

Figure 31.—Thermal profile, Frankfort to Sturgeon Bay, June 23, 1955.

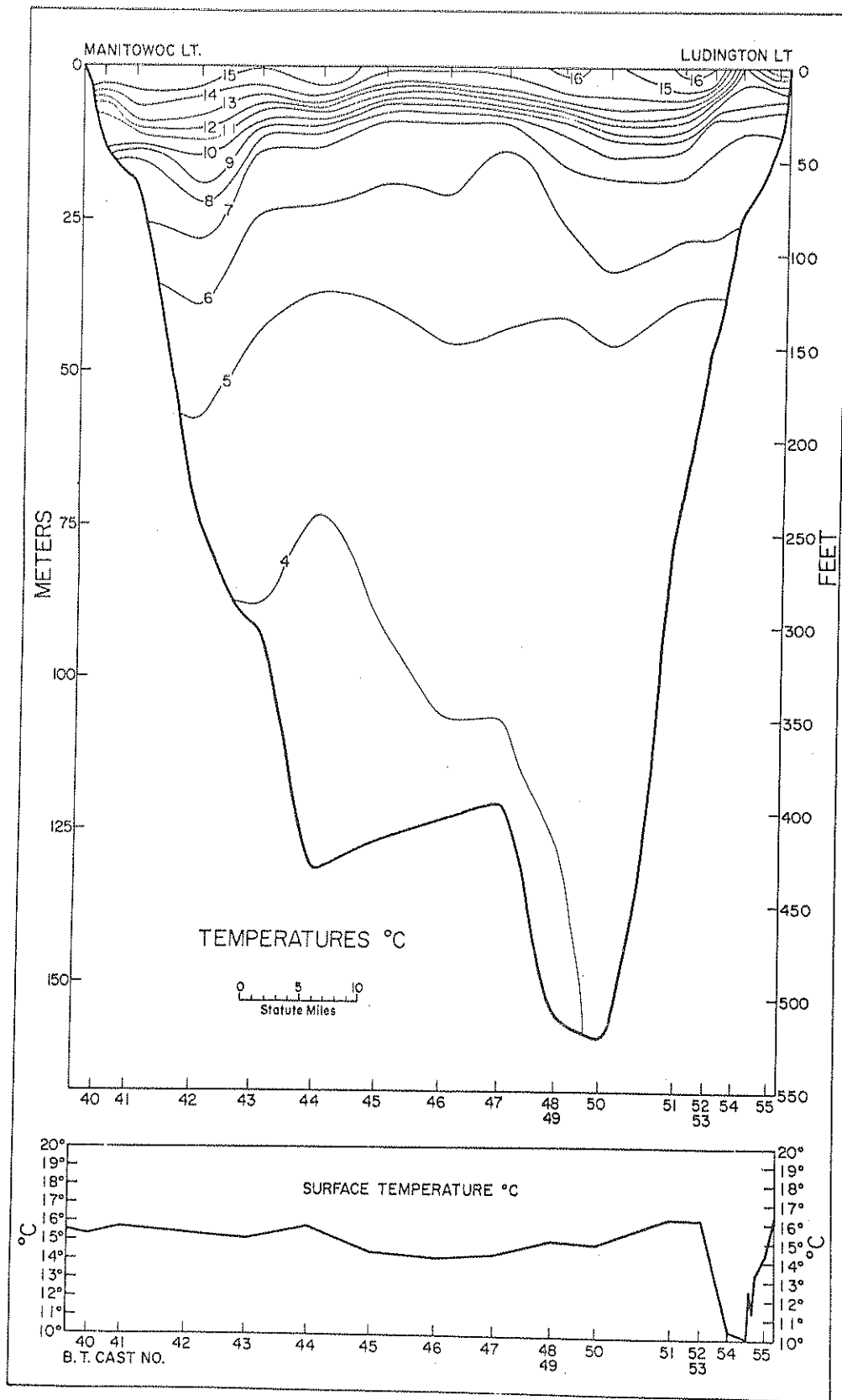


Figure 32.--Thermal profile, Manitowoc to Ludington, June 26, 1955.

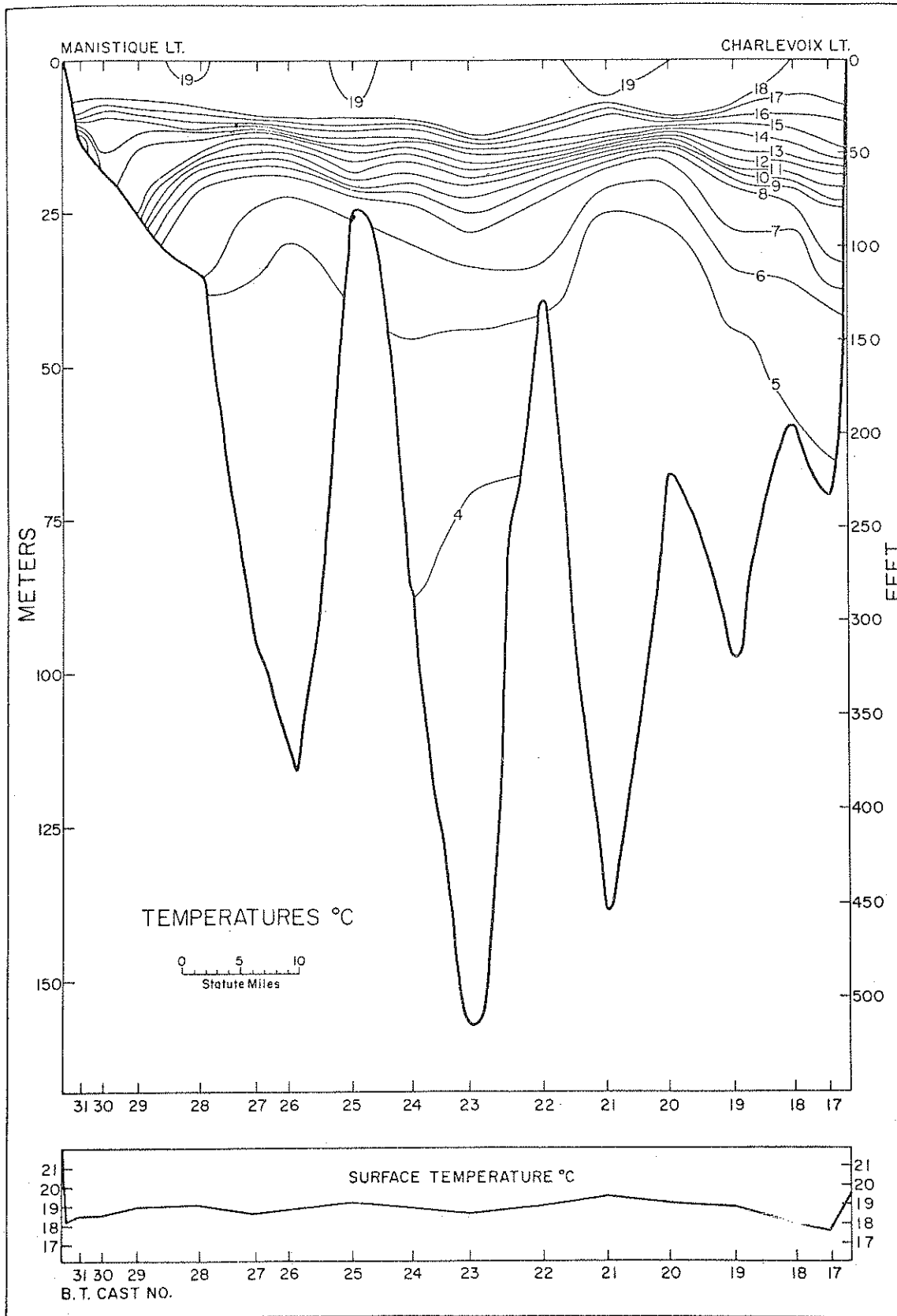


Figure 33.--Thermal profile, Charlevoix to Manistique, July 14, 1955.

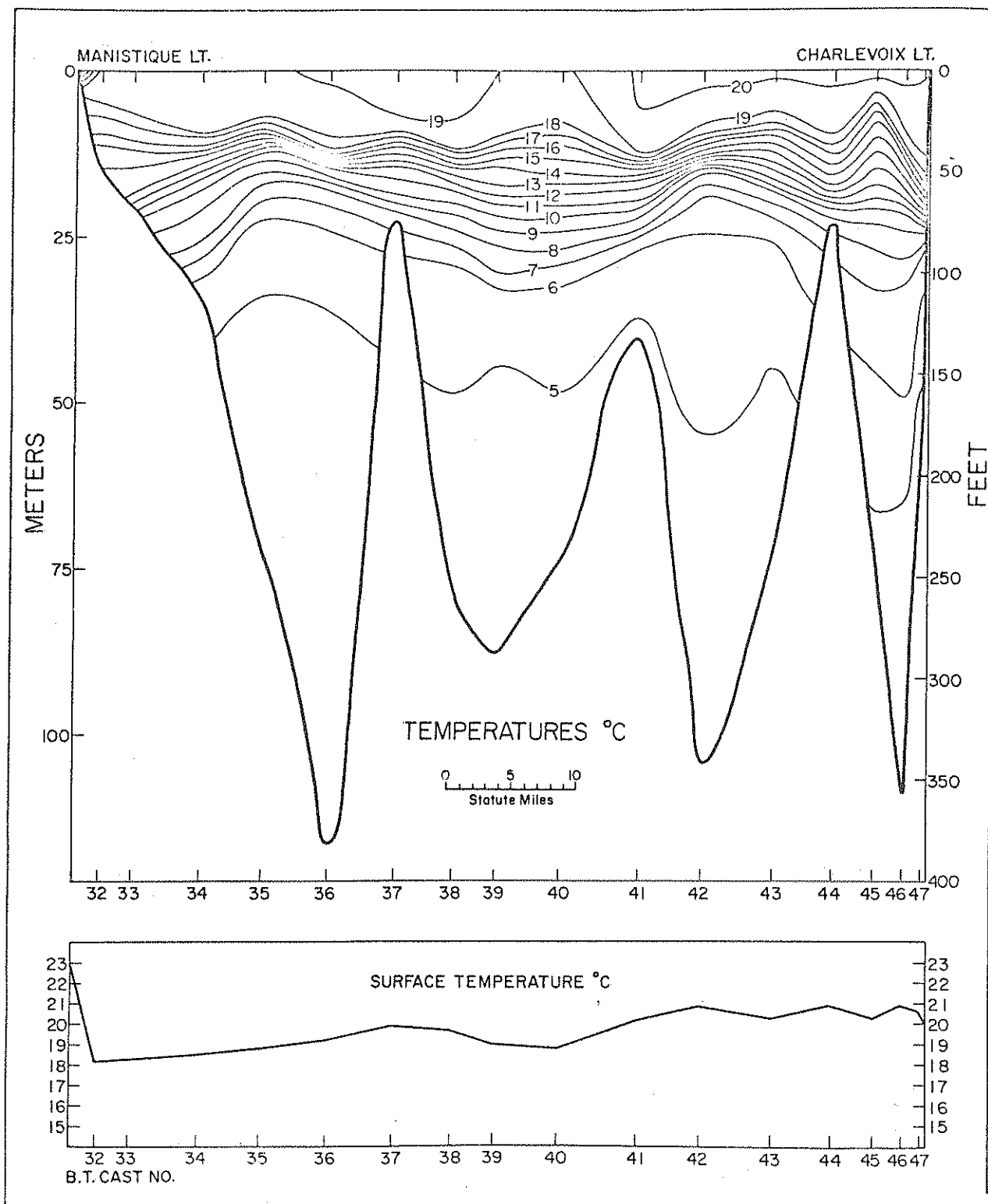


Figure 34.—Thermal profile, Manistique to Charlevoix, July 15, 1955.

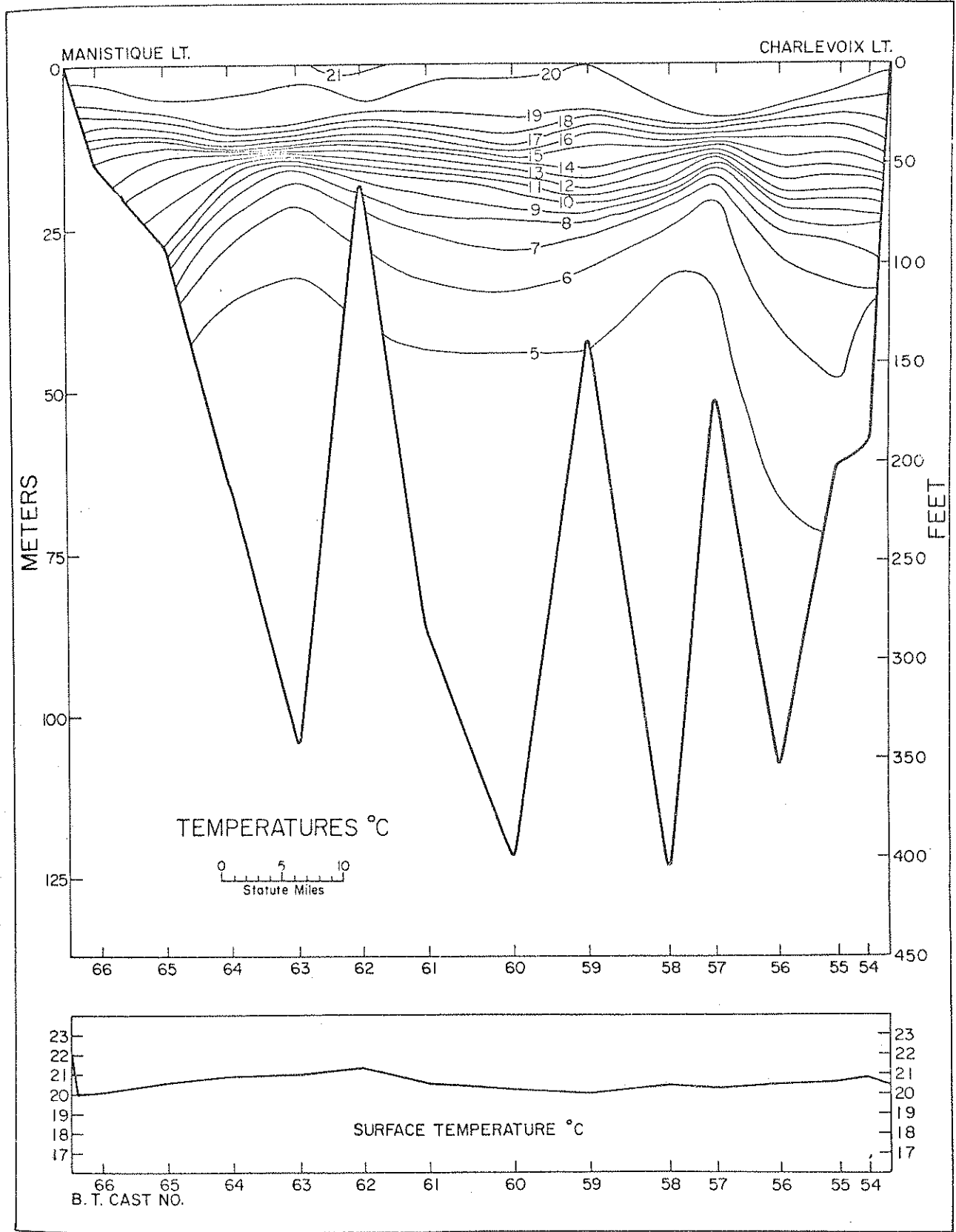


Figure 35.--Thermal profile, Charlevoix to Manistique, July 17, 1955.

