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Special Report No. 32

AN OCEANOGRAPHIC SURVEY OF THE
BELLINGHAM-SAMISH BAY SYSTEM

Volume I — Physical and Chemical Data

Compiled by

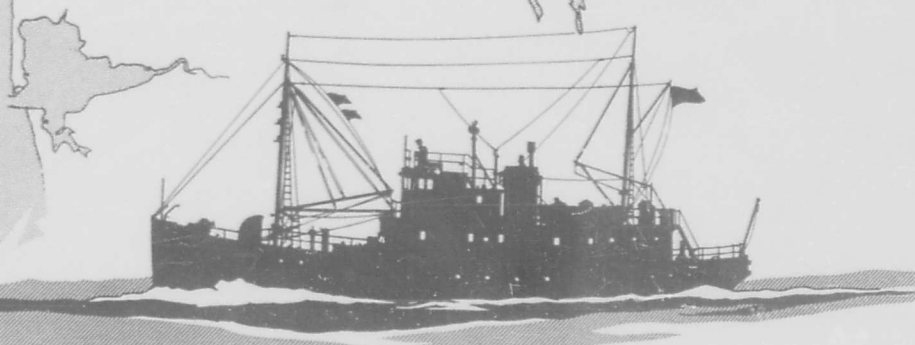
Eugene E. Collias and Clifford A. Barnes

Puget Sound Pulp
and Timber Co.

Reference M62-22
August 1962

Office of Naval Research
Contract Nonr-477(10)
Project NR 083-012

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DEPARTMENT OF OCEANOGRAPHY
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AN OCEANOGRAPHIC SURVEY OF THE
BELLINGHAM-SAMISH BAY SYSTEM

Volume I - Physical and Chemical Data

Compiled by

Eugene E. Collias and Clifford A. Barnes

Research conducted for the Puget Sound Pulp and Timber Company,
Bellingham, Washington

This report also incorporates some results of work carried out under
Office of Naval Research, Contract Nonr-477(10), Project NR 083 012.

Reference M62-22
August 1962

Clifford A. Barnes
for Richard H. Fleming
Chairman

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ABSTRACT

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This volume presents a tabulation of physical and chemical observations made at various locations in the Bellingham-Samish Bay system during the period from November 1959 to November 1961. Charts show the positions of the stations sampled. Values for temperature, salinity, dissolved oxygen, dissolved inorganic phosphate and spent sulfite liquor are given at selected depths from the surface to near bottom.

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INTRODUCTION

The publication, "AN OCEANOGRAPHIC SURVEY OF THE BELLINGHAM-SAMISH BAY SYSTEM", is divided into two volumes. This volume (Volume I) is a tabulation of chemical and physical data collected at various locations in the Bellingham-Samish Bay system from November 1959 to November 1961. The results of these observations are analyzed and discussed in Volume II of this report.

Two charter vessels, the ASTOR and the HYDAH, and the Department of Oceanography research vessel, the BROWN BEAR, were used to collect the data.

The data presented in this report were processed by machine methods. After the actual sampling depths were determined, temperature readings corrected and the chemical analyses complete, the data were punched on IBM cards. Then, calculations of salinity (or chlorinity), density as sigma-t, oxygen in millilieters per liter (ml/l) and percentage of oxygen saturation were made by the IBM 650 magnetic drum data processing machine. Portions of the original observed data and computed values based on these data were put into tabular form by means of the IBM 407 tabulator.

At the beginning of the survey, 27 sampling locations were established within the Bellingham-Samish Bay system and its approaches and were given fixed code names. On each cruise station numbers were assigned, but in chronological order so that the same location did not necessarily receive the same number from cruise to cruise. Table 1 presents a list of the established sampling sites with the various stations numbers listed for each cruise. Figure 1 shows the established sampling sites. Station location charts are presented before the data for each cruise.

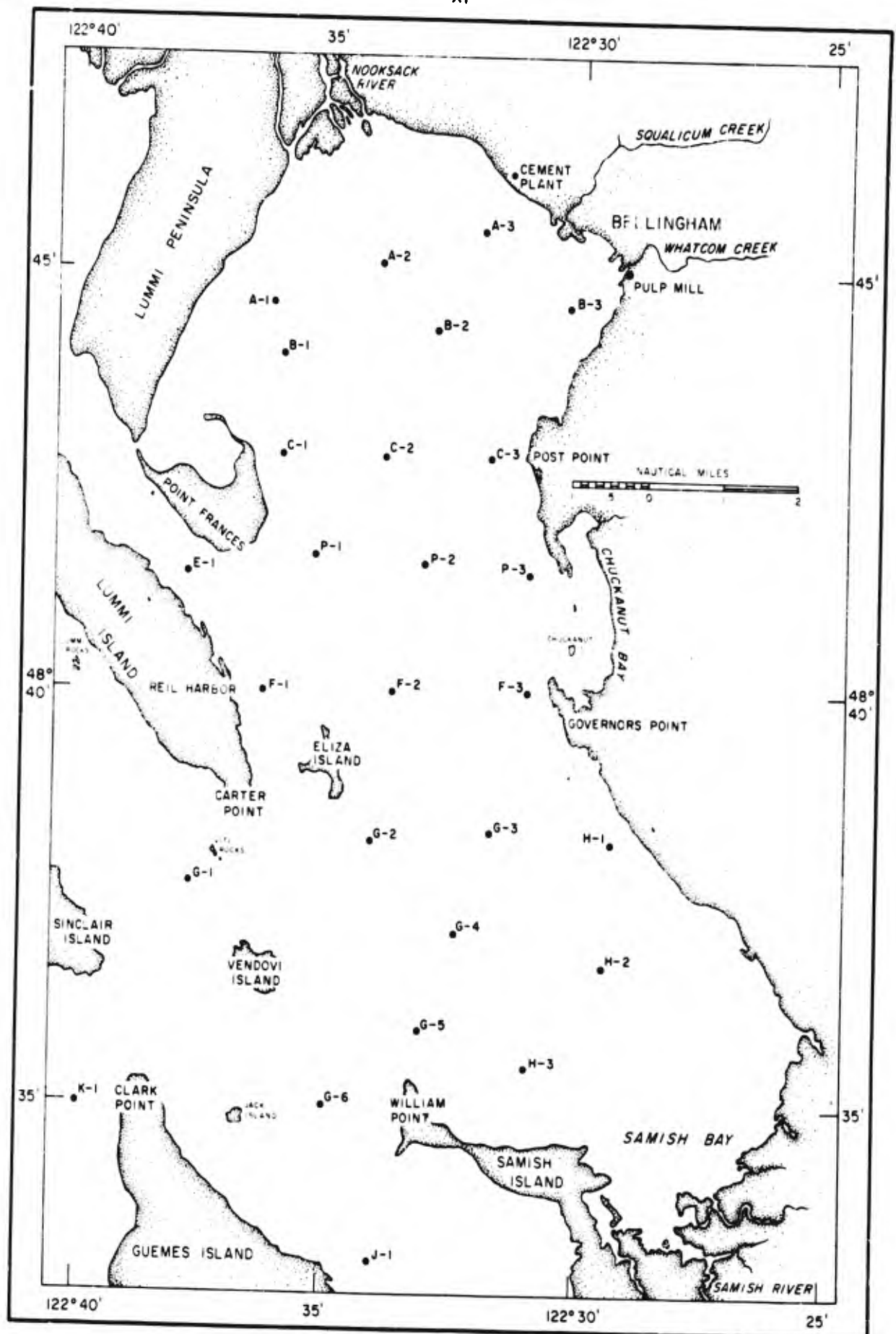


FIGURE 1

ESTABLISHED SAMPLING SITES IN THE
BELLINGHAM-SAMISH BAY SYSTEM

TABLE 1
LIST OF SAMPLING SITES BY CRUISE AND STATION NUMBER

Station No.	CRUISE													
	BB243 1959 Nov.	BB257 1960 April	BB262 May	BLLO4 June	BLLO5 July	BLLO6 Aug.	BLLO7 Sept.	BLLO8 Nov.	Dec.	BB272 1961 Feb.	BLLO11 May	BLLO12 May	BLLO13 July	BLLO14 Nov.
A-1	23	28	29	24	25	25	24	5	37	26	12	25	3	--
A-2	25	30	31	25	26	26	25	6	36	27	11	26	2	39
A-3	24	29	30	26	27	27	26	7	38	28	10	28	1	--
B-1	26	26	26	--	24	24	23	4	33	23	9	24	4	--
B-2	28	27	28	23	23	23	22	3	34	24	8	27	5	--
B-3	27	25	27	22	22	22	27	2	35	25	7-22	27	6	40
C-1	29	22	23	19	20	20	20	10	30	20	15	23	9	42
C-2	31	24	25	20	21	21	21	9	31	21	14	22	8	38
C-3	30	23	24	21	19	19	19	8	32	22	13	21	7	41
D-1	32	19	20	17	15	15	16	12	27	17	16	18	11	--
D-2	34	21	22	13-16	18-14	18-16	17	13	28	18	17	19	15	43
D-3	33	20	21	15	17	17	18	14	29	19	18	20	14	--
E-1	22	18	16	18	16	14	15	11	26	16	11	1	10	37
F-1	35	15	17	12	13	13	14	17	23	13	21	11	--	--
F-2	37	17	19	11	12	12	13	16	24	14	20	10	12	36
F-3	36	16	18	14	11	11	12	15	25	15	19	9	13	--
G-1	21	14	14	8	9	9	8	26	22	12	2	2	--	35
G-2	38	14	15	9	10	10	9	25	45	35	6	7	16	45
G-3	39	36	13	10	8	8	10-28	23	44	34	23	12	--	--
G-4	42	33	10	7	6	6	7	24	43	33	24	13	--	46
G-5	44	35	12	3	3	3	4	19	42	32	25	14	--	--
G-6	46	37	7	2	2	2	2	1	46	36	5	6	--	--
H-1	40	31	8	6	7	7	11	22	39	29	28	17	--	--
H-2	43	34	11	5	5	5	6	21	40	30	27	16	--	44
H-3	41	32	9	4	4	4	5	20	41	31	26	15	--	--
J-1	45	38	35	--	--	--	3	18	47	37	4	5	--	47
K-1	47	--	6	1	1	1	1	27	--	38	3	4	--	34

ABBREVIATIONS AND HEADINGS USED IN DATA TABLES

CRUISE	The letters BB designate the research vessel BROWN BEAR, whereas the letters BLL designate that a charter vessel was used for the cruise. The numbers designate the particular scientific cruise of the BROWN BEAR or the particular cruise in this survey.														
STATION	Oceanographic stations were numbered consecutively within a given cruise without regard to location. The name or code letters following the numbers refer to the closest significant land mark or to one of the established sampling locations as shown in Figure 1.														
DATE	Month, day and year the station was occupied.														
HR (HOUR)	The time when the messenger was released on the most significant cast.														
ZN (ZONE)	The time zone on which the messenger TIME was based. OS indicates Pacific Standard Time.														
LAT	Latitude in degrees and nearest 0.1 minute.														
LONG	Longitude in degrees and nearest 0.1 minute.														
AREA	This code locates the station within one of the geographic areas as listed below -- <table data-bbox="731 1272 1120 1514"> <tr><td>BEL</td><td>Bellingham Channel</td></tr> <tr><td>BLL</td><td>Bellingham Bay</td></tr> <tr><td>GUE</td><td>Guemes Channel</td></tr> <tr><td>HLN</td><td>Hale Passage</td></tr> <tr><td>PAD</td><td>Padilla Bay</td></tr> <tr><td>RSR</td><td>Rosario Strait</td></tr> <tr><td>SAM</td><td>Samish Bay</td></tr> </table>	BEL	Bellingham Channel	BLL	Bellingham Bay	GUE	Guemes Channel	HLN	Hale Passage	PAD	Padilla Bay	RSR	Rosario Strait	SAM	Samish Bay
BEL	Bellingham Channel														
BLL	Bellingham Bay														
GUE	Guemes Channel														
HLN	Hale Passage														
PAD	Padilla Bay														
RSR	Rosario Strait														
SAM	Samish Bay														
SDG	Depth of water (in meters) from the surface, obtained by means of an echo sounder.														
TIDE HT	Tide height (in feet) above mean lower low water (MLLW).														
STG	The tide stage designated as follows -- <table data-bbox="731 1789 1086 1926"> <tr><td>L</td><td>Low water stand</td></tr> <tr><td>R</td><td>Tide rising</td></tr> <tr><td>H</td><td>High water stand</td></tr> <tr><td>F</td><td>Tide falling</td></tr> </table>	L	Low water stand	R	Tide rising	H	High water stand	F	Tide falling						
L	Low water stand														
R	Tide rising														
H	High water stand														
F	Tide falling														
WSPD	Wind speed in knots.														
DIR	Wind direction expressed in degrees true.														

WEA

Weather reported in code given in the U. S. Navy
Hydrographic Office Publication No. 606-C. Code
designations used in this report are as follows --

B	Clear Sky
00	Cloud Development not observed
01	Clouds generally dissolving
02	Clouds remaining unchanged during the past hour
03	Increasing cloudiness
04	Visibility reduced by smoke
05	Dry haze
10	Light fog, visibility more than 1000 yds
21	Rain during the past hour
28	Fog during the past hour
45	Fog remaining constant, sky not discernable
50	Drizzle (not freezing) during station time
60	Rain, not freezing, intermittent, slight at time of observation
61	Rain, not freezing, continuous, slight at time of observation
63	Rain, not freezing, continuous, moderate at time of observation
65	Rain, not freezing, continuous, heavy at time of observation

SEA

Sea state coded as follows --

0	Calm, glassy, no waves
1	Calm, smooth, waves less than 4 inches
2	Smooth, wavelets, waves less than 20 inches
3	Slight, waves up to 4 feet
4	Moderate, waves up to 8 feet

BAR

Barometric pressure in millibars (add 900 to values greater than 50, and 1000 to values less than 50).

DRY

Air temperature, dry bulb, in degrees Fahrenheit.

WET

Air temperature, wet bulb, in degrees Fahrenheit.

RELHU

Relative humidity expressed in percent.

CL

Cloud type coded for the significant cloud layer as follows --

Blank	No clouds
0	Stratus or fractostratus
1	Cirrus
2	Cirrostratus
3	Cirrocumulus
4	Alto cumulus
5	Altostratus
6	Stratocumulus
7	Nimbostratus
8	Cumulus or fractocumulus
9	Cumulonimbus
X	Not observed or not observable

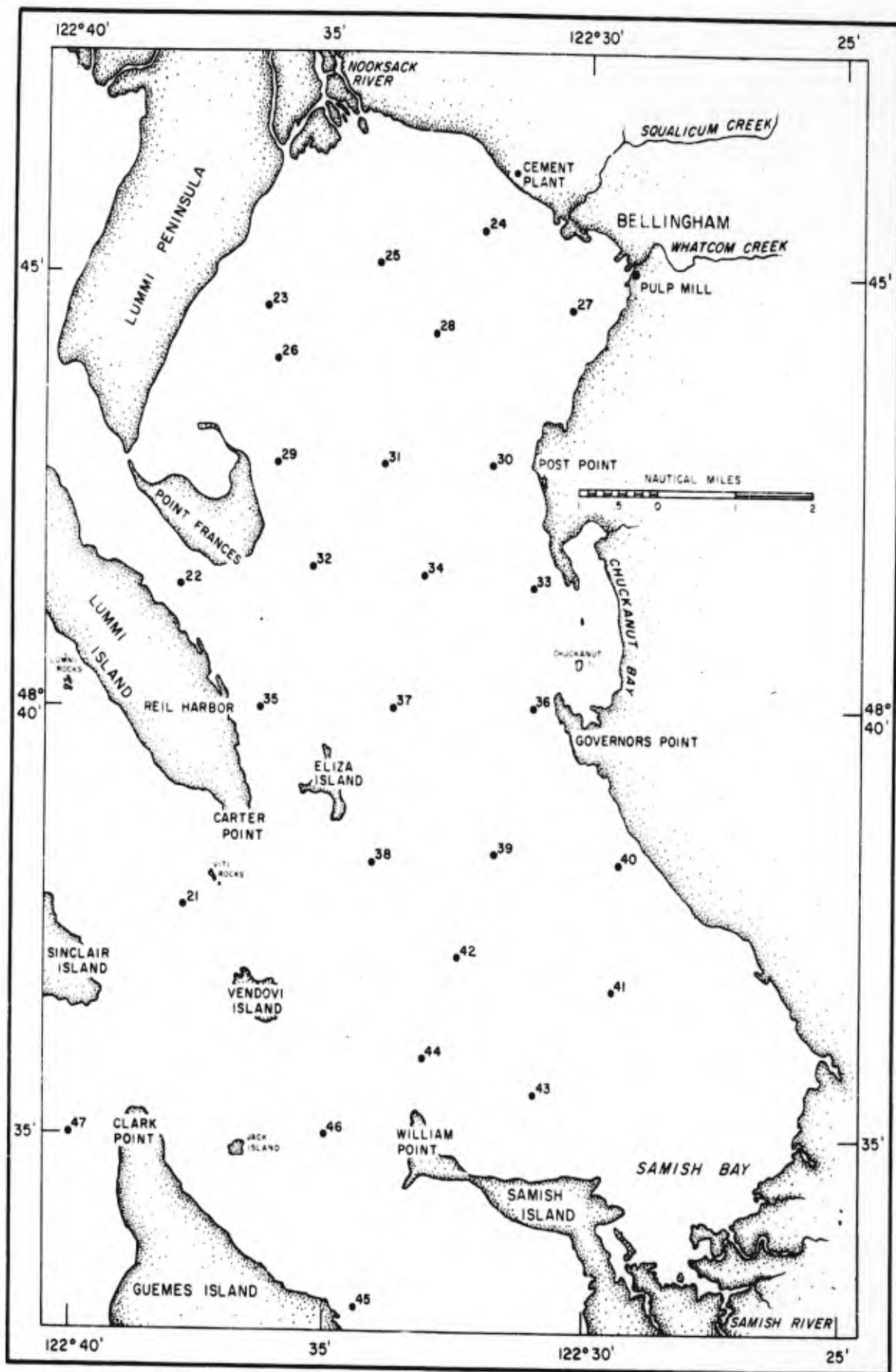
AMT	Cloud amount coded as follows --
	0 No clouds
	1 Less than 0.1 or 0.1 cover
	2 From 0.1 to 0.3 cover
	3 0.4 cover
	4 0.5 cover
	5 0.6 cover
	6 0.7 to 0.8 cover
	7 0.9 cover
	8 Complete overcast
	9 Sky obscured
SCD	Secchi disk reading (depth in meters to which a 30-cm white disk was seen on daylight stations).
SPOB	Special observation designated as follows:
STD	Signifies a lowering to depth using the salinity-temperature-depth recorder (Jacobsen, 1948).
GRAB	Signifies a bottom sample was obtained with a Van Veen grab sampler.
DEPTH	Corrected depth (in meters) at which the water sample was obtained.
TEMP.	Water temperature in degrees Centigrade with a probable error of less than 0.1 degree.
SAL.	The salinity of the sample in parts per thousand by weight.
	The salinity of all samples reported in this volume was determined using a University of Washington salinometer (Paquette, 1958). The probable error for samples with a salinity greater than 14 ‰ is less than 0.010 ‰ but for samples with a salinity of less than 14 ‰ the probable error may be as great as 0.030 ‰.
SIGMA-T	An expression for the density of sea water, at atmospheric pressure and its <u>in situ</u> temperature and salinity, as defined by the equation
	$\text{Sigma-t} = (\text{density} - 1) \times 1000$
OXYGEN	
MG.AT.	Concentration of dissolved oxygen expressed in milligram-atoms of oxygen per liter of sea water as determined by the modified Winkler method described by Thompson and Robinson (1939). To obtain parts per million, multiply the value in mg.at. by 16.
ML/L	Concentration of dissolved oxygen per liter of sea water, expressed in milliliters of oxygen gas at normal pressure and temperature.

- SATN. Ratio (expressed in percent) of the amount of oxygen actually dissolved in the sample, compared to the amount of oxygen necessary to saturate a sample of the same sea water. The amount of oxygen necessary to saturate the sea water was calculated from the equation of Truesdale and Gameson (1957).
- PHOS. Amount of soluble inorganic phosphate expressed in microgram-atoms per liter as determined by the method of Robinson and Thompson (1948), except that color intensities were measured with a Beckman spectrophotometer model DU and a constant temperature bath set at 27 degrees centigrade was used to bring all samples and standards to the same temperature.
- SSL Amount of spent sulfite liquor expressed in parts per million, based on standards containing ten percent solids by weight. A blow-pit liquor sample obtained from the Puget Sound Pulp and Timber Company was used as the standard. All samples and standards were analyzed by the Pearl-Benson technique as modified by Felicetta and McCarthy (1959).

Only observed values are reported. If a value was not observed at a given station (e.g., phosphate) that property is not indicated in the data column heading. If a value was rejected as being questionable or was lost, the individual result is filled in with dashes. Asterisks (*) in the station headings indicate that the value was not observed.

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OCEANOGRAPHIC STATION LOCATIONS
 BLL-01 BB 243 3-4 NOV. 1959

CRUISE BB 243 STATION 021 VITI ROCKS, WEST OF G-1

DATE 11/03/59 HR 1958 ZN 08 LAT 48-37.7N LONG 122-38.1W AREA BLL
 SDG 088M TIDE HT 05.7 STG F WSPD 12 DIR 030 WEA 01 SEA 2 BAR 15
 DRY 48.4 WET 45.2 RELHU 77 CL 4 AMT 3 SCD * SPOB STD-12 GRAB-1

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.64	26.579	20.48	0.512	5.73	88	2.35	-
2	9.76	27.459	21.14	0.498	5.58	86	2.50	-
4	9.70	27.666	21.31	0.493	5.52	85	2.39	-
8	9.46	29.802	23.01	0.385	4.31	67	2.65	5
17	9.44	29.980	23.15	0.364	4.08	64	2.70	4
25	9.44	29.998	23.17	0.368	4.12	64	2.69	4
34	9.42	29.985	23.16	0.363	4.07	63	2.62	2
51	9.40	30.043	23.21	0.359	4.02	63	2.66	2
68	9.37	30.123	23.27	0.350	3.92	61	2.87	2

CRUISE BB 243 STATION 022 HALE PASSAGE E-1

DATE 11/03/59 HR 2110 ZN 08 LAT 48-41.4N LONG 122-37.9W AREA BLL
 SDG 038M TIDE HT 03.5 STG F WSPD 06 DIR 320 WEA 01 SEA 1 BAR 18
 DRY 45.5 WET 40.8 RELHU 68 CL X AMT 2 SCD * SPOB STD-13 GRAB-2

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.70	27.050	20.83	0.491	5.50	84	2.54	10
2	9.74	27.066	20.84	0.494	5.53	85	2.87	20
5	9.74	27.138	20.90	0.486	5.44	84	2.30	13
10	9.72	27.753	21.38	0.463	5.19	80	2.54	5
15	9.69	27.861	21.47	0.457	5.12	79	2.65	-
20	9.66	28.678	22.11	0.426	4.77	74	2.65	5
25	9.63	28.909	22.29	0.415	4.65	72	2.75	2
30	9.60	29.194	22.52	0.404	4.52	70	2.78	-

CRUISE BB 243 STATION 023 A-1

DATE 11/03/59 HR 2223 ZN 08 LAT 48-44.7N LONG 122-36.2W AREA BLL
 SDG 011M TIDE HT 01.7 STG F WSPD 15 DIR 015 WEA 01 SEA 2 BAR 20
 DRY ** WET ** RELHU * CL X AMT * SCD * SPOB STD-14 GRAB-3

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.32	23.485	18.12	0.540	6.05	90	2.70	12
1	9.66	25.345	19.52	0.518	5.80	88	2.70	15
2	9.74	26.594	20.47	0.504	5.64	86	2.61	17
4	9.81	26.688	20.54	0.503	5.63	86	2.65	15
6	9.90	27.449	21.11	0.494	5.53	86	2.49	16

CRUISE BB 243 STATION 024 CEMENT PLANT A-3

DATE 11/03/59 HR 2307 ZN 08 LAT 48-45.7N LONG 122-32.1W AREA BLL
 SDG 007M TIDE HT 00.6 STG F WSPD 12 DIR 040 WEA 01 SEA 2 BAR 22
 DRY 42.1 WET 36.9 RELHU 62 CL X AMT 2 SCD * SPOB STD-15 GRAB 4

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.72	27.087	20.86	0.477	5.34	82	2.43	23
1	9.77	27.085	20.85	0.477	5.34	82	2.36	26
2	10.00	29.075	22.36	0.383	4.29	67	3.04	8
2	9.83	27.723	21.34	0.463	5.19	80	2.54	3
6	9.98	29.336	22.57	0.354	3.96	62	3.34	5

CRUISE BB 243 STATION 025 A-2

DATE 11/03/59 HR 2350 ZN 08 LAT 48-45.2N LONG 122-34.3W AREA BLL
 SDG 007M TIDE HT -0.7 STG F WSPD 16 DIR 040 WEA 02 SEA 2 BAR 22
 DRY ** WET ** RELHU * CL X AMT 2 SCD * SPOB STD-25 GRAB 5

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.44	24.932	19.23	0.519	5.81	88	2.72	14
1	9.60	25.067	19.31	0.510	5.71	86	2.57	11
2	9.56	25.459	19.62	0.511	5.72	87	2.54	18
3	9.62	25.572	19.70	0.512	5.73	87	2.63	22
4	9.82	26.004	20.00	0.487	5.45	83	2.69	14

CRUISE BB 243 STATION 026 LUMMI PENINSULA B-1

DATE 11/04/59 HR 0030 ZN 08 LAT 48-40.7N LONG 122-36.3W AREA BLL
 SDG 018M TIDE HT -1.3 STG F WSPD 20 DIR 070 WEA 3 SEA 3 BAR 24
 DRY 42.0 WET ** RELHU * CL X AMT * SCD * SPOB STD-17 GRAB 6

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.35	24.640	19.09	0.531	5.95	89	2.43	12
1	9.36	24.721	19.10	0.529	5.92	89	2.48	19
2	9.34	24.744	19.10	0.528	5.91	89	2.26	23
4	9.34	24.751	19.10	0.532	5.96	89	2.55	--
6	9.38	24.755	19.10	0.532	5.96	89	2.67	15
10	9.92	27.962	21.51	0.447	5.01	78	2.89	8
14	9.92	29.250	22.51	0.388	4.35	68	2.85	--
18	9.90	29.456	22.67	0.365	4.09	64	2.28	--

CRUISE BB 243 STATION 027 PULP MILL B-3

DATE 11/04/59 HR 0134 ZN 08 LAT 48-44.5N LONG 122-30.3W AREA BLL
 SDG 009M TIDE HT -1.5 STG R WSPD 06 DIR 340 WEA 2 SEA 2 BAR 24
 DRY 39.0 WET ** RELHU * CL X AMT * SCD * SPOB STD-18 GRAB 7

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	9.38	25.898	19.99	0.367	4.11	62	214
1	9.89	27.260	20.97	0.418	4.68	72	87
2	9.90	28.465	21.90	0.427	4.78	75	16
4	9.96	29.099	22.39	0.399	4.47	70	4
6	9.94	29.277	22.53	0.383	4.29	67	3
8	9.75	29.547	22.77	0.356	3.99	62	1

CRUISE BB 243 STATION 028 B-2

DATE 11/04/59 HR 0212 ZN 08 LAT 48-44.2N LONG 122-33.1W AREA BLL
 SDG 022M TIDE HT -0.9 STG R WSPD 18 DIR 040 WEA 02 SEA 2 BAR 25
 DRY ** WET ** RELHU * CL X AMT * SCD * SPOB STD-19 GRAB-8

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	9.58	27.278	21.03	0.481	5.39	83	18
1	9.59	27.282	21.03	0.482	5.40	83	--
2	9.57	27.308	21.05	0.481	5.39	83	11
4	9.63	27.471	21.17	0.472	5.29	81	16
6	9.96	28.828	22.18	0.414	4.64	73	3
10	9.73	28.959	22.31	0.378	4.23	66	4
15	9.64	29.672	22.88	0.346	3.88	60	2
20	9.68	29.674	22.88	0.348	3.90	61	2

CRUISE BB 243 STATION 029 C-1

DATE 11/04/59 HR 0300 ZN 08 LAT 48-42.9N LONG 122-35.9W AREA BLL
 SDG 022M TIDE HT 00.5 STG R WSPD 18 DIR 040 WEA * SEA 2 BAR 27
 DRY ** WET ** RELHU * CL X AMT * SCD * SPOB STD-20 GRAB 9

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	9.06	24.022	18.57	0.545	6.10	91	21
1	9.08	24.424	18.88	0.543	6.08	91	22
2	9.06	24.444	18.90	0.545	6.10	91	21
4	9.04	24.424	18.89	0.544	6.09	91	21
6	9.18	24.480	18.91	0.546	6.12	91	-
10	9.90	28.512	21.94	0.426	4.77	74	6
15	9.72	29.373	22.64	0.379	4.24	66	1
20	9.77	---	---	0.322	3.61	--	0

CRUISE BB 243 STATION 030 POST POINT C-3

DATE 11/04/59 HR 0353 ZN 08 LAT 48-42.7N LONG 122-31.9W AREA BLL
 SDG 032M TIDE HT 02.3 STG R WSPD 17 DIR 060 WEA 02 SEA 2 BAR 27
 DRY 44.5 WET 40.5 RELHU 71 CL X AMT 2 SCD * SPOB STD 25 GRAB 5

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	9.58	28.822	22.23	0.402	4.50 70	2.49	20
2	9.58	28.863	22.26	0.402	4.50 70	2.63	21
4	9.56	28.825	22.23	0.402	4.50 70	2.64	4
6	9.62	29.028	22.38	0.398	4.46 69	2.75	4
10	9.62	29.413	22.68	0.391	4.38 68	2.73	10
15	9.54	29.659	22.89	0.368	4.12 64	2.45	0
20	9.52	29.736	22.95	0.363	4.07 63	2.80	8
25	9.50	29.759	22.97	0.372	4.17 65	2.81	3
30	9.46	29.796	23.01	0.372	4.17 65	2.82	2

CRUISE BB 243 STATION 031 C-2

DATE 11/04/59 HR 0440 ZN 08 LAT 48-42.6N LONG 122-33.9W AREA BLL
 SDG 029M TIDE HT 04.1 STG R WSPD 12 DIR 060 WEA * SEA 2 BAR 28
 DRY 42.9 WET 39.6 RELHU 74 CL X AMT * SCD * SPOB STD-22 GRAB-11

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	9.54	27.570	21.26	0.469	5.25 81	2.40	30
2	9.56	27.554	21.25	0.470	5.26 81	2.43	32
4	9.54	27.548	21.24	0.471	5.28 81	2.42	33
6	9.57	27.667	21.33	0.459	5.14 79	2.44	32
10	9.70	29.240	22.54	0.393	4.40 69	2.70	8
15	9.57	29.433	22.71	0.392	4.39 68	2.74	
20	9.49	29.792	23.00	0.361	4.04 63	2.83	4
25	9.48	---	---	0.362	4.05 ---	2.80	5

CRUISE BB 243 STATION 032 PT. FRANCES D-1

DATE 11/04/59 HR 0531 ZN 08 LAT 48-41.5N LONG 122-35.4W AREA BLL
 SDG 031M TIDE HT 05.7 STG R WSPD 14 DIR 030 WEA * SEA 2 BAR 30
 DRY ** WET ** RELHU * CL X AMT * SCD * SPOB STD-23 GRAB-12

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	9.54	27.100	20.90	0.466	5.22 80	2.06	52
2	9.55	27.094	20.89	0.469	5.25 80	2.22	61
4	9.52	27.092	20.89	0.467	5.23 80	2.09	61
6	9.60	27.166	20.94	0.465	5.21 80	2.26	61
10	9.82	29.444	22.68	0.378	4.23 66	0.28	3
15	9.76	29.647	22.84	0.350	3.92 61	2.97	6
20	9.47	29.880	23.07	0.361	4.04 63	2.67	3
25	9.44	29.9=0	23.11	0.365	4.09 64	2.90	2
30	9.40	29.997	23.17	0.365	4.09 64	3.08	5

CRUISE BB 243 STATION 033 CHUCKANUT ROCK D-3

DATE 11/04/59 HR 0626 ZN 08 LAT 48-41.4N LONG 122-31.0W AREA BLL
SDG 027M TIDE HT 07.7 STG R WSPD 10 DIR 030 WEA * SEA 2 BAR 30
DRY ** WET ** RELHU * CL X AMT * SCD * SPOB STD-24 GRAB-13

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.14	28.638	22.15	0.469	5.25	80	2.57	4
2	9.16	28.642	22.15	0.471	5.28	81	2.74	0
4	9.13	28.782	22.27	0.471	5.28	81	2.69	4
6	9.25	28.790	22.25	0.454	5.08	78	2.44	0
10	9.69	29.410	22.67	0.385	4.31	67	2.73	0
15	9.58	29.634	22.86	0.362	4.05	63	2.77	1
20	9.52	29.734	22.95	0.364	4.08	64	2.79	-

CRUISE BB 243 STATION 034 D-2

DATE 11/04/59 HR 0702 ZN 08 LAT 48-41.5N LONG 122-33.5W AREA BLL
SDG 031M TIDE HT 08.5 STG R WSPD 30 DIR 030 WEA 01 SEA 3 BAR 30
DRY 40.7 WET 39.8 RELHU 92 CL 2 AMT 1 SCD * SPOB STD-25 GRAB-14

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.45	28.744	22.19	0.449	5.03	78	2.61	9
2	9.46	28.746	22.19	0.450	5.04	78	2.65	5
4	9.42	28.732	22.18	0.445	4.98	77	2.67	6
6	9.42	28.734	22.19	0.446	5.00	77	2.64	7
10	9.60	28.882	22.27	0.429	4.80	74	2.67	5
15	9.51	29.708	22.93	0.380	4.26	66	2.75	6
20	9.42	29.938	23.12	0.374	4.19	65	2.72	5
25	9.42	29.959	23.14	0.368	4.12	64	2.77	3

CRUISE BB 243 STATION 035 REIL HARBOR F-1

DATE 11/04/59 HR 1144 ZN 08 LAT 48-39.7N LONG 122-36.1W AREA BLL
SDG 027M TIDE HT 06.7 STG F WSPD 07 DIR 360 WEA * SEA 1 BAR 34
DRY ** WET ** RELHU * CL X AMT * SCD * SPOB STD-26 GRAB-15

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.34	27.078	20.91	0.493	5.52	84	2.33	--
2	9.33	27.066	20.90	0.459	5.14	78	2.45	30
4	9.28	27.081	20.92	0.495	5.54	84	2.36	--
6	9.28	27.204	21.02	0.474	5.31	81	2.37	--
10	9.33	28.682	22.16	0.434	4.86	75	2.65	34
15	9.34	28.686	22.16	0.434	4.86	75	2.46	33
20	9.35	29.775	23.01	0.388	4.35	67	2.74	1

CRUISE BB 243 STATION 036 GOVERNORS POINT F-3

DATE 11/04/59 HR 1239 ZN 08 LAT 48-40.0N LONG 122-31.2W AREA BLL
 SDG 022M TIDE HT 05.8 STG F WSPD 04 DIR 310 WEA * SEA 1 BAR 35
 DRY 44.0 WET ** RELHU * CL X AMT * SCD 01 SPOB STD-27 GRAB-16

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	9.42	28.890	22.31	0.451	5.05 78	2.82	4
2	9.46	28.939	22.34	0.444	4.97 77	2.91	3
4	9.56	29.605	22.84	0.374	4.19 65	2.84	1
6	9.55	29.635	22.87	0.374	4.19 65	2.78	3
10	9.55	29.664	22.89	0.382	4.28 67	2.77	3
15	9.52	29.741	22.95	0.375	4.20 65	2.74	3
20	9.45	29.844	23.04	0.370	4.14 64	2.75	1

CRUISE BB 243 STATION 037 ELIZA ISLAND F-2

DATE 11/04/59 HR 1325 ZN 08 LAT 48-39.8N LONG 122-33.8W AREA BLL
 SDG 027M TIDE HT 05.6 STG L WSPD 04 DIR 290 WEA 02 SEA 1 BAR 34
 DRY 47.2 WET 39.8 RELHU 52 CL 2 AMT 1 SCD * SPOB STD-28 GRAB-17

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	9.58	27.571	21.26	0.487	5.45 84	2.39	25
2	9.58	27.624	21.30	0.487	5.45 84	2.88	25
4	9.46	28.628	22.10	0.461	5.16 80	---	7
6	9.46	28.778	22.21	0.434	4.86 75	2.67	7
10	9.55	29.300	22.61	0.397	4.45 69	2.71	7
15	9.42	29.548	22.82	0.389	4.36 68	2.81	7
20	9.38	29.636	22.89	0.385	4.31 67	---	4
25	9.39	29.687	22.93	0.384	4.30 67	2.78	5

CRUISE BB 243 STATION 038 ELIZA ROCK, SE OF G-2

DATE 11/04/59 HR 1425 ZN 08 LAT 48-38.1N LONG 122-34.3W AREA BLL
 SDG 101M TIDE HT 05.8 STG R WSPD 04 DIR 290 WEA 02 SEA 1 BAR 34
 DRY ** WET ** RELHU * CL X AMT * SCD 04 SPOB STD-29 GRAB-18

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	9.48	28.169	21.74	0.482	5.40 83	2.92	18
2	9.42	28.830	22.26	0.446	5.00 77	2.19	6
4	9.40	29.108	22.48	0.428	4.79 74	2.59	7
6	9.36	29.449	22.75	0.405	4.54 70	2.65	7
10	9.38	29.684	22.93	0.388	4.35 67	2.69	3
20	9.37	29.725	22.96	0.386	4.32 67	2.48	2
40	9.36	29.858	23.07	0.378	4.23 66	2.69	0
60	9.36	29.882	23.09	0.377	4.22 66	2.78	-
80	9.36	30.435	23.52	0.378	4.23 66	2.83	0

CRUISE BB 243 STATION 039 G-3

DATE 11/04/59 HR 1517 ZN 08 LAT 48-37.6N LONG 122-31.5W AREA BLL
 SDG 016M TIDE HT 06.5 STG R WSPD 06 DIR 280 WEA 03 SEA 1 BAR 35
 DRY 45.7 WET 39.6 RELHU 58 CL X AMT * SCD 06 SPOB STD-30 GRAB 19

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.58	29.192	22.52	0.421	4.72	73	2.83	
2	9.65	29.556	22.79	0.371	4.16	65	2.89	6
4	9.58	29.614	22.85	0.372	4.17	65	2.80	5
6	9.43	29.648	22.90	0.388	4.35	67	2.70	2
10	9.39	29.702	22.94	0.388	4.35	67	2.71	4
13	9.36	29.840	23.06	0.384	4.30	67	2.79	5

CRUISE BB 243 STATION 040 SAMISH BAY, NORTH END H-1

DATE 11/04/59 HR 1554 ZN 08 LAT 48-38.2N LONG 122-29.2W AREA SAM
 SDG 015M TIDE HT 06.8 STG R WSPD 08 DIR 350 WEA 03 SEA 1 BAR 35
 DRY 45.5 WET 40.5 RELHU 65 CL X AMT * SCD * SPOB STD-31 GRAB 20

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT.	ML/L	SATN.	PHOS.	SSL
0	9.43	28.731	22.18	0.483	5.41	83	2.70	6
2	9.46	28.739	22.18	0.487	5.45	84	2.72	7
4	9.44	28.737	22.18	0.485	5.43	84	2.72	6
6	9.53	28.842	22.25	0.470	5.26	81	2.73	8
8	9.58	29.484	22.74	0.379	4.24	66	2.84	3

CRUISE BB 243 STATION 041 SAMISH BAY, SOUTH END H-3

DATE 11/04/59 HR 1641 ZN 08 LAT 48-35.5N LONG 122-30.8W AREA SAM
 SDG 016M TIDE HT 07.2 STG R WSPD 05 DIR 350 WEA 01 SEA 1 BAR 35
 DRY 46.0 WET 43.0 RELHU 79 CL 2 AMT 3 SCD * SPOB STD-32 GRAB-21

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.36	28.791	22.24	0.472	5.29	82	2.79	1
2	9.38	28.784	22.23	0.474	5.31	82	2.75	2
4	9.36	28.790	22.24	0.474	5.31	82	2.57	0
6	9.36	28.957	22.37	0.452	5.06	78	2.83	1
10	9.58	29.614	22.85	0.370	4.14	65	2.92	1
15	9.50	29.754	22.97	0.368	4.12	64	2.97	2

CRUISE BB 243 STATION 042 G-4

DATE 11/04/59 HR 1722 ZN 08 LAT 48-37.1N LONG 122-32.4W AREA BLL
 SDG 022M TIDE HT 07.7 STG R WSPD 08 DIR 350 WEA 00 SEA 1 BAR 35
 DRY 46.0 WET 40.8 RELHU 64 CL X AMT * SCD * SPOB GRAB-23

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	9.32	29.024	22.43	0.446	5.00 77	2.65	4
2	9.33	29.020	22.42	0.455	5.10 79	2.67	7
4	9.34	29.043	22.44	0.443	4.96 77	2.65	9
6	9.36	29.171	22.53	0.430	4.82 74	2.71	6
8	9.38	29.330	22.66	0.423	4.74 73	2.65	7
10	9.38	29.506	22.79	0.402	4.50 70	2.65	4
14	9.36	29.785	23.01	0.379	4.24 66	2.69	-
18	9.36	29.848	23.06	0.380	4.26 66	2.75	-

CRUISE BB 243 STATION 043 SAMISH BAY, MIDDLE OF H-2

DATE 11/04/59 HR 1821 ZN 08 LAT 48-36.8N LONG 122-29.8W AREA SAM
 SDG 018M TIDE HT 07.7 STG H WSPD 05 DIR 340 WEA 00 SEA 1 BAR 34
 DRY ** WET ** RELHU * CL X AMT * SCD * SPOB GRAB-24

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	9.36	28.698	22.17	0.491	5.50 85	2.42	4
2	9.38	28.720	22.18	0.491	5.50 85	2.66	7
4	9.38	28.716	22.18	0.487	5.45 84	2.69	4
6	9.50	29.250	22.57	0.415	4.65 72	2.74	1
10	9.51	29.650	22.88	0.377	4.22 66	2.74	1
13	9.42	29.857	23.06	0.367	4.11 64	2.75	-

CRUISE BB 243 STATION 044 WILLIAMS POINT, NORTH OF G-5

DATE 11/04/59 HR 1948 ZN 08 LAT 48-35.9N LONG 122-33.2W AREA BLL
 SDG 044M TIDE HT 06.8 STG F WSPD 10 DIR 340 WEA 00 SEA 2 BAR 33
 DRY ** WET ** RELHU * CL X AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	9.28	29.197	22.57	0.434	4.86 75	2.63	1
2	9.29	29.205	22.57	0.433	4.85 75	2.73	1
5	9.38	29.409	22.72	0.412	4.61 71	2.67	7
10	9.38	29.456	22.75	0.406	4.55 70	2.76	8
15	9.40	29.544	22.82	0.401	4.49 70	2.75	
20	9.38	29.708	22.95	0.388	4.35 67	2.92	4
25	9.36	29.788	23.01	0.379	4.24 66	2.75	8
30	9.36	29.822	23.04	0.379	4.24 66	2.74	4

CRUISE BB 243 STATION 045 BOAT HARBOR J-1

DATE 11/04/59 HR 2030 ZN 08 LAT 48-32.8N LONG 122-34.3W AREA PAD
 SDG 064M TIDE HT 05.5 STG F WSPD 00 DIR WEA 00 SEA 1 BAR 35
 DRY ** WET ** RELHU * CL X AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	PHOS.	SSL
0	9.22	28.840	22.30	0.478 5.35 82	2.71	-
2	9.29	28.912	22.34	0.472 5.29 81	2.75	5
5	9.28	28.948	22.37	0.419 4.69 72	2.78	6
10	9.48	29.548	22.81	0.394 4.41 69	2.78	5
20	9.48	29.789	23.00	0.385 4.31 67	2.78	-
29	9.47	29.785	23.00	0.381 4.27 66	2.78	4
39	9.42	29.786	23.00	0.375 4.20 65	2.80	4
58	9.45	29.812	23.02	0.374 4.19 65	2.89	-

CRUISE BB 243 STATION 046 WILLIAMS POINT. WEST OF G-6

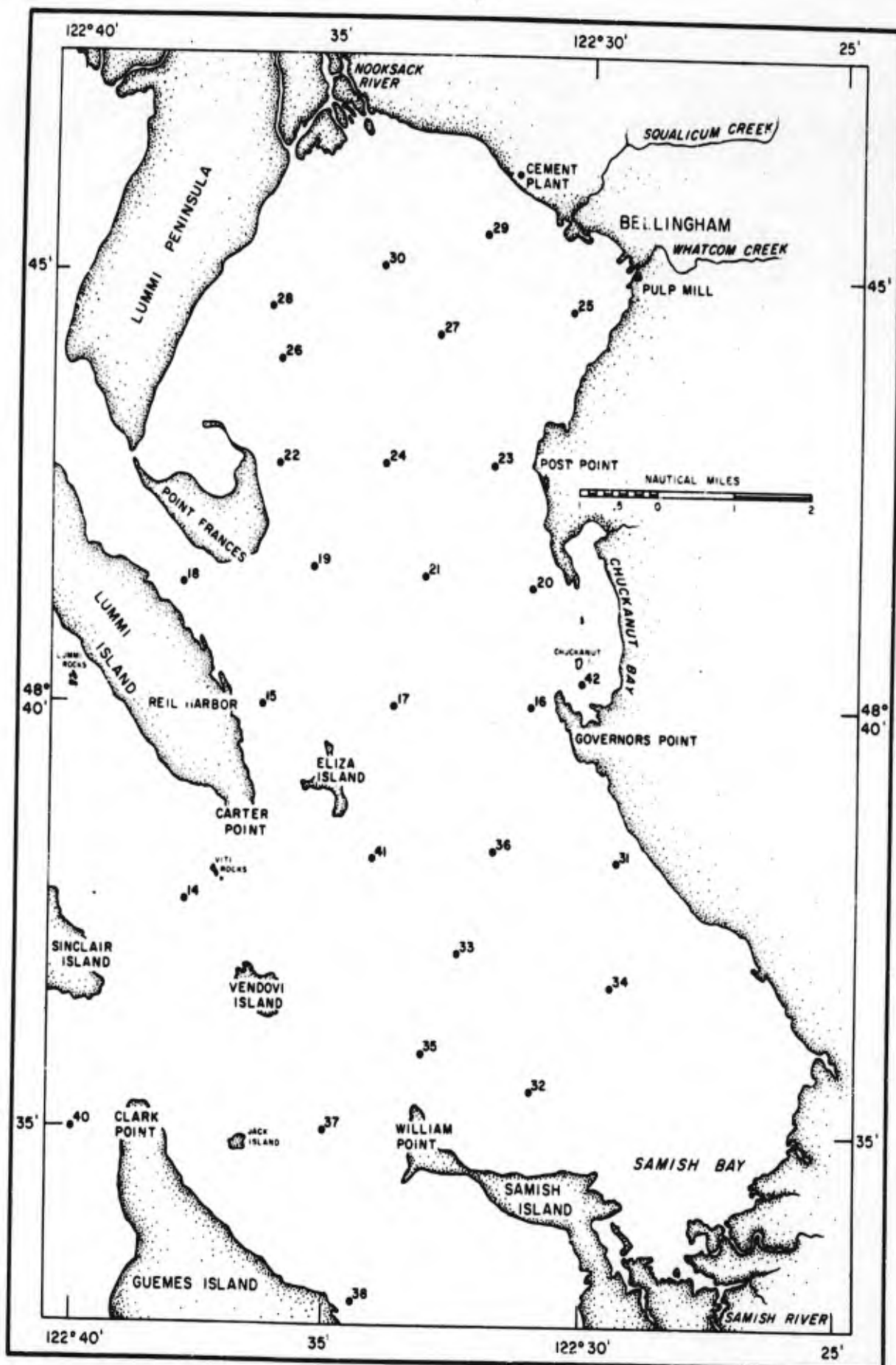
DATE 11/04/59 HR 2110 ZN 08 LAT 48-35.2N LONG 122-35.0W AREA BLL
 SDG 027M TIDE HT 04.3 STG F WSPD 06 DIR 330 WEA * SEA 1 BAR 35
 DRY ** WET ** RELHU * CL X AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	PHOS.	SSL
0	9.30	29.231	22.59	0.397 4.45 69	2.74	6
2	9.52	29.527	22.79	0.396 4.44 69	2.79	7
5	9.43	29.659	22.90	0.388 4.35 67	2.75	13
10	9.37	29.754	22.99	0.383 4.29 67	2.87	6
15	9.38	29.754	22.99	0.385 4.31 67	2.87	6
20	9.37	29.851	23.06	0.378 4.23 66	2.84	6
25	9.38	29.872	23.08	0.374 4.19 65	---	4

