HOKKAIDO UNIVERSITY

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THE " USHIO MARU "

CRUISE 336
CRUISE 337
CRUISE 338

IN JUNE 2015
IN JULY 2015

1.Cruise Itinerary

Cruise 336

Departure from Hakodate	Jun.	8, 2015
Start frame trawl net sampling and hydrographic research (US15269)		8
Arrival at Hakodate		10
Departure from Hakodate		11
Arrival at and deperture from Usujiri		11
Arrival at Usujiri		12
Departure from Usujiri		13
Arrival at Usujiri		14
Departure from Usujiri		15
Retrieval mooring mooring ADCP system		15
Set mooring ADCP system		16
Finish frame trawl sampling and hyfrographic research (US15314)		16
Arrival at and departure from Usujiri		16
Return to Hakodate		17

Total coverage 640.1 miles

Cruise 337

Departure from Hakodate	Jun.	20, 2015
Start hydrographic research (US15315) and echo sounding research		21
Finish hydrographic research (US15320) and echo sounding research		22
Start and finish marine mammals watching research		23
Return to Hakodate		24

Total coverage 830.1 miles

Cruise 338

Departure from Hakodate	Jul.	29, 2015
Start hydrographic research (US15321)		29
Set Argos buoy		29
Start and finish XBT observation		29
Retrieval of Argos buoy		30
Arrival at Hakodate	Aug.	1
Departure from Hakodate		2
Start trawl net sampling		2
Start and finish squid jigging research		2
Finish trawl net sampling and hydrographic research (US15347)		3
Start and finish squid jigging research		3
Return to Hakodate		4

Total coverage 599.8 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”.

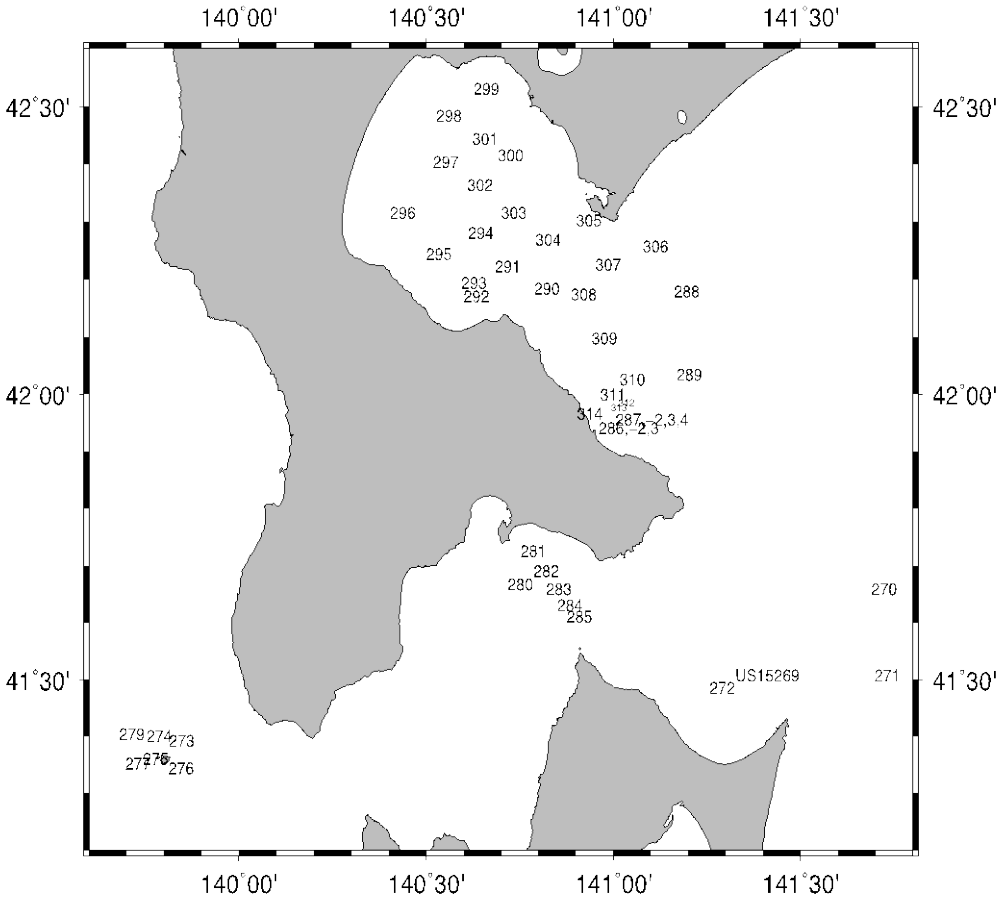

Figure 1. Oceanographic stations (Cruise 336)

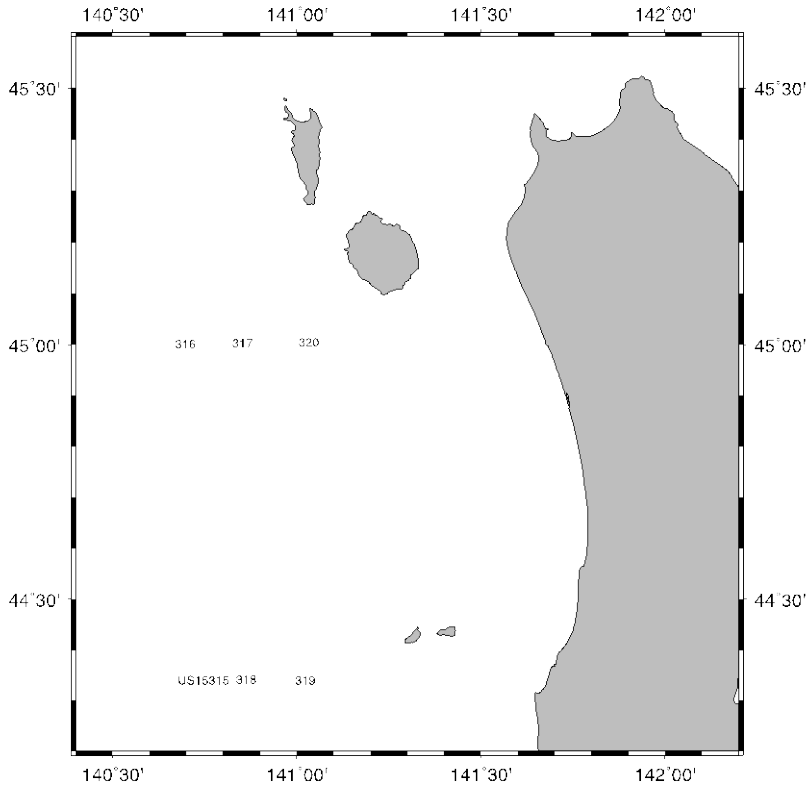

Figure 2. Oceanographic stations (Cruise 337)

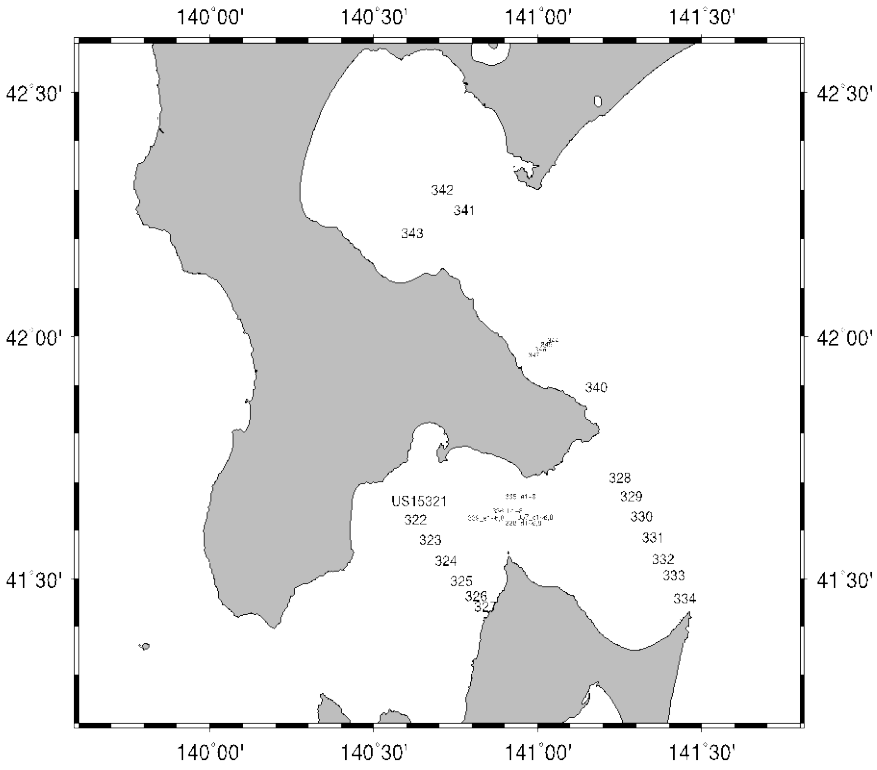

Figure 3. Oceanographic stations (Cruise 338)