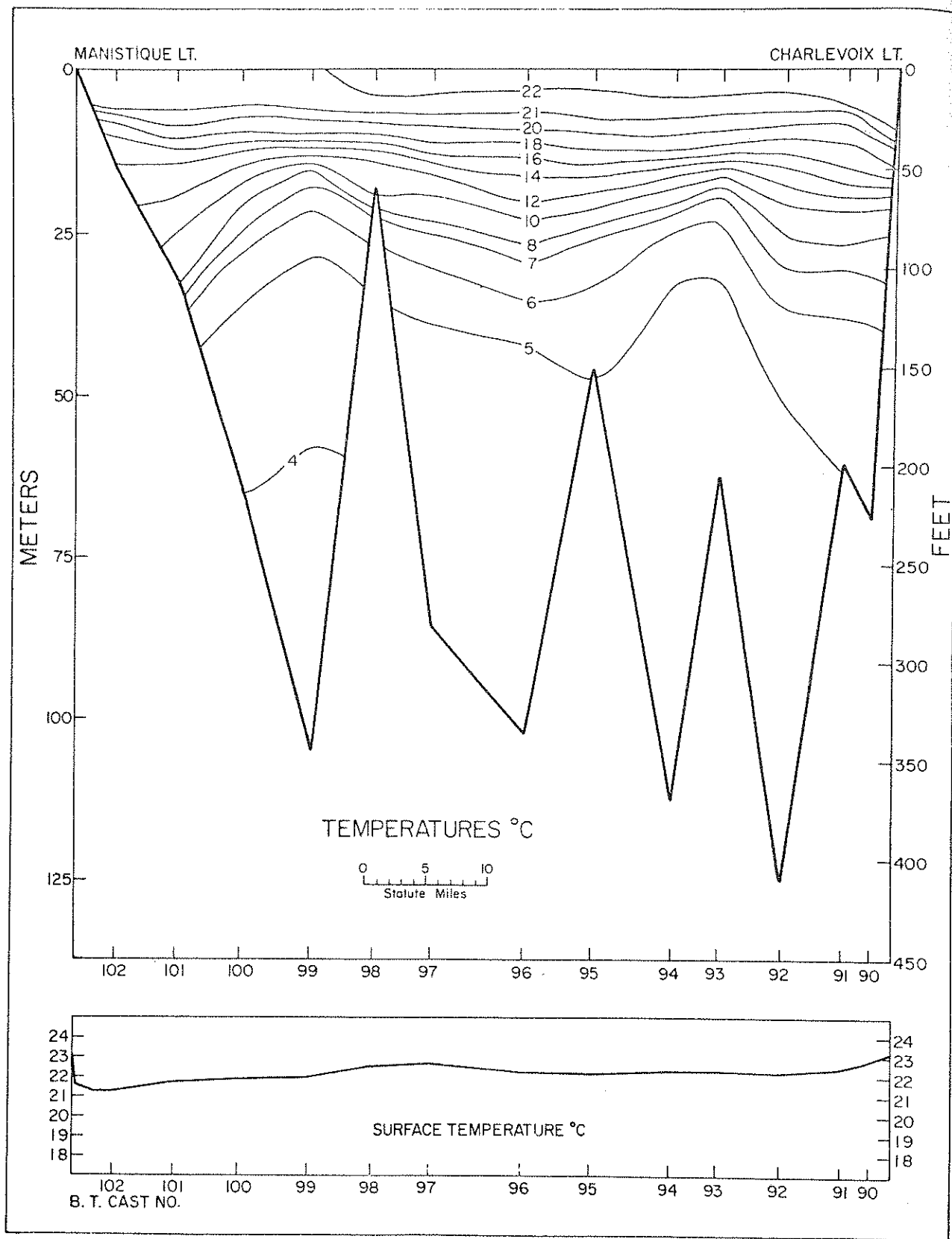


Figure 36.--Thermal profile, Charlevoix to Manistique, July 21, 1955.

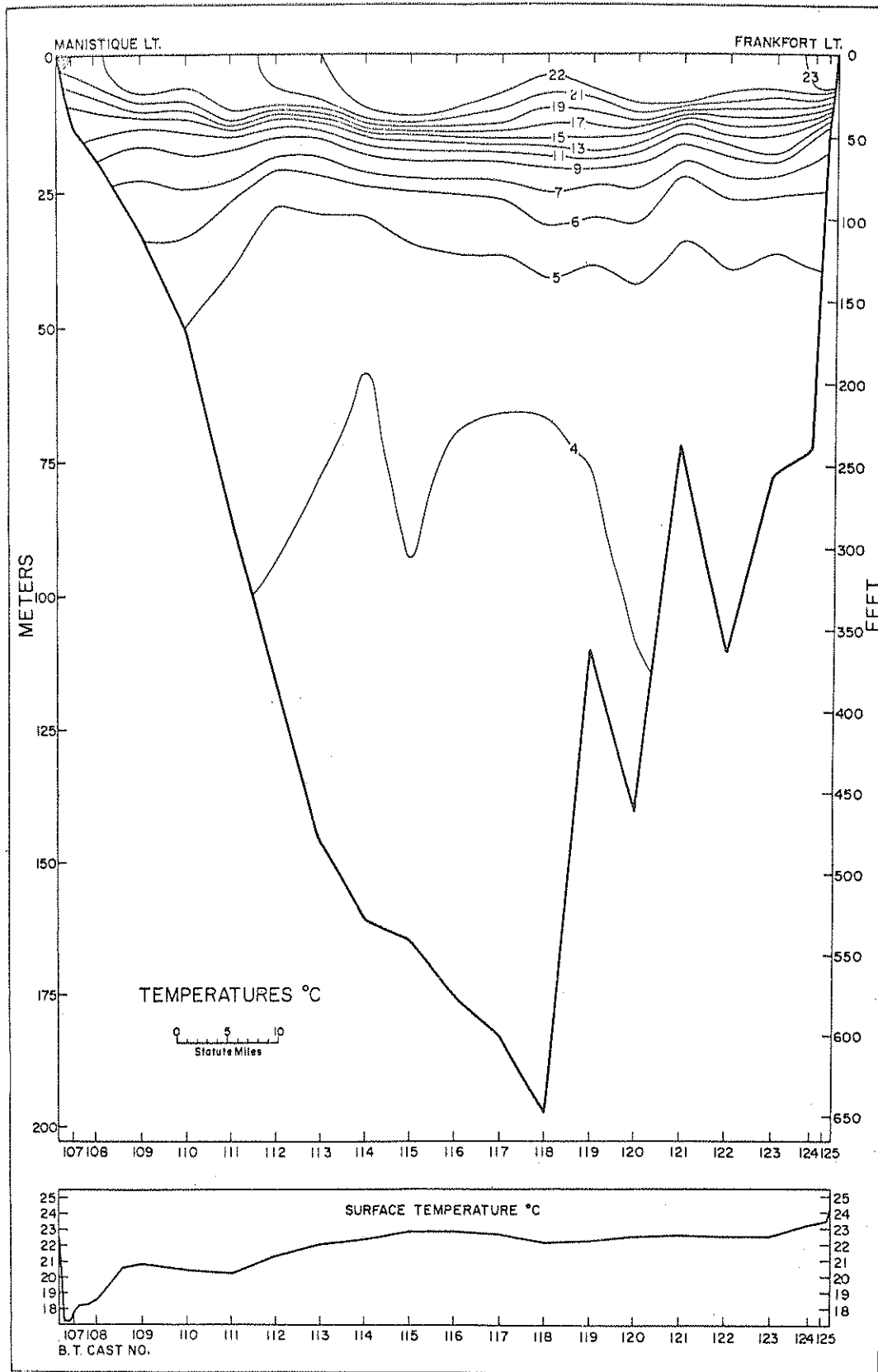


Figure 37.--Thermal profile, Manistique to Frankfort, July 23, 1955.

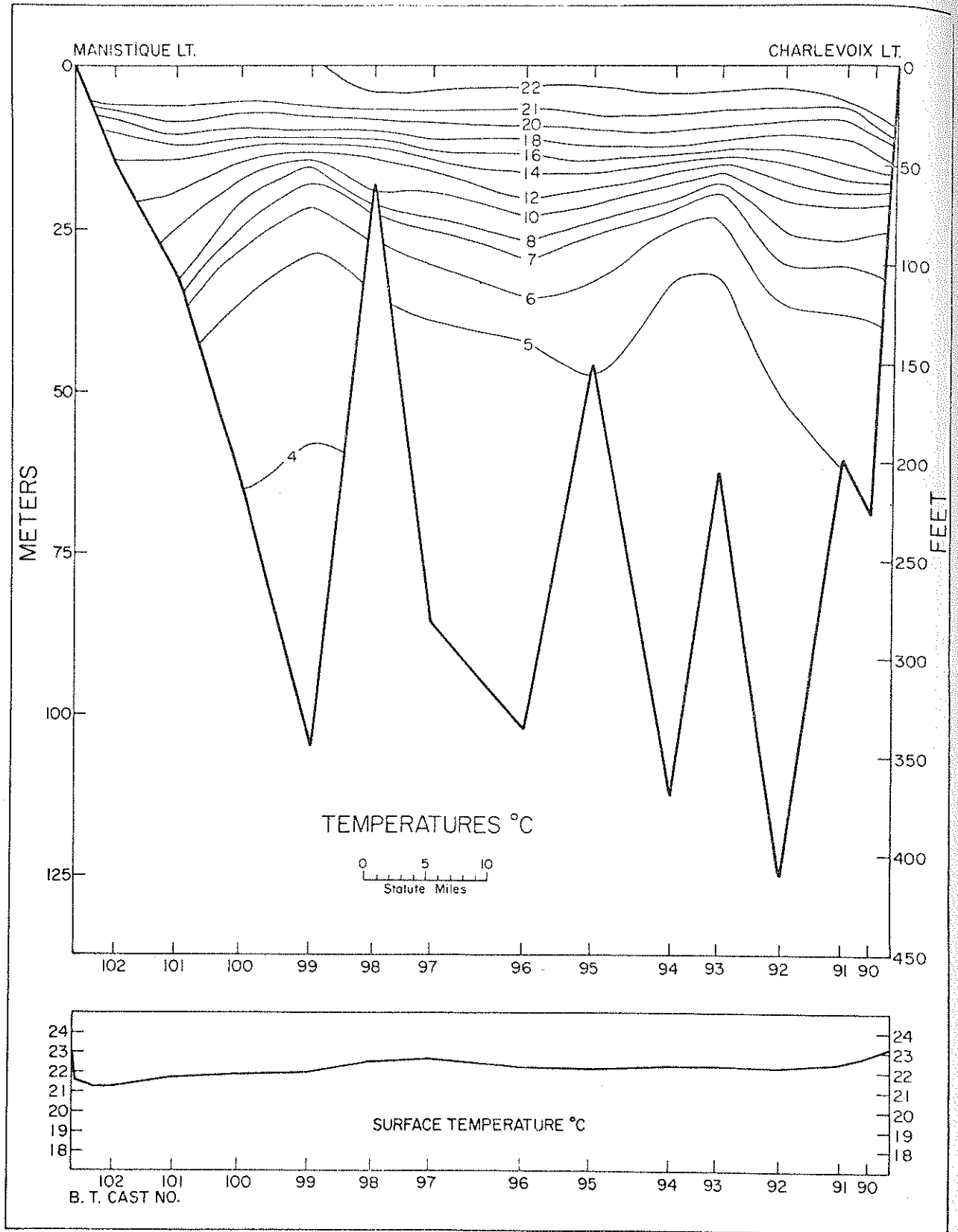


Figure 36.—Thermal profile, Charlevoix to Manistique, July 21, 1955.

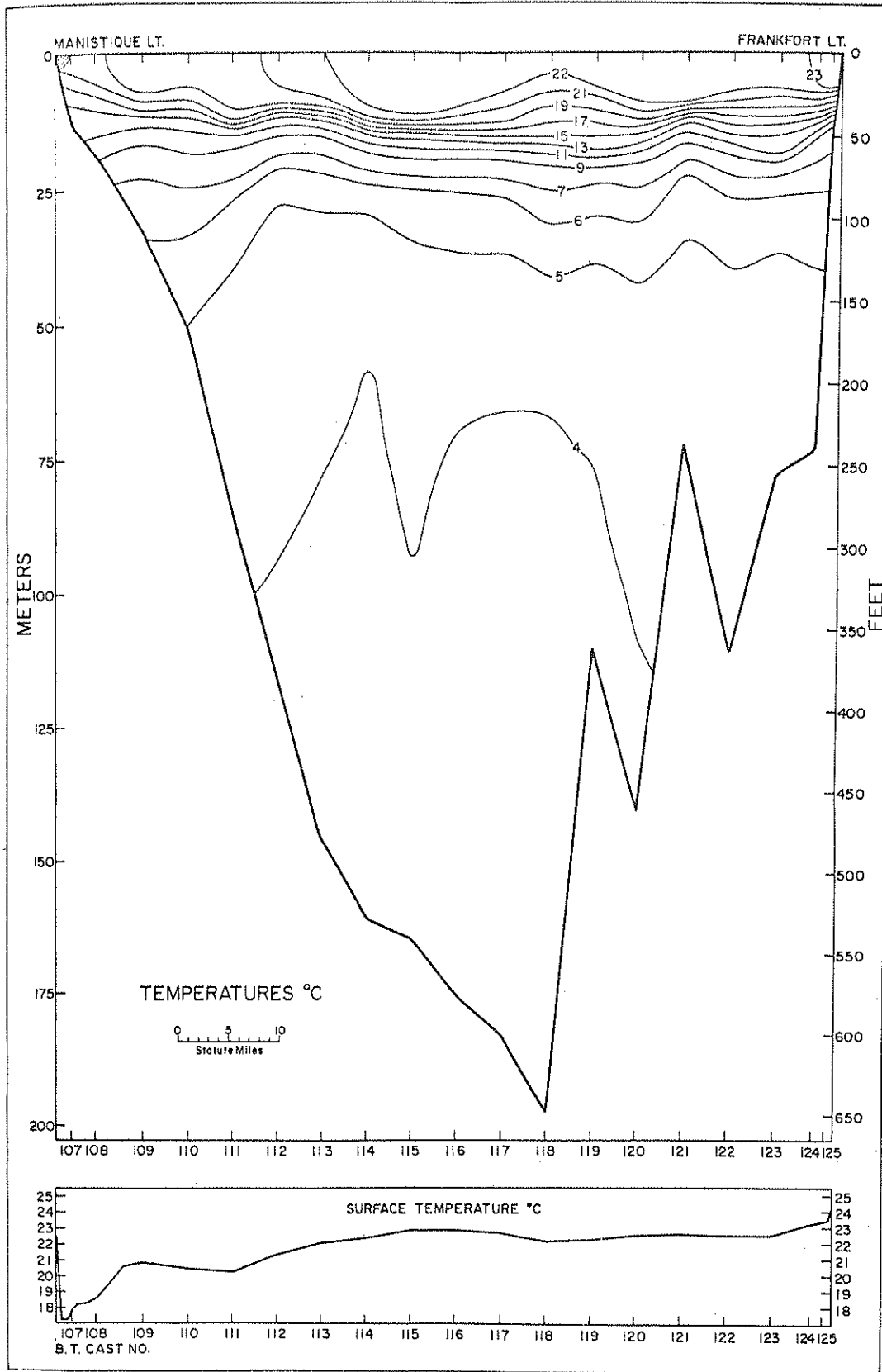


Figure 37.--Thermal profile, Manistique to Frankfort, July 23, 1955.

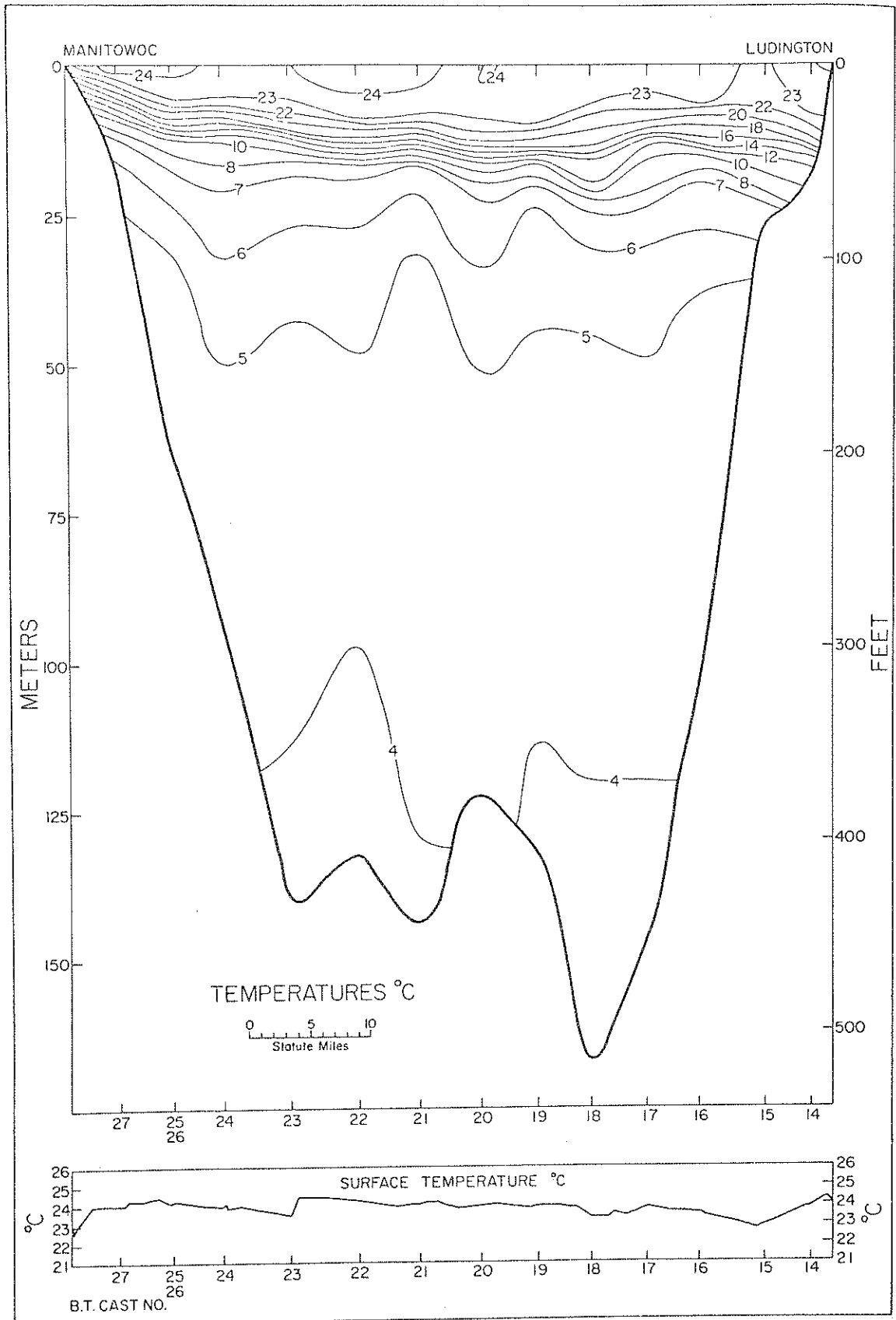


Figure 38.--Thermal profile, Ludington to Manitowoc, August 4, 1955.