CRUISE BB 243 STATION 047 BELLINGHAM CHANNEL K-1

DATE 11/04/59 HR 2155 ZN 08 LAT 48-32.7N LONG 122-40.1W AREA BEL
 SDG 108M TIDE HT 03.2 STG F WSPD 06 DIR 025 WEA * SEA 1 BAR 35
 DRY ** WET ** RELHU * CL X AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	PHOS.	SSL
0	9.40	29.332	22.65	0.417 4.67 72	2.49	4
5	9.40	29.446	22.74	0.410 4.59 71	2.48	2
10	9.38	29.544	22.82	0.402 4.50 70	2.98	3
20	9.38	29.609	22.87	0.401 4.49 70	2.65	2
30	9.40	29.672	22.92	0.392 4.39 68	2.70	2



OCEANOGRAPHIC STATION LOCATIONS
BLL-02 BB 257 20-21 APRIL 1960

CRUISE BB 257 STATION 014 VITI ROCKS, WEST OF G-1

DATE 04/20/60 HR 0546 ZN 08 LAT 48-37.7N LONG 122-37.7W AREA BLL
 SDG 089M TIDE HT 05.2 STG F WSPD 07 DIR 157 WEA 03 SEA 3 BAR 93
 DRY 46.8 WET 44.8 RELHU 86 CL 5 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.07	30.042	23.40	0.528	5.91	89	2.44	3
2	8.06	30.041	23.40	0.528	5.91	89	2.45	2
5	8.05	30.030	23.40	0.530	5.94	90	2.52	7
10	8.07	30.053	23.41	0.526	5.89	89	2.52	3
20	8.05	30.051	23.41	0.524	5.87	89	2.59	4
30	8.11	30.074	23.42	0.522	5.85	88	2.58	3
39	8.09	30.087	23.43	0.519	5.81	88	2.45	3
59	8.10	30.112	23.45	0.519	5.81	88	2.56	4
78	8.05	30.184	23.52	0.517	5.79	87	2.52	-

CRUISE BB 257 STATION 015 F-1

DATE 04/20/60 HR 0641 ZN 08 LAT 48-40.0N LONG 122-36.3W AREA BEL
 SDG 022M TIDE HT 04.5 STG F WSPD 08 DIR 155 WEA 02 SEA 2 BAR 06
 DRY 46.0 WET 45.0 RELHU 93 CL 5 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.08	29.948	23.33	0.549	6.15	93	2.48	3
2	8.08	29.935	23.32	0.548	6.14	93	2.44	3
4	8.08	29.935	23.32	0.548	6.14	93	2.47	6
7	8.08	29.941	23.32	0.549	6.15	93	2.49	3
10	8.05	29.961	23.34	0.546	6.12	92	2.48	0
15	8.09	30.042	23.40	0.535	5.99	90	2.49	1
20	8.08	30.063	23.42	0.530	5.94	90	2.48	3

CRUISE BB 257 STATION 016 GOVERNORS POINT F-3

DATE 04/20/60 HR 0729 ZN 08 LAT 48-39.9N LONG 122-31.2W AREA BLL
 SDG 022M TIDE HT 04.2 STG L WSPD 05 DIR 190 WEA 02 SEA 2 BAR 06
 DRY 47.8 WET 45.0 RELHU 79 CL 4 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.18	29.569	23.02	0.564	6.32	95	2.23	1
2	8.17	29.561	23.01	0.563	6.31	95	2.27	4
4	8.15	29.567	23.02	0.564	6.32	95	2.24	4
7	8.18	29.571	23.02	0.563	6.31	95	2.25	4
10	8.14	29.571	23.02	0.564	6.32	95	2.24	5
15	8.17	29.655	23.09	0.551	6.17	93	2.42	4
20	8.16	29.760	23.17	0.537	6.01	91	2.42	-

CRUISE BB 257 STATION 017 F-2

DATE 04/20/60 HR 0815 ZN 08 LAT 48-40.0N LONG 122-33.8W AREA BLL
SDG 031M TIDE HT 04.1 STG L WSPD 12 DIR 240 WEA 02 SEA 1 BAR 07
DRY 47.8 WET 43.7 RELHU 73 CL 6 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.14	29.711	23.13	0.573	6.42	97	2.24	5
2	8.13	29.702	23.13	0.574	6.43	97	2.30	4
4	8.13	29.707	23.13	0.573	6.42	97	2.45	6
7	8.13	29.737	23.16	0.570	6.38	96	2.39	4
10	8.12	29.778	23.19	0.567	6.35	96	2.43	5
15	8.16	29.789	23.19	0.563	6.31	95	2.49	6
20	8.15	29.826	23.22	0.536	6.00	91	2.35	5
25	8.15	29.930	23.30	0.546	6.12	92	2.59	-

CRUISE BB 257 STATION 018 HALE PASSAGE E-1

DATE 04/20/60 HR 0915 ZN 08 LAT 48-41.4N LONG 122-37.9W AREA BEL
SDG 038M TIDE HT 04.3 STG L WSPD 00 DIR WEA 02 SEA 1 BAR 06
DRY 49.6 WET 44.2 RELHU 63 CL 6 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT.	ML/L SATN.	PHOS.	SSL	
0	8.15	29.684	23.11	0.551	6.17	93	2.35	5
2	8.12	29.762	23.18	0.554	6.20	94	2.34	3
4	8.10	29.858	23.25	0.552	6.18	93	2.41	5
7	8.10	29.895	23.28	0.547	6.13	92	2.47	5
10	8.07	29.901	23.29	0.546	6.12	92	2.50	6
15	8.12	29.920	23.30	0.537	6.01	91	2.60	5
20	8.11	29.929	23.31	0.532	5.96	90	2.41	2
25	8.13	29.950	23.32	0.535	5.99	91	-.--	3
30	8.09	29.956	23.33	0.536	6.00	91	2.32	3

CRUISE BB 257 STATION 019 POINT FRANCES D-1

DATE 04/20/60 HR 1010 ZN 08 LAT 48-41.6N LONG 122-35.3W AREA BLL
SDG 031M TIDE HT 04.5 STG R WSPD 15 DIR 235 WEA 01 SEA 2 BAR 06
DRY 48.6 WET 42.4 RELHU 63 CL 6 AMT 6 SCD 02 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		PHOS.	SSL
				MG.AT.	ML/L SATN.		
0	8.62	24.252	18.81	0.611	6.84	100	43
2	8.45	25.097	19.49	0.590	6.61	97	38
4	8.20	29.052	22.61	0.572	6.41	96	9
7	8.15	29.592	23.04	0.559	6.26	94	7
10	8.11	29.798	23.21	0.558	6.25	94	0
15	8.16	29.797	23.20	0.554	6.20	94	4
20	8.15	29.802	23.20	0.551	6.17	93	3
25	8.17	29.805	23.20	0.555	6.22	94	4
30	8.15	29.817	23.21	0.551	6.17	93	2

CRUISE BB 257 STATION 020 CHUCKANUT ROCK D-3

DATE 04/20/60 HR 1105 ZN 08 LAT 48-41.4N LONG 122-31.0W AREA BLL
 SDG 031M TIDE HT 04.8 STG R WSPD 17 DIR 235 WEA 02 SEA 3 BAR 08
 DRY 50.2 WET 44.4 RELHU 61 CL 6 AMT 6 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.42	29.278	22.76	0.590	6.61	100	2.14	8
2	8.43	29.280	22.76	0.590	6.61	100	2.12	10
4	8.41	29.279	22.76	0.590	6.61	100	2.10	9
7	8.25	29.405	22.88	0.577	6.46	97	2.10	10
10	8.18	29.512	22.97	0.553	6.19	93	2.39	5
15	8.21	29.610	23.04	0.549	6.15	93	2.47	3
20	8.16	29.720	23.14	0.522	5.85	88	2.63	4

CRUISE BB 257 STATION 021 D-2

DATE 04/20/60 HR 1156 ZN 08 LAT 48-41.8N LONG 122-33.2W AREA BLL
 SDG 035M TIDE HT 05.1 STG R WSPD 14 DIR 235 WEA 03 SEA 3 BAR 08
 DRY 49.6 WET 43.2 RELHU 56 CL 5 AMT 7 SCD 7 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.79	24.026	18.61	0.617	6.91	102	1.25	53
2	8.78	24.075	18.65	0.615	6.89	101	1.18	54
4	8.77	24.129	18.70	0.613	6.87	100	1.41	44
7	8.33	28.763	22.37	0.574	6.43	97	2.02	21
10	8.21	29.400	22.88	0.567	6.35	96	2.38	7
15	8.19	29.608	23.05	0.543	6.08	92	2.33	6
20	8.15	29.632	23.07	0.558	6.25	94	2.36	6
25	8.11	29.752	23.17	0.560	6.27	95	2.49	5

CRUISE BB 257 STATION 022 C-1

DATE 04/20/60 HR 1250 ZN 08 LAT 48-42.8N LONG 122-35.9W AREA BLL
 SDG 024M TIDE HT 05.4 STG H WSPD 12 DIR 215 WEA 03 SEA 3 BAR 10
 DRY 49.3 WET 43.2 RELHU 61 CL 6 AMT 5 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.77	26.707	20.70	0.604	6.76	101	1.49	40
1	8.74	26.720	20.72	0.603	6.75	101	1.47	40
2	8.72	26.779	20.76	0.603	6.75	101	1.49	42
4	8.45	27.832	21.62	0.574	6.43	96	1.67	43
7	8.39	28.063	21.81	0.570	6.38	96	1.80	29
10	8.36	28.623	22.25	0.569	6.37	96	1.93	14
15	8.23	29.310	22.81	0.566	6.34	95	2.19	9
20	8.18	29.779	23.18	0.555	6.22	94	2.35	4

CRUISE BB 257 STATION 023 POST POINT C-3

DATE 04/20/60 HR 1341 ZN 08 LAT 4=-42.8N LONG 122-32.0W AREA BLL
SDG 032M TIDE HT 05.7 STG H WSPD 10 DIR 240 WEA 02 SEA 3 BAR 10
DRY 50.7 WET 44.8 RELHU 62 CL 6 AMT 5 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.68	24.278	18.82	0.610	6.83	100	1.15	62
1	8.46	26.935	20.92	0.581	6.51	97	1.54	44
2	8.22	29.330	22.82	0.570	6.38	96	2.15	8
4	8.21	29.419	22.90	0.565	6.33	95	2.31	7
7	8.18	29.516	22.98	0.569	6.37	96	2.19	8
10	8.19	29.564	23.01	0.561	6.28	95	2.28	5
15	8.19	29.605	23.04	0.556	6.23	94	2.34	5
20	8.20	29.658	23.08	0.557	6.24	94	2.35	5
25	8.15	29.692	23.12	0.559	6.26	94	2.38	5
30	8.15	29.697	23.12	0.558	6.25	94	2.32	5

CRUISE BB 257 STATION 024 C-2

DATE 04/20/60 HR 1448 ZN 08 LAT 48-42.9N LONG 122-33.8W AREA BLL
SDG 029M TIDE HT 05.5 STG H WSPD 20 DIR 200 WEA 02 SEA 3 BAR 10
DRY 47.7 WET 44.4 RELHU 76 CL 6 AMT 5 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.91	26.152	20.25	0.607	6.80	102	1.35	42
1	8.89	26.155	20.26	0.607	6.80	102	1.36	38
2	8.87	26.154	20.26	0.607	6.80	102	1.34	40
4	8.72	26.157	20.28	0.604	6.76	101	1.42	37
7	8.31	28.617	22.26	0.575	6.44	97	1.89	15
10	8.27	29.180	22.70	0.564	6.32	95	2.05	7
15	8.16	29.582	23.03	0.564	6.32	95	2.19	4
20	8.12	29.762	23.18	0.555	6.22	94	2.43	3
25	8.13	29.764	23.18	0.554	6.20	94	2.41	3

CRUISE BB 257 STATION 025 PULP MILL B-3

DATE 04/20/60 HR 1541 ZN 08 LAT 48-44.8N LONG 122-30.4W AREA BLL
SDG 010M TIDE HT 05.0 STG F WSPD 18 DIR 180 WEA 02 SEA 3 BAR 11
DRY 50.0 WET 46.2 RELHU 74 CL 6 AMT 6 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.06	13.703	10.55	0.546	6.12	85	1.12	246
1	8.96	19.559	15.11	0.551	6.17	89	0.90	185
2	8.92	21.529	16.65	0.551	6.17	90	0.91	162
4	8.82	23.080	17.87	0.554	6.20	91	0.96	124
6	8.48	25.473	19.78	0.549	6.15	91	2.21	74
8	8.36	28.883	22.46	0.552	6.18	93	2.20	13

CRUISE BB 257 STATION 026 B-1

DATE 04/20/60 HR 1630 ZN 08 LAT 48-43.9N LONG 122-35.1W AREA BLL
 SDG 018M TIDE HT 04.3 STG F WSPD 10 DIR 255 WEA 20 SEA 3 BAR 10
 DRY 47.8 WET 44.1 RELHU 73 CL 6 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.75	26.667	20.67	0.602	6.74	101	1.63	28
1	8.72	26.738	20.73	0.599	6.71	101	1.59	30
2	8.69	26.727	20.73	0.597	6.69	100	1.60	32
4	8.46	27.591	21.43	0.580	6.50	97	1.71	26
7	8.33	28.464	22.13	0.575	6.44	97	2.12	16
10	8.30	29.013	22.57	0.566	6.34	95	2.19	8
14	8.15	29.731	23.15	0.559	6.26	94	2.38	2
18	8.19	29.760	23.16	0.559	6.26	95	2.48	5

CRUISE BB 257 STATION 027 B-2

DATE 04/20/60 HR 1710 ZN 08 LAT 48-44.4N LONG 122-32.6W AREA BLL
 SDG 022M TIDE HT 03.6 STG F WSPD 10 DIR 255 WEA 01 SEA 1 BAR 11
 DRY 48.6 WET 44.4 RELHU 73 CL 6 AMT 6 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.85	26.349	20.41	0.605	6.78	102	1.52	31
1	8.82	26.334	20.40	0.607	6.80	102	1.44	32
2	8.82	26.343	20.41	0.604	6.76	101	1.40	35
4	8.80	26.395	20.45	0.603	6.75	101	1.44	38
7	8.30	29.023	22.57	0.573	6.42	97	1.98	9
10	8.31	29.027	22.58	0.567	6.35	96	2.08	6
15	8.26	29.359	22.84	0.565	6.33	95	2.40	11
20	8.20	29.730	23.14	0.542	6.07	92	2.50	6

CRUISE BB 257 STATION 028 A-1

DATE 04/20/60 HR 1810 ZN 08 LAT 48-44.8N LONG 122-36.5W AREA BLL
 SDG 011M TIDE HT 02.7 STG F WSPD 20 DIR 220 WEA 02 SEA 1 BAR 11
 DRY 45.3 WET 42.6 RELHU 88 CL 6 AMT 6 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.61	27.408	21.27	0.591	6.62	99	1.73	28
1	8.61	27.410	21.27	0.591	6.62	99	1.78	29
2	8.60	27.411	21.27	0.589	6.60	99	1.80	31
4	8.60	27.412	21.27	0.587	6.57	99	1.67	19
7	8.34	27.445	21.34	0.569	6.37	95	2.32	32

CRUISE BB 257 STATION 029 A-3

DATE 04/20/60 HR 1857 ZN 08 LAT 48-45.7N LONG 122-32.2W AREA BLL
 SDG 012M TIDE HT 02.4 STG F WSPD 30 DIR 250 WEA 02 SEA 3 BAR 11
 DRY 45.3 WET 42.6 RELHU 81 CL 6 AMT 6 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	PHOS.	SSL
0	9.07	16.792	12.95	0.564 6.32 89	1.01	152
1	9.00	19.063	14.72	0.552 6.18 89	1.00	178
2	8.98	19.591	15.14	0.560 6.27 90	0.98	166
4	8.80	24.145	18.70	0.583 6.53 96	1.13	78
7	8.48	27.862	21.64	0.550 6.16 92	1.98	28
10	8.35	29.123	22.64	0.516 5.78 87	2.55	--

CRUISE BB 257 STATION 030 A-2

DATE 04/20/60 HR 1934 ZN 08 LAT 48-45.3N LONG 122-34.2W AREA BLL
 SDG 008M TIDE HT 02.0 STG L WSPD 13 DIR 230 WEA 02 SEA 1 BAR 11
 DRY 45.0 WET 41.2 RELHU 72 CL 6 AMT 6 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	PHOS.	SSL
0	8.71	26.230	20.34	0.588 6.59 98	1.60	37
1	8.62	27.180	21.09	0.582 6.52 98	1.66	36
2	8.61	27.200	21.11	0.582 6.52 98	1.64	30
4	8.51	27.288	21.19	0.580 6.50 97	1.66	32
6	8.40	28.176	21.90	0.562 6.29 94	2.16	--

CRUISE BB 257 STATION 031 SAMISH BAY, NORTH END H-1

DATE 04/20/60 HR 2047 ZN 08 LAT 48-37.9N LONG 122-29.4W AREA SAM
 SDG 013M TIDE HT 01.6 STG L WSPD 06 DIR 240 WEA 02 SEA 1 BAR 12
 DRY 43.9 WET 41.0 RELHU 78 CL X AMT * SCD * SPOB GRAB-1

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	PHOS.	SSL
0	8.83	26.706	20.69	0.612 6.85 103	1.50	21
2	8.77	28.192	21.86	0.606 6.79 103	2.00	11
4	8.73	29.304	22.73	0.610 6.83 104	2.24	3
6	8.78	29.461	22.85	0.623 6.98 107	2.30	3
8	8.74	29.526	22.90	0.620 6.94 106	2.24	4

CRUISE BB 257 STATION 032 SAMISH BAY, SOUTH END H-3

DATE 04/20/60 HR 2207 ZN 08 LAT 48-35.2N LONG 122-31.2W AREA SAM
 SDG 018M TIDE HT 03.2 STG R WSPD 10 DIR 165 WEA 02 SEA 1 BAR 12
 DRY 42.4 WET 40.3 RELHU 85 CL X AMT * SCD * SPOB GRAB-3

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	8.32	29.642	23.05	0.580	6.50 98	2.10	3
2	8.31	29.642	23.06	0.580	6.50 98	2.17	3
4	8.30	29.637	23.05	0.577	6.46 98	2.23	1
6	8.32	29.639	23.05	0.576	6.45 98	2.22	3
8	8.30	29.644	23.06	0.579	6.48 98	2.16	4
10	8.35	29.647	23.05	0.578	6.47 98	2.10	3
15	8.26	29.740	23.14	0.566	6.34 96	2.24	4

CRUISE BB 257 STATION 033 G-4

DATE 04/20/60 HR 2312 ZN 08 LAT 48-37.1N LONG 122-32.4W AREA BLL
 SDG 020M TIDE HT 05.8 STG R WSPD 10 DIR 150 WEA 02 SEA 1 BAR 12
 DRY 42.4 WET 40.8 RELHU 88 CL X AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	8.48	28.696	22.29	0.602	6.75 102	1.80	8
2	8.47	28.724	22.32	0.601	6.73 102	1.91	8
4	8.49	28.790	22.37	0.597	6.69 101	1.91	8
7	8.35	29.446	22.90	0.576	6.45 98	2.25	3
10	8.27	29.662	23.08	0.569	6.37 96	2.20	3
14	8.12	29.924	23.30	0.531	5.95 90	2.45	4
18	8.06	30.068	23.42	0.518	5.80 88	2.58	-

CRUISE BB 257 STATION 034 SAMISH BAY, MIDDLE OF H-2

DATE 04/21/60 HR 0003 ZN 08 LAT 48-36.7N LONG 122-29.5W AREA SAM
 SDG 016M TIDE HT 07.5 STG R WSPD 07 DIR 190 WEA 63 SEA 1 BAR 12
 DRY 41.2 WET 40.6 RELHU 95 CL X AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	8.56	26.891	20.87	0.608	6.81 102	1.63	26
2	8.47	29.284	22.75	0.582	6.52 99	2.10	8
4	8.41	29.605	23.01	0.579	6.48 98	2.15	5
7	8.41	29.632	23.03	0.577	6.46 98	2.22	4
10	8.42	29.692	23.08	0.578	6.47 98	2.27	1
13	8.26	29.799	23.19	0.550	6.16 93	2.33	0

CRUISE BB 257 STATION 035 G-5

DATE 04/21/60 HR 0041 ZN 08 LAT 48-35.5N LONG 122-36.2W AREA BLL
 SDG 037M TIDE HT 07.6 STG H WSPD 04 DIR 110 WEA 63 SEA 1 BAR 12
 DRY 40.1 WET 39.6 RELHU 98 CL X AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	8.42	29.217	22.71	0.611	6.84 104	2.18	2
2	8.41	29.220	22.71	0.610	6.83 103	2.09	2
5	8.41	29.239	22.73	0.607	6.80 103	2.10	3
10	8.26	29.715	23.12	0.570	6.38 97	2.23	1
15	8.10	29.795	23.20	0.550	6.16 93	2.62	2
20	8.14	29.909	23.29	0.534	5.98 90	2.48	2
25	8.07	30.029	23.39	0.520	5.82 88	2.53	2
30	8.06	---	---	0.519	5.81 --	2.50	1

CRUISE BB 257 STATION 036 G-3

DATE 04/21/60 HR 0128 ZN 08 LAT 48-38.6N LONG 122-32.0W AREA BLL
 SDG 015M TIDE HT 07.8 STG H WSPD 12 DIR 130 WEA 63 SEA 1 BAR 12
 DRY 40.5 WET 39.6 RELHU 98 CL X AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	8.67	24.381	18.90	0.610	6.83 101	0.93	55
2	8.52	28.760	22.34	0.597	6.69 101	1.80	12
4	8.47	28.942	22.49	0.590	6.61 100	1.94	10
7	8.17	29.696	23.12	0.556	6.23 94	2.37	6
10	8.06	30.030	23.39	0.526	5.89 89	2.47	3
13	8.12	30.066	23.41	0.519	5.81 88	---	3

CRUISE BB 257 STATION 037 WILLIAMS POINT, WEST OF G-6

DATE 04/21/60 HR 0223 ZN 08 LAT 48-35.0N LONG 122-35.1W AREA BLL
 SDG 031M TIDE HT 07.6 STG H WSPD 03 DIR 160 WEA 02 SEA 1 BAR 12
 DRY 40.5 WET 39.2 RELHU 95 CL 6 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	8.25	29.647	23.07	0.556	6.23 94	2.40	1
2	8.23	29.645	23.07	0.556	6.23 94	2.38	2
5	8.23	29.755	23.16	0.550	6.16 93	2.39	2
10	8.20	29.795	23.19	0.539	6.04 91	2.46	3
15	8.15	30.010	23.37	0.533	5.97 90	2.49	2
20	8.18	30.026	23.37	0.525	5.88 89	2.56	1

CRUISE BB 257 STATION 038 BOAT HARBOR J-1

DATE 04/21/60 HR 0320 ZN 08 LAT 48-32.9N LONG 122-34.5W AREA PAD
SDG 067M TIDE HT 07.0 STG F WSPD 05 DIR 120 WEA 02 SEA 1 BAR 12
DRY 40.6 WET 38.8 RELHU 85 CL 6 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	8.16	29.690	23.11	0.548	6.14 93	2.44	3
2	8.16	29.754	23.16	0.541	6.06 91	2.44	2
5	8.15	29.826	23.22	0.538	6.03 91	2.41	3
10	8.13	29.872	23.26	0.531	5.95 90	2.50	3
20	8.08	29.912	23.30	0.529	5.92 89	2.39	3
30	8.12	29.937	23.31	0.524	5.87 89	2.43	3
40	8.08	29.952	23.33	0.524	5.87 89	2.52	3
60	8.07	30.004	23.37	0.520	5.82 88	2.48	2

CRUISE BB 257 STATION 039 HAT ISLAND

DATE 04/21/60 HR 0403 ZN 08 LAT 48-31.3N LONG 122-34.0W AREA JDF
SDG 073M TIDE HT 06.2 STG F WSPD 10 DIR 120 WEA 02 SEA 1 BAR 12
DRY 39.4 WET 38.3 RELHU 92 CL 6 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	8.16	29.846	23.24	0.537	6.01 91	2.55	1
5	8.15	29.851	23.24	0.535	5.99 91	2.45	2
10	8.15	29.852	23.24	0.533	5.97 90	2.54	3
15	8.17	29.860	23.25	0.530	5.94 90	2.53	7
19	8.14	29.869	23.26	0.534	5.98 90	2.49	3
48	8.20	29.878	23.26	0.529	5.92 90	2.61	1
66	8.18	29.880	23.26	0.532	5.96 90	2.83	-

CRUISE BB 257 STATION 040 BELLINGHAM CHANNEL K-1

DATE 04/21/60 HR 0533 ZN 08 LAT 48-33.8N LONG 122-39.5W AREA BEL
SDG 101M TIDE HT 04.7 STG F WSPD 12 DIR 130 WEA 02 SEA 1 BAR
DRY 38.8 WET 37.8 RELHU 92 CL 6 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	8.14	30.042	23.39	0.528	5.91 89	2.67	3
5	8.12	30.038	23.39	0.528	5.91 89	2.55	4
10	8.11	30.042	23.40	0.537	6.01 91	2.53	8
19	8.12	30.042	23.39	0.524	5.87 89	2.43	2
28	8.09	30.041	23.40	0.528	5.91 89	2.47	3
47	8.16	30.041	23.39	0.526	5.89 89	2.54	3
71	8.13	30.041	23.39	0.524	5.87 89	2.41	3
95	8.16	30.062	23.40	0.524	5.87 89	2.58	3

CRUISE BB 257 STATION 041 ELIZA ROCK, SE OF G-2

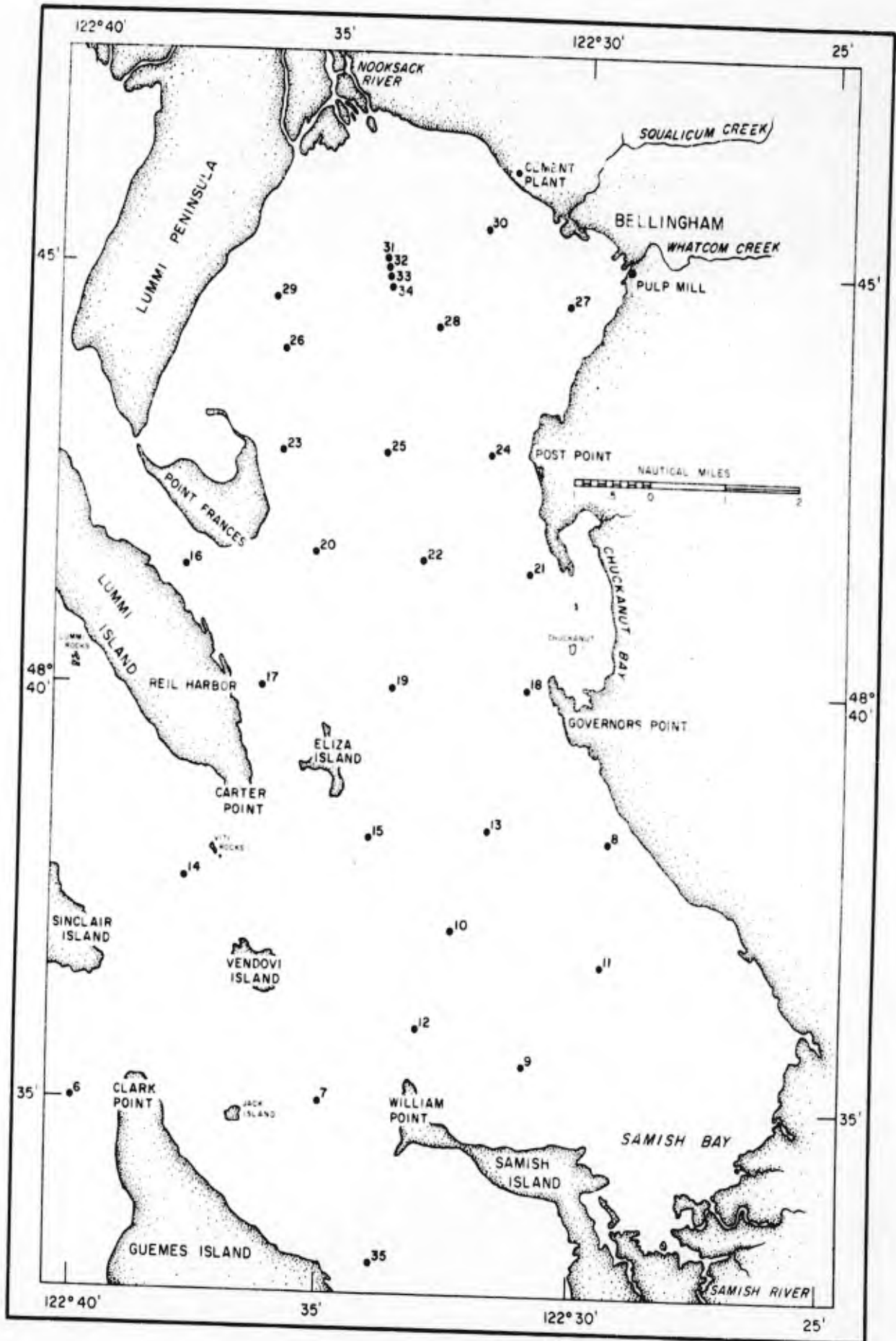
DATE 04/21/60 HR 0646 ZN 08 LAT 48-38.5N LONG 122-34.1W AREA BLL
 SDG 101M TIDE HT 04.2 STG F WSPD 12 DIR 130 WEA 02 SEA 1 BAR 12
 DRY 38.8 WET 37.8 RELHU 92 CL 6 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L	SATN.	PHOS.	SSL
0	8.32	28.435	22.11	0.584	6.54	98	1.79	10
2	8.31	28.440	22.12	0.583	6.53	98	1.94	13
4	8.30	28.446	22.12	0.582	6.52	98	1.93	13
7	8.24	29.869	23.24	0.535	5.99	91	2.45	3
9	8.14	29.832	23.23	0.535	5.99	90	2.65	5
19	8.13	29.977	23.34	0.533	5.97	90	2.49	4
28	8.12	30.005	23.37	0.520	5.82	88	2.47	1
46	8.14	30.039	23.39	0.517	5.79	87	2.49	3
65	8.09	30.067	23.42	0.520	5.82	88	2.48	3
84	8.07	30.120	23.46	0.519	5.81	88	2.55	3

CRUISE BB 257 STATION 042 CHUCKANUT BAY, SOUTH END

DATE 04/21/60 HR 0745 ZN 08 LAT 48-40.2N LONG 122-30.0W AREA BLL
 SDG 015M TIDE HT 03.3 STG L WSPD 08 DIR 115 WEA 02 SEA 1 BAR 13
 DRY 41.5 WET 39.4 RELHU 85 CL 6 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L	SATN.	PHOS.	SSL
0	8.89	28.023	21.71	0.657	7.36	112	1.37	13
2	8.43	28.654	22.27	0.607	6.80	103	1.62	14
4	8.20	29.432	22.91	0.568	6.36	96	2.13	4
7	8.17	29.451	22.93	0.562	6.29	95	2.22	6
10	8.13	29.647	23.08	0.548	6.14	92	2.45	3



OCEANOGRAPHIC STATION LOCATIONS
 BLL-03 BB 262 20-21 MAY 1960

CRUISE BB 262 STATION 006 BELLINGHAM CHANNEL K-1

DATE 05/20/60 HR 0709 ZN 08 LAT 48-33.6N LONG 122-39.7W AREA BEL
SDG 062M TIDE HT 03.1 STG F WSPD 03 DIR 185 WEA 02 SEA 1 BAR 08
DRY 49.0 WET 43.0 RELHU 73 CL 6 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.19	29.975	23.19	0.505	5.66	88	2.37	3
4	9.14	29.973	23.19	0.504	5.64	87	2.43	2
8	9.16	29.972	23.19	0.502	5.62	87	2.46	2
16	9.16	29.973	23.19	0.503	5.63	87	2.44	
34	9.13	29.975	23.20	0.503	5.63	87	2.41	2
40	9.15	29.975	23.19	0.504	5.64	87	2.03	3
61	9.17	29.977	23.19	0.505	5.66	98	2.37	1
81	---	29.973	---	0.511	5.72	--	2.42	1

CRUISE BB 262 STATION 007 G-6

DATE 05/20/60 HR 0815 ZN 08 LAT 48-35.0N LONG 122-35.0W AREA BLL
SDG 031M TIDE HT 02.5 STG F WSPD 04 DIR 185 WEA 01 SEA 2 BAR 08
DRY 48.7 WET 45.9 RELHU 80 CL 6 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.46	29.679	22.91	0.532	5.96	93	2.25	2
2	9.45	29.708	22.94	0.540	6.05	94	2.27	3
5	9.50	29.707	22.93	0.541	6.06	94	2.28	3
10	9.42	29.779	23.00	0.532	5.96	93	2.21	3
15	9.30	29.853	23.07	0.523	5.86	91	2.30	3
20	9.29	29.885	23.10	0.514	5.76	89	2.30	3
25	9.17	29.932	23.16	0.502	5.62	87	2.14	3

CRUISE BB 262 STATION 008 SAMISH BAY, N END H-1

DATE 05/20/60 HR 0858 ZN 08 LAT 48-38.2N LONG 122-29.3W AREA SAM
SDG 013M TIDE HT 02.3 STG L WSPD 06 DIR 180 WEA 02 SEA 2 BAR 08
DRY 49.3 WET 45.5 RELHU 73 CL 6 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	10.15	29.520	22.68	0.602	6.74	106	1.66	4
2	10.17	29.522	22.68	0.604	6.76	107	1.72	3
4	10.17	29.532	22.69	0.604	6.76	107	1.80	1
6	10.12	29.632	22.77	0.600	6.72	106	1.80	4
8	10.07	29.700	22.84	0.597	6.69	105	1.92	-

CRUISE BB 262 STATION 009 SAMISH BAY, S END H-3

DATE 05/20/60 HR 0931 ZN 08 LAT 48-35.5N LONG 122-31.0W AREA SAM
 SDG 018M TIDE HT 02.6 STG R WSPD 06 DIR 180 WEA 50 SEA 2 BAR 08
 DRY * WET * RELHU * CL 7 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L	SATN.	PHOS.	SSL
0	10.04	29.633	22.79	0.601	6.73	106	1.73	5
2	9.95	29.602	22.78	0.601	6.73	106	1.76	4
4	10.01	29.613	22.78	0.602	6.74	106	1.77	3
6	9.97	29.654	22.82	0.604	6.76	106	1.75	-
8	9.81	29.730	22.90	0.594	6.65	104	1.90	1
10	9.82	29.765	22.93	0.580	6.50	102	1.87	1
15	9.52	29.836	23.03	0.567	6.35	99	2.10	1

CRUISE BB 262 STATION 010 G-4

DATE 05/20/60 HR 0959 ZN 08 LAT 48-37.1N LONG 122-32.4W AREA BLL
 SDG 019M TIDE HT 02.7 STG R WSPD 05 DIR 180 WEA 60 SEA 2 BAR 08
 DRY 46.6 WET 42.8 RELHU 72 CL 7 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L	SATN.	PHOS.	SSL
0	9.56	29.590	22.83	0.560	6.27	98	2.08	6
2	9.53	29.587	22.83	0.557	6.24	97	2.03	4
4	9.51	29.563	22.82	0.557	6.24	97	2.38	8
7	9.47	29.695	22.93	0.549	6.15	96	2.10	3
10	9.42	29.737	22.97	0.544	6.09	95	2.19	0
14	9.23	29.865	23.09	0.524	5.87	91	2.27	1
18	9.13	29.972	23.19	0.496	5.56	86	2.47	3

CRUISE BB 262 STATION 011 SAMISH BAY, MIDDLE H-2

DATE 05/20/60 HR 1026 ZN 08 LAT 48-36.9N LONG 122-29.8W AREA SAM
 SDG 016M TIDE HT 03.1 STG R WSPD 05 DIR 180 WEA 60 SEA 2 BAR 08
 DRY 46.0 WET 42.4 RELHU 72 CL 7 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L	SATN.	PHOS.	SSL
0	10.04	29.547	22.72	0.612	6.85	108	1.69	3
2	10.02	29.545	22.72	0.612	6.85	108	1.86	5
4	10.00	29.540	22.72	0.611	6.84	108	1.86	4
7	10.02	29.659	22.81	0.583	6.53	103	1.86	
10	9.74	29.804	22.97	0.558	6.25	98	2.18	3
13	9.12	29.999	23.22	0.484	5.42	84	2.61	4

CRUISE BB 262 STATION 012 G-5

DATE 05/20/60 HR 1136 ZN 08 LAT 48-35.9N LONG 122-33.1W AREA BLL
 SDG 035M TIDE HT 04.5 STG R WSPD 05 DIR 135 WEA 01 SEA 1 BAR 08
 DRY 05.0 WET 45.5 RELHU 70 CL 8 AMT 6 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.70	29.610	22.82	0.554	6.20	97	2.13	3
2	9.60	29.631	22.86	0.548	6.14	96	2.16	3
5	9.58	29.760	22.96	0.536	6.00	94	2.25	2
10	9.36	29.778	23.01	0.531	5.95	92	2.31	3
15	9.25	29.847	23.08	0.526	5.89	91	2.38	1
20	9.25	29.875	23.10	0.522	5.85	91	2.34	2
24	9.16	29.937	23.16	0.505	5.66	88	2.13	2
29	9.14	29.961	23.18	0.500	5.60	87	2.37	3

CRUISE BB 262 STATION 013 G-3

DATE 05/20/60 HR 1200 ZN 08 LAT 48-39.6N LONG 122-31.8W AREA SAM
 SDG 013M TIDE HT 04.9 STG R WSPD 04 DIR 135 WEA 21 SEA 2 BAR 08
 DRY 50.5 WET 46.4 RELHU 74 CL 8 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.71	29.251	22.54	0.578	6.47	101	2.46	7
2	9.56	29.483	22.75	0.570	6.38	99	2.40	6
4	9.51	29.662	22.89	0.557	6.24	97	2.09	5
7	9.43	29.800	23.01	0.546	6.12	95	2.12	4
9	9.34	29.837	23.06	0.540	6.05	94	2.32	2
12	9.33	29.858	23.07	0.531	5.95	92	2.34	4

CRUISE BB 262 STATION 014 VITI ROCKS, W OF G-1

DATE 05/20/60 HR 1307 ZN 08 LAT 48-37.9N LONG 122-38.9W AREA BLL
 SDG 082M TIDE HT 05.6 STG H WSPD 10 DIR 120 WEA 01 SEA 1 BAR 08
 DRY 49.8 WET 45.9 RELHU 74 CL 7 AMT 6 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	9.14	29.952	23.18	0.503	5.63	87	2.53	1
5	9.12	29.951	23.18	0.502	5.62	87	2.48	1
10	9.26	29.953	23.16	0.500	5.60	87	2.39	2
19	8.90	29.952	23.21	0.498	5.58	86	2.36	3
29	9.11	29.961	23.19	0.499	5.59	86	2.49	2
38	9.08	29.964	23.19	0.496	5.56	86	2.44	2
57	9.03	29.964	23.20	0.493	5.52	85	2.42	0
76	9.04	29.974	23.21	0.493	5.52	85	2.38	3

CRUISE BB 262 STATION 015 ELIZA ROCK, SE OF G-2

DATE 05/20/60 HR 1415 ZN 08 LAT 48-38.5N LONG 122-34.2W AREA BLL
 SDG 093M TIDE HT 05.6 STG H WSPD 08 DIR 125 WEA 60 SEA 1 BAR 08
 DRY 51.1 WET 46.4 RELHU 68 CL 7 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	10.39	28.817	22.10	0.644	7.21	114	1.26	4
4	10.40	28.875	22.10	0.647	7.25	114	1.44	7
7	9.58	29.586	22.82	0.545	6.10	95	2.05	5
10	9.38	29.673	22.92	0.534	5.98	93	2.20	5
19	9.20	29.935	23.15	0.503	5.63	87	2.36	1
29	9.12	29.968	23.19	0.491	5.50	85	2.38	2
48	9.10	30.006	23.22	0.478	5.35	83	2.18	1
67	9.09	30.015	23.23	0.477	5.34	83	2.49	3
87	9.08	30.015	23.23	0.475	5.32	82	2.57	3

CRUISE BB 262 STATION 016 HALE PASS, S END E-1

DATE 05/20/60 HR 1545 ZN 08 LAT 48-41.5N LONG 122-37.9W AREA BLL
 SDG 035M TIDE HT 04.7 STG F WSPD 04 DIR 184 WEA 60 SEA 1 BAR 08
 DRY 50.5 WET 46.2 RELHU 76 CL 7 AMT 7 SCD 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	11.24	26.144	19.89	0.625	7.00	111	1.05	3
2	9.80	28.967	22.31	0.543	6.08	95	1.92	1
4	9.66	29.352	22.63	0.529	5.92	92	2.07	8
7	9.62	29.433	22.70	0.531	5.94	92	2.10	8
10	9.52	29.496	22.76	0.523	5.86	91	2.08	8
15	9.38	29.759	22.99	0.512	5.73	89	2.35	5
20	9.30	29.828	23.06	0.508	5.69	88	2.08	4
24	9.28	29.858	23.08	0.505	5.66	88	2.33	4
29	9.22	29.898	23.12	0.500	5.60	87	2.33	3

CRUISE BB 262 STATION 017 REIL HARBOR F-1

DATE 05/20/60 HR 1624 ZN 08 LAT 48-39.9N LONG 122-37.9W AREA BLL
 SDG 020M TIDE HT 04.3 STG F WSPD 02 DIR 160 WEA 63 SEA 2 BAR 08
 DRY 48.7 WET 45.7 RELHU 80 CL 7 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	10.84	26.752	20.42	0.621	6.96	109	1.02	2
2	10.78	27.513	21.02	0.628	7.03	111	1.17	2
4	9.74	29.181	22.48	0.555	6.22	97	1.88	3
7	9.36	29.434	22.74	0.542	6.07	94	2.03	1
10	9.34	29.703	22.95	0.523	5.86	91	2.28	3
14	9.20	29.909	23.13	0.523	5.86	91	2.29	0
19	9.12	29.977	23.20	0.491	5.50	85	2.34	0

CRUISE BB 262 STATION 018 GOVERNORS POINT F-3

DATE 05/20/60 HR 1709 ZN 08 LAT 48-40.2N LONG 122-31.1W AREA BLL
 SDG 026M TIDE HT 03.5 STG F WSPD 08 DIR 150 WEA 63 SEA 2 BAR 08
 DRY 49.6 WET 47.8 RELHU 87 CL 7 AMT 3 SCD 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	10.24	29.560	22.70	0.651	7.29	115	1.64	2
2	10.22	29.565	22.71	0.650	7.28	115	1.62	-
4	10.23	29.558	22.70	0.642	7.19	114	1.67	-
7	10.24	29.580	22.71	0.633	7.09	112	1.64	-
10	9.74	29.745	22.92	0.554	6.20	97	2.06	1
14	9.44	29.811	23.02	0.556	6.23	97	2.03	1
19	9.30	29.857	23.08	0.522	5.85	91	2.21	1

CRUISE BB 262 STATION 019 F-2

DATE 05/20/60 HR 1743 ZN 08 LAT 48-40.2N LONG 122-33.9W AREA BLL
 SDG 027M TIDE HT 03.2 STG F WSPD 10 DIR 140 WEA 60 SEA 2 BAR 08
 DRY 49.1 WET 45.7 RELHU 73 CL 8 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	10.04	28.060	21.57	0.644	7.21	112	1.19	16
2	9.92	29.333	22.57	0.650	7.28	114	1.44	5
4	9.64	29.695	22.90	0.581	6.51	102	1.76	1
7	9.59	29.783	22.98	0.572	6.41	100	2.15	4
10	9.32	29.867	23.08	0.528	5.91	94	1.89	3
14	9.22	29.894	23.12	0.500	5.60	87	2.15	1
19	9.10	29.981	23.20	0.485	5.43	84	2.51	1
24	9.04	30.008	23.23	0.473	5.30	82	2.54	2

CRUISE BB 262 STATION 20 POINT FRANCES D-1

DATE 05/20/60 HR 2158 ZN 08 LAT 48-41.6N LONG 122-35.3W AREA BLL
 SDG 031M TIDE HT 04.5 STG R WSPD 08 DIR 155 WEA 02 SEA 3 BAR 09
 DRY 47.5 WET 44.2 RELHU 70 CL 6 AMT 3 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	11.65	20.616	15.55	0.628	7.03	108	0.59	45
2	10.88	26.601	20.30	0.658	7.37	116	0.92	30
4	10.33	29.324	22.50	0.614	6.88	109	1.48	3
7	9.85	29.590	22.78	0.594	6.65	104	1.83	1
10	9.45	29.656	22.90	0.515	5.77	90	2.33	4
15	9.11	29.841	23.09	0.444	4.97	77	2.76	1
20	8.82	29.920	23.20	0.464	5.20	80	2.73	1
25	8.72	29.928	23.22	0.404	4.52	69	3.07	1
30	8.98	30.063	23.29	0.435	4.87	75	2.97	1

CRUISE BB 262 STATION 021 D-3

DATE 05/20/60 HR 2245 ZN 08 LAT 48-41.4N LONG 122-31.0W AREA BLL
SDG 026M TIDE HT 07.9 STG R WSPD 08 DIR 155 WEA 02 SEA 3 BAR 09
DRY 46.6 WET 43.3 RELHU 76 CL 6 AMT 3 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT.	ML/L SATN.	PHOS.	SSL
0	10.54	28.779	22.04	0.660	7.39	117	11
2	10.38	29.290	22.47	0.660	7.39	117	7
4	10.28	29.445	22.60	0.637	7.13	113	3
7	10.29	29.568	22.70	0.632	7.08	112	2
10	9.76	29.685	22.87	0.588	6.59	103	4
15	9.42	29.872	23.07	0.536	6.00	93	3
20	9.14	29.968	23.19	0.484	5.42	84	3

