-175.5	3.0	1.027	34.707	-0.1
187	4376	3263	-175.3	3.1	0.877	34.710	-0.3
189	4681	3264	-165.5	2.9	0.775	34.710	-0.2
193	4986	3265	-166.3	3.0	0.729	34.709	-0.1
194	5292	3266	-169.3	3.3	0.692	34.708	-0.3

Cruise: P16S17 Station: 180 37°30'S 150°30'W 12 Aug 1991

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
490	4	3259	113.4	3.9		34.743	1.1
381	1332	3251	-130.2	3.2	3.183	34.422	0.2
383	1627	3252	-164.2	3.3	2.605	34.552	-0.6
384	1926	3253	-194.1	2.9	2.274	34.613	-0.8
387	2224	3255	-200.4	3.2	2.031	34.638	-0.7
389	2523	3256	-212.0	2.9	1.847	34.651	-1.0
393	2822	3257	-215.8	3.3	1.682	34.665	-0.4
394	3123	3258	-213.0	3.0	1.555	34.675	-0.8
385	3427	3254	-192.9	3.0	1.427	34.691	-0.9
181	3841	3244	-176.1	3.0	1.198	34.712	-0.1
183	4129	3245	-170.9	3.1	1.002	34.713	0.0
184	4420	3246	-166.8	3.3		34.711	-0.3
187	4714	3247	-168.4	2.3	0.761	34.710	-0.2
189	5016	3248	-163.9	3.0		34.708	-0.5
193	5324	3249	-159.7	3.4	0.669	34.707	-0.3
194	5639	3250	-163.9	3.1	0.648	34.707	-0.7

Cruise: P16A17A Station: 14 43°0'S 150°30'W 16 Oct 1992

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
181	2824	5874*	-202.2	4.0	1.662	34.680	-0.7
182	3129	5873*	-196.0	4.0	1.505	34.696	0.0
183	3434	5872*	-177.8	4.0	1.349	34.713	-0.6
184	3740	5871*	-177.1	4.0	1.131	34.718	-1.0
187	4047	5870*	-167.9	4.0	0.951	34.715	-1.1
189	4355	5869*	-167.5	4.0	0.821	34.713	-1.1
190	4664	5868*	-168.0	4.0	0.767	34.713	-0.2
192	4974	5867*	-173.0	4.0	0.759	34.713	-0.8
193	5286	5866*	-173.8	4.0	0.731	34.712	-1.1

Cruise: P16A17A Station: 22 47°0'S 150°29'W 18 Oct 1992

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
281	3340	5880*	-165.0	4.0	1.455	34.722	-0.9
282	3546	5879*	-169.5	4.0	1.297	34.724	-0.7
283	3750	5878*	-166.5	4.0	1.134	34.723	-0.5
284	3952	5877*	-165.9	4.0	1.001	34.721	-0.1
287	4152	5876*	-167.9	4.0	0.912	34.717	0.1
289	4347	5875*	-168.9	4.0	0.832	34.715	-0.4

Cruise: P16A17A Station: 38 54°59'S 150°30'W 24 Oct 1992

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
181	2144	5892*	-157.4	4.0	1.487	34.736	-1.4
182	2349	5891*	-158.3	4.0	1.294	34.731	-0.5
183	2551	5890*	-159.5	4.0	1.120	34.727	-1.6
184	2759	5889*	-158.0	4.0	0.904	34.719	0.4

185	2963	5888*	-165.7	4.0	0.776	34.715	-2.8
187	3165	5884*	-162.6	4.0	0.691	34.710	-1.4
189	3368	5887*	-159.2	4.0	0.662	34.710	-2.2
190	3570	5886*	-158.8	4.0	0.622	34.709	-1.8
193	3770	5885*	-160.4	4.0	0.612	34.708	-2.6

Cruise: P16A17A Station: 43 57°30'S 150°30'W 26 Oct 1992

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$	
	181	1877			1.203	34.731		
	182	2027	5896*	-155.6	4.0	1.093	34.727	-2.4
	183	2176	5895*	-167.9	4.0	1.002	34.724	0.2
	184	2324	5894*	-163.1	4.0	0.902	34.721	-1.5
	185	2473	5893*	-164.4	4.0	0.799	34.715	-0.6
	187	2622			0.730	34.713		
	189	2769	5883*	-161.0	4.0	0.639	34.710	-1.6
	190	2917	5882*	-167.6	4.0	0.596	34.708	-1.3
	193	3063	5881*	-160.6	4.0	0.593	34.707	-3.7

Cruise: P16A17A Station: 48 59°59'S 150°32'W 27 Oct 1992

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$	
	181	1623	5914*	-158.1	4.0	0.600	34.708	-1.3
	182	1775	5913*	-163.4	4.0	0.550	34.706	-1.6
	183	1928	5912*	-161.3	4.0	0.530	34.705	-0.9
	184	2079	5911*	-159.3	4.0	0.479	34.704	-1.3
	185	2230			0.366	34.702		
	187	2381	5910*	-159.3	4.0	0.308	34.701	-1.2
	189	2531	5909*	-155.5	4.0	0.237	34.700	-1.2
	190	2681	5908*	-163.5	4.0	0.146	34.699	-2.2
	193	2829	5907*	-158.2	4.0	0.115	34.699	-1.7

Cruise: P16A17A Station: 56 62°27'S 135°6'W 1 Nov 1992

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$	
	381	1412	5932*	-164.6	4.0	1.079	34.725	-0.6
	382	1613	5931*	-159.9	4.0	0.917	34.720	-1.9
	383	1814	5930*	-165.9	4.0	0.804	34.716	2.2
	384	2016	5926*	-163.6	4.0	0.710	34.711	-0.9
	385	2218	5925*	-150.5	4.0	0.586	34.708	-1.1
	387	2420	5924*	-160.5	4.0	0.531	34.706	-0.8
	389	2622	5929*	-160.2	4.0	0.455	34.704	-2.0
	390	2825	5928*	-165.7	4.0	0.340	34.703	-0.4
	393	3029	5927*	-156.7	4.0	0.234	34.703	-1.1
	181	3289	5923*	-160.5	4.0	0.162	34.701	-1.2
	182	3546	5921*	-150.4	4.0	0.070	34.702	-1.4
	183	3803	5922*	-157.2	4.0	-0.032	34.701	-0.4
	184	4060	5920*	-153.4	4.0	-0.069	34.700	-0.3
	185	4316	5919*	-154.0	4.0	-0.087	34.701	-0.8
	187	4572	5918*	-153.3	4.0	-0.094	34.700	-1.2
	189	4828	5917*	-153.8	4.0	-0.093	34.700	-0.8
	190	5082	5916*	-152.5	4.0	-0.103	34.700	-0.2
	193	5336	5915*	-154.2	4.0	-0.104	34.701	-1.1

Cruise: P16A17A		Station: 73	56°2'S 135°2'W		7 Nov 1992		
Cast/Bottle	Depth	QL/ML(*)	Δ ¹⁴ C	σ ¹⁴ C	θ	Salinity	δ ¹³ C
181	1601	5933*	-154.1	4.0	1.688	34.735	-0.8
182	1802	5941*	-152.1	4.0	1.495	34.737	-0.4
183	2004	5940*	-163.0	4.0	1.321	34.734	-1.2
184	2207	5939*	-157.8	4.0	1.157	34.728	-1.3
185	2410	5938*	-160.4	4.0	1.013	34.724	-0.1
187	2613	5937*	-156.9	4.0	0.917	34.720	-1.2
189	2817	5936*	-152.1	4.0	0.820	34.717	-0.5
190	3022	5935*	-154.8	4.0	0.724	34.714	-0.6
193	3215	5934*	-158.7	4.0	0.608	34.711	-0.8

Cruise: P16A17A		Station: 80	52°31'S 135°0'W		9 Nov 1992		
Cast/Bottle	Depth	QL/ML(*)	Δ ¹⁴ C	σ ¹⁴ C	θ	Salinity	δ ¹³ C
381	1604	5959*	-152.0	4.0	2.469	34.554	-0.4
382	1755	5958*	-148.1	4.0	2.298	34.606	-1.1
383	1906	5957*	-156.2	4.0	2.206	34.639	-0.7
384	2057	5956*	-159.3	4.0	2.115	34.670	-0.4
385	2208	5955*	-165.8	4.0	1.983	34.688	-0.5
387	2360	5954*	-164.9	4.0	1.901	34.705	-0.7
389	2511	5953*	-158.6	4.0	1.799	34.719	-0.3
390	2663	5952*	-170.9	4.0	1.677	34.725	0.6
393	2815	5951*	-162.5	4.0	1.545	34.728	-0.7
181	2936	5950*	-161.4	4.0	1.455	34.726	-1.1
182	3136	5949*	-165.9	4.0	1.260	34.724	-0.5
183	3337	5948*	-166.2	4.0	1.182	34.722	-0.2
184	3538	5947*	-174.6	4.0	1.074	34.719	0.2
185	3739	5946*	-172.0	4.0	1.014	34.718	-0.3
187	3940	5945*	-172.1	4.0	0.983	34.717	-0.6
189	4141	5944*	-172.2	4.0	0.961	34.716	-1.0
190	4343	5943*	-170.5	4.0	0.949	34.716	-0.2
193	4545	5942*	-167.0	4.0	0.945	34.716	-0.8