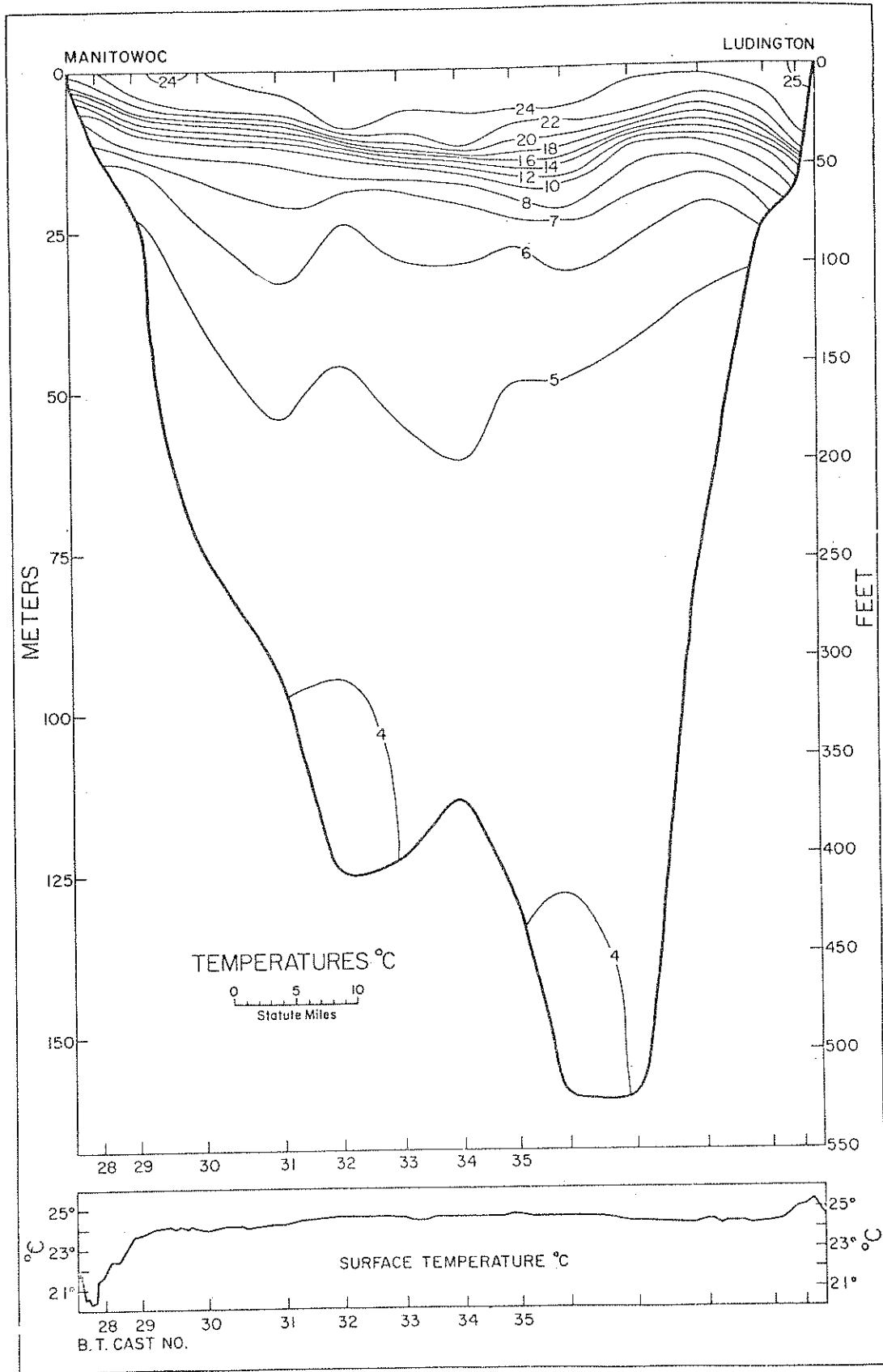


Figure 39.—Thermal profile, Maniwoc to Ludington, August 5, 1955.

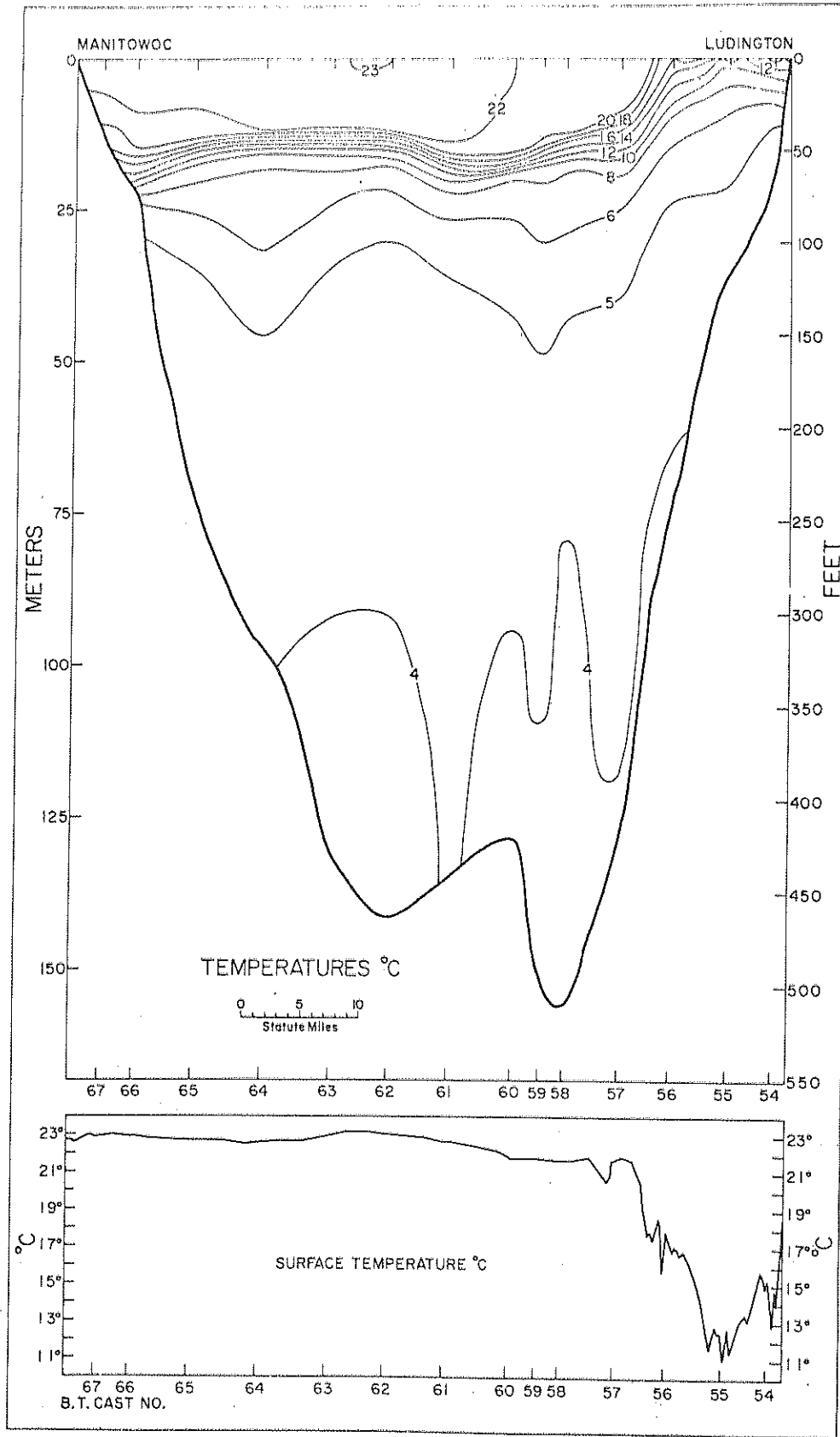


Figure 40.--Thermal profile, Ludington to Manitowoc, August 11, 1955.

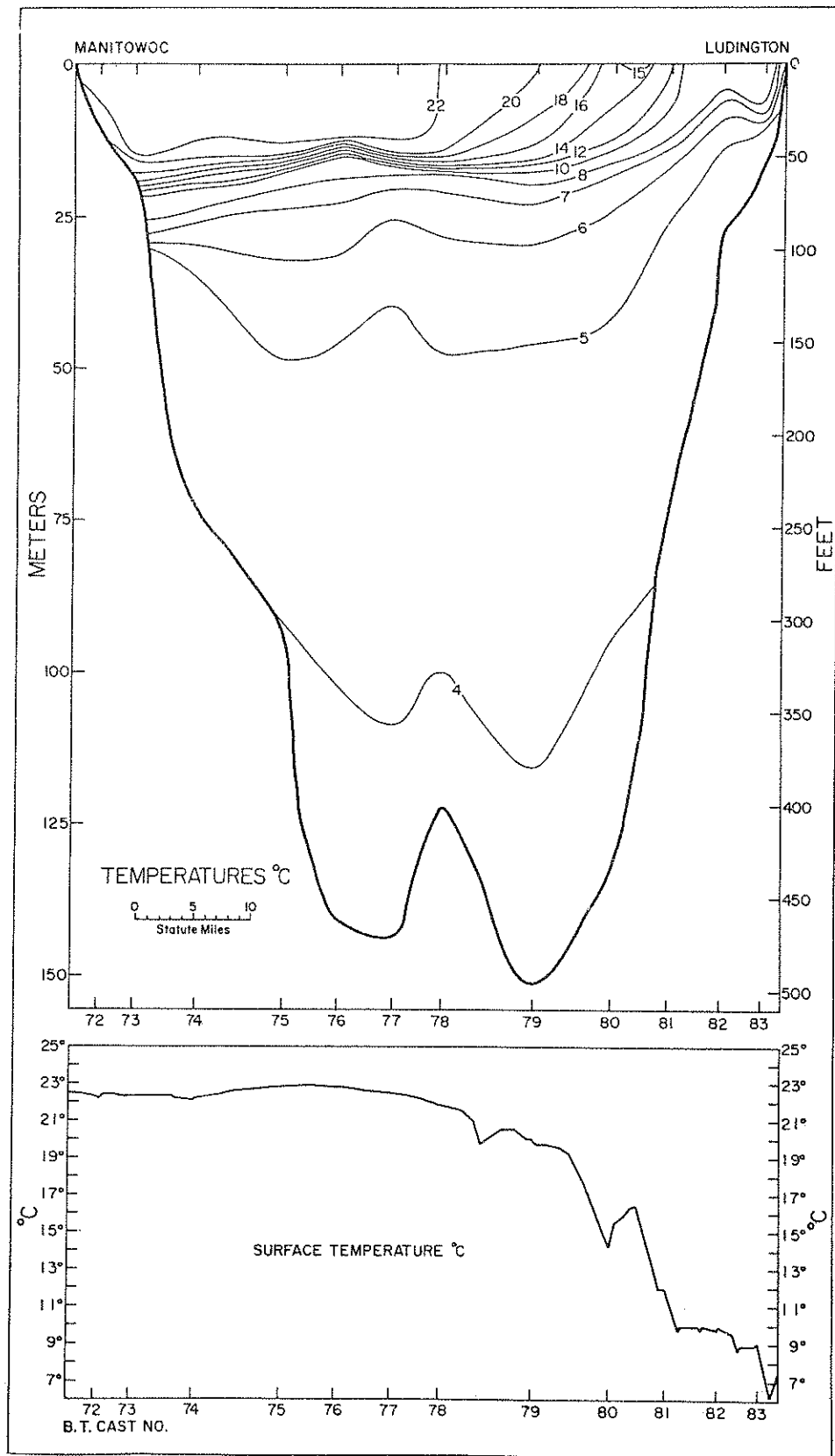


Figure 41.--Thermal profile, Manitowoc to Ludington, August 13, 1955.

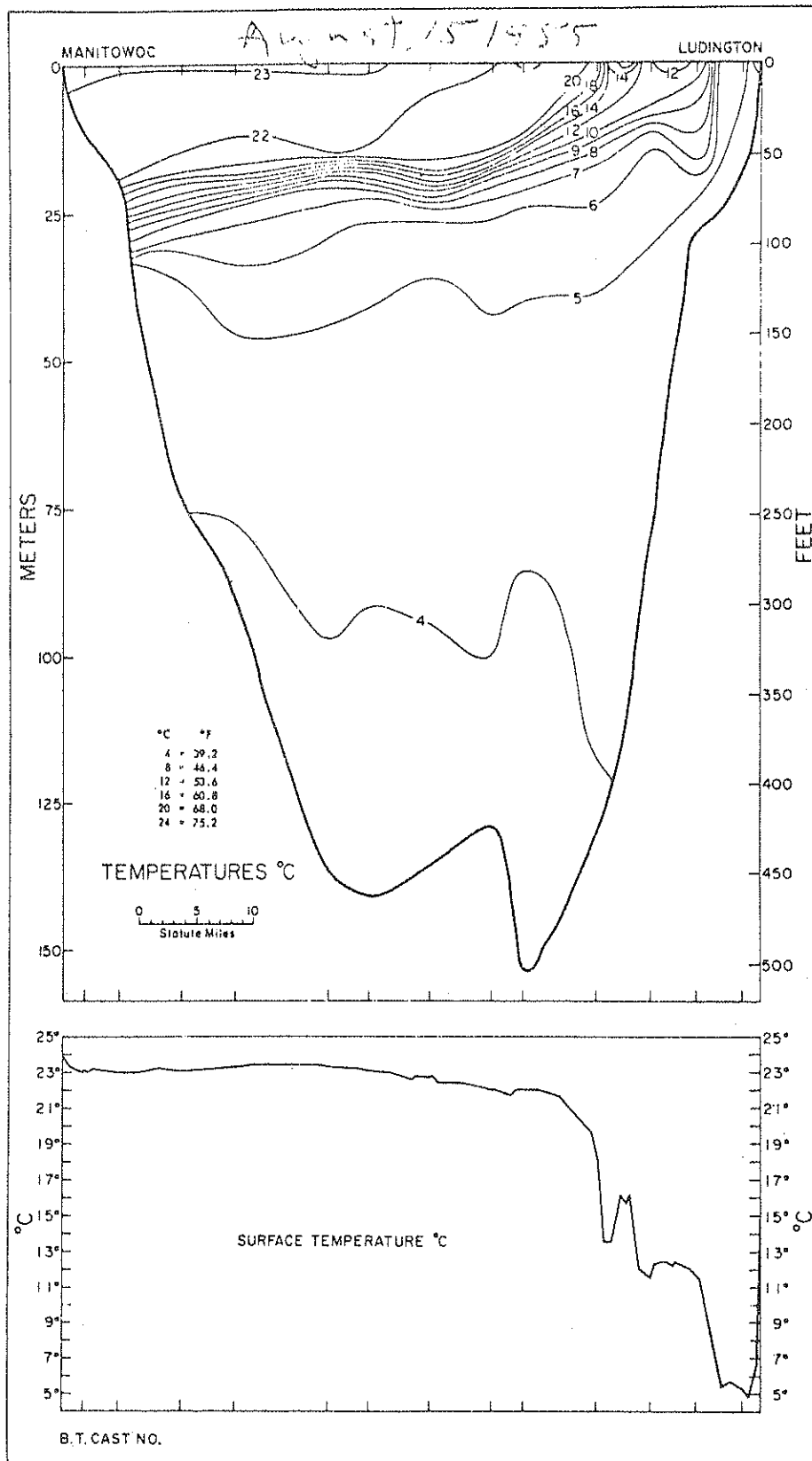


Figure 42.--Thermal profile, Ludington to Manitowoc, August 15, 1955.