CRUISE BB 262 STATION 022 D-2

DATE 05/20/60 HR 2330 ZN 08 LAT 48-41.5N LONG 122-33.1W AREA BLL
SDG 028M TIDE HT 08.4 STG H WSPD 08 DIR 195 WEA 02 SEA * BAR 09
DRY * WET * RELHU * CL * AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT.	ML/L SATN.	PHOS.	SSL
0	10.68	26.887	20.55	0.631	7.07	111	23
2	10.44	28.204	21.61	0.633	7.09	112	13
4	10.30	28.205	21.64	0.628	7.03	110	11
7	9.92	29.693	22.85	0.588	6.59	104	0
10	9.66	29.780	22.96	0.559	6.26	98	2
15	9.54	29.821	23.01	0.555	6.22	97	2
20	9.30	29.882	23.10	0.523	5.86	91	2
25	8.96	29.992	23.23	0.462	5.17	80	1

CRUISE BB 262 STATION 023 C-1

DATE 05/21/60 HR 0025 ZN 08 LAT 48-42.8N LONG 122-36.0W AREA BLL
SDG 027M TIDE HT 08.3 STG H WSPD 00 DIR WEA * SEA * BAR 10
DRY * WET * RELHU * CL * AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT.	ML/L SATN.	PHOS.	SSL
0	11.39	17.881	13.48	0.615	6.89	104	58
1	10.92	27.251	20.80	0.640	7.17	113	17
2	10.51	29.144	22.33	0.656	7.35	117	5
4	10.41	29.290	22.46	0.646	7.24	115	5
7	9.63	29.744	22.94	0.571	6.40	100	4
10	9.68	29.795	22.97	0.568	6.36	99	1
15	9.35	29.825	23.05	0.531	5.95	92	2
20	8.75	29.912	23.20	0.467	5.23	80	2

CRUISE BB 262 STATION 024 POST POINT C-3

DATE 05/21/60 HR 0137 ZN 08 LAT 48-42.8N LONG 122-31.8W AREA BLL
 SDG 033M TIDE HT 07.2 STG F WSPD 10 DIR 220 WEA 02 SEA 1 BAR 10
 DRY * WET * RELHU * CL 6 AMT 3 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	11.39	22.827	17.30	0.565	6.33	98	0.76	88
1	11.03	25.467	19.40	0.624	6.99	109	0.70	63
2	10.84	26.065	19.89	0.631	7.07	111	0.83	56
4	10.46	28.996	22.23	0.648	7.26	115	1.32	5
7	10.19	29.477	22.66	0.603	6.75	107	1.60	4
10	10.17	29.611	22.75	0.597	6.69	106	1.81	6
15	9.79	29.671	22.86	0.567	6.35	99	1.85	5
20	9.11	29.857	23.11	0.492	5.51	85	2.29	4
25	8.89	30.002	23.25	0.442	4.95	76	2.87	2
30	8.93	30.087	23.31	0.439	4.92	76	2.82	2

CRUISE BB 262 STATION 025 C-2

DATE 05/21/60 HR 0235 ZN 08 LAT 48-42.8N LONG 122-34.3W AREA BLL
 SDG 033M TIDE HT 06.0 STG F WSPD 12 DIR 145 WEA * SEA * BAR 10
 DRY * WET * RELHU * CL * AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	11.16	25.728	19.58	0.638	7.15	112	0.61	25
1	10.78	28.686	21.93	0.683	7.65	122	1.02	4
2	10.14	29.497	22.67	0.599	6.71	106	1.70	5
4	10.10	29.622	22.77	0.599	6.71	106	1.75	5
7	9.96	29.660	22.82	0.592	6.63	104	1.74	2
10	9.95	29.707	22.86	0.580	6.50	102	1.85	2
15	9.71	29.775	22.95	0.572	6.41	100	1.88	3
20	8.78	29.890	23.18	0.456	5.11	78	2.72	6

CRUISE BB 262 STATION 026 B-1

DATE 05/21/60 HR 0337 ZN 08 LAT 48-44.8N LONG 122-35.2W AREA BLL
 SDG 015M TIDE HT 04.5 STG F WSPD 12 DIR 145 WEA 01 SEA 3 BAR 10
 DRY * WET * RELHU * CL 8 AMT 2 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	11.48	18.627	14.05	0.596	6.68	101	0.76	37
1	11.60	22.963	17.37	0.603	6.75	105	0.69	44
2	11.10	23.081	17.54	0.606	6.79	105	0.77	43
4	10.71	28.630	21.90	0.667	7.47	119	1.05	9
7	10.13	29.327	22.54	0.602	6.74	106	1.77	5
9	9.88	29.596	22.78	0.519	5.81	92	2.33	2
13	9.80	29.599	22.80	0.489	5.48	86	2.58	5

CRUISE BB 262 STATION 027 PULP MILL B-3

DATE 05/21/60 HR 0449 ZN 08 LAT 48-44.6N LONG 122-30.3W AREA BLL
 SDG 011M TIDE HT 03.2 STG F WSPD 11 DIR 180 WEA 02 SEA 3 BAR 10
 DRY * WET * RELHU * CL 8 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT.	ML/L	SATN.	PHOS.	SSL
0	11.34	18.665	14.10	0.523	5.86	88	0.61	254
1	11.40	19.664	14.86	0.550	6.16	94	0.66	186
2	11.22	20.750	15.72	---	---	---	0.68	126
4	10.50	28.964	22.19	0.588	6.59	104	1.54	14
6	10.61	29.163	22.33	0.625	7.00	111	1.21	6
8	10.28	29.457	22.61	0.614	6.88	109	1.61	5

CRUISE BB 262 STATION 028 B-2

DATE 05/21/60 HR 0539 ZN 08 LAT 48-44.2N LONG 122-32.9W AREA BLL
 SDG 020M TIDE HT 02.3 STG F WSPD 14 DIR 160 WEA * SEA * BAR 11
 DRY * WET * RELHU * CL * AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT.	ML/L	SATN.	PHOS.	SSL
0	11.22	18.177	13.74	0.575	6.44	97	0.71	109
1	11.22	20.825	15.78	0.576	6.45	98	0.81	--
2	11.15	21.421	16.23	0.572	6.41	96	0.72	--
4	10.50	28.471	21.81	0.560	6.27	99	1.45	15
7	10.12	29.169	22.41	0.567	6.35	100	1.66	6
10	10.03	29.360	22.58	0.573	6.42	101	1.72	3
14	9.45	29.672	22.91	0.524	5.87	91	2.24	3
19	9.09	29.775	23.05	0.431	4.83	74	---	4

CRUISE BB 262 STATION 029 A-1

DATE 05/21/60 HR 0638 ZN 08 LAT 48-44.6N LONG 122-36.1W AREA BLL
 SDG 012M TIDE HT 01.4 STG L WSPD 09 DIR 150 WEA * SEA * BAR 11
 DRY * WET * RELHU * CL * AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT.	ML/L	SATN.	PHOS.	SSL
0	11.19	16.851	12.72	0.559	6.26	93	0.64	54
1	11.38	19.138	14.45	0.602	6.74	102	0.65	56
2	11.40	20.102	15.20	0.602	6.74	103	0.69	51
4	10.47	28.697	21.99	0.589	6.60	104	1.40	30
7	10.11	29.311	22.55	0.537	6.01	95	2.48	5
10	10.12	29.338	22.52	0.519	5.81	92	2.08	5

CRUISE BB 262 STATION 030 CEMENT PLANT A-3

DATE 05/21/60 HR 0747 ZN 08 LAT 48-45.5N LONG 122-32.2W AREA BLL
 SDG 013M TIDE HT 01.4 STG L WSPD 13 DIR 155 WEA 02 SEA 3 BAR 07
 DRY * WET * RELHU * CL 8 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	---	17.212	---	0.659	7.38	---	---
1	11.10	17.576	13.29	0.562	6.29	94	113
2	11.21	19.965	15.12	0.554	6.20	94	113
3	11.29	21.882	16.59	0.550	6.16	95	103
6	11.18	22.654	17.20	0.556	6.23	96	83
9	10.66	22.827	17.41	0.554	6.20	95	81

CRUISE BB 262 STATION 031 A-2

DATE 05/21/60 HR 0860 ZN 08 LAT 48-45.1N LONG 122-34.1W AREA BLL
 SDG 014M TIDE HT 02.5 STG R WSPD 12 DIR 165 WEA 03 SEA 3 BAR 08
 DRY * WET * RELHU * CL 7 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	11.12	15.810	11.92	0.564	6.32	93	103
1	11.22	18.873	14.27	0.560	6.27	94	87
2	10.88	20.597	15.66	0.569	6.37	96	78
4	10.73	24.235	18.49	0.611	6.84	106	53
6	10.30	28.150	21.59	0.582	6.52	102	15

CRUISE BB 262 STATION 032 A-2-X

DATE 05/21/60 HR 1643 ZN 08 LAT 48-45.1N LONG 122-34.1W AREA BLL
 SDG * TIDE HT 05.4 STG F WSPD 10 DIR 180 WEA 02 SEA 2 BAR 09
 DRY * WET * RELHU * CL 0 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	SSL
0	12.68	13.027	9.55	101
1	11.28	20.043	15.17	111
2	10.67	24.948	19.06	48
3	10.40	28.045	21.50	19

CRUISE BB 262 STATION 033 A-2-Y

DATE 05/21/60 HR 1702 ZN 08 LAT 48-45.1N LONG 122-34.1W AREA BLL
 SDG * TIDE HT 05.3 STG F WSPD 10 DIR 180 WEA 02 SEA 2 BAR 09
 DRY * WET * RELHU * CL 0 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	SSL
0	12.02	16.073	11.99	
1	11.25	21.939	16.64	92
2	10.59	25.782	19.71	72
3	10.30	28.308	21.72	39
				14

CRUISE BB 262 STATION 034 A-2-Z

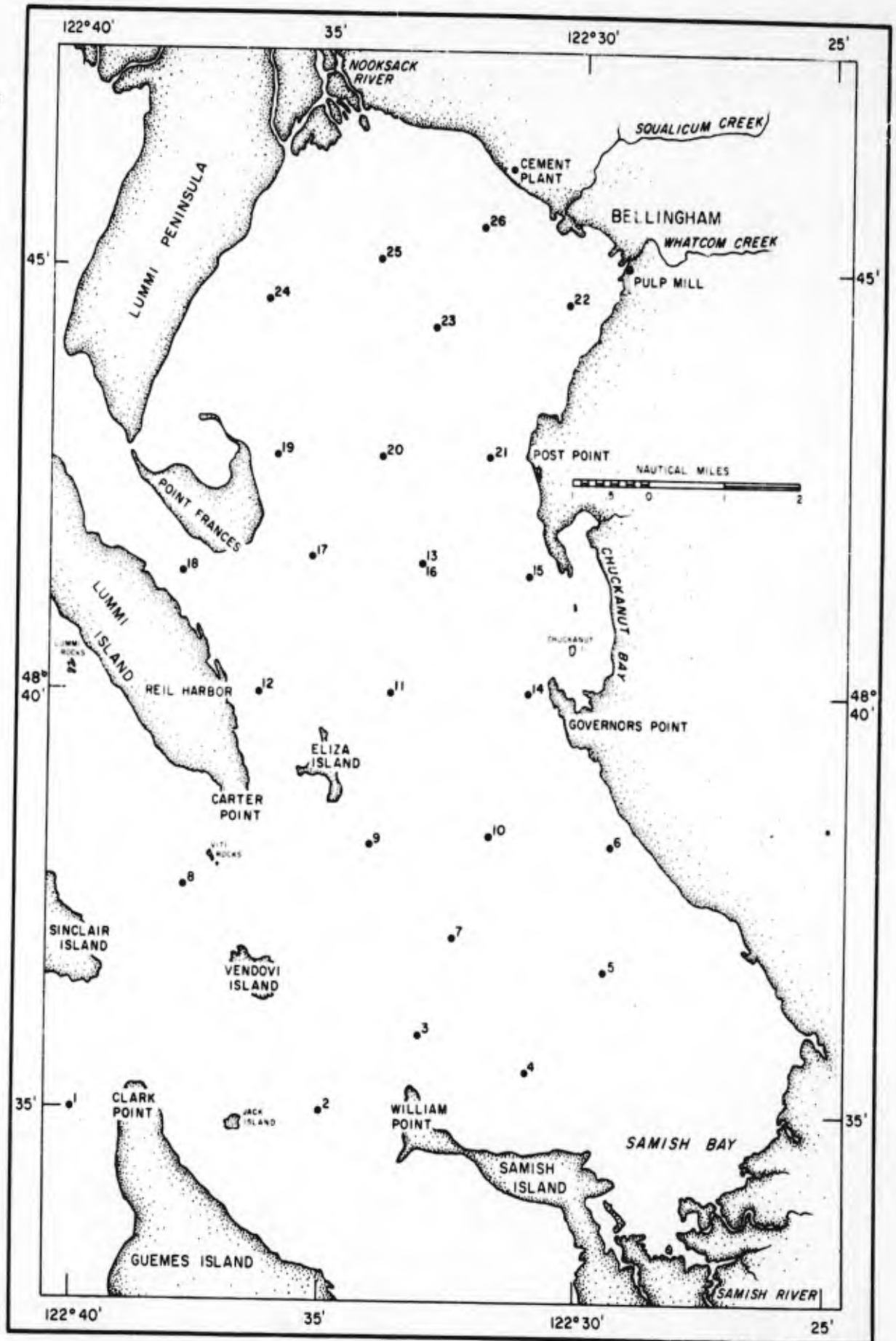
DATE 05/21/60 HR 1722 ZN 08 LAT 48-45.1N LONG 122-34.1W AREA BLL
 SDG * TIDE HT 05.0 STG F WSPD 10 DIR 180 WEA 02 SEA 2 BAR 09
 DRY * WET * RELHU * CL 0 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	SSL
0	11.53	23.451	17.76	
1	10.48	26.181	20.04	74
2	10.62	28.490	21.81	31
3	10.51	29.512	22.62	--
				--

CRUISE BB 262 STATION 035 J-1

DATE 05/21/60 HR 2018 ZN 08 LAT 48-31.7N LONG 122-34.2W AREA PAD
 SDG 060M TIDE HT 04.0 STG L WSPD 10 DIR 180 WEA 03 SEA 2 BAR 10
 DRY 48.6 WET 45.7 RELHU 80 CL 0 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	PHOS.	SSL
0	9.58	29.524	22.78	0.534 5.98 93	2.33	20
2	9.56	29.528	22.78	0.531 5.95 93	2.32	4
5	9.55	29.571	22.82	0.531 5.95 93	2.38	3
10	9.35	29.876	23.08	0.515 5.77 90	2.43	3
20	9.18	29.936	23.16	0.501 5.61 87	2.42	3
29	9.23	29.954	23.16	0.496 5.56 86	2.61	3
38	9.21	29.976	23.18	0.490 5.49 85	2.63	1
57	9.20	30.013	23.21	0.484 5.42 84	2.51	0



OCEANOGRAPHIC STATION LOCATIONS
BLL-04 20-22 JUNE 1960

CRUISE BLL 04 STATION 001 BELLINGHAM CHANNEL K-1

DATE 06/21/60 HR 0646 ZN 08 LAT 48-33.2N LONG 122-39.6W AREA BLL
 SDG * M TIDE HT 01.3 STG F WSPD 08 DIR 202 WEA 00 SEA 2 BAR 22
 DRY 52.0 WET * RELHU * CL 6 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.96	29.881	22.99	0.458	5.13	81	3
5	10.00	29.886	22.99	0.459	5.14	81	3
10	10.00	29.899	23.00	0.459	5.14	81	2
20	9.96	29.896	23.01	0.458	5.13	81	1
30	9.96	29.900	23.01	0.462	5.17	81	2
50	9.96	29.900	23.01	0.461	5.16	81	5
75	9.99	29.900	23.00	0.463	5.19	82	3

CRUISE BLL 04 STATION 002 WILLIAM POINT, W OF G-6

DATE 06/21/60 HR 0826 ZN 08 LAT 48-35.0N LONG 122-35.0W AREA BLL
 SDG * M TIDE HT -0.1 STG F WSPD 09 DIR 158 WEA 00 SEA 2 BAR 22
 DRY 53.5 WET * RELHU * CL 6 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	11.01	29.278	22.35	---	---	---	0
2	10.94	29.309	22.39	0.592	6.63	106	0
5	10.74	29.415	22.50	0.553	6.19	99	5
10	10.14	29.641	22.78	0.477	5.34	84	3
15	9.88	29.764	22.92	0.433	4.85	76	4
20	9.94	29.821	22.95	0.448	5.02	79	2
25	10.00	29.840	22.96	0.450	5.04	79	0

CRUISE BLL 04 STATION 003 G-5

DATE 06/21/60 HR 0918 ZN 08 LAT 48-35.6N LONG 122-33.1W AREA BLL
 SDG * M TIDE HT -0.3 STG L WSPD 08 DIR 158 WEA 00 SEA 2 BAR 22
 DRY 56.0 WET * RELHU * CL 6 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	11.48	29.061	22.10	0.651	7.29	118	2
2	11.52	29.070	22.10	0.650	7.28	118	0
5	11.21	29.124	22.20	0.584	6.54	105	1
10	10.66	29.432	22.53	0.539	6.04	96	3
15	9.90	29.744	22.90	0.436	4.88	77	0
20	9.90	29.771	22.92	0.426	4.77	75	1
25	9.94	29.797	22.93	0.401	4.49	71	1
30	9.98	29.881	22.99	---	---	---	1

CRUISE BLL 04 STATION 004 SAMISH BAY, SOUTH END H-3

DATE 06/21/60 HR 1026 ZN 08 LAT 48-35.5N LONG 122-31.0W AREA SAM
 SDG * M TIDE HT -0.2 STG R WSPD 09 DIR 135 WEA 00 SEA 1 BAR 22
 DRY 58.0 WET * RELHU * CL 6 AMT 6 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	12.50	28.345	21.37	0.606	6.79	112	4
2	11.72	28.990	22.01	0.695	7.78	127	4
4	11.63	29.006	22.04	0.650	7.28	118	7
7	10.02	29.603	22.77	0.431	4.83	76	2
10	9.96	29.679	22.84	0.430	4.82	76	2

CRUISE BLL 04 STATION 005 SAMISH BAY, MIDDLE OF H-2

DATE 06/21/60 HR 1121 ZN 08 LAT 48-36.7N LONG 122-29.5W AREA SAM
 SDG * M TIDE HT 00.2 STG R WSPD 05 DIR 180 WEA 00 SEA 1 BAR 22
 DRY 58.0 WET * RELHU * CL 8 AMT 4 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	12.30	28.477	21.51	0.638	7.15	117	1
2	11.88	28.902	21.91	0.667	7.47	122	7
4	10.94	29.228	22.33	0.537	6.01	96	3
7	10.15	29.578	22.73	0.404	4.52	71	0
10	9.96	29.682	22.84	0.384	4.30	68	1
14	9.83	29.742	22.91	0.379	4.24	67	-

CRUISE BLL 04 STATION 006 SAMISH BAY, NORTH END H-1

DATE 06/21/60 HR 1203 ZN 08 LAT 48-38.2N LONG 122-29.3W AREA SAM
 SDG * M TIDE HT 01.0 STG R WSPD 04 DIR 202 WEA 00 SEA 1 BAR 21
 DRY 57.0 WET * RELHU * CL 8 AMT 2 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	13.32	28.388	21.25	0.625	7.00	117	0
2	13.10	28.551	21.42	0.574	6.43	107	0
4	13.14	28.598	21.44	---	---	---	0
7	13.00	28.629	21.50	0.598	6.70	112	0
10	12.30	28.776	21.74	---	---	---	-

CRUISE BLL 04 STATION 007 G-4

DATE 06/21/60 HR 1300 ZN 08 LAT 48-37.0N LONG 122-32.4W AREA BLL
 SDG * M TIDE HT 02.2 STG R WSPD 04 DIR 225 WEA 00 SEA 1 BAR 21
 DRY 60.0 WET * RELHU * CL 8 AMT 3 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	13.73	28.252	21.07	0.742	8.31	141	
2	11.29	29.187	22.23	0.646	7.24	117	12
4	11.04	29.275	22.35	0.558	6.25	100	11
7	9.97	29.768	22.90	0.411	4.60	72	0
10	9.97	29.832	22.95	0.423	4.74	75	0
14	9.90	29.888	23.01	0.426	4.77	75	0
18	9.90	29.914	23.03	0.421	4.72	74	0

CRUISE BLL 04 STATION 008 VITI ROCKS G-1

DATE 06/21/60 HR 1443 ZN 08 LAT 48-37.7N LONG 122-37.6W AREA BLL
 SDG * M TIDE HT 05.0 STG R WSPD 00 DIR WEA 00 SEA 0 BAR 20
 DRY 56.0 WET * RELHU * CL 8 AMT 2 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	10.08	29.877	22.97	0.434	4.86	77	1
5	10.11	29.872	22.96	0.436	4.88	77	0
10	10.12	29.876	22.96	0.436	4.88	77	4
20	10.10	29.874	22.97	0.434	4.86	77	1
30	10.08	29.875	22.97	0.436	4.88	77	0
40	10.03	29.879	22.98	0.434	4.86	77	2
60	10.08	29.880	22.97	0.441	4.94	78	3
75	10.06	29.881	22.98	0.434	4.86	77	-

CRUISE BLL 04 STATION 009 ELIZA ROCK, SE OF G-2

DATE 06/21/60 HR 1531 ZN 08 LAT 48-38.2N LONG 122-33.8W AREA BLL
 SDG * M TIDE HT 06.7 STG R WSPD 05 DIR 225 WEA 00 SEA 1 BAR 20
 DRY 59.0 WET * RELHU * CL 8 AMT 2 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	13.56	27.193	20.28	0.730	8.18	137	11
5	10.28	29.680	22.79	0.465	5.21	82	3
10	10.14	29.802	22.90	0.444	4.97	79	3
20	9.95	29.857	22.98	0.432	4.84	76	3
30	9.97	29.887	23.00	0.428	4.79	75	3
50	9.92	29.917	23.03	0.444	4.97	78	2
70	9.87	29.972	23.08	0.423	4.74	74	1
90	9.86	30.006	23.11	0.419	4.69	74	-

CRUISE BLL 04 STATION 010 G-3

DATE 06/21/60 HR 1617 ZN 08 LAT 48-38.1N LONG 122-31.7W AREA BLL
 SDG * M TIDE HT 07.1 STG R WSPD 05 DIR 223 WEA 00 SEA 1 BAR 19
 DRY 59.0 WET * RELHU * CL 8 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	14.74	27.508	20.29	0.718	8.04	129	9
2	11.82	29.065	22.05	0.907	10.16	166	6
4	11.10	29.259	22.32	0.678	7.59	122	2
7	10.32	29.565	22.69	0.480	5.38	85	1
10	9.94	29.783	22.92	0.417	4.67	73	3
14	9.91	29.904	23.02	0.415	4.65	73	-

CRUISE BLL 04 STATION 011 F-2

DATE 06/21/60 HR 1715 ZN 08 LAT 48-40.0N LONG 122-34.2W AREA BLL
 SDG * M TIDE HT 07.2 STG H WSPD 06 DIR 270 WEA 00 SEA 1 BAR 19
 DRY 62.0 WET * RELHU * CL 6 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	16.72	22.859	16.33	0.601	6.73	117	59
2	13.09	27.052	20.26	0.771	8.64	143	18
5	11.28	29.096	22.17	0.630	7.06	114	10
10	10.12	29.586	22.74	0.434	4.86	77	3
15	10.01	29.847	22.96	0.432	4.84	76	4

CRUISE BLL 04 STATION 012 REIL HARBOR F-1

DATE 06/21/60 HR 1752 ZN 08 LAT 48-40.0N LONG 122-36.3W AREA BEL
 SDG * M TIDE HT 07.1 STG F WSPD 55 DIR 292 WEA * SEA * BAR 19
 DRY 61.0 WET * RELHU * CL 6 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	17.06	19.191	13.47	0.612	6.85	117	84
2	12.92	26.058	19.53	0.750	8.40	138	32
4	12.29	27.406	20.68	0.705	7.90	129	19
7	10.88	29.042	22.19	0.605	6.78	108	8
10	10.14	29.798	22.90	0.503	5.63	89	3
15	10.00	29.815	22.94	0.506	5.67	89	-
20	9.96	29.904	23.01	0.481	5.39	85	4

CRUISE BLL 04 STATION 013 D-2

DATE 06/21/60 HR 1842 ZN 08 LAT 48-41.5N LONG 122-33.2W AREA BLL
 SDG * M TIDE HT 06.8 STG F WSPD 04 DIR 270 WEA * SEA * BAR 19
 DRY 60.0 WET * RELHU * CL 4 AMT 2 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	14.85	18.188	13.14	0.576	6.45	105	
2	12.36	28.743	21.70	0.931	10.43	172	139
5	11.78	28.890	21.92	0.657	7.36	120	8
10	10.52	29.363	22.50	0.503	5.63	90	1
							2
15	10.04	29.775	22.90	0.482	5.40	85	
20	9.91	29.893	23.01	0.471	5.28	83	0
25	9.94	29.898	23.01	0.467	5.23	82	1
30	9.90	29.906	23.02	0.471	5.28	83	1
							-

CRUISE BLL 04 STATION 014 GOVERNORS POINT F-3

DATE 06/21/60 HR 1917 ZN 08 LAT 48-40.0N LONG 122-31.2W AREA BLL
 SDG * M TIDE HT 06.5 STG F WSPD 02 DIR 240 WEA * SEA * BAR 19
 DRY 62.0 WET * RELHU * CL 4 AMT 2 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	13.47	27.731	20.71	0.885	9.91	166	
2	12.14	28.775	21.77	0.741	8.30	136	6
4	10.88	29.101	22.24	0.581	6.51	104	2
7	9.99	29.755	22.89	0.522	5.85	92	0
							4
10	10.00	29.866	22.98	0.523	5.86	92	
15	9.93	29.875	22.99	0.478	5.35	84	3
20	9.98	29.892	23.00	---	---	---	1
							-

CRUISE BLL 04 STATION 015 D-3

DATE 06/22/60 HR 0832 ZN 08 LAT 48-41.5N LONG 122-31.0W AREA BLL
 SDG * M TIDE HT -0.1 STG F WSPD 03 DIR 270 WEA * SEA * BAR 18
 DRY 56.0 WET * RELHU * CL 8 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	15.12	27.044	19.86	0.630	7.06	122	
2	12.02	28.778	21.79	0.795	8.90	146	85
4	10.36	29.233	22.43	0.530	5.94	94	8
7	9.89	29.694	22.86	0.455	5.10	80	0
							5
10	9.92	29.746	22.89	0.456	5.11	80	
15	9.84	29.845	22.98	0.455	5.10	80	3
20	9.85	29.881	23.01	0.438	4.91	77	-
25	9.84	29.894	23.02	0.436	4.88	77	7
							-

CRUISE BLL 04 STATION 016 D-2

DATE 06/22/60 HR 0915 ZN 08 LAT 48-41.5N LONG 122-33.2W AREA BLL
 SDG * M TIDE HT -0.5 STG F WSPD 03 DIR 270 WEA * SEA * BAR 17
 DRY 61.0 WET * RELHU * CL 8 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	15.15	11.333	7.84	0.658	7.37	115	4
2	12.42	28.329	21.37	0.824	9.23	152	2
5	12.10	28.810	21.80	0.777	8.70	143	0
10	10.04	29.680	22.82	0.464	5.20	82	3
15	9.96	29.875	22.99	0.465	5.21	82	2
20	9.92	29.877	23.00	0.461	5.16	81	1
25	9.94	29.909	23.02	0.452	5.06	80	0
30	9.90	29.915	23.03	0.447	5.01	79	-

CRUISE BLL 04 STATION 017 POINT FRANCES D-1

DATE 06/22/60 HR 1019 ZN 08 LAT 48-41.6N LONG 122-35.3W AREA BLL
 SDG * M TIDE HT -0.7 STG L WSPD 05 DIR 270 WEA * SEA * BAR 17
 DRY 62.0 WET * RELHU * CL 8 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	14.86	18.976	13.74	0.604	6.76	110	75
2	12.73	26.630	20.01	0.649	7.27	119	22
5	11.76	28.718	21.79	0.816	9.14	149	2
10	9.95	29.579	22.76	0.450	5.04	79	3
15	9.88	29.686	22.85	0.451	5.05	79	3
20	9.79	29.660	22.85	0.450	5.04	79	5
25	9.82	29.802	22.95	0.410	4.59	72	-

CRUISE BLL 04 STATION 018 HALE PASSAGE E-1

DATE 06/22/60 HR 1119 ZN 08 LAT 48-41.5N LONG 122-37.8W AREA BLL
 SDG * M TIDE HT -0.5 STG R WSPD 10 DIR 270 WEA * SEA * BAR 17
 DRY 59.0 WET * RELHU * CL 8 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	13.86	22.850	16.89	0.619	6.93	113	47
2	12.67	27.096	20.38	0.719	8.05	132	20
5	12.24	27.679	20.90	0.703	7.87	129	13
10	10.42	29.342	22.50	0.480	5.38	85	6
15	10.27	29.542	22.68	0.470	5.26	83	4
20	10.08	29.734	22.86	0.460	5.15	81	3
25	10.06	29.806	22.92	0.460	5.15	81	-

CRUISE BLL 04 STATION 019 C-1

DATE 06/22/60 HR 1212 ZN 08 LAT 48-42.9N LONG 122-35.9W AREA BLL
 SDG * M TIDE HT 00.1 STG R WSPD 10 DIR 270 WEA * SEA 2 BAR 17
 DRY 59.0 WET * RELHU * CL 8 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	SSL
0	13.85	18.483	13.55	0.569	6.37 101	24
2	12.48	27.212	20.50	0.666	7.46 122	13
4	11.66	28.172	21.38	0.664	7.44 120	6
7	10.06	29.326	22.55	0.460	5.15 81	4
10	9.99	29.555	22.74	0.367	4.11 65	5
15	9.84	29.734	22.90	0.439	4.92 77	3

CRUISE BLL 04 STATION 020 C-2

DATE 06/22/60 HR 1252 ZN 08 LAT 48-42.9N LONG 122-34.0W AREA BLL
 SDG * M TIDE HT 00.7 STG R WSPD 10 DIR 270 WEA * SEA 2 BAR 17
 DRY 64.0 WET * RELHU * CL 8 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	SSL
0	16.05	16.395	11.54	0.626	7.01 115	61
2	12.07	27.951	21.14	0.636	7.12 116	9
4	11.56	28.932	21.99	0.743	8.32 135	3
7	10.39	29.397	22.55	0.489	5.48 87	2
10	10.08	29.604	22.76	0.446	5.00 79	0
15	9.92	29.830	22.96	0.452	5.06 80	0
20	9.91	29.892	23.01	0.447	5.01 79	1
25	9.87	29.904	23.03	0.445	4.98 78	-

CRUISE BLL 04 STATION 021 POST POINT C-3

DATE 06/22/60 HR 1335 ZN 08 LAT 48-42.9N LONG 122-31.8W AREA BLL
 SDG * M TIDE HT 02.1 STG R WSPD 10 DIR 270 WEA * SEA 2 BAR 17
 DRY 63.0 WET * RELHU * CL 8 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	SSL
0	16.74	13.999	9.58	0.670	7.50 123	56
2	12.06	27.993	21.18	0.615	6.89 112	14
4	11.42	28.980	22.05	0.644	7.21 117	3
7	10.16	28.978	22.26	0.361	4.04 64	8
10	9.90	29.662	22.83	0.314	3.52 55	2
15	9.76	29.810	22.97	0.436	4.88 76	2
20	9.81	29.849	22.99	0.441	4.94 78	6
25	9.82	29.904	23.03	0.435	4.87 76	-

CRUISE BLL 04 STATION 022 PULP MILL B-3

DATE 06/22/60 HR 1424 ZN 08 LAT 48-44.5N LONG 122-30.2W AREA BLL
 SDG * M TIDE HT 05.1 STG R WSPD 10 DIR 270 WEA * SEA * BAR 17
 DRY 62.0 WET * RELHU * CL 8 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	16.22	11.484	7.76	0.620	6.94	111	76
1	12.04	20.412	15.33	0.369	4.13	64	237
2	11.74	28.128	21.34	0.602	6.74	109	12
4	11.75	28.779	21.84	0.691	7.74	126	1
6	10.46	29.086	22.30	0.448	5.02	79	5
8	10.04	29.311	22.54	0.340	3.81	60	-

CRUISE BLL 04 STATION 023 B-2

DATE 06/22/60 HR 1517 ZN 08 LAT 48-44.3N LONG 122-33.0W AREA BLL
 SDG * M TIDE HT 06.7 STG R WSPD 06 DIR 270 WEA * SEA * BAR 17
 DRY 65.0 WET * RELHU * CL 8 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	15.19	23.588	17.20	0.612	6.85	116	30
1	15.04	23.618	17.26	0.618	6.92	117	36
2	12.14	27.942	21.12	0.650	7.28	119	7
4	10.92	28.966	22.13	0.588	6.59	105	2
7	9.95	29.566	22.75	0.440	4.93	77	4
10	9.86	29.673	22.85	0.442	4.95	78	4
15	9.78	29.782	22.94	0.433	4.85	76	1
20	9.74	29.850	23.00	0.382	4.28	67	-

CRUISE BLL 04 STATION 024 A-1

DATE 06/22/60 HR 1620 ZN 08 LAT 48-44.3N LONG 122-36.2W AREA BLL
 SDG * M TIDE HT 07.3 STG R WSPD 06 DIR 270 WEA * SEA * BAR 17
 DRY 65.0 WET * RELHU * CL 8 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	14.48	26.209	19.35	0.583	6.53	111	--
1	12.18	27.825	21.03	0.572	6.41	105	11
2	11.70	28.020	21.26	0.548	6.14	99	--
4	10.38	29.098	22.32	0.489	5.48	87	4
6	10.16	29.318	22.52	0.475	5.32	84	0
8	9.91	29.604	22.79	0.446	5.00	78	0

CRUISE BLL 04 STATION 025 A-2

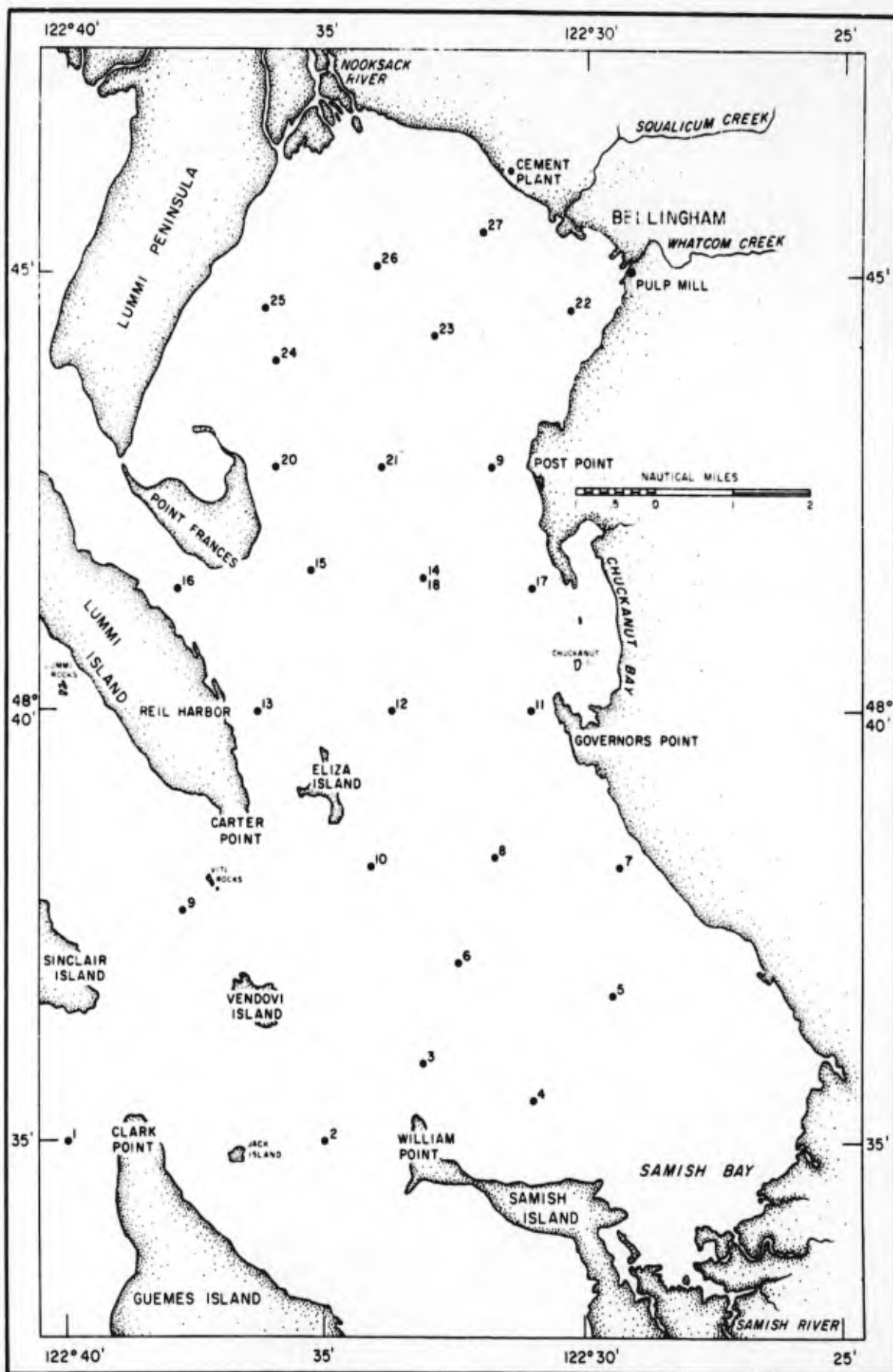
DATE 06/22/60 HR 1648 ZN 08 LAT 48-45.1N LONG 122-34.7W AREA BLL
 SDG * M TIDE HT 07.6 STG R WSPD * DIR * WEA * SEA * BAR *
 DRY *. WET * RELHU * CL * AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	13.12	27.271	20.43	0.680	7.62	126
1	11.70	27.975	21.23	0.578	6.47	105
2	11.08	28.732	21.92	0.431	4.83	77
4	10.76	28.948	22.14	0.392	4.39	70
6	10.60	29.046	22.24	0.222	2.49	40

CRUISE BLL 04 STATION 026 CEMENT PLANT A-3

DATE 06/22/60 HR 1721 ZN 08 LAT 48-45.7N LONG 122-32.1W AREA BLL
 SDG * M TIDE HT 07.7 STG H WSPD 05 DIR 225 WEA * SEA * BAR 17
 DRY 63.0 WET * RELHU * CL 8 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	17.08	12.995	8.75	0.586	6.56	108	18
1	14.18	26.080	19.31	0.598	6.70	113	21
2	12.27	27.549	20.80	0.627	7.02	115	12
4	11.28	28.776	21.92	0.578	6.47	104	7
6	10.26	29.211	22.42	0.327	3.66	58	6
8	9.88	29.613	22.80	0.346	3.88	61	4



OCEANOGRAPHIC STATION LOCATIONS
BLL-05 18-19 JULY 1960

CRUISE BLL 05 STATION 001 BELLINGHAM CHANNEL K-1

DATE 07/18/60 HR 0730 ZN 08 LAT 48-35.1N LONG 122-40.0W AREA BEL
 SDG * TIDE HT 01.2 STG F WSPD 04 DIR 180 WEA 28 SEA 1 BAR 14
 DRY 64.0 WET * RELHU * CL AMT 0 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	10.94	29.507	22.54	0.411	4.60	74	2
5	10.93	29.507	22.54	0.407	4.56	73	5
10	10.89	29.518	22.56	0.407	4.56	73	4
20	10.83	29.580	22.62	0.403	4.51	72	3
30	10.67	29.638	22.69	0.444	4.97	79	2
50	10.60	29.666	22.72	0.397	4.45	71	2
70	10.47	29.757	22.81	0.391	4.38	70	3
80	10.43	29.794	22.85	0.392	4.39	70	1

CRUISE BLL 05 STATION 002 WILLIAM POINT, W OF G-6

DATE 07/18/60 HR 0833 ZN 08 LAT 48-35.0N LONG 122-35.0W AREA BLL
 SDG * TIDE HT 01.0 STG F WSPD 09 DIR 180 WEA 28 SEA 1 BAR 13
 DRY 60.0 WET * RELHU * CL AMT 0 SCD 09 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	13.32	28.209	21.11	0.455	5.10	85	8
2	11.09	29.418	22.45	0.409	4.58	74	2
5	10.99	29.484	22.52	0.404	4.52	73	2
10	10.99	29.491	22.52	0.406	4.55	73	1
15	10.51	29.724	22.78	0.391	4.38	70	4
20	10.47	29.716	22.78	0.391	4.38	70	4
25	10.46	29.719	22.79	0.387	4.33	69	1

CRUISE BLL 05 STATION 003 G-5

DATE 07/18/60 HR 0913 ZN 08 LAT 48-35.7N LONG 122-33.1W AREA BLL
 SDG * TIDE HT 00.6 STG F WSPD 08 DIR 180 WEA 28 SEA 1 BAR 13
 DRY 64.0 WET * RELHU * CL AMT 0 SCD 07 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	14.68	27.087	19.98	0.505	5.66	97	14
2	13.31	28.641	21.45	0.489	5.48	92	7
5	12.51	28.980	21.86	0.469	5.25	87	2
10	10.95	29.391	22.45	0.447	5.01	80	3
15	10.41	29.655	22.74	0.381	4.27	68	2
20	10.43	29.696	22.77	0.382	4.28	68	1
25	10.39	29.713	22.79	0.383	4.29	68	0
30	---	29.707	---	0.383	4.29	---	0

CRUISE BLL 05 STATION 004 SAMMISH BAY, S END H-3

DATE 07/18/60 HR 0953 ZN 08 LAT 48-35.5N LONG 122-31.0W AREA SAM
 SDG 017M TIDE HT 00.5 STG L WSPD 00 DIR WEA 28 SEA 0 BAR 13
 DRY 61.0 WET * RELHU * CL AMT 0 SCD 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	14.35	28.722	21.30	0.510	5.71	98	3
2	12.68	28.888	21.75	0.487	5.45	91	3
4	11.40	29.233	22.25	0.413	4.63	75	3
7	10.70	29.402	22.50	0.386	4.32	69	4
10	10.59	29.466	22.57	0.385	4.31	69	2
15	10.39	29.599	22.70	0.364	4.08	65	1

CRUISE BLL 05 STATION 005 SAMMISH BAY, MIDDLE OF H-2

DATE 07/18/60 HR 1037 ZN 08 LAT 48-36.8N LONG 122-29.6W AREA SAM
 SDG 014M TIDE HT 00.6 STG R WSPD 00 DIR WEA 28 SEA 0 BAR 13
 DRY 61.0 WET * RELHU * CL AMT 0 SCD 07 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	14.39	28.547	21.16	0.506	5.67	97	6
2	13.79	28.598	21.32	0.504	5.64	96	5
4	12.30	28.883	21.82	0.439	4.92	81	5
7	10.37	29.415	22.57	0.356	3.99	63	5
10	10.28	29.495	22.64	0.357	4.00	63	1

CRUISE BLL 05 STATION 006 G-4

DATE 07/18/60 HR 1110 ZN 08 LAT 48-37.1N LONG 122-32.4W AREA BLL
 SDG * TIDE HT 00.8 STG R WSPD 06 DIR 285 WEA 28 SEA 1 BAR 13
 DRY 62.0 WET * RELHU * CL AMT 0 SCD 07 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	16.43	27.937	20.26	0.507	5.68	101	8
2	13.76	28.769	21.46	0.495	5.54	94	3
4	13.01	28.768	21.60	0.489	5.48	92	5
7	10.75	28.874	22.08	0.396	4.44	71	4
10	10.39	29.298	22.47	0.377	4.22	67	3
14	10.39	29.459	22.60	0.371	4.16	66	6
18	10.44	29.574	22.68	0.380	4.26	68	9

DATE 07/18/60 HR 1150 ZN 08 LAT 48-38.2N LONG 122-29.4W AREA SAM
SDG 013M TIDE HT 01.3 STG R WSPD 03 DIR 285 WEA 28 SEA 1 BAR 13
DRY 66.0 WET * RELHU * CL AMT 0 SCD 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	16.33	28.294	20.56	0.525	5.88	105	
2	14.77	28.473	21.03	0.511	5.72	99	2
4	13.65	28.685	21.41	0.471	5.28	89	2
7	10.73	29.491	22.56	0.345	3.86	62	0
							10
10	10.27	29.504	22.65	0.344	3.85	61	7

CRUISE BLL 05 STATION 008 G-3

DATE 07/18/60 HR 1316 ZN 08 LAT 48-38.3N LONG 122-31.8W AREA BLL
SDG * TIDE HT 05.9 STG R WSPD 09 DIR 275 WEA 05 SEA 2 BAR 13
DRY 65.5 WET * RELHU * CL AMT 0 SCD 07 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	15.51	28.001	20.51	0.521	5.84	102	
2	14.48	28.253	20.92	0.516	5.78	99	10
4	13.37	28.720	21.49	0.498	5.58	94	9
6	10.92	29.248	22.34	0.406	4.55	73	4
9	10.42	29.451	22.59	0.380	4.26	67	3
12	10.41	29.586	22.69	0.377	4.22	67	3

CRUISE BLL 05 STATION 009 VITI ROCKS G-1

DATE 07/18/60 HR 1407 ZN 08 LAT 48-37.9N LONG 122-37.7W AREA BLL
SDG * TIDE HT 06.2 STG R WSPD 06 DIR 270 WEA 05 SEA 1 BAR 12
DRY 62.0 WET * RELHU * CL AMT 0 SCD 07 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG. AT.	OXYGEN ML/L	SATN.	SSL
0	10.75	29.691	22.72	0.400	4.48	72	3
5	10.68	29.707	22.74	0.401	4.49	72	4
10	10.65	29.697	22.74	0.399	4.47	71	4
20	10.65	29.704	22.74	0.402	4.50	72	4
30	10.59	29.706	22.75	0.399	4.47	71	4
40	10.59	29.720	22.77	0.396	4.44	71	7
60	10.51	29.736	22.79	0.392	4.39	70	1
80	10.10	29.742	22.86	0.383	4.29	68	1

CRUISE BLL 05 STATION 010 ELIZA ROCK, SE OF G-2

DATE 07/18/60 HR 1446 ZN 08 LAT 48-38.4N LONG 122-34.1W AREA BLL
 SDG * TIDE HT 06.3 STG H WSPD 09 DIR 270 WEA 05 SEA 1 BAR 12
 DRY 65.0 WET * RELHU * CL AMT 0 SCD 09 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	15.13	27.710	20.37	0.517	5.79	100	-
5	11.75	28.864	21.90	0.426	4.77	78	-
10	10.89	29.324	22.41	0.399	4.47	72	2
20	10.51	29.682	22.75	0.391	4.38	70	1
30	10.25	29.798	22.88	0.383	4.29	68	-
50	10.18	29.883	22.96	0.382	4.28	68	1
70	10.13	29.912	22.99	0.381	4.27	67	0
90	10.15	29.921	22.99	0.378	4.23	67	2