Cruise: P16A17A		Station: 87	49°0'S 134°57'W		11 Nov 1992		
Cast/Bottle	Depth	QL/ML(*)	Δ ¹⁴ C	σ ¹⁴ C	θ	Salinity	δ ¹³ C
381	1438	5976*	-118.4	4.0	3.194	34.400	-0.8
382	1611	5975*	-139.0	4.0	2.804	34.467	-0.2
383	1791	5974*	-152.4	4.0	2.562	34.534	-0.9
485	1884	5972*	-161.6	4.0	2.422	34.576	-0.8
484	1972	5973*	-162.3	4.0	2.398	34.589	-1.0
487	2324	5971*	-181.5	4.0	2.101	34.654	-1.6
489	2502	5970*	-178.1	4.0	1.996	34.676	0.1
490	2680	5969*	-167.3	4.0	1.920	34.703	-1.1
493	2861	5968*	-165.6	4.0	1.776	34.712	-1.4
181	3054	5967*	-170.5	4.0	1.669	34.726	0.2
182	3285	5966*	-168.3	4.0	1.421	34.726	-1.0
183	3514	5965*	-176.2	4.0	1.232	34.720	-0.1
184	3743	5964*	-176.5	4.0	1.111	34.718	-0.2
185	3973	5963*	-168.6	4.0	0.989	34.716	-0.1
187	4203	5977*	-167.3	4.0	0.955	34.715	-0.1
189	4433	5962*	-171.9	4.0	0.929	34.715	-0.4
190	4664	5961*	-176.1	4.0	0.912	34.714	-0.6
193	4895	5960*	-175.1	4.0	0.895	34.713	-2.0

Cruise: P16A17A		Station: 95	45°0'S 134°59'W		13 Nov 1992		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1443				2.818	34.459	
382	1593	6089*	-147.4	4.0	2.529	34.528	-0.5
383	1743				2.368	34.582	
384	1892	6088*	-172.6	4.0	2.227	34.617	-0.3
385	2042				2.096	34.641	
387	2191	6086*	-196.8	4.0	1.985	34.653	-1.5
389	2340				1.864	34.661	
390	2488	6087*	-203.8	4.0	1.742	34.665	-1.5
181	2770	6085*	-209.9	4.0	1.618	34.674	-0.1
182	3023				1.496	34.681	
183	3277	6084*	-203.3	4.0	1.393	34.691	-1.0
184	3528				1.280	34.698	
185	3780	6083*	-187.0	4.0	1.448	34.704	-0.9
187	4030				1.032	34.709	
189	4279	6082*	-179.4	4.0	0.927	34.712	-0.6
190	4525	6081*	-173.4	4.0	0.831	34.711	-0.6
193	4771				0.793	34.711	

Cruise: P16A17A		Station: 105	40°0'S 134°59'W		16 Nov 1992		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
481	1358				2.973	34.429	
482	1559				2.561	34.525	
483	1760	6097*	-176.1	4.0	2.337	34.595	-0.8
484	1961	6096*	-195.9	4.0	2.123	34.634	0.2
485	2163	6095*	-210.4	4.0	1.948	34.650	-0.2
487	2365	6094*	-216.4	4.0	1.812	34.658	-1.0
489	2567				1.706	34.667	
490	2770				1.599	34.674	
493	2973				1.501	34.682	
181	3147				1.445	34.691	
182	3404	6092*	-193.9	4.0	1.292	34.699	-0.6
183	3661				1.170	34.704	
184	3916	6099*	-196.4	4.0	1.025	34.707	-0.9
185	4171	6091*	-183.2	4.0	0.929	34.708	-0.7
281	4391	6090*	-179.0	4.0	0.885	34.709	-0.5
282	4660				0.864	34.711	
283	4921				0.838	34.711	
284	5173				0.832	34.711	

Cruise: P16A17A		Station: 113	36°0'S 135°0'W		19 Nov 1992		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1506				2.684	34.516	
382	1657	6106*	-182.8	4.0	2.415	34.572	0.0
383	1809	6105*	-183.7	4.0	2.254	34.603	-1.5
384	1961	6104*	-203.8	4.0	2.133	34.624	0.2
385	2112	6103*	-205.8	4.0	1.982	34.638	-1.0
387	2264	6102*	-214.9	4.0	1.880	34.648	-0.5
389	2415				1.788	34.658	
390	2567				1.686	34.662	
393	2718	6101*	-215.4	4.0	1.603	34.667	-2.1
181	2934	6100*	-194.7	4.0	1.514	34.673	-0.7
182	3164				1.414	34.680	

183	3392				1.309	34.686	
184	3621				1.231	34.693	
185	3849				1.100	34.700	
187	4077	6098*	-179.4	4.0	0.988	34.706	-0.4
189	4306				0.934	34.708	
190	4535				0.898	34.709	
193	4764				0.891	34.709	

Cruise: P16A17A Station: 119 33°0'S 135°0'W 20 Nov 1992

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
181	1899				2.089	34.619	
182	2106	6110*	-206.3	4.0	1.904	34.639	-0.4
183	2310	6109*	-213.6	4.0	1.758	34.652	-0.7
184	2514	6108*	-212.3	4.0	1.671	34.659	-1.0
185	2716	6107*	-213.5	4.0	1.555	34.667	-1.4

Cruise: P16S17 Station: 179 33°1'S 135°1'W 8 Aug 1991

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
490	4	3243	-188.3	3.0		35.174	-0.3
381	1218	3240	126.6	3.9	3.341	34.402	0.4
383	1464	3241	-126.8	3.9	2.688	34.508	-0.7
384	1701	3242	-161.3	3.1	2.312	34.585	-0.2
181	3077				1.442	34.673	
183	3335	3234	-208.1	3.0	1.358	34.680	-0.5
184	3591	3235	-199.7	3.0	1.273	34.687	-0.9
187	3846	3236	-193.2	3.3	1.149	34.695	-0.4
189	4099	3237	-179.2	3.0	1.015	34.685	0.0
193	4300	3238	-177.5	3.1	0.963	34.704	-0.2
194	4498	3239	-182.4	3.0	0.941	34.683	-0.3

Cruise: P16S17 Station: 172 29°34'S 134°4'W 5 Aug 1991

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
490	5	3233	127.4	3.5		33.421	0.8
385	1237	3229	-153.5	4.3		34.450	0.0
299	1287				3.083	34.469	-0.1
381	1487	3226	-177.7	3.1	2.607	34.540	-0.3
383	1739	3227	-198.2	2.8	2.211	34.599	-0.4
384	1989	3228	-216.4	2.8	1.983	34.627	-0.8
387	2243	3230	-211.8	4.1	1.813	34.643	-0.5
389	2495	3231	-215.7	2.9	1.673	34.655	-0.6
393	2748	3232	-216.6	2.9	1.552	34.665	-0.6
183	2992	3220	-207.2	2.9	1.431	34.672	-0.4
184	3241	3221	-205.8	2.7	1.357	34.678	-0.2
187	3493	3222	-207.1	2.5		34.685	-0.1
189	3752	3223	-201.1	3.3	1.208	34.689	-0.2
193	4018	3224	-197.4	3.0	1.169	34.692	-0.1
194	4237	3225	-189.6	3.4	1.145	34.693	-0.1

Cruise: P16S17 Station: 166 26°38'S 133°18'W 3 Aug 1991

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
481	5	3218	130.1	3.6			0.6
185	449	3205	15.4	3.3	8.712	34.484	0.6
187	745	3206	-39.8	3.2	5.944	34.321	0.5