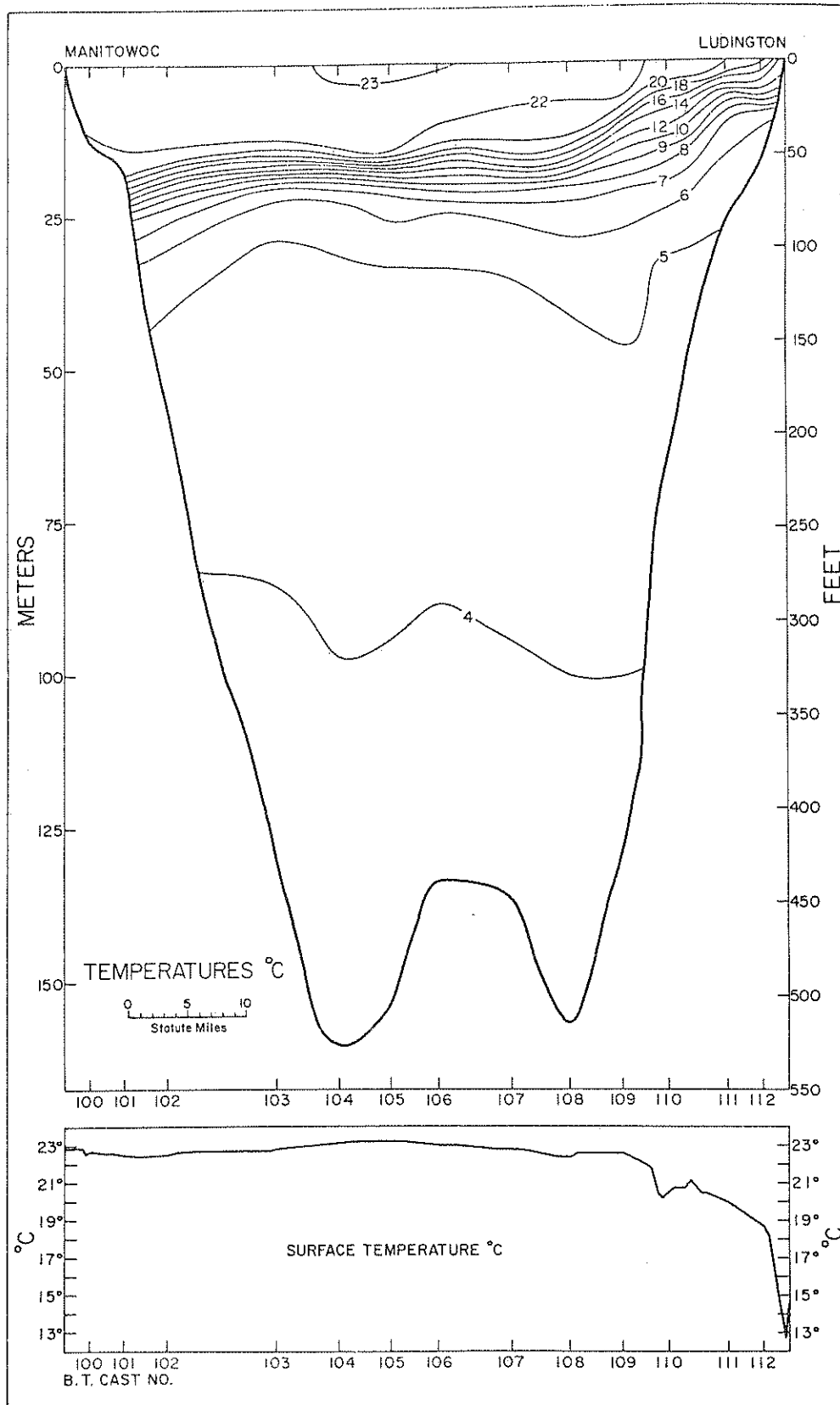


Figure 43.--Thermal profile, Manitowoc to Ludington, August 16, 1955.

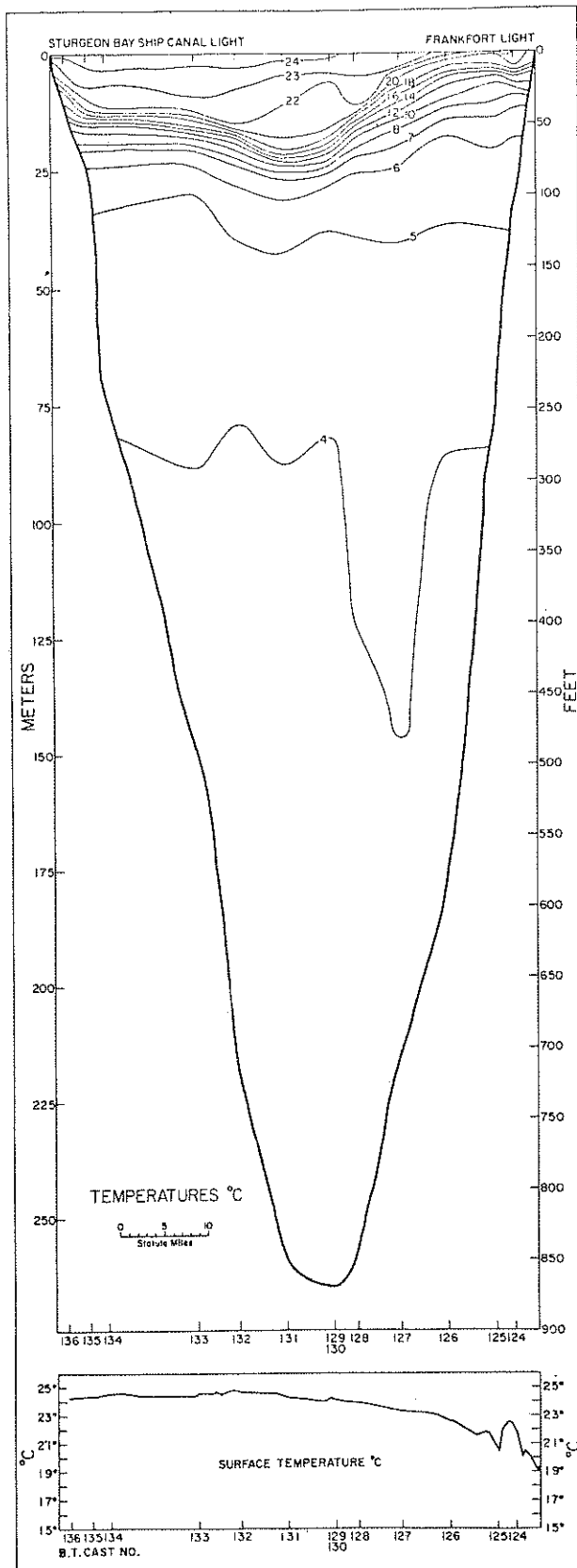


Figure 44.—Thermal profile, Frankfort to Sturgeon Bay, August 19, 1955.

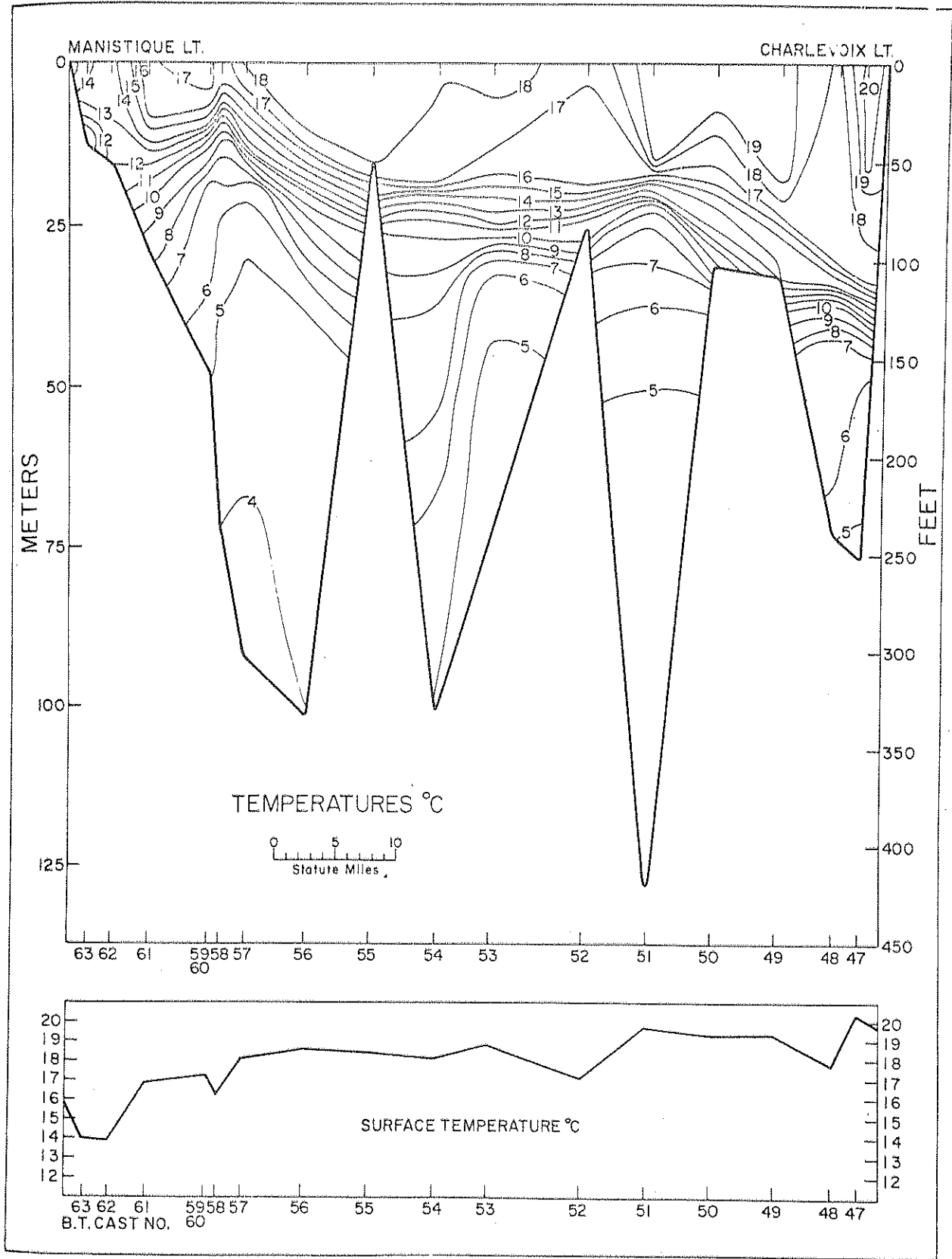


Figure 45.--Thermal profile, Charlevoix to Manistique, September 5, 1955.

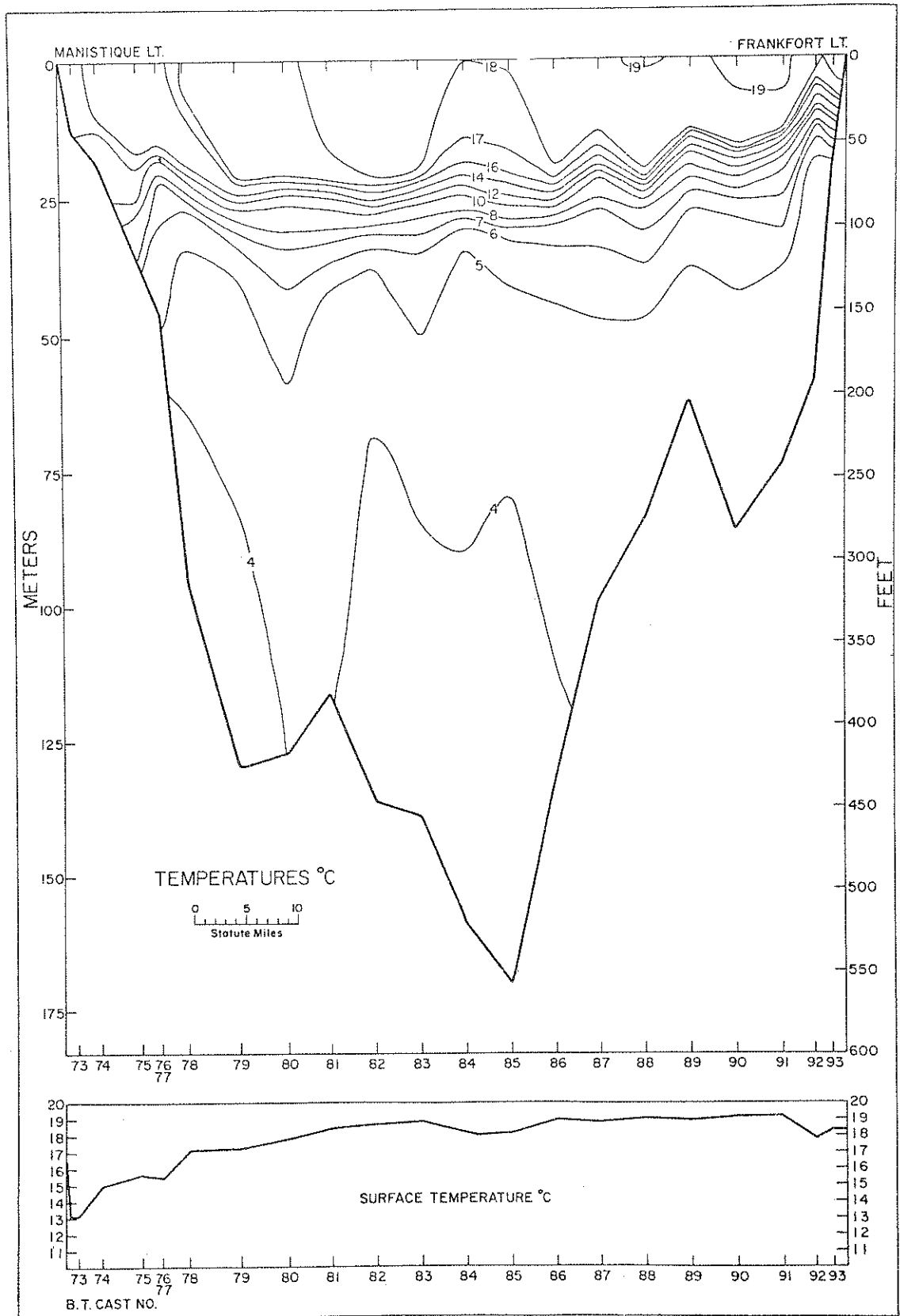


Figure 46.--Thermal profile, Manistique to Frankfort, September 8, 1955.

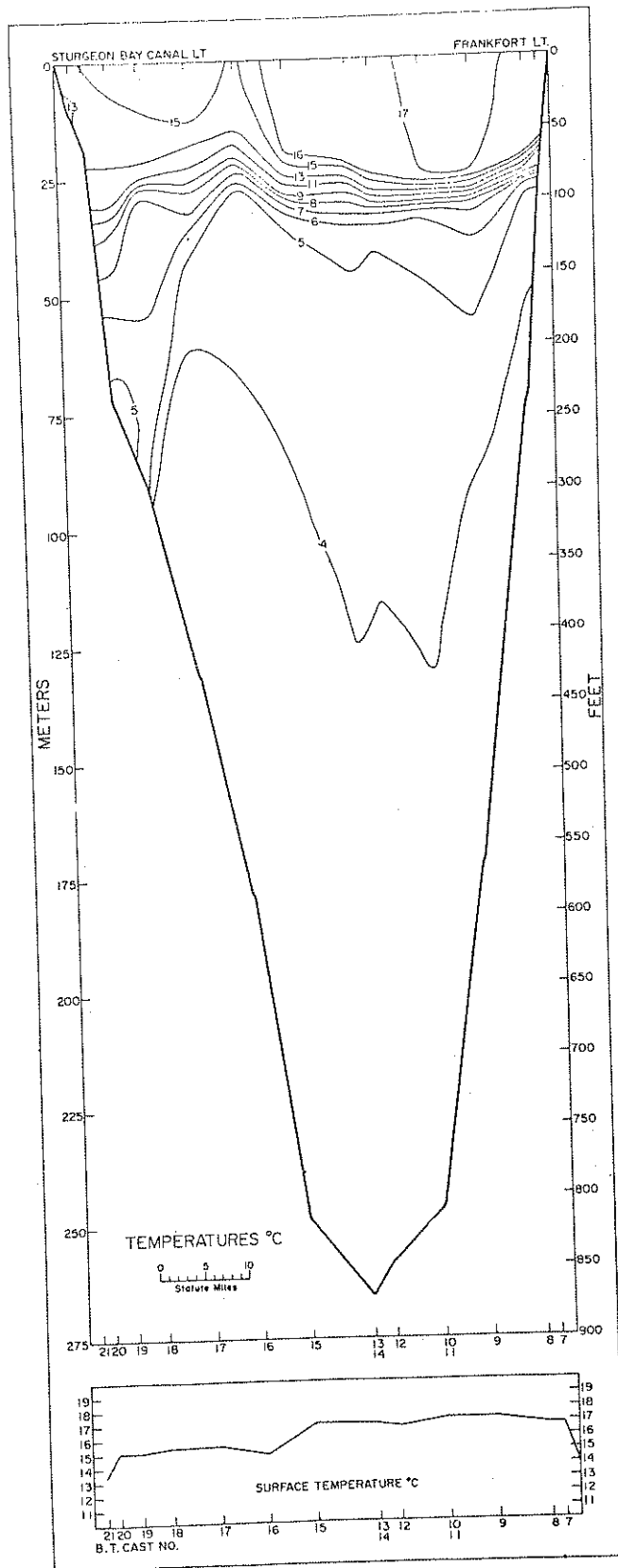


Figure 47.--Thermal profile, Frankfort to Sturgeon Bay, September 22, 1955.

