



HOKKAIDO UNIVERSITY

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THE " USHIO MARU "

CRUISE 273

CRUISE 274

IN DECEMBER 2012

1. Cruise Itinerary

Cruise 273

Departure from Hakodate	Dec. 9, 2012
Arrival at Usujiri	9
Departure from Usujiri	11
Start hydrographic research (US12778)	11
Retrieval mooring ADCP system	11
Arrival at Usujiri	11
Departure from Usujiri	12
Set mooring ADCP system	12
Arrival at and departure from Usujiri	12
Finish hydrographic research (US12798)	12
Return to Hakodate	13
Total coverage 292.1 miles	

Cruise 274

Departure from Hakodate	Dec. 20, 2012
Start hydrographic research (US12799)	20
Arrival at Fukushima	20
Departure from Fukushima	21
Finish hydrographic research (US12823)	21
Return to Hakodate	22
Total coverage 153.0 miles	

2. Data on Temperature, Salinity and Computed Dynamic Depth Anomaly

Hydrographic work on deck and the data processing were made by the deck officers, crews, research staff and cadets of the “Ushio Maru”. Temperature and salinity were measured by CTD (Seabird SBE-9Plus and SBE-19). Dynamic computations were made using a desk-top computer aboard the “Ushio Maru”.

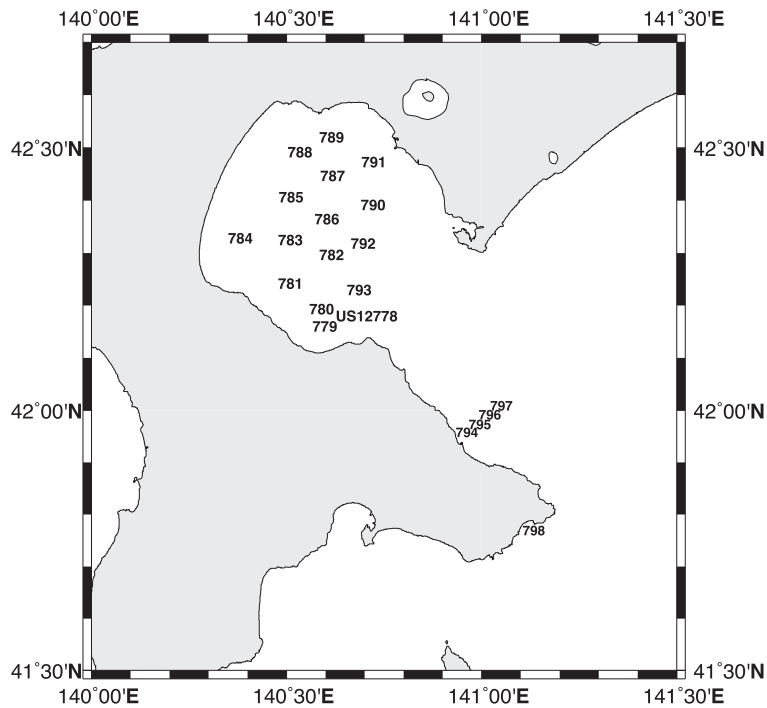


Figure 1. Oceanographic stations (Cruise 273)