189	1121	3207	-139.1	3.6	3.756	34.433	0.0
381	1407	3211	-177.8	3.0	2.791	34.527	-0.2
387	1546	3214	-182.5	3.0	2.543	34.557	-0.3
383	1701	3212	-200.0	3.0	2.224	34.596	-0.2
384	1947	3213	-210.5	2.9	1.966	34.630	-0.4
390	2399	3215	-211.6	2.2	1.681	34.652	-0.5
190	2435	3208	-210.5	2.9	1.678	34.655	-0.6
393	2620	3216	-216.3	3.2	1.593	34.660	-0.6
193	2638	3209	-206.9	3.0	1.591	34.662	-0.3
194	2778	3210	-210.1	3.0	1.529	34.668	-0.2
394	2907	3217	-211.2	2.9	1.460	34.670	-0.4
Cruise: P16S17 Station: 153 20°17'S 132°50'W 30 Jul 1991							
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	8	3196	111.2	2.7		36.426	1.3
383	1190	3197	-169.8	3.0	3.016	34.523	0.2
384	1393	3198	-192.4	3.3	2.842	34.558	-0.2
385	1595	3199	-195.7	3.0	2.390	34.590	-0.2
387	1797	3200	-197.9	3.7	2.137	34.615	-0.2
389	1998	3201	-202.6	3.4	1.952	34.632	-0.1
390	2198	3202	-216.0	3.2	1.847	34.645	-0.2
393	2397	3203	-221.3	2.9	1.731	34.656	-0.1
394	2596	3204	-220.1	3.1	1.644	34.662	-0.2
181	2844	3187	-214.4	3.2	1.572	34.667	-0.2
183	3046	3188	-207.7	3.0	1.484	34.671	-0.1
184	3248	3189	-205.2	2.9	1.396	34.684	-0.1
185	3450	3190	-207.9	3.2	1.385	34.680	-0.3
187	3653	3191	-208.2	2.9	1.364	34.679	-0.1
189	3853	3192	-211.7	3.2	1.353	34.680	-0.2
190	4055	3193	-212.8	2.9	1.350	34.679	-0.4
193	4255	3194	-208.5	3.1	1.347	34.680	-0.2
194	4455	3195	-204.6	2.2	1.343	34.680	0.1
Cruise: P16S17 Station: 143 15°23'S 133°53'W 28 Jul 1991							
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
483	3	3179	89.4	3.8	26.399	36.591	1.5
484	993	3180	-161.0	3.2	4.421	34.513	0.0
485	1195	3181	-187.3	3.3			-0.1
487	1397	3182	-205.6	3.1	3.108	34.572	-0.2
489	1598	3183	-209.7	3.2	2.657	34.594	-0.5
490	1798	3184	-217.0	3.0	2.245	34.620	-0.2
493	1996	3185	-219.8	3.1	1.982	34.639	0.0
494	2193	3186	-220.5	3.0	1.827	34.651	-0.5
181	2356	3169	-223.1	3.1	1.725	34.662	-0.1
183	2632	3170	-215.5	3.3	1.582	34.671	-0.2
284	2862	3171	-217.9	3.2	1.502	34.676	-0.1
285	3123	3172	-218.5	3.3	1.418	34.681	-0.3
287	3381	3173	-218.1	3.2		34.686	-0.1
289	3635	3174	-210.8	3.2	1.269	34.687	-0.2
290	3884	3175	-205.5	3.1	1.252	34.689	-0.1
293	4080	3176	-203.6	3.2	1.219	34.690	-0.2
294	4261	3177	-201.7	3.1	1.197	34.691	-0.1

Cruise: P16S17 Station: 132 10°2'S 134°58'W 24 Jul 1991

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	6	3160	76.5	3.6	27.469	35.767	1.7
383	1090	3161	-178.0	3.1	4.036	34.545	-0.1
384	1291	3162	-195.3	3.2	3.345	34.569	-0.1
385	1492	3163	-200.9	2.6	2.863	34.592	-0.2
387	1743	3164	-224.4	2.2	2.398	34.617	-0.3
389	1992	3165	-226.8	2.1	2.081	34.638	-0.4
390	2241	3166	-229.8	2.2	1.853	34.656	-0.6
181	2428	3154	-224.6	3.1	1.718	34.665	-0.2
183	2729	3155	-219.9	3.1	1.593	34.672	-0.2
184	2929	3156	-221.1	2.0	1.486	34.677	-0.4
185	3180	3157	-211.6	3.0		34.686	-0.3
187	3429	3158	-208.2	2.1	1.290	34.685	-0.3
189	3678	3159	-208.9	2.2	1.254	34.687	-0.3
393	4055	3167	-221.1	1.8	1.154	34.690	-0.4
394	4360	3168	-213.7	1.8	1.110	34.693	-0.6

Cruise: P17C Station: 121 5°8'S 135°3'W 6 Jul 1991

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
285	739	5332*	-142.4	4.0	6.441	34.559	-0.5
287	1053	5331*	-172.1	4.0	4.326	34.550	-1.7
485	1151	5330*	-182.5	4.0	4.050	34.557	-0.9
481	1196	5329*	-189.0	4.0	3.779	34.565	-0.7
288	1405	5328*	-206.5	4.0	3.207	34.592	-1.6
483	1546	5325*	-217.0	4.0	2.809	34.604	-1.2
484	1747	5324*	-213.0	4.0	2.516	34.619	-1.5
389	1921	5323*	-214.1	4.0	2.323	34.629	-1.6
390	2220	5322*	-223.5	4.0	1.992	34.647	-1.9
393	2535	5321*	-221.6	4.0	1.699	34.666	-0.3
281	2673	5320*	-228.2	4.0	1.627	34.669	-1.3
394	2864	5319*	-226.4	4.0	1.541	34.673	-0.8
284	2938	5318*	-222.8	4.0	1.514	34.674	-0.7
487	3282	5317*	-218.6	4.0	1.344	34.682	-1.6
489	3536	5316*	-213.9	4.0	1.250	34.686	-1.0
490	3790	5315*	-216.1	4.0	1.165	34.690	-1.9
493	4044	5314*	-203.2	4.0	1.108	34.693	-1.9
494	4299	5313*	-195.8	4.0	1.061	34.695	-1.5

Cruise: P17C Station: 98 0°0'18" S 135°9'W 1 Jul 1991

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
388	495				8.059	34.627	
188	617	5334*	-128.6	4.0	7.010	34.591	-0.9
381	694	5350*	-135.5	4.0	6.107	34.559	-2.0
384	892	5349*	-171.0	4.0	4.738	34.552	-0.7
385	1093	5348*	-188.4	4.0	3.877	34.570	-1.0
387	1291	5347*	-208.6	4.0	3.285	34.591	-0.3
389	1492	5346*	-213.9	4.0	2.863	34.606	-0.7
390	1694	5345*	-227.7	4.0	2.501	34.623	-1.4
393	1894	5344*	-228.0	4.0	2.172	34.698	-1.6
394	2096	5343*	-232.5	4.0	1.934	34.651	-1.0
181	2363	5342*	-230.0	4.0	1.787	34.659	-0.9
184	2615	5341*	-229.9	4.0	1.617	34.667	-1.3
185	2867	5340*	-224.9	4.0	1.522	34.671	-1.8

187	3118	5339*	-229.8	4.0	1.370	34.688	-0.4
189	3623	5338*	-209.9	4.0	1.155	34.690	-0.7
190	3877	5337*	-212.4	4.0	1.095	34.694	-0.8
193	4129	5336*	-205.2	4.0	1.084	34.693	0.0
194	4382	5335*	-205.3	4.0	1.092	34.693	-0.9

Cruise: P17C		Station: 76	5°0'N	134°59'W	27 Jun 1991		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	5	5355*	91.1	4.0	28.457	34.369	0.0
384	593	5354*	-125.7	4.0	7.184	34.585	-1.0
385	839	5353*	-168.6	4.0	5.211	34.551	-0.9
387	1087	5352*	-187.5	4.0	4.279	34.565	-1.7
388	1338	5351*	-211.0	4.0	3.397	34.590	-1.8
389	1588	5367*	-233.2	4.0		34.613	-1.3
390	1841	5366*	-234.1	4.0	2.339	34.632	-1.0
393	2095	5365*	-231.1	4.0	2.021	34.647	-0.4
394	2350	5356*	-235.3	4.0	1.767	34.660	-1.2
181	2607	5364*	-232.0	4.0	1.663	34.666	-1.0
184	2858	5363*	-230.7	4.0	1.569	34.670	-0.8
185	3117	5362*	-226.2	4.0	1.421	34.676	-1.9
187	3362	5361*	-221.3	4.0	1.304	34.682	-1.8
188	3614	5360*	-215.4	4.0	1.199	34.686	-1.0
189	3868	5359*	-214.2	4.0	1.136	34.690	-1.8
190	4121	5358*	-208.1	4.0	1.095	34.691	-1.6
193	4376	5357*	-204.7	4.0	1.053	34.693	-1.3
194	4630	5368*	-208.8	4.0	1.039	34.693	-0.8

Cruise: P17C		Station: 66	9°59'N	135°2'W	24 Jun 1991		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	889	5392*	-173.2	4.0	5.095	34.550	-1.8
384	1117	5391*	-193.0	4.0	4.222	34.564	-1.6
385	1420	5390*	-222.8	4.0	3.374	34.565	-0.5
387	1658	5389*	-225.9	4.0	2.750	34.606	-0.5
488	1876	5388*	-240.8	4.0	2.308	34.626	-2.0
489	2107	5387*	-240.3	4.0	1.982	34.644	-0.8
490	2338	5386*	-238.6	4.0	1.785	34.657	-0.9
493	2567	5385*	-233.5	4.0	1.674	34.664	-1.1
494	2801	5383*	-233.0	4.0	1.576	34.668	-1.5
181	3004	5384*	-229.6	4.0	1.498	34.673	-0.5
184	3246	5376*	-234.3	4.0	1.377	34.677	-1.5
185	3489	5375*	-235.6	4.0	1.284	34.679	0.3
187	3730	5374*	-220.7	4.0	1.181	34.684	-1.4
188	3971	5373*	-212.6	4.0	1.106	34.687	-0.9
189	4213	5372*	-212.4	4.0	1.070	34.691	-0.9
190	4555	5371*	-209.1	4.0	1.041	34.692	-0.9
193	4696	5370*	-205.2	4.0	1.044	34.693	0.8
194	4936	5369*	-203.2	4.0	1.035	34.689	-1.1