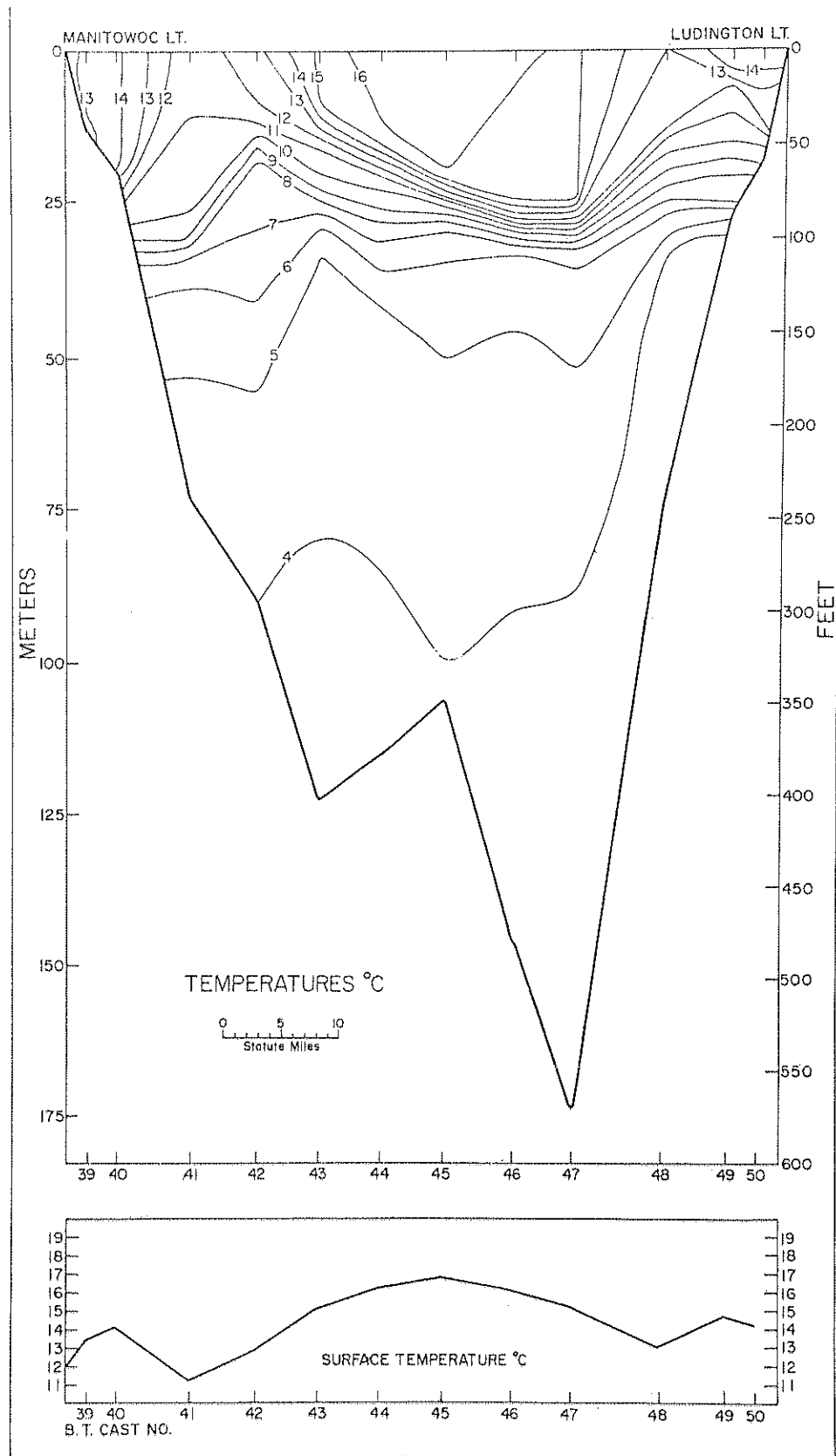


Figure 48.--Thermal profile, Maniwoc to Ludington, September 26, 1955.

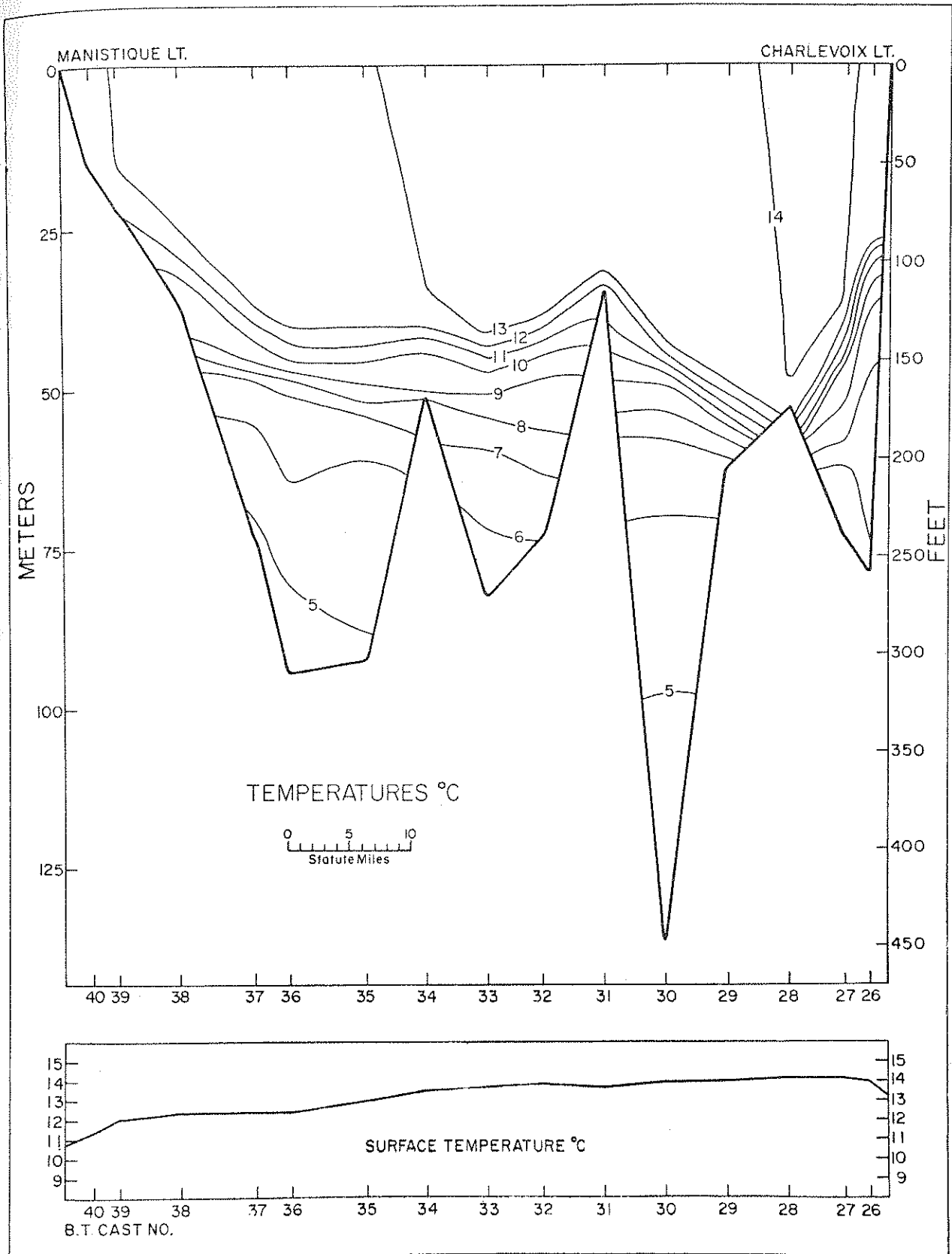


Figure 49.--Thermal profile, Charlevoix to Manistique, October 19, 1955.

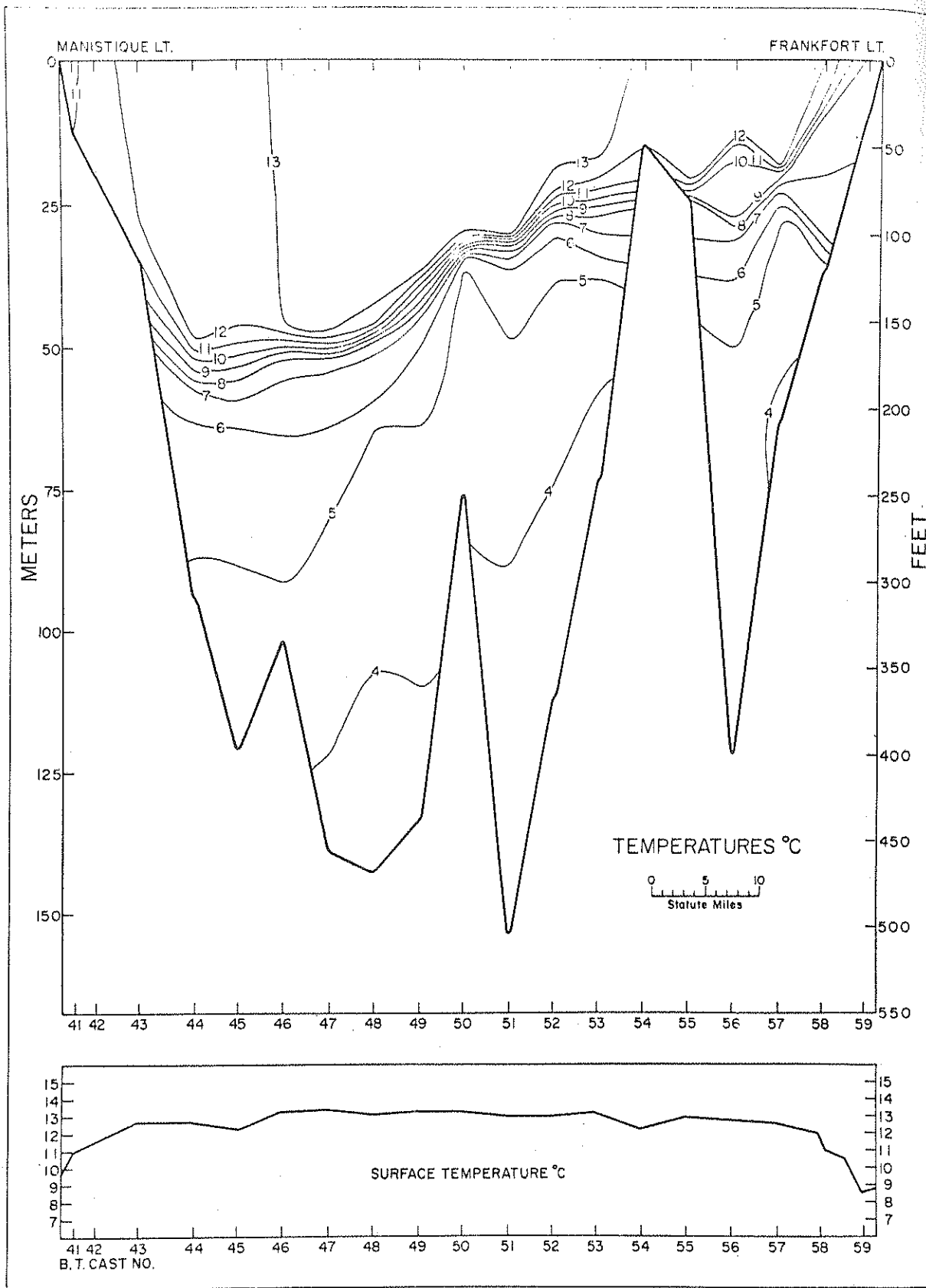


Figure 50.--Thermal profile, Manistique to Frankfort, October 20, 1955.

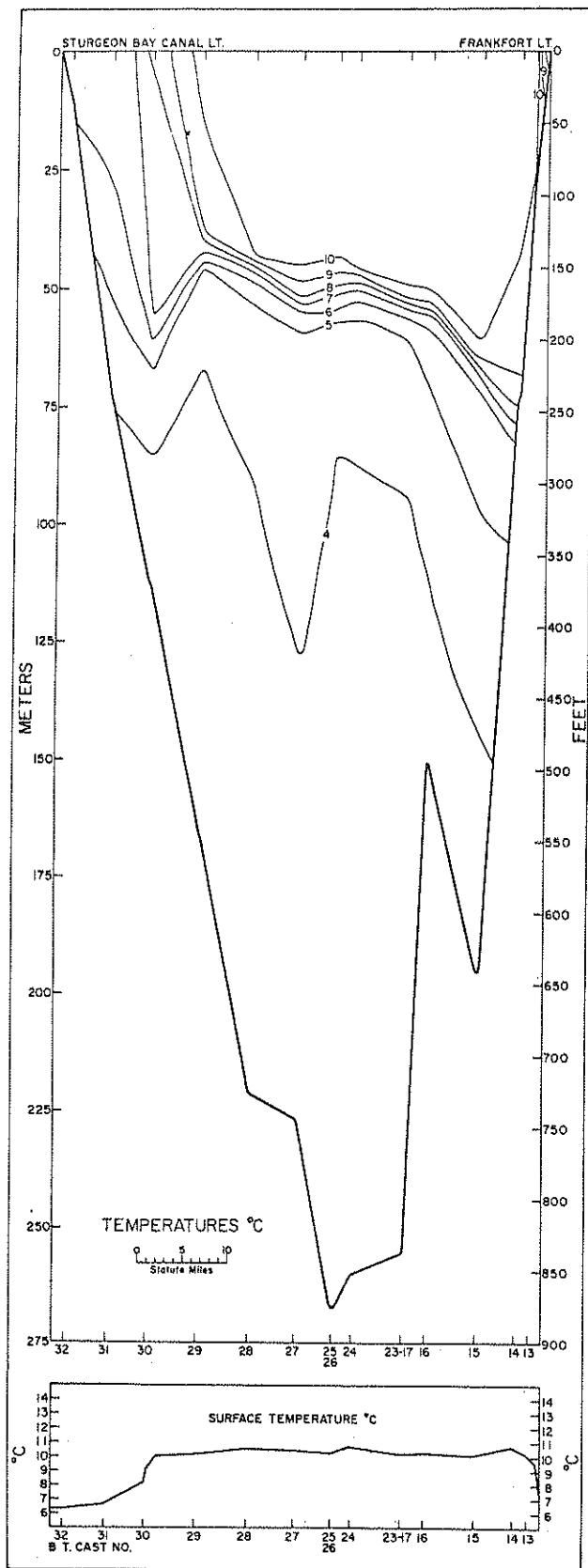


Figure 51.--Thermal profile, Frankfort to Sturgeon Bay, November 4, 1955.