Table 1. List of Oceanographic Station

Cruise 336

Station	Lat. (N)°	Long. (E)°	Date	S.M.T.	Depth (m)	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar. (hPa)
US15269	41-29.8	141-19.5	6/8	1211-1221	240	East-1	NE-1	East-3	14.4	10.8	c	1018.7
US15270	41-38.9	141-41.3	6/8	1402-1410	697	ESE-3	NE-2	ESE-4	12.9	12.9	f	1018.6
US15271	41-29.8	141-41.8	6/8	1548-1555	721	East-2	NE-2	East-4	13.0	12.1	f	1017.4
US15272	41-29.8	141-19.5	6/8	1808-1816	237	East-2	ESE-1	East-3	13.0	13.6	f	1017.1
US15273	41-22.9	139-48.8	6/9	0526-0534	409	East-3	East-1	East-5	16.9	16.6	o	1008.6
US15274	41-23.4	139-45.2	6/9	0631-0638	880	East-3	East-1	East-4	17.1	16.5	o	1009.1
US15275	41-21.0	139-44.6	6/9	0738-0745	460	East-3	East-1	East-5	16.9	16.2	r	1009.1
US15276	41-20.0	139-48.7	6/9	0845-0852	309	East-3	East-1	East-5	17.2	16.2	o	1008.6
US15277	41-20.5	139-41.8	6/9	0956-1002	522	East-3	East-1	East-5	16.7	16.0	o	1008.1
US15278	41-20.4	139-33.5	6/9	1115-1120	1168	East-3	East-2	East-5	16.9	16.7	o	1006.8
US15279	41-23.6	139-40.8	6/9	1820-1829	868	East-3	East-1	East-5	16.6	17.0	o	1004.5
US15280	41-40.7	140-45.1	6/10	0431-0440	167	SE-1	East-1	SE-2	14.7	14.7	o	1006.4
US15281	41-42.9	140-45.1	6/11	0730-0737	83	SSW-1	ESE-1	SSW-2	15.7	14.7	bc	1012.6
US15282	41-40.8	140-47.2	6/11	0756-0805	221	SW-2	ESE-1	SW-3	15.7	15.1	bc	1012.5
US15283	41-38.9	140-49.2	6/11	0823-0835	348	SW-2	ESE-1	SW-3	15.8	14.8	bc	1012.6
US15284	41-37.2	140-51.0	6/11	0851-0858	99	WSW-3	East-1	WSW-4	15.7	14.8	bc	1012.7
US15285	41-36.0	140-52.5	6/11	0912-0918	36	SW-3	East-1	SW-5	15.8	15.1	bc	1012.5
US15286	41-57.1	140-57.6	6/11	1436-1440	60	calm	WNW-1	calm	20.4	11.8	bc	1012.1
US15287	41-58.0	141-00.3	6/11	1959-2004	92	SE-1	East-1	SE-1	14.4	11.3	bc	1012.1
US15287-2	41-57.0	141-02.8	6/11	2207-2212	109	calm	East-1	calm	14.3	10.9	bc	1012.2
US15287-3	41-58.1	141-00.3	6/12	0556-0602	92	NNE-1	ENE-1	NNE-2	11.7	11.6	f	1011.6
US15287-4	41-56.8	141-03.2	6/12	0852-0857	112	SW-1	NE-1	SW-2	13.4	11.7	f	1011.6
US15288	42-10.1	141-09.7	6/12	1020-1025	121	NE-1	ENE-1	NE-3	13.2	11.7	c	1010.8
US15289	42-01.4	141-10.1	6/12	1146-1152	132	SE-1	East-1	SE-3	15.2	12.3	c	1010.5
US15286-2	41-57.1	140-57.7	6/13	1729-1734	61	NW-1	NE-2	NW-2	13.2	11.4	f	1008.1
US15286-3	41-57.1	140-57.6	6/14	0557-0602	61	calm	East-1	calm	13.4	11.1	b	1011.7
US15290	42-10.4	140-47.3	6/15	0651-0657	91	calm	ESE-1	calm	15.3	13.0	m	1010.1
US15291	42-12.7	140-41.0	6/15	0817-0822	90	calm	ESE-1	calm	15.9	12.6	m	1010.2
US15292	42-09.6	140-36.0	6/15	0853-0858	70	calm	East-1	calm	15.9	13.0	m	1010.1
US15293	42-11.0	140-35.6	6/15	0918-0922	79	calm	East-1	calm	16.1	12.5	m	1010.1
US15294	42-16.2	140-36.7	6/15	1036-1046	90	NNE-1	ESE-1	NNW-2	17.1	14.0	m	1010.1
US15295	42-14.0	140-30.0	6/15	1213-1218	78	calm	ESE-1	calm	18.5	13.4	m	1009.6
US15296	42-18.3	140-24.2	6/15	1256-1300	59	SE-1	ESE-1	SE-2	18.3	15.3	c	1009.6
US15297	42-23.6	140-31.1	6/15	1401-1407	96	calm	ESE-1	calm	21.3	15.5	bc	1009.3
US15298	42-28.4	140-31.6	6/15	1451-1459	79	SW-1	ESE-1	SW-3	21.2	13.3	bc	1009.1
US15299	42-31.2	140-37.6	6/15	1542-1549	61	SW-1	ESE-1	SW-2	20.3	15.2	bc	1009.0
US15300	42-24.3	140-41.5	6/15	1709-1715	69	SW-1	ESE-1	SW-2	19.1	13.9	bc	1008.6
US15301	42-26.0	140-37.4	6/15	1738-1743	83	SSW-1	ESE-1	SSW-3	18.6	15.5	bc	1008.6
US15302	42-21.2	140-36.6	6/15	1815-1820	87	West-2	ESE-1	West-4	16.9	14.6	bc	1008.6
US15303	42-18.3	140-42.0	6/16	0521-0526	65	calm	ESE-1	calm	14.8	13.7	o	1009.7
US15304	42-15.5	140-47.5	6/16	0616-0621	71	calm	ESE-1	calm	14.7	14.2	o	1010.1
US15305	42-17.5	140-54.0	6/16	0707-0712	56	SW-1	ESE-1	SW-3	16.0	14.9	o	1010.1
US15306	42-14.8	141-04.7	6/16	0837-0841	78	calm	ESE-1	calm	14.7	12.6	o	1010.6
US15307	42-12.9	140-57.1	6/16	0929-0932	69	calm	ESE-1	calm	16.7	12.4	o	1010.6
US15308	42-09.8	140-53.2	6/16	1016-1019	74	calm	ESE-1	calm	18.2	12.9	o	1010.6
US15309	42-05.2	140-56.5	6/16	1106-1110	84	calm	ESE-1	calm	17.6	13.8	c	1010.7
US15310	42-00.9	141-01.0	6/16	1225-1233	92	calm	ESE-1	calm	21.7	14.1	bc	1010.4
US15311	41-59.3	141-02.0	6/16	1247-1252	101	East-1	ESE-1	East-2	19.1	13.9	bc	1010.0
US15312	41-58.7	141-00.8	6/16	1301-1306	95	East-1	ESE-1	East-2	20.4	14.6	bc	1010.0
US15313	41-58.2	140-59.6	6/16	1317-1322	87	East-1	ESE-1	East-2	20.4	14.4	bc	1009.8
US15314	41-57.3	140-58.3	6/16	1342-1347	78	ESE-1	ESE-1	ESE-2	21.2	15.3	bc	1009.6

Cruise 337

Station	Lat. (N)°	Long. (E)°	Date	S.M.T.	Depth (m)	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar. (hPa)
US15315	44-19.9	140-40.6	6/21	0700-0715	141	South-2	North-1	South-3	14.0	15.5	bc	1011.6
US15316	44-59.6	140-40.2	6/21	1214-1232	356	SSW-2	North-1	SSW-3	20.2	14.1	c	1010.5
US15317	44-59.7	140-49.5	6/21	1325-1338	133	SSW-2	North-1	SSW-3	18.2	13.9	bc	1010.7
US15318	44-20.0	140-50.1	6/21	1828-1843	251	SW-3	SW-1	SW-5	16.0	15.0	bc	1010.6
US15319	44-19.9	140-59.7	6/21	1937-1945	311	SSW-3	SW-1	SSW-5	15.5	15.2	bc	1010.7
US15320	44-59.8	141-00.3	6/22	1155-1210	96	calm	SW-1	calm-2	14.3	14.0	o	1012.1

Cruise 338

Station	Lat. (N)°	Long. (E)°	Date	S.M.T.	Depth (m)	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar. (hPa)
US15321	41-39.0	140-33.2	7/29	0920-0923	46	calm	NNE-1	calm	25.0	19.8	o	1011.6
US15322	41-36.7	140-35.6	7/29	0942-0946	65	calm	NE-1	calm	25.2	20.0	f	1010.5
US15323	41-34.2	140-38.3	7/29	1008-1016	161	calm	NE-1	calm	25.7	23.0	f	1010.7
US15324	41-31.6	140-41.2	7/29	1043-1051	217	calm	North-1	calm	27.6	21.9	f	1010.6
US15325	41-29.1	140-44.0	7/29	1126-1134	196	calm	SW-1	calm	25.9	20.8	m	1010.7
US15326	41-27.2	140-46.7	7/29	1159-1208	163	South-1	SW-1	Suth-3	24.8	21.4	m	1012.1
US15327	41-25.9	140-48.4	7/29	1227-1235	75	SSW-2	SW-1	SSW-3	25.4	22.6	c	1008.6
US15328	41-41.9	141-13.0	7/29	2131-2139	218	SW-1	ESE-1	SW-3	23.2	19.5	c	1008.1
US15329	41-39.6	141-15.1	7/29	2159-2208	200	calm	ESE-1	calm	21.9	18.0	c	1006.8
US15330	41-37.1	141-17.0	7/29	2310-2318	207	SSW-1	ESE-1	SSW-3	22.4	18.0	m	1004.5
US15331	41-34.5	141-19.1	7/29	2341-2355	298	SSW-1	ESE-1	SSW-3	22.9	18.8	c	1006.4
US15332	41-31.8	141-20.9	7/30	0012-0025	258	South-1	ESE-1	South-2	23.0	20.3	c	1012.6
US15333	41-29.8	141-22.9	7/30	0050-0055	145	SSW-1	ESE-1	SSW-2	22.7	20.0	c	1012.5
US15334	41-26.9	141-24.9	7/30	0123-0126	40	SSW-1	ESE-1	SSW-2	22.6	19.9	c	1012.6
US15335_a1	41-39.9	140-54.1	7/31	0649-0701	171	west-1	SE-1	West-3	23.9	21.9	m	1012.7
US15336_b1	41-38.1	140-51.7	7/31	0731-0705	277	SW-1	SE-1	SW-3	24.8	21.7	m	1012.5
US15337_c1	41-38.0	140-56.3	7/31	0804-0814	179	SSW-2	East-1	SSW-4	23.9	22.1	o	1012.1
US15338_d1	41-36.6	140-54.1	7/31	0847-0905	207	SSW-2	East-1	SSW-4	23.6	19.7	o	1012.1
US15339_e1	41-37.9	140-53.9	7/31	0919-0939	292	SW-1	East-1	SW-3	24.0	18.4	f	1012.2
a2	41-39.1	140-54.1	7/31	0957-1007	185							1011.6
b2	41-37.9	140-51.9	7/31	1038-1053	259							1011.6
c2	41-37.9	140-56.9	7/31	1107-1114	170							1010.8
d2	41-36.6	140-44.2	7/31	1206-1223	228							1010.5
e2	41-37.9	140-54.1	7/31	1244-1255	255							1008.1
a3	41-39.8	140-54.0	7/31	1330-1339	188							1011.7
b3	41-38.0	140-51.8	7/31	1415-1437	260							1010.1
c3	41-38.0	140-56.7	7/31	1446-1455	170							1010.2
d3	41-36.6	140-54.2	7/31	1537-1554	220							1010.1
e3	41-37.9	140-54.1	7/31	1617-1630	280							1010.1
a4	41-39.9	140-54.0	7/31	1652-1701	179							1010.1
b4	41-37.9	140-51.7	7/31	1731-1745	252							1009.6
c4	41-37.9	140-56.5	7/31	1802-1812	179							1009.6
d4	41-36.4	140-54.1	7/31	1840-1852	163							1009.3
e4	41-38.0	140-54.0	7/31	1911-1925	281							1009.1
a5	41-40.0	140-54.0	7/31	1043-1952	178							1009.0
b5	41-38.1	140-51.9	7/31	2016-2032	267							1008.6
c5	41-38.0	140-56.5	7/31	2050-2059	178							1008.6
d5	41-36.6	140-54.3	7/31	2122-2135	244							1008.6
e5	41-38.0	140-54.0	7/31	2148-2202	281							1009.7
a6	41-39.9	140-54.0	7/31	2222-2232	183							1010.1
b6	41-38.1	140-51.7	7/31	2255-2308	254							1010.1
c6	41-38.0	140-56.6	7/31	2327-2336	178							1010.6
d6	41-36.5	140-54.1	8/1	0003-0016	184							1010.6
e6	41-37.9	140-53.9	8/1	0029-0044	292							1010.6