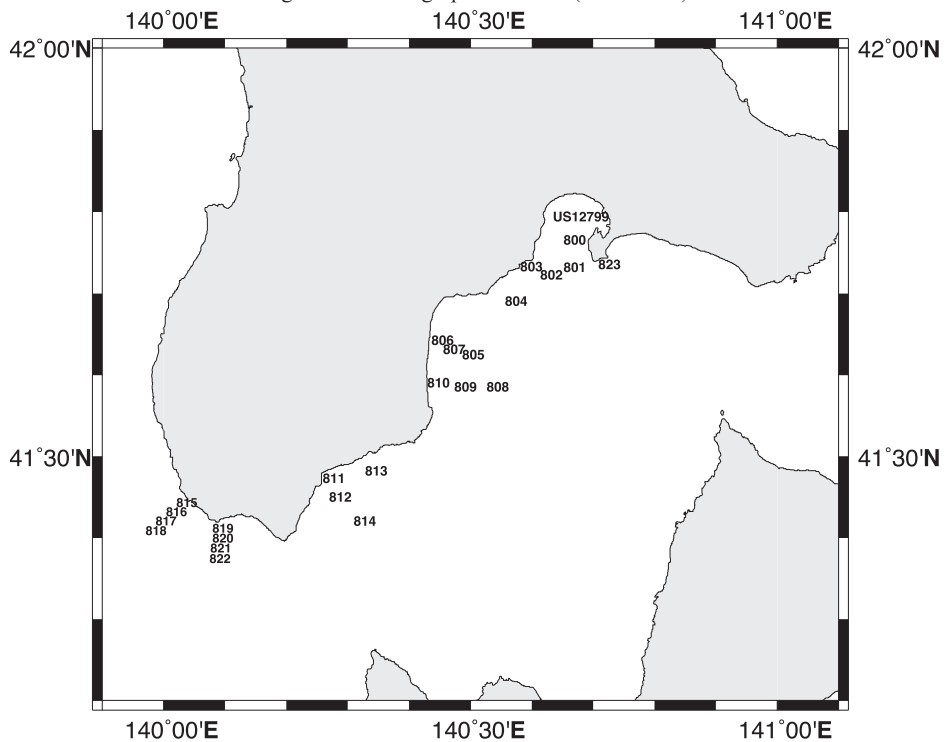


Figure 2. Oceanographic stations (Cruise 274)

Table 1. List of Oceanographic Station

Cruise 273												
Station	Lat. (N)*	Long. (E)*	Date	S.M.T.	Depth (m)	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar. (hPa)
US12778	42-10.0	140-41.2	12/11	0803-0807	83	NW -3	WNW-1	NW -5	3.1	8.2	bc	1010.6
US12779	42-09.0	140-35.9	12/11	0840-0845	66	NW -3	WNW-1	NW -5	2.8	8.5	c	1011.0
US12780	42-11.0	140-35.4	12/11	0919-0923	79	NW -3	NW -1	NW -5	2.6	8.2	bc	1011.4
US12781	42-13.9	140-30.6	12/11	0959-1004	80	NNW-3	NW -1	NNW-5	3.1	8.4	bc	1011.6
US12782	42-17.2	140-36.9	12/11	1041-1047	89	NNW-3	NW -1	NNW-5	3.8	8.6	bc	1011.6
US12783	42-18.9	140-30.6	12/11	1210-1215	93	NNW-2	NW -1	NNW-4	2.6	8.5	bc	1011.6
US12784	42-19.1	140-22.9	12/11	1256-1259	52	WNW-2	NW -1	WNW-4	3.4	8.6	bc	1011.5
US12785	42-23.8	140-30.7	12/11	1352-1356	94	NW -3	NW -1	NW -5	3.1	8.5	c	1011.1
US12786	42-21.3	140-36.2	12/11	1434-1438	88	NW -3	NW -1	NW -5	3.6	8.5	s	1011.5
US12787	42-26.2	140-37.1	12/11	1513-1518	82	NW -3	NW -1	NW -5	3.1	8.5	s	1011.5
US12788	42-28.9	140-32.1	12/11	1617-1620	75	NW -2	NW -1	NW -4	1.1	8.6	c	1012.2
US12789	42-30.6	140-36.9	12/11	1646-1649	64	NW -2	NW -1	NW -4	2.2	8.6	s	1012.2
US12790	42-22.9	140-43.3	12/12	0823-0827	58	WNW-3	NW -1	WNW-5	2.1	8.0	s	1016.7
US12791	42-27.8	140-43.4	12/12	0907-0911	60	WNW-1	West-1	WNW-3	1.9	8.5	bc	1016.9
US12792	42-18.5	140-41.8	12/12	1011-1015	70	West-2	West-1	West-4	2.3	8.0	bc	1017.8
US12793	42-13.2	140-41.2	12/12	1149-1154	89	WNW-2	West-1	WNW-4	3.7	8.4	bc	1017.6
US12794	41-57.4	140-58.2	12/12	1436-1439	78	NW -2	NW -1	NW -4	3.0	9.8	bc	1017.6
US12795	41-58.0	140-59.5	12/12	1448-1452	86	NW -2	NW -1	NW -4	3.7	9.9	bc	1017.6
US12796	41-58.6	141-00.8	12/12	1503-1506	94	NW -3	NW -1	NW -5	3.7	9.9	bc	1017.8
US12797	41-59.3	141-01.9	12/12	1517-1521	100	NW -3	NW -1	NW -5	3.8	9.9	bc	1018.1
US12798	41-46.3	141-07.8	12/12	1713-1716	40	NW -1	West-1	NW -3	1.8	10.2	bc	1019.1