CRUISE BLL 05 STATION 011 GOVERNORS POINT F-3

DATE 07/18/60 HR 1530 ZN 08 LAT 48-40.0N LONG 122-31.0W AREA BLL
 SDG * TIDE HT 06.2 STG F WSPD 08 DIR 160 WEA 05 SEA 1 BAR 12
 DRY 65.0 WET * RELHU * CL AMT 0 SCD 06 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	16.83	26.390	19.00	0.521	5.84	104	25
2	14.48	28.167	20.85	0.522	5.85	100	8
4	13.55	28.592	21.36	0.362	4.05	68	-
7	10.53	29.446	22.56	0.365	4.09	65	2
10	10.42	29.466	22.60	0.362	4.05	64	1
15	10.25	29.6=6	22.74	0.362	4.05	64	0
20	10.15	29.679	22.81	0.361	4.04	64	1

CRUISE BLL 05 STATION 012 F-2

DATE 07/18/60 HR 1602 ZN 08 LAT 48-40.0N LONG 122-33.6W AREA BLL
 SDG * TIDE HT 06.1 STG F WSPD 12 DIR 180 WEA B SEA 1 BAR 11
 DRY 66.0 WET * RELHU * CL AMT 0 SCD 08 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	17.24	26.253	18.80	0.505	5.66	101	--
2	16.59	26.339	19.01	0.513	5.75	102	20
4	14.06	28.119	20.90	0.527	5.90	100	8
7	10.81	29.228	22.35	0.397	4.45	71	2
10	10.45	29.443	22.57	0.388	4.35	69	8
15	10.34	29.757	22.84	0.390	4.37	69	3
20	10.18	29.825	22.91	0.382	4.28	68	2
25	10.19	29.844	22.93	0.379	4.24	67	1

CRUISE BLL 05 STATION 013 REIL HARBOR F-1

DATE 07/18/60 HR 1641 ZN 08 LAT 48-40.0N LONG 122-36.4W AREA BLL
 SDG * TIDE HT 05.9 STG F WSPD 02 DIR 300 WEA B SEA 1 BAR 11
 DRY 67.0 WET * RELHU * CL AMT 0 SCD 06 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	16.67	27.117	19.59	0.509	5.70	101	16
2	13.87	27.401	20.38	0.473	5.30	89	14
4	13.29	27.782	20.79	0.481	5.39	90	18
7	12.49	28.187	21.25	0.443	4.96	82	13
10	11.27	28.901	22.02	0.413	4.63	75	7
15	10.35	29.760	22.84	0.383	4.29	68	2
20	10.16	29.839	22.93	0.381	4.27	67	3

CRUISE BLL 05 STATION 014 D-2

DATE 07/18/60 HR 1720 ZN 08 LAT 48-41.3N LONG 122-33.2W AREA BLL
 SDG * TIDE HT 05.7 STG F WSPD 10 DIR 200 WEA B SEA 2 BAR 10
 DRY 66.0 WET * RELHU * CL AMT 0 SCD 07 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	16.79	25.569	18.38	0.477	5.34	94	37
2	14.43	26.731	19.76	0.508	5.69	97	19
4	14.55	27.858	20.60	0.515	5.77	99	9
7	12.82	28.353	21.32	0.483	5.41	90	-
10	10.47	29.213	22.39	0.393	4.40	70	3
15	10.29	29.591	22.71	0.382	4.28	68	4
20	10.16	29.717	22.83	0.376	4.21	67	4
25	10.18	29.783	22.88	0.378	4.23	67	3

CRUISE BLL 05 STATION 015 POINT FRANCIS D-1

DATE 07/18/60 HR 1753 ZN 08 LAT 48-41.6N LONG 122-35.3W AREA BLL
 SDG * TIDE HT 05.6 STG F WSPD 12 DIR 200 WEA B SEA 2 BAR 10
 DRY 68.0 WET * RELHU * CL AMT 0 SCD 06 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	16.62	26.178	18.88	0.535	5.99	106	25
2	15.83	26.327	19.16	0.537	6.01	105	26
5	14.18	27.780	20.61	0.537	6.01	102	10
10	10.84	29.138	22.27	0.402	4.50	72	0
15	10.20	29.608	22.74	0.379	4.24	67	0
20	10.13	29.821	22.92	0.378	4.23	67	1
25	10.11	29.828	22.93	0.377	4.22	67	1
30	10.15	29.835	22.93	0.387	4.33	68	-

CRUISE BLL 05 STATION 016 E-1

DATE 07/18/60 HR 1832 ZN 08 LAT 48-41.4N LONG 122-37.9W AREA BLL
 SDG * TIDE HT 05.5 STG L WSPD 04 DIR 290 WEA B SEA 1 BAR 11
 DRY 68.0 WET * RELHU * CL AMT 0 SCD 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	18.10	24.729	17.45	0.573	6.42	116	29
2	15.76	26.596	19.38	0.519	5.81	101	19
5	13.83	27.520	20.48	0.485	5.43	92	13
10	11.25	28.994	22.09	0.407	4.56	73	0
15	10.55	29.527	22.62	0.387	4.33	69	1
20	10.33	29.696	22.79	0.384	4.30	68	4
25	10.23	29.746	22.85	0.385	4.31	68	0
30	10.21	29.737	22.84	0.385	4.31	68	3

CRUISE BLL 05 STATION 017 D-3

DATE 07/18/60 HR 1922 ZN 08 LAT 48-41.4N LONG 122-30.0W AREA BLL
 SDG * TIDE HT 05.6 STG R WSPD 14 DIR 180 WEA B SEA 3 BAR 10
 DRY 65.0 WET * RELHU * CL AMT 0 SCD 05 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	15.89	26.038	18.93	0.492	5.51	96	31
2	15.90	26.021	18.92	0.490	5.49	96	33
4	14.20	27.984	20.77	0.514	5.76	98	10
7	11.65	28.460	21.61	0.438	4.91	79	4
10	10.29	29.434	22.59	0.357	4.00	63	2
14	10.35	29.442	22.59	0.378	4.23	67	1
18	10.19	29.664	22.79	0.383	4.29	68	2
22	10.14	29.713	22.83	0.365	4.09	65	1

CRUISE BLL 05 STATION 018 D-2

DATE 07/19/60 HR 0845 ZN 08 LAT 48-41.5N LONG 122-33.2W AREA BLL
 SDG * TIDE HT 00.0 STG L WSPD 05 DIR 210 WEA B SEA 1 BAR 13
 DRY 65.0 WET * RELHU * CL AMT 0 SCD 06 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	17.51	21.652	15.24	0.466	5.22	91	100
2	14.86	27.201	20.03	0.524	5.87	101	16
4	14.57	28.111	20.79	0.520	5.82	100	7
7	12.97	28.267	21.22	0.474	5.31	88	5
10	10.53	29.153	22.34	0.366	4.10	65	1
15	10.33	29.624	22.73	0.383	4.29	68	1
20	10.15	29.769	22.88	0.374	4.19	66	1
25	10.18	29.787	22.88	0.372	4.17	66	1

CRUISE BLL 05 STATION 019 POST POINT C-3

DATE 07/19/60 HR 0915 ZN 08 LAT 48-42.6N LONG 122-31.8W AREA BLL
 SDG * TIDE HT 00.2 STG R WSPD 04 DIR 210 WEA B SEA 1 BAR 13
 DRY 68.0 WET * RELHU * CL AMT 0 SCD 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	18.57	21.298	14.73	0.451	5.05	90	
2	14.69	27.119	20.01	0.522	5.85	100	18
5	13.98	27.473	20.42	0.494	5.53	94	11
10	10.55	29.243	22.40	0.347	3.89	62	1
15	10.15	29.600	22.74	0.367	4.11	65	1
20	10.17	29.726	22.84	0.381	4.27	67	1
25	10.12	29.777	22.89	0.376	4.21	67	2
30	10.10	29.827	22.93	0.351	3.93	62	1
							2

CRUISE BLL 05 STATION 020 C-1

DATE 07/19/60 HR 1014 ZN 08 LAT 48-48.9N LONG 122-36.0W AREA BLL
 SDG * TIDE HT 00.5 STG R WSPD 11 DIR 330 WEA B SEA 1 BAR 13
 DRY 69.5 WET * RELHU * CL AMT 0 SCD 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	17.93	21.956	15.38	0.541	6.06	107	
1	17.77	22.071	15.50	0.540	6.05	107	63
2	16.21	22.700	16.32	0.521	5.84	100	62
4	14.63	26.911	19.86	0.498	5.58	95	63
7	11.35	28.578	21.75	0.392	4.39	71	21
10	10.45	29.280	22.45	0.367	4.11	65	6
15	10.14	29.613	22.76	0.320	3.58	57	3
20	---	29.738	---	0.353	3.95	---	8
							0

CRUISE BLL 05 STATION 021 C-2

DATE 07/19/60 HR 1054 ZN 08 LAT 48-48.8N LONG 122-33.9W AREA BLL
 SDG * TIDE HT 00.9 STG R WSPD 07 DIR 330 WEA B SEA 1 BAR 13
 DRY 74.0 WET * RELHU * CL AMT 0 SCD 03 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	17.83	20.633	14.40	0.467	5.23	91	
2	15.39	25.390	18.54	0.507	5.68	98	116
4	14.75	27.495	20.28	0.531	5.95	102	44
7	11.23	28.573	21.77	0.418	4.68	75	16
10	10.64	29.034	22.23	0.393	4.40	70	4
15	10.45	29.364	22.51	0.380	4.26	67	4
20	10.15	29.682	22.81	0.377	4.22	67	4
25	10.12	29.803	22.91	0.363	4.07	64	3
							3

CRUISE BLL 05 STATION 022 PULP MILL B-3

DATE 07/19/60 HR 1139 ZN 08 LAT 48-44.3N LONG 122-32.5W AREA BLL
 SDG 009M TIDE HT 01.7 STG R WSPD 06 DIR 330 WEA B SEA 1 BAR 13
 DRY 70.0 WET * RELHU * CL AMT 0 SCD 00 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	20.52	4.324	1.44	0.238	2.67	44	313
1	17.19	21.556	15.24	0.454	5.08	88	97
2	15.50	24.709	18.00	0.405	4.54	78	54
4	13.83	26.636	19.80	0.420	4.70	79	32
7	11.39	28.572	21.74	0.319	3.57	58	9

CRUISE BLL 05 STATION 023 B-2

DATE 07/19/60 HR 1302 ZN 08 LAT 48-44.3N LONG 122-33.0W AREA BLL
 SDG 020M TIDE HT 05.4 STG R WSPD 07 DIR 330 WEA B SEA 1 BAR 13
 DRY 72.0 WET * RELHU * CL AMT 0 SCD 02 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	21.42	9.509	5.16	0.537	6.01	105	74
1	17.25	21.507	15.19	0.515	5.77	100	79
2	15.79	23.410	16.94	0.495	5.54	95	62
4	15.03	23.504	17.17	0.512	5.73	96	57
7	12.65	26.795	20.15	0.492	5.51	90	15
10	10.67	28.356	21.70	0.390	4.37	69	0
14	10.46	28.947	22.19	0.395	4.42	70	4
18	10.32	29.327	22.51	0.355	3.98	63	2

CRUISE BLL 05 STATION 024 B-1

DATE 07/19/60 HR 1343 ZN 08 LAT 48-44.0N LONG 122-35.7W AREA BLL
 SDG 015M TIDE HT 06.2 STG R WSPD 08 DIR 330 WEA B SEA 1 BAR 12
 DRY 71.0 WET * RELHU * CL AMT 0 SCD 02 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	19.12	17.950	12.07	0.503	5.63	99	89
1	18.01	21.121	14.73	0.544	6.09	107	70
2	16.13	25.185	18.23	0.502	5.62	98	42
4	12.84	27.789	20.88	0.485	5.43	90	10
7	10.57	29.120	22.30	0.339	3.80	60	2
10	10.29	29.529	22.67	0.353	3.95	63	2
13	10.17	29.574	22.72	0.316	3.54	56	3

DATE 07/19/60 HR 1421 ZN 08 LAT 48-44.4N LONG 122-36.1W AREA BLL
SDG 010M TIDE HT 06.5 STG R WSPD 08 DIR 330 WEA B SEA 1 BAR 12
DRY 72.0 WET * RELHU * CL AMT 0 SCD 02 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	23.13	17.536	10.77	0.530	5.94	112	
1	17.83	21.240	14.86	0.567	6.35	111	85
2	16.10	24.821	17.96	0.502	5.62	97	66
4	12.94	27.539	20.67	0.464	5.20	86	45
							13
6	11.27	28.523	21.72	0.401	4.49	72	
8	10.48	29.455	22.58	0.337	3.77	60	2
							2

CRUISE BLL 05 STATION 026 A-2

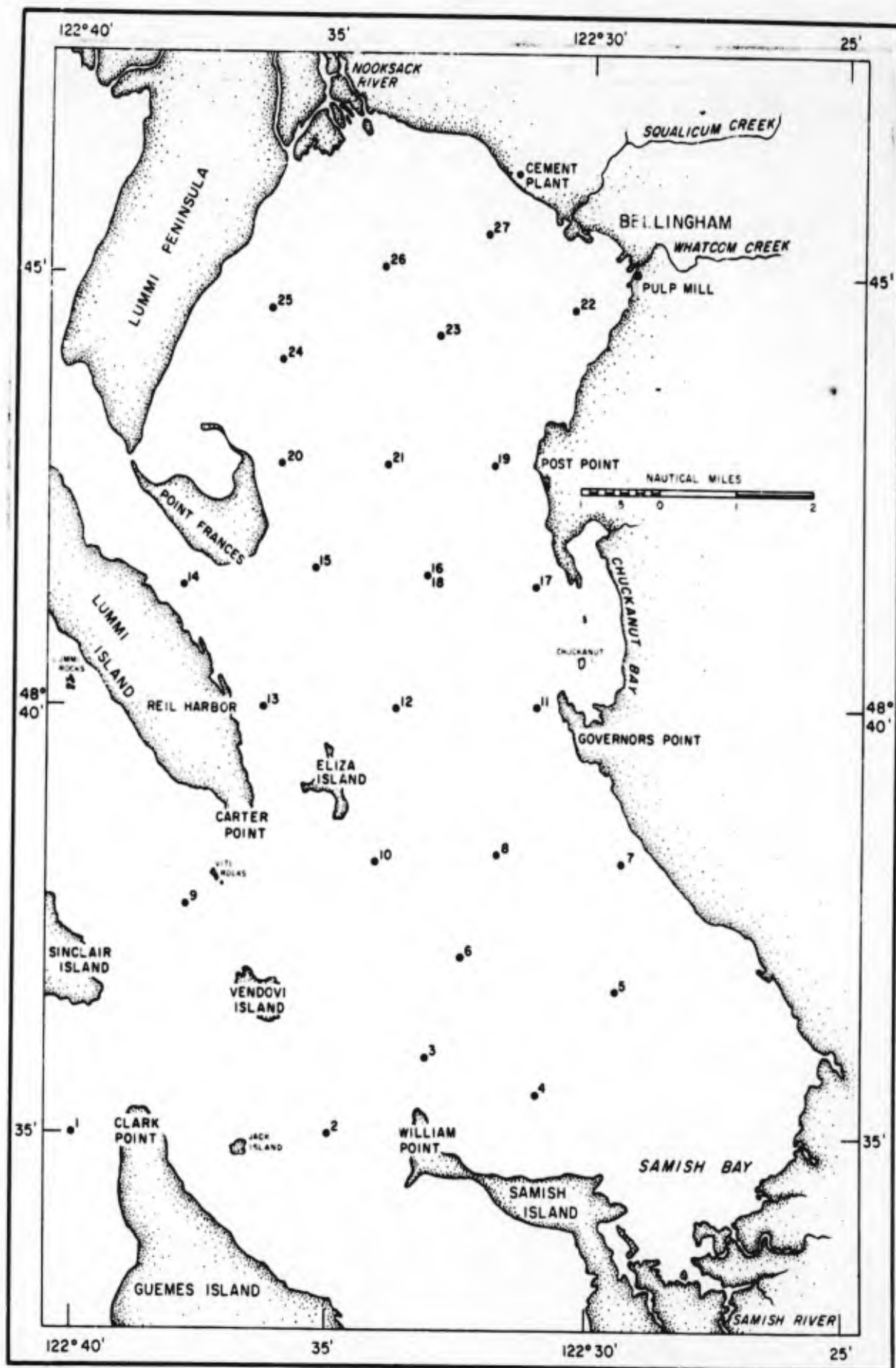
DATE 07/19/60 HR 1500 ZN 08 LAT 48-45.0N LONG 122-34.1W AREA BLL
SDG 010M TIDE HT 06.7 STG R WSPD 09 DIR 330 WEA B SEA 1 BAR 12
DRY 70.0 WET * RELHU * CL AMT 0 SCD 01 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	22.94	11.793	6.50	0.473	5.30	96	
1	17.41	22.429	15.85	0.552	6.18	108	152
2	15.89	22.733	16.41	0.529	5.92	101	74
4	12.43	28.004	21.12	0.357	4.00	66	73
							9
6	11.63	28.482	21.63	0.333	3.73	60	
8	10.93	28.901	22.07	0.253	2.83	45	3
							3

CRUISE BLL 05 STATION 027 CEMENT PLANT A-3

DATE 07/19/60 HR 1539 ZN 08 LAT 48-45.5N LONG 122-32.0W AREA BLL
SDG 011M TIDE HT 06.8 STG H WSPD 09 DIR 300 WEA B SEA 1 BAR 12
DRY 73.0 WET * RELHU * CL AMT 0 SCD 01 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	20.02	13.097	8.19	0.510	5.71	99	94
1	17.22	21.409	15.12	0.477	5.34	93	100
2	16.01	25.848	18.76	0.493	5.52	96	34
4	13.52	27.555	20.57	0.429	4.80	80	12
6	11.77	28.2=8	21.46	0.358	4.01	65	7
8	10.79	28.890	22.09	0.307	3.44	55	6



OCEANOGRAPHIC STATION LOCATIONS
BLL-06 23-24 AUGUST 1960

CRUISE BLL 06 STATION 001 BELLINGHAM CHANNEL K-1

DATE 08/23/60 HR 0700 ZN 08 LAT 48-34.2N LONG 122-39.5W AREA BEL
 SDG * TIDE HT 5.0 STG F WSPD 10 DIR 180 WEA 51 SEA 1 BAR 10
 DRY 55.0 WET * RELHU * CL 2 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	11.17	29.940	22.84	0.381	4.27	69	1.22	5
5	10.86	29.955	22.90	0.381	4.27	69	---	4
10	10.82	29.966	22.92	0.380	4.26	68	---	3
20	10.84	29.962	22.91	0.379	4.24	68	---	2
30	10.82	29.970	22.92	0.379	4.24	68	1.29	5
49	10.84	29.983	22.94	0.379	4.24	68	1.54	2
74	10.76	29.983	22.94	0.379	4.24	68	1.34	5
98	10.67	30.098	23.05	0.379	4.24	68	1.53	6

CRUISE BLL 06 STATION 002 WILLIAMS POINT. W OF G-6

DATE 08/23/60 HR 0758 ZN 08 LAT 48-34.1N LONG 122-35.0W AREA BLL
 SDG * TIDE HT 3.5 STG F WSPD 11 DIR 180 WEA 51 SEA 2 BAR 10
 DRY 54.0 WET * RELHU * CL 2 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	11.60	29.551	22.46	0.425	4.76	78	2.30	4
2	11.58	29.551	22.47	0.425	4.76	78	2.02	1
5	11.34	29.614	22.56	0.403	4.51	73	2.20	8
10	10.84	29.907	22.87	0.374	4.19	67	2.10	-
15	10.80	29.917	22.88	0.405	4.54	73	2.22	6
20	10.86	---	---	0.384	4.30	69	2.22	4
25	10.80	29.918	22.89	0.379	4.24	68	2.34	1

CRUISE BLL 06 STATION 003 G-5

DATE 08/23/60 HR 0835 ZN 08 LAT 48-36.1N LONG 122-33.8W AREA BLL
 SDG * TIDE HT 2.6 STG F WSPD 12 DIR 160 WEA 51 SEA 2 BAR 09
 DRY 57.0 WET * RELHU * CL 2 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	11.96	29.448	22.32	0.442	4.95	81	2
2	11.94	29.451	22.32	0.440	4.93	81	3
5	11.79	29.463	22.36	0.434	4.86	79	4
10	11.68	29.548	22.45	0.430	4.82	79	3
15	11.26	29.695	22.63	0.402	4.50	73	1
20	11.15	29.720	22.67	0.395	4.42	71	3
25	10.79	29.900	22.87	0.374	4.19	67	2
30	10.80	29.903	22.87	0.370	4.14	67	4

CRUISE BLL 06 STATION 004 SAMISH BAY, SOUTH END H-3

DATE 08/23/60 HR 0912 ZN 08 LAT 48-35.5N LONG 122-31.6W AREA SAM
 SDG * TIDE HT 1.7 STG F WSPD 11 DIR 160 WEA 02 SEA 2 BAR 09
 DRY 58.0 WET * RELHU * CL 2 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	12.34	29.402	22.21	0.449	5.03	83	3
2	12.28	29.408	22.23	0.449	5.03	83	6
4	12.15	29.418	22.26	0.449	5.03	83	4
7	11.54	29.498	22.43	0.402	4.50	73	1
10	11.24	29.637	22.59	0.376	4.21	68	0
15	10.94	29.808	22.78	0.344	3.85	62	2

CRUISE BLL 06 STATION 005 SAMISH BAY, MIDDLE OF H-2

DATE 08/23/60 HR 0953 ZN 08 LAT 48-37.4N LONG 122-29.5W AREA SAM
 SDG 015M TIDE HT 0.9 STG F WSPD 11 DIR 170 WEA 02 SEA 2 BAR 09
 DRY 60.0 WET * RELHU * CL 2 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	12.48	29.397	22.18	0.463	5.19	86	2.12	3
2	12.44	29.384	22.18	0.463	5.19	86	2.12	2
4	12.19	29.405	22.24	0.446	5.00	82	2.18	0
7	12.14	29.438	22.28	0.436	4.88	80	2.25	1
10	12.08	29.461	22.31	0.414	4.64	76	2.25	0
13	11.82	29.504	22.39	0.405	4.54	74	2.29	0

CRUISE BLL 06 STATION 006 G-4

DATE 08/23/60 HR 1026 ZN 08 LAT 48-37.2N LONG 122-32.7W AREA BLL
 SDG * TIDE HT 0.5 STG F WSPD 13 DIR 140 WEA 02 SEA 2 BAR 09
 DRY 60.0 WET * RELHU * CL 2 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	12.70	29.119	21.93	0.477	5.34	89	1.98	4
2	12.69	29.115	21.93	0.478	5.35	89	1.98	1
4	12.49	29.145	21.99	0.466	5.22	86	2.09	5
7	11.83	29.354	22.27	0.432	4.84	79	2.11	2
10	11.20	29.575	22.55	0.391	4.38	71	2.37	5
14	10.94	29.815	22.78	0.362	4.05	65	2.40	0
18	10.79	29.922	22.89	0.370	4.14	67	2.34	0

CRUISE BLL 06 STATION 007 SAMISH BAY, NORTH END H-1

DATE 08/23/60 HR 1120 ZN 08 LAT 48-38.0N LONG 122-29.3W AREA SAM
 SDG 013M TIDE HT 0.1 STG L WSPD 13 DIR 150 WEA 02 SEA 1 BAR 09
 DRY 62.0 WET * RELHU * CL 2 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	13.24	29.290	21.96	0.433	4.85	82	2
2	12.86	29.290	22.03	0.433	4.85	81	3
4	12.11	29.439	22.28	0.431	4.83	80	4
7	11.90	29.494	22.36	0.405	4.54	74	4
10	10.80	29.820	22.81	0.295	3.30	53	1

CRUISE BLL 06 STATION 008 G-3

DATE 08/23/60 HR 1153 ZN 08 LAT 48-38.9N LONG 122-31.6W AREA BLL
 SDG * TIDE HT 0.2 STG R WSPD 14 DIR 140 WEA 02 SEA 2 BAR 08
 DRY 60.0 WET * RELHU * CL 2 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	12.84	28.943	21.77	0.475	5.32	89	1.53	11
2	12.84	28.923	21.75	0.482	5.40	90	1.73	9
4	12.68	28.992	21.83	0.473	5.30	88	1.54	7
7	12.68	29.053	21.88	0.473	5.30	88	1.77	11
10	11.88	29.214	22.15	0.426	4.77	78	1.46	7
13	10.89	29.866	22.83	0.365	4.09	66	1.81	0

CRUISE BLL 06 STATION 009 VITI ROCKS G-1

DATE 08/23/60 HR 1325 ZN 08 LAT 48-38.5N LONG 122-37.8W AREA BEL
 SDG * TIDE HT 1.7 STG R WSPD 08 DIR 150 WEA 02 SEA 1 BAR 09
 DRY 63.0 WET * RELHU * CL 2 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	12.66	29.209	22.01	0.486	5.44	91	1.83	4
5	12.00	29.450	22.31	0.444	4.97	82	1.58	3
10	11.68	29.548	22.45	0.432	4.84	79	1.73	5
20	11.04	29.767	22.73	0.399	4.47	72	1.88	1
30	10.84	29.859	22.83	0.384	4.30	69	2.07	2
40	10.66	30.016	22.98	0.366	4.10	66	2.13	2
60	10.58	30.030	23.01	0.365	4.09	65	2.13	2
80	10.48	30.125	23.10	0.357	4.00	64	2.18	2

CRUISE BLL 06 STATION 010 ELIZA ROCK, SE OF G-2

DATE 08/23/60 HR 1413 ZN 08 LAT 48-38.7N LONG 122-34.1W AREA BLL
 SDG * TIDE HT 3.3 STG R WSPD 11 DIR 150 WEA 02 SEA 2 BAR 08
 DRY 60.0 WET * RELHU * CL 2 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	13.04	29.104	21.85	0.501	5.61	94	3
5	11.66	29.476	22.39	0.421	4.72	77	2
10	10.92	29.812	22.78	0.336	3.76	61	1
20	10.82	29.938	22.90	0.372	4.17	67	0
30	10.75	29.965	22.93	0.370	4.14	66	3
50	10.78	29.980	22.94	0.366	4.10	66	2
70	10.68	29.987	22.96	0.366	4.10	66	3

CRUISE BLL 06 STATION 011 GOVERNORS POINT F-3

DATE 08/23/60 HR 1500 ZN 08 LAT 48-40.0N LONG 122-31.3W AREA BLL
 SDG * TIDE HT 4.1 STG R WSPD 19 DIR 150 WEA 61 SEA 3 BAR 08
 DRY 57.0 WET * RELHU * CL 2 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	13.29	28.667	21.47	0.493	5.52	93	16
2	13.28	28.656	21.46	0.492	5.51	92	15
4	13.16	28.679	21.50	0.486	5.44	91	15
7	12.80	29.027	21.84	0.485	5.43	90	6
10	11.02	29.358	22.41	0.415	4.65	75	3
15	10.72	29.906	22.89	0.337	3.77	61	0
20	10.64	29.920	22.91	0.335	3.75	60	0

CRUISE BLL 06 STATION 012 F-2

DATE 08/23/60 HR 1540 ZN 08 LAT 48-40.8N LONG 122-31.3W AREA BLL
 SDG * TIDE HT 3.4 STG R WSPD 18 DIR 120 WEA 02 SEA 2 BAR 08
 DRY 59.0 WET * RELHU * CL 2 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	13.17	28.799	21.59	0.501	5.61	94	1.94	8
2	13.16	28.797	21.59	0.502	5.62	94	1.86	9
4	13.10	28.799	21.61	0.504	5.64	95	1.83	5
7	12.32	29.137	22.01	0.448	5.02	83	2.02	1
10	11.88	29.341	22.25	0.426	4.77	78	2.33	0
15	11.65	29.276	22.24	0.441	4.94	80	---	0
20	10.81	29.639	22.67	0.328	3.67	59	---	0
25	10.76	29.955	22.92	0.369	4.13	66	---	0

CRUISE BLL 06 STATION 013 REIL HARBOR F-1

DATE 08/23/60 HR 1620 ZN 08 LAT 48-40.0N LONG 122-36.3W AREA HPN
 SDG * TIDE HT 6.7 STG R WSPD 10 DIR 130 WEA 02 SEA 1 BAR 08
 DRY 59.0 WET * RELHU * CL 2 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	12.80	28.975	21.80	0.462	5.17	86	-
2	12.76	28.988	21.82	0.456	5.11	85	7
4	12.72	28.977	21.82	0.461	5.16	86	8
7	12.68	28.998	21.84	0.459	5.14	85	6
10	12.64	28.970	21.83	0.464	5.20	86	8
15	11.68	28.999	22.02	0.458	5.13	83	7
20	10.72	29.902	22.89	0.377	4.22	68	0

CRUISE BLL 06 STATION 014 HALE PASS., SOUTH END E-1

DATE 08/23/60 HR 1657 ZN 08 LAT 48-41.9N LONG 122-38.6W AREA HPN
 SDG * TIDE HT 7.1 STG R WSPD 06 DIR 160 WEA 02 SEA 1 BAR 08
 DRY 59.0 WET * RELHU * CL 2 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	14.14	27.685	20.55	0.531	5.95	101	1.07	35
3	13.21	28.583	21.42	0.498	5.58	93	1.49	48
8	12.38	29.025	21.92	0.445	4.98	82	1.52	9
13	11.90	29.292	22.21	0.450	5.04	83	1.56	7
18	11.88	29.319	22.23	0.421	4.72	77	1.88	5
23	11.77	29.347	22.27	0.416	4.66	76	1.55	3
28	11.44	29.544	22.48	0.399	4.47	73	2.13	2

CRUISE BLL 06 STATION 015 POINT FRANCES D-1

DATE 08/23/60 HR 1751 ZN 08 LAT 48-41.6N LONG 122-35.9W AREA BLL
 SDG * TIDE HT 7.7 STG H WSPD 10 DIR 130 WEA 51 SEA 1 BAR 08
 DRY 58.0 WET * RELHU * CL 2 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	13.94	27.851	20.72	0.534	5.98	101	24
2	13.86	27.966	20.82	0.531	5.95	100	24
5	13.40	28.467	21.29	0.530	5.94	100	13
10	12.16	29.128	22.04	0.397	4.45	73	8
15	10.76	29.742	22.75	0.291	3.26	52	6
20	10.71	29.787	22.80	0.282	3.16	51	10
25	10.51	29.878	22.90	0.252	2.82	45	6
30	10.60	30.014	22.99	0.342	3.83	61	2

CRUISE BLL 06 STATION 016 D-2

DATE 08/23/60 HR 1825 ZN 08 LAT 48-41.7N LONG 122-33.1W AREA BLL
 SDG * TIDE HT 7.7 STG H WSPD 00 DIR WEA 51 SEA 1 BAR 08
 DRY 58.0 WET * RELHU * CL 2 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	13.96	27.801	20.67	0.494	5.53	94	0.86	28
2	13.91	27.838	20.71	0.491	5.50	93	1.05	15
4	13.52	28.479	21.28	0.492	5.51	93	1.10	15
7	12.94	28.792	21.63	0.478	5.35	89	1.21	12
10	11.98	29.310	22.21	0.439	4.92	81	1.39	0
15	10.75	29.823	22.82	0.302	3.38	54	---	2
20	10.76	29.961	22.92	0.366	4.10	66	1.77	2
25	10.74	29.962	22.93	0.364	4.08	65	1.69	0

CRUISE BLL 06 STATION 017 D-3

DATE 08/23/60 HR 1902 ZN 08 LAT 48-41.4N LONG 122-31.0W AREA BLL
 SDG * TIDE HT 7.5 STG F WSPD 00 DIR WEA 02 SEA 1 BAR 08
 DRY 59.0 WET * RELHU * CL 2 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	14.94	27.657	20.37	0.564	6.32	109	55
2	13.56	28.296	21.13	0.501	5.61	95	15
4	13.05	28.759	21.59	0.478	5.35	90	4
7	12.40	29.139	22.00	0.445	4.98	82	1
10	11.68	29.355	22.30	0.372	4.17	68	1
15	10.84	29.769	22.76	0.327	3.66	59	4
20	10.73	29.912	22.89	0.354	3.96	64	2
25	10.66	29.963	22.94	0.349	3.91	63	0

CRUISE BLL 06 STATION 018 D-2

DATE 08/24/60 HR 0653 ZN 08 LAT 48-41.1N LONG 122-33.1W AREA BLL
 SDG * TIDE HT 7.0 STG F WSPD 08 DIR 180 WEA 63 SEA 1 BAR 10
 DRY 55.0 WET * RELHU * CL 6 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	14.42	27.477	20.33	0.479	5.36	91	32
2	13.94	27.421	20.39	0.474	5.31	90	36
4	13.49	28.204	21.07	0.495	5.54	93	19
7	12.95	28.732	21.58	0.495	5.54	93	8
10	10.80	29.715	22.73	0.330	3.70	59	2
15	10.78	29.936	22.90	0.373	4.18	67	1
20	10.76	29.987	22.94	0.372	4.17	67	0
25	10.70	29.982	22.95	0.369	4.13	66	0

CRUISE BLL 06 STATION 019 POST POINT C-3

DATE 08/24/60 HR 0804 ZN 08 LAT 48-42.9N LONG 122-31.8W AREA BLL
 SDG * TIDE HT 4.7 STG F WSPD 12 DIR 180 WEA 65 SEA 2 BAR 10
 DRY 55.0 WET * RELHU * CL 6 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	14.70	26.092	19.22	0.490	5.49	93	
2	14.75	26.103	19.21	0.488	5.47	93	58
5	14.72	26.122	19.24	0.483	5.41	92	58
10	14.33	26.234	19.40	0.488	5.47	92	60
							59
15	11.85	26.336	19.93	0.461	5.16	83	
20	11.06	29.583	22.58	0.325	3.64	59	59
25	10.76	29.577	22.63	0.337	3.77	60	1
30	10.72	29.802	22.81	0.321	3.60	58	1
							1

CRUISE BLL 06 STATION 020 C-1

DATE 08/24/60 HR 0848 ZN 08 LAT 48-43.2N LONG 122-36.0W AREA BLL
 SDG * TIDE HT 3.8 STG F WSPD 12 DIR 160 WEA 64 SEA 2 BAR 11
 DRY 55.0 WET * RELHU * CL 6 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	15.16	25.668	18.80	0.461	5.16	88	
1	14.56	25.874	19.08	0.458	5.13	87	60
2	14.01	27.062	20.10	0.463	5.19	88	58
4	14.02	27.237	20.23	0.495	5.54	94	37
							37
7	12.90	28.747	21.60	0.424	4.75	79	
10	11.67	29.381	22.32	0.425	4.76	78	10
15	10.68	29.829	22.84	0.313	3.51	56	6
20	10.58	29.906	22.91	0.261	2.92	47	4
							2

CRUISE BLL 06 STATION 021 C-2

DATE 08/24/60 HR 0920 ZN 08 LAT 48-43.6N LONG 122-34.0W AREA BLL
 SDG * TIDE HT 3.8 STG F WSPD 10 DIR 160 WEA 53 SEA 2 BAR 11
 DRY 56.0 WET * RELHU * CL 6 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	14.70	26.762	19.74	0.474	5.31	90	---	48
2	14.42	26.751	19.78	---	---	---	1.36	47
4	14.38	26.760	19.79	0.481	5.39	91	1.35	48
7	13.38	28.357	21.21	0.472	5.29	89	1.37	14
10	12.15	29.116	22.03	0.421	4.72	78	---	5
15	10.81	29.938	22.90	0.369	4.13	66	2.26	2
20	10.73	29.979	22.94	0.366	4.10	66	2.35	3

CRUISE BLL 06 STATION 022 PULP MILL B-3

DATE 08/24/60 HR 1008 ZN 08 LAT 48-42.9N LONG 122-30.2W AREA BLL
 SDG * TIDE HT 1.8 STG F WSPD 08 DIR 210 WEA 51 SEA 1 BAR 12
 DRY 59.0 WET * RELHU * CL 6 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	SSL
0	15.63	24.524	17.83	0.379	4.24 73	155
1	15.08	24.518	17.94	0.390	4.37 74	151
2	15.00	24.538	17.97	0.382	4.28 72	137
4	14.91	25.416	18.66	0.437	4.89 83	82
6	12.71	28.826	21.70	0.441	4.94 82	1
8	12.15	29.121	22.03	0.389	4.36 72	1

CRUISE BLL 06 STATION 023 B-2

DATE 08/24/60 HR 1043 ZN 08 LAT 48-44.3N LONG 122-33.0W AREA BLL
 SDG * TIDE HT 1.3 STG F WSPD 24 DIR 180 WEA 51 SEA 2 BAR 12
 DRY 59.0 WET * RELHU * CL 6 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	15.53	23.857	17.34	0.491	5.50 94	0.89	72
1	14.96	23.912	17.50	0.465	5.21 88	1.06	73
2	14.86	23.989	17.57	0.491	5.50 92	1.22	76
4	14.50	26.340	19.45	0.477	5.34 91	1.11	56
7	12.00	29.157	22.09	0.368	4.12 68	2.34	5
10	10.96	29.639	22.64	0.327	3.66 59	2.25	1
15	10.64	29.804	22.82	0.283	3.17 51	3.18	2

CRUISE BLL 06 STATION 024 B-1

DATE 08/24/60 HR 1144 ZN 08 LAT 48-43.8N LONG 122-35.5W AREA BLL
 SDG * TIDE HT 0.7 STG L WSPD 12 DIR 180 WEA 51 SEA 2 BAR 13
 DRY 60.0 WET * RELHU * CL 6 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	SSL
0	14.68	26.717	19.70	0.486	5.44 93	40
1	14.36	26.934	19.93	0.481	5.39 91	33
2	14.12	27.012	20.04	0.481	5.39 91	39
4	13.82	27.655	20.59	0.491	5.50 93	26
7	12.78	28.843	21.70	0.389	4.36 72	10
10	11.15	29.540	22.53	0.378	4.23 68	2
13	10.70	29.790	22.80	0.325	3.64 58	4

CRUISE BLL 06 STATION 025 A-1

DATE 08/24/60 HR 1221 ZN 08 LAT 48-44.3N LONG 122-36.2W AREA BLL
 SDG * TIDE HT 0.9 STG R WSPD 15 DIR 180 WEA 01 SEA 2 BAR 13
 DRY 60.0 WET * RELHU * CL 6 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	16.30	18.224	12.88	0.531	5.95	99	94
1	14.91	25.112	18.42	0.460	5.15	87	74
2	14.44	26.297	19.43	0.458	5.13	87	69
4	14.18	26.902	19.94	0.476	5.33	90	54
6	13.24	28.468	21.33	0.407	4.56	76	16
8	11.79	29.319	22.25	-.---	-.---	--	--

CRUISE BLL 06 STATION 026 A-2

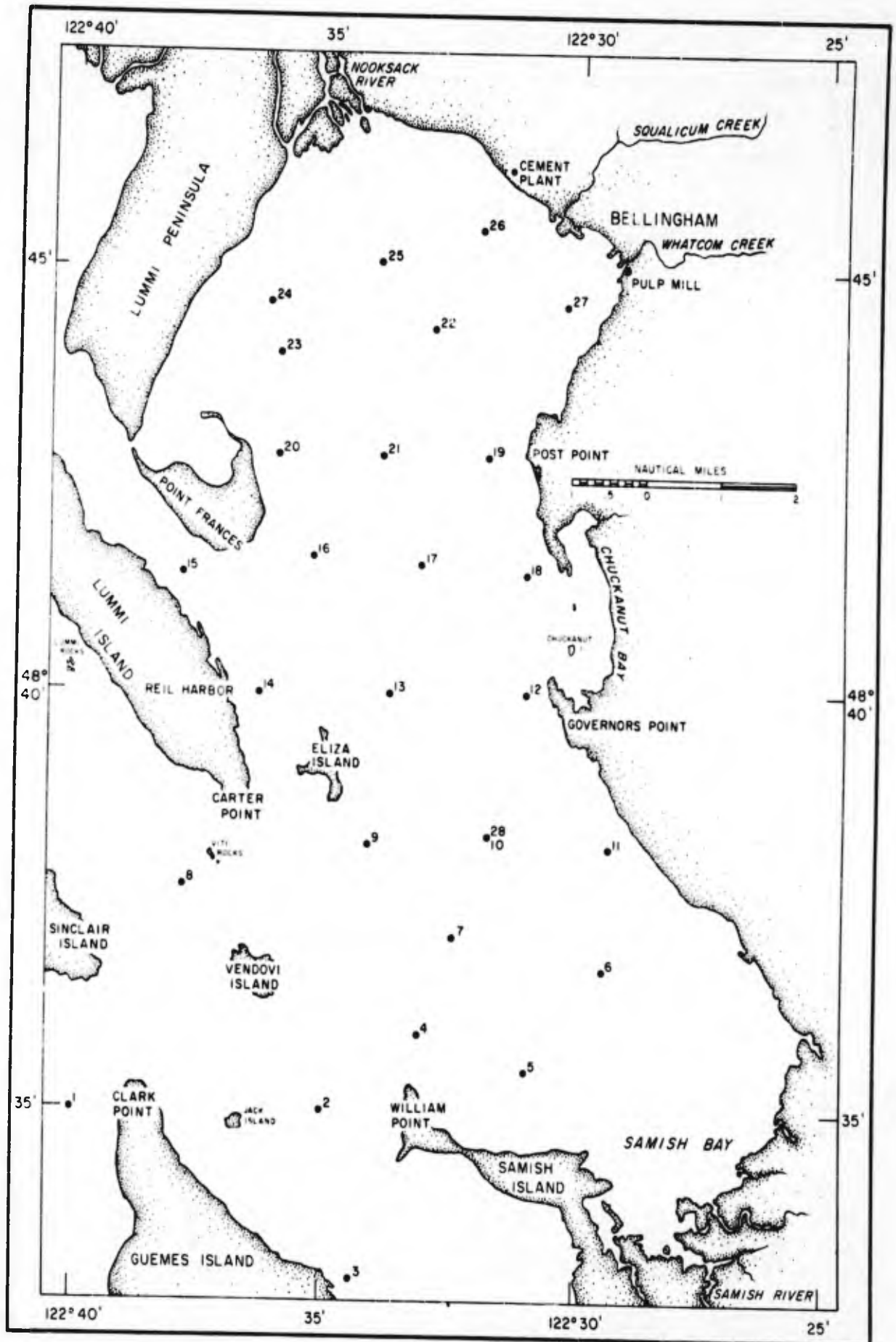
DATE 08/24/60 HR 1337 ZN 08 LAT 48-45.2N LONG 122-34.8W AREA BLL
 SDG * TIDE HT 1.9 STG R WSPD 10 DIR 160 WEA 01 SEA 2 BAR 13
 DRY 63.0 WET * RELHU * CL 6 AMT 4 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	16.17	19.493	13.88	0.545	6.10	102	0.39	89
1	15.33	20.829	15.07	0.470	5.26	88	0.90	95
2	15.02	25.142	18.42	0.446	5.00	85	1.10	86
4	14.45	26.665	19.71	0.474	5.31	90	1.30	85
6	12.70	27.703	20.84	0.372	4.17	69	1.81	29
8	11.89	29.206	22.14	0.360	4.03	66	1.80	3

CRUISE BLL 06 STATION 027 CEMENT PLANT A-3

DATE 08/24/60 HR 1409 ZN 08 LAT 48-45.1N LONG 122-32.2W AREA BLL
 SDG * TIDE HT 2.7 STG R WSPD 16 DIR 180 WEA 01 SEA 2 BAR 14
 DRY 63.0 WET * RELHU * CL 6 AMT 4 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	16.55	18.936	13.38	0.561	6.28	106	112
1	15.70	20.069	14.41	0.535	5.99	100	114
2	15.12	21.666	15.75	0.515	5.77	96	124
4	14.84	25.704	18.89	0.449	5.03	86	77
6	13.90	27.385	20.37	0.390	4.37	74	39
8	12.73	28.819	21.69	0.313	3.51	58	40



OCEANOGRAPHIC STATION LOCATIONS
BLL -07 28-29 SEPT. 1960

CRUISE BLL 07 STATION 001 K-1

DATE 09/28/60 HR 0753 ZN 08 LAT 48-33.9N LONG 122-39.6W AREA BEL
SDG 090M TIDE HT 03.7 STG R WSPD 12 DIR 330 WEA 00 SEA 2 BAR 21
DRY 68.0 WET * RELHU * CL X AMT 0 SCD 06 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	10.92	28.310	21.62	0.456	5.11	81	2
5	10.88	28.447	21.73	0.442	4.95	79	2
10	10.82	28.724	21.96				3
20	10.34	29.833	22.89	0.330	3.70	59	2
20	10.62	29.028	22.22	0.455	5.10	81	
30	10.54	29.150	22.33	0.414	4.64	74	3
50	10.39	29.632	22.73	0.390	4.37	69	2
75	10.34	29.667	22.77	0.384	4.30	68	4
							2
83	10.37	29.663	22.76	0.386	4.32	69	2

CRUISE BLL 07 STATION 002 POINT WILLIAMS, WEST OF G-6

DATE 09/28/60 HR 0912 ZN 08 LAT 48-34.1N LONG 122-35.0W AREA BLL
SDG 026M TIDE HT 06.4 STG R WSPD 10 DIR 340 WEA 04 SEA 2 BAR 20
DRY 58.0 WET * RELHU * CL X AMT 0 SCD 05 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	11.34	27.290	20.76	0.507	5.68	91	2
2	11.30	27.292	20.77	0.509	5.70	91	3
5	11.14	28.115	21.43	0.479	5.36	86	4
8	11.14	28.561	21.78	0.451	5.05	81	8
12	11.22	28.879	22.01	0.442	4.95	80	9
16	10.91	28.943	22.11	0.441	4.94	79	6
20	10.80	29.404	22.49	0.408	4.57	73	4

CRUISE BLL 07 STATION 003 BOAT HARBOR J-1

DATE 09/28/60 HR 1021 ZN 08 LAT 48-32.2N LONG 122-34.3W AREA BEL
SDG 068M TIDE HT 09.0 STG R WSPD 15 DIR 330 WEA 04 SEA 2 BAR 19
DRY 64.0 WET * RELHU * CL X AMT 0 SCD 05 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	11.59	27.563	20.93	0.514	5.76	92	
5	11.52	27.702	21.05	0.514	5.76	92	6
9	11.53	28.305	21.51	0.487	5.45	88	6
18	11.27	28.868	21.99	0.466	5.22	84	5
							6
27	11.02	29.071	22.19	0.444	4.97	80	
45	10.61	29.566	22.64	0.391	4.38	70	5
62	10.59	29.626	22.69	0.378	4.23	68	5
67	10.58	29.646	22.71	0.384	4.30	69	6