Cruise 338 (continued)

Station	Lat. (N)*	Long. (E)*	Date	S.M.T.	Depth (m)	Wave	Swell	Wind	Air Temp.	Sea Temp.	Wr.	Bar. (hPa)
a7	41-39.9	140-54.0	8/1	0104-0114	180							1010.7
b7	41-38.0	140-51.6	8/1	0139-0152	252							1010.4
a8	41-40.0	140-54.0	8/1	0510-0520	179							1010.0
b8	41-38.1	140-51.9	8/1	0545-0559	267							1010.0
c8	41-37.9	140-56.4	8/1	0620-0631	184							1009.8
d8	41-36.6	140-54.2	8/1	0654-0707	203							1009.6
e8	41-37.9	140-54.0	8/1	0721-0736	282							1000.8
US15340	41-53.1	141-08.7	8/2	1157-1202	105	calm	SE-1	calm	22.9	21.1	c	1001.1
US15341	42-14.9	140-44.6	8/2	1614-1619	79	SE-1	SE-1	SE-3	22.5	22.5	c	1001.0
US15342	42-17.4	140-40.5	8/3	0732-0736	79	ESE-1	ESE-1	ESE-4	22.4	22.0	o	1001.1
US15343	42-12.1	140-35.0	8/3	1053-1058	83	East-1	NE-1	East-3	22.9	22.2	o	1001.6
US15344	41-59.2	141-01.8	8/3	1414-1419	100	calm	ESE-1	calm	24.2	22.0	o	1001.3
US15345	41-58.7	141-00.6	8/3	1443-1448	93	calm	ESE-1	calm	24.1	22.5	o	1001.7
US15346	41-58.1	140-59.5	8/3	1457-1501	86	calm	ESE-1	calm	24.3	22.0	c	1001.2
US15347	41-57.4	140-58.3	8/3	1504-1515	79	NW-1	ESE-1	NW-2	24.8	22.3	m	1001.8

(*): Fixed position by Global Positioning System

Table 2. Oceanographic data

STATION US15269
LATITUDE 41-40.5 N
LONGITUDE 141-21.8 E
DEPTH (m) 240

Press.	Temp.	Salinity	Sigma-T
5	10.889	33.186	25.383
10	10.799	33.409	25.572
20	10.821	33.654	25.759
30	10.776	33.866	25.932
40	10.660	33.939	26.010
50	10.166	33.958	26.110
75	9.498	34.035	26.282
100	9.212	34.020	26.317
125	8.843	33.990	26.352

STATION US15270
LATITUDE 41-38.9 N
LONGITUDE 141-41.3 E
DEPTH (m) 697

Press.	Temp.	Salinity	Sigma-T
5	12.697	33.769	25.499
10	12.367	33.874	25.645
20	12.287	33.894	25.675
30	11.903	33.854	25.718
40	11.066	33.842	25.862
50	10.535	34.057	26.124
75	9.890	33.977	26.172
100	9.191	33.944	26.261
125	8.255	33.928	26.394

STATION US15271
LATITUDE 41-29.8 N
LONGITUDE 141-41.8 E
DEPTH (m) 721

Press.	Temp.	Salinity	Sigma-T
5	12.233	33.505	25.384
10	12.150	33.583	25.460
20	12.051	33.776	25.629
30	12.130	33.839	25.663
40	11.670	33.828	25.741
50	11.633	33.854	25.768
75	11.547	33.871	25.797
100	11.531	33.901	25.824
125	11.461	33.961	25.883

STATION US15272
LATITUDE 41-29.8 N
LONGITUDE 141-19.5 E
DEPTH (m) 237

Press.	Temp.	Salinity	Sigma-T
5	11.851	33.080	25.126
10	12.250	33.183	25.131
20	13.327	33.567	25.218
30	13.185	33.711	25.358
40	12.728	33.871	25.572
50	12.709	33.930	25.622
75	11.323	33.960	25.907
100	10.848	34.053	26.065
125	10.838	34.052	26.066
145	10.363	34.086	26.176

STATION US15273
LATITUDE 41-22.9 N
LONGITUDE 139-48.8 E
DEPTH (m) 409

Press.	Temp.	Salinity	Sigma-T
5	16.788	33.263	24.232
10	16.904	33.573	24.442
20	16.288	34.233	25.092
30	15.865	34.193	25.157
40	12.337	34.289	25.972
50	11.802	34.309	26.090
75	11.357	34.325	26.185
100	10.798	34.300	26.266
125	10.161	34.232	26.324

STATION US15274
LATITUDE 41-23.4 N
LONGITUDE 139-45.2 E
DEPTH (m) 880

Press.	Temp.	Salinity	Sigma-T
5	16.839	33.469	24.377
10	16.786	33.817	24.657
20	15.952	34.243	25.176
30	14.620	34.229	25.460
40	13.314	34.274	25.767
50	12.118	34.348	26.060
75	11.230	34.331	26.213
100	10.539	34.305	26.316
125	9.248	34.202	26.453
145	7.984	34.154	26.612

STATION	US15275	
LATITUDE	41-21.0	N
LONGITUDE	139-44.6	E
DEPTH (m)	460	

Press.	Temp.	Salinity	Sigma-T
5	16.500	33.049	24.133
10	16.553	33.338	24.343
20	16.197	34.180	25.072
30	15.846	34.253	25.208
40	12.866	34.110	25.730
50	11.810	34.304	26.085
75	10.778	34.231	26.216
100	10.262	34.256	26.326
125	10.079	34.271	26.370
150	8.772	34.174	26.508

STATION	US15276	
LATITUDE	41-20.0	N
LONGITUDE	139-48.7	E
DEPTH (m)	309	

Press.	Temp.	Salinity	Sigma-T
5	16.513	32.889	24.007
10	16.487	32.918	24.036
20	16.345	33.822	24.763
30	15.668	34.173	25.186
40	13.949	33.827	25.291
50	11.713	34.025	25.886
75	10.745	34.187	26.188
100	10.346	34.262	26.317
125	8.883	34.165	26.483
150	8.113	34.155	26.594

STATION	US15277	
LATITUDE	41-20.5	N
LONGITUDE	139-41.8	E
DEPTH (m)	522	

Press.	Temp.	Salinity	Sigma-T
5	16.330	33.187	24.279
10	16.355	33.215	24.294
20	16.537	33.410	24.402
30	16.234	34.132	25.026
40	13.915	33.956	25.398
50	11.686	34.055	25.914
75	10.884	34.191	26.167
100	10.433	34.220	26.269
125	9.781	34.232	26.389
150	9.593	34.219	26.410
155	9.298	34.222	26.461

STATION	US15278	
LATITUDE	41-20.4	N
LONGITUDE	139-33.5	E
DEPTH (m)	1168	

Press.	Temp.	Salinity	Sigma-T
5	16.817	34.068	24.843
10	16.526	34.205	25.015
20	15.030	34.168	25.324
30	12.919	34.184	25.777
40	12.227	34.359	26.048
50	11.576	34.331	26.149
75	10.383	34.262	26.310
100	9.383	34.238	26.460
125	8.672	34.182	26.529
150	7.170	34.116	26.699

STATION	US15279	
LATITUDE	41-23.6	N
LONGITUDE	139-40.8	E
DEPTH (m)	868	

Press.	Temp.	Salinity	Sigma-T
5	17.159	33.562	24.373
10	16.454	34.191	25.021
20	15.336	34.165	25.254
30	13.400	34.304	25.773
40	12.449	34.367	26.011
50	11.795	34.272	26.062
75	11.035	34.339	26.254
100	9.887	34.218	26.360
125	9.436	34.244	26.455

STATION	US15280	
LATITUDE	41-40.7	N
LONGITUDE	140-45.1	E
DEPTH (m)	167	

Press.	Temp.	Salinity	Sigma-T
5	13.742	33.895	25.387
10	13.583	33.942	25.456
20	13.137	34.028	25.613
30	12.277	34.052	25.800
40	11.273	34.099	26.024
50	10.442	34.148	26.210
75	9.799	34.160	26.330
100	9.532	34.171	26.383
125	9.353	34.162	26.405