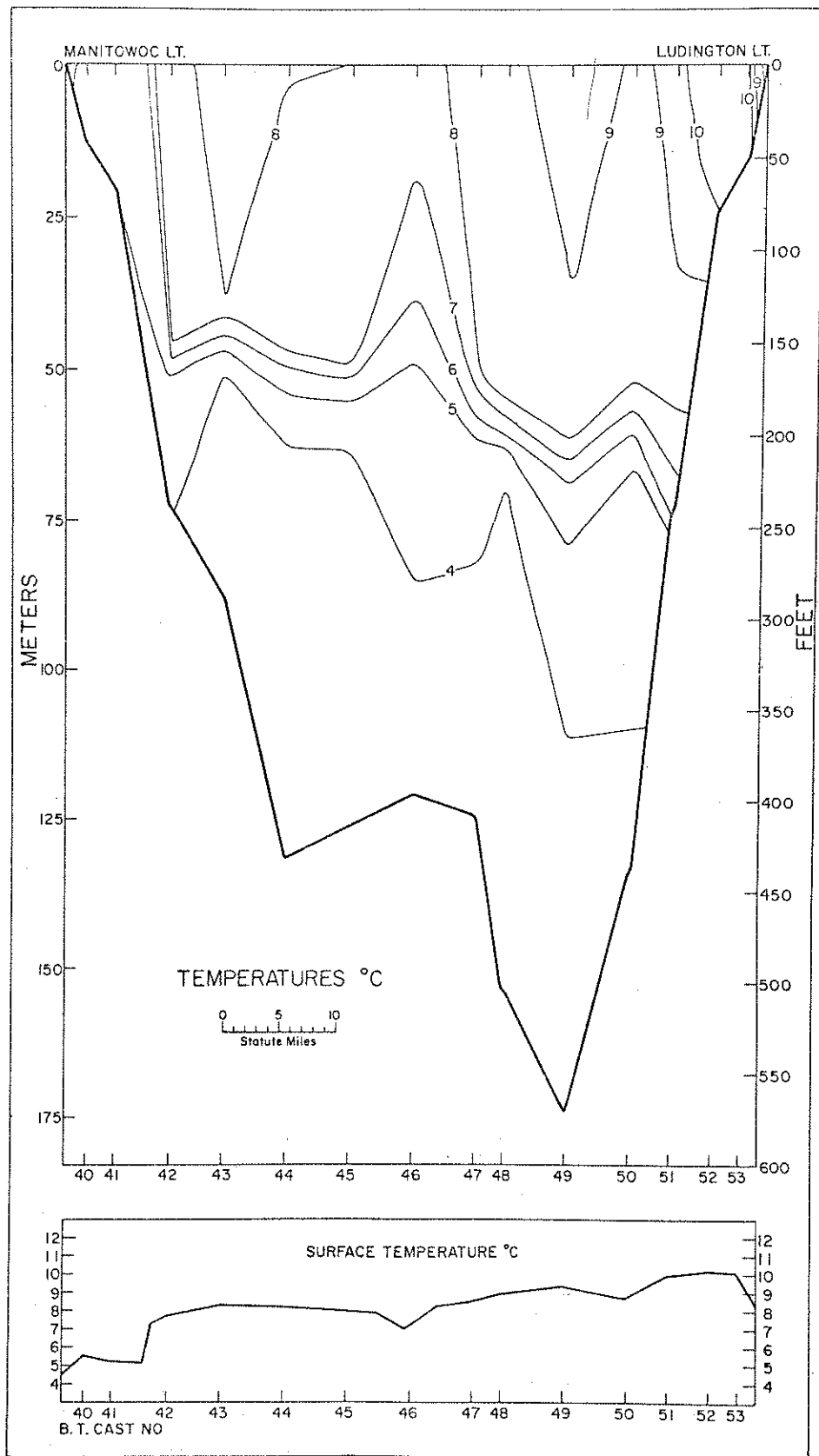


Figure 52.--Thermal profile, Manitowoc to Ludington, November 8, 1955.

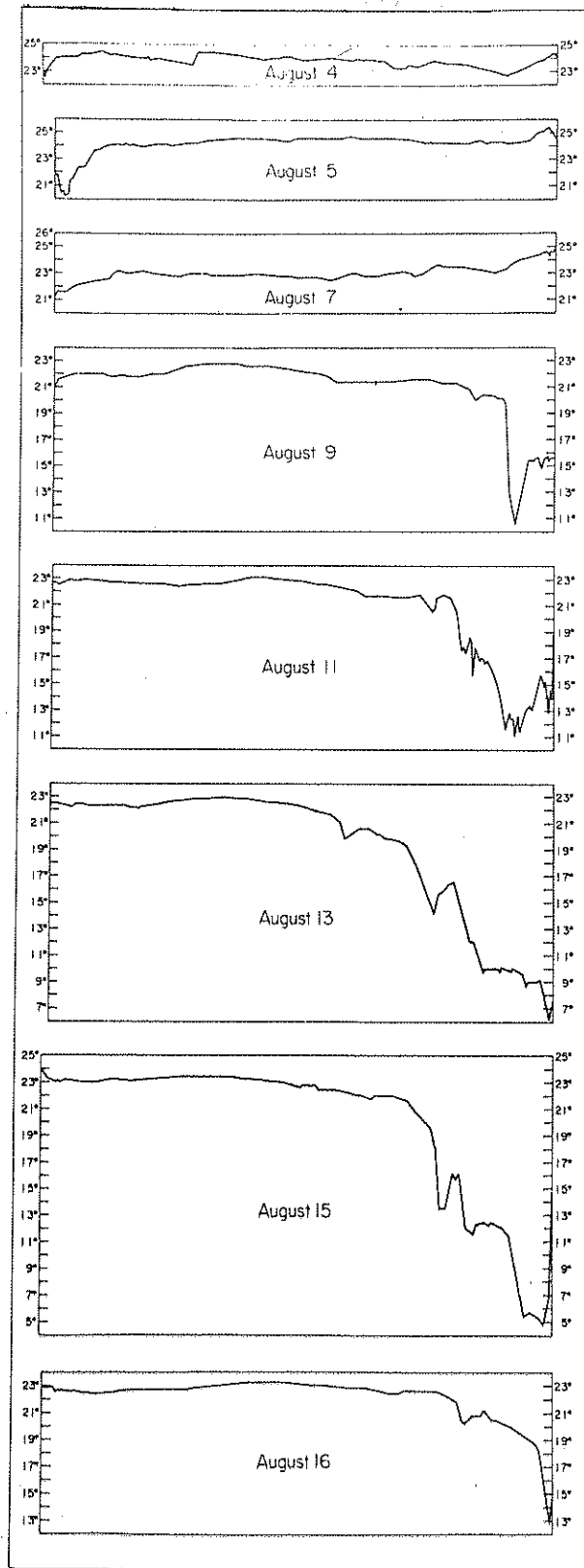


Figure 53.---Surface temperature profiles from Manitowoc (left) to Ludington (right) during the massive upwelling of August 1955.

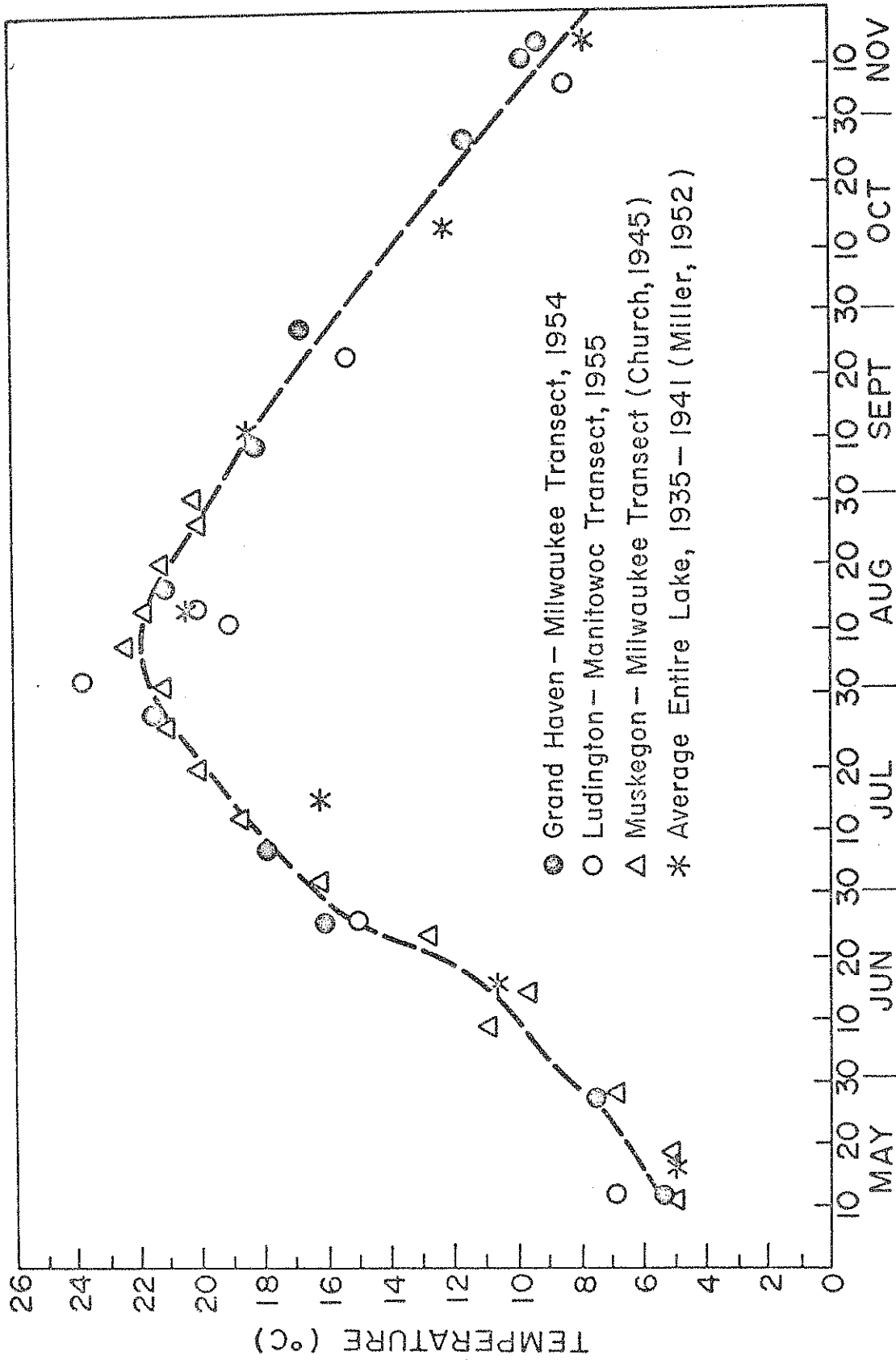


Figure 54.—Mean surface temperatures of Lake Michigan on different dates in various years.

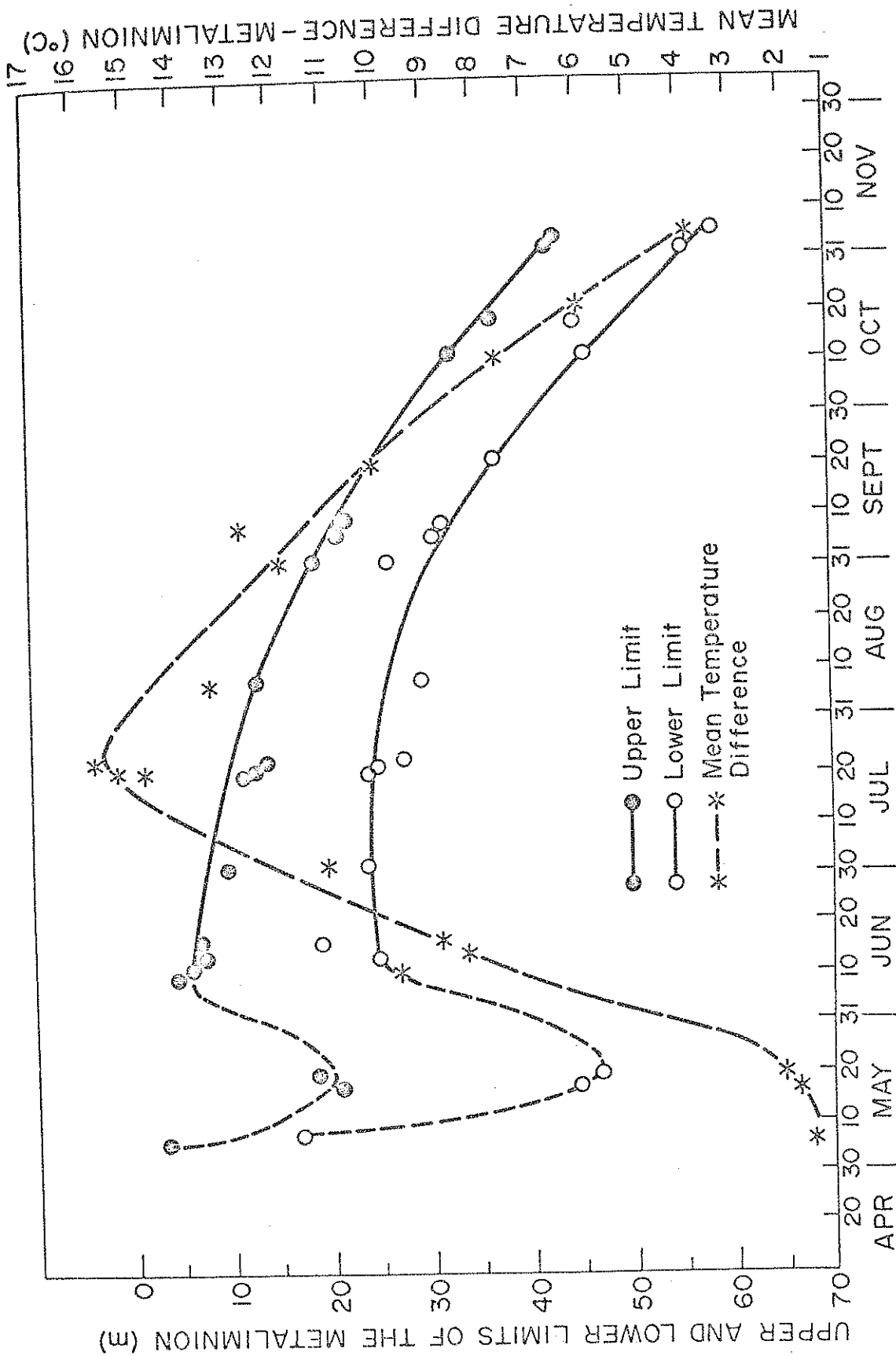


Figure 55.--Mean position of the metalimnion and mean temperature difference within the metalimnion, southern Lake Michigan, 1954. Dotted lines indicate a temporary condition during early development of the metalimnion.

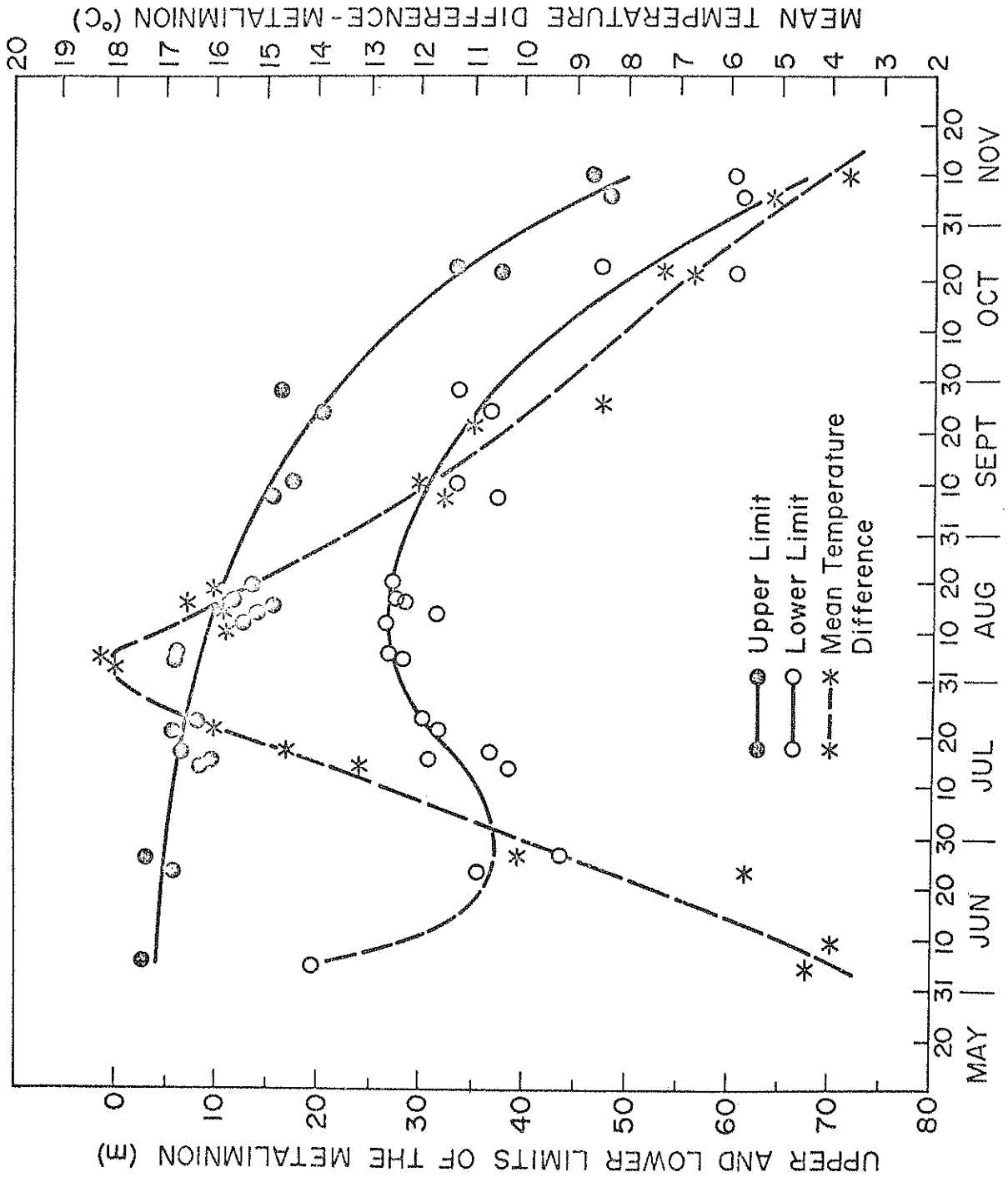


Figure 56.—Mean position of the metalimnion and mean temperature difference within the metalimnion, northern Lake Michigan, 1955. Dotted lines indicate a temporary condition during early development of the metalimnion.