Cruise 274												
Station	Lat. (N)*	Long. (E)*	Date	S.M.T.	Depth (m)	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar. (hPa)
US12799	41-47.3	140-40.8	12/20	0836-0838	18	West-3	SW -1	West-5	-2.7	7.7	s	1019.6
US12800	41-45.6	140-40.2	12/20	0859-0902	33	West-2	SSW-1	West-4	-2.5	11.1	s	1019.7
US12801	41-43.6	140-40.2	12/20	0926-0930	64	West-2	SSW-1	West-4	-1.9	12.0	s	1020.1
US12802	41-43.4	140-37.9	12/20	0950-0954	58	West-3	SW -1	West-5	-2.7	11.7	s	1020.1
US12803	41-43.9	140-35.8	12/20	1006-1008	9	SW -2	SW -1	SW -4	-1.5	11.4	c	1020.1
US12804	41-41.1	140-34.5	12/20	1045-1048	42	West-3	SW -1	West-6	-1.3	11.9	s	1020.0
US12805	41-37.3	140-30.1	12/20	1127-1130	31	West-3	SW -1	West-5	-0.7	11.1	c	1019.7
US12806	41-38.1	140-26.3	12/20	1150-1152	12	West-2	SSW-1	West-5	-1.2	10.5	bc	1019.6
US12807	41-37.7	140-27.9	12/20	1210-1212	17	West-2	SSW-1	West-5	-0.6	10.6	bc	1019.6
US12808	41-34.8	140-32.7	12/20	1300-1305	60	West-2	SW -1	West-4	-0.7	12.0	c	1019.0
US12809	41-34.8	140-29.5	12/20	1338-1341	41	WNW-2	South-1	WNW-4	-1.4	11.3	bc	1019.4
US12810	41-35.1	140-26.9	12/20	1414-1416	14	West-2	South-1	West-4	-1.5	11.9	bc	1019.5
US12811	41-28.2	140-16.3	12/21	1737-1740	20	West-1	South-1	West-3	1.6	11.3	o	1024.1
US12812	41-26.7	140-17.3	12/21	0825-0829	59	West-3	SSW-1	West-5	0.1	11.6	s	1026.6
US12813	41-28.6	140-20.8	12/21	0900-0904	63	West-3	SW -1	West-5	0.0	11.7	bc	1026.5
US12814	41-24.9	140-19.7	12/21	0945-0950	92	West-4	SW -2	West-6	1.4	11.3	bc	1026.5
US12815	41-26.3	140-02.3	12/21	1124-1127	31	West-3	West-2	West-5	1.0	9.9	bc	1026.1
US12816	41-26.0	140-01.6	12/21	1143-1147	60	WNW-3	West-2	WNW-5	0.6	9.8	bc	1025.5
US12817	41-25.8	140-01.1	12/21	1200-1205	87	West-3	West-2	West-5	0.5	10.4	c	1025.1
US12818	41-25.6	140-00.6	12/21	1218-1223	101	WNW-3	West-2	WNW-5	1.1	10.7	bc	1024.9
US12819	41-24.4	140-05.8	12/21	1300-1304	54	NW-2	West-1	NW-4	1.5	10.6	c	1024.6
US12820	41-23.8	140-05.8	12/21	1318-1323	88	West-3	West-2	West-5	2.0	10.7	c	1024.7
US12821	41-23.3	140-05.6	12/21	1336-1342	103	West-3	West-2	West-5	1.4	11.1	c	1024.7
US12822	41-22.4	140-05.5	12/21	1358-1404	117	West-3	West-2	West-5	1.8	11.0	o	1024.6
US12823	41-43.8	140-43.6	12/21	2047-2050	72	West-2	SW -1	West-4	3.3	11.9	o	1022.2