STATION	US15281	
LATITUDE	41-42.9	N
LONGITUDE	140-45.1	E
DEPTH (m)	83	

Press.	Temp.	Salinity	Sigma-T
5	14.308	33.917	25.285
10	13.749	33.978	25.447
20	12.765	34.020	25.684
30	11.457	34.093	25.986
40	11.030	34.110	26.077
50	10.622	34.134	26.168
75	9.554	34.154	26.366

STATION	US15282	
LATITUDE	41-40.8	N
LONGITUDE	140-47.2	E
DEPTH (m)	221	

Press.	Temp.	Salinity	Sigma-T
5	15.510	32.827	25.112
10	15.428	32.679	25.128
20	13.679	32.455	25.465
30	12.337	32.875	25.762
40	11.928	33.063	25.912
50	11.860	33.243	25.963
75	11.519	33.210	26.039
100	10.248	33.287	26.257
125	9.910	33.382	26.304
150	9.756	33.424	26.335
175	9.609	33.700	26.366
200	9.554	33.484	26.373

STATION	US15283	
LATITUDE	41-38.9	N
LONGITUDE	140-49.2	E
DEPTH (m)	348	

Press.	Temp.	Salinity	Sigma-T
5	14.643	33.932	25.226
10	13.562	33.810	25.358
20	12.942	33.989	25.710
30	11.759	34.088	25.926
40	11.527	34.162	26.027
50	11.368	34.204	26.088
75	11.353	34.212	26.098
100	10.581	34.170	26.203
125	10.358	34.184	26.253
150	10.282	34.189	26.271
175	9.769	34.177	26.348
200	9.473	34.154	26.379
250	9.012	34.158	26.457
300	8.732	34.159	26.502
310	8.667	34.159	26.510

STATION US15284
LATITUDE 41-37.2 N
LONGITUDE 140-51.0 E
DEPTH (m) 99

Press.	Temp.	Salinity	Sigma-T
5	15.291	33.836	25.011
10	15.299	33.838	25.011
20	15.296	33.838	25.011
30	15.086	33.840	25.066
40	13.518	33.869	25.413
50	12.448	33.969	25.703
75	11.068	34.135	26.090

STATION US15285
LATITUDE 41-36.0 N
LONGITUDE 140-52.5 E
DEPTH (m) 36

Press.	Temp.	Salinity	Sigma-T
5	15.240	33.739	24.948
10	15.155	33.724	24.955
20	14.197	33.732	25.166
30	13.287	33.915	25.495

STATION US15286
LATITUDE 41-57.1 N
LONGITUDE 140-57.6 E
DEPTH (m) 60

Press.	Temp.	Salinity	Sigma-T
5	10.533	32.521	24.513
10	10.397	32.480	24.556
20	8.155	32.552	25.006
30	4.811	32.623	25.694
40	3.440	32.833	25.999
50	3.284	32.878	26.089

STATION US15286-2
LATITUDE 41-57.1 N
LONGITUDE 140-57.7 E
DEPTH (m) 61

Press.	Temp.	Salinity	Sigma-T
5	10.548	31.701	24.285
10	8.590	32.166	24.962
20	5.385	32.286	25.481
30	3.699	32.624	25.925
40	3.466	32.707	26.014
50	3.230	32.791	26.102
55	3.186	32.846	26.150

STATION US15286-3
LATITUDE 41-57.1 N
LONGITUDE 140-57.6 E
DEPTH (m) 61

Press.	Temp.	Salinity	Sigma-T
5	9.953	31.984	24.605
10	7.305	32.016	25.027
20	4.219	32.541	25.808
30	3.477	32.710	26.015
40	3.336	32.771	26.076
50	3.296	32.804	26.106

STATION US15287
LATITUDE 41-58.0 N
LONGITUDE 141-00.3 E
DEPTH (m) 92

Press.	Temp.	Salinity	Sigma-T
5	8.582	32.062	24.882
10	7.430	32.145	25.113
20	3.766	32.520	25.836
30	3.061	32.730	26.068
40	2.826	32.809	26.152
50	2.968	32.893	26.206
75	3.440	33.183	26.395
85	3.740	33.195	26.376

STATION US15287-2
LATITUDE 41-57.0 N
LONGITUDE 141-02.8 E
DEPTH (m) 109

Press.	Temp.	Salinity	Sigma-T
5	10.412	31.968	24.516
10	9.282	31.918	24.657
20	7.101	32.269	25.254
30	3.612	32.582	25.900
40	3.788	32.822	26.075
50	3.296	32.884	26.170
75	3.101	33.081	26.345
100	3.719	33.208	26.388

STATION US15287-3
LATITUDE 41-58.1 N
LONGITUDE 141-00.3 E
DEPTH (m) 92

Press.	Temp.	Salinity	Sigma-T
5	10.444	31.949	24.496
10	6.968	32.003	25.062
20	3.819	32.581	25.880
30	3.765	32.811	26.068
40	3.106	32.840	26.152
50	3.311	32.933	26.297
75	3.603	33.185	26.382

STATION US15287-4
LATITUDE 41-56.8 N
LONGITUDE 141-03.2 E
DEPTH (m) 112

Press.	Temp.	Salinity	Sigma-T
5	10.991	31.932	24.389
10	10.084	31.817	24.453
20	5.886	32.734	25.776
30	5.354	32.739	25.843
40	3.790	32.798	26.056
50	3.208	32.818	26.126
75	3.955	33.196	26.356
100	4.075	33.272	26.404

STATION US15288
LATITUDE 42-10.1 N
LONGITUDE 141-09.7 E
DEPTH (m) 121

Press.	Temp.	Salinity	Sigma-T
5	11.841	32.232	24.469
10	11.791	32.216	24.466
20	10.700	32.196	24.645
30	7.918	32.513	25.333
40	5.457	32.654	25.763
50	5.131	33.037	26.104
75	4.817	33.392	26.421
100	5.743	33.541	26.431
110	5.766	33.503	26.398

STATION US15289
LATITUDE 42-01.4 N
LONGITUDE 141-10.1 E
DEPTH (m) 132

Press.	Temp.	Salinity	Sigma-T
5	12.354	32.261	24.396
10	11.131	32.397	24.726
20	8.100	33.044	25.723
30	4.508	32.758	25.951
40	3.657	33.107	26.314
50	5.007	33.427	26.428
75	5.682	33.516	26.419
100	5.668	33.519	26.423
125	5.750	33.547	26.436

STATION US15290
LATITUDE 42-10.4 N
LONGITUDE 140-47.3 E
DEPTH (m) 91

Press.	Temp.	Salinity	Sigma-T
5	12.139	32.149	24.349
10	11.844	32.156	24.410
20	8.913	32.465	25.147
30	4.560	32.598	25.818
40	3.658	32.820	26.085
50	3.084	32.903	26.204
75	3.502	33.183	26.389

STATION US15291
LATITUDE 42-12.7 N
LONGITUDE 140-41.0 E
DEPTH (m) 90

Press.	Temp.	Salinity	Sigma-T
5	12.608	32.174	24.281
10	11.920	32.168	24.405
20	9.164	32.712	25.301
30	3.979	32.399	25.719
40	3.372	32.731	26.041
50	3.057	32.843	26.159
75	3.909	33.323	26.461

STATION US15292
LATITUDE 42-09.6 N
LONGITUDE 140-36.0 E
DEPTH (m) 70

Press.	Temp.	Salinity	Sigma-T
5	12.147	32.007	24.238
10	11.069	31.952	24.391
20	7.111	32.054	25.084
30	4.049	32.449	25.752
40	3.402	32.668	25.088
50	3.086	32.822	26.139
60	3.071	32.869	26.178

STATION US15293
LATITUDE 43-29.6 N
LONGITUDE 145-22.6 E
DEPTH (m) 11

Press.	Temp.	Salinity	Sigma-T
5	12.827	31.330	23.584
10	11.069	31.952	24.391
20	7.111	32.054	25.084
30	4.049	32.449	25.752
40	3.402	32.668	25.088
50	3.086	32.822	26.139
60	3.071	32.869	26.178
75	3.071	32.869	26.178

STATION US15294
LATITUDE 42-16.2 N
LONGITUDE 140-36.7 E
DEPTH (m) 90

Press.	Temp.	Salinity	Sigma-T
5	13.868	31.665	23.638
10	13.267	31.735	23.813
20	10.917	31.881	24.362
30	5.511	32.462	25.605
40	3.457	32.685	25.997
50	3.108	32.831	26.144
75	3.900	33.255	26.408
85	4.439	33.540	26.580

STATION US15295
LATITUDE 42-14.0 N
LONGITUDE 140-30.0 E
DEPTH (m) 78

Press.	Temp.	Salinity	Sigma-T
5	12.456	32.156	24.295
10	12.186	32.204	24.384
20	7.680	31.900	24.885
30	3.974	32.428	25.743
40	3.519	32.690	25.995
50	3.100	32.834	26.148
75	3.834	33.326	26.471

STATION US15296
LATITUDE 42-18.5 N
LONGITUDE 140-24.2 E
DEPTH (m) 59

Press.	Temp.	Salinity	Sigma-T
5	13.288	31.842	23.891
10	12.577	31.964	24.124
20	7.515	31.937	24.937
30	3.753	32.534	25.849
40	3.349	32.670	25.995
50	3.158	32.805	26.119

STATION US15297
LATITUDE 42-23.6 N
LONGITUDE 140-31.1 E
DEPTH (m) 96

Press.	Temp.	Salinity	Sigma-T
5	13.703	31.806	23.780
10	12.903	31.795	23.930
20	12.585	31.822	24.012
30	8.074	31.912	24.839
40	3.925	32.344	25.756
50	3.061	32.774	26.103
75	3.581	33.184	26.382

STATION US15298
LATITUDE 42-28.4 N
LONGITUDE 140-31.6 E
DEPTH (m) 79

Press.	Temp.	Salinity	Sigma-T
5	13.100	31.770	23.872
10	12.305	31.885	24.114
20	12.340	32.179	24.335
30	5.739	32.039	25.245
40	3.627	32.556	25.878
50	3.057	32.754	26.087