CRUISE BLL 07 STATION 004 G-5

DATE 09/28/60 HR 1120 ZN 08 LAT 48-34.6N LONG 122-32.1W AREA BLL
 SDG 035M TIDE HT 10.3 STG R WSPD 08 DIR 330 WEA 04 SEA 2 BAR 19
 DRY 65.0 WET * RELHU * CL X AMT 0 SCD 05 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	11.60	27.747	21.07	0.503	5.63	91	4
2	11.53	27.755	21.09	0.508	5.69	91	4
5	11.39	27.850	21.18	0.502	5.62	90	8
10	11.24	28.654	21.83	0.463	5.19	83	7
14	11.26	28.758	21.91	0.415	4.65	75	8
19	11.16	28.857	22.00	0.456	5.11	82	8
24	11.02	29.182	22.28	0.428	4.79	77	7
29	10.43	29.745	22.81	0.368	4.12	65	7

CRUISE BLL 07 STATION 005 SAMISH BAY, SOUTH END H-3

DATE 09/28/60 HR 1317 ZN 08 LAT 48-35.6N LONG 122-30.8W AREA SAM
 SDG 016M TIDE HT 10.1 STG F WSPD 07 DIR 330 WEA 04 SEA 2 BAR 19
 DRY 57.0 WET * RELHU * CL X AMT 0 SCD 05 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	11.61	28.264	21.47	0.516	5.78	93	4
2	11.51	28.321	21.53	0.509	5.70	92	5
4	11.44	28.436	21.63	0.499	5.59	90	6
7	11.46	28.523	21.69	0.494	5.53	89	6
10	11.52	28.588	21.73	0.490	5.49	89	7
15	11.17	29.057	22.15	0.441	4.94	79	4

CRUISE BLL 07 STATION 006 SAMISH BAY, MIDDLE H-2

DATE 09/28/60 HR 1412 ZN 08 LAT 48-36.4N LONG 122-29.5W AREA SAM
 SDG 013M TIDE HT 09.2 STG F WSPD 11 DIR 300 WEA 04 SEA 2 BAR 18
 DRY 63.0 WET * RELHU * CL X AMT 0 SCD 07 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	11.88	29.029	22.01	0.484	5.42	88	5
2	11.88	29.070	22.04	0.483	5.41	88	6
4	11.88	29.069	22.04	0.483	5.41	88	8
7	11.88	29.073	22.04	0.484	5.42	89	8
10	11.88	29.101	22.06	0.483	5.41	88	7
13	11.88	29.155	22.11	0.475	5.32	87	7

CRUISE BLL 07 STATION 007 G-4

DATE 09/28/60 HR 1513 ZN 08 LAT 48-36.8N LONG 122-32.4W AREA BLL
 SDG 022M TIDE HT 08 2 STG F WSPD 07 DIR 330 WEA 04 SEA 2 BAR 18
 DRY 57.0 WET * RELHU * CL X AMT 0 SCD 06 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	11.49	28.471	21.65	0.496	5.56	90	2
2	10.93	28.605	21.84	0.473	5.30	84	2
4	10.64	29.235	22.38	0.508	5.69	91	4
7	10.65	29.257	22.40	0.503	5.63	90	4
10	10.66	29.277	22.41	0.419	4.69	75	3
14	10.66	29.322	22.45	0.414	4.64	74	4
18	10.64	29.475	22.57	0.392	4.39	70	2

CRUISE BLL 07 STATION 008 VITI ROCKS G-1

DATE 09/28/60 HR 1608 ZN 08 LAT 48-36.9N LONG 122-37.8W AREA BEL
 SDG 082M TIDE HT 07 2 STG F WSPD 10 DIR 330 WEA 04 SEA 2 BAR 18
 DRY 68.0 WET * RELHU * CL X AMT 0 SCD 05 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	11.06	28.583	21.81	0.465	5.21	83	2
5	10.88	28.783	21.99	0.447	5.01	80	2
10	10.76	28.964	22.15	0.457	5.12	81	3
20	10.72	29.060	22.23	0.440	4.93	78	2
30	10.58	29.189	22.36	0.420	4.70	75	0
40	10.42	29.532	22.65	0.391	4.38	69	2
59	10.28	29.859	22.92	0.371	4.16	66	4
78	10.24	29.884	22.95	0.365	4.09	65	5

CRUISE BLL 07 STATION 009 ELIZA ROCK, SE OF G-2

DATE 09/28/60 HR 1654 ZN 08 LAT 48-38.4N LONG 122-33.5W AREA BLL
 SDG 101M TIDE HT 06 5 STG F WSPD 09 DIR 330 WEA 04 SEA 2 BAR 18
 DRY 58.0 WET * RELHU * CL X AMT 0 SCD 05 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	12.13	28.777	21.77	0.462	5.17	85	16
5	11.94	29.088	22.04	0.457	5.12	84	12
10	10.60	29.510	22.60	0.422	4.73	75	3
20	10.44	29.683	22.76	0.389	4.36	69	3
30	10.44	29.688	22.77	0.375	4.20	67	2
50	10.37	29.737	22.82	0.372	4.17	66	2
69	10.26	29.923	22.98	0.355	3.98	63	1

CRUISE BLL 07 STATION 010 G-3

DATE 09/28/60 HR 1738 ZN 08 LAT 48-38.3N LONG 122-31.6W AREA BLL
 SDG 014M TIDE HT 06 2 STG F WSPD 09 DIR 330 WEA 04 SEA 2 BAR 18
 DRY 58.0 WET * RELHU * CL 1 AMT 1 SCD 06 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	11.76	28.987	22.00	0.473	5.30	86	8
2	11.71	28.996	22.01	0.476	5.33	87	9
4	10.91	29.172	22.29	0.433	4.85	78	5
7	10.62	29.313	22.45	0.413	4.63	74	4
10	10.50	29.465	22.58	0.395	4.42	70	3
13	10.52	29.459	22.57	0.396	4.44	70	3

CRUISE BLL 07 STATION 011 SAMISH BAY, NORTH END H-1

DATE 09/28/60 HR 1815 ZN 08 LAT 48-38.2N LONG 122-29.3W AREA SAM
 SDG 014M TIDE HT 06 2 STG R WSPD 10 DIR 330 WEA 04 SEA 2 BAR 17
 DRY 57.5 WET * RELHU * CL 1 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	11.82	29.278	22.21	0.470	5.26	86	5
2	11.81	29.280	22.22	0.470	5.26	86	6
4	11.66	29.289	22.25	0.459	5.14	84	7
7	11.18	29.382	22.40	0.460	5.15	83	6
10	11.24	29.460	22.45	0.396	4.44	72	5

CRUISE BLL 07 STATION 012 GOVERNORS POINT F-3

DATE 09/28/60 HR 1916 ZN 08 LAT 48-40.0N LONG 122-31.3W AREA BLL
 SDG 024M TIDE HT 06 5 STG R WSPD 07 DIR 350 WEA 04 SEA 2 BAR 17
 DRY 57.0 WET * RELHU * CL 1 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	12.44	29.222	22.06	0.497	5.57	92	4
2	12.43	29.222	22.06	0.496	5.56	92	4
4	12.40	29.218	22.06	0.498	5.58	92	5
7	11.79	29.218	22.17	0.475	5.32	87	8
10	11.17	29.327	22.36	0.409	4.58	74	5

CRUISE BLL 07 STATION 013 F-2

DATE 09/29/60 HR 0736 ZN 08 LAT 48-39.7N LONG 122-30.9W AREA BLL
 SDG 026M TIDE HT 01 5 STG R WSPD 12 DIR 330 WEA 04 SEA 2 BAR 15
 DRY 62.5 WET * RELHU * CL X AMT 0 SCD 05 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	12.08	28.661	21.69	0.428	4.79	78	
2	12.03	28.717	21.74	0.423	4.74	77	14
4	11.60	28.958	22.00	0.402	4.50	73	16
7	11.25	29.225	22.27	0.414	4.64	75	14
							8
10	10.98	29.368	22.43	0.396	4.44	71	
15	10.54	29.666	22.73	0.363	4.07	65	5
20	10.46	29.746	22.81	0.363	4.07	65	3
25	10.41	29.757	22.82	0.358	4.01	64	0

CRUISE BLL 07 STATION 014 REIL HARBOR F-1

DATE 09/29/60 HR 0816 ZN 08 LAT 48-40.3N LONG 122-36.7W AREA HPN
 SDG 022M TIDE HT 02 7 STG R WSPD 12 DIR 330 WEA 04 SEA 2 BAR 16
 DRY 55.5 WET * RELHU * CL X AMT 0 SCD 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	11.18	28.684	21.86	0.486	5.44	87	2
2	11.14	28.722	21.90	0.484	5.42	87	3
4	11.09	28.736	21.92	0.487	5.45	87	4
7	11.08	28.793	21.97	0.460	4.32	69	4
10	11.03	28.853	22.02	0.433	4.32	69	
15	10.88	29.112	22.25	0.386	4.32	69	3
20	10.46	29.700	22.77	0.362	4.05	65	4
							0

CRUISE BLL 07 STATION 015 HALE PASSAGE E-1

DATE 09/29/60 HR 0907 ZN 08 LAT 48-41.4N LONG 122-37.9W AREA HPN
 SDG 037M TIDE HT 04 5 STG R WSPD 15 DIR 330 WEA 04 SEA 2 BAR 16
 DRY 65.0 WET * RELHU * CL X AMT 0 SCD 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	11.38	27.911	21.23	0.530	5.94	95	
3	11.34	27.907	21.24	0.526	5.89	94	2
8	11.05	28.794	21.97	0.437	4.89	78	2
13	10.90	28.990	22.15	0.440	4.93	79	4
							4
18	10.80	29.409	22.49	0.248	2.78	44	
23	10.84	29.413	22.49	0.373	4.18	67	3
27	10.85	29.488	22.54	0.341	3.82	61	3
							2

CRUISE BLL 07 STATION 016 POINT FRANCES D-1

DATE 09/29/60 HR 0950 ZN 08 LAT 48-41.6N LONG 122-35.9W AREA BLL
 SDG 036M TIDE HT 06 2 STG R WSPD 10 DIR 330 WEA 04 SEA 2 BAR 16
 DRY 68.0 WET * RELHU * CL X AMT 0 SCD 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	12.16	26.065	19.67	0.407	4.56	73	11
2	12.18	26.688	20.15	0.390	4.37	71	14
5	10.84	29.620	22.65	0.286	3.20	51	3
10	10.50	29.757	22.81	0.350	3.92	62	2
15	10.32	29.795	22.87	0.267	2.99	47	2
20	10.29	29.868	22.93	0.288	3.23	51	2
25	---	29.904	---	0.316	3.54	--	2
29	---	29.976	---	0.307	3.44	--	2

CRUISE BLL 07 STATION 017 D-2

DATE 09/29/60 HR 1035 ZN 08 LAT 48-41.5N LONG 122-31.7W AREA BLL
 SDG 026M TIDE HT 07 5 STG R WSPD 10 DIR 330 WEA 04 SEA 2 BAR 16
 DRY * . WET * RELHU * CL X AMT 0 SCD 05 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	12.45	29.085	21.95	0.450	5.04	83	11
2	12.38	29.102	21.98	---	---	--	11
4	12.26	29.113	22.01	0.481	5.39	89	9
7	12.12	29.131	22.04	0.438	4.91	81	8
10	11.58	29.242	22.23	0.419	4.69	76	6
15	10.59	29.562	22.64	0.317	3.55	57	5
20	10.52	29.696	22.76	0.324	3.63	58	2
25	10.33	29.844	22.90	0.330	3.70	59	2

CRUISE BLL 07 STATION 018 D-3

DATE 09/29/60 HR 1117 ZN 08 LAT 48-41.9N LONG 122-31.0W AREA BLL
 SDG 024M TIDE HT 08 8 STG R WSPD 05 DIR 350 WEA 04 SEA 2 BAR 16
 DRY 68.0 WET * RELHU * CL X AMT 0 SCD 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	12.42	28.898	21.81	0.519	5.81	96	5
2	12.00	28.893	21.88	0.520	5.82	95	7
4	11.86	28.982	21.98	0.501	5.61	92	6
7	11.84	29.192	22.14	0.475	5.32	87	5
10	11.82	29.211	22.16	0.475	5.32	87	5
15	11.80	29.209	22.16	0.473	5.30	86	6
20	11.46	29.227	22.24	0.466	5.22	85	5
25	10.66	29.687	22.73	0.336	3.76	60	3

CRUISE BLL 07 STATION 019 POST POINT C-3

DATE 09/29/60 HR 1200 ZN 08 LAT 48-43.5N LONG 122-32.6W AREA BLL
 SDG 031M TIDE HT 10 0 STG R WSPD 06 DIR 240 WEA 04 SEA 2 BAR 16
 DRY 66.0 WET * RELHU * CL X AMT 0 SCD 06 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	12.77	28.985	21.81	0.514	5.76	96	7
2	11.49	28.948	22.01	0.516	5.78	93	7
5	11.55	29.174	22.18	0.478	5.35	87	5
10	11.55	29.354	22.32	0.437	4.89	80	5
15	10.78	29.522	22.58	0.396	4.44	71	5
20	10.56	29.718	22.77	0.286	3.20	51	3
25	10.40	29.809	22.87	0.340	3.81	60	2
30	10.35	29.906	22.95	0.301	3.37	54	3

CRUISE BLL 07 STATION 020 C-1

DATE 09/29/60 HR 1311 ZN 08 LAT 48-42.5N LONG 122-36.0W AREA BLL
 SDG 022M TIDE HT 10 7 STG H WSPD 09 DIR 330 WEA 04 SEA 2 BAR 15
 DRY 63.0 WET *. RELHU * CL 4 AMT 1 SCD 06 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	13.50	27.601	20.61	0.361	4.04	68	46
1	13.24	27.681	20.72	0.353	3.95	66	45
2	11.47	29.435	22.40	0.314	3.52	57	10
4	10.94	29.632	22.64	0.297	3.33	53	2
7	10.70	29.756	22.78	0.232	2.60	42	1
10	10.60	29.803	22.83	0.250	2.80	45	2
15	10.42	29.819	22.87	0.299	3.35	53	2
20	10.36	29.842	22.90	0.272	3.05	48	4

CRUISE BLL 07 STATION 021 C-2

DATE 09/29/60 HR 1353 ZN 08 LAT 48-42.9N LONG 122-34.0W AREA BLL
 SDG 027M TIDE HT 10.7 STG F WSPD 03 DIR 320 WEA 04 SEA 1 BAR 15
 DRY 67.0 WET *. RELHU * CL 4 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	13.46	27.539	20.57	0.358	4.01	67	84
2	12.42	28.754	21.70	0.452	5.06	84	20
4	11.93	29.106	22.06	0.504	5.64	92	8
7	11.16	29.376	22.40	0.416	4.66	75	3
10	10.62	29.589	22.66	0.392	4.39	70	5
15	10.40	29.791	22.85	0.334	3.74	59	2
20	10.34	29.833	22.89	0.330	3.70	59	2
25	10.29	29.857	22.92	0.362	4.05	64	2

CRUISE BLL 07 STATION 022 B-2

DATE 09/29/60 HR 1445 ZN 08 LAT 48-44.3N LONG 122-33.0W AREA BLL
 SDG 020M TIDE HT 10.0 STG F WSPD 06 DIR 290 WEA 04 SEA 2 BAR 14
 DRY 63.0 WET *. RELHU * CL 4 AMT 2 SCD 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	13.32	29.103	21.80	0.400	4.48	75	69
1	13.37	29.098	21.79	0.388	4.35	73	66
2	12.82	29.095	21.89	0.399	4.47	75	74
4	11.99	29.271	22.18	0.496	5.56	91	7
7	11.56	29.302	22.28	0.468	5.24	85	6
10	11.28	29.424	22.42	0.428	4.79	78	5
15	10.71	29.658	22.70	0.357	4.00	64	3

CRUISE BLL 07 STATION 023 B-1

DATE 09/29/60 HR 1524 ZN 08 LAT 48-44.0N LONG 122-35.5W AREA BLL
 SDG 016M TIDE HT 09.2 STG F WSPD 05 DIR 270 WEA 04 SEA 2 BAR 14
 DRY 79.0 WET *. RELHU * CL 4 AMT 1 SCD 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	12.85	28.907	21.74	0.367	4.11	68	18
1	12.79	28.940	21.77	0.362	4.05	68	19
2	11.82	29.279	22.21	0.297	3.33	54	9
4	10.74	29.658	22.69	0.342	3.83	61	3
7	10.54	29.712	22.77	0.339	3.80	51	3
10	--.--	29.754	--.--	0.287	3.21	--	1
13	10.41	29.777	22.84	0.260	2.91	46	1

CRUISE BLL 07 STATION 024 A-1

DATE 09/29/60 HR 1558 ZN 08 LAT 48-44.3N LONG 122-36.2W AREA BLL
 SDG 011M TIDE HT 08.5 STG F WSPD 03 DIR 310 WEA 04 SEA 1 BAR 13
 DRY 60.0 WET *. RELHU * CL 4 AMT 1 SCD 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	12.70	29.147	21.95	0.379	4.24	71	14
1	12.28	29.141	22.02	0.380	4.26	70	16
2	11.96	29.218	22.14	0.379	4.24	70	11
4	11.04	29.552	22.56	0.352	3.94	63	5
6	10.94	29.584	22.60	0.330	3.70	59	2
8	10.78	29.652	22.68	0.248	2.78	44	1

CRUISE BLL 07 STATION 025 A-2

DATE 09/29/60 HR 1631 ZN 08 LAT 48-45.2N LONG 122-34.8W AREA BLL
 SDG 015M TIDE HT 07.8 STG F WSPD 03 DIR 250 WEA 04 SEA 0 BAR 13
 DRY 62.0 WET *. RELHU * CL 4 AMT 1 SCD 06 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	14.27	27.237	20.18	0.395	4.42	75	
1	12.56	28.998	21.86	0.424	4.75	79	36
2	12.15	29.186	22.08	0.422	4.73	78	24
4	11.66	29.202	22.18	0.460	5.15	84	35
							8
6	11.31	29.409	22.40	0.399	4.47	72	
8	11.13	29.520	22.52	0.376	4.21	68	5
							5

CRUISE BLL 07 STATION 026 CEMENT PLANT A-3

DATE 09/29/60 HR 1709 ZN 08 LAT 48-45.1N LONG 122-32.2W AREA BLL
 SDG 011M TIDE HT 07.0 STG F WSPD 00 DIR WEA 04 SEA 0 BAR 13
 DRY 62.0 WET *. RELHU * CL X AMT 0 SCD 03 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	13.95	27.913	20.76	0.371	4.16	70	
1	13.23	28.861	21.63	0.346	3.88	65	53
2	11.96	29.247	22.16	0.393	4.40	72	71
4	11.56	29.350	22.31	0.413	4.63	75	11
							7
6	11.26	29.404	22.41	0.404	4.52	73	
8	11.07	29.513	22.52	0.375	4.20	68	6
							7

CRUISE BLL 07 STATION 027 PULP MILL B-3

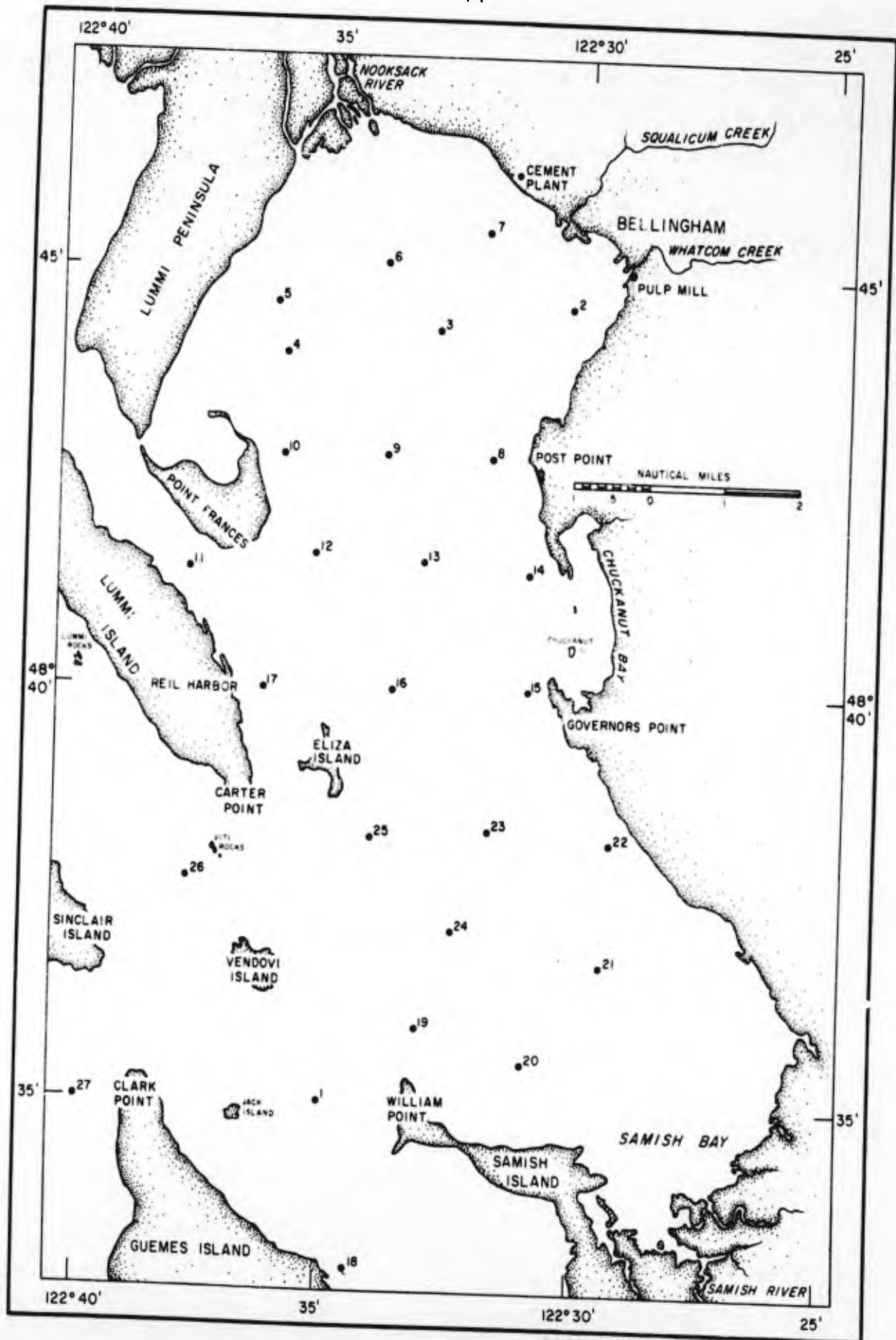
DATE 09/29/60 HR 1741 ZN 08 LAT 48-44.6N LONG 122-30.2W AREA BLL
 SDG 011M TIDE HT 06.5 STG F WSPD 00 DIR WEA 04 SEA 0 BAR 12
 DRY 61.0 WET *. RELHU * CL 4 AMT 1 SCD 02 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	15.58	28.413	20.81	0.055	0.62	11	
1	13.88	28.846	21.49	0.381	4.27	73	434
2	12.51	28.914	21.81	0.511	5.72	95	134
4	12.40	29.087	21.96	0.519	5.81	96	34
							11
6	12.40	29.147	22.01	0.467	5.23	86	
8	12.27	29.384	22.21	0.413	4.63	76	22
							8

CRUISE BLL 07 STATION 028 G-3

DATE 09/29/60 HR 1914 ZN 08 LAT 48-38.3N LONG 122-31.6W AREA BLL
 SDG 014M TIDE HT 05.8 STG R WSPD 10 DIR 300 WEA 04 SEA 1 BAR 12
 DRY 57.0 WET *. RELHU * CL 4 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L	SATN.	SSL
0	11.21	28.396	21.64	0.507	5.68	91	3
2	11.06	28.456	21.71	0.492	5.51	88	4
4	10.98	28.619	21.85	0.470	5.26	84	3
7	10.60	29.200	22.36	-.---	---.---	---	5
10	10.56	29.366	22.50	0.394	4.41	70	2
13	10.52	29.476	22.59	0.364	4.08	65	5



OCEANOGRAPHIC STATION LOCATIONS
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CRUISE BLL 08 STATION 001 WILLIAMS POINT G-6

DATE 11/02/60 HR 1710 ZN 08 LAT 48-35.2N LONG 122-35.0W AREA BLL
 SDG 030M TIDE HT 10.8 STG F WSPD 08 DIR 325 WEA 01 SEA 2 BAR 33
 DRY 49.0 WET *. RELHU * CL 0 AMT 3 SCD * SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.40	30.165	23.30	0.452	5.06	79	3
2	9.41	30.163	23.30	0.455	5.10	79	4
5	9.39	30.168	23.31	0.451	5.05	79	1
10	9.40	30.186	23.32	0.448	5.02	78	1
15	9.38	30.249	23.37	0.449	5.03	78	2
20	9.34	30.360	23.46	0.448	5.0	78	2
25	9.28	30.375	23.48	0.448	5.02	78	0

CRUISE BLL 08 STATION 002 PULP MILL B-3

DATE 11/03/60 HR 0723 ZN 08 LAT 48-44.6N LONG 122-30.4W AREA BLL
 SDG 010M TIDE HT 10.0 STG F WSPD 05 DIR 050 WEA 01 SEA 1 BAR 30
 DRY 40.0 WET *. RELHU * CL 1 AMT 3 SCD * SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.83	28.572	22.00	0.347	3.89	60	276
1	9.76	29.269	22.55	0.480	5.38	84	13
2	9.73	29.679	22.87	0.452	5.06	79	7
4	9.61	29.886	23.05	0.464	5.20	81	3
6	9.70	29.957	23.09	0.444	4.97	78	2
8	9.50	30.178	23.30	0.402	4.50	70	2

CRUISE BLL 08 STATION 003 B-2

DATE 11/03/60 HR 0800 ZN 08 LAT 48-44.2N LONG 122-32.8W AREA BLL
 SDG 024M TIDE HT 09.0 STG F WSPD 09 DIR 030 WEA 02 SEA 1 BAR 30
 DRY 42.0 WET *. RELHU * CL 5 AMT 6 SCD 02 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.11	27.338	21.14	0.438	4.91	74	71
1	9.54	27.416	21.14	0.442	4.95	76	78
2	9.62	29.552	22.79	0.491	5.50	86	7
4	9.71	29.754	22.93	0.458	5.13	80	0
7	9.64	29.906	23.06	0.459	5.14	80	3
10	9.56	30.060	23.20	0.452	5.06	79	4
15	9.48	30.237	23.35	0.428	4.79	75	3

CRUISE BLL 08 STATION 004 B-1

DATE 11/03/60 HR 0842 ZN 08 LAT 48-44.0N LONG 122-35.4W AREA BLL
 SDG 022M TIDE HT 08.0 STG F WSPD 07 DIR 040 WEA 03 SEA 1 BAR 31
 DRY 42.5 WET * RELHU * CL 5 AMT 6 SCD 01 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.01	17.179	13.26	0.532	5.96	84	
1	9.24	25.193	19.46	0.522	5.85	88	38
2	9.70	28.448	21.92	0.500	5.60	87	34
4	9.77	29.476	22.71	0.478	5.35	84	12
							4
7	9.61	29.743	22.94	0.468	5.24	82	
10	9.54	30.102	23.23	0.447	5.01	78	5
13	9.44	30.274	23.38	0.425	4.76	74	3
							4

CRUISE BLL 08 STATION 005 CEMENT PLANT A-1

DATE 11/03/60 HR 0915 ZN 08 LAT 48-44.6N LONG 122-36.2W AREA BLL
 SDG 008M TIDE HT 07.1 STG F WSPD 05 DIR 040 WEA 02 SEA 1 BAR 32
 DRY 44.0 WET * RELHU * CL 5 AMT 5 SCD 01 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.60	21.144	16.39	0.550	6.16	89	
1	9.42	26.167	20.19	0.500	5.60	85	41
2	9.74	28.920	22.28	0.478	5.35	83	30
4	9.70	29.552	22.78	0.461	5.16	81	14
							7
6	9.64	29.590	22.82	0.443	4.96	77	
8	9.64	29.731	22.93	0.455	5.10	80	6
							6

CRUISE BLL 08 STATION 006 A-2

DATE 11/03/60 HR 1007 ZN 08 LAT 48-45.1N LONG 122-34.0W AREA BLL
 SDG 010M TIDE HT 05.8 STG F WSPD 10 DIR WEA 01 SEA 1 BAR 34
 DRY 45.0 WET * RELHU * CL 5 AMT 2 SCD 01 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.00	24.560	19.00	0.493	5.52	82	
1	9.36	25.811	19.92	0.494	5.53	84	67
2	9.74	28.582	22.02	0.492	5.51	86	58
4	9.72	29.661	22.86	0.478	5.35	84	14
							4
6	9.64	29.814	22.99	0.461	5.16	81	
8	9.62	29.848	23.02	0.463	5.19	81	4
							5

CRUISE BLL 08 STATION 007 A-3

DATE 11/03/60 HR 1036 ZN 08 LAT 48-45.5N LONG 122-31.9W AREA BLL
 SDG 010M TIDE HT 05.3 STG F WSPD 05 DIR 030 WEA 02 SEA 1 BAR 34
 DRY 45.0 WET * RELHU * CL 4 AMT 1 SCD 02 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	SSL
0	9.20	26.548	20.52	0.481 5.39 82	39
1	9.80	29.218	22.50	0.440 4.93 77	7
2	9.84	29.686	22.86	0.438 4.91 77	5
4	9.84	29.825	22.97	0.354 3.96 62	10
6	9.78	29.873	23.02	0.429 4.80 75	7
8	9.82	29.965	23.08	0.423 4.74 74	6

CRUISE BLL 08 STATION 008 C-3

DATE 11/03/60 HR 1116 ZN 08 LAT 48-42.8N LONG 122-32.0W AREA BLL
 SDG 031M TIDE HT 04.8 STG F WSPD 04 DIR 030 WEA 04 SEA 1 BAR 34
 DRY 45.0 WET * RELHU * CL 4 AMT 1 SCD 06 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	SSL
0	9.79	29.430	22.67	0.450 5.04 79	20
2	9.72	29.928	23.07	0.454 5.08 80	6
5	9.58	30.088	23.21	0.455 5.10 80	5
10	9.54	30.177	23.29	0.450 5.04 79	2
15	9.48	30.275	23.38	0.427 4.78 75	2
20	9.37	30.428	23.51	0.395 4.42 69	2
25	9.36	30.452	23.53	0.391 4.38 68	3
30	9.36	30.483	23.56	0.365 4.09 64	3

CRUISE BLL 08 STATION 009 C-2

DATE 11/03/60 HR 1156 ZN 08 LAT 48-42.8N LONG 122-33.9W AREA BLL
 SDG 030M TIDE HT 04.8 STG R WSPD 00 DIR 000 WEA 00 SEA BAR 34
 DRY 46.0 WET * RELHU * CL AMT 0 SCD 02 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	SSL
0	9.29	20.887	16.10	0.496 5.56 81	57
2	9.54	28.552	22.03	0.393 4.40 68	121
4	9.68	29.121	22.45	0.445 4.98 78	50
7	9.71	30.018	23.14	0.453 5.08 80	5
10	9.61	30.174	23.28	0.437 4.89 77	3
15	9.36	30.425	23.51	0.383 4.29 67	0
20	9.28	30.446	23.54	0.385 4.31 67	0
25	9.34	30.480	23.56	0.375 4.20 65	2

CRUISE BLL 08 STATION 010 C-1

DATE 11/03/60 HR 1244 ZN 08 LAT 48-32.8N LONG 122-36.0W AREA BLL
 SDG 027M TIDE HT 05.5 STG R WSPD 08 DIR 310 WEA 10 SEA BAR 34
 DRY 48.0 WET * RELHU * CL 1 AMT 1 SCD 01 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.26	17.656	13.60	0.580	6.50	93	39
1	9.51	26.070	20.10	0.512	5.73	87	42
2	9.68	29.611	22.83	0.475	5.32	83	6
4	9.72	29.894	23.04	0.466	5.22	82	9
7	9.60	29.991	23.14	0.492	5.51	86	5
10	9.54	29.978	23.14	0.480	5.38	84	3
15	9.48	30.336	23.42	0.373	4.18	65	2
20	9.36	30.520	23.58	0.350	3.92	61	2

CRUISE BLL 08 STATION 011 E-1

DATE 11/03/60 HR 1345 ZN 08 LAT 48-41.6N LONG 122-38.2W AREA BLL
 SDG 035M TIDE HT 07.3 STG R WSPD 10 DIR 320 WEA 10 SEA 1 BAR 34
 DRY 47.0 WET * RELHU * CL 1 AMT 1 SCD 02 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.46	24.956	19.24	0.527	5.90	89	30
5	9.40	29.564	22.83	0.437	4.89	76	8
10	9.36	29.832	23.05	0.429	4.80	75	5
15	9.36	29.912	23.11	0.418	4.68	73	7
20	9.35	30.084	23.25	0.412	4.61	72	0
25	9.35	30.078	23.24	0.413	4.63	72	3

CRUISE BLL 08 STATION 012 D-1

DATE 11/03/60 HR 1425 ZN 08 LAT 48-41.5N LONG 122-35.2W AREA BLL
 SDG 029M TIDE HT 08.4 STG R WSPD 10 DIR 000 WEA 10 SEA 2 BAR 34
 DRY 48.0 WET * RELHU * CL 1 AMT 1 SCD 02 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.52	24.082	18.55	0.500	5.60	84	56
2	9.48	28.582	22.06	0.445	4.98	77	14
5	9.58	30.032	23.17	0.443	4.96	78	2
10	9.46	30.139	23.27	0.416	4.66	73	2
15	9.44	30.411	23.49	0.384	4.30	67	1
20	9.38	30.469	23.54	0.381	4.27	67	2
25	9.35	30.550	23.61	0.339	3.80	59	1
30	9.37	30.559	23.61	0.334	3.74	58	3

CRUISE BLL 08 STATION 013 D-2

DATE 11/03/60 HR 1459 ZN 08 LAT 48-41.5N LONG 122-33.2W AREA BLL
 SDG 029M TIDE HT 09.4 STG R WSPD 10 DIR 310 WEA 10 SEA 2 BAR 32
 DRY 48.0 WET * RELHU * CL 1 AMT 1 SCD 02 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.90	28.408	21.86	0.429	4.80	75	75
2	9.78	28.621	22.04	0.456	5.11	79	76
4	9.55	29.711	22.93	0.452	5.06	79	6
7	9.59	30.110	23.23	0.432	4.84	76	4
10	9.44	30.191	23.32	0.413	4.63	72	3
15	9.33	30.366	23.47	0.396	4.44	69	4
20	9.30	30.400	23.50	0.396	4.44	69	0
25	9.30	30.406	23.51	0.396	4.44	69	3

CRUISE BLL 08 STATION 014 D-3

DATE 11/03/60 HR 1535 ZN 08 LAT 48-41.3N LONG 122-30.9W AREA BLL
 SDG 027M TIDE HT 10.3 STG R WSPD 10 DIR 320 WEA 10 SEA 2 BAR 31
 DRY 48.0 WET * RELHU * CL 1 AMT 1 SCD 06 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.58	29.875	23.05	0.480	5.38	84	4
2	9.62	29.882	23.05	0.478	5.35	84	6
4	9.58	29.885	23.06	0.478	5.35	84	6
7	9.55	29.959	23.12	0.471	5.28	82	3
10	9.52	30.153	23.27	0.441	4.94	77	3
15	9.42	30.351	23.44	0.406	4.55	71	0
20	9.32	30.406	23.50	0.396	4.44	69	1
25	9.33	30.445	23.53	0.391	4.38	68	3

CRUISE BLL 08 STATION 015 F-3

DATE 11/03/60 HR 1610 ZN 08 LAT 48-38.8N LONG 122-31.0W AREA BLL
 SDG 026M TIDE HT 11.0 STG R WSPD 09 DIR 320 WEA 10 SEA 2 BAR 31
 DRY 48.0 WET * RELHU * CL 0 AMT 0 SCD 03 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.62	29.216	22.53	0.478	5.35	83	20
2	9.68	29.214	22.52	0.481	5.39	84	20
4	9.53	29.801	23.00	0.475	5.32	83	8
7	9.57	30.151	23.27	0.436	4.88	76	4
10	9.56	30.232	23.33	0.426	4.77	75	0
15	9.43	30.371	23.46	0.399	4.47	70	3
20	9.36	30.393	23.49	0.377	4.22	66	2

CRUISE BLL 08 STATION 016 F-2

DATE 11/03/60 HR 1645 ZN 08 LAT 48-39.8N LONG 122-33.4W AREA BLL
 SDG 027M TIDE HT 11.2 STG H WSPD 10 DIR 310 WEA 02 SEA 2 BAR 31
 DRY 47.0 WET * RELHU * CL AMT 0 SCD * SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.51	28.024	21.62	0.478	5.35	82	31
2	9.50	28.047	21.64	0.469	5.25	81	30
4	9.39	29.534	22.81	0.438	4.91	76	9
7	9.46	29.672	22.91	0.433	4.85	75	8
10	9.38	30.078	23.24	0.419	4.69	73	4
15	9.34	30.266	23.39	0.407	4.56	71	2
20	9.26	30.314	23.44	0.403	4.63	72	1
25	9.29	30.322	23.44	0.409	4.58	71	2

CRUISE BLL 08 STATION 017 REIL HARBOR F-1

DATE 11/03/60 HR 1726 ZN 08 LAT 48-39.9N LONG 122-36.4W AREA BLL
 SDG 022M TIDE HT 10.8 STG F WSPD 07 DIR 320 WEA 10 SEA 1 BAR 32
 DRY 46.0 WET * RELHU * CL AMT 0 SCD * SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.37	23.665	18.25	0.529	5.92	88	44
2	9.40	29.147	22.51	0.444	4.97	77	12
4	9.34	29.207	22.57	0.443	4.96	77	7
7	9.34	29.605	22.88	0.435	4.87	76	7
10	9.30	29.696	22.95	0.426	4.77	74	7
15	9.28	30.136	23.30	0.409	4.58	71	5
20	9.24	30.280	23.42	0.409	4.58	71	0

CRUISE BLL 08 STATION 018 J-1

DATE 11/04/60 HR 0718 ZN 08 LAT 48-32.9N LONG 122-34.5W AREA PAD
 SDG 073M TIDE HT 11.2 STG F WSPD 10 DIR 010 WEA 02 SEA 1 BAR 32
 DRY 43.0 WET * RELHU * CL AMT 0 SCD * SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.16	28.716	22.21	0.479	5.36	82	4
5	9.24	28.748	22.22	0.468	5.24	81	8
15	9.28	28.755	22.22	0.451	5.05	78	4
25	9.30	29.765	23.01	0.437	4.89	76	
45	9.35	29.915	23.12	0.422	4.73	73	
65	9.32	30.258	23.39	0.413	4.63	72	3
70	9.35	30.263	23.39	0.411	4.60	72	2

CRUISE BLL 08 STATION 019 G-5

DATE 11/04/60 HR 0807 ZN 08 LAT 48-35.7N LONG 122-33.1W AREA BLL
 SDG 042M TIDE HT 10.4 STG F WSPD 07 DIR 000 WEA 10 SEA 2 BAR 31
 DRY 42.0 WET * RELHU * CL 0 AMT 0 SCD 05 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.10	28.855	22.33	0.459	5.14	79	5
2	9.14	28.852	22.32	0.464	5.02	77	7
5	9.24	29.099	22.50	0.448	5.20	80	6
10	9.26	29.173	22.55	0.460	5.15	79	5
15	9.26	29.226	22.59	0.464	5.20	80	9
20	9.26	29.237	22.60	0.463	5.19	80	7
25	9.22	29.259	22.62	0.469	5.25	81	6
30	9.22	29.406	22.74	0.474	5.31	82	7

CRUISE BLL 08 STATION 020 SAMMISH BAY, SE OF H-3

DATE 11/04/60 HR 0840 ZN 08 LAT 48-35.5N LONG 122-31.2W AREA SAM
 SDG 018M TIDE HT 09.5 STG F WSPD 04 DIR 000 WEA 10 SEA 2 BAR 32
 DRY 42.0 WET * RELHU * CL 1 AMT 1 SCD 05 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.99	28.523	22.09	0.472	5.29	81	10
2	9.16	28.785	22.26	0.466	5.22	80	8
4	9.14	28.911	22.37	0.467	5.23	80	9
7	9.16	29.007	22.44	0.475	5.32	82	9
10	9.14	29.027	22.46	0.480	5.38	83	11

CRUISE BLL 08 STATION 021 SAMMISH BAY, MIDDLE OF H-2

DATE 11/04/60 HR 0918 ZN 08 LAT 48-36.8N LONG 122-29.5W AREA SAM
 SDG 015M TIDE HT 08.5 STG F WSPD 02 DIR 320 WEA 10 SEA 1 BAR 32
 DRY 45.0 WET * RELHU * CL 1 AMT 1 SCD 04 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.68	29.594	22.97	0.522	5.85	89	6
2	8.71	29.599	22.96	0.518	5.80	89	4
4	9.03	29.604	22.92	0.513	5.75	88	3
7	9.28	29.802	23.04	0.501	5.61	87	2
10	9.36	29.860	23.07	0.482	5.40	84	2
13	9.38	29.982	23.16	0.466	5.22	81	1

CRUISE BLL 08 STATION 022 H-1

DATE 11/04/60 HR 0943 ZN 08 LAT 48-38.1N LONG 122-29.4W AREA SAM
 SDG 013M TIDE HT 08.0 STG F WSPD 08 DIR 320 WEA 10 SEA 1 BAR 32
 DRY 44.0 WET * RELHU * CL 1 AMT 1 SCD 03 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.84	29.276	22.69	0.530	5.94	91	2
2	8.86	29.290	22.70	0.527	5.90	90	6
4	8.92	29.413	22.79	0.520	5.82	89	4
7	9.29	29.763	23.01	0.519	5.81	90	7
10	9.25	29.880	23.10	0.487	5.45	85	6

CRUISE BLL 08 STATION 023 G-3

DATE 11/04/60 HR 1008 ZN 08 LAT 48-38.2N LONG 122-31.4W AREA BLL
 SDG 015M TIDE HT 07.4 STG F WSPD 07 DIR 320 WEA 10 SEA 1 BAR 32
 DRY 45.0 WET * RELHU * CL 1 AMT 1 SCD 04 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.34	29.237	22.59	0.463	5.19	80	13
2	9.25	29.233	22.60	0.453	5.07	78	10
4	9.26	29.407	22.73	0.437	4.89	76	6
7	9.27	29.805	23.04	0.425	4.76	74	2
10	9.36	29.863	23.07	0.420	4.70	73	3
13	9.41	30.024	23.19	0.416	4.66	72	3

CRUISE BLL 08 STATION 024 G-4

DATE 11/04/60 HR 1040 ZN 08 LAT 48-37.1N LONG 122-32.4W AREA BLL
 SDG 022M TIDE HT 06.5 STG F WSPD 07 DIR 320 WEA 10 SEA 1 BAR 32
 DRY 45.0 WET * RELHU * CL 1 AMT 1 SCD 04 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.17	28.805	22.28	0.462	5.17	79	14
2	9.19	28.801	22.27	0.465	5.21	80	14
4	9.20	29.397	22.73	0.437	4.89	75	5
7	9.25	29.719	22.98	0.425	4.76	74	3
10	9.28	29.823	23.05	0.422	4.73	73	3
14	9.30	29.874	23.09	0.418	4.68	73	2
18	9.29	29.904	23.12	0.414	4.64	72	2

CRUISE BLL 08 STATION 025 ELIZA ROCK, SE OF G-2

DATE 11/04/60 HR 1121 ZN 08 LAT 48-38.2N LONG 122-33.9W AREA BLL
 SDG 113M TIDE HT 05.6 STG F WSPD 08 DIR 330 WEA 10 SEA 1 BAR 32
 DRY 45.0 WET * RELHU * CL 1 AMT 2 SCD 03 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.14	27.783	21.49	0.483	5.41	82	25
5	9.15	28.821	22.29	0.452	5.06	78	18
10	9.21	29.698	22.97	0.425	4.76	74	2
20	9.30	29.973	23.17	0.423	4.74	74	3
30	9.35	29.990	23.17	0.413	4.63	72	5
50	9.34	30.108	23.27	0.411	4.60	72	3
70	9.32	30.351	23.46	0.383	4.29	67	4

CRUISE BLL 08 STATION 026 VITI ROCKS G-1

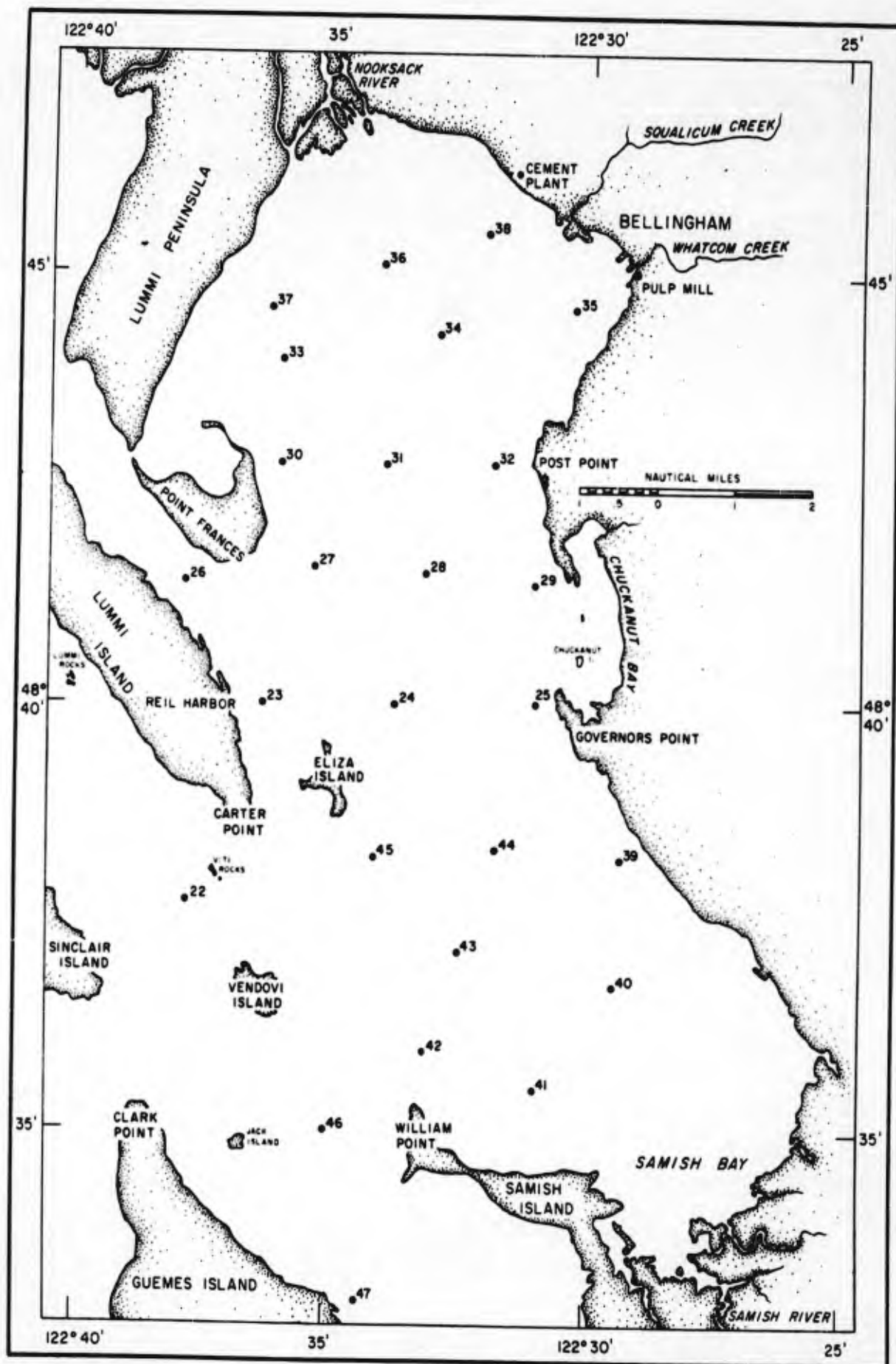
DATE 11/04/60 HR 1206 ZN 08 LAT 48-37.6N LONG 122-37.6W AREA BEL
 SDG 097M TIDE HT 05.3 STG L WSPD 09 DIR 320 WEA 10 SEA 1 BAR 32
 DRY 47.0 WET * RELHU * CL 1 AMT 1 SCD 06 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.29	28.956	22.38	0.435	4.87	75	1
5	9.24	29.116	22.51	0.423	4.74	73	2
10	9.24	29.424	22.75	0.422	4.73	73	2
20	9.25	29.579	22.67	0.422	4.73	73	2
30	9.29	29.878	23.10	0.417	4.67	72	3
40	9.30	29.860	23.08	0.417	4.67	72	0
59	9.24	30.068	23.25	0.409	4.58	71	2
79	9.28	30.105	23.27	0.409	4.58	71	1