Cruise: P17C		Station: 57	14°29'N	134°59'W	21 Jun 1991		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	992	5410*	-203.4	4.0	4.278	34.540	-1.9
383	1241	5409*	-221.3	4.0	3.485	34.568	-1.3
384	1490	5408*	-229.2	4.0	2.885	34.596	-0.8
389	1511	5407*	-230.6	4.0	2.926	34.597	-1.0

385	1742	5406*	-239.7	4.0		34.615	-2.0
387	1992	5405*	-250.0	4.0	2.068	34.632	-0.5
390	2495	5404*	-244.0	4.0	1.674	34.657	-0.9
393	2747	5403*	-237.4	4.0	1.538	34.666	-1.1
394	2999	5402*	-242.3	4.0	1.445	34.671	-0.9
181	3076	5401*	-239.8	4.0	1.419	34.672	-1.2
183	3301	5400*	-230.8	4.0	1.327	34.658	0.3
184	3527	5399*	-230.6	4.0	1.252	34.679	-0.8
185	3754	5398*	-230.9	4.0	1.188	34.682	-1.5
187	3982	5397*	-213.1	4.0	1.172	34.687	-2.3
189	4211	5396*	-208.0	4.0	1.068	34.690	-1.6
190	4442	5395*	-213.8	4.0	1.057	34.691	-0.3
193	4674	5394*	-217.4	4.0	1.042	34.691	-2.1
194	4907	5393*	-211.2	4.0	1.044	34.691	-0.2

Cruise: P17C Station: 46 19°59'N 135°0'W 17 Jun 1991

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	894	5411*	-196.4*	4.0	4.569	34.491	-1.4
383	1142	5431*	-219.4	4.0	3.635	34.536	-1.3
384	1391	5430*	-229.0	4.0	2.990	34.569	-1.9
385	1640	5429*	-248.4	4.0	2.505	34.598	-1.4
387	1890	5428*	-250.6	4.0	2.139	34.617	-2.0
389	2141	5427*	-251.0	4.0	1.861	34.632	-1.1
390	2394	5434*	-248.0	4.0	1.662	34.647	-1.5
393	2649	5426*	-238.4	4.0	1.524	34.657	-1.8
394	2907	5425*	-247.0	4.0	1.413	34.666	-1.7
181	3201	5424*	-242.3	4.0	1.325	34.673	-1.1
183	3453	5423*	-240.2	4.0	1.250	34.678	-0.4
184	3703	5422*	-217.3	4.0	1.299	34.679	-2.5
185	3957	5421*	-225.7	4.0	1.166	34.683	0.7
187	4209						
189	4465	5420*	-210.7	4.0	1.077	34.689	0.0
190	4721	5419*	-211.0	4.0	1.057	34.692	-0.5
193	4978	5418*	-208.7	4.0	1.033	34.691	-0.8
194	5243	5412*	-205.3	4.0	1.022	34.693	-0.8

Cruise: P17C Station: 34 26°1'N 135°0'W 14 Jun 1991

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
181	2281	5441*	-228.7	4.0	1.721	34.636	-1.3
183	2582	5440*	-248.0	4.0	1.498	34.652	-1.4
184	2883	5439*	-244.1	4.0	1.363	34.663	-0.5
185	3186	5438*	-240.5	4.0	1.285	34.670	-1.4
187	3489	5437*	-236.0	4.0	1.225	34.676	-1.0
189	3793	5436*	-239.4	4.0	1.194	34.671	-1.5
190	4099	5435*	-225.9	4.0	1.170	34.680	-0.6
193	4406	5433*	-229.5	4.0	1.162	34.679	-1.8
194	4714	5432*	-230.8	4.0	1.148	34.683	-1.3

Cruise: P17C Station: 26 30°1'N 134°58'W 11 Jun 1991

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
388	176	5459*	103.8	4.0		34.718	1.2
385	543	5458*	-74.6	4.0	6.291	34.026	-1.0
387	795	5457*	-176.0	4.0	4.379	34.277	-2.0
383	893	5456*	-184.9	4.0	4.112	34.361	-1.0

384	1092	5455*	-209.1	4.0	3.480	34.447	-1.8
393	1190	5454*	-217.3	4.0	3.226	34.486	-2.2
390	1191	5453*	-216.3	4.0	3.234	34.484	-1.1
394	1291	5452*	-229.4	4.0	3.068	34.513	-1.0
389	1895	5451*	-242.5	4.0	2.070	34.602	-1.3
183	2748	5450*	-242.9	4.0	1.454	34.656	-2.0
184	2997	5449*	-237.5	4.0	1.371	34.664	-1.5
185	3247	5448*	-237.3	4.0	1.279	34.671	-0.5
187	3497	5447*	-229.7	4.0	1.215	34.676	-1.0
188	3749	5446*	-230.1	4.0	1.179	34.681	-1.0
189	3999	5445*	-229.7	4.0	1.171	34.682	-1.1
190	4253	5444*	-229.7	4.0	1.173	34.683	-0.1
193	4506	5443*	-224.3	4.0	1.163	34.684	-1.0
194	4761	5442*	-221.9	4.0	1.153	34.677	-1.4

Cruise: P17C		Station: 17	34°36'N	134°59'W	8 Jun 1991		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
590	244	5460*	45.3	4.0	8.174	33.813	-0.3
593	497	5462*	-95.9	4.0		34.068	-1.2
594	755				4.109	34.254	
383	990	5476*	-185.2	4.0	3.602	34.432	-0.7
384	1242	5475*	-208.2	4.0	3.003	34.508	-1.3
385	1493	5474*	-220.0	4.0	2.568	34.554	-1.5
387	1743	5473*	-227.3	4.0	2.177	34.587	-1.4
388	1992				1.904	34.605	
489	2249	5471*	-224.9	4.0	1.680	34.619	-1.3
183	3156	5470*	-217.8	4.0	1.342	34.658	-0.6
184	3409	5469*	-214.5	4.0	1.254	34.666	-0.8
185	3660	5468*	-208.6	4.0	1.227	34.670	0.2
187	3912	5467*	-218.7	4.0	1.187	34.675	-0.3
188	4165	5466*	-210.8	4.0	1.158	34.673	-0.3
189	4419				1.151	34.675	
190	4674	5465*	-217.3	4.0	1.145	34.681	-2.1
193	4931	5464*	-213.0	4.0	1.130	34.682	-0.8
194	5189	5463*	-206.5	4.0	1.072	34.682	-0.9

Cruise: P17N		Station: 10	38°14'N	124°58'W	17 May 1993		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1811	3410	-242.6	2.2	2.165	34.592	-1.8
382	1964	3411	-245.6	2.0	1.936	34.602	-2.5
383	2116	3412	-244.5	2.0	1.805	34.618	-2.2
384	2271	3413	-242.1	2.1	1.703	34.630	-1.9
385	2424	3414	-247.8	2.0	1.620	34.638	-0.9
387	2576	3415	-243.7	2.2	1.577	34.645	-1.5
389	2728	3416	-249.6	2.3	1.514	34.633	-1.1
390	2880				1.451	34.659	
181	2954	3401	-228.1	2.3	1.434	34.659	-1.9
182		3402	-240.8	2.1		34.664	-1.5
393	3027	3417	-244.8	2.0	1.408	34.661	-1.3
183	3252	3403	-237.2	2.4	1.347	34.667	-1.9
184	3404	3404	-233.0	2.4	1.312	34.671	-1.6
185	3507	3405	-238.5	2.3	1.272	34.673	-0.7
187	3610	3406	-235.0	2.1	1.261	34.674	-1.1

189	3726	3407			1.230	34.677	
190	3821	3408	-229.7	3.7	1.205	34.679	-2.6
193	3928	3409	-224.7	1.5	1.171	34.684	-1.2

Cruise: P17N Station: 28 35°35'N 134°59'W 23 May 1993

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1917	3426	-246.0	2.2	2.028	34.601	-2.2
382	2093	3427	-246.3	2.2	1.846	34.616	-1.6
383	2270	3428	-247.7	2.3	1.703	34.628	-1.8
384	2445	3429	-246.9	2.0	1.599	34.638	-1.7
385	2622	3430	-248.4	2.1	1.514	34.646	-0.9
387	2799	3431	-242.9	2.4	1.449	34.653	-1.4
389		3432	-242.4	2.2		34.659	-1.5
390	3155	3433	-242.0	1.8	1.327	34.664	-1.5
393	3337	3434	-242.8	2.1	1.280	34.670	-1.3
181	3560	3418	-235.1	2.1	1.228	34.675	-1.6
182	3764	3419	-232.5	2.1	1.197	34.678	-1.5
183	3969	3420	-227.7	1.6	1.155	34.681	-2.1
184	4173				1.143	34.683	
185	4377	3421	-225.9	2.2	1.129	34.685	-0.4
187	4583	3422	-228.2	2.2	1.135	34.686	-1.3
189	4788	3423	-223.6	2.1	1.120	34.686	-1.0
190	4994	3424	-218.4	1.7	1.117	34.687	-1.3
193	5198	3425	-224.4	2.0	1.114	34.687	-1.0