(*) : Fixed position by Global Positioning System

Table 2. Oceanographic data

STATION US12778				STATION US12779				STATION US12780			
LATITUDE 42-10.0 N				LATITUDE 42-09.0 N				LATITUDE 42-11.0 N			
LONGITUD 140-41.2 E				LONGITUD 140-35.9 E				LONGITUD 140-35.4 E			
DEPTH (m) 83				DEPTH (m) 66				DEPTH (m) 79			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	8.606	33.709	26.169	5	8.913	33.567	26.010	5	8.560	33.709	26.176
10	8.614	33.709	26.168	10	8.985	33.763	26.152	10	8.560	33.710	26.176
20	8.604	33.709	26.169	20	8.987	33.771	26.158	20	8.563	33.711	26.177
30	8.615	33.714	26.171	30	8.981	33.771	26.159	30	8.566	33.712	26.177
40	8.617	33.714	26.171	40	8.979	33.770	26.158	40	8.568	33.711	26.176
50	8.638	33.723	26.175	50	8.984	33.770	26.158	50	8.570	33.710	26.175
75	6.325	33.698	26.483					75	6.303	33.712	26.496
STATION US12781				STATION US12782				STATION US12783			
LATITUDE 42-13.9 N				LATITUDE 42-17.2 N				LATITUDE 42-18.9 N			
LONGITUD 140-30.6 E				LONGITUD 140-36.9 E				LONGITUD 140-30.6 E			
DEPTH (m) 80				DEPTH (m) 89				DEPTH (m) 93			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	8.814	33.728	26.152	5	8.781	33.536	26.006	5	8.824	33.732	26.153
10	8.815	33.729	26.152	10	8.838	33.694	26.121	10	8.833	33.732	26.151
20	8.815	33.729	26.152	20	8.861	33.740	26.153	20	8.835	33.732	26.151
30	8.816	33.729	26.152	30	8.859	33.742	26.155	30	8.837	33.733	26.152
40	8.816	33.729	26.152	40	8.858	33.743	26.156	40	8.837	33.732	26.151
50	8.817	33.729	26.152	50	8.855	33.745	26.158	50	8.834	33.733	26.152
75	7.098	33.711	26.390	75	8.793	33.746	26.169	75	8.663	33.697	26.150
STATION US12784				STATION US12785				STATION US12786			
LATITUDE 42-19.1 N				LATITUDE 42-23.8 N				LATITUDE 42-21.3 N			
LONGITUD 140-22.9 E				LONGITUD 140-30.7 E				LONGITUD 140-36.2 E			
DEPTH (m) 52				DEPTH (m) 94				DEPTH (m) 88			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	8.690	33.723	26.166	5	8.903	33.727	26.137	5	8.876	33.740	26.151
10	8.683	33.722	26.167	10	8.903	33.726	26.136	10	8.885	33.741	26.151
20	8.707	33.737	26.175	20	8.901	33.726	26.136	20	8.885	33.740	26.150
30	8.735	33.751	26.182	30	8.915	33.728	26.135	30	8.883	33.740	26.150
40	8.749	33.760	26.187	40	8.915	33.727	26.135	40	8.891	33.748	26.155
50	8.778	33.775	26.194	50	8.918	33.726	26.134	50	8.842	33.751	26.165
				75	8.911	33.727	26.135	75	8.839	33.769	26.180
STATION US12787				STATION US12788				STATION US12789			
LATITUDE 42-26.2 N				LATITUDE 42-28.9 N				LATITUDE 42-30.6 N			
LONGITUD 140-37.1 E				LONGITUD 140-32.1 E				LONGITUD 140-36.9 E			
DEPTH (m) 82				DEPTH (m) 75				DEPTH (m) 64			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	8.690	33.491	25.985	5	8.939	33.743	26.143	5	8.904	33.788	26.184
10	8.736	33.674	26.121	10	8.955	33.740	26.138	10	8.927	33.792	26.184
20	8.811	33.756	26.174	20	8.954	33.741	26.139	20	8.937	33.795	26.185
30	8.818	33.756	26.173	30	8.955	33.741	26.140	30	8.898	33.793	26.189
40	8.824	33.756	26.172	40	8.950	33.746	26.144	40	8.825	33.795	26.202
50	8.826	33.756	26.171	50	9.102	33.812	26.172	50	8.642	33.818	26.248
75	8.846	33.761	26.172								
STATION US12790				STATION US12791				STATION US12792			
LATITUDE 42-22.9 N				LATITUDE 42-27.8 N				LATITUDE 42-18.5 N			
LONGITUD 140-43.3 E				LONGITUD 140-43.4 E				LONGITUD 140-41.8 E			
DEPTH (m) 58				DEPTH (m) 60				DEPTH (m) 70			
Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T	Press.	Temp.	Salinity	Sigma-T
5	8.915	33.808	26.198	5	8.770	33.789	26.206	5	8.371	33.666	26.171
10	8.927	33.807	26.196	10	8.796	33.791	26.203	10	8.375	33.666	26.170
20	8.929	33.810	26.198	20	8.797	33.793	26.205	20	8.440	33.701	26.188
30	8.933	33.814	26.200	30	8.801	33.795	26.206	30	8.496	33.734	26.205
40	8.934	33.818	26.203	40	8.801	33.800	26.210	40	8.516	33.740	26.207
50	8.629	33.923	26.333	50	8.496	33.817	26.270	50	8.547	33.747	26.207