STATION US15299
LATITUDE 42-31.2 N
LONGITUDE 140-37.6 E
DEPTH (m) 61

Press.	Temp.	Salinity	Sigma-T
5	14.132	31.842	23.721
10	12.592	31.844	24.028
20	11.258	31.958	24.362
30	4.482	32.353	25.632
40	3.563	32.591	25.912
50	3.095	32.760	26.089
55	3.207	32.905	26.195

STATION US15300
LATITUDE 42-24.3 N
LONGITUDE 140-41.5 E
DEPTH (m) 69

Press.	Temp.	Salinity	Sigma-T
5	12.869	31.811	23.949
10	12.551	31.952	24.119
20	12.035	32.066	24.305
30	6.855	31.910	25.004
40	3.711	32.550	25.865
50	3.088	32.791	26.114

STATION US15301
LATITUDE 42-26.0 N
LONGITUDE 140-37.4 E
DEPTH (m) 83

Press.	Temp.	Salinity	Sigma-T
5	13.378	31.740	23.795
10	12.915	31.788	23.922
20	12.643	31.784	23.972
30	8.314	31.815	24.728
40	3.920	32.473	25.784
50	3.303	32.703	26.025
75	3.863	33.284	26.435

STATION US15302
LATITUDE 42-21.1 N
LONGITUDE 140-36.6 E
DEPTH (m) 87

Press.	Temp.	Salinity	Sigma-T
5	13.703	31.700	23.699
10	13.061	31.770	23.880
20	12.637	31.807	23.990
30	10.608	31.831	24.377
40	4.022	32.404	25.720
50	3.166	32.721	26.052
75	3.844	33.195	26.366

STATION US15303
LATITUDE 42-18.3 N
LONGITUDE 140-42.0 E
DEPTH (m) 65

Press.	Temp.	Salinity	Sigma-T
5	12.280	31.764	24.025
10	12.415	31.998	24.181
20	12.144	32.004	24.237
30	7.926	31.867	24.824
40	4.193	32.516	25.791
50	3.132	32.788	26.108

STATION US15304
LATITUDE 42-15.5 N
LONGITUDE 140-47.5 E
DEPTH (m) 71

Press.	Temp.	Salinity	Sigma-T
5	13.560	31.751	23.767
10	11.899	31.993	24.274
20	11.395	32.178	24.508
30	8.179	32.564	25.335
40	4.439	32.524	25.772
50	3.237	32.739	26.060

STATION US15305
LATITUDE 42-17.5 N
LONGITUDE 140-54.0 E
DEPTH (m) 56

Press.	Temp.	Salinity	Sigma-T
5	12.634	31.800	23.985
10	10.152	31.897	24.505
20	8.969	32.601	25.245
30	7.196	32.614	25.513
40	6.213	32.702	25.710
50	5.697	32.664	25.744

STATION US15306
LATITUDE 42-14.8 N
LONGITUDE 141-04.7 E
DEPTH (m) 78

Press.	Temp.	Salinity	Sigma-T
5	11.702	32.296	24.544
10	9.875	32.357	24.909
20	7.206	32.591	25.493
30	5.116	32.702	25.841
40	5.347	33.050	26.090
50	3.345	32.906	26.183

STATION US15307
LATITUDE 42-12.9 N
LONGITUDE 140-57.1 E
DEPTH (m) 69

Press.	Temp.	Salinity	Sigma-T
5	12.209	32.123	24.316
10	11.898	32.218	24.448
20	10.643	32.697	25.045
30	7.493	32.589	25.452
40	6.526	32.656	25.635
50	4.939	32.536	25.728

STATION US15308
LATITUDE 42-09.8 N
LONGITUDE 140-52.3 E
DEPTH (m) 74

Press.	Temp.	Salinity	Sigma-T
5	12.777	32.100	24.191
10	12.408	32.045	24.218
20	11.176	32.991	25.180
30	7.514	32.331	25.247
40	4.553	32.684	25.888
50	4.157	33.039	26.211
70	4.500	33.183	26.289

STATION US15309
LATITUDE 42-05.2 N
LONGITUDE 140-56.5 E
DEPTH (m) 84

Press.	Temp.	Salinity	Sigma-T
5	12.946	32.435	24.417
10	10.721	32.345	24.757
20	7.627	32.531	25.389
30	5.816	32.746	25.794
40	4.961	32.955	26.058
50	3.810	32.813	26.065
75	3.930	33.325	26.461

STATION US15310
LATITUDE 42-00.9 N
LONGITUDE 141-01.0 E
DEPTH (m) 92

Press.	Temp.	Salinity	Sigma-T
5	13.513	32.184	24.111
10	12.915	32.354	24.361
20	11.722	33.018	25.101
30	6.546	32.520	25.525
40	3.507	32.646	25.961
50	3.899	32.910	26.134
75	6.280	33.558	26.378

STATION US15311
LATITUDE 41-59.3 N
LONGITUDE 141-02.0 E
DEPTH (m) 101

Press.	Temp.	Salinity	Sigma-T
5	11.416	32.235	24.549
10	9.279	32.354	25.003
20	7.101	32.561	25.484
30	5.032	33.003	26.089
40	3.965	32.933	26.146
50	3.007	32.893	26.203
75	6.200	33.543	26.376
95	4.075	33.289	26.417

STATION US15312
LATITUDE 41-58.7 N
LONGITUDE 141-00.8 E
DEPTH (m) 95

Press.	Temp.	Salinity	Sigma-T
5	12.568	32.280	24.370
10	11.474	32.408	24.673
20	8.117	32.439	25.246
30	5.848	32.715	25.766
40	5.348	32.953	26.013
50	3.643	32.770	26.047
75	3.344	33.091	26.330
90	3.783	33.233	26.402

STATION US15313
LATITUDE 41-58.2 N
LONGITUDE 140-59.6 E
DEPTH (m) 87

Press.	Temp.	Salinity	Sigma-T
5	11.968	32.268	24.474
10	11.262	32.310	24.635
20	7.935	32.486	25.309
30	5.658	32.836	25.884
40	4.125	32.791	26.016
50	3.065	32.819	26.138
75	3.146	33.008	26.282

STATION US15314
LATITUDE 41-57.3 N
LONGITUDE 140-58.3 E
DEPTH (m) 78

Press.	Temp.	Salinity	Sigma-T
5	12.872	32.119	24.187
10	12.045	32.214	24.418
20	7.970	32.058	24.968
30	4.071	32.461	25.760
40	3.278	32.771	26.082
50	3.176	32.830	26.138

STATION	US15315	
LATITUDE	44-19.1	N
LONGITUDE	140-40.6	E
DEPTH (m)	141	

Press.	Temp.	Salinity	Sigma-T
5	15.033	33.941	25.149
10	13.415	33.902	25.459
20	12.698	33.970	25.655
30	11.359	33.944	25.888
40	10.410	33.987	26.091
50	9.732	33.991	26.209
75	8.296	34.046	26.480
100	7.226	34.075	26.659
125	6.304	34.077	26.784

STATION	US15316	
LATITUDE	44-59.6	N
LONGITUDE	140-40.2	E
DEPTH (m)	356	

Press.	Temp.	Salinity	Sigma-T
5	14.326	33.920	25.284
10	14.163	33.905	25.307
20	12.270	33.895	25.680
30	11.595	33.962	25.859
40	11.140	33.961	25.941
50	10.525	33.964	26.052
75	9.106	34.021	26.334
100	8.184	34.052	26.502
125	7.516	34.085	26.626
150	6.762	34.084	26.729
175	5.783	34.084	26.856
200	4.140	34.023	26.995
250	1.844	34.034	27.209
300	1.216	34.048	27.266

STATION	US15317	
LATITUDE	44-59.7	N
LONGITUDE	140-49.5	E
DEPTH (m)	133	

Press.	Temp.	Salinity	Sigma-T
5	14.127	33.838	25.263
10	13.765	33.847	25.345
20	11.764	33.915	25.791
30	10.981	33.928	25.944
40	10.549	33.966	26.050
50	9.578	33.927	26.185
75	8.225	34.015	26.467
100	7.135	34.072	26.669

STATION	US15318	
LATITUDE	44-20.0	N
LONGITUDE	140-50.1	E
DEPTH (m)	251	

Press.	Temp.	Salinity	Sigma-T
5	15.196	33.890	25.073
10	14.469	33.830	25.184
20	12.268	33.838	25.635
30	11.494	33.890	25.822
40	10.707	33.986	26.038
50	9.551	33.990	26.238
75	7.880	34.068	26.560
100	6.905	34.064	26.694
125	5.909	34.074	26.832
150	5.121	34.070	26.924
175	4.362	34.046	26.989
200	3.519	34.050	27.078

STATION	US15319	
LATITUDE	44-19.9	N
LONGITUDE	140-59.7	E
DEPTH (m)	311	

Press.	Temp.	Salinity	Sigma-T
5	15.451	33.836	24.976
10	12.525	33.830	25.580
20	11.320	33.951	25.901
30	10.881	33.989	26.010
40	10.192	33.995	26.135
50	8.757	34.012	26.383
75	7.513	34.076	26.619
100	6.724	34.079	26.730
125	5.951	34.079	26.831
150	4.704	34.066	26.968
175	4.214	34.068	27.023
200	3.496	34.041	27.073
250	1.971	34.037	27.202

STATION	US15320	
LATITUDE	44-59.8	N
LONGITUDE	141-00.3	E
DEPTH (m)	96	

Press.	Temp.	Salinity	Sigma-T
5	14.110	33.837	25.265
10	12.750	33.813	25.524
20	11.168	33.955	25.932
30	10.051	34.001	26.163
40	9.058	34.040	26.357
50	8.200	34.049	26.497
75	7.291	34.080	26.654

STATION	US15321	
LATITUDE	41-39.0	N
LONGITUDE	140-33.2	E
DEPTH (m)	46	

Press.	Temp.	Salinity	Sigma-T
5	19.811	33.853	23.937
10	19.570	33.912	24.044
20	18.371	33.997	24.413
30	17.579	34.068	24.661
40	16.811	34.081	24.854

STATION	US15322	
LATITUDE	41-36.9	N
LONGITUDE	140-35.6	E
DEPTH (m)	65	

Press.	Temp.	Salinity	Sigma-T
5	20.097	33.667	23.720
10	18.934	33.876	24.179
20	18.412	34.021	24.421
30	16.947	33.993	24.754
40	15.786	34.176	25.162
50	14.571	34.160	25.417
60	13.447	34.066	25.579