Cruise: P17N Station: 39 39°36'N 135°0'W 26 May 1993

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1965	3444	-237.5	2.5	1.857	34.599	-1.5
382	2116	3445	-242.9	2.2	1.755	34.613	-1.6
383	2268	3446	-243.5	2.6	1.664	34.624	-1.9
384	2419	3447	-244.4	2.3	1.601	34.633	-1.2
385	2574	3448	-245.4	2.2	1.519	34.640	-0.9
387	2727	3449	-244.5	2.3	1.485	34.646	-1.4
389	2880	3450	-243.2	2.2	1.412	34.652	-1.3
390	3036	3451	-242.6	2.6	1.368	34.656	-1.2
393	3192	3452	-243.1	2.4	1.353	34.660	-1.2
181	3464	3435	-235.6	2.2	1.286	34.666	-1.5
182	3641	3436	-232.8	2.3	1.288	34.666	-1.6
183	3819	3437	-231.8	2.4	1.210	34.675	-2.7
184	3996	3438	-227.9	2.5	1.220	34.679	-1.2
185	4174	3439	-225.7	2.0	1.162	34.683	-0.6
187	4352	3440	-221.6	2.2	1.152	34.684	-1.5
189	4531	3441	-220.7	2.2	1.140	34.685	-0.8
190	4710	3442	-218.7	2.2	1.132	34.685	-2.1
193	4889	3443	-223.9	2.5	1.127	34.687	-0.9

Cruise: P17N Station: 48 41°40'N 135°59'W 28 May 1993

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1912	3462	-243.1	2.1	1.891	34.590	-1.9
382	2040				1.801	34.604	
383	2193	3463	-245.9	2.6	1.670	34.618	-2.3
384	2294	3464	-249.5	1.6	1.632	34.625	-2.3
385	2420	3465	-249.7	2.9	1.552	34.633	-1.1
387	2548	3466	-246.4	2.3	1.511	34.639	-1.8

389	2673	3467	-245.0	2.1	1.460	34.645	-1.3
390	2800	3468	-244.3	2.7	1.418	34.648	-1.9
393	2924	3469	-241.4	2.3	1.379	34.655	-1.5
181	3024	3453	-247.1	2.9	1.359	34.656	-0.9
182	3151	3454	-238.4	2.4	1.327	34.660	-0.9
183	3279	3455	-239.1	2.2	1.305	34.663	-1.6
184	3407	3456	-236.8	2.8	1.292	34.667	-1.0
185	3534	3457	-237.3	2.4	1.260	34.668	-0.7
187	3686	3458	-233.4	2.1	1.254	34.671	-0.8
189	3839	3459	-234.5	2.7	1.235	34.673	-0.6
190	3992	3460	-233.2	2.3	1.215	34.676	-0.9
193	4144	3461	-230.4	2.1	1.214	34.677	-1.4

Cruise: P17N		Station: 58	44°58'N	141°14'W	31 May 1993		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1965	3479	-234.3	2.1	1.847	34.584	-1.3
382		3480	-239.3	2.2		34.597	-1.3
383	2217	3481	-242.1	2.3	1.668	34.609	-1.7
384	2342	3482	-244.9	2.1	1.628	34.617	-1.4
385	2468	3483	-244.6	2.2	1.558	34.627	-1.4
387	2594	3484	-240.6	2.2	1.487	34.638	-1.0
389	2721	3485	-242.5	2.2	1.416	34.646	-1.0
390	2848	3486	-236.3	1.6	1.373	34.653	-1.1
393	2975	3487	-238.5	2.3	1.335	34.654	-0.9
181	3148	3470	-239.6	2.1	1.318	34.661	-1.3
182		3471	-235.0	2.7		34.665	-1.6
183	3451	3472	-233.4	2.3	1.239	34.670	-2.1
184	3603	3473	-228.7	2.1	1.214	34.674	-1.1
185	3755	3474	-232.1	2.7	1.207	34.676	-0.9
187	3934	3475	-227.4	2.2	1.198	34.679	-1.3
189	4114	3476	-228.3	2.2	1.185	34.680	-1.3
190	4293	3477	-223.2	2.8	1.187	34.681	-1.0
193	4474	3478	-225.2	2.3	1.175	34.682	-1.1

Cruise: P17N		Station: 68	48°13'N	146°41'W	3 Jun 1993		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1916	3497	-235.9	2.2	1.890	34.572	-2.8
382	2068	3498	-239.0	2.1	1.779	34.588	-2.6
383	2220	3499	-242.9	1.5	1.697	34.602	-3.1
384	2372	3500	-242.8	2.1	1.625	34.614	-2.1
385	2524	3501	-247.4	2.1	1.523	34.627	-1.0
387	2676	3502	-237.9	2.1	1.480	34.636	-2.0
389	2828	3503	-242.1	2.0	1.417	34.643	-2.5
390	2981	3504	-241.9	2.1	1.363	34.653	-2.3
393	3134	3505	-234.2	2.1	1.315	34.660	-2.0
181	3300	3488	-233.0	2.4	1.274	34.663	-1.5
182	3478	3489	-234.0	2.3	1.256	34.670	-1.8
183	3655	3490	-231.0	2.1	1.198	34.674	-1.9
184	3834	3491	-230.6	2.2	1.209	34.677	-1.2
185	4011	3492	-229.7	2.1	1.170	34.679	-1.0
187	4188	3493	-231.6	2.2	1.180	34.678	-2.9
189	4369	3494	-226.3	1.5	1.161	34.682	-1.2
190	4549	3495	-222.8	2.2	1.161	34.683	-1.8
193	4730	3496	-228.9	2.3	1.157	34.682	-1.8

Cruise: P17N		Station: 78	51°29'N	152°30'W	8 Jun 1993		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1708	3515	-229.9	2.0	2.036	34.539	-1.9
382	1886	3516	-239.4	2.2	1.923	34.565	-2.1
383	2062	3517	-240.2	2.1	1.790	34.584	-2.0
384	2239	3518	-240.8	2.1	1.706	34.603	-2.1
385	2415	3519	-234.3	2.0	1.621	34.617	-0.9
387	2592	3520	-240.5	1.5	1.547	34.628	-1.4
389	2769	3521	-241.8	2.0	1.462	34.639	-1.8
390	2946	3522	-234.3	2.0	1.406	34.648	-1.6
393	3133	3523	-236.9	2.1	1.349	34.656	-1.4
181	3384	3506	-237.8	2.1	1.275	34.664	-1.4
182	3586	3507	-231.6	2.1	1.235	34.670	-1.2
183	3788	3508	-226.0	2.1	1.194	34.673	-1.6
184	3990	3509	-222.9	2.1	1.172	34.677	-1.3
185	4193	3510	-220.9	2.1	1.160	34.679	-0.6
187	4371	3511	-221.3	2.1	1.149	34.681	-1.0
189	4548	3512	-221.4	2.0	1.145	34.682	-0.7
190	4726	3513	-221.9	2.1	1.139	34.683	-0.9
193	4903	3514	-224.3	2.0	1.144	34.684	-1.4

Cruise: P17N		Station: 86	53°59'N	157°22'W	10 Jun 1993		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	2017	3533	-243.0	2.1	1.695	34.603	-2.2
382	2192	3534	-236.9	2.2	1.592	34.617	-1.1
383	2369	3535	-239.6	2.0	1.507	34.631	-1.5
384	2546	3536	-241.8	2.0	1.453	34.640	-1.2
385	2723	3537	-236.4	2.1	1.397	34.648	-0.6
387	2900	3538	-239.1	2.0	1.351	34.653	-1.2
389	3078	3539	-231.8	2.2	1.295	34.661	-0.9
390	3284	3540			1.253	34.667	
393	3491	3541	-226.6	2.1	1.208	34.673	-1.1
181	3787	3524	-226.5	2.1	1.155	34.679	-1.3
182	4043	3525	-221.9	2.1	1.118	34.683	-1.6
183	4299	3526	-215.3	2.1	1.109	34.684	-2.1
184	4557	3527	-219.8	2.1	1.089	34.687	-0.9
185	4813	3528	-215.6	2.1	1.069	34.685	-0.6
187	5018	3529	-215.4	2.1	1.083	34.688	-0.9
189	5223	3530	-208.4	1.5	1.060	34.689	-0.8
190	5429	3531	-210.0	1.5	1.064	34.690	-1.3
193	5633	3532	-206.8	2.1	1.061	34.689	-1.1

Cruise: P17N		Station: 132	54°50'N	146°44'W	18 Jun 1993		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1661	3551	-235.4	2.2	2.030	34.540	-1.6
382	1812	3552	-240.6	2.0	1.909	34.562	-1.2
383	1963	3553	-232.7	2.1	1.788	34.583	-1.2
384	2114	3554	-234.3	2.0	1.697	34.599	-1.3
385	2266	3555	-238.5	1.6	1.644	34.611	-0.6
387	2418	3556	-242.2	2.1	1.572	34.620	-1.1
389	2570	3557	-237.9	2.1	1.519	34.630	-0.6
390	2722	3558	-235.0	2.2	1.456	34.639	-1.2
393	2875	3559	-237.6	2.1	1.413	34.647	-0.9
181	2998	3542	-235.6	2.0	1.381	34.651	-1.6