CRUISE BLL 08 STATION 027 BELLINGHAM CHANNEL K-1

DATE 11/04/60 HR 1258 ZN 08 LAT 48-34.8N LONG 122-39.8W AREA BEL
 SDG 079M TIDE HT 05.3 STG R WSPD 12 DIR 320 WEA 10 SEA 2 BAR 32
 DRY 47.0 WET * RELHU * CL 1 AMT 1 SCD 05 SPOB

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.26	29.011	22.43	0.448	5.02	77	2
5	9.28	29.028	22.43	0.447	5.01	66	4
10	9.23	29.008	22.43	0.443	4.96	76	3
18	9.23	29.137	22.53	0.438	4.91	76	3
20	9.25	29.113	22.51	0.439	4.92	76	3
38	9.23	29.295	22.65	0.437	4.89	75	3
63	9.20	29.570	22.87	0.430	4.82	74	4
88	9.23	29.813	23.05	0.425	4.76	74	3



OCEANOGRAPHIC STATION LOCATIONS
BLL-09 BB-272 16-17 DEC. 1960

CRUISE BB 272 STATION 022 VITI ROCKS G-1

DATE 12/16/60 HR 0323 ZN 08 LAT 48-37.4N LONG 122-37.4W AREA BEL
SDG 099M TIDE HT 07.7 STG R WSPD 09 DIR 000 WEA 02 SEA 1 BAR 21
DRY 38.1 WET 35.2 RELHU 76 CL AMT 0 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.05	29.807	23.22	0.497	5.57	84	2.76	
2	8.02	29.814	23.23	0.494	5.53	83	2.82	4
5	8.06	29.835	23.24	0.494	5.53	83	2.72	6
10	8.04	29.864	23.27	0.491	5.50	83	2.83	5
20	8.11	29.971	23.34	0.486	5.44	82	2.79	
29	8.14	30.004	23.36	0.483	5.41	82	2.77	4
39	8.14	30.005	23.36	0.483	5.41	82	2.79	2
69	8.15	30.018	23.37	0.480	5.38	81	2.71	3
78	8.15	30.032	23.38	0.480	5.38	81	2.74	1

CRUISE BB 272 STATION 023 REIL HARBOR F-1

DATE 12/16/60 HR 0422 ZN 08 LAT 48-40.1N LONG 122-35.2W AREA BLL
SDG 022M TIDE HT 08.0 STG H WSPD 04 DIR 175 WEA 02 SEA 1 BAR 21
DRY 35.0 WET 31.5 RELHU 68 CL AMT 0 SCD * SPOB SST

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	5.23	21.605	17.10	0.614	6.88	91	2.47	
2	6.88	27.143	21.29	0.556	6.23	90	2.70	4
4	7.91	29.393	22.92	0.513	5.75	86	2.80	1
7	7.96	29.562	23.04	0.502	5.62	84	2.79	2
10	8.04	29.714	23.15	0.499	5.59	84	2.73	7
15	8.24	29.913	23.28	0.485	5.43	82	2.83	4
20	8.24	29.924	23.29	0.482	5.40	82	2.73	3

CRUISE BB 272 STATION 024 F-2

DATE 12/16/60 HR 0514 ZN 08 LAT 48-29.2N LONG 122-33.7W AREA BLL
SDG 027M TIDE HT 07.8 STG F WSPD 04 DIR 175 WEA 02 SEA 1 BAR 21
DRY 35.0 WET 31.5 RELHU CL X AMT SCD * SPOB SST

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	7.59	29.522	23.06	0.534	5.98	89	2.80	
2	7.66	29.520	23.05	0.533	5.97	89	2.75	11
4	7.66	29.523	23.05	0.532	5.96	89	2.76	12
7	8.05	29.661	23.11	0.516	5.78	87	2.72	11
10	8.09	29.713	23.14	0.508	5.69	86	2.73	
15	8.23	29.912	23.28	---	---	---	2.80	7
20	8.24	29.953	23.31	0.478	5.35	81	2.76	3
25	8.24	30.020	23.36	0.475	5.32	81	2.84	2

CRUISE BB 272 STATION 025 GOVERNORS POINT F-3

DATE 12/16/60 HR 0614 ZN 08 LAT 48-39.8N LONG 122-30.8W AREA BLL
 SDG 022M TIDE HT 07.2 STG F WSPD 00 DIR WEA 03 SEA 1 BAR 21
 DRY 35.0 WET 31.5 RELHU 60 CL 4 AMT 1 SCD * SPOB SST

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	7.62	29.663	23.17	0.542	6.07 90	2.88	6
2	7.60	29.664	23.17	0.537	6.01 90	2.88	7
4	7.60	29.675	23.18	0.530	5.94 88	2.93	5
7	7.58	29.668	23.18	0.519	5.81 87	2.94	5
10	7.57	29.667	23.18	0.519	5.81 87	2.92	4
15	8.20	29.831	23.22	0.497	5.57 84	2.77	5
16	8.24	29.882	23.25	0.479	5.36 81	2.85	2
21	8.29	29.886	23.25	0.472	5.29 80	2.95	3

CRUISE BB 272 STATION 026 HALE PASSAGE, S END OF E-1

DATE 12/16/60 HR 0806 ZN 08 LAT 48-41.4N LONG 122-37.9W AREA HLN
 SDG 037M TIDE HT 06.0 STG L WSPD 05 DIR 355 WEA 03 SEA 1 BAR 21
 DRY 34.5 WET 31.0 RELHU 68 CL 3 AMT 2 SCD 20 SPOB SST

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	7.78	29.038	22.66	0.514	5.76 86	2.82	8
2	7.88	29.251	22.81	0.508	5.69 85	2.85	9
5	7.99	29.434	22.94	0.505	5.66 85	2.88	8
10	8.14	29.711	23.13	0.494	5.53 83	2.90	9
15	8.18	29.764	23.17	0.489	5.48 83	2.88	5
20	8.19	29.782	23.18	0.487	5.45 82	2.90	4
25	8.19	29.827	23.22	0.484	5.42 82	2.84	4
30	8.23	29.871	23.25	0.478	5.35 81	2.84	1

CRUISE BB 272 STATION 027 POINT FRANCES D-1

DATE 12/16/60 HR 0856 ZN 08 LAT 48-41.6N LONG 122-35.4W AREA BLL
 SDG 031M TIDE HT 06.1 STG R WSPD 05 DIR 355 WEA 03 SEA 1 BAR 21
 DRY 34.7 WET 32.2 RELHU 77 CL 4 AMT 2 SCD 27 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	6.40	27.279	21.45	0.533	5.97 85	2.52	26
2	7.62	28.987	22.64	0.506	5.67 84	2.84	8
4	7.81	29.227	22.80	0.502	5.62 84	2.88	11
7	7.96	29.461	22.96	0.498	5.58 84	2.80	9
10	8.12	29.728	23.15	0.484	5.42 82	2.75	5
15	8.14	29.764	23.17	0.482	5.40 81	2.76	2
19	8.16	29.818	23.21	0.482	5.40 82	2.71	3
24	8.20	29.861	23.24	0.480	5.38 81	2.69	3
29	8.20	29.889	23.26	0.480	5.38 81	2.81	-

CRUISE BB 272 STATION 028 D-2

DATE 12/16/60 HR 1008 ZN 08 LAT 48-41.5N LONG 122-33.2W AREA BLL
 SDG 028M TIDE HT 06.7 STG R WSPD 00 DIR WEA 03 SEA 1 BAR 22
 DRY 37.1 WET 35.4 RELHU 87 CL 4 AMT 5 SCD 33 SPOB SST

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	7.39	29.415	23.00	0.534	5.98 88	2.76	14
2	7.37	29.412	23.00	0.534	5.98 88	2.77	14
4	7.78	29.551	23.06	0.534	5.98 89	2.77	13
7	7.99	29.650	23.11	0.528	5.91 89	2.80	10
10	8.03	29.689	23.13	0.527	5.90 89	2.83	7
15	8.18	29.806	23.20	0.496	5.56 84	2.88	5
20	8.27	29.900	23.26	0.479	5.36 81	2.80	2
25	8.28	29.935	23.29	0.471	5.28 80	2.81	2

CRUISE BB 272 STATION 029 D-3

DATE 12/16/60 HR 1047 ZN 08 LAT 48-41.4N LONG 122-30.9W AREA BLL
 SDG 027M TIDE HT 07.5 STG R WSPD 02 DIR 200 WEA 10 SEA * BAR 22
 DRY 38.8 WET 36.4 RELHU 84 CL 4 AMT 5 SCD 45 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	7.74	29.730	23.20	0.524	5.87 88	2.81	4
2	7.72	29.733	23.21	0.524	5.87 88	2.82	8
4	7.74	29.742	23.21	0.524	5.87 88	2.84	5
7	7.74	29.733	23.21	0.523	5.86 87	2.80	7
10	7.73	29.741	23.21	0.523	5.86 87	2.80	7
15	8.05	29.791	23.21	0.495	5.54 83	2.80	5
20	8.27	29.902	23.26	0.477	5.34 81	2.77	3
25	8.30	29.946	23.29	0.472	5.29 80	2.77	3

CRUISE BB 272 STATION 030 C-1

DATE 12/16/60 HR 1132 ZN 08 LAT 48-42.8N LONG 122-36.0W AREA BLL
 SDG 024M TIDE HT 07.9 STG R WSPD 00 DIR WEA 10 SEA 1 BAR 22
 DRY 36.9 WET 32.4 RELHU 64 CL 4 AMT 8 SCD 01 SPOB SST

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	5.24	22.209	17.58	0.611	6.84 91	2.43	20
2	7.78	29.525	23.04	0.543	6.08 91	2.67	24
4	7.86	29.602	23.09	0.533	5.97 89	2.72	18
7	8.00	29.698	23.14	0.537	6.01 90	2.90	8
10	8.08	29.741	23.17	0.528	5.91 89	3.11	7
14	8.16	29.783	23.19	0.518	5.80 88	2.99	6
18	8.17	29.783	23.19	0.513	5.75 87	2.99	5
22	8.26	29.988	23.33	0.467	5.23 79	3.09	6

CRUISE BB 272 STATION 031 C-2

DATE 12/16/60 HR 1210 ZN 08 LAT 48-42.5N LONG 122-33.5W AREA BLL
 SDG 027M TIDE HT 08.6 STG R WSPD 00 DIR WEA 10 SEA 1 BAR 22
 DRY 37.5 WET 32.9 RELHU 61 CL 4 AMT 8 SCD 05 SPOB SST

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L	SATN.	PHOS.	SSL
0	7.68	29.657	23.15	0.540	6.05	90	2.76	7
2	7.64	29.656	23.16	0.538	6.03	90	2.78	8
4	7.64	29.662	23.16	0.538	6.03	90	2.76	7
7	7.66	29.655	23.16	0.538	6.03	90	2.82	6
10	7.67	29.666	23.16	0.538	6.03	90	2.88	7
15	8.02	29.734	23.17	0.531	5.95	89	2.83	5
20	8.14	29.800	23.20	0.506	5.67	85	2.83	5
25	8.32	29.975	23.31	0.467	5.23	79	2.75	-

CRUISE BB 272 STATION 032 POST POINT C-3

DATE 12/16/60 HR 1254 ZN 08 LAT 48-41.4N LONG 123-31.6W AREA BLL
 SDG 030M TIDE HT 09.2 STG R WSPD 00 DIR WEA 10 SEA 1 BAR 21
 DRY 38.9 WET 36.4 RELHU 77 CL 4 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L	SATN.	PHOS.	SSL
0	7.74	29.713	23.19	0.529	5.92	88	2.42	6
2	7.72	29.719	23.20	0.528	5.91	88	2.59	6
4	7.72	29.715	23.19	0.526	5.89	88	2.76	7
7	7.72	29.715	23.19	0.528	5.91	88	2.81	6
10	7.72	29.733	23.21	0.530	5.94	89	2.75	6
15	8.14	29.797	23.20	0.512	5.73	86	2.82	6
20	8.22	29.870	23.25	0.488	5.47	83	2.76	4
25	8.30	29.960	23.31	0.470	5.26	80	2.83	2
30	8.32	29.969	23.31	0.464	5.20	79	2.88	2

CRUISE BB 272 STATION 033 B-1

DATE 12/16/60 HR 1353 ZN 08 LAT 48-43.6N LONG 122-35.4W AREA BLL
 SDG 020M TIDE HT 09.5 STG H WSPD 00 DIR WEA 10 SEA 1 BAR 21
 DRY 39.1 WET 35.6 RELHU 71 CL 4 AMT 8 SCD 02 SPOB SST

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L	SATN.	PHOS.	SSL
0	7.24	27.056	21.18	0.552	6.18	90	2.74	13
1	7.24	28.335	22.18	0.532	5.96	87	2.72	23
2	6.95	28.788	22.57	0.487	5.45	79	2.44	29
4	7.58	29.502	23.05	0.489	5.48	81	2.44	41
7	7.80	29.544	23.05	0.504	5.64	84	2.60	28
10	8.07	29.671	23.11	0.528	5.91	89	2.87	6
14	8.12	29.761	23.18	0.523	5.86	88	2.89	5
18	8.18	29.786	23.19	0.500	5.60	85	3.16	4

CRUISE BB 272 STATION 034 B-2

DATE 12/16/60 HR 1438 ZN 08 LAT 48-44.1N LONG 122-33.4W AREA BLL
 SDG 023M TIDE HT 09.3 STG F WSPD 01 DIR 315 WEA 51 SEA 1 BAR 21
 DRY 39.5 WET 35.5 RELHU 68 CL 4 AMT 8 SCD 02 SPOB SST

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	7.66	29.285	22.87	0.506	5.67	84	2.47	55
1	7.58	29.321	22.90	0.500	5.60	83	2.50	50
2	7.64	29.326	22.90	0.497	5.57	83	2.51	52
4	7.60	29.353	22.93	0.500	5.60	83	2.63	46
7	7.91	29.619	23.09	0.506	5.67	85	2.59	31
10	7.96	29.681	23.13	0.517	5.79	87	2.79	15
15	7.82	29.704	23.17	0.526	5.89	88	2.85	9
20	8.08	29.788	23.20	0.514	5.76	87	2.90	5

CRUISE BB 272 STATION 035 PULP MILL B-3

DATE 12/16/60 HR 1525 ZN 08 LAT 48-44.6N LONG 122-30.2W AREA BLL
 SDG 011M TIDE HT 09.0 STG F WSPD 01 DIR 345 WEA 51 SEA 0 BAR 21
 DRY 39.1 WET 34.9 RELHU 67 CL 6 AMT 8 SCD 02 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	7.57	29.370	22.94	0.485	5.43	81	2.78	74
1	7.58	29.447	23.00	0.490	5.49	82	2.79	60
2	7.60	29.450	23.00	0.487	5.45	81	2.79	55
4	7.58	29.439	23.00	0.485	5.43	81	2.68	57
6	8.12	29.662	23.10	0.519	5.81	88	2.87	9
8	8.09	29.705	23.14	0.517	5.79	87	2.98	5

CRUISE BB 272 STATION 036 A-2

DATE 12/16/60 HR 1619 ZN 08 LAT 48-45.0N LONG 122-34.5W AREA BLL
 SDG 015M TIDE HT 07.8 STG F WSPD 04 DIR 035 WEA 02 SEA 1 BAR 21
 DRY 37.1 WET 34.0 RELHU 74 CL 9 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	7.51	28.848	22.54	---	---	---	---	16
1	7.64	28.927	22.59	0.542	6.07	90	2.83	19
2	7.62	29.260	22.85	0.532	5.96	89	2.76	25
4	7.60	29.340	22.92	0.505	5.66	84	2.48	41
6	7.66	29.420	22.97	0.517	5.79	86	2.70	23
8	7.78	29.430	22.96	0.502	5.62	84	2.63	37
12	7.94	29.636	23.10	0.534	5.98	90	2.90	13

CRUISE BB 272 STATION 037 A-1

DATE 12/16/60 HR 1658 ZN 08 LAT 48-44.5N LONG 122-36.2W AREA BLL
 SDG 010M TIDE HT 06.5 STG F WSPD 04 DIR 015 WEA 02 SEA 1 BAR 21
 DRY 36.4 WET 33.7 RELHU 82 CL AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	6.38	23.209	18.26	0.594	6.65	92	2.67	11
1	6.82	26.306	20.64	0.559	6.26	89	2.90	13
2	7.22	29.369	22.91	0.530	5.94	88	2.89	20
4	7.83	29.443	22.98	0.528	5.91	77	2.71	47
6	7.74	29.497	23.01	0.459	5.14	80	2.63	--
8	7.82			0.481	5.39			

CRUISE BB 272 STATION 038 CEMENT PLANT A-3

DATE 12/16/60 HR 1747 ZN 08 LAT 48-45.5N LONG 122-32.0W AREA BLL
 SDG 008M TIDE HT 04.8 STG R WSPD 04 DIR 015 WEA 02 SEA 1 BAR 21
 DRY 37.2 WET 34.5 RELHU 78 CL AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	7.24	28.887	22.61	0.529	5.92	87	2.83	21
1	7.27	28.915	22.63	0.533	5.97	88	2.89	25
2	7.86	29.310	22.86	0.537	6.01	90	2.95	17
4	8.00	29.550	23.03	0.527	5.90	89	2.98	17
6	8.11	29.692	23.12	0.522	5.85	88	3.19	4
8	8.14	29.935	23.31	0.502	5.62	85	3.26	4

CRUISE BB 272 STATION 039 SAMISH BAY, NORTH END H-1

DATE 12/16/60 HR 2016 ZN 08 LAT 48-38.2N LONG 122-29.5W AREA SAM
 SDG 010M TIDE HT -0.8 STG F WSPD 05 DIR 275 WEA 02 SEA 1 BAR 21
 DRY 40.0 WET 38.2 RELHU 83 CL 5 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	7.25	29.478	23.07	0.551	6.17	91	3.02	6
2	7.24	29.484	23.08	0.559	6.26	92	2.94	9
4	7.25	29.484	23.08	0.545	6.10	90	2.98	7

CRUISE BB 272 STATION 040 SAMISH BAY, MIDDLE OF H-2

DATE 12/16/60 HR 2055 ZN 08 LAT 48-36.8N LONG 122-29.6W AREA SAM
 SDG 013M TIDE HT -1.1 STG F WSPD 05 DIR 300 WEA 02 SEA 1 BAR
 DRY 40.0 WET 38.2 RELHU CL AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	6.26	28.618	22.52	0.563	6.31	90	2.92	6
2	6.28	28.629	22.53	0.560	6.27	90	2.92	8
4	6.53	28.933	22.73	0.556	6.23	90	2.93	4
7	6.87	29.193	22.90	0.546	6.12	89	2.92	3
10	6.92	29.281	22.96	0.544	6.09	89	2.88	2
13	7.26	29.496	23.08	0.542	6.07	89	2.82	5

CRUISE BB 272 STATION 041 SAMISH BAY, SOUTH END H-3

DATE 12/16/60 HR 2131 ZN 08 LAT 48-35.5N LONG 122-31.0W AREA SAM
 SDG 016M TIDE HT -1.2 STG L WSPD 04 DIR 345 WEA 02 SEA 1 BAR 20
 DRY 40.6 WET 37.3 RELHU 78 CL 5 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	7.41	29.576	23.13	0.546	6.12	91	2.86	6
2	7.39	29.584	23.14	0.546	6.12	91	2.94	5
4	7.44	29.581	23.13	0.546	6.12	91	2.98	5
7	7.54	29.623	23.15	0.542	6.07	90	2.94	5
10	7.66	29.670	23.17	0.542	6.07	90	2.90	6
12	7.71	29.661	23.15	0.531	5.95	89	2.89	5
15	8.03	29.700	23.14	0.512	5.73	86	2.98	5

CRUISE BB 272 STATION 042 G-5

DATE 12/16/60 HR 2213 ZN 08 LAT 48-35.7N LONG 122-34.2W AREA BLL
 SDG 037M TIDE HT -1.0 STG R WSPD 02 DIR 325 WEA 02 SEA 1 BAR 21
 DRY 40.5 WET 36.7 RELHU 69 CL 5 AMT 8 SCD * SPOB * SST

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	7.53	29.623	23.15	0.545	6.10	91	2.86	4
2	7.52	29.616	23.14	0.544	6.09	91	2.97	5
5	7.53	29.620	23.15	0.542	6.07	90	2.97	5
7	7.52	29.627	23.15	0.542	6.07	90	2.98	5
10	7.58	29.637	23.15	0.539	6.04	90	2.82	3
15	7.80	29.684	23.16	0.527	5.90	88	2.97	5
20	8.11	29.779	23.19	0.496	5.56	84	3.02	5
25	8.13	29.830	23.23	0.485	5.43	82	3.06	4
30	8.19	29.879	23.26	0.476	5.33	81	2.97	2

CRUISE BB 272 STATION 043 G-4

DATE 12/16/60 HR 2249 ZN 08 LAT 48-37.1N LONG 122-32.3W AREA BLL
 SDG 018M TIDE HT -0.7 STG R WSPD 00 DIR WEA 02 SEA 1 BAR 21
 DRY 40.2 WET 36.2 RELHU 75 CL 5 AMT 8 SCD * SPOB SST

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	7.76	29.741	23.21	0.526	5.89	88	2.90	5
2	7.73	29.742	23.21	0.521	5.84	87	2.97	5
4	7.76	29.745	23.21	0.521	5.84	87	2.98	5
7	7.80	29.758	23.22	0.517	5.79	87	2.97	5
10	7.96	29.800	23.23	0.505	5.66	85	3.06	3
14	8.05	29.835	23.24	0.493	5.52	83	2.90	3
18	-.-	29.850	--.-	0.489	5.47	82	2.98	3

CRUISE BB 272 STATION 044 G-3

DATE 12/16/60 HR 2322 ZN 08 LAT 48-38.3N LONG 122-31.7W AREA BLL
 SDG 011M TIDE HT -0.3 STG R WSPD 02 DIR 310 WEA 02 SEA 1 BAR 20
 DRY 40.2 WET 36.3 RELHU 65 CL 7 AMT 8 SCD * SPOB SST

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	7.72	29.726	23.20	0.520	5.82	87	2.58	5
2	7.75	29.722	23.20	0.520	5.82	87	2.92	5
4	7.82	29.738	23.20	0.511	5.72	86	2.82	7
7	8.00	29.807	23.23	0.497	5.57	84	2.92	4
10	8.17	29.882	23.26	0.475	5.32	80	2.98	4

CRUISE BB 272 STATION 045 ELIZA ROCKS, SE OF G-2

DATE 12/17/60 HR 0005 ZN 08 LAT 48-38.4N LONG 122-34.1W AREA BLL
 SDG 095M TIDE HT 01.0 STG R WSPD 03 DIR 305 WEA 51 SEA 1 BAR 19
 DRY *. WET *. RELHU * CL 7 AMT 8 SCD * SPOB SST

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	7.08	28.528	22.35	0.523	5.86	85	2.65	11
2	7.74	29.154	22.75	0.515	5.77	86	2.74	11
4	7.84	29.603	23.09	0.515	5.77	86	2.80	10
7	8.01	29.713	23.15	0.493	5.52	83	2.78	6
10	8.12	29.768	23.18	0.486	5.44	82	2.85	6
20	8.09	29.805	23.21	0.486	5.44	82	2.78	4
30	8.12	29.872	23.26	0.486	5.44	82	2.78	1
49	8.12	29.876	23.27	0.487	5.45	82	2.84	2
68	8.14	29.870	23.26	0.488	5.47	82	2.85	2
88	8.16	29.876	23.26	0.480	5.38	81	2.66	-

CRUISE BB 272 STATION 046 POINT WILLIAMS, W OF G-6

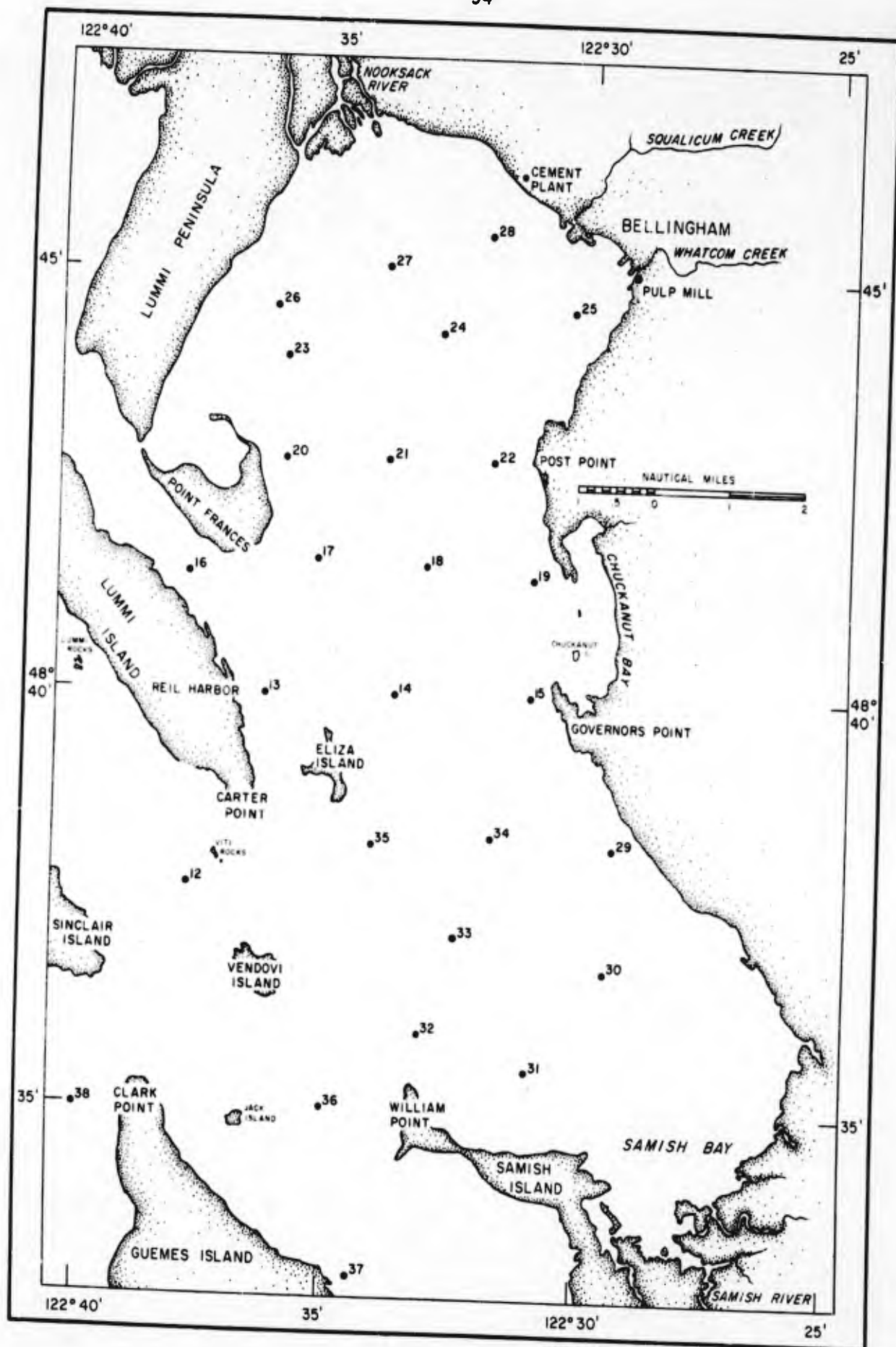
DATE 12/17/60 HR 0115 ZN 08 LAT 48-35.0N LONG 122-35.0W AREA BLL
 SDG 031M TIDE HT 04.8 STG R WSPD 06 DIR 305 WEA 51 SEA 1 BAR 19
 DRY 42.5 WET 38.5 RELHU 69 CL 7 AMT 8 SCD * SPOB SST

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		SATN.	PHOS.	SSL
				MG.AT.	ML/L			
0	7.33	29.176	22.82	0.538	6.03	89	2.74	-
2	7.36	29.222	22.86	0.535	5.99	88	2.86	-
5	7.48	29.402	22.98	0.534	5.98	89	2.74	4
10	7.60	29.682	23.18	0.533	5.97	89	3.03	7
15	---	29.715	---	0.524	5.87	---	2.86	4
20	8.02	29.807	23.23	0.496	5.56	84	2.92	5
25	8.15	29.863	23.25	0.487	5.45	82	2.82	4

CRUISE BB 272 STATION 047 BOAT HARBOR J-1

DATE 12/17/60 HR 0217 ZN 08 LAT 48-32.2N LONG 122-34.4W AREA PAD
 SDG 067M TIDE HT 07.5 STG R WSPD 04 DIR 270 WEA 51 SEA 1 BAR 18
 DRY 40.5 WET 39.5 RELHU 84 CL 7 AMT 8 SCD * SPOB SST

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		SATN.	PHOS.	SSL
				MG.AT.	ML/L			
0	7.52	29.132	22.76	0.525	5.88	87	2.81	5
5	7.63	29.297	22.88	0.522	5.85	87	2.81	5
10	7.90	29.664	23.13	0.504	5.64	85	2.87	4
20	7.92	29.722	23.17	0.499	5.59	84	2.89	2
29	8.04	29.773	23.20	0.491	5.50	83	2.94	5
39	7.99	29.879	23.29	0.494	5.53	83	2.89	4
58	8.08	29.846	23.25	0.488	5.47	82	2.88	2



OCEANOGRAPHIC STATION LOCATIONS
BLL-IO BB276 7-8 FEB. 1961

0 CRUISE BB 276 STATION 012 VITI ROCKS G-1

DATE 02/07/61 HR 0315 ZN 08 LAT 48-37.7N LONG 122-37.8W AREA BLL
 SDG 085 TIDE HT 03.2 STG L WSPD 05 DIR 140 WEA 01 SEA 1 BAR 30
 DRY 44.2 WET 42.8 RELHU 91 CL 6 AMT 5 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	7.95	29.401	22.63	0.545	6.10	91	2.56	4
2	7.94	29.432	22.94	0.544	4.97	74	2.65	3
5	8.04	29.729	23.16	0.523	5.86	88	2.53	3
10	8.03	29.817	23.23	0.517	5.79	87	2.50	2
20	8.09	29.823	23.23	0.515	5.77	87	2.50	3
29	8.05	29.861	23.26	0.515	5.77	87	2.55	2
39	8.09	29.924	23.31	0.509	5.70	86	2.52	-
59	8.09	30.014	23.38	0.504	5.64	85	2.49	-
78	8.14	30.152	23.48	0.493	5.52	84	2.31	-

CRUISE BB 276 STATION 013 REIL HARBOR F-1

DATE 02/07/61 HR 0435 ZN 08 LAT 48-40.3N LONG 122-36.5W AREA BLL
 SDG 022 TIDE HT 03.7 STG R WSPD 14 DIR 200 WEA 03 SEA 1 BAR 30
 DRY 45.1 WET 43.1 RELHU 86 CL AMT 4 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	7.88	28.772	22.44	0.559	6.26	93	2.44	7
2	7.87	28.781	22.44	0.558	6.25	93	2.14	7
4	7.90	28.763	22.43	0.562	6.29	94	2.54	6
7	7.90	29.035	22.64	0.554	6.20	93	2.57	-
10	7.91	29.138	22.72	0.550	6.16	92	2.59	4
15	7.93	29.300	22.84	0.541	6.06	91	2.61	3
20	7.97	29.374	22.89	0.533	5.97	89	2.67	2

CRUISE BB 276 STATION 014 F-2

DATE 02/07/61 HR 0537 ZN 08 LAT 48-40.2N LONG 122-34.0W AREA BLL
 SDG 027 TIDE HT 05.0 STG R WSPD 14 DIR 130 WEA * SEA 2 BAR 31
 DRY 45.2 WET 43.2 RELHU 86 CL AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	7.85	29.002	22.62	0.562	6.29	94	2.56	7
2	7.85	29.017	22.63	0.562	6.29	94	2.95	7
4	7.86	29.018	22.63	0.563	6.31	94	2.47	5
7	7.84	29.024	22.64	0.563	6.31	94		4
10	8.01	29.102	22.70	0.564	6.32	94	2.55	-
15	8.05	29.406	22.91	0.551	6.17	93	2.57	1
20	7.96	29.648	23.11	0.521	5.84	88	2.53	1
24	8.03	29.845	23.25	0.509	5.70	86	2.48	-

CRUISE BB 276 STATION 015 GOVERNORS POINT F-3

DATE 02/07/61 HR 0640 ZN 08 LAT 48-39.9N LONG 122-31.1W AREA BLL
 SDG 024 TIDE HT 06.4 STG R WSPD 18 DIR 140 WEA 02 SEA 2 BAR 31
 DRY 46.0 WET 43.2 RELHU 78 CL * AMT SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L	SATN.	PHOS.	SSL
0	8.17	29.093	22.65	0.563	6.31	95	2.55	1
2	8.15	29.091	22.65	0.563	6.31	95	2.55	1
4	8.15	29.088	22.65	0.565	6.33	95	2.54	-
7	8.14	29.102	22.66	0.563	6.31	95	-.-	-
10	8.19	29.123	22.67	0.562	6.29	95	2.53	-
15	8.10	29.325	22.84	0.554	6.20	93	2.35	2
20	8.05	29.583	23.05	0.523	5.86	88	2.63	3
24	7.98	29.855	23.27	0.506	5.67	85	2.86	2

CRUISE BB 276 STATION 016 HALE PASSAGE E-1

DATE 02/07/61 HR 0752 ZN 08 LAT 48-41.3N LONG 122-37.8W AREA HLN
 SDG 040 TIDE HT 07.7 STG R WSPD 14 DIR 170 WEA 02 SEA 2 BAR *
 DRY * WET * RELHU CL 4 AMT 5 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	7.87	27.344	21.32	0.567	6.35	94	2.47	19
2	7.85	27.727	21.62	0.567	6.35	94	2.39	16
5	7.89	28.663	22.35	0.560	6.27	93	2.53	7
10	7.88	28.754	22.42	0.555	6.22	93	2.55	8
15	7.93	28.942	22.56	0.553	6.19	92	2.51	6
20	7.92	29.279	22.83	0.540	6.05	90	2.57	2
24	7.96	29.515	23.01	0.526	5.89	88	2.60	2
29	7.95	29.678	23.13	0.515	5.77	87	0.00	-

CRUISE BB 276 STATION 017 POINT FRANCES D-1

DATE 02/07/61 HR 0838 ZN 08 LAT 48-41.6N LONG 122-35.3W AREA BLL
 SDG 036 TIDE HT 08.2 STG R WSPD 20 DIR 160 WEA 03 SEA 3 BAR 30
 DRY 46.8 WET 44.0 RELHU 80 CL 5 AMT 6 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.
				MG.AT.	ML/L	SATN.	
0	7.90	28.578	22.28	0.569	6.37	95	2.46
2	7.89	28.579	22.28	0.571	6.40	95	2.37
4	7.92	28.583	22.28	0.571	6.40	95	2.35
7	7.90	28.584	22.29	0.569	6.37	95	2.13
10	8.08	28.854	22.47	0.566	6.34	95	2.49
15	7.98	29.342	22.87	0.549	6.15	92	2.54
20	7.89	29.373	22.90	0.534	5.98	89	2.57
24	7.91	29.514	23.01	0.523	5.86	88	--
29	8.03	29.964	23.35	0.498	5.58	84	2.38

CRUISE BB 276 STATION 018 D-2

DATE 02/07/61 HR 0922 ZN 08 LAT 48-41.5N LONG 122-33.1W AREA BLL
 SDG 029 TIDE HT 08.4 STG H WSPD 19 DIR 150 WEA 03 SEA 3 BAR 30
 DRY 47.2 WET 43.2 RELHU 73 CL 5 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.
				MG.AT.	ML/L	SATN.	
0	7.99	29.131	22.70	0.567	6.35	95	2.49
2	7.97	29.120	22.70	0.567	6.35	95	2.49
4	7.97	29.130	22.70	0.566	6.34	95	2.49
7	7.95	29.141	22.71	0.565	6.33	95	2.48
10	8.00	29.151	22.72	0.565	6.33	95	2.44
15	8.06	29.281	22.81	0.552	6.18	93	2.37
20	7.95	29.593	23.07	0.521	5.84	88	2.05
24	8.03	29.868	23.27	0.507	5.68	85	2.05

CRUISE BB 276 STATION 019 D-3

DATE 02/07/61 HR 1003 ZN 08 LAT 48-41.4N LONG 122-31.0W AREA BLL
 SDG 027 TIDE HT 08.2 STG F WSPD 12 DIR 165 WEA 02 SEA 2 BAR 30
 DRY 47.2 WET 43.7 RELHU 77 CL 5 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	8.13	29.057	22.62	0.567	6.35	95
2	8.13	29.055	22.62	0.567	6.35	95
4	8.13	29.057	22.62	0.567	6.35	95
7	8.11	29.056	22.63	0.566	6.34	95
10	8.11	29.056	22.63	0.565	6.33	95
15	8.10	29.248	22.78	0.556	6.23	93
20	8.03	29.469	22.96	0.534	5.98	90
24	7.99	29.850	23.26	0.499	5.59	84

CRUISE BB 276 STATION 020 C-1

DATE 02/07/61 HR 1048 ZN 08 LAT 48-42.8N LONG 122-36.3W AREA BLL
 SDG 027 TIDE HT 08.8 STG F WSPD 18 DIR 145 WEA 03 SEA 3 BAR 30
 DRY 47.1 WET 43.6 RELHU 76 CL 5 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	7.98	26.532	20.67	0.521	5.84	86
1	7.95	26.568	20.70	0.504	5.64	83
2	7.97	26.644	20.76	0.571	6.40	94
4	7.98	26.720	20.82	0.564	6.32	93
7	7.99	26.763	20.85	0.570	6.38	94
10	7.91	28.118	21.92	0.466	5.22	77
14	7.98	28.699	22.36	0.488	5.47	81
18	8.03	29.177	22.73	0.524	5.87	88
22	8.01	29.314	22.84	0.526	5.89	88

CRUISE BB 276 STATION 021 C-2

DATE 02/07/61 HR 1126 ZN 08 LAT 48-42.8N LONG 122-33.9W AREA BLL
 SDG 031 TIDE HT 06.8 STG F WSPD 12 DIR 160 WEA 02 SEA 2 BAR 30
 DRY * . WET * . RELHU CL 6 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	PHOS.	SSL
0	7.45	10.907	8.52	0.660 7.39 97	---	215
1	7.93	25.420	19.81	0.566 6.34 92	---	23
2	7.95	26.831	20.91	0.547 6.13 90	2.56	23
4	7.95	27.129	21.14	0.526 5.89 87	2.45	19
7	8.04	28.648	22.32	0.567 6.35 95	2.57	8
10	8.03	28.794	22.43	0.568 6.36 95	2.72	6
15	8.03	29.210	22.76	0.516 5.78 87	2.62	4
20	7.99	29.301	22.83	0.551 6.17 92	2.65	3
25	7.97	29.730	23.17	0.481 5.39 81	2.85	1

CRUISE BB 276 STATION 022 POST POINT C-3

DATE 02/07/61 HR 1208 ZN 08 LAT 48-42.8N LONG 122-31.8W AREA BLL
 SDG 031 TIDE HT 06.2 STG F WSPD 07 DIR 185 WEA 02 SEA BAR 30
 DRY 48.8 WET 43.8 RELHU 67 CL 6 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	SSL
0	7.85	15.099	11.76	0.574 6.43 87	194
2	8.00	26.308	20.49	0.552 6.18 91	42
4	7.82	28.264	22.05	0.539 6.04 89	12
7	7.97	28.631	22.31	0.548 6.14 91	--
10	8.12	29.029	22.60	0.561 6.28 94	3
15	8.09	29.182	22.73	0.576 6.45 97	2
20	8.01	29.352	22.87	0.546 6.12 92	-
24	7.93	29.614	23.09	0.510 5.71 86	1
29	8.02	29.855	23.26	0.506 5.67 85	-

CRUISE BB 276 STATION 023 B-1

DATE 02/07/61 HR 1305 ZN 08 LAT 48-44.0N LONG 122-36.0W AREA BLL
 SDG 014 TIDE HT 04.8 STG F WSPD 06 DIR 150 WEA 02 SEA 1 BAR 30
 DRY 47.3 WET 44.0 RELHU 77 CL 6 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	SSL
0	7.51	8.222	6.41	0.681 7.63 99	16
1	7.48	9.205	7.18	0.670 7.50 98	55
2	7.81	11.598	9.03	0.654 7.32 97	35
4	7.83	28.932	22.57	0.533 5.97 89	--
7	7.91	28.932	22.56	0.554 6.20 92	1
10	7.89	29.204	22.77	0.553 6.19 92	-
14	7.83	29.257	22.82	0.527 5.90 88	1
18	7.83	29.286	22.84	0.526 5.89 88	-

CRUISE BB 276 STATION 024 B-2

DATE 02/07/61 HR 1407 ZN 08 LAT 48-44.3N LONG 122-32.9W AREA BLL
 SDG 020 TIDE HT 03.7 STG F WSPD 04 DIR 135 WEA 03 SEA 1 BAR 30
 DRY 48.0 WET 43.1 RELHU 67 CL 6 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	6.29	0.320	0.25	0.731	8.19	98	---	--
1	7.95	22.338	17.40	0.565	6.33	90	---	60
2	7.95	25.855	20.15	0.557	6.24	91	2.43	20
4	7.94	27.180	21.18	0.551	6.17	91	2.69	--
7	8.12	27.986	21.79	0.567	6.35	95	2.70	-
10	8.05	29.019	22.61	0.560	6.27	94	2.69	2
15	7.79	29.131	22.73	0.529	5.92	88	2.79	3
20	7.96	29.509	23.00	0.507	5.68	85	3.07	-

CRUISE BB 276 STATION 025 PULP MILL B-3

DATE 02/07/61 HR 1513 ZN 08 LAT 48-44.6N LONG 122-30.3W AREA BLL
 SDG 011 TIDE HT 02.5 STG F WSPD 06 DIR 045 WEA 03 SEA 1 BAR 30
 DRY 47.9 WET 44.3 RELHU 75 CL 6 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	7.70	5.922	4.59	0.651	7.29	93	19
1	7.79	19.129	14.92	0.565	6.33	88	98
2	7.93	25.723	20.05	0.558	6.25	91	33
4	7.98	26.066	20.31	0.552	6.18	91	36
6	8.01	27.037	21.06	0.553	6.19	91	25
8	7.75	28.648	22.36	0.510	5.71	85	9

CRUISE BB 276 STATION 026 A-1

DATE 02/07/61 HR 1559 ZN 08 LAT 48-44.6N LONG 122-30.2W AREA BLL
 SDG 011 TIDE HT 03.2 STG L WSPD 00 DIR WEA 02 SEA 1 BAR 30
 DRY * WET * RELHU * CL 5 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	6.73	1.645	1.28	0.700	7.84	95	-
1	7.70	15.348	11.97	0.581	6.51	88	7
2	7.79	27.170	21.19	0.529	5.92	87	13
4	7.83	28.848	22.50	0.556	6.23	93	5
6	7.89	29.144	22.72	0.554	6.20	93	6
8	7.83	29.221	22.79	0.531	5.95	89	3

CRUISE BB 276 STATION 027 A-2

DATE 02/07/61 HR 1628 ZN 08 LAT 48-45.1N LONG 122-34.0W AREA BLL
 SDG 015 TIDE HT 03.2 STG R WSPD 00 DIR WEA 02 SEA BAR 29
 DRY 46.0 WET 44.0 RELHU 86 CL 0 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	6.37	1.645	1.30				
1	7.89	22.514	17.55	0.730	8.18	99	--
2	7.93	27.630	21.54	0.556	6.23	89	--
4	7.92	28.047	21.86	0.552	6.18	91	16
				0.549	6.15	91	16
6	8.02	28.344	22.08				6
8	8.00	28.922	22.54	0.558	6.25	93	8
10	7.87	29.012	22.62	0.557	6.24	93	1
				0.556	6.23	93	-

CRUISE BB 276 STATION 028 CEMENT PLANT A-3

DATE 02/07/61 HR 1958 ZN 08 LAT 48-45.5N LONG 122-32.0W AREA BLL
 SDG 011 TIDE HT 04.4 STG R WSPD 00 DIR WEA 02 SEA 1 BAR 30
 DRY * WET * RELHU CL 0 AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	SSL
0	6.03	0.310	0.25			
1	7.97	23.683	18.45	0.726	8.13	97
2	7.99	27.140	21.15	0.555	6.22	90
4	7.91	27.850	21.71	0.554	6.20	92
				0.548	6.14	91
6	7.89	28.375	22.12			
8	7.79	28.944	22.58	0.545	6.10	91
				0.531	5.95	89
						8
						7

CRUISE BB 276 STATION 029 SAMISH BAY, NORTH END H-1

DATE 02/07/61 HR 2117 ZN 08 LAT 48-38.2N LONG 122-29.3W AREA SAM
 SDG 014 TIDE HT 05.5 STG R WSPD 19 DIR 145 WEA 61 SEA 1 BAR 30
 DRY * WET * RELHU CL 0 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.	SSL
0	8.09	28.290	22.03				
2	8.07	28.291	22.03	0.570	6.38	95	2.48
4	8.11	28.475	22.17	0.570	6.38	95	2.48
7	8.17	28.898	22.49	0.568	6.36	95	2.46
				0.564	6.32	95	2.44
10	8.15	28.956	22.54				
				0.561	6.28	94	2.56
							5