STATION	US15323	
LATITUDE	41-34.2	N
LONGITUDE	140-38.3	E
DEPTH (m)	161	

Press.	Temp.	Salinity	Sigma-T
5	21.654	33.784	23.390
10	21.090	33.847	23.592
20	20.084	33.907	23.906
30	18.897	34.019	24.297
40	16.769	34.079	24.862
50	16.066	34.080	25.025
75	13.080	34.186	25.746
100	11.374	34.198	26.083
125	10.833	34.196	26.179
150	9.643	34.194	26.382

STATION US15324
LATITUDE 41-31.6 N
LONGITUDE 140-41.2 E
DEPTH (m) 217

Press.	Temp.	Salinity	Sigma-T
5	20.909	33.928	23.703
10	20.679	33.941	23.775
20	19.714	33.976	24.055
30	19.448	33.973	24.122
40	19.258	33.962	24.163
50	17.341	34.053	24.706
75	15.252	34.192	25.293
100	12.271	34.184	25.903
125	10.782	34.226	26.212
150	10.333	34.224	26.289
175	10.071	34.217	26.328

STATION US15325
LATITUDE 41-29.1 N
LONGITUDE 140-44.0 E
DEPTH (m) 196

Press.	Temp.	Salinity	Sigma-T
5	19.368	34.047	24.199
10	18.622	34.072	24.408
20	17.123	34.131	24.818
30	16.419	34.143	24.992
40	16.246	34.170	25.053
50	16.200	34.178	25.070
75	14.731	34.195	25.410
100	12.865	34.265	25.850
125	12.095	34.244	25.984
150	11.194	34.252	26.158

STATION US15326
LATITUDE 41-27.2 N
LONGITUDE 140-46.7 E
DEPTH (m) 163

Press.	Temp.	Salinity	Sigma-T
5	20.541	33.966	23.831
10	19.409	33.933	24.101
20	16.443	34.083	24.940
30	15.131	34.189	25.318
40	14.496	34.201	25.465
50	13.950	34.238	25.609
75	13.457	34.283	25.745
100	12.554	34.242	25.894
125	12.020	34.262	26.012

STATION US15327
LATITUDE 41-25.9 N
LONGITUDE 140-48.4 E
DEPTH (m) 75

Press.	Temp.	Salinity	Sigma-T
5	20.357	33.925	23.848
10	16.645	33.940	24.784
20	15.144	34.199	25.323
30	14.767	34.206	25.410
40	14.275	34.221	25.527
50	13.936	34.189	25.574

STATION US15328
LATITUDE 41-41.9 N
LONGITUDE 141-13.0 E
DEPTH (m) 218

Press.	Temp.	Salinity	Sigma-T
5	18.195	34.003	24.460
10	15.907	34.005	25.004
20	13.937	34.130	25.528
30	13.316	34.166	25.684
40	12.715	34.177	25.812
50	12.668	34.195	25.855
75	8.884	33.650	26.080
100	8.002	33.703	26.255
125	6.193	33.460	26.312
150	5.444	33.460	26.403
175	4.202	33.376	26.474

STATION US15329
LATITUDE 41-39.6 N
LONGITUDE 141-15.1 E
DEPTH (m) 200

Press.	Temp.	Salinity	Sigma-T
5	17.216	34.015	24.707
10	16.815	33.943	24.746
20	14.956	34.094	25.283
30	14.101	34.105	25.475
40	12.784	34.128	25.760
50	12.379	34.178	25.878
75	11.588	34.142	26.000
100	9.904	33.994	26.183
125	8.488	33.866	26.309
150	7.719	33.788	26.363
175	7.541	33.798	26.396

STATION US15330
LATITUDE 41-37.1 N
LONGITUDE 141-17.0 E
DEPTH (m) 207

Press.	Temp.	Salinity	Sigma-T
5	18.885	33.940	24.240
10	18.359	33.975	24.399
20	16.957	33.983	24.744
30	16.012	33.958	24.943
40	15.157	33.990	25.159
50	14.765	34.012	25.261
75	11.726	34.043	25.897
100	9.496	34.031	26.280
125	9.536	34.078	26.309
150	9.532	34.079	26.311
175	9.360	34.053	26.318

STATION US15331
LATITUDE 41-34.5 N
LONGITUDE 141-19.1 E
DEPTH (m) 248

Press.	Temp.	Salinity	Sigma-T
5	19.678	33.964	24.055
10	19.489	33.982	24.118
20	18.945	33.998	24.269
30	18.569	34.016	24.378
40	18.048	33.957	24.462
50	17.450	34.048	24.676
75	14.914	34.118	25.311
100	14.649	34.156	25.397
125	14.232	34.145	25.478
150	10.858	34.096	26.097
175	10.172	34.138	26.249
200	9.933	34.124	26.279

STATION US15332
LATITUDE 41-31.8 N
LONGITUDE 141-20.9 E
DEPTH (m) 258

Press.	Temp.	Salinity	Sigma-T
5	20.271	33.944	23.885
10	19.463	33.968	24.114
20	18.895	33.985	24.272
30	18.735	33.994	24.320
40	18.622	34.007	24.358
50	18.555	34.013	24.379
75	15.196	34.004	25.162
100	13.600	34.140	25.605
125	12.703	34.192	25.826
150	12.226	34.218	25.939
175	11.929	34.222	25.999
200	10.984	34.225	26.175

STATION US15333
LATITUDE 41-29.8 N
LONGITUDE 141-22.9 E
DEPTH (m) 145

Press.	Temp.	Salinity	Sigma-T
5	20.106	33.851	23.858
10	19.834	33.874	23.946
20	19.703	33.910	24.008
30	19.542	33.962	24.089
40	19.452	33.957	24.109
50	19.554	33.992	24.109
75	14.734	33.959	25.227
100	13.078	34.179	25.741
125	12.285	34.204	25.916

STATION US15334
LATITUDE 41-26.9 N
LONGITUDE 141-24.9 E
DEPTH (m) 40

Press.	Temp.	Salinity	Sigma-T
5	18.512	33.805	24.231
10	17.789	33.851	24.444
20	17.209	33.972	24.676
30	17.213	33.985	24.685

STATION US15335_a1
LATITUDE 41-39.9 N
LONGITUDE 140-54.1 E
DEPTH (m) 171

Press.	Temp.	Salinity	Sigma-T
5	21.394	33.965	23.599
10	20.633	34.047	23.867
20	18.397	34.116	24.497
30	17.047	34.139	24.842
40	16.735	34.118	24.900
50	16.320	34.108	24.988
75	15.342	34.187	25.270
100	14.322	34.231	25.525
125	12.887	34.247	25.832
150	12.166	34.248	25.973
160	12.051	34.248	25.995

STATION US15336_b1
LATITUDE 41-38.1 N
LONGITUDE 140-51.7 E
DEPTH (m) 277

Press.	Temp.	Salinity	Sigma-T
5	21.649	33.934	23.505
10	19.395	34.060	24.202
20	17.117	34.149	24.833
30	16.533	34.184	24.997
40	15.773	34.193	25.178
50	15.525	34.206	25.244
75	14.952	34.208	25.372
100	14.045	34.209	25.567
125	12.955	34.225	25.802
150	12.032	34.238	25.991
175	11.789	34.240	26.039
200	11.604	34.233	26.068
250	10.636	34.209	26.224

STATION US15337_c1
LATITUDE 41-38.0 N
LONGITUDE 140-56.4 E
DEPTH (m) 179

Press.	Temp.	Salinity	Sigma-T
5	20.585	34.021	23.860
10	19.905	34.091	24.093
20	19.193	34.112	24.294
30	17.478	34.082	24.696
40	16.457	34.100	24.950
50	16.175	34.114	25.027
75	14.472	34.166	25.443
100	14.038	34.226	25.581
125	13.006	34.235	25.799

STATION US15338_d1
LATITUDE 41-36.6 N
LONGITUDE 140-54.1 E
DEPTH (m) 207

Press.	Temp.	Salinity	Sigma-T
5	18.434	34.104	18.434
10	18.336	34.112	18.336
20	17.950	34.125	17.950
30	17.352	34.145	17.352
40	16.776	34.151	16.776
50	16.689	34.168	16.689
75	15.893	34.194	15.893
100	15.041	34.211	15.041
125	14.461	34.225	14.461
150	12.697	34.220	12.697
175	11.956	34.246	11.956

STATION US15339_e1
LATITUDE 41-37.8 N
LONGITUDE 140-53.9 E
DEPTH (m) 296

Press.	Temp.	Salinity	Sigma-T
5	17.722	34.044	24.608
10	16.876	34.098	24.851
20	14.889	34.184	25.367
30	14.620	34.211	25.446
40	14.244	34.223	25.535
50	14.247	34.226	25.537
75	14.064	34.238	25.585
100	13.900	34.240	25.620
125	12.844	34.247	25.840
150	11.724	34.240	26.050
200	10.714	34.217	26.216

STATION USa2
LATITUDE 41-39.8 N
LONGITUDE 140-53.9 E
DEPTH (m) 187

Press.	Temp.	Salinity	Sigma-T
5	19.264	34.051	24.229
10	18.827	34.060	24.347
20	18.278	34.084	24.502
30	16.002	34.144	25.089
40	14.874	34.200	25.383
50	14.425	34.215	25.491
75	13.496	34.240	25.704
100	12.864	34.249	25.838
125	11.776	34.225	26.030
150	11.465	34.231	26.092

STATION USb2
LATITUDE 41-37.9 N
LONGITUDE 140-51.8 E
DEPTH (m) 255

Press.	Temp.	Salinity	Sigma-T
5	20.235	34.011	23.945
10	17.591	34.039	24.635
20	14.575	34.159	25.416
30	12.060	34.188	25.947
40	11.925	34.208	25.988
50	12.437	34.229	25.906
75	11.727	34.228	26.041
100	12.126	34.228	25.966
125	11.071	34.222	26.157
150	11.136	34.225	26.148
175	10.852	34.217	26.193
200	10.957	34.223	26.178
230	10.090	34.204	26.315