182	3150	3543	-231.2	1.7	1.327	34.657	-1.2
183	3302	3544	-236.4	1.6	1.283	34.663	-2.5
184	3454	3545	-231.8	2.2	1.248	34.668	-1.4
185	3607	3546	-230.4	2.1	1.223	34.672	-0.6
187	3759	3547	-224.1	1.7	1.197	34.675	-1.5
189	3913	3548	-224.8	2.2	1.173	34.678	-0.8
190	4066	3549	-217.1	2.5	1.151	34.681	-2.3
193	4221	3550	-221.6	2.1	1.134	34.684	-1.3
Cruise: P17N Station: 141 56°13'N 139°11'W 20 Jun 1993							
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1510	3569	-229.0	2.1	2.289	34.489	-1.4
382	1611	3570	-231.2	2.2	2.152	34.511	-1.5
383	1713	3571	-233.8	2.1	2.035	34.534	-2.3
384	1814	3572	-232.9	2.2	1.948	34.554	-1.6
385	1910	3573	-239.3	2.1	1.861	34.567	-0.9
387	1920	3574	-235.7	2.2	1.870	34.567	-1.3
389	2016	3575	-236.0	2.1	1.801	34.579	-1.0
390	2117	3576			1.726	34.593	
393	2217	3577	-238.4	2.4	1.676	34.603	-1.1
181	2346	3560	-238.4	1.8	1.618	34.615	-1.5
182	2466	3561	-239.0	1.7	1.568	34.622	-1.5
183	2476	3562	-241.8	2.2	1.537	34.624	-2.6
184	2600	3563	-237.4	2.1	1.497	34.632	-1.4
185	2724	3564	-236.3	2.2	1.466	34.639	-1.1
187	2876	3565	-236.4	2.1	1.403	34.647	-1.1
189	3031	3566	-231.0	2.1	1.355	34.654	-1.3
190	3185	3567	-231.2	2.1	1.310	34.661	-1.1
193	3339	3568	-226.9	2.2	1.260	34.670	-1.0
Cruise: P17E19S Station: 164 66°20'S 126°6'W 26 Dec 1992							
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1055	6043*	-149.0	4.0	1.605	34.7305	-2.6
382	1232	6042*	-152.0	4.0	1.436	34.7321	-1.7
383	1408	6041*	-158.5	4.0	1.293	34.7307	-2.5
384	1584	6040*	-156.4	4.0	1.172	34.7278	-1.5
385	1761	6039*	-157.5	4.0	1.056	34.7232	-2.6
387	1938	6038*	-154.4	4.0	0.957	34.7211	-0.6
389	2115	6037*	-163.0	4.0	0.855	34.7170	-0.9
390	2292	6036*	-159.9	4.0	0.764	34.7142	-1.7
393	2469	6031*	-161.7	4.0	0.682	34.7111	-1.8
281	2691	6035*	-163.8	4.0	0.534	34.7076	-0.2
282	2945	6034*	-163.3	4.0	0.400	34.7052	-2.0
283	3200	6033*	-158.0	4.0	0.265	34.7035	-2.7
284	3454	6032*	-161.2	4.0	0.162	34.7033	-1.2
285	3709	6030*	-165.0	4.0	0.102	34.7029	-1.8
287	3963	6029*	-161.1	4.0	0.036	34.7025	-1.6
289	4217	6028*	-162.3	4.0	0.000	34.7027	-1.4
290	4420	6027*	-157.4	4.0	-0.035	34.7023	-1.2
293	4522	6026*	-161.4	4.0	-0.055	34.7021	-1.9

Cruise: P17E19S Station: 157 61°38'S 126°2'W 23 Dec 1992

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	955	6014*	-149.0	4.0	1.977	34.6819	-1.3
382	1157	6013*	-149.1	4.0	1.820	34.7144	-1.4
383	1358	6025*	-156.0	4.0	1.656	34.7284	-2.0
384	1560	6024*	-155.4	4.0	1.493	34.7319	-1.8
385	1761	6023*	-157.5	4.0	1.304	34.7300	
387	1963	6022*	-160.8	4.0	1.140	34.7265	-2.0
389	2165	6021*	-154.5	4.0	0.983	34.7214	-0.6
390	2367	6020*	-156.8	4.0	0.862	34.7173	0.5
393	2569	6019*	-159.1	4.0	0.756	34.7140	-1.7
181	2778				0.621	34.7084	
182	3032	6017*	-165.3	4.0	0.509	34.7055	-1.1
183	3286				0.367	34.7029	
184	3539	6016*	-158.6	4.0	0.247	34.7017	-1.5
185	3792	6015*	-154.8	4.0	0.122	34.7013	-2.6
187	4045				0.074	34.7015	

Cruise: P17E19S Station: 146 56°0'S 125°56'W 19 Dec 1992

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1203	6012*	-136.8	4.0	2.411	34.5509	-0.7
382	1354	6011*	-142.5	4.0	2.271	34.5960	-0.3
383	1505	6010*	-150.8	4.0	2.190	34.6386	-1.8
384	1656	6009*	-150.0	4.0	2.089	34.6738	-1.2
385	1808	6008*	-147.2	4.0	2.007	34.7001	-1.7
387	1959	6007*	-156.5	4.0	1.896	34.7160	-1.1
389	2111	6006*	-157.5	4.0		34.7259	-2.3
390	2263	6005*	-157.9	4.0	1.654	34.7312	0.4
393	2416	6004*	-158.3	4.0	1.493	34.7329	-1.3
181	2558	6003*	-158.9	4.0	1.373	34.7258	-1.3
182	2757	6002*	-158.0	4.0	1.188	34.7268	-0.4
183	2957	6001*	-165.8	4.0	1.062	34.7228	-0.6
184	3156	6000*	-167.8	4.0	0.985	34.7189	-2.1
185	3356	5999*	-166.2	4.0	0.897	34.7163	-0.5
187	3556	5994*	-162.7	4.0	0.789	34.7165	-1.5
189	3756	5993*	-158.8	4.0	0.672	34.7123	-0.7
190	3956	5992*	-162.7	4.0	0.583	34.7111	0.0
193	4156	5991*	-163.3	4.0	0.513	34.7093	-2.6

Cruise: P17E19S Station: 187 52°24'S 108°32'W 3 Jan 1993

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	749	5901*	-22.2	4.0		34.268	-1.4
382	900	5902*	-54.2	4.0	4.519	34.281	0.1
383	1052	5903*	-86.4	4.0	3.801	34.307	-2.2
384	1203				3.194	34.349	
385	1355				2.825	34.421	
387	1506	6075*	-132.3	4.0	2.595	34.483	-1.4
389	1658				2.444	34.540	
390	1809	6074*	-150.8	4.0	2.284	34.595	-1.9
393	1959				2.192	34.637	
181	2105					34.665	
182	2334	6072*	-165.5	4.0	1.913	34.692	-1.7
183	2563				1.716	34.706	
184	2793	6073*	-177.6	4.0	1.528	34.710	-1.0

185	3022	6071*	-177.6	4.0	1.398	34.713	-1.5
187	3253	6080*	-169.1	4.0	1.307	34.717	-1.8
189	3483				1.128	34.671	
190	3714	6070*	-171.2	4.0	0.861	34.710	-0.8
193	3945	6069*	-176.9	4.0	0.701	34.712	-1.7

Cruise: P17E19S Station: 229 67°2'S 87°59'W 16 Jan 1993

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
483	703	5588*	-145.1	4.0	2.029	34.6318	-2.0
381	801				2.013	34.6601	
484	904				1.966	34.6860	
382	1004	5589*	-151.8	4.0	1.900	34.7019	-3.1
485	1103				1.833	34.7141	
487	1303	5587*	-153.9	4.0	1.681	34.7274	-2.1
489	1504	5586*	-156.8	4.0	1.527	34.7321	-0.8
490	1706	5585*	-154.2	4.0	1.354	34.7312	-2.8
493	1910	5584*	-158.4	4.0		34.7278	-2.6
181	2626	5583*	-157.4	4.0	0.759	34.7157	-2.6
182	2852	5577*	-154.7	4.0	0.641	34.7114	-2.6
183	3078	5582*	-157.8	4.0	0.523	34.7098	-2.1
184	3305				0.395	34.7070	
185	3527	5576*	-165.2	4.0	0.286	34.7052	-0.8
187	3754				0.195	34.7052	
189	3979	5581*	-164.2	4.0	0.153	34.7042	-3.3
190	4205	5580*	-161.9	4.0	0.110	34.7042	-1.6
193	4431	5579*	-162.8	4.0	0.067	34.7040	-2.9