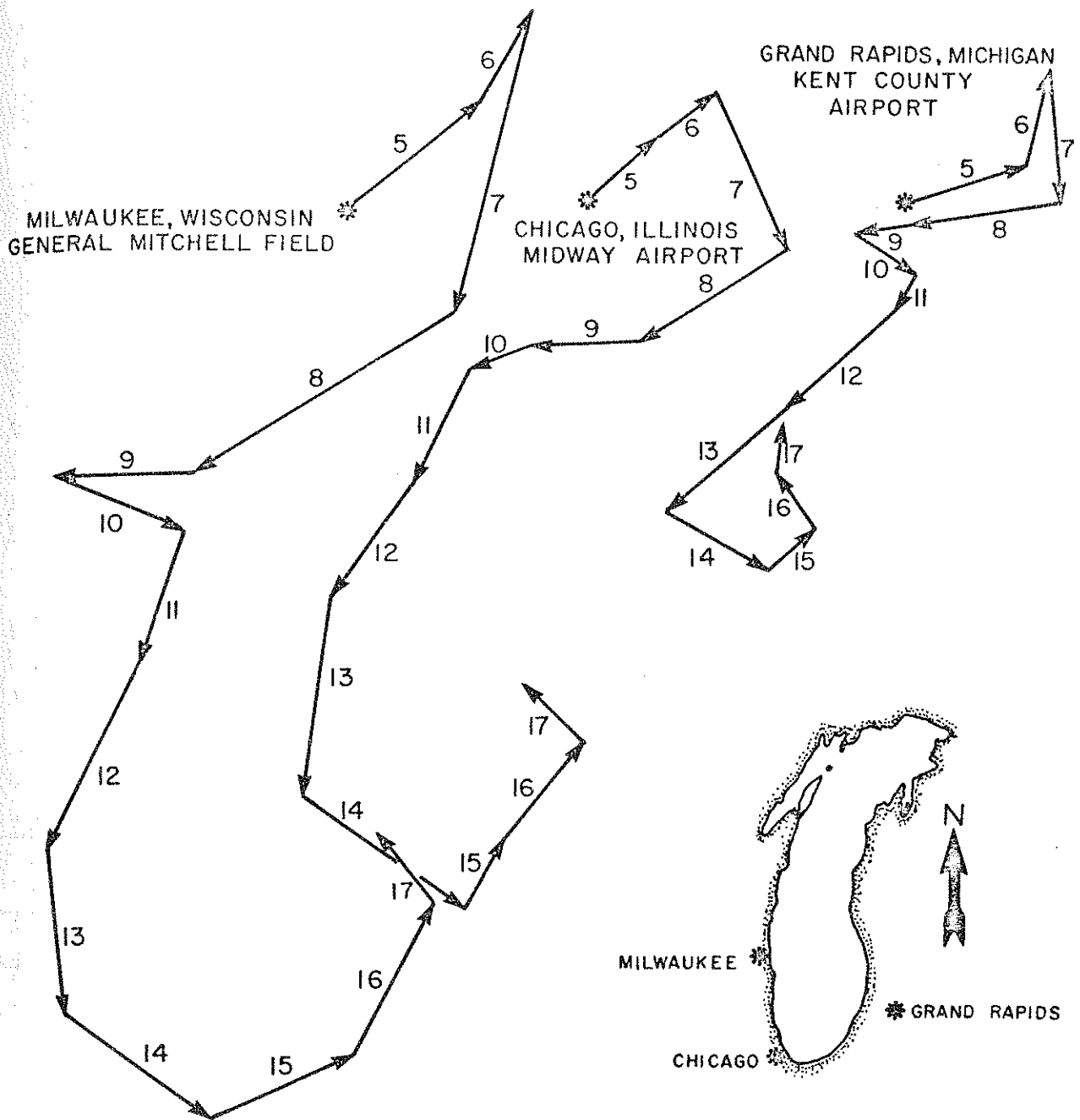


Figure 57.--Daily resultant wind vectors at three Lake Michigan weather stations based on 6-hour-interval data. Numbers refer to days in August 1955.

Appendix Table 1.--Summary of water temperature data from BT casts and related meteorological observations, Lake Michigan, 1954

[Sea state codes as follows: 0 - calm; 1 - gentle; 2 - choppy; 3 - moderate; 4 - rough; 5 - heavy; 6 - gentle swells; 7 - moderate swells, 8 - heavy swells]

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution					Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)	
					Surface (°C)	Metalimnion		Deepest reading (meters)	Direction				Velocity (mph)			
						Upper limits Temperature (°C)	Depth (meters)							Lower limits Temperature (°C)		Depth (meters)
Cruise I																
1	May 8	1032	43°00'35"	86°33'00"	3.9	-	-	-	-	-	29.88	7	1	W	15-20	100
2	8	1037	43 00 35	86 33 00	3.3	-	-	-	-	3.2	29.88	7	1	W	15-20	100
3	8	1528	42 50 45	86 19 05	5.1	-	-	-	-	4.9	29.90	10	1	W	10	25
4	9	1016	42 46 20	86 16 40	8.4	7.9	9.1	5.5	21.1	5.4	29.94	15+	1	NW	10-15	25
5	9	1046	42 46 10	86 22 50	4.2	-	-	-	-	4.0	29.94	15+	1	NW	10-15	25
6	9	1101	42 46 10	86 23 45	4.3	-	-	-	-	3.9	29.94	15+	1	NW	10-15	25
7	9	1217	42 45 50	86 36 35	4.3	-	-	-	-	4.0	29.98	8	3	NW	20-25	50
8	9	1245	42 45 45	86 42 20	4.6	-	-	-	-	4.4	29.98	8	3	NW	20-25	50
9	9	1315	42 45 40	86 48 25	4.6	-	-	-	-	4.3	30.02	10	3	NW	20	50
10	9	1408	42 45 30	86 57 30	4.7	-	-	-	-	4.0	30.02	10	3	NW	20	50
11	9	1520	42 45 20	86 06 00	5.4	-	-	-	-	4.8	30.02	10	3	NW	20	50
12	9	1550	42 45 00	87 11 30	4.0	-	-	-	-	3.6	30.02	10	3	NW	20	50
13	9	1620	42 45 00	87 14 40	3.9	-	-	-	-	3.9	30.02	10	3	NW	20	50
14	9	1650	42 45 20	87 20 45	3.8	-	-	-	-	3.8	30.02	10	3	NW	20	50
15	9	1751	42 44 35	87 32 05	4.5	-	-	-	-	3.9	30.02	10	3	NW	20	50
16	9	1842	42 44 30	87 38 40	5.7	-	-	-	-	4.2	30.05	10	6	-	>1	25
17	10	0942	42 45 40	87 36 10	4.3	-	-	-	-	4.3	30.06	10	1	N	1-5	100
18	10	1046	42 47 10	87 28 15	3.7	-	-	-	-	3.7	30.06	10	1	N	1-5	100
19	10	1247	42 58 00	87 33 40	4.2	-	-	-	-	3.7	30.04	10	1	NW	1-5	100
20	10	1431	42 53 50	87 38 20	4.7	-	-	-	-	3.9	30.01	10	0	-	>1	100
21	10	1500	42 56 50	87 43 00	4.9	-	-	-	-	4.1	30.01	10	0	-	>1	100
22	11	0900	43 01 40	87 46 20	4.4	-	-	-	-	3.9	29.95	5	0	-	>1	100
23	11	0930	43 01 45	87 40 00	3.7	-	-	-	-	3.6	29.95	5	0	-	>1	100
24	11	0942	43 01 50	87 37 15	3.9	-	-	-	-	3.9	29.95	5	0	-	>1	100
25	11	1045	43 01 55	87 31 10	4.0	-	-	-	-	3.9	29.95	5	0	-	>1	100

Continued

Appendix Table 1.---(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Surface temperature (°C)	Temperature distribution						Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)		
						Metalimnion		Deepest		Depth (meters)	Tempera- ture (°C)				Tempera- ture (°C)	Depth (meters)		Direction	Velocity (mph)
						Upper limits (meters)	Lower limits (meters)	Upper limits (meters)	Deepest reading										
26	May 11	1115	43°02'00"	87°24'55"	3.9	-	-	-	-	3.9	97.5	29.95	5	0	-	>1	100		
27	11	1145	43 02 05	87 18 35	3.9	-	-	-	-	3.9	79.2	29.95	5	0	-	>1	100		
28	11	1215	43 02 10	87 12 20	4.3	-	-	-	-	3.9	83.8	29.95	5	0	-	>1	100		
29	11	1245	43 02 15	87 06 00	4.2	-	-	-	-	4.1	76.2	29.95	5	0	-	>1	100		
30	11	1315	43 02 20	86 59 00	4.0	-	-	-	-	3.9	85.3	29.95	5	0	-	>1	100		
31	11	1334	43 02 25	86 58 00	3.9	-	-	-	-	3.9	89.6	29.95	5	0	-	>1	100		
32	11	1430	43 02 30	86 51 50	3.8	-	-	-	-	3.7	95.1	29.96	15+	1	NW	1-5	50		
33	11	1500	43 02 40	86 45 40	3.8	-	-	-	-	3.7	105.1	29.96	15+	1	NW	1-5	50		
34	11	1530	43 02 45	86 39 20	3.9	-	-	-	-	3.8	100.6	29.97	15+	3	NW	20-25	50		
35	11	1600	43 02 50	86 33 05	3.9	-	-	-	-	3.9	91.4	29.97	15+	3	NW	20-25	50		
36	11	1635	43 03 00	86 24 10	7.7	7.4	18.3	5.1	27.4	4.6	73.8	29.97	15+	3	NW	20-25	50		
37	12	0845	43 02 20	86 22 20	7.2	7.0	19.8	4.7	35.1	4.6	45.7	30.07	10	3	WNW	15-18	100		
38	12	1027	43 00 35	86 33 00	4.0	-	-	-	-	3.9	93.2	30.12	10+	3	NW	15-18	100		
39	13	0830	43 02 35	86 20 00	6.5	5.8	28.7	4.5	35.1	4.4	38.7	30.16	15+	0	E	1-5	0		
40	13	0900	43 01 20	86 26 00	7.2	7.1	9.1	4.6	22.9	4.0	73.8	30.16	15+	0	E	1-5	0		
41	13	0930	43 00 00	86 31 55	4.1	-	-	-	-	4.0	79.2	30.16	15+	0	E	1-5	0		
42	13	1000	42 58 50	86 38 00	4.2	-	-	-	-	4.0	90.5	30.16	15+	0	E	1-5	0		
43	13	1030	42 57 30	86 43 50	4.2	-	-	-	-	4.0	97.5	30.16	15+	1	NW	1-5	0		
44	13	1100	42 56 15	86 49 45	4.5	-	-	-	-	4.0	94.5	30.16	15+	1	NW	1-5	0		
45	13	1130	42 54 30	86 56 00	4.5	-	-	-	-	4.1	96.6	30.16	15+	1	NW	1-5	0		
46	13	1222	42 52 30	87 01 30	4.4	-	-	-	-	4.0	137.2	30.16	15+	1	NW	1-5	0		
47	13	1405	42 50 40	87 14 00	4.0	-	-	-	-	3.9	125.0	30.16	15+	1	NW	1-5	0		
48	13	1437	42 49 00	87 19 00	3.9	-	-	-	-	3.9	109.7	30.12	15+	1	NNNE	1-5	0		
49	13	1615	42 47 40	87 25 05	3.9	-	-	-	-	3.9	95.4	30.12	15+	1	NNNE	1-5	0		
50	13	1645	42 46 25	87 31 05	4.3	-	-	-	-	3.9	79.2	30.12	15+	1	NNNE	1-5	0		

Continued

Appendix Table 1.---(Continued)

Cruise and Br cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution										Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)
					Metalimnion					Deepest								Direction	Velocity (mph)	
					Surface Temperature (°C)	Upper limits Temperature (°C)	Depth (meters)	Lower limits Temperature (°C)	Depth (meters)	Temperature (°C)	Lower limits Temperature (°C)	Depth (meters)	Temperature (°C)	Deepest reading						
51	May 13	1715	42°45'10"	87°37'00"	5.2	-	-	-	-	-	4.2	41.5	30.12	15+	1	NNE	1-5	0		
52	14	0845	42 45 00	87 39 10	5.0	-	-	-	-	-	4.4	23.5	30.15	10	0	-	>1	0		
53	14	0948	42 45 40	87 36 10	4.8	-	-	-	-	-	3.8	47.5	30.15	10	0	-	>1	0		
54	14	1111	42 47 10	87 28 15	4.1	-	-	-	-	-	4.0	94.5	30.15	10	0	-	>1	0		
55	14	1152	42 50 35	87 33 20	5.1	-	-	-	-	-	4.0	68.0	30.17	10	0	-	>1	0		
56	14	1237	42 55 05	87 40 30	6.7	6.6	0.9	4.4	10.4	4.0	39.6	30.17	10	0	0	-	>1	0		
57	14	1308	42 58 15	87 45 00	7.3	6.5	0.9	4.5	10.7	4.2	24.4	30.17	10	0	0	-	>1	0		
58	15	0845	43 01 40	87 46 30	6.1	5.9	3.0	4.4	12.2	4.0	32.9	30.06	8	0	0	SE	1-5	25		
59	15	0915	43 01 45	87 40 10	4.9	4.8	0.9	3.7	16.8	3.7	57.3	30.06	8	0	0	SE	1-5	25		
60	15	0930	43 01 50	87 37 15	4.9	4.7	3.0	4.0	21.3	3.9	76.2	30.05	5	0	0	S	1-5	25		
61	15	1030	43 01 55	87 29 30	4.9	4.9	3.0	4.2	21.3	3.9	85.3	30.05	5	0	0	S	1-5	25		
62	15	1100	43 02 00	87 23 15	5.5	5.4	4.6	4.4	15.2	4.0	85.3	30.05	5	0	0	S	1-5	25		
63	15	1130	43 02 05	87 17 00	5.2	5.1	3.0	4.4	21.3	3.9	85.3	30.05	5	0	0	S	1-5	25		
64	15	1201	43 02 15	87 10 35	5.5	5.4	3.0	4.4	15.2	4.0	61.9	30.05	5	0	0	S	1-5	25		
65	15	1230	43 02 20	87 04 00	5.2	5.1	4.6	4.4	15.2	4.0	78.6	30.03	8	1	1	SE	10	25		
66	15	1303	43 02 25	86 58 00	5.4	5.3	4.6	4.4	15.2	3.9	92.6	30.03	8	1	1	SE	10	25		
67	15	1400	43 02 30	86 50 00	5.6	5.4	3.0	4.4	15.2	3.9	82.3	30.02	8	1	1	SE	10	25		
68	15	1430	43 02 40	86 46 00	4.2	-	-	-	-	3.9	103.0	30.02	8	1	1	SE	10	25		
69	15	1500	43 02 45	86 39 45	4.8	4.7	1.5	4.0	9.1	3.9	101.5	30.02	8	1	1	SE	10	25		
70	15	1553	43 03 00	86 31 30	8.5	8.4	1.5	4.3	13.7	3.9	91.4	29.97	8	1	1	S	10	50		
71	15	1625	43 03 00	86 24 10	9.6	9.4	1.5	4.9	25.0	4.4	74.1	29.97	8	1	1	S	10	50		
72	16	0831	43 03 00	86 19 20	7.8	7.6	10.7	4.7	35.1	4.4	38.1	29.87	5	1	1	-	-	-		
73	16	0900	43 02 55	86 25 35	8.8	8.6	9.1	4.3	21.3	3.9	76.8	29.87	5	1	1	-	-	-		
74	16	1033	43 03 00	86 31 30	7.8	7.8	6.1	4.2	38.1	4.0	91.4	29.87	5	1	1	-	-	-		
75	16	1337	43 03 30	86 25 45	10.1	9.4	3.0	4.7	27.4	4.2	68.6	29.84	10	1	1	SW	10	-		