STATION US12793			
LATITUDE 42-13.2 N			
LONGITUD 140-41.2 E			
DEPTH (m) 89			
Press.	Temp.	Salinity	Sigma-T
5	8.711	33.753	26.187
10	8.712	33.754	26.188
20	8.712	33.754	26.188
30	8.681	33.754	26.192
40	8.676	33.755	26.194
50	8.596	33.751	26.203
75	8.466	33.748	26.220

STATION US12796			
LATITUDE 41-58.6 N			
LONGITUD 141-00.8 E			
DEPTH (m) 94			
Press.	Temp.	Salinity	Sigma-T
5	10.279	33.875	26.026
10	10.286	33.876	26.025
20	10.293	33.875	26.024
30	10.292	33.875	26.024
40	10.285	33.875	26.025
50	10.193	33.868	26.035
75	9.069	33.845	26.203

STATION US12799			
LATITUDE 41-47.3 N			
LONGITUD 140-40.8 E			
DEPTH (m) 18			
Press.	Temp.	Salinity	Sigma-T
5	10.073	32.798	25.221
10	11.172	33.498	25.575

STATION US12802			
LATITUDE 41-43.4 N			
LONGITUD 140-37.9 E			
DEPTH (m) 58			
Press.	Temp.	Salinity	Sigma-T
5	12.088	33.769	25.617
10	12.105	33.771	25.615
20	12.117	33.772	25.613
30	12.117	33.773	25.614
40	12.115	33.772	25.614
50	12.112	33.772	25.614

STATION US12805			
LATITUDE 41-37.3 N			
LONGITUD 140-30.1 E			
DEPTH (m) 31			
Press.	Temp.	Salinity	Sigma-T
5	11.350	33.695	25.696
10	11.355	33.697	25.697
20	11.365	33.696	25.694
30	11.371	33.695	25.693

STATION US12808			
LATITUDE 41-34.8 N			
LONGITUD 140-32.7 E			
DEPTH (m) 60			
Press.	Temp.	Salinity	Sigma-T
5	12.389	33.845	25.617
10	12.393	33.841	25.614
20	12.387	33.842	25.615
30	12.394	33.840	25.613
40	12.390	33.837	25.611
50	12.234	33.815	25.624

STATION US12794			
LATITUDE 41-57.4 N			
LONGITUD 140-58.2 E			
DEPTH (m) 78			
Press.	Temp.	Salinity	Sigma-T
5	10.245	33.876	26.033
10	10.250	33.875	26.031
20	10.245	33.877	26.034
30	10.185	33.860	26.030
40	9.996	33.860	26.063
50	9.216	33.758	26.111
75	7.160	33.736	26.401

STATION US12797			
LATITUDE 41-59.3 N			
LONGITUD 141-01.9 E			
DEPTH (m) 100			
Press.	Temp.	Salinity	Sigma-T
5	10.194	33.869	26.036
10	10.205	33.869	26.034
20	10.215	33.869	26.032
30	10.213	33.868	26.032
40	10.216	33.869	26.032
50	10.220	33.869	26.031
75	9.198	33.822	26.164
100	8.505	33.780	26.240