Cruise: P17E19S Station: 218 59°59'S 87°57'W 13 Jan 1993

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1500	5629*	-156.5	4.0	2.042	34.6755	-2.2
382	1649	5628*	-155.4	4.0	1.941	34.6977	-1.6
383	1800	5627*	-162.4	4.0	1.840	34.7140	-3.3
384	1950	5626*	-157.5	4.0	1.730	34.7234	-1.8
385	2101	5625*	-166.6	4.0	1.618	34.7278	-1.4
387	2252	5624*	-162.8	4.0	1.507	34.7289	-2.1
389	2403	5623*	-166.9	4.0	1.376	34.7272	-0.6
390	2553	5622*	-166.7	4.0	1.275	34.7272	-2.3
393	2705	5621*	-166.3	4.0	1.173	34.7242	-0.5
181	2886	5620*	-172.2	4.0	1.049	34.7225	-1.5
182	3165				0.827	34.7174	
183	3445	5619*	-160.7	4.0	0.635	34.7125	-2.2
184	3723	5618*	-163.0	4.0	0.461	34.7086	-2.2
185	4002				0.306	34.7064	
187	4281	5617*	-162.6	4.0	0.228	34.7053	-2.8
189	4559				0.179	34.7049	
190	4836	5616*	-163.1	4.0	0.147	34.7043	-0.7
193	5115	5615*	-167.4	4.0	0.125	34.7041	0.1

Cruise: P17E19S Station: 206 54°0'S 88°0'W 10 Jan 1993

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1257	5630*	-125.6	4.0	2.813	34.4137	0.1
382	1408				2.603	34.4789	
383	1560	5652*	-145.2	4.0	2.443	34.5319	-0.9
384	1710	5651*	-154.4	4.0	2.322	34.5830	-0.9

385	1861	5650*	-158.6	4.0	2.210	34.6241	-0.5
387	2013	5649*	-156.0	4.0	2.109	34.6563	-1.5
389	2165				2.007	34.6809	
390	2315	5648*	-173.5	4.0	1.885	34.6959	-0.1
393	2467				1.754	34.7010	
181	2678	5647*	-173.8	4.0	1.627	34.7102	-1.0
182	2982	5646*	-174.5	4.0	1.402	34.7187	-2.5
183	3288	5645*	-174.1	4.0	1.206	34.7224	-0.8
184	3593	5636*	-163.0	4.0	0.971	34.7193	-1.1
185	3899	5635*	-166.6	4.0	0.696	34.7134	-1.5
187	4205	5634*	-164.7	4.0	0.450	34.7089	-2.3
189	4511	5633*	-172.0	4.0	0.310	34.7066	-0.8
190	4818	5632*	-156.7	4.0	0.266	34.7060	-1.7
193	5124	5631*	-165.4	4.0	0.239	34.7059	-2.5

Cruise: P19C Station: 264 49°59'S 88°0'W 3 Mar 1993

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1028	5655*	-97.0	4.0	3.434	34.322	-1.8
382	1203	5654*	-122.8	4.0	3.008	34.396	-2.5
383	1378				2.747	34.482	
384	1552	5653*	-166.5	4.0	2.563	34.541	-2.3
385	1727	5668*	-180.5	4.0	2.356	34.587	-2.0
387	1902	5667*	-190.8	4.0	2.204	34.618	-2.5
389	2077	5666*	-176.1	4.0	2.052	34.648	2.7
390	2252	5665*	-179.0	4.0	1.935	34.672	-2.3
393	2428	5664*	-191.4	4.0	1.777	34.680	-0.8
181	2644				1.696	34.691	
182	2897	5663*	-192.5	4.0	1.529	34.698	-1.4
183	3151	5662*	-180.9	4.0	1.395	34.710	-0.8
184	3405	5661*	-176.9	4.0	1.217	34.715	-0.3
185	3657	5660*	-169.1	4.0	0.915	34.715	-1.2
187	3911	5659*	-172.8	4.0	0.668	34.711	0.2
189	4165	5658*	-168.4	4.0	0.496	34.711	-1.3
190	4418	5657*	-168.3	4.0	0.414	34.709	-0.2
193	4672	5656*	-172.0	4.0	0.368	34.708	-0.5

Cruise: P19C Station: 274 45°0'S 88°1'W 6 Mar 1993

Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1106	5600*	-127.6	4.0	3.317	34.375	-0.3
382	1257	5601*	-150.4	4.0	3.001	34.454	-0.7
187	1336	5602*	-182.5	4.0	2.874	34.548	-1.1
383	1557				2.625	34.556	
189	1669	5603*	-188.2	4.0	2.458	34.579	-1.2
190	1819				2.290	34.602	
193	1976	5614*	-203.4	4.0	2.144	34.623	-1.3
384	2159	5613*	-203.1	4.0	1.993	34.641	-1.0
385	2308	5612*	-207.4	4.0	1.856	34.656	-1.2
181	2408				1.814	34.666	
182	2611	5611*	-208.1	4.0	1.671	34.677	-1.1
183	2813	5610*	-203.8	4.0	1.620	34.684	-0.3
184	3014	5609*	-194.6	4.0	1.527	34.689	0.0
185	3215	5608*	-190.8	4.0	1.405	34.697	-0.8
387	3461	5607*	-184.3	4.0	1.137	34.704	-1.9
389	3663	5606*	-180.2	4.0	0.871	34.708	-1.4

390	3860	5605*	-171.7	4.0	0.716	34.712	-0.8
393	4060	5604*	-171.8	4.0	0.680	34.710	-0.7
Cruise: P19C Station: 284 40°0'S 87°59'W 9 Mar 1993							
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1052	5681*	-114.3	4.0	3.513	34.347	-1.0
382	1202	5680*	-147.4	4.0	3.144	34.427	-2.3
383	1352				2.905	34.503	
384	1501	5679*	-194.5	4.0	2.735	34.551	-1.0
385	1652				2.498	34.584	
387	1802	5678*	-209.4	4.0	2.332	34.604	-1.0
389	1953				2.162	34.622	
390	2104	5677*	-213.4	4.0		34.637	-1.9
393	2255				1.886	34.650	
181	2471	5676*	-212.7	4.0	1.769	34.661	-1.2
182	2671				1.657	34.670	
183	2871	5675*	-193.2	4.0	1.582	34.676	-7.0
184	3072	5674*	-212.6	4.0	1.524	34.681	-0.5
185	3274	5673*	-204.2	4.0	1.427	34.689	-0.8
187	3477	5672*	-195.4	4.0	1.222	34.698	0.2
189	3681	5671*	-191.8	4.0	1.165	34.701	-0.8
190	3887	5670*	-187.1	4.0	1.139	34.702	-1.5
193	4093	5669*	-185.8	4.0	1.135	34.702	-0.5
Cruise: P19C Station: 299 32°30'S 88°0'W 12 Mar 1993							
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1155	5682*	-165.6	4.0	3.399	34.467	-3.0
382	1279	5692*	-189.0	4.0	3.180	34.520	-2.0
383	1404	5691*	-193.4	4.0	2.996	34.551	-2.6
384	1528	5690*	-197.3	4.0	2.769	34.571	-2.9
385	1653				2.557	34.588	
387	1780	5689*	-208.4	4.0	2.389	34.601	-1.3
389	1905				2.193	34.619	
390	2032	5688*	-205.9	4.0	2.027	34.631	-1.5
393	2161	5687*	-205.9	4.0	1.920	34.643	-2.0
181	2318	5686*	-204.1	4.0	1.790	34.658	-2.4
182	2494				1.668	34.670	
183	2670	5685*	-209.3	4.0	1.599	34.679	-2.2
184	2847				1.545	34.685	
185	3023	5684*	-206.6	4.0	1.502	34.688	-0.9
187	3200				1.465	34.690	
189	3377	5683*	-203.7	4.0	1.425	34.692	-1.5
190	3553				1.394	34.693	
193	3731				1.375	34.694	
Cruise: P19C Station: 317 24°19'S 88°0'W 16 Mar 1993							
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1251	5708*	-190.3	4.0	3.341	34.537	-0.6
382	1401				2.970	34.563	
383	1550	5705*	-209.1	4.0	2.675	34.582	-3.9
384	1701	5704*	-210.3	4.0	2.460	34.597	-1.3
385	1852				2.256	34.615	
387	2001	5703*	-205.4	4.0	2.065	34.630	-0.7
389	2152	5702*	-212.2	4.0	1.945	34.641	-2.5

390	2302	5701*	-211.5	4.0	1.824	34.653	-2.3
393	2451	5700*	-212.0	4.0	1.742	34.669	-1.4
181	2557	5699*	-212.2	4.0	1.685	34.668	-2.5
182	2758				1.630	34.674	
183	2960	5698*	-211.1	4.0	1.563	34.678	-3.9
184	3162	5697*	-228.0	4.0	1.552	34.681	-2.8
185	3363	5696*	-214.3	4.0	1.515	34.684	-2.9
187	3565	5695*	-217.2	4.0	1.492	34.686	-4.0
189	3767	5694*	-216.9	4.0	1.483	34.687	-3.1
190	3970				1.476	34.688	
193	4172	5693*	-216.9	4.0	1.473	34.688	-2.4