STATION USc2
LATITUDE 41-37.9 N
LONGITUDE 140-56.7 E
DEPTH (m) 170

Press.	Temp.	Salinity	Sigma-T
5	20.429	34.032	23.910
10	19.712	33.998	24.072
20	18.388	34.106	24.492
30	18.237	34.126	24.545
40	17.227	34.127	24.790
50	16.436	34.142	24.988
75	13.706	34.191	25.623
100	13.445	34.227	25.705
125	12.821	34.234	25.835
140	12.110	34.229	25.969

STATION USd2
LATITUDE 41-36.6 N
LONGITUDE 140-54.1 E
DEPTH (m) 197

Press.	Temp.	Salinity	Sigma-T
5	21.134	34.013	23.706
10	20.285	34.033	23.949
20	19.713	34.065	24.123
30	18.863	34.091	24.361
40	18.315	34.103	24.508
50	18.351	34.113	24.506
75	18.210	34.117	24.544
100	15.273	34.152	25.258
125	10.848	34.190	26.172
150	10.586	34.212	26.236
175	10.527	34.214	26.247

STATION USe2
LATITUDE 41-37.9 N
LONGITUDE 140-54.0 E
DEPTH (m) 286

Press.	Temp.	Salinity	Sigma-T
5	21.512	33.953	23.557
10	20.566	33.970	23.826
20	18.063	34.118	24.581
30	14.731	34.187	25.404
40	13.562	34.213	25.670
50	13.404	34.226	25.712
75	12.651	34.222	25.859
100	11.891	34.218	26.003
125	11.077	34.227	25.993
150	11.993	34.228	25.991
175	11.853	34.221	26.012
200	11.773	34.223	26.029

STATION USa3
LATITUDE 41-39.8 N
LONGITUDE 140-54.0 E
DEPTH (m) 188

Press.	Temp.	Salinity	Sigma-T
5	16.654	34.071	24.882
10	15.968	34.090	25.055
20	15.337	34.117	25.217
30	15.320	34.122	25.225
40	14.903	34.134	25.325
50	12.330	34.139	25.857
75	11.397	34.220	26.096
100	11.342	34.223	26.108
125	11.254	34.230	26.130
150	11.240	34.232	26.134

STATION USb3
LATITUDE 41-38.0 N
LONGITUDE 140-51.7 E
DEPTH (m) 255

Press.	Temp.	Salinity	Sigma-T
5	19.121	34.047	24.262
10	19.102	34.054	24.272
20	18.972	34.062	24.311
30	18.952	34.072	24.324
40	18.705	34.066	24.382
50	18.078	34.090	24.556
75	15.314	34.156	25.252
100	13.772	34.219	25.631
125	12.299	34.224	25.929
150	12.037	34.229	25.983
175	11.218	34.208	26.119
200	10.812	34.208	26.192

STATION USc3
LATITUDE 41-38.0 N
LONGITUDE 140-56.7 E
DEPTH (m) 170

Press.	Temp.	Salinity	Sigma-T
5	19.996	34.005	24.004
10	19.137	34.015	24.234
20	18.220	34.077	24.511
30	17.375	34.119	24.749
40	16.480	34.145	24.980
50	16.224	34.172	25.060
75	15.284	34.201	25.294
100	12.164	34.151	25.898
125	11.535	34.219	26.070
130	10.765	34.209	26.201

STATION USd3
LATITUDE 41-36.6 N
LONGITUDE 140-54.2 E
DEPTH (m) 220

Press.	Temp.	Salinity	Sigma-T
5	23.510	33.918	22.966
10	22.273	33.905	23.309
20	19.504	33.985	24.117
30	18.245	34.035	24.472
40	17.344	34.099	24.741
50	17.190	34.116	24.790
75	16.160	34.158	25.063
100	11.557	34.221	26.067
125	10.462	34.213	26.258
150	10.443	34.213	26.261
175	10.274	34.212	26.290
200	10.232	34.209	26.294

STATION USe3
LATITUDE 41-37.9 N
LONGITUDE 140-54.1 E
DEPTH (m) 280

Press.	Temp.	Salinity	Sigma-T
5	20.525	33.983	23.847
10	18.380	34.088	24.480
20	17.655	34.111	24.675
30	15.920	34.160	25.120
40	15.524	34.210	25.247
50	14.824	34.227	25.414
75	14.027	34.244	25.597
100	12.826	34.245	25.843
125	12.494	34.246	25.908
150	12.313	34.238	25.937
175	12.174	34.222	25.952
200	11.365	34.199	26.085
240	10.230	34.209	26.295

STATION USa4
LATITUDE 41-39.9 N
LONGITUDE 140-54.0 E
DEPTH (m) 179

Press.	Temp.	Salinity	Sigma-T
5	21.266	33.939	23.614
10	20.422	34.001	23.889
20	17.499	34.071	24.683
30	15.187	34.159	25.283
40	14.790	34.169	25.377
50	14.076	34.172	25.531
75	11.077	34.204	26.142
100	10.803	34.217	26.201
125	10.720	34.217	26.215
150	10.662	34.216	26.225

STATION USb4
LATITUDE 41-37.9 N
LONGITUDE 140-51.7 E
DEPTH (m) 252

Press.	Temp.	Salinity	Sigma-T
5	22.311	33.963	23.343
10	20.323	33.995	23.911
20	18.255	34.027	24.465
30	16.459	34.064	24.922
40	16.128	34.138	25.055
50	15.736	34.185	25.181
75	14.772	34.247	25.441
100	13.611	34.254	25.691
125	13.032	34.249	25.805
150	12.378	34.247	25.932
175	11.870	34.241	26.024
200	11.423	34.216	26.088

STATION USc4
LATITUDE 41-37.9 N
LONGITUDE 140-56.5 E
DEPTH (m) 179

Press.	Temp.	Salinity	Sigma-T
5	19.607	34.040	24.132
10	18.697	34.063	24.382
20	17.123	34.018	24.732
30	16.357	34.129	24.996
40	16.233	34.144	25.036
50	15.800	34.156	25.143
75	15.040	34.197	25.344
100	13.735	34.219	25.638
125	12.116	34.179	25.929
150	10.734	34.207	26.206

STATION USd4
LATITUDE 41-36.4 N
LONGITUDE 140-54.1 E
DEPTH (m) 163

Press.	Temp.	Salinity	Sigma-T
5	22.342	33.921	23.302
10	20.914	33.883	23.667
20	19.456	33.991	24.133
30	18.580	34.060	24.409
40	17.687	34.100	24.659
50	16.673	34.126	24.921
75	14.151	34.160	25.506
100	11.961	34.205	25.979
125	10.436	34.209	26.259
150	10.268	34.209	26.288

STATION USe4
LATITUDE 41-38.0 N
LONGITUDE 140-54.0 E
DEPTH (m) 281

Press.	Temp.	Salinity	Sigma-T
5	19.384	33.973	24.138
10	18.766	33.991	24.309
20	17.537	34.056	24.662
30	16.178	34.113	25.025
40	15.702	34.155	25.165
50	15.046	34.179	25.329
75	13.916	34.224	25.605
100	11.997	34.236	25.996
125	11.412	34.215	26.089
150	11.294	34.212	26.109
175	11.181	34.216	26.132
200	10.778	34.212	26.201

STATION USa5
LATITUDE 41-40.0 N
LONGITUDE 140-54.0 E
DEPTH (m) 178

Press.	Temp.	Salinity	Sigma-T
5	22.393	33.919	23.287
10	21.298	33.892	23.570
20	19.455	34.037	24.169
30	18.740	34.103	24.401
40	16.738	34.084	24.873
50	15.997	34.134	25.082
75	14.328	34.227	25.521
100	12.742	34.193	25.819
125	12.218	34.211	25.935
150	11.978	34.217	25.985

STATION USb5
LATITUDE 41-38.1 N
LONGITUDE 140-51.9 E
DEPTH (m) 267

Press.	Temp.	Salinity	Sigma-T
5	22.634	33.919	23.218
10	21.227	33.955	23.637
20	18.275	34.058	24.483
30	17.862	34.088	24.607
40	16.413	34.129	24.983
50	15.748	34.163	25.161
75	13.773	34.227	25.637
100	12.539	34.240	25.895
125	11.460	34.229	26.092
150	10.911	34.212	26.178
175	10.285	34.208	26.285
200	10.181	34.208	26.302
240	10.094	34.207	26.317

STATION USc5
LATITUDE 41-38.0 N
LONGITUDE 140-56.5 E
DEPTH (m) 178

Press.	Temp.	Salinity	Sigma-T
5	22.116	33.936	23.377
10	21.927	33.931	23.426
20	19.518	33.964	24.097
30	18.109	34.065	24.529
40	18.102	34.086	24.547
50	17.218	34.097	24.770
75	14.717	34.208	25.423
100	13.494	34.211	25.682
125	12.165	34.242	25.969
150	12.041	34.229	25.982

STATION USd5
LATITUDE 41-36.6 N
LONGITUDE 140-54.3 E
DEPTH (m) 244

Press.	Temp.	Salinity	Sigma-T
5	23.141	33.912	23.068
10	21.988	33.885	23.374
20	19.546	34.007	24.123
30	18.859	34.034	24.318
40	18.337	34.057	24.467
50	17.640	34.084	24.659
75	11.689	34.162	25.997
100	11.095	34.217	26.149
125	10.749	34.214	26.208
150	10.600	34.212	26.233
175	10.385	34.210	26.269
200	10.356	34.211	26.275
220	10.288	34.210	26.286

STATION USe5
LATITUDE 41-38.0 N
LONGITUDE 140-54.0 E
DEPTH (m) 280

Press.	Temp.	Salinity	Sigma-T
5	22.115	33.904	23.353
10	21.513	33.935	23.544
20	20.859	33.973	23.750
30	19.880	34.017	24.043
40	18.937	34.061	24.319
50	18.080	34.077	24.546
75	15.343	34.131	25.227
100	13.959	34.234	25.604
125	13.124	34.242	25.781
150	11.310	34.219	26.111
175	10.941	34.212	26.173
200	10.681	34.206	26.214
250	10.211	34.207	26.297