STATION US12800			
LATITUDE 41-45.6 N			
LONGITUD 140-40.2 E			
DEPTH (m) 33			
Press.	Temp.	Salinity	Sigma-T
5	11.474	33.621	25.616
10	11.423	33.600	25.609
20	11.546	33.640	25.618
30	11.568	33.640	25.613

STATION US12803			
LATITUDE 41-43.9 N			
LONGITUD 140-35.8 E			
DEPTH (m) 9			
Press.	Temp.	Salinity	Sigma-T
5	11.653	33.702	25.646

STATION US12806			
LATITUDE 41-38.1 N			
LONGITUD 140-26.3 E			
DEPTH (m) 12			
Press.	Temp.	Salinity	Sigma-T
5	10.832	33.534	25.664
10	10.839	33.531	25.660

STATION US12809			
LATITUDE 41-34.8 N			
LONGITUD 140-29.5 E			
DEPTH (m) 41			
Press.	Temp.	Salinity	Sigma-T
5	11.495	33.695	25.670
10	11.495	33.696	25.671
20	11.498	33.696	25.670
30	11.498	33.696	25.670

STATION US12795			
LATITUDE 41-58.0 N			
LONGITUD 140-59.5 E			
DEPTH (m) 86			
Press.	Temp.	Salinity	Sigma-T
5	10.265	33.877	26.030
10	10.277	33.877	26.028
20	10.278	33.877	26.028
30	10.279	33.877	26.027
40	10.270	33.876	26.029
50	10.265	33.875	26.028
75	8.303	33.765	26.259

STATION US12798			
LATITUDE 41-46.3 N			
LONGITUD 141-07.8 E			
DEPTH (m) 40			
Press.	Temp.	Salinity	Sigma-T
5	10.425	33.879	26.004
10	10.430	33.877	26.002
20	10.429	33.878	26.002
30	10.421	33.877	26.003

STATION US12801			
LATITUDE 41-43.6 N			
LONGITUD 140-40.2 E			
DEPTH (m) 64			
Press.	Temp.	Salinity	Sigma-T
5	12.522	33.840	25.588
10	12.547	33.838	25.582
20	12.552	33.840	25.582
30	12.525	33.833	25.582
40	12.511	33.836	25.587
50	12.478	33.828	25.588

STATION US12804			
LATITUDE 41-41.1 N			
LONGITUD 140-34.5 E			
DEPTH (m) 42			
Press.	Temp.	Salinity	Sigma-T
5	12.258	33.829	25.631
10	12.264	33.828	25.629
20	12.265	33.828	25.628
30	12.267	33.828	25.628
40	12.270	33.829	25.628

STATION US12807			
LATITUDE 41-37.7 N			
LONGITUD 140-27.9 E			
DEPTH (m) 17			
Press.	Temp.	Salinity	Sigma-T
5	10.788	33.588	25.714
10	10.795	33.589	25.713

STATION US12810			
LATITUDE 41-35.1 N			
LONGITUD 140-26.9 E			
DEPTH (m) 14			
Press.	Temp.	Salinity	Sigma-T
5	11.628	33.402	25.418
10	12.054	33.772	25.625

STATION US12811			
LATITUDE 41-28.2 N			
LONGITUD 140-16.3 E			
DEPTH (m) 20			
Press.	Temp.	Salinity	Sigma-T
5	11.627	33.907	25.810
10	11.640	33.966	25.854
20	11.612	34.025	25.904

STATION US12812			
LATITUDE 41-26.7 N			
LONGITUD 140-17.3 E			
DEPTH (m) 59			
Press.	Temp.	Salinity	Sigma-T
5	11.830	33.888	25.757
10	11.825	33.885	25.756
20	11.816	33.899	25.769
30	11.842	33.917	25.778
40	11.855	33.972	25.818
50	11.767	34.037	25.885

STATION US12813			
LATITUDE 41-28.6 N			
LONGITUD 140-20.8 E			
DEPTH (m) 63			
Press.	Temp.	Salinity	Sigma-T
5	11.978	33.912	25.748
10	11.987	33.914	25.748
20	11.943	33.921	25.762
30	11.662	33.976	25.858
40	11.248	34.051	25.992
50	10.918	34.086	26.079