Cruise: P19C Station: 326 19°59'S 88°0'W 19 Mar 1993

Cast/Bottle	Depth	QL/ML(*)	Δ ¹⁴ C	σ ¹⁴ C	θ	Salinity	δ ¹³ C
381	1379	5716*	-203.1	4.0	3.025	34.569	-1.9
382	1529	5724*	-212.6	4.0	2.682	34.591	-2.7
383	1680	5723*	-223.7	4.0	2.435	34.610	-1.8
384	1830	5722*	-221.9	4.0	2.269	34.621	-2.4
385	1981	5721*	-219.7	4.0	2.069	34.634	-1.1
387	2132	5720*	-223.5	4.0	1.933	34.645	-1.0
389	2283	5719*	-210.3	4.0	1.825	34.655	-1.2
390	2434	5718*	-219.6	4.0	1.728	34.663	-2.1
393	2585	5717*	-217.0	4.0	1.652	34.669	-1.7
181	2733	5725*	-214.4	4.0	1.612	34.674	-1.7
182	2933	5715*	-222.7	4.0	1.543	34.679	-0.5
183	3134	5714*	-215.8	4.0	1.516	34.683	-1.4
184	3335	5713*	-214.7	4.0	1.477	34.685	-0.8
185	3537	5712*	-211.2	4.0	1.468	34.687	-1.9
187	3740	5711*	-215.9	4.0	1.450	34.688	-0.2
189	3944				1.442	34.688	
190	4149	5710*	-212.4	4.0	1.432	34.688	-1.3
193	4355	5709*	-215.9	4.0	1.421	34.689	-0.9

Cruise: P19C Station: 338 14°34'S 85°50'W 22 Mar 1993

Cast/Bottle	Depth	QL/ML(*)	Δ ¹⁴ C	σ ¹⁴ C	θ	Salinity	δ ¹³ C
381	1301	6060*	-201.2	4.0	3.484	34.561	-0.8
382	1474	6059*	-214.2	4.0	3.001	34.586	-1.9
383	1649	6058*	-219.1	4.0	2.640	34.609	-3.5
384	1823	6057*	-222.4	4.0	2.365	34.625	-1.1
385	1997	6056*	-234.4	4.0	2.120	34.640	-1.4
387	2171	6055*	-232.8	4.0	1.951	34.651	-1.9
389	2345				1.608	34.660	
390	2522	6054*	-230.4	4.0	1.714	34.667	-2.0
393	2697	6053*	-233.1	4.0	1.651	34.672	-1.0
181	2878	6052*	-230.5	4.0	1.612	34.676	-2.0
182	3104	6051*	-229.2	4.0	1.546	34.678	-1.3
183	3331	6050*	-226.4	4.0	1.525	34.681	-3.2
184	3558	6049*	-221.1	4.0	1.500	34.684	-1.4
185	3785	6048*	-217.8	4.0	1.469	34.686	-1.7
187	4013	6047*	-210.5	4.0	1.441	34.688	-1.3
189	4242	6046*	-212.6	4.0	1.413	34.690	-2.2
190	4471	6045*	-207.6	4.0	1.405	34.690	-2.5
193	4701	6044*	-212.2	4.0	1.408	34.690	-0.6

Cruise: P19C		Station: 353	7°0'S	85°50'W	26 Mar 1993		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1184	6119*	-203.6	4.0	3.675	34.574	-2.2
382	1307				3.257	34.593	
383	1428				2.998	34.607	
384	1552	6118*	-216.3	4.0	2.702	34.621	-1.9
385	1675				2.517	34.630	
387	1799	6122*	-231.3	4.0	2.349	34.637	-1.8
389	1925	6121*	-230.7	4.0	2.218	34.642	-0.3
390	2053	6120*	-228.2	4.0	2.042	34.652	-2.5
393	2181				1.924	34.657	
281	2300				1.858	34.661	
282	2501				1.687	34.670	
283	2702	6117*	-225.3	4.0	1.603	34.674	-1.1
284	2903	6116*	-227.8	4.0	1.544	34.678	-2.1
285	3103	6115*	-227.0	4.0	1.527	34.680	-2.4
287	3304	6114*	-227.4	4.0	1.519	34.681	-1.1
289	3505	6113*	-218.0	4.0	1.505	34.683	-1.5
290	3708	6112*	-223.9	4.0	1.489	34.684	-2.2
293	3910	6111*	-218.0	4.0	1.479	34.686	-1.1

Cruise: P19C		Station: 361	3°0'S	85°50'W	28 Mar 1993		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1123	6068*	-184.8	4.0	4.085	34.577	-2.0
382	1222				3.748	34.587	
383	1323	6067*	-207.5	4.0	3.440	34.594	-3.2
384	1427				3.180	34.608	
385	1519	6066*	-213.2	4.0	2.956	34.614	-1.3
387	1617				2.790	34.622	
389	1725	6065*	-226.3	4.0	2.661	34.627	-1.7
390	1818				2.509	34.633	
393	1922	6064*	-225.0	4.0	2.331	34.643	-1.3
181	2020				2.251	34.647	
182	2168	6063*	-225.0	4.0	2.037	34.657	-2.2
183	2322				1.927	34.662	
184	2479	6062*	-227.2	4.0	1.778	34.668	-1.0
185	2623				1.644	34.674	
187	2770	6061*	-226.4	4.0	1.583	34.677	-1.6
189	2927				1.551	34.694	
190	3073	5856*	-228.2	4.0	1.531	34.681	-2.5
193	3227	5855*	-224.6	4.0	1.534	34.681	-1.1

Cruise: P19C		Station: 379	1°0'N	85°50'W	31 Mar 1993		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
181	1328	5865*	-206.7	4.0	3.397	34.599	-2.0
182	1503	5864*	-212.7	4.0	2.944	34.616	-1.4
183	1679	5863*	-218.1	4.0	2.631	34.629	-1.1
184	1854	5862*	-223.8	4.0	2.357	34.641	-1.5
185	2028	5861*	-224.3	4.0	2.102	34.654	-2.2
187	2205	5860*	-226.4	4.0	1.959	34.661	-1.6
189	2380	5859*	-228.0	4.0	1.907	34.664	-1.1
190	2554	5858*	-222.2	4.0	1.875	34.666	-5.2
193	2730	5857*	-229.4	4.0	1.838	34.667	-1.9

Cruise: P19C		Station: 395	6°44'N	88°46'W	4 Apr 1993		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1348	5854*	-207.2	4.0	3.438	34.600	-1.5
382	1448				3.107	34.606	
383	1548	5853*	-229.0	4.0	2.870	34.617	-4.0
384	1648				2.641	34.625	
385	1747				2.480	34.630	
387	1847	5852*	-233.9	4.0	2.316	34.637	-1.8
389	1947				2.197	34.642	
390	2049	5851*	-227.0	4.0	2.067	34.649	-4.6
393	2148	5850*	-234.2	4.0	1.944	34.655	-1.9
181	2262	5849*	-233.4	4.0	1.841	34.660	-1.1
182	2414	5848*	-233.3	4.0	1.716	34.665	-1.9
183	2567	5847*	-234.2	4.0	1.641	34.669	-3.0
184	2718				1.615	34.670	
185	2869	5846*	-240.0	4.0	1.584	34.672	-1.1
187	3018				1.595	34.671	
189	3166	5845*	-231.3	4.0	1.585	34.671	-1.1
190	3312				1.580	34.672	
193	3459	5844*	-236.3	4.0	1.577	34.672	0.4

Cruise: P19C		Station: 413	13°1'N	91°47'W	8 Apr 1993		
Cast/Bottle	Depth	QL/ML(*)	$\Delta^{14}\text{C}$	$\sigma^{14}\text{C}$	θ	Salinity	$\delta^{13}\text{C}$
381	1643	5831*	-234.4	4.0	2.736	34.617	-1.8
382	1843	5832*	-235.1	4.0	2.413	34.631	-1.4
383	2043				2.112	34.644	
384	2243				1.890	34.655	
385	2444	5833*	-238.4	4.0	1.701	34.663	-1.4
387	2645	5843*	-232.9	4.0	1.642	34.667	-1.1
389	2846	5842*	-235.2	4.0	1.618	34.669	-1.4
390	3047	5841*	-223.9	4.0	1.605	34.670	-5.2
393	3249	5840*	-237.1	4.0	1.602	34.670	-0.3
181	3626	5839*	-230.6	4.0	1.607	34.672	-1.9
182	3879				1.581	34.671	
183	4129	5838*	-227.5	4.0	1.586	34.672	-1.2
184	4383				1.573	34.672	
185	4637	5837*	-233.9	4.0	1.579	34.672	-1.0
187	4892				1.588	34.672	
189	5147	5836*	-230.5	4.0	1.582	34.672	-0.6
190	5555	5835*	-222.3	4.0	1.578	34.672	-3.1
193	5966	5834*	-233.1	4.0	1.580	34.673	-1.7

Fig. A.1 (begins next page). $\Delta^{14}\text{C}$ vs. depth is plotted for individual station data. For most stations AMS samples were collected above 1000 m by NOSAMS. The profiles given here are for >1000 m depth. See Table A.1 for additional data.