CRUISE BB 276 STATION 030 SAMISH BAY, MIDDLE H-2

DATE 02/07/61 HR 2213 ZN 08 LAT 48-36.7N LONG 122-29.5W AREA SAM
 SDG 013 TIDE HT 05.9 STG H WSPD 18 DIR 140 WEA 61 SEA 2 BAR 30
 DRY * WET * RELHU CL 0 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.09	28.697	22.35	0.564	6.32	94	2.56	4
2	8.08	28.697	22.35	0.558	6.25	93	2.52	4
4	8.07	28.767	22.41	0.560	6.27	94	2.56	2
7	8.10	29.189	22.73	0.522	5.85	88	2.56	2
10	8.02	29.502	22.99	0.512	5.73	86	2.63	4
13	7.99	29.673	23.12	0.497	5.57	84	2.76	2

CRUISE BB 276 STATION 031 SAMISH BAY, SOUTH END H-3

DATE 02/07/61 HR 2244 ZN 08 LAT 48-35.5N LONG 122-31.0W AREA SAM
 SDG 018 TIDE HT 05.9 STG H WSPD 12 DIR 122 WEA 61 SEA 2 BAR 30
 DRY * WET * RELHU CL AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.11	29.236	22.77	0.554	6.20	93	2.46	2
2	8.09	29.232	22.77	0.553	6.19	93	2.47	4
4	8.09	29.230	22.76	0.538	6.03	90	2.21	3
7	8.10	29.359	22.86	0.541	6.06	91	2.48	4
10	8.06	29.526	23.00	0.527	5.90	89	2.53	4
15	7.99	29.768	23.20	0.493	5.52	83	2.62	2

CRUISE BB 276 STATION 032 G-5

DATE 02/07/61 HR 2320 ZN 08 LAT 48-35.9N LONG 122-33.1W AREA BLL
 SDG 036 TIDE HT 05.8 STG F WSPD 12 DIR 140 WEA 61 SEA 2 BAR 30
 DRY 46.0 WET 43.8 RELHU 85 CL AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.01	28.893	22.51	0.547	6.13	92	2
2	8.01	28.892	22.51	0.548	6.14	92	2
4	8.03	28.922	22.53	0.547	6.13	92	2
7	8.11	29.224	22.76	0.537	6.01	90	2
10	8.09	29.303	22.82	0.546	6.12	92	2
15	8.05	29.458	22.95	0.527	5.90	89	3
20	7.99	29.740	23.18	0.419	4.69	71	2
25	8.04	29.825	23.24	0.494	5.53	83	3

CRUISE BB 276 STATION 033 G-4

DATE 02/07/61 HR 2345 ZN 08 LAT 48-37.1N LONG 122-32.4W AREA BLL
 SDG 020 TIDE HT 05.7 STG F WSPD 20 DIR 160 WEA 61 SEA 2 BAR 30
 DRY * WET * RELHU CL AMT * SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	SSL
0	8.00	29.041	22.63	0.557 6.24 93	2
2	8.00	29.038	22.63	0.557 6.24 93	3
4	8.00	29.050	22.64	0.555 6.22 93	3
7	8.00	29.182	22.74	0.550 6.16 92	2
10	8.01	29.408	22.91	0.540 6.05 91	4
14	8.07	29.842	23.25	0.506 5.67 85	3
18	8.03	29.887	23.29	0.506 5.67 85	3

CRUISE BB 276 STATION 034 G-3

DATE 02/08/61 HR 0038 ZN 08 LAT 48-38.3N LONG 122-31.7W AREA BLL
 SDG 014 TIDE HT 05.3 STG F WSPD 20 DIR 160 WEA 61 SEA 3 BAR 30
 DRY * WET * RELHU CL AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	SSL
0	7.98	29.174	22.74	0.557 6.24 93	6
2	7.97	29.194	22.75	0.556 6.23 93	4
4	7.97	29.196	22.75	0.556 6.23 93	3
7	7.97	29.225	22.78	0.555 6.22 93	3
10	7.99	29.337	22.86	0.553 6.19 93	5
13	8.02	29.394	22.90	0.548 6.14 92	4

CRUISE BB 276 STATION 035 ELIZA ROCKS. SE OF G-2

DATE 02/08/61 HR 0140 ZN 08 LAT 48-38.2N LONG 122-34.1W AREA BLL
 SDG 102 TIDE HT 04.7 STG F WSPD 24 DIR 160 WEA 02 SEA BAR 30
 DRY * WET * RELHU CL AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN MG.AT. ML/L SATN.	PHOS.	SSL
0	7.95	28.852	22.49	0.563 6.31 94	2.48	7
2	7.95	28.900	22.53	0.563 6.31 94	2.49	7
5	7.93	28.918	22.54	0.563 6.31 94	2.50	6
10	7.95	29.336	22.87	0.550 6.16 92	2.44	2
20	8.02	29.792	23.21	0.516 5.78 87	2.50	3
29	8.05	29.869	23.27	0.509 5.70 86	2.49	1
39	8.07	29.927	23.31	0.506 5.67 85	2.49	2
59	8.07	29.956	23.33	0.504 5.64 85	2.49	3
78	8.11	30.004	23.37	0.502 5.62 85	2.51	2

CRUISE BB 276 STATION 036 POINT WILLIAMS, W OF G-6

DATE 02/08/61 HR 0240 ZN 08 LAT 48-35.0N LONG 122-35.0W AREA BLL
 SDG 027 TIDE HT 04.3 STG F WSPD 33 DIR 160 WEA 02 SEA 3 BAR 30
 DRY * WET * RELHU CL AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	7.98	29.555	23.03	0.526	5.89	88	3
2	7.97	29.561	23.04	0.526	5.89	88	2
5	7.98	29.558	23.04	0.529	5.92	89	2
10	7.96	29.562	23.04	0.527	5.90	89	2
15	8.00	29.675	23.12	0.520	5.82	88	2
20	8.06	29.862	23.26	0.506	5.67	85	3
24	8.05	29.868	23.27	0.507	5.68	85	3

CRUISE BB 276 STATION 037 BOAT HARBOR J-1

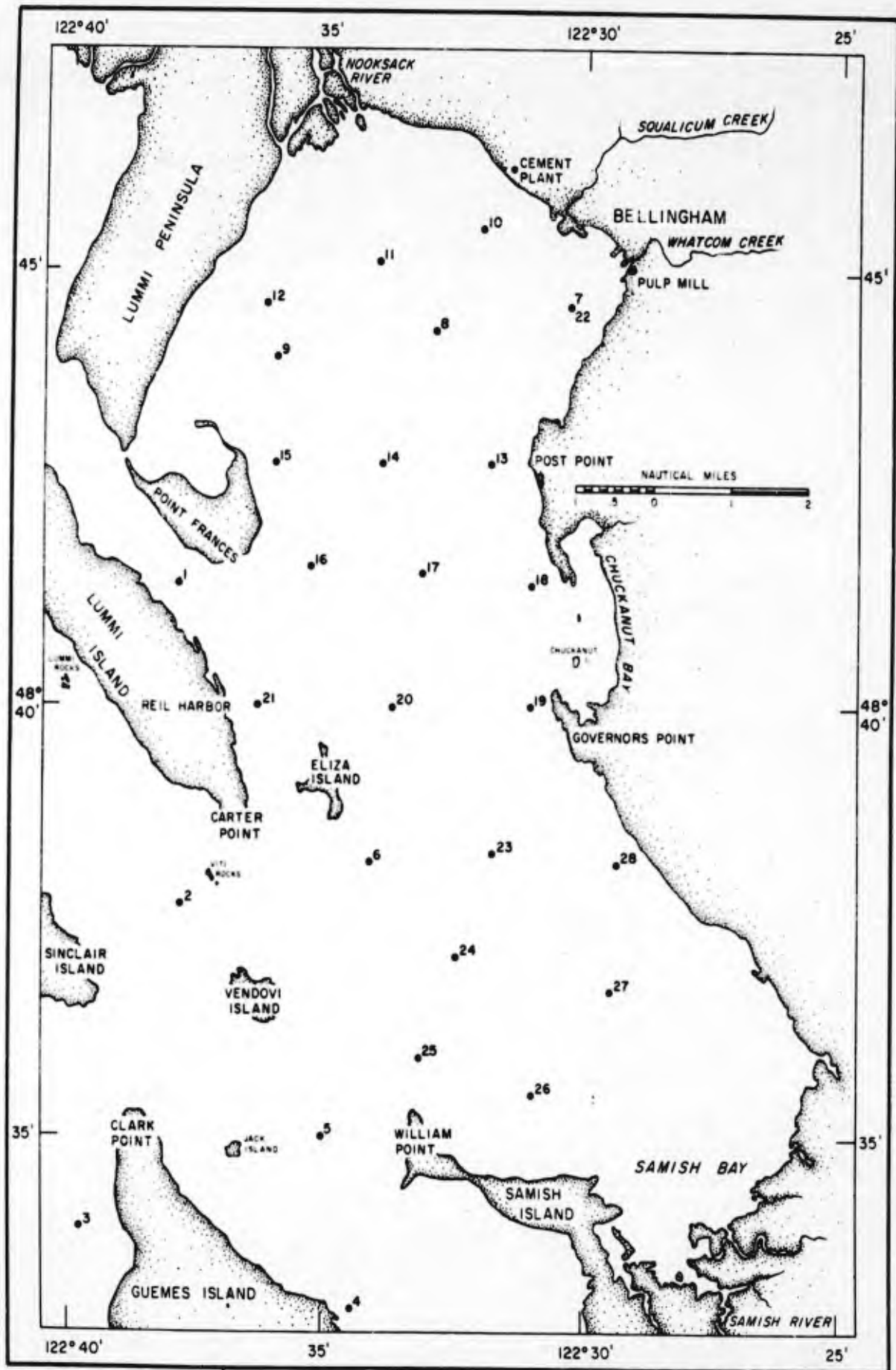
DATE 02/08/61 HR 0330 ZN 08 LAT 48-33.0N LONG 122-34.5W AREA PAD
 SDG 068 TIDE HT 04.2 STG L WSPD 22 DIR 160 WEA 02 SEA 3 BAR 30
 DRY 45.0 WET 43.0 RELHU 86 CL AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.02	29.754	23.18	0.518	5.80	87	2.58	4
5	8.01	29.735	23.17	0.517	5.79	87	2.50	4
10	8.01	29.753	23.18	0.518	5.80	87	2.52	4
19	8.00	29.769	23.20	0.510	5.71	86	2.54	3
28	8.03	29.800	23.22	0.510	5.71	86	2.54	3
48	8.06	29.885	23.28	0.507	5.68	85	2.54	3
66	8.05	29.890	23.29	0.499	5.59	84	2.70	4

CRUISE BB 276 STATION 038 BELLINGHAM CHANNEL K-1

DATE 02/08/61 HR 0434 ZN 08 LAT 48-35.0N LONG 122-40.0W AREA BEL
 SDG 090 TIDE HT 04.3 STG R WSPD 12 DIR 180 WEA 02 SEA 2 BAR 30
 DRY * WET * RELHU CL AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.	SSL
				MG.AT.	ML/L	SATN.		
0	8.04	29.786	23.21	0.515	5.77	87	2.50	3
5	8.03	29.777	23.20	0.517	5.79	87	2.54	6
10	8.05	29.820	23.23	0.515	5.77	87	2.47	5
20	8.03	29.830	23.24	0.516	5.78	87	2.50	6
39	8.03	29.845	23.25	0.512	5.73	86	2.52	4
59	8.06	29.859	23.26	0.510	5.71	86	2.51	4
78	8.05	29.887	23.28	0.511	5.72	86	2.50	4



OCEANOGRAPHIC STATION LOCATIONS
BLL-II 21-22 MARCH 1961

CRUISE BLL 11 STATION 001 HALE PASSAGE E-1

DATE 03/20/61 HR 1421 ZN 08 LAT 48-41.5N LONG 122-36.4W AREA HPN
 SDG 0035 TIDE HT 00.8 STG F WSPD 08 DIR 310 WEA 03 SEA 1 BAR *
 DRY 48.2 WET * RELHU * CL 6 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.26	28.931	22.51	0.548	6.14	92	3
2	8.21	28.944	22.52	0.547	6.13	92	6
5	8.19	28.978	22.55	0.549	6.15	92	5
10	8.18	29.019	22.59	0.549	6.15	92	3
15	8.14	29.093	22.65	0.548	6.14	92	4
20	8.11	29.170	22.71	0.549	6.15	92	1
25	8.14	29.200	22.73	0.548	6.14	92	5
30	8.09	29.286	22.81	0.546	6.12	92	3

CRUISE BLL 11 STATION 002 VITI ROCKS G-1

DATE 03/20/61 HR 1513 ZN 08 LAT 48-37.7N LONG 122-37.7W AREA BLL
 SDG 0090 TIDE HT 01.0 STG R WSPD 13 DIR 290 WEA 03 SEA 2 BAR 30
 DRY 50.0 WET RELHU * CL 6 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.15	---:---	---:---	0.538	6.03	--	-
5	8.12	---:---	---:---	0.534	5.98	--	-
10	8.08	29.515	22.99	0.536	6.00	90	1
20	8.08	29.539	23.01	0.535	5.99	90	2
30	8.05	29.549	23.02	0.534	5.98	90	2
40	8.02	29.553	23.03	0.534	5.98	90	3
60	8.09	29.570	23.03	0.534	5.98	90	3
80	8.07	29.564	23.03	0.534	5.98	90	1

CRUISE BLL 11 STATION 003 BELLINGHAM CHANNEL K-1

DATE 03/20/61 HR 1558 ZN 08 LAT 48-35.1N LONG 122-39.9W AREA BLL
 SDG 0090 TIDE HT 01.7 STG R WSPD 10 DIR 270 WEA 02 SEA 1 BAR 30
 DRY 50.0 WET RELHU * CL 5 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.15	29.491	22.96	0.541	6.06	91	2
5	8.17	29.504	22.97	0.544	6.09	92	0
10	8.13	29.506	22.97	0.539	6.04	91	4
20	8.12	29.512	22.98	0.540	6.05	91	1
30	8.12	29.512	22.98	0.540	6.05	91	3
40	8.09	29.521	22.99	0.539	6.04	91	2
60	8.11	29.509	22.98	0.539	6.04	91	4
80	---:---	29.529	---:---	0.540	6.05	--	2

CRUISE BLL 11 STATION 004 BOAT HARBOR J-1

DATE 03/20/61 HR 1651 ZN 08 LAT 48-34.4N LONG 122-33.0W AREA PAD
 SDG 0071 TIDE HT 03.5 STG R WSPD 02 DIR 330 WEA 02 SEA 1 BAR 30
 DRY 50.0 WET RELHU * CL 5 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.15	29.206	22.74	0.553	6.19	93	2
5	8.20	29.268	22.78	0.550	6.16	93	4
10	8.14	29.309	22.82	0.548	6.14	92	1
20	8.19	29.310	22.81	0.548	6.14	92	2
30	8.12	29.331	22.84	0.548	6.14	92	
40	8.13	29.346	22.85	0.546	6.12	92	0
50	8.13	29.369	22.87	0.542	6.07	91	0
70	8.08	29.410	22.91	0.543	6.08	91	2

CRUISE BLL 11 STATION 005 POINT WILLIAMS G-6

DATE 03/20/61 HR 1725 ZN 08 LAT 48-35.0N LONG 122-35.0W AREA BLL
 SDG 0053 TIDE HT 04.8 STG R WSPD 10 DIR 270 WEA 01 SEA 2 BAR 30
 DRY 48.9 WET RELHU * CL 7 AMT 5 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.22	---	---	0.549	6.15		-
2	8.23	29.395	22.87	0.552	6.18	93	0
4	8.22	29.375	22.86	0.553	6.19	93	-
7	8.22	29.378	22.86	0.553	6.19	93	2
10	8.13	29.395	22.89	0.551	6.17	93	
15	8.12	29.370	22.87	0.549	6.15	92	2
20	8.13	29.371	22.87	0.554	6.20	93	1
25	8.12	29.416	22.91	0.547	6.13	92	2
							4

CRUISE BLL 11 STATION 006 ELIZA ROCK G-2

DATE 03/20/61 HR 1817 ZN 08 LAT 48-38.4N LONG 122-34.0W AREA BLL
 SDG 0104 TIDE HT 06.5 STG R WSPD * DIR 270 WEA 03 SEA 1 BAR 30
 DRY 47.7 WET RELHU * CL 2 AMT 6 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.21	29.242	22.76	0.558	6.25	94	3
5	8.15	29.230	22.76	0.558	6.25	94	3
10	8.17	29.230	22.75	0.556	6.23	94	3
20	8.20	29.258	22.77	0.555	6.22	94	3
30	8.09	29.390	22.89	0.544	6.09	92	
50	8.09	29.462	22.95	0.540	6.05	91	3
70	8.09	29.509	22.98	0.538	6.03	91	3
90	8.09	29.520	22.99	0.539	6.04	91	2

CRUISE BLL 11 STATION 007 PULP MILL B-3

DATE 03/21/61 HR 0827 ZN 08 LAT 48-44.7N LONG 122-30.2W AREA BLL
 SDG 0009 TIDE HT 10.7 STG F WSPD 02 DIR 010 WEA 02 SEA 1 BAR 30
 DRY *. WET RELHU * CL 0 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.10	10.818	8.39	0.546	6.12	81	313
1	8.37	24.751	19.23	0.574	6.43	94	35
2	8.25	26.781	20.83	0.568	6.36	94	20
4	7.96	27.721	21.60	0.541	6.06	90	--
6	7.90	28.075	21.89	0.541	6.06	90	21
8	7.85	28.624	22.32	0.533	5.97	89	7

CRUISE BLL 11 STATION 008 B-2

DATE 03/21/61 HR 0908 ZN 08 LAT 48-44.3N LONG 122-33.0W AREA BLL
 SDG 0022 TIDE HT 10.4 STG F WSPD 02 DIR 020 WEA 01 SEA 1 BAR *
 DRY 41.7 WET RELHU * CL 5 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.09	11.608	9.01	0.623	6.98	93	71
1	8.07	25.595	19.93	0.575	6.44	94	36
2	7.97	26.330	20.52	0.580	6.50	95	28
4	7.92	28.355	22.10	0.566	6.34	94	11
7	7.88	28.696	22.38	0.565	6.33	94	7
10	7.91	28.876	22.51	0.560	6.27	93	8
15	7.96	28.946	22.56	0.557	6.24	93	5
20	7.90	29.124	22.71	0.534	5.98	89	4

CRUISE BLL 11 STATION 009 B-1

DATE 03/21/61 HR 0938 ZN 08 LAT 48-44.0N LONG 122-35.LW AREA BLL
 SDG 0015 TIDE HT 10.0 STG F WSPD 02 DIR 000 WEA 02 SEA 1 BAR 30
 DRY 42.8 WET RELHU * CL 4 AMT 6 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	7.00	7.229	5.67	0.633	7.09	90	89
1	--	27.314	--	0.575	6.44	--	18
2	8.20	27.719	21.57	0.576	6.45	96	10
4	8.15	27.862	21.69	0.576	6.45	96	9
7	8.10	28.117	21.89	0.569	6.37	95	
10	7.95	28.412	22.14	0.565	6.33	94	9
14	7.97	28.982	22.59	0.555	6.22	93	6
18	7.97	28.989	22.59	0.526	5.89	88	1

CRUISE BLL 11 STATION 010 CEMENT PLANT A-3

DATE 03/21/61 HR 1006 ZN 08 LAT 48-44.6N LONG 122-32.6W AREA BLL
 SDG 0007 TIDE HT 09.3 STG F WSPD 00 DIR WEA 03 SEA * BAR 30
 DRY 45.0 WET RELHU * CL 4 AMT 6 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	6.92	4.340	3.40	0.661	7.40	92	
1	7.96	25.779	20.09	0.589	6.60	96	37
2	8.11	27.570	21.47	0.575	6.44	96	15
4	8.06	27.818	21.67	0.575	6.44	96	7
							6
6	8.04	28.023	21.83	0.565	6.33	94	
8	7.99	28.567	22.26	0.551	6.17	92	5
							4

CRUISE BLL 11 STATION 011 A-2

DATE 03/21/61 HR 1038 ZN 08 LAT 48-45.1N LONG 122-34.1W AREA BLL
 SDG 0015 TIDE HT 09.3 STG F WSPD 00 DIR WEA * SEA * BAR 30
 DRY 48.2 WET RELHU * CL 4 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	7.39	3.617	2.80	0.632	7.08	89	
1	8.34	26.360	20.49	0.580	6.50	96	21
2	8.06	27.426	21.36	0.584	6.54	97	15
4	7.98	28.380	22.12	0.560	6.27	93	7
							5
6	7.91	28.732	22.40	0.560	6.27	93	
8	7.96	28.814	22.46	0.564	6.32	94	3
10	8.01	28.955	22.56	0.545	6.10	91	3
							1

CRUISE BLL 11 STATION 012 A-1

DATE 03/21/61 HR 1119 ZN 08 LAT 48-45.5N LONG 122-31.9W AREA BLL
 SDG 0009 TIDE HT 06.8 STG F WSPD 00 DIR WEA * SEA * BAR *
 DRY 48.2 WET RELHU * CL 4 AMT 7 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.37	10.248	7.92	0.609	6.82	91	
1	8.02	22.704	17.68	0.575	6.44	92	42
2	7.95	27.482	21.42	0.560	6.27	93	67
4	7.90	28.111	21.92	0.554	6.20	92	20
							15
6	7.91	28.499	22.22	0.556	6.23	93	
8	7.92	28.667	22.35	0.550	6.16	92	8
							6

CRUISE BLL 11 STATION 013 POST POINT C-3

DATE 03/21/61 HR 1233 ZN 08 LAT 48-41.3N LONG 122-31.9W AREA BLL
 SDG * TIDE HT 04.5 STG F WSPD 00 DIR WEA 01 SEA 0 BAR 30
 DRY 52.2 WET RELHU * CL 4 AMT 1 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.31	23.761	18.47	0.579	6.48	94	53
2	8.11	27.669	21.54	0.560	6.27	93	11
4	8.09	28.525	22.21	0.560	6.27	94	7
7	8.02	28.852	22.48	0.562	6.29	94	4
10	8.02	28.935	22.54	0.560	6.27	94	3
15	7.95	28.949	22.56	0.560	6.27	94	4
20	7.94	29.138	22.71	0.544	6.09	91	4
25	7.93	29.260	22.81	0.531	5.95	89	1
30	7.89	29.407	22.93	0.501	5.61	84	-

CRUISE BLL 11 STATION 014 C-2

DATE 03/21/61 HR 1312 ZN 08 LAT 48-41.3N LONG 122-34.0W AREA BLL
 SDG 0027 TIDE HT 03.5 STG F WSPD 02 DIR 320 WEA 01 SEA 1 BAR 30
 DRY 51.8 WET RELHU * CL 4 AMT 3 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.23	22.357	17.38	0.560	6.27	90	49
2	8.15	26.467	20.60	0.568	6.36	94	27
4	7.92	28.294	22.06	0.556	6.23	93	17
7	7.92	28.684	22.36	0.555	6.22	93	5
10	7.98	28.957	22.57	0.564	6.32	94	4
15	8.05	29.148	22.71	0.554	6.20	93	2
20	8.06	29.192	22.74	0.564	6.32	95	2
25	8.04	29.281	22.81	0.501	5.61	84	-

CRUISE BLL 11 STATION 015 C-1

DATE 03/21/61 HR 1339 ZN 08 LAT 48-41.3N LONG 122-36.0W AREA BLL
 SDG * TIDE HT 02.3 STG F WSPD 00 DIR WEA 02 SEA * BAR 30
 DRY *. WET RELHU * CL 4 AMT 3 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	7.51	8.767	6.84	0.608	6.81	88	100
2	8.28	26.972	20.98	0.575	6.44	96	14
4	8.17	27.808	21.64	0.561	6.28	94	12
7	7.97	28.195	21.97	0.560	6.27	93	12
10	7.94	28.789	22.44	0.561	6.28	94	--
14	8.06	29.047	22.63	0.545	6.10	91	5
18	8.07	29.193	22.74	0.553	6.19	93	2
22	8.03	29.299	22.83	0.534	5.98	90	2

CRUISE BLL 11 STATION 016 POINT FRANCES D-1

DATE 03/21/61 HR 1308 ZN 08 LAT 48-41.6N LONG 122-34.2W AREA BLL
 SDG 0027 TIDE HT 03.5 STG F WSPD * DIR * WEA 02 SEA * BAR *
 DRY 55.9 WET RELHU * CL 4 AMT 2 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.52	17.952	13.80	0.520	5.82	84	
2	8.42	26.594	20.66	0.579	6.48	96	92
5	7.92	27.980	21.81	0.537	6.01	89	17
10	8.20	28.898	22.49	0.560	6.27	94	28
							6
15	8.08	29.088	22.65	0.554	6.20	93	
20	8.11	29.339	22.85	0.544	6.09	92	5
25	8.08	29.502	22.98	0.539	6.04	91	4
30	8.09	29.503	22.98	0.405	4.54	68	0
							-

CRUISE BLL 11 STATION 017 D-2

DATE 03/21/61 HR 1444 ZN 08 LAT 48-41.5N LONG 122-33.7W AREA BLL
 SDG 0026 TIDE HT 01.0 STG F WSPD * DIR * WEA 02 SEA 0 BAR *
 DRY 54.0 WET RELHU * CL 4 AMT 2 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.42	25.008	19.43	0.566	6.34	93	
2	8.03	28.162	21.94	0.559	6.26	93	31
4	8.07	28.953	22.55	0.561	6.28	94	16
7	8.17	29.029	22.60	0.562	6.29	94	5
							4
10	8.03	29.037	22.62	0.561	6.28	94	
15	7.94	29.063	22.65	0.559	6.26	93	2
20	8.06	29.220	22.76	0.551	6.17	93	4
25	8.08	29.487	22.97	0.536	6.00	90	4
							2

CRUISE BLL 11 STATION 018 D-3

DATE 03/21/61 HR 1510 ZN 08 LAT 48-41.4N LONG 122-31.0W AREA BLL
 SDG * TIDE HT 00.9 STG F WSPD * DIR * WEA 02 SEA 0 BAR *
 DRY 54.7 WET RELHU * CL 5 AMT 3 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	9.96	26.075	20.04	0.540	6.05	93	
2	8.63	27.801	21.57	0.573	6.42	97	28
4	8.11	28.783	22.41	0.560	6.27	94	16
7	7.93	28.955	22.57	0.560	6.27	94	7
							5
10	8.00	29.003	22.60	0.561	6.28	94	
15	8.03	29.167	22.72	0.544	6.09	91	4
20	7.98	29.271	22.81	0.536	6.00	90	4
25	8.06	29.458	22.95	0.536	6.00	90	6
							-

CRUISE BLL 11 STATION 019 GOVERNORS POINT F-3

DATE 03/21/61 HR 1544 ZN 08 LAT 48-39.9N LONG 122-31.1W AREA BLL
 SDG 0022 TIDE HT 01.0 STG R WSPD * DIR * WEA * SEA * BAR *
 DRY 59.0 WET RELHU * CL 1 AMT 2 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	SSL
0	8.51	28.647	22.25	0.567	6.35 96	3
2	8.21	28.942	22.52	0.560	6.27 94	5
4	8.08	29.040	22.62	0.557	6.24 93	2
7	8.04	29.118	22.68	0.548	6.14 92	4
10	8.00	29.352	22.87	0.533	5.97 89	2
15	8.08	29.405	22.90	0.535	5.99 90	2
20	8.06	29.415	22.91	0.536	6.00 90	2
25	8.07	29.424	22.92	0.527	5.90 89	1

CRUISE BLL 11 STATION 020 F-2

DATE 03/21/61 HR 1617 ZN 08 LAT 48-40.0N LONG 122-33.7W AREA BLL
 SDG 0024 TIDE HT 01.2 STG R WSPD 04 DIR 270 WEA 02 SEA 1 BAR *
 DRY *. WET RELHU * CL 1 AMT 3 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	SSL
0	10.36	24.498	18.75	0.547	6.13 94	86
2	9.15	24.793	19.16	0.551	6.17 92	49
4	8.35	28.554	22.20	0.572	6.41 96	4
7	8.33	28.768	22.37	0.568	6.36 96	2
10	8.10	28.964	22.56	0.566	6.34 95	2
15	8.15	29.222	22.75	0.552	6.18 93	3
20	8.10	29.318	22.83	0.550	6.16 93	2
25	8.11	29.441	22.93	0.539	6.04 91	0

CRUISE BLL 11 STATION 021 REIL HARBOR F-1

DATE 03/21/61 HR 1653 ZN 08 LAT 48-39.9N LONG 122-36.5W AREA BLL
 SDG 0020 TIDE HT 02.1 STG R WSPD 03 DIR 027 WEA 02 SEA 1 BAR *
 DRY *. WET RELHU * CL 1 AMT 3 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	SSL
0	8.83	24.257	18.79	0.560	6.27 93	35
2	8.19	27.245	21.20	0.560	6.27 93	19
4	8.13	28.462	22.16	0.557	6.24 93	8
7	8.11	28.634	22.30	0.552	6.18 92	5
10	8.11	28.764	22.40	0.548	6.14 92	6
14	8.10	28.868	22.48	0.551	6.17 92	6
18	8.09	28.925	22.53	0.551	6.17 92	6

CRUISE BLL 11 STATION 022 PULP MILL B-3

DATE 03/22/61 HR 0833 ZN 08 LAT 48-44.6N LONG 122-30.3W AREA BLL
 SDG 0009 TIDE HT 10.0 STG R WSPD 05 DIR 030 WEA 02 SEA 1 BAR 30
 DRY *. WET RELHU * CL 5 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	7.98	23.131	18.02	0.548	6.14	88	184
1	7.95	27.413	21.36	0.560	6.27	93	23
2	7.92	27.639	21.54	0.560	6.27	93	16
3	8.01	28.419	22.14	0.560	6.27	93	8
4	8.06	28.619	22.29	0.568	6.36	95	8
6	8.08	28.733	22.38	0.564	6.32	94	6
8	7.95	28.846	22.48	0.525	5.88	88	3

CRUISE BLL 11 STATION 023 G-3

DATE 03/22/61 HR 1048 ZN 08 LAT 48-38.4N LONG 122-31.7W AREA BLL
 SDG 0013 TIDE HT 08.8 STG F WSPD 20 DIR 130 WEA * SEA 3 BAR *
 DRY *. WET RELHU * CL 7 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.15	29.248	22.77	0.547	6.13	92	3
2	8.21	29.255	22.77	0.547	6.13	92	4
4	8.13	29.263	22.78	0.548	6.14	92	3
7	8.12	29.260	22.78	0.547	6.13	92	4
10	8.10	29.311	22.83	0.545	6.10	92	3
13	8.11	29.224	22.76	0.548	6.14	92	3

CRUISE BLL 11 STATION 024 G-4

DATE 03/22/61 HR 1118 ZN 08 LAT 48-37.2N LONG 122-32.4W AREA BLL
 SDG 0022 TIDE HT 08.0 STG F WSPD 16 DIR 130 WEA 02 SEA 3 BAR 30
 DRY *. WET RELHU * CL 5 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.38	28.866	22.44	0.568	6.36	96	6
2	8.42	28.866	22.43	0.568	6.36	96	5
4	8.33	28.886	22.46	0.564	6.32	95	6
7	8.30	28.955	22.52	0.560	6.27	94	3
10	8.16	29.099	22.65	0.553	6.19	93	2
14	8.13	29.419	22.91	0.540	6.05	91	1
18	8.10	29.420	22.91	0.540	6.05	91	4

CRUISE BLL 11 STATION 025 G-5

DATE 03/22/61 HR 1148 ZN 08 LAT 48-35.9N LONG 122-33.9W AREA BLL
 SDG 0042 TIDE HT 07.0 STG F WSPD 18 DIR 130 WEA 02 SEA 2 BAR 29
 DRY *. WET RELHU * CL 5 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.36	29.013	22.56	0.571	6.40	96	4
5	8.40	29.007	22.55	0.571	6.40	97	3
10	8.31	29.066	22.61	0.564	6.32	95	2
15	8.21	29.122	22.66	0.557	6.24	94	3
20	8.13	29.236	22.76	0.551	6.17	93	3
25	8.11	29.295	22.81	0.529	5.92	89	2
30	8.11	29.317	22.83	0.551	6.17	93	2

CRUISE BLL 11 STATION 026 SAMISH BAY, S END H-3

DATE 03/22/61 HR 1217 ZN 08 LAT 48-35.5N LONG 122-31.0W AREA SAM
 SDG 0017 TIDE HT 06.6 STG F WSPD 16 DIR 130 WEA 02 SEA 2 BAR *
 DRY *. WET RELHU * CL 5 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.85	26.500	20.53	0.597	6.69	100	0
2	8.82	27.219	21.09	0.583	6.53	98	0
4	8.31	28.999	22.55	0.571	6.40	96	2
7	8.26	29.081	22.62	0.574	6.43	97	3
10	8.09	29.400	22.90	0.529	5.92	89	2
15	8.07	29.415	22.91	0.525	5.88	88	2

CRUISE BLL 11 STATION 027 SAMISH BAY, MIDDLE OF H-2

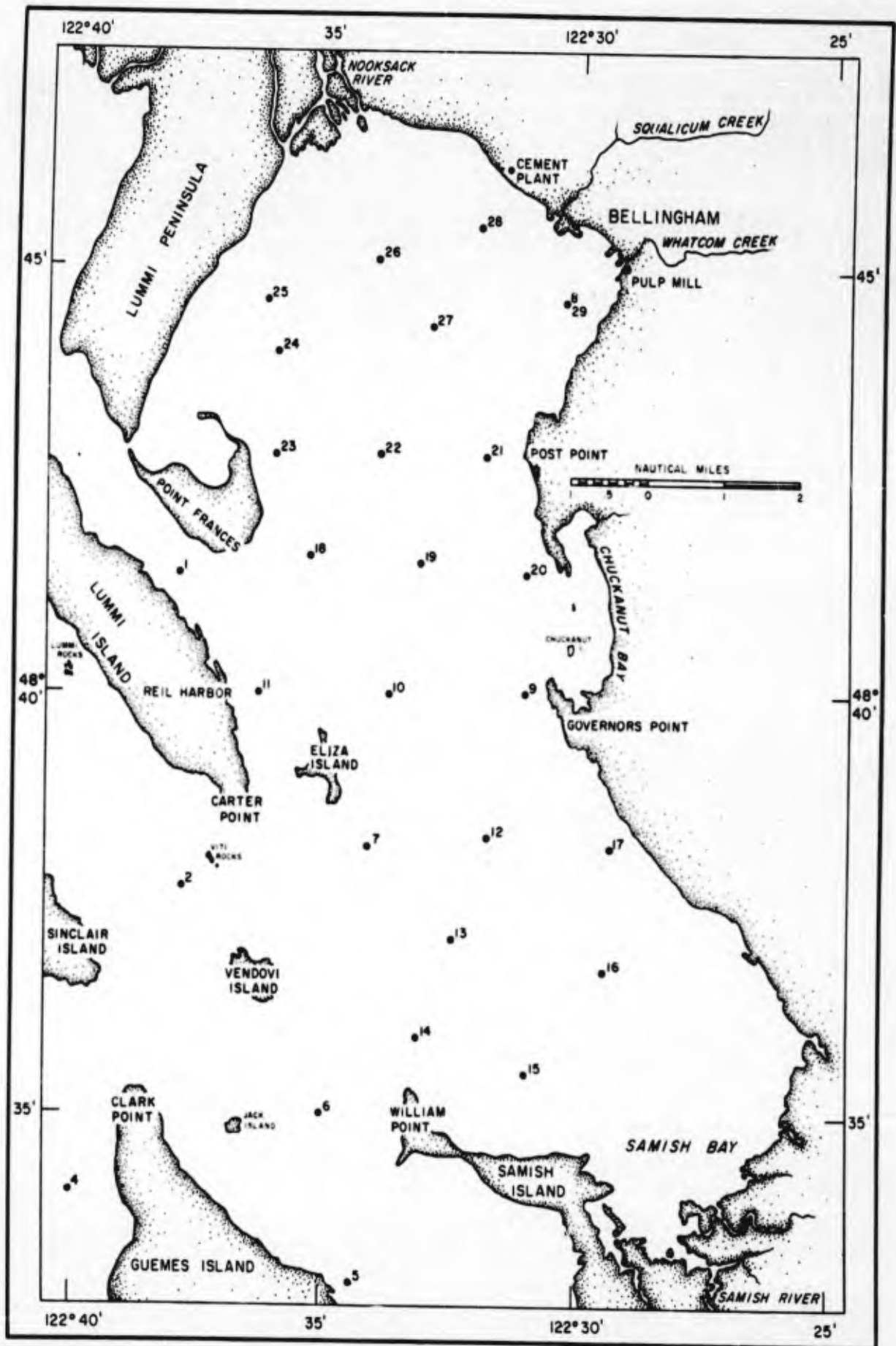
DATE 03/22/61 HR 1253 ZN 08 LAT 48-37.0N LONG 122-29.5W AREA SAM
 SDG 0013 TIDE HT 05.5 STG R WSPD 12 DIR 130 WEA 02 SEA * BAR *
 DRY *. WET RELHU * CL 4 AMT 8 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	8.29	29.105	22.64	0.571	6.40	96	2
2	8.33	29.113	22.64	0.570	6.38	96	2
4	8.27	29.116	22.65	0.570	6.38	96	3
7	8.24	29.150	22.68	0.564	6.32	95	1
10	8.15	29.179	22.72	0.558	6.25	94	0
13	8.11	29.321	22.83	0.538	6.03	91	3

CRUISE BLL 11 STATION 028 SAMISH BAY, N END H-1

DATE 03/22/61 HR 1322 ZN 08 LAT 48-38.4N LONG 122-29.3W AREA SAM
 SDG 0013 TIDE HT 04.5 STG F WSPD 16 DIR 130 WEA 01 SEA 2 BAR 30
 DRY 51.8 WET RELHU * CL 4 AMT 9 SCD * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L	SATN.	SSL
0	8.56	28.757	22.33	0.571	6.40	97	1
2	8.61	28.762	22.33	0.571	6.40	97	2
4	8.48	28.824	22.39	0.568	6.36	96	1
7	8.28	29.048	22.60	0.556	6.23	94	1
10	8.21	---.---	---.---	0.551	6.17	--	-



OCEANOGRAPHIC STATION LOCATIONS
BLL-12 15-16 MAY 1961

CRUISE BLL 12 STATION 001 HALE PASSAGE E-1

DATE 05/15/61 HR 1423 ZN 08 LAT 48-41.4N LONG 122-38.1W AREA HPN
 TIDE HT 02.0 STG R WSPD 10 DIR 310 WEA 10 SEA 1 BAR 22 DRY 54.9
 CL 1 AMT 1 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	11.20	27.089	20.63	0.570	6.38	101
2	11.18	27.256	20.76	0.574	6.43	102
5	9.74	28.644	22.07	0.558	6.25	97
10	9.16	29.238	22.62	0.485	5.43	84
15	9.16	29.368	22.72	0.481	5.39	83
20	9.19	29.372	22.72	0.481	5.39	83
25	9.14	29.366	22.72	0.481	5.39	83
30	8.96	29.496	22.85	0.465	5.21	80

CRUISE BLL 12 STATION 002 VITI ROCKS G-1

DATE 05/15/61 HR 1521 ZN 08 LAT 48-37.8N LONG 122-37.7W AREA BEL
 TIDE HT 04.8 STG R WSPD 10 DIR 310 WEA 10 SEA 1 BAR 20 DRY 53.1
 CL 1 AMT 3 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	9.06	29.636	22.94	---	---	---
5	8.90	29.696	23.01	0.462	5.17	79
10	8.90	29.725	23.04	0.461	5.16	79
20	8.90	29.785	23.08	0.458	5.13	79
30	8.76	29.808	23.12	0.458	5.13	79
40	8.74	29.813	23.13	0.458	5.13	78
60	8.80	29.816	23.12	0.458	5.13	79
80	8.74	29.817	23.13	0.457	5.12	78

CRUISE BLL 12 STATION 003 LAWRENCE POINT

DATE 05/15/61 HR 1613 ZN 08 LAT 49-39.3N LONG 122-43.7W AREA RSR
 TIDE HT 04.0 STG R WSPD 04 DIR 035 WEA 10 SEA 1 BAR 20 DRY *
 CL 1 AMT 3 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	8.89	29.812	23.10	0.456	5.11	78
5	8.86	29.795	23.10	0.457	5.12	79
10	8.84	29.797	23.10	0.454	5.08	78
20	8.79	29.807	23.12	0.453	5.07	78
30	8.74	29.800	23.12	0.453	5.07	78
50	8.82	29.802	23.11	0.453	5.07	78
70	8.74	29.808	23.12	0.453	5.07	78
90	8.68	29.814	23.14	0.453	5.07	78

CRUISE BLL 12 STATION 004 BELLINGHAM CHANNEL K-1

DATE 05/15/61 HR 1733 ZN 08 LAT 48-34.8N LONG 122-40.0W AREA BEL
 TIDE HT 10.3 STG R WSPD 04 DIR 320 WEA 10 SEA * BAR 19 DRY 58.1
 CL 1 AMT 1 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	9.04	29.759	23.04	0.472	5.29	81
5	9.02	29.772	23.05	0.474	5.31	82
10	9.05	29.770	23.05	---	---	---
20	9.05	29.772	23.05	0.471	5.28	81
29	9.04	29.770	23.05	0.475	5.32	82
39	9.10	29.787	23.05	0.476	5.33	82
58	9.03	29.810	23.08	0.473	5.30	82
77	9.02	29.809	23.08	0.473	5.30	82

CRUISE BLL 12 STATION 005 BOAT HARBOR J-1

DATE 05/15/61 HR 1830 ZN 08 LAT 48-33.0N LONG 122-34.3W AREA PAD
 TIDE HT 11.5 STG R WSPD 02 DIR 315 WEA 10 SEA 1 BAR 19 DRY 60.8
 CL 9 AMT 1 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	10.06	28.870	22.19	0.547	6.13	96
5	9.40	29.391	22.70	0.504	5.64	88
10	9.18	29.502	22.82	0.495	5.54	85
20	9.18	29.562	22.87	0.485	5.43	84
30	9.18	29.582	22.88	0.485	5.43	84
50	9.02	29.667	22.97	0.476	5.33	82
70	8.96	29.745	23.04	0.457	5.12	79

CRUISE BLL 12 STATION 006 WILLIAMS POINT G-6

DATE 05/15/61 HR 1903 ZN 08 LAT 48-35.0N LONG 122-35.0W AREA PAD
 TIDE HT 11.6 STG H WSPD 02 DIR 310 WEA 10 SEA 1 BAR 19 DRY 60.8
 CL AMT 0 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	9.65	29.398	22.67	0.608	6.81	106
2	9.46	29.406	22.70	0.587	6.57	102
5	8.97	29.663	22.98	0.476	5.33	82
10	8.96	29.696	23.00	0.493	5.52	85
15	9.01	29.708	23.01	0.478	5.35	82
20	8.98	29.728	23.03	0.474	5.31	82
25	8.94	29.725	23.03	0.474	5.31	82

CRUISE BLL 12 STATION 007 ELIZA ROCK G-2

DATE 05/15/61 HR 1945 ZN 08 LAT 48-38.1N LONG 122-33.9W AREA BLL
 TIDE HT 11.5 STG F WSPD 04 DIR 280 WEA 02 SEA 1 BAR 19 DRY *.
 CL AMT 0 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	11.74	26.622	20.17	0.583	6.53	105
5	9.52	29.245	22.57	0.489	5.48	85
10	9.45	29.332	22.65	0.445	4.98	77
20	9.12	29.542	22.86	0.480	5.38	83
30	9.07	29.673	22.97	0.475	5.32	82
50	8.95	29.766	23.06	0.476	5.33	82
70	8.93	29.752	23.05	0.472	5.29	81
90	8.91	29.750	23.05	0.468	5.24	81

CRUISE BLL 12 STATION 008 PULP MILL B-3

DATE 05/16/61 HR 0828 ZN 08 LAT 48-44.6N LONG 122-30.2W AREA BLL
 TIDE HT 06.5 STG F WSPD 00 DIR WEA 49 SEA 1 BAR 16 DRY 48.7
 CL X AMT SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	12.12	22.217	16.71	0.359	4.02	63
1	11.54	26.989	20.49	0.597	6.69	107
2	11.42	27.261	20.72	0.607	6.80	109
4	10.98	27.770	21.19	0.659	7.38	117
6	10.67	28.119	21.51	0.655	7.34	116
8	10.05	28.590	21.98	0.470	5.26	82

CRUISE BLL 12 STATION 009 GOVERNORS POINT F-3

DATE 05/16/61 HR 0945 ZN 08 LAT 48-40.0N LONG 122-30.9W AREA BLL
 TIDE HT 03.3 STG F WSPD 01 DIR 210 WEA 49 SEA 1 BAR 16 DRY 51.4
 CL X AMT SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	10.40	28.324	21.71	0.607	6.80	107
2	10.55	28.521	21.84	0.671	7.52	119
4	10.30	28.941	22.21	0.654	7.32	116
7	9.55	29.300	22.61	0.578	6.47	101
10	8.89	29.675	23.00	0.459	5.14	79
15	8.84	29.728	23.05	0.450	5.04	77
20	8.82	29.767	23.08	0.458	5.13	79
25	8.88	29.786	23.09	0.468	5.24	80

CRUISE BLL 12 STATION 010 F-2

DATE 05/16/61 HR 1018 ZN 08 LAT 48-39.9N LONG 122-33.7W AREA BLL
 TIDE HT 02.0 STG F WSPD 03 DIR 140 WEA 49 SEA 1 BAR 16 DRY 51.4
 CL X AMT SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	10.10	28.619	21.99	0.603	6.75	106
2	9.86	28.683	22.08	0.654	7.32	114
4	9.68	29.030	22.38	0.663	7.43	116
7	8.87	29.614	22.95	0.480	5.38	82
10	8.88	29.714	23.03	0.476	5.33	82
15	8.97	29.789	23.07	0.473	5.30	82
20	8.92	29.769	23.07	0.472	5.29	81
25	8.95	29.791	23.08	0.471	5.28	81

CRUISE BLL 12 STATION 011 REIL HARBOR F-1

DATE 05/16/61 HR 1048 ZN 08 LAT 48-40.0N LONG 122-36.3W AREA BLL
 TIDE HT 00.7 STG F WSPD 04 DIR 180 WEA 49 SEA 1 BAR 16 DRY 50.9
 CL X AMT SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	9.86	28.777	22.15	0.516	5.78	90
2	9.74	28.913	22.28	0.509	5.70	89
4	9.50	29.076	22.44	0.500	5.60	87
7	9.23	29.304	22.66	0.488	5.47	84
10	9.13	29.544	22.86	0.480	5.38	83
15	9.04	29.623	22.93	0.492	5.51	85
20	8.94	29.700	23.01	0.469	5.25	81

CRUISE BLL 12 STATION 012 G-3

DATE 05/16/61 HR 1132 ZN 08 LAT 48-38.4N LONG 122-31.8W AREA BLL
 TIDE HT 00.5 STG F WSPD 02 DIR 160 WEA 48 SEA 1 BAR 15 DRY 54.9
 CL X AMT SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	10.67	28.403	21.73	0.562	6.29	100
2	10.56	28.751	22.02	0.707	7.92	125
4	9.65	29.145	22.47	0.626	7.01	109
7	9.12	29.734	23.01	0.472	5.29	82
10	9.00	29.738	23.03	0.463	5.19	80
13	8.97	29.740	23.04	0.463	5.19	80