STATION US12814			
LATITUDE 41-24.9 N			
LONGITUD 140-19.7 E			
DEPTH (m) 92			
Press.	Temp.	Salinity	Sigma-T
5	11.709	33.951	25.829
10	11.720	33.950	25.826
20	11.703	33.949	25.829
30	11.201	34.058	26.006
40	10.852	34.080	26.085
50	10.395	34.101	26.182
75	9.575	34.163	26.370

STATION US12815			
LATITUDE 41-26.3 N			
LONGITUD 140-02.3 E			
DEPTH (m) 31			
Press.	Temp.	Salinity	Sigma-T
5	10.061	34.068	26.214
10	10.093	34.067	26.208
20	10.049	34.071	26.219

STATION US12816			
LATITUDE 41-26.0 N			
LONGITUD 140-01.6 E			
DEPTH (m) 60			
Press.	Temp.	Salinity	Sigma-T
5	10.721	33.979	26.030
10	10.720	33.979	26.030
20	10.713	34.025	26.067
30	10.596	34.008	26.074
40	10.053	34.076	26.221
50	9.475	34.165	26.388

STATION US12817			
LATITUDE 41-25.8 N			
LONGITUD 140-01.1 E			
DEPTH (m) 87			
Press.	Temp.	Salinity	Sigma-T
5	10.938	33.969	25.984
10	10.942	33.969	25.983
20	10.952	33.975	25.986
30	10.953	33.979	25.989
40	10.400	34.086	26.170
50	10.275	34.157	26.247
75	8.624	34.142	26.505

STATION US12818			
LATITUDE 41-25.6 N			
LONGITUD 140-00.6 E			
DEPTH (m) 101			
Press.	Temp.	Salinity	Sigma-T
5	11.201	33.932	25.908
10	11.106	33.939	25.930
20	11.066	33.942	25.940
30	10.497	33.915	26.020
40	9.612	33.935	26.185
50	9.311	33.983	26.272
75	8.810	34.199	26.521

STATION US12819			
LATITUDE 41-24.4 N			
LONGITUD 140-05.8 E			
DEPTH (m) 54			
Press.	Temp.	Salinity	Sigma-T
5	10.228	34.067	26.184
10	10.239	34.067	26.183
20	10.231	34.071	26.187
30	10.071	34.106	26.242
40	9.951	34.111	26.266
50	9.665	34.128	26.327

STATION US12820			
LATITUDE 41-23.8 N			
LONGITUD 140-05.8 E			
DEPTH (m) 88			
Press.	Temp.	Salinity	Sigma-T
5	11.201	33.952	25.923
10	11.187	33.952	25.926
20	11.181	33.952	25.927
30	11.106	33.946	25.936
40	10.615	34.006	26.070
50	10.130	34.055	26.192
75	9.328	34.157	26.405

STATION US12821			
LATITUDE 41-23.3 N			
LONGITUD 140-05.6 E			
DEPTH (m) 103			
Press.	Temp.	Salinity	Sigma-T
5	11.293	33.937	25.894
10	11.298	33.937	25.894
20	11.197	33.938	25.913
30	10.674	33.993	26.050
40	10.521	34.022	26.099
50	10.081	34.085	26.224
75	9.497	34.120	26.349
100	8.867	34.182	26.499

STATION US12822			
LATITUDE 41-22.4 N			
LONGITUD 140-05.5 E			
DEPTH (m) 117			
Press.	Temp.	Salinity	Sigma-T
5	11.419	33.920	25.858
10	11.426	33.921	25.858
20	11.433	33.921	25.857
30	11.425	33.919	25.857
40	10.956	33.920	25.942
50	9.867	33.959	26.161
75	9.718	34.139	26.327
100	8.849	34.177	26.498

STATION US12823			
LATITUDE 41-43.8 N			
LONGITUD 140-43.6 E			
DEPTH (m) 72			
Press.	Temp.	Salinity	Sigma-T
5	12.112	33.909	25.721
10	12.101	33.914	25.727
20	12.107	33.915	25.726
30	12.112	33.915	25.725
40	12.151	33.959	25.752
50	12.049	33.970	25.780