STATION USa6
LATITUDE 41-39.9 N
LONGITUDE 140-54.0 E
DEPTH (m) 183

Press.	Temp.	Salinity	Sigma-T
5	22.869	33.934	23.163
10	21.836	33.998	23.502
20	20.206	34.025	23.964
30	18.178	34.040	24.493
40	17.764	34.070	24.618
50	17.036	34.095	24.811
75	14.443	34.215	25.487
100	12.467	34.241	25.911
125	12.319	34.252	25.947
150	12.024	34.238	25.992

STATION USb6
LATITUDE 41-38.1 N
LONGITUDE 140-51.7 E
DEPTH (m) 254

Press.	Temp.	Salinity	Sigma-T
5	21.393	34.010	23.634
10	19.974	34.032	24.030
20	19.765	34.045	24.095
30	19.285	34.057	24.228
40	19.067	34.061	24.286
50	18.633	34.055	24.392
75	16.355	34.134	25.000
100	12.941	34.229	25.807
125	12.187	34.240	25.963
150	11.259	34.232	26.130
175	10.569	34.211	26.238
200	10.503	34.215	26.252
235	10.290	34.210	26.285

STATION USc6
LATITUDE 41-38.0
LONGITUDE 140-56.6 E
DEPTH (m) 178

Press.	Temp.	Salinity	Sigma-T
5	22.423	33.972	23.319
10	20.972	33.985	23.729
20	19.864	34.006	24.039
30	19.498	34.053	24.197
40	19.451	34.058	24.186
50	19.210	34.049	24.241
75	14.367	34.189	25.483
100	12.392	34.238	25.922
125	11.736	34.225	26.037
150	10.561	34.198	26.229

STATION USd6
LATITUDE 41-36.5 N
LONGITUDE 140-54.1 E
DEPTH (m) 184

Press.	Temp.	Salinity	Sigma-T
5	21.568	34.000	23.578
10	21.403	33.998	23.622
20	20.655	33.988	23.817
30	20.065	33.986	23.971
40	18.177	34.021	24.479
50	14.971	34.157	25.328
75	13.642	34.222	25.660
100	12.966	34.229	25.802
125	11.913	34.217	25.997
150	11.228	34.222	26.129
175	11.147	34.221	26.143

STATION USe6
LATITUDE 41-37.9 N
LONGITUDE 140-53.9 E
DEPTH (m) 292

Press.	Temp.	Salinity	Sigma-T
5	20.998	34.008	23.740
10	20.963	34.012	23.752
20	20.856	34.005	23.776
30	20.753	33.981	23.785
40	19.989	33.966	23.976
50	18.417	34.021	24.419
75	15.850	34.150	25.128
100	12.871	34.247	25.835
125	12.040	34.243	25.993
150	11.341	34.230	26.114
175	11.094	34.217	26.149
200	10.603	34.210	26.231
250	10.498	34.212	26.251
260	10.504	34.213	26.251

STATION USa7
LATITUDE 41-39.9
LONGITUDE 140-54.0 E
DEPTH (m) 180

Press.	Temp.	Salinity	Sigma-T
5	20.865	34.031	23.793
10	20.364	34.038	23.932
20	20.275	34.045	23.961
30	19.993	34.049	24.038
40	19.732	34.056	24.112
50	19.102	34.042	24.263
75	15.131	34.149	25.287
100	12.745	34.252	25.864
125	11.764	34.229	26.035
150	11.547	34.222	26.070
160	11.450	34.222	26.088

STATION USb7
LATITUDE 41-38.0 N
LONGITUDE 140-51.6 E
DEPTH (m) 252

Press.	Temp.	Salinity	Sigma-T
5	21.271	33.989	23.651
10	21.007	34.001	23.732
20	20.462	34.029	23.899
30	19.629	34.010	24.104
40	17.347	34.074	24.721
50	15.217	34.161	25.278
75	14.593	34.214	25.454
100	13.186	34.247	25.772
125	12.615	34.238	25.879
150	11.799	34.239	26.036
175	11.205	34.233	26.141
200	10.886	34.225	26.193

STATION USa8
LATITUDE 41-40.0 N
LONGITUDE 140-54.0 E
DEPTH (m) 179

Press.	Temp.	Salinity	Sigma-T
5	21.676	33.964	23.521
10	21.340	33.967	23.615
20	20.558	33.998	23.850
30	19.271	34.013	24.198
40	17.929	34.084	24.588
50	16.945	34.127	24.857
75	15.116	34.167	25.305
100	14.079	34.220	25.568
125	12.704	34.257	25.876
150	12.115	34.238	25.976

STATION USb8
LATITUDE 41-38.1
LONGITUDE 140-51.9 E
DEPTH (m) 267

Press.	Temp.	Salinity	Sigma-T
5	21.275	33.958	23.626
10	21.175	33.958	23.654
20	20.571	33.961	23.818
30	19.013	34.026	24.274
40	16.726	34.119	24.902
50	16.207	34.157	25.052
75	15.575	34.177	25.210
100	14.515	34.210	25.468
125	12.193	34.236	25.958
150	11.819	34.245	26.037
175	11.826	34.246	26.036
200	11.350	34.233	26.115
250	11.056	34.217	26.156

STATION USc8
LATITUDE 41-37.9 N
LONGITUDE 140-56.4 E
DEPTH (m) 184

Press.	Temp.	Salinity	Sigma-T
5	21.767	33.962	23.494
10	21.453	33.952	23.573
20	20.532	33.944	23.816
30	18.843	33.974	24.277
40	15.713	34.108	25.127
50	15.634	34.151	25.178
75	15.649	34.165	25.185
100	13.643	34.245	25.677
125	13.123	34.259	25.794
150	12.003	34.233	25.993
160	11.669	34.227	26.051

STATION USd8
LATITUDE 41-36.6 N
LONGITUDE 140-54.2 E
DEPTH (m) 203

Press.	Temp.	Salinity	Sigma-T
5	21.986	33.949	23.424
10	21.701	33.943	23.498
20	20.276	33.950	23.889
30	19.028	34.027	24.270
40	18.940	34.047	24.308
50	17.998	34.024	24.525
75	15.055	34.186	25.332
100	14.301	34.207	25.511
125	14.046	34.220	25.575
150	12.265	34.213	25.928
175	11.844	34.237	26.026
200	11.642	34.228	26.057
210	11.411	34.223	26.095

STATION USe8
LATITUDE 41-37.9
LONGITUDE 140-54.0 E
DEPTH (m) 282

Press.	Temp.	Salinity	Sigma-T
5	21.486	33.940	23.555
10	21.432	33.939	23.569
20	19.922	33.972	23.999
30	18.568	34.053	24.406
40	17.899	34.050	24.596
50	16.085	34.101	25.037
75	15.074	34.195	25.335
100	13.956	34.235	25.605
125	13.004	34.221	25.788
150	12.487	34.249	25.912
175	11.870	34.233	26.018
200	11.481	34.231	26.089

STATION US15340
LATITUDE 41-53.2 N
LONGITUDE 141-08.7 E
DEPTH (m) 105

Press.	Temp.	Salinity	Sigma-T
5	19.427	32.094	22.693
10	17.438	32.200	23.263
20	12.278	32.546	24.632
30	11.055	33.036	25.237
40	9.653	33.353	25.723
50	7.844	33.224	25.902
75	7.923	33.664	26.236

STATION US15341
LATITUDE 42-14.9 N
LONGITUDE 140-44.6 E
DEPTH (m) 79

Press.	Temp.	Salinity	Sigma-T
5	21.317	31.468	21.723
10	19.167	31.662	22.430
20	14.422	31.810	23.636
30	10.438	32.301	24.771
40	7.361	32.565	25.452
50	4.582	32.518	25.753
75	4.459	33.052	26.190

STATION US15342
LATITUDE 42-17.4
LONGITUDE 140-40.5 E
DEPTH (m) 79

Press.	Temp.	Salinity	Sigma-T
5	21.995	31.585	21.627
10	19.860	31.642	22.238
20	13.879	32.135	23.999
30	10.555	32.518	24.921
40	6.030	32.419	25.510
50	5.213	32.742	25.862

STATION US15343
LATITUDE 42-12.1 N
LONGITUDE 140-35.0 E
DEPTH (m) 83

Press.	Temp.	Salinity	Sigma-T
5	19.593	31.606	22.279
10	18.531	31.718	22.631
20	13.081	32.464	24.413
30	9.743	32.570	25.098
40	7.445	32.449	25.349
50	4.711	32.506	25.730
75	3.256	32.968	26.241

STATION US15344
LATITUDE 41-59.2 N
LONGITUDE 141-01.8 E
DEPTH (m) 100

Press.	Temp.	Salinity	Sigma-T
5	19.104	32.130	22.803
10	15.500	32.333	23.808
20	12.789	32.823	24.748
30	11.554	33.282	25.338
40	10.035	33.151	25.502
50	7.137	32.951	25.787
75	6.867	33.423	26.194

STATION US15345
LATITUDE 41-58.7
LONGITUDE 141-00.6 E
DEPTH (m) 93

Press.	Temp.	Salinity	Sigma-T
5	19.737	31.926	22.486
10	15.786	32.068	23.541
20	12.698	32.710	24.678
30	11.316	33.178	25.300
40	9.395	32.938	25.440
50	8.532	33.575	26.075
75	5.712	33.335	26.273

STATION US15346
LATITUDE 41-58.1 N
LONGITUDE 140-59.5 E
DEPTH (m) 86

Press.	Temp.	Salinity	Sigma-T
5	18.711	31.970	22.779
10	16.406	32.196	23.500
20	11.716	32.657	24.822
30	11.216	33.249	25.373
40	9.649	33.147	25.564
50	6.633	33.020	25.908
75	5.169	33.396	26.385

STATION US15347
LATITUDE 41-57.4 N
LONGITUDE 140-58.3 E
DEPTH (m) 79

Press.	Temp.	Salinity	Sigma-T
5	19.232	31.897	22.593
10	17.649	32.062	23.107
20	13.539	32.575	24.408
30	10.745	32.908	25.191
40	10.035	33.048	25.422
50	8.574	32.987	25.608