CRUISE BLL 12 STATION 013 G-4

DATE 05/16/61 HR 1155 ZN 08 LAT 48-37.1N LONG 122-32.4W AREA BLL
 TIDE HT 00.8 STG F WSPD 00 DIR WEA 48 SEA BAR 16 DRY 55.4
 CL X AMT SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	10.92	28.452	21.73	0.555	6.22	99
2	10.26	28.615	21.96	0.568	6.36	100
4	10.24	28.648	21.99	0.591	6.62	104
7	10.12	28.877	22.19	0.633	7.09	111
10	9.21	29.719	22.98	0.471	5.28	81
14	9.08	29.751	23.03	0.470	5.26	81
18	9.02	29.747	23.03	0.461	5.16	79

CRUISE BLL 12 STATION 014 G-5

DATE 05/16/61 HR 1225 ZN 08 LAT 48-35.8N LONG 122-33.1W AREA BLL
 TIDE HT 01.3 STG L WSPD 03 DIR 320 WEA 49 SEA 1 BAR * DRY 51.4
 CL X AMT SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	11.40	28.844	21.95	0.764	8.56	138
2	10.36	28.835	22.12	0.691	7.74	122
5	10.13	28.937	22.23	0.620	6.94	109
10	9.52	29.312	22.62	0.600	6.72	104
15	9.22	29.532	22.84	0.471	5.28	81
20	8.99	29.667	22.98	0.536	6.00	92
25	8.86	29.744	23.06	0.461	5.16	79
30	8.86	29.741	23.05	0.460	5.15	79

CRUISE BLL 12 STATION 015 SAMISH BAY H-3

DATE 05/16/61 HR 1352 ZN 08 LAT 48-35.6N LONG 122-30.7W AREA SAM
 TIDE HT 00.7 STG R WSPD 04 DIR 270 WEA 48 SEA 1 BAR 91 DRY *
 CL 4 AMT 2 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	12.49	28.411	21.42	0.736	8.24	136
2	10.94	28.783	21.98	0.776	8.69	139
4	10.20	29.166	22.40	0.746	8.36	132
7	9.25	29.499	22.81	0.547	6.13	95
10	9.06	29.625	22.93	0.480	5.38	83
13	8.93	29.667	22.99	0.468	5.24	80

CRUISE BLL 12 STATION 016 SAMISH BAY H-2

DATE 05/16/61 HR 1418 ZN 08 LAT 48-36.7N LONG 122-29.6W AREA SAM
 TIDE HT 00.2 STG R WSPD 03 DIR 285 WEA 41 SEA 1 BAR 15 DRY *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.
0	14.28	27.163	20.12	0.730	8.16 139
2	10.86	28.673	21.91	0.702	7.86 125
4	9.66	29.361	22.64	0.572	6.41 100
7	8.96	29.683	22.99	0.459	5.14 79
10	8.82	29.736	23.06	0.441	4.94 76
13	8.77	---	---	0.442	4.95 --

CRUISE BLL 12 STATION 017 SAMISH BAY, N OF H-1

DATE 05/16/61 HR 1442 ZN 08 LAT 48-38.3N LONG 122-29.7W AREA SAM
 TIDE HT 00.9 STG R WSPD 04 DIR 280 WEA 41 SEA 2 BAR 15 DRY 56.8
 CL 4 AMT 2 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.
0	13.66	28.267	21.09	0.659	7.38 125
2	13.32	28.340	21.21	0.697	7.81 131
4	11.78	28.349	21.50	0.772	8.65 140
7	11.84	28.427	21.55	0.754	8.44 137
10	8.87	29.750	23.06	0.448	5.02 77

CRUISE BLL 12 STATION 018 POINT FRANCES D-1

DATE 05/16/61 HR 1536 ZN 08 LAT 48-41.5N LONG 122-35.2W AREA BLL
 TIDE HT 03.0 STG R WSPD 04 DIR 325 WEA 10 SEA 1 BAR 15 DRY 63.5
 CL 4 AMT 2 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.
0	12.04	25.792	19.48	0.624	6.99 112
2	10.38	28.365	21.75	0.563	6.31 99
5	9.54	29.109	22.46	0.579	6.48 101
10	8.91	29.573	22.92	0.464	5.20 80
15	8.74	29.697	23.04	0.465	5.21 80
20	8.72	29.723	23.06	0.400	4.48 68
25	8.71	29.761	23.09	0.400	4.48 68
29	8.70	29.853	23.16	0.388	4.35 66

CRUISE BLL 12 STATION 019 D-2

DATE 05/16/61 HR 1610 ZN 08 LAT 48-41.5N LONG 122-34.2W AREA BLL
 TIDE HT 04.5 STG R WSPD 03 DIR 330 WEA 10 SEA 1 BAR 15 DRY *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	12.35	28.214	21.30	0.670	7.50	123
2	10.46	28.598	21.92	0.756	8.47	134
4	9.84	28.923	22.27	0.693	7.76	121
7	9.14	29.455	22.79	0.494	5.53	85
10	9.11	29.485	22.82	0.488	5.47	84
15	9.04	29.509	22.85	0.488	5.47	84
20	8.92	29.674	22.99	0.472	5.29	81
25	8.82	29.764	23.08	0.463	5.19	79

CRUISE BLL 12 STATION 020 D-3

DATE 05/16/61 HR 1635 ZN 08 LAT 48-41.6N LONG 122-31.0W AREA BLL
 TIDE HT 06.0 STG R WSPD 00 DIR WEA 10 SEA 1 BAR 15 DRY *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	12.01	28.203	21.35	0.733	8.21	134
2	11.48	28.386	21.58	0.724	8.11	131
4	11.20	28.436	21.67	0.763	8.55	137
7	9.78	29.138	22.44	0.638	7.15	112
10	9.35	29.363	22.69	0.555	6.22	96
15	8.83	29.730	23.05	0.456	5.11	78
20	8.77	29.760	23.08	0.448	5.02	77
25	8.74	29.784	23.10	0.441	4.94	76

CRUISE BLL 12 STATION 021 POST POINT C-3

DATE 05/16/61 HR 1700 ZN 08 LAT 48-42.8N LONG 122-31.9W AREA BLL
 TIDE HT 07.2 STG R WSPD 02 DIR 330 WEA 10 SEA 1 BAR 15 DRY 63.5

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	12.18	27.630	20.88	0.660	7.39	120
2	10.46	28.514	21.85	0.660	7.39	117
4	10.32	28.949	22.21	0.660	7.39	117
7	9.34	29.152	22.52	0.537	6.01	93
10	9.01	29.469	22.82	0.447	5.01	77
15	8.96	29.722	23.02	0.473	5.30	81
20	8.85	29.773	23.08	0.465	5.21	80
25	8.81	29.785	23.10	0.462	5.17	79
30	8.73	29.812	23.13	0.434	4.86	74

CRUISE BLL 12 STATION 022 C-2

DATE 05/16/61 HR 1729 ZN 08 LAT 48-42.9N LONG 122-33.8W AREA BLL
 TIDE HT 08.3 STG R WSPD 00 DIR WEA 10 SEA 1 BAR * DRY 63.1
 CL 4 AMT 2 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	12.46	27.666	20.85	0.704	7.88	129
2	10.96	28.343	21.64	0.758	8.49	135
4	10.08	28.780	22.12	0.640	7.17	112
7	9.22	29.277	22.64	0.526	5.89	91
10	9.19	29.400	22.74	0.500	5.60	86
15	9.08	29.438	22.78	0.491	5.50	85
20	8.79	29.587	22.94	0.477	5.34	82
25	8.68	29.776	23.11	0.442	4.95	76

CRUISE BLL 12 STATION 023 C-1

DATE 05/16/61 HR 1744 ZN 08 LAT 48-42.8N LONG 122-36.0W AREA BLL
 TIDE HT 09.0 STG R WSPD 03 DIR 330 WEA 10 SEA 1 BAR 15 DRY 63.5
 CL 4 AMT 2 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	14.76	21.570	15.74	0.641	7.18	119
2	11.04	27.788	21.19	0.733	8.21	131
4	10.73	28.051	21.45	0.726	8.13	129
7	9.48	29.146	22.50	0.686	7.68	119
10	9.01	29.450	22.80	0.475	5.32	82
14	8.81	29.647	22.99	0.458	5.13	79
18	8.64	29.773	23.11	0.398	4.46	68
22	8.65	29.800	23.13	0.400	4.48	68

CRUISE BLL 12 STATION 024 B-1

DATE 05/16/61 HR 1808 ZN 08 LAT 48-43.7N LONG 122-35.6W AREA BLL
 TIDE HT 10.0 STG R WSPD 00 DIR WEA * SEA 1 BAR 15 DRY 62.6
 CL 4 AMT 2 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	15.28	18.964	13.65	0.596	6.68	110
1	11.70	26.943	20.43	0.697	7.81	125
2	11.06	27.506	20.97	0.731	8.19	130
4	9.94	28.968	22.29	0.732	8.20	128
7	9.12	29.258	22.64	0.517	5.79	89
10	9.02	29.543	22.88	0.500	5.60	86
14	8.70	29.718	23.06	0.417	4.67	71
18	8.67	29.782	23.11	0.344	3.85	59

CRUISE BLL 12 STATION 025 A-1

DATE 05/16/61 HR 1836 ZN 08 LAT 48-44.7N LONG 122-36.1W AREA BLL
 TIDE HT 10.1 STG R WSPD 03 DIR 330 WEA 10 SEA 1 BAR 15 DRY 61.5
 CL 4 AMT 2 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	13.00	24.899	18.62	0.630	7.06	115
1	11.63	26.322	19.96	0.694	7.77	124
2	11.30	27.391	20.84	0.619	6.93	111
4	10.57	28.665	21.95	0.618	6.92	110
6	10.04	29.037	22.32	---	---	140
8	9.30	29.266	22.62	0.444	4.97	77

CRUISE BLL 12 STATION 026 A-2

DATE 05/16/61 HR 1937 ZN 08 LAT 48-45.4N LONG 122-33.5W AREA BLL
 TIDE HT 11.5 STG R WSPD 03 DIR 330 WEA 10 SEA 1 BAR 15 DRY 62.4
 CL 4 AMT 2 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	13.69	21.176	15.64	0.592	6.63	107
1	11.20	27.225	20.73	0.691	7.74	123
2	10.14	28.827	22.15	0.750	8.40	132
4	9.83	29.058	22.37	0.637	7.13	111
6	9.65	29.032	22.38	0.554	6.20	97
8	9.34	29.087	22.47	0.540	6.05	93
10	9.15	29.419	22.76	0.454	5.08	78

CRUISE BLL 12 STATION 027 B-2

DATE 05/16/61 HR 2006 ZN 08 LAT 48-44.4N LONG 122-32.7W AREA BLL
 TIDE HT 11.6 STG H WSPD 05 DIR 170 WEA 01 SEA 1 BAR 15 DRY 59.9
 CL 4 AMT 1 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	11.88	25.000	18.90	0.602	6.74	107
1	11.37	27.523	20.93	0.683	7.65	122
2	10.83	27.760	21.21	0.754	8.44	134
4	10.24	28.818	22.12	0.737	8.25	130
7	9.22	29.420	22.75	0.528	5.91	91
10	9.04	29.543	22.87	0.501	5.61	86
15	8.71	29.747	23.08	0.454	5.08	78
20	8.69	29.784	23.11	0.416	4.66	71

CRUISE BLL 12 STATION 028 CEMENT PLANT A-3

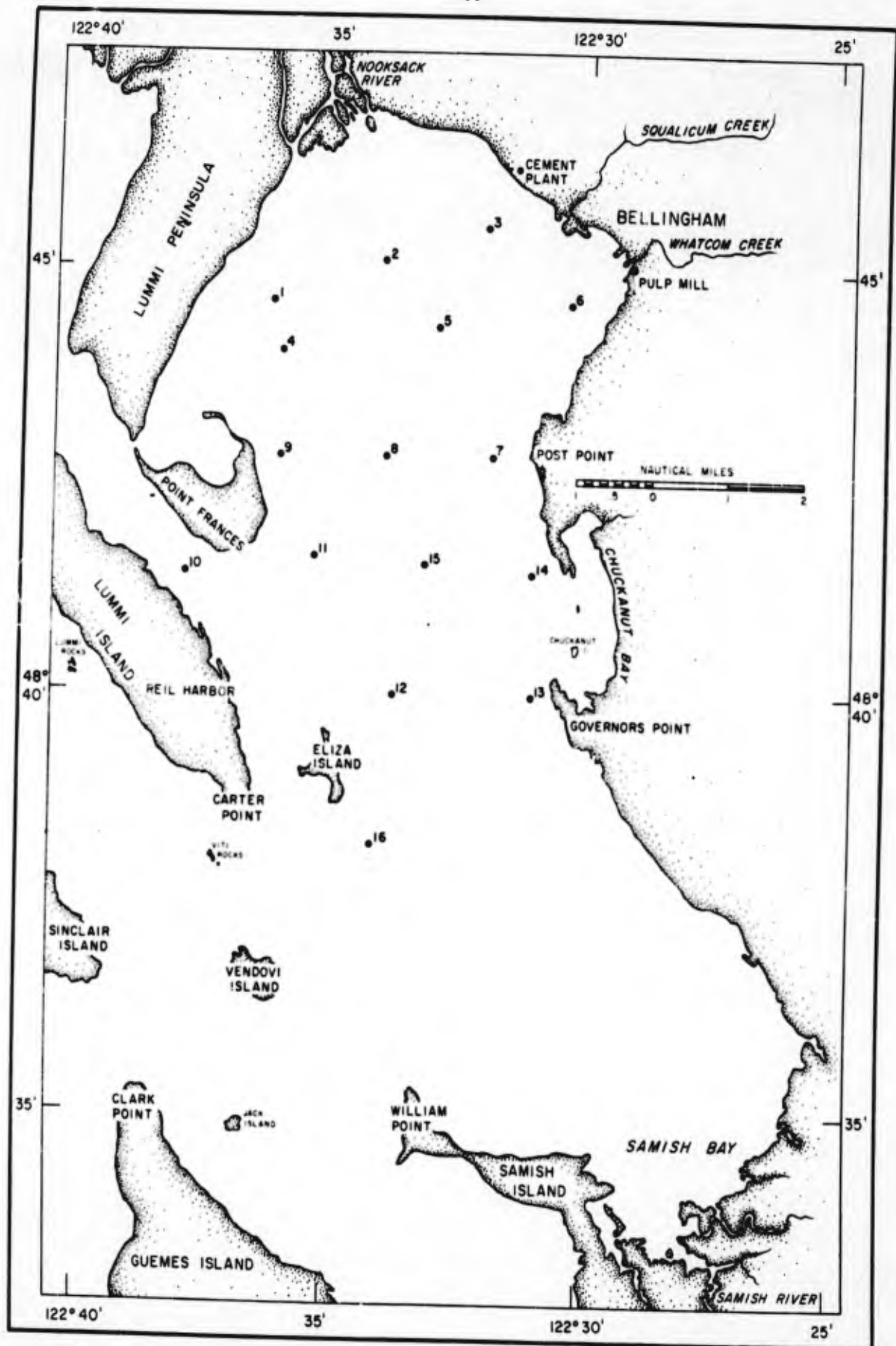
DATE 05/16/61 HR 2029 ZN 08 LAT 48-45.5N LONG 122-31.9W AREA BLL
 TIDE HT 11.5 STG F WSPD 04 DIR 185 WEA 02 SEA 1 BAR 14 DRY 58.1
 CL 4 AMT 1 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	13.37	20.507	15.18	0.618	6.92	110
1	12.30	24.909	18.76	0.619	6.93	111
2	11.32	27.423	20.86	0.687	7.69	123
4	10.40	28.607	21.93	0.646	7.24	114
6	9.50	29.117	22.47	0.400	4.48	69
8	9.04	29.533	22.86	0.333	3.73	57

CRUISE BLL 12 STATION 029 PULP MILL B-3

DATE 05/16/61 HR 2054 ZN 08 LAT 48-44.7N LONG 122-30.2W AREA BLL
 TIDE HT 11.2 STG F WSPD 08 DIR 200 WEA 01 SEA 1 BAR 15 DRY 60.1
 CL AMT 0 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN		
				MG.AT.	ML/L	SATN.
0	14.20	27.207	20.17	0.453	5.07	86
1	11.76	27.598	20.92	0.657	7.36	119
2	11.04	27.599	21.05	0.636	7.12	113
4	10.54	28.353	21.71	0.644	7.21	114
6	10.07	28.804	22.14	0.640	7.17	112
8	9.22	29.207	22.58	0.378	4.23	65



OCEANOGRAPHIC STATION LOCATIONS
BLL-13 10-11 JULY 1961

CRUISE BLL 13 STATION 001 CEMENT PLANT A-3

DATE 07/10/61 HR 1310 ZN 08 LAT 48-45.5N LONG 122-32.0W AREA BLL
 TIDE HT 03.3 STG R WSPD 10 DIR 250 WEA 02 SEA 1 BAR * DRY *
 CL AMT 0 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	18.89	24.659	17.21	0.621	6.96	127	36
1	15.80	26.988	19.68	0.777	8.70	152	13
2	15.76	27.791	20.30	0.849	9.51	167	8
4	13.43	28.030	20.95	0.858	9.61	161	5
6	13.15	28.211	21.15	0.755	8.46	141	5
8	13.10	28.315	21.23	0.755	8.46	141	8

CRUISE BLL 13 STATION 002 A-2

DATE 07/10/61 HR 1442 ZN 08 LAT 48-45.1N LONG 122-34.0W AREA BLL
 TIDE HT 06.9 STG R WSPD 07 DIR 270 WEA 02 SEA 1 BAR * DRY *
 CL AMT 0 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	15.78	27.030	19.71	0.788	8.83	154	-
1	15.32	27.180	19.92	0.787	8.81	153	7
2	13.60	28.022	20.91	0.783	8.77	147	9
4	12.75	28.204	21.21	0.710	7.95	132	9
6	12.68	28.388	21.37	0.653	7.31	121	-
8	12.64	28.398	21.38	0.638	7.15	118	-

CRUISE BLL 13 STATION 003 A-1

DATE 07/10/61 HR 1539 ZN 08 LAT 48-44.6N LONG 122-36.2W AREA BLL
 TIDE HT 09.2 STG R WSPD 07 DIR 270 WEA 02 SEA 1 BAR * DRY *
 CL AMT 0 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	15.64	27.548	20.14	0.722	8.09	141	9
1	14.91	27.822	20.50	0.755	8.46	146	7
2	13.22	28.206	21.13	0.816	9.14	153	4
4	12.79	28.350	21.32	0.732	8.20	136	7
6	12.46	28.420	21.43	0.619	6.93	114	11
8	12.16	28.633	21.65	0.411	4.60	75	--

DATE 07/10/61 HR 1619 ZN 08 LAT 48-44.0N LONG 122-36.0W AREA BLL
TIDE HT 10.4 STG R WSPD * DIR * WEA 02 SEA 1 BAR * DRY *
CL AMT 0 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	17.11	26.758	19.21	0.727	8.14	146	
1	17.12	26.753	19.21	0.736	8.24	147	4
2	14.62	27.105	20.01	0.798	8.94	153	4
4	12.96	28.211	21.18	0.736	8.24	137	5
7	12.63	28.296	21.31	0.695	7.78	128	5
10	12.00	28.621	21.67	0.590	6.61	108	6
14	11.47	28.890	21.97	0.451	5.05	82	4

CRUISE BLL 13 STATION 005 B-2

DATE 07/10/61 HR 1704 ZN 08 LAT 48-44.3N LONG 122-32.9W AREA BLL
TIDE HT 11.0 STG H WSPD 09 DIR 270 WEA 02 SEA 1 BAR * DRY *
CL AMT 0 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	18.72	25.633	17.99	0.695	7.78	143	
1	17.96	25.802	18.29	0.715	8.01	145	18
2	16.22	27.043	19.63	0.816	9.14	161	14
4	14.56	27.407	20.25	0.801	8.97	153	3
7	13.56	28.110	20.99	0.695	7.78	131	0
10	12.78	28.434	21.39	0.660	7.39	123	0
15	11.45	28.810	21.92	0.491	5.50	89	2
20	11.08	29.076	22.18	0.423	4.74	76	1
							1

CRUISE BLL 13 STATION 006 PULP MILL B-3

DATE 07/10/61 HR 1737 ZN 08 LAT 48-44.6N LONG 122-30.3W AREA BLL
TIDE HT 11.0 STG F WSPD 04 DIR 247 WEA 02 SEA 1 BAR * DRY *
CL AMT 0 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	20.44	24.264	16.53				
1	17.26	27.086	19.43	0.426	4.77	89	274
2	16.33	27.450	19.91	0.638	7.15	129	47
4	15.81	27.717	20.23	0.820	9.18	163	10
				0.829	9.28	163	10
6	15.50	27.781	20.34				
8	14.94	27.941	20.58	0.838	9.39	164	3
				0.837	9.37	162	5

CRUISE BLL 13 STATION 007 POST POINT C-3

DATE 07/11/61 HR 0833 ZN 08 LAT 48-42.8N LONG 122-31.8W AREA BLL
 TIDE HT 01.6 STG F WSPD * DIR * WEA 02 SEA 1 BAR * DRY *
 CL AMT 0 SCI 03 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	14.44	25.560	18.86	0.597	6.69	113	5
2	14.08	25.833	19.14	0.632	7.08	119	1
4	13.46	26.103	19.47	0.476	5.33	88	0
7	---	26.984	---	0.438	4.91	---	2
10	14.55	27.354	20.21	0.527	5.90	101	3
15	12.37	28.443	21.47	0.528	5.91	97	2
20	11.38	28.851	21.96	0.354	3.96	64	2
25	10.64	29.410	22.52	0.314	3.52	56	1
30	10.46	29.472	22.59	0.326	3.65	58	1

CRUISE BLL 13 STATION 008 C-2

DATE 07/11/61 HR 0919 ZN 08 LAT 48-42.8N LONG 122-33.9W AREA BLL
 TIDE HT 02.0 STG F WSPD * DIR * WEA 02 SEA 1 BAR * DRY *
 CL AMT 0 SCI 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	14.76	25.470	18.73	0.686	7.68	130	3
2	14.08	25.757	19.08	0.614	6.88	115	1
4	13.42	26.502	19.78	0.570	6.38	106	2
7	14.61	27.508	20.32	0.721	8.08	138	2
10	14.22	27.811	20.63	0.694	7.77	132	3
15	12.08	---	---	0.511	5.72	---	3
20	11.14	28.421	21.67	0.423	4.74	76	0

CRUISE BLL 13 STATION 009 C-1

DATE 07/11/61 HR 0956 ZN 08 LAT 48-42.0N LONG 122-36.0W AREA BLL
 TIDE HT 00.7 STG F WSPD * DIR * WEA 02 SEA 1 BAR * DRY *
 CL AMT 0 SCI 03 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	17.74	21.207	14.85	0.658	7.37	129	12
2	17.34	26.189	18.73	0.768	8.60	154	7
4	14.88	26.960	19.84	0.727	8.14	140	4
10	13.54	27.654	20.64	0.655	7.34	123	3
14	12.60	28.104	21.17	0.605	6.78	112	4
18	12.77	28.327	21.31	0.565	6.33	105	3
22	11.46	28.947	22.02	0.386	4.32	70	-

CRUISE BLL 13 STATION 010 HALE PASSAGE E-1

DATE 07/11/61 HR 1057 ZN 08 LAT 48-41.4N LONG 122-37.9W AREA HPN
 TIDE HT 01.3 STG L WSPD * DIR * WEA 02 SEA 1 BAR * DRY *
 CL AMT 0 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	15.58	22.649	16.41	0.586	6.56	111	3
2	15.20	23.108	16.83	0.613	6.87	116	1
5	14.56	25.811	19.03	0.552	6.18	103	3
10	13.48	26.812	20.01	0.508	5.69	93	3
15	12.36	27.510	20.75	0.489	5.48	89	2
25	11.86	28.420	21.54	0.450	5.04	82	5
30	11.54	28.699	21.81				2

CRUISE BLL 13 STATION 011 POINT FRANCES D-1

DATE 07/11/61 HR 1135 ZN 08 LAT 48-41.6N LONG 122-35.3W AREA BLL
 TIDE HT 01.1 STG R WSPD * DIR * WEA 02 SEA 1 BAR * DRY *
 CL AMT 0 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	17.10	24.818	17.74	0.618	6.92	122	6
2	16.44	24.852	17.91	0.670	7.50	131	5
4	14.56	27.080	20.00	0.540	6.05	103	5
7	12.46	27.889	21.02	0.537	6.01	99	3
10	12.16	28.371	21.45	0.536	6.00	98	3
15	12.05	28.621	21.66	0.527	5.90	97	2
20	10.86	29.204	22.32	0.406	4.55	73	3
25	10.52	29.422	22.55	0.338	3.79	60	2
30	10.62	29.432	22.54	0.387	4.33	69	2

CRUISE BLL 13 STATION 012 F-2

DATE 07/11/61 HR 1303 ZN 08 LAT 48-40.0N LONG 122-33.7W AREA BLL
 TIDE HT 01.4 STG R WSPD * DIR * WEA 02 SEA 1 BAR * DRY *
 CL AMT 0 SCI * SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	16.72	24.309	17.43	0.644	7.21	126	9
2	16.68	24.428	17.53	0.659	7.38	129	10
4	16.68	24.585	17.65	0.675	7.56	132	7
7	15.24	24.872	18.17	0.622	6.97	119	4
10	13.80	26.176	19.46	0.612	6.85	114	3
15	13.36	27.820	20.80	0.590	6.61	109	3
20	12.40	28.400	21.43	0.439	4.92	79	3
25	11.17	28.975	22.09				0

CRUISE BLL 13 STATION 013 GOVERNORS POINT F-3

DATE 07/11/61 HR 1342 ZN 08 LAT 48-40.0N LONG 122-31.0W AREA BLL
 TIDE HT 02.9 STG R WSPD * DIR * WEA 02 SEA 1 BAR * DRY *
 CL AMT 0 SCI 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	17.10	25.450	18.22	0.679	7.60	135	6
2	16.50	25.437	18.34	0.686	7.68	135	5
4	14.36	25.420	18.77	0.642	7.19	121	1
7	14.34	26.036	19.24	0.642	7.19	121	1
10	14.22	26.031	19.26	0.638	7.15	120	2
15	13.28	26.753	20.00	0.545	6.10	101	2
20	11.96	28.267	21.41	0.479	5.36	87	2
25	11.34	28.552	21.73	0.403	4.51	73	2

CRUISE BLL 13 STATION 014 D-3

DATE 07/11/61 HR 1421 ZN 08 LAT 48-41.4N LONG 122-31.0W AREA BLL
 TIDE HT 04.6 STG R WSPD * DIR * WEA 02 SEA 1 BAR * DRY *
 CL AMT 0 SCI 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	16.80	25.493	18.32	0.683	7.65	135	5
2	16.66	25.496	18.35	0.693	7.76	137	5
4	16.56	25.622	18.47	0.700	7.84	138	5
7	15.60	25.730	18.76	0.704	7.88	136	4
10	14.38	26.362	19.49	---	---	---	4
15	13.14	26.925	20.16	0.581	6.51	108	3
20	12.26	27.763	20.96	0.496	5.56	91	5
25	11.08	28.996	22.12	0.406	4.55	73	1

CRUISE BLL 13 STATION 015 D-2

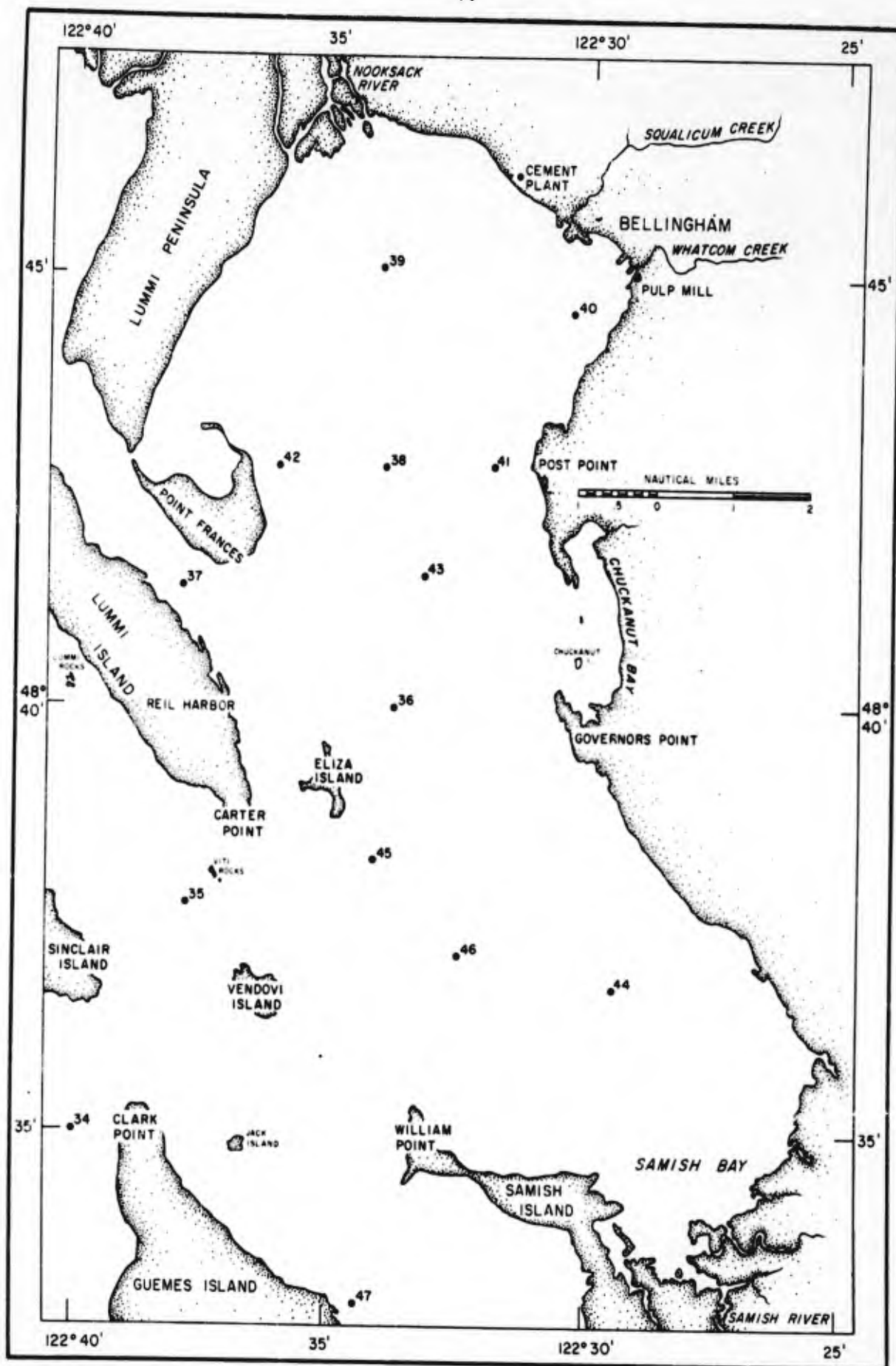
DATE 07/11/61 HR 1505 ZN 08 LAT 48-41.5N LONG 122-33.1W AREA BLL
 TIDE HT 06.4 STG R WSPD * DIR * WEA 02 SEA 1 BAR * DRY *
 CL AMT 0 SCI 05 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	SSL
0	18.70	25.824	18.14	7
2	17.07	26.002	18.65	6
4	15.19	27.363	20.09	6
7	12.51	27.554	20.76	3
10	12.69	28.315	21.31	1
15	11.94	28.348	21.47	1
20	11.08	28.882	22.03	1
25	10.62	---	---	1

CRUISE BLL 13 STATION 016 G-2

DATE 07/13/61 HR 0856 ZN 08 LAT 48-38.2N LONG 122-34.1W AREA BLL
 TIDE HT 03.4 STG F WSPD * DIR * WEA 02 SEA BAR * DRY *
 CL AMT 0 SCI 04 SPOB *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			SSL
				MG.AT.	ML/L	SATN.	
0	17.68	24.524	17.39	0.677	7.58	135	15
5	14.78	25.641	18.86	0.636	7.12	121	3
9	12.10	27.828	21.04	0.473	5.30	86	2
19	11.36	28.603	21.77	0.416	4.66	75	2
28	11.23	28.823	21.96	0.409	4.58	74	3
42	10.92	29.074	22.21	0.380	4.26	68	1
59	10.98	29.107	22.23	0.374	4.19	67	1
76	10.66	29.291	22.42	0.377	4.22	67	1



OCEANOGRAPHIC STATION LOCATIONS
BLL-14 BB 296 15 NOV. 1961

CRUISE BB 296 STATION 034 BELLINGHAM CHANNEL K-1

DATE 11/15/61 HR 1051 ZN 08 LAT 48-35.0N LONG 122-40.0W AREA BEL
SDG 0082M TIDE HT 09.4 STG H WSPD 16 DIR 034 WEA 01 SEA 2 BAR 37
DRY 41.4 WET 39.0 RELHU 81 CL 6 AMT 1 SCD 04

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.
				MG.AT.	ML/L	SATN.	
0	8.62	30.534	23.71	0.401	4.49	69	2.68
5	8.62	30.598	23.76	0.398	4.46	68	2.67
10	8.61	30.601	23.76	0.394	4.41	68	2.69
20	8.61	30.623	23.78	0.391	4.38	67	2.71
39	8.62	30.643	23.79	0.391	4.38	67	2.74
59	8.63	30.646	23.79	0.391	4.38	67	2.71
78	8.64	30.653	23.80	0.388	4.35	67	2.73

CRUISE BB 296 STATION 035 VITI ROCKS G-1

DATE 11/15/61 HR 1138 ZN 08 LAT 48-37.7N LONG 122-37.8W AREA BLL
SDG 0090M TIDE HT 09.4 STG H WSPD 17 DIR 033 WEA 01 SEA 2 BAR 38
DRY 45.5 WET 39.9 RELHU 60 CL 8 AMT 2 SCD *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.
				MG.AT.	ML/L	SATN.	
0	8.64	30.188	23.43	0.419	4.69	72	2.67
2	8.63	30.194	23.44	0.425	4.76	73	2.67
5	8.63	30.223	23.46	0.415	4.65	71	2.67
10	8.63	30.233	23.47	0.412	4.61	71	2.67
20	8.64	30.265	23.49	0.409	4.58	70	2.75
30	8.63	30.282	23.51	0.409	4.58	70	2.76
40	8.62	30.304	23.53	0.409	4.58	70	2.64
60	8.63	30.333	23.55	0.401	4.49	69	2.68
80	8.68	30.374	23.57	0.395	4.42	68	2.62

CRUISE BB 296 STATION 036 F-2

DATE 11/15/61 HR 1247 ZN 08 LAT 48-00.0N LONG 122-34.6W AREA BLL
SDG 0027M TIDE HT 07.5 STG F WSPD 13 DIR 035 WEA 00 SEA 1 BAR 36
DRY 44.4 WET 40.0 RELHU 68 CL 2 AMT 2 SCD *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.
				MG.AT.	ML/L	SATN.	
0	8.58	29.545	22.94	0.462	5.17	79	2.60
2	8.58	29.596	22.98	0.465	5.21	79	2.64
4	8.57	29.597	22.98	0.464	5.20	79	2.58
7	8.56	29.605	22.99	0.458	5.13	78	2.62
10	8.60	29.625	23.00	0.458	5.13	78	2.61
15	8.70	30.269	23.49	0.459	5.14	79	2.65
20	8.70	30.372	23.57	0.389	4.36	67	2.66
24	8.70	30.481	23.65	0.385	4.31	66	2.68

CRUISE BB 296 STATION 037 HALE PASSAGE, SOUTH END E-1

DATE 11/15/61 HR 1336 ZN 08 LAT 48-41.4N LONG 122-37.9W AREA BLL
 SDG 0037M TIDE HT 08.0 STG F WSPD 13 DIR 032 WEA 00 SEA 1 BAR 36
 DRY 44.0 WET 40.0 RELHU 71 CL 2 AMT 2 SCD 03

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L	SATN.	PHOS.
0	8.08	28.632	22.30	0.512	5.73	86	2.56
2	8.07	28.695	22.35	0.512	5.73	86	2.56
5	8.02	28.709	22.37	0.520	5.82	87	2.57
10	8.57	29.748	23.10	0.441	4.94	75	2.67
15	8.61	30.277	23.51	0.403	4.51	69	2.69
19	8.65	30.387	23.59	0.393	4.40	68	2.77
29	8.70	30.472	23.65	0.389	4.36	67	2.79

CRUISE BB 296 STATION 038 C-2

DATE 11/15/61 HR 1435 ZN 08 LAT 48-42.5N LONG 122-34.5W AREA BLL
 SDG 0031M TIDE HT 06.9 STG F WSPD 14 DIR 360 WEA 00 SEA 1 BAR 36
 DRY 48.0 WET 41.0 RELHU 54 CL 2 AMT 3 SCD *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L	SATN.	PHOS.
0	8.59	29.361	22.80	0.463	5.19	79	2.61
1	8.59	29.413	22.84	0.458	5.13	78	2.61
2	8.59	29.413	22.84	0.455	5.10	78	2.56
4	8.59	29.413	22.84	0.456	5.11	78	2.54
7	8.56	29.447	22.87	0.461	5.16	79	2.58
10	8.68	29.944	23.24	0.421	4.72	72	2.66
15	8.73	30.118	23.37	0.409	4.58	70	2.68
20	8.70	30.387	23.58	0.382	4.28	66	2.71
25	8.74	30.404	23.59	0.379	4.24	65	2.77

CRUISE BB 296 STATION 039 A-2

DATE 11/15/61 HR 1538 ZN 08 LAT 48-45.0N LONG 122-34.0W AREA BLL
 SDG 0009M TIDE HT 06.0 STG F WSPD 10 DIR 360 WEA 00 SEA * BAR 36
 DRY 44.1 WET 41.2 RELHU 99 CL 2 AMT 2 SCD 02

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L	SATN.	PHOS.
0	8.63	29.452	22.86	0.453	5.07	77	2.67
1	8.65	29.464	22.87	0.451	5.05	77	2.68
2	8.64	29.464	20.53	0.453	5.07	76	2.67
4	8.67	29.464	22.87	0.452	5.06	77	2.69
6	8.76	29.909	23.20	0.429	4.80	74	2.76
8	8.80	30.180	23.40	0.404	4.52	70	2.66

CRUISE BB 296 STATION 040 PULP MILL B-3

DATE 11/15/61 HR 1618 ZN 08 LAT 48-44.5N LONG 122-30.2W AREA BLL
 SDG 0009M TIDE HT 05.5 STG F WSPD 09 DIR 360 WEA 01 SEA 1 BAR 36
 DRY 47.0 WET 39.7 RELHU 52 CL 7 AMT 3 SCD 02

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.
0	8.85	29.973	23.24	0.384	4.30 66	3.03
1	8.86	29.981	23.24	0.393	4.40 68	2.89
2	8.84	29.997	23.26	0.382	4.28 66	2.99
4	8.84	30.004	23.26	0.382	4.28 66	2.98
6	8.84	30.089	23.33	0.382	4.28 66	2.91
8	8.87	30.189	23.40	0.380	4.26 66	2.93

CRUISE BB 296 STATION 041 POST POINT C-3

DATE 11/15/61 HR 1654 ZN 08 LAT 48-42.8N LONG 122-31.8W AREA BL4
 SDG 0031M TIDE HT 05.5 STG F WSPD 11 DIR 350 WEA 01 SEA 2 BAR 36
 DRY 45.5 WET 41.0 RELHU 68 CL 7 AMT 4 SCD *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.
0	8.77	30.099	23.35	0.406	4.55 70	2.75
1	8.76	30.101	23.35	0.406	4.55 70	2.73
2	8.77	30.107	23.35	0.403	4.51 69	2.76
4	8.76	30.110	23.36	0.402	4.50 69	2.74
7	8.79	30.166	23.40	0.403	4.51 69	2.77
10	8.78	30.194	23.42	0.396	4.44 68	2.77
15	8.75	30.300	23.51	0.389	4.36 67	2.80
20	8.74	30.314	23.52	0.391	4.38 67	2.73
25	8.74	30.326	23.53	0.390	4.37 67	2.69
29	8.74	30.346	23.54	0.390	4.37 67	2.67

CRUISE BB 296 STATION 042 C-1

DATE 11/15/61 HR 1733 ZN 08 LAT 48-42.8N LONG 122-36.0W AREA BLL
 SDG 0025M TIDE HT 05.4 STG L WSPD 10 DIR 340 WEA 01 SEA 2 BAR 27
 DRY 43.4 WET 40.2 RELHU 77 CL 7 AMT 2 SCD *

DEPTH	TEMP.	SAL.	SIGMA-T	MG.AT.	OXYGEN ML/L SATN.	PHOS.
0	7.94	25.662	20.00	0.535	5.99 87	2.50
1	8.04	25.996	20.25	0.528	5.91 87	2.50
2	8.11	26.987	21.01	0.515	5.77 85	2.47
4	8.43	28.744	22.34	0.480	5.38 81	2.62
7	8.74	29.995	23.27	0.433	4.85 74	2.76
10	8.75	30.109	23.36	0.421	4.72 72	2.83
14	8.77	30.338	23.53	0.386	4.32 66	2.96
18	8.77	30.342	23.54	0.380	4.26 65	2.90
22	8.78	30.342	23.53	0.382	4.28 66	2.92

CRUISE BB 296 STATION 043 D-2

DATE 11/15/61 HR 1843 ZN 08 LAT 48-41.4N LONG 122-33.0W AREA BLL
SDG 0027M TIDE HT 05.5 STG R WSPD 10 DIR 340 WEA 01 SEA 1 BAR 35
DRY 43.1 WET 40.4 RELHU 79 CL 5 AMT 2 SCD *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.
				MG.AT.	ML/L	SATN.	
0	8.56	29.706	23.07	0.455	5.10	78	2.64
2	8.55	29.719	23.08	0.459	5.14	78	2.68
4	8.55	29.736	23.09	0.455	5.10	78	2.67
7	8.62	29.769	23.11	0.452	5.06	77	--
10	8.73	30.067	23.33	0.410	4.59	70	--
15	8.71	30.407	23.60	0.393	4.40	68	--
20	8.71	30.445	23.62	0.390	4.37	67	--
25	8.72	30.470	23.64	0.378	4.23	65	--

CRUISE BB 296 STATION 044 SAMISH BAY, MIDDLE H-2

DATE 11/15/61 HR 1934 ZN 08 LAT 48-36.7N LONG 122-29.7W AREA SAM
SDG 0017M TIDE HT 05.6 STG R WSPD 14 DIR 340 WEA 01 SEA 2 BAR 34
DRY 44.0 WET 38.7 RELHU 61 CL AMT 0 SCD *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.
				MG.AT.	ML/L	SATN.	
0	8.21	29.351	22.84	0.504	5.64	85	2.69
2	8.22	29.349	22.84	0.510	5.71	86	2.73
4	8.21	29.351	22.84	0.509	5.70	86	2.74
7	8.23	29.351	22.84	0.515	5.77	87	2.70
10	8.76	30.087	23.34	0.413	4.63	71	2.86
13	8.72	30.313	23.52	0.398	4.46	68	2.89

CRUISE BB 296 STATION 045 ELIZA ROCK, SE OF G-2

DATE 11/15/61 HR 2019 ZN 08 LAT 48-38.2N LONG 122-34.2W AREA BLL
SDG 0109M TIDE HT 05.6 STG R WSPD 06 DIR 020 WEA 01 SEA 1 BAR 34
DRY 42.9 WET 38.2 RELHU 65 CL * AMT * SCD *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.
				MG.AT.	ML/L	SATN.	
0	8.16	28.876	22.48	0.495	5.54	83	2.50
2	8.31	29.087	22.62	0.485	5.43	82	2.54
5	8.41	29.231	22.72	0.476	5.33	81	2.59
10	8.53	29.813	23.16	0.446	5.00	76	2.88
19	8.64	30.324	23.54	0.415	4.65	71	2.70
29	8.63	30.313	23.53	0.410	4.59	70	2.67
48	8.61	30.369	23.58	0.407	4.56	70	2.78
68	8.63	30.375	23.58	0.407	4.56	70	2.72
87	8.60	30.374	23.59	0.403	4.51	69	2.74

CRUISE BB 296 STATION 046 G-5

DATE 11/15/61 HR 2056 ZN 08 LAT 48-35.9N LONG 122-33.2W AREA BLL
 SDG 0031M TIDE HT 05.4 STG F WSPD 11 DIR 310 WEA 01 SEA 1 BAR 34
 DRY 42.9 WET 39.2 RELHU 72 CL AMT 2 SCD *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.
				MG.AT.	ML/L	SATN.	
0	8.33	29.610	23.03	0.476	5.33	81	2.68
2	8.33	29.611	23.03	0.481	5.39	82	2.68
4	8.31	29.613	23.03	0.480	5.38	81	2.66
7	8.36	29.612	23.03	0.476	5.33	81	2.67
10	8.44	29.864	23.21	0.448	5.02	76	2.68
15	8.54	30.005	23.31	0.437	4.89	75	2.66
19	8.64	30.340	23.55	0.413	4.63	71	2.67
24	8.64	30.340	23.55	0.406	4.55	70	2.76
29	8.62	30.352	23.57	0.404	4.52	69	2.72

CRUISE BB 296 STATION 047 BOAT HARBOR J-1

DATE 11/15/61 HR 2150 ZN 08 LAT 48-33.0N LONG 122-34.6W AREA PAD
 SDG 0067M TIDE HT 05.5 STG F WSPD 17 DIR 350 WEA 01 SEA 2 BAR 34
 DRY 42.9 WET 39.1 RELHU 71 CL AMT 0 SCD *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.
				MG.AT.	ML/L	SATN.	
0	8.32	29.509	22.95	0.480	5.38	81	2.59
5	8.32	29.527	22.96	0.486	5.44	82	2.64
10	8.45	29.729	23.10	0.463	5.19	79	2.99
20	8.66	30.022	23.30	0.420	4.70	72	2.69
30	8.66	30.163	23.41	0.410	4.59	70	2.70
49	8.72	30.338	23.54	0.394	4.41	68	2.76
64	8.74	30.368	23.56	0.392	4.39	67	2.80

CRUISE BB 296 STATION 048 GUERES CHANNEL

DATE 11/15/61 HR 2236 ZN 08 LAT 48-31.5N LONG 122-37.2W AREA GUE
 SDG 0022M TIDE HT 05.4 STG F WSPD 08 DIR 330 WEA 01 SEA 1 BAR 34
 DRY 41.6 WET 36.8 RELHU 63 CL AMT 2 SCD *

DEPTH	TEMP.	SAL.	SIGMA-T	OXYGEN			PHOS.
				MG.AT.	ML/L	SATN.	
0	8.43	29.837	23.19	0.455	5.10	77	2.65
5	8.55	29.923	23.24	0.442	4.95	75	2.67
10	8.57	30.019	23.31	0.432	4.84	74	2.64
15	8.60	30.092	23.37	0.426	4.77	73	2.67
20	8.60	30.144	23.41	0.416	4.66	71	2.67

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