Continued

Appendix Table 1.--(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Surface Temperature (°C)	Temperature distribution						Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)
						Metalimnion			Deepest reading						Direction	Velocity (mph)	
						Upper Temperature (°C)	Depth (meters)	Lower Temperature (°C)	Depth (meters)	Temperature (°C)	Depth (meters)						
76	May 16	1504	43°03'20"	86°20'15"	9.9	0.9	5.1	26.5	4.1	42.7	29.84	10	1	SW	10	-	
77	17	0840	43 03 20	86 17 50	11.0	4.6	4.6	14.6	4.6	24.4	30.00	15+	1	NW	15	0	
78	17	0923	43 03 00	86 19 20	8.1	0.9	4.5	22.9	4.4	33.5	30.00	15+	1	NW	15	0	
79	17	1000	43 03 00	86 20 50	8.0	6.1	4.4	35.1	4.3	42.7	30.00	15+	1	NW	15	0	
Cruise II																	
1	27	0858	43 03 03	86 18 50	6.5	20.4	4.6	27.4	4.6	30.5	30.08	10	3	ESE	20	100	
2	27	1923	43 03 00	86 24 10	6.2	39.6	4.6	61.0	4.4	74.4	30.08	10	3	ESE	20	100	
3	27	1030	43 02 55	86 29 20	7.3	15.2	4.4	51.8	4.2	76.2	30.06	10	3	SE	20	100	
4	27	1059	43 02 50	86 35 20	6.0	30.5	4.4	48.8	4.1	91.4	30.02	7	3	SE	15-18	100	
5	27	1130	43 02 45	86 41 20	6.0	21.3	4.3	45.7	4.1	94.5	30.02	7	3	SE	15-18	100	
6	27	1200	43 02 40	86 48 00	5.6	15.2	4.5	33.5	4.2	54.9	30.00	8	3	SE	20	100	
7	27	1230	43 02 35	86 54 05	5.7	15.2	4.4	45.7	3.9	94.8	30.00	8	3	ESE	20	100	
8	27	1300	43 02 25	86 59 50	5.8	21.3	4.3	35.1	4.1	80.8	29.97	8	3	ESE	20	100	
9	27	1330	43 02 15	87 06 05	5.7	31.3	4.3	42.7	4.0	73.2	29.94	8	3	ESE	20	100	
10	27	1400	43 02 10	87 12 20	5.9	31.3	4.3	61.0	4.1	88.4	29.93	8	5	ESE	20	100	
11	27	1430	43 02 05	87 18 35	6.7	32.9	4.7	61.0	4.6	88.4	29.92	8	5	ESE	20	100	
12	27	1500	43 02 00	87 24 50	6.3	27.4	4.7	36.6	4.0	95.1	29.90	8	5	ESE	20	100	
13	27	1530	43 01 55	87 31 00	5.9	21.3	4.3	48.8	4.0	85.3	29.88	6	5	ESE	20	100	
14	27	1558	43 01 50	87 37 15	6.1	18.3	4.2	48.8	4.0	73.2	29.87	5	5	ESE	15-18	100	
15	27	1703	43 01 40	87 45 05	8.3	16.8	5.0	24.4	4.6	37.5	29.86	4	5	ESE	15-18	100	
16	29	0912	43 04 00	87 49 15	8.2	15.2	5.4	22.9	5.1	30.5	29.69	15+	2	W	20-25	25	
17	29	0945	43 08 40	87 47 15	7.5	15.2	4.4	25.9	3.6	61.0	29.69	15+	2	W	20-25	25	
18	29	1015	43 12 45	87 49 30	6.7	18.3	4.9	25.9	3.8	48.2	29.69	15+	2	W	25	25	
19	29	1045	43 15 10	87 51 10	7.7	12.8	4.6	24.4	4.5	27.4	29.69	15+	2	WSW	25-30	25	
20	29	1330	43 15 15	87 49 45	7.4	6.1	4.2	22.9	3.7	47.5	29.69	15+	2	WSW	25-30	25	

Continued

Appendix Table 1.--(Continued)

Cruise and BT number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution						Barometer (inches)	Visibility (miles)	Sea	Wind		Cloud coverage (percent)	
					Surface (°C)	Metalimnion		Deepest		Direction				Velocity (mph)			
						Upper limits (meters)	Lower limits (meters)	Temperature (°C)	Depth (meters)						Temperature (°C)		Depth (meters)
21	May 29	1419	43°15'30"	87°46'10"	6.8	6.7	12.2	4.3	35.1	4.0	79.2	29.78	15+	3	W	30-35	50
22	30	0900	43 23 05	87 49 05	7.2	-	-	-	-	6.8	22.9	30.07	15+	1	SSW	1-5	0
23	30	0920	43 23 05	87 44 20	7.4	7.1	15.2	4.7	39.6	4.0	73.2	30.07	15+	0	SSW	>1	0
24	30	1031	43 23 00	87 35 25	5.1	-	-	-	-	3.9	137.2	30.07	15+	0	SSW	>1	0
25	30	1100	43 22 57	87 29 20	5.4	5.1	33.5	4.2	54.9	3.9	121.9	30.07	15+	0	SSW	>1	0
26	30	1126	43 22 53	87 23 50	6.2	5.5	36.6	4.2	48.8	3.9	106.7	30.06	15+	1	S	1-5	0
27	30	1240	43 22 45	87 14 20	7.1	7.0	3.0	4.6	33.5	4.3	80.5	30.06	15+	1	S	1-5	0
28	30	1311	43 22 40	87 07 30	6.4	5.6	21.3	4.5	36.6	3.8	49.1	30.06	15+	1	S	1-5	0
29	30	1340	43 22 40	87 02 00	6.4	5.8	27.4	4.5	36.6	4.3	59.4	30.05	15+	1	S	10-15	0
30	30	1356	43 22 40	86 58 00	7.1	6.8	6.1	4.4	73.2	4.2	112.8	30.05	15+	1	S	10-15	0
31	30	1500	43 23 05	86 54 40	5.7	-	-	-	-	4.0	61.0	30.05	15+	1	S	10-15	0
32	30	1531	43 23 00	86 40 35	5.5	-	-	-	-	4.0	121.9	30.05	15+	1	S	10-15	0
33	30	1600	43 22 50	86 48 15	5.8	-	-	-	-	4.2	110.6	30.04	15+	1	S	10-15	0
34	30	1637	43 22 45	86 32 50	8.1	8.0	3.0	4.5	51.8	4.1	76.2	30.04	15+	1	S	10-15	0
35	31	0904	43 25 05	86 28 50	7.3	-	-	-	-	7.0	25.9	29.84	3-5	4	SSE	20-25	100
36	31	0947	43 31 50	86 32 00	7.0	-	-	-	-	6.7	43.3	29.83	3-5	5	SSE	25	100
37	31	1016	43 36 00	86 34 00	6.8	-	-	-	-	6.7	35.7	29.83	3-5	5	SSE	25	100
38	31	1045	43 40 20	86 34 30	6.6	-	-	-	-	6.0	40.2	29.83	3-5	5	SSE	25	100
39	31	1115	43 44 15	86 31 35	7.7	7.6	10.7	6.2	28.7	6.2	28.7	29.83	3-5	5	SSE	25	100
40	31	1145	43 48 30	86 28 45	7.5	-	-	-	-	7.2	19.5	29.83	3-5	5	SSE	25	100
41	June 2	0851	43 57 15	86 33 40	5.8	-	-	-	-	5.8	29.0	29.80	15+	3	NW	15-18	100
42	2	1015	43 57 15	86 36 40	5.6	-	-	-	-	5.2	50.3	29.82	15+	3	NW	15-18	100
43	2	1100	43 57 15	86 38 20	5.1	-	-	-	-	4.3	73.2	29.82	15+	3	NW	15-18	100
44	2	1320	43 46 00	86 37 20	5.1	-	-	-	-	4.9	45.7	29.84	15+	3	NW	15-18	100
45	2	1350	43 41 30	86 36 40	7.6	7.4	4.0	5.8	6.1	4.5	57.9	29.84	15+	3	NW	15-18	100

Continued

Appendix Table 1.--(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution										Deepest reading (meters)	Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)
					Metalimnion					Deep									Direction	Velocity (mph)	
					Upper limits (meters)	Lower limits (meters)	Temperature (°C)	Depth (meters)	Temperature (°C)	Upper limits (meters)	Lower limits (meters)	Temperature (°C)	Depth (meters)	Temperature (°C)							
46	June 2	1424	43°39'10"	86°37'57"	7.0	6.9	3.0	5.3	13.7	4.6	73.2	29.84	15+	3	NW	15-18	100				
47	2	1530	43 33 15	86 34 40	8.0	7.6	12.2	6.0	18.3	4.4	51.8	29.81	15+	1	NW	12-15	75				
48	2	1600	43 29 00	86 32 20	8.0	7.5	12.2	4.4	35.1	4.2	43.9	29.81	15+	1	NW	12-15	75				
49	2	1630	43 24 40	86 29 55	8.3	8.0	9.1	5.0	27.4	4.8	32.0	29.81	15+	1	NW	12-15	75				
50	5	0851	43 03 30	86 18 15	7.9	7.5	3.0	4.8	16.8	4.5	22.9	30.00	15+	1	NW	1-5	0				
51	5	0859	43 03 30	86 20 00	7.6	6.0	32.0	4.6	37.2	4.4	40.8	30.00	15+	1	NW	1-5	0				
52	6	1300	43 03 30	86 24 10	10.0	9.6	6.1	4.6	45.7	4.4	73.2	30.05	10-15	0	-	>1	25				
53	6	1357	43 03 30	86 24 10	9.8	9.6	4.6	4.3	45.7	4.2	73.2	30.05	10-15	0	-	>1	25				
54	6	1450	43 03 30	86 24 10	10.4	10.3	4.6	4.4	48.8	4.3	73.2	30.02	10-15	0	-	>1	50				
55	6	1530	43 03 30	86 24 10	11.7	11.1	3.0	4.3	48.8	4.3	73.2	30.00	10-15	0	ENE	1-5	75				
56	6	1600	43 03 30	86 24 10	11.1	10.6	3.0	4.4	48.8	4.3	73.2	30.00	10-15	0	-	>1	100				
57	6	1700	43 03 30	86 24 10	11.4	10.6	3.0	4.4	54.9	4.3	75.0	30.00	10-15	0	-	>1	100				
58	6	1730	43 03 30	86 24 10	11.4	10.6	1.5	4.4	54.9	4.3	73.2	30.00	10-15	0	-	>1	100				
59	6	1803	43 03 30	86 24 10	11.4	11.0	1.5	4.6	54.9	4.4	73.2	30.00	10-15	0	-	>1	100				
60	6	1844	43 03 30	86 24 10	11.1	10.3	1.5	4.5	54.9	4.4	73.2	29.97	10-15	0	-	>1	75				
61	6	2042	43 03 30	86 24 10	10.4	10.3	1.5	4.5	48.8	4.4	73.2	29.97	10-15	0	-	>1	75				
62	6	2124	43 03 30	86 24 10	11.4	10.9	1.5	4.5	50.3	4.4	73.2	29.97	10-15	0	-	>1	75				
63	6	2206	43 03 30	86 24 10	11.7	11.3	1.5	4.5	48.8	4.4	73.2	29.97	10-15	0	-	>1	75				
64	6	2304	43 03 30	86 24 10	10.6	10.3	3.0	4.5	48.8	4.4	73.2	29.97	10-15	0	-	>1	75				
65	7	0003	43 03 30	86 24 10	11.1	11.1	4.6	4.5	50.3	4.4	75.0	29.97	10-15	0	-	>1	75				
Cruise III																					
1	16	0822	43 03 20	86 16 05	18.5	18.1	9.1	10.2	15.2	10.2	15.2	29.87	5	1	S	12-17	-				
2	16	0922	43 02 20	86 22 20	16.0	15.9	6.1	5.2	36.0	5.1	51.8	29.87	5	1	S	12-17	-				
3	16	1120	43 00 35	86 33 00	14.0	13.9	6.1	4.4	61.0	4.2	92.6	29.87	5	1	S	12-17	-				
4	18	0619	43 03 15	86 17 40	19.6	19.2	6.1	8.8	18.3	8.8	18.3	30.13	3	1	SE	1-5	-				
5	18	0650	42 59 10	86 17 20	18.4	18.2	4.6	6.9	21.3	5.7	33.5	30.13	3	1	SE	1-5	-				

Continued

Appendix Table 1.-- (Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution							Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)
					Metalimnion				Deepest						Direction	Velocity (mph)	
					Upper limits (meters)	Lower limits (meters)	Depth (meters)	Temperature (°C)	Temperature (°C)	Depth (meters)	Temperature (°C)						
6	June 18	0720	42°54'40"	86°17'20"	18.0	4.6	8.8	15.2	5.0	38.1	30.15	1	1	SE	1-5	-	
7	18	0750	42 50 20	86 17 20	18.0	4.6	8.3	18.3	5.4	36.6	30.15	1	1	SE	1-5	-	
8	18	0820	42 46 15	86 17 40	18.2	7.6	8.5	24.4	5.1	38.1	30.15	1	1	SE	1-5	-	
9	18	0851	42 46 10	86 23 45	17.2	5.5	4.4	44.2	4.4	74.7	30.15	1	1	SE	1-5	-	
10	18	1016	42 46 00	86 30 25	16.9	4.6	4.4	44.2	4.3	64.0	30.15	1	1	SE	1-5	-	
11	18	1046	42 45 50	86 36 40	16.8	4.6	5.9	45.7	4.4	79.2	30.13	2-3	1	SE	12-15	-	
12	18	1115	42 45 45	86 42 30	15.7	3.0	7.8	12.2	4.4	111.5	30.13	2-3	1	SE	12-15	-	
13	18	1145	42 45 40	86 48 40	15.5	6.1	6.9	24.4	4.1	137.2	30.13	2-3	1	SE	12-15	-	
14	18	1223	42 45 30	86 56 30	15.4	1.5	6.5	18.3	4.1	161.5	30.13	2-3	1	SE	12-15	-	
15	18	1255	42 45 25	86 58 25	15.0	3.0	6.4	18.3	4.1	164.6	30.13	2-3	1	SE	12-15	-	
16	18	1400	42 45 00	87 03 30	14.8	3.0	6.1	18.3	4.0	155.4	30.13	4	1	SSE	1-5	-	
17	18	1430	42 44 45	87 09 30	14.8	3.0	5.9	24.4	3.7	149.4	30.13	4	1	SSE	1-5	-	
18	18	1500	42 44 40	87 14 50	15.7	6.1	5.5	24.4	3.9	137.2	30.13	4	1	SSE	1-5	-	
19	18	1530	42 44 35	87 20 50	16.3	6.1	6.1	24.4	4.1	114.0	30.13	4	1	SSE	1-5	-	
20	18	1600	42 44 25	87 27 05	18.3	3.0	5.8	24.4	3.9	92.0	30.13	4	1	SSE	1-5	-	
21	18	1622	42 44 30	87 31 40	17.8	6.1	6.0	18.3	4.1	76.2	30.13	4	1	SSE	1-5	-	
22	18	1720	42 43 05	87 38 30	16.6	3.0	6.3	15.2	5.0	40.5	30.13	4	1	SSE	1-5	-	
23	18	1733	42 43 25	87 41 10	16.6	3.0	6.4	15.2	5.9	20.1	30.13	4	1	SSE	1-5	-	
24	18	1748	42 44 10	87 43 30	16.6	1.5	7.2	7.6	7.0	12.8	30.13	4	1	SSE	1-5	-	
25	19	0858	42 44 00	87 44 35	15.7	1.5	7.3	9.1	7.2	12.2	30.06	1	1	SE	1-5	0	
26	19	0915	42 44 40	87 41 10	16.2	2.4	6.1	15.2	5.7	19.8	30.06	2	1	SE	1-5	0	
27	19	0942	42 45 40	87 36 10	16.4	2.4	6.3	16.8	5.2	47.2	30.06	2	1	SE	1-5	0	
28	19	1050	42 47 10	87 28 15	18.3	6.7	5.7	24.4	4.0	94.5	30.06	2	1	SE	1-5	0	
29	19	1230	42 43 00	87 31 30	18.5	6.7	6.1	18.3	4.3	77.7	30.04	2	1	SSE	1-5	-	
30	19	1300	42 39 00	87 34 30	18.9	5.2	6.0	15.2	4.4	67.1	30.04	2	1	SSE	1-5	-	

Continued

Appendix Table 1.--(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Surface temperature (°C)	Temperature distribution								Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)
						Metalimnion				Deepest							Direction	Velocity (mph)	
						Upper limits (meters)	Temperature (°C)	Depth (meters)	Temperature (°C)	Upper limits (meters)	Temperature (°C)	Depth (meters)	Temperature (°C)						
31	June 19	1330	42°32'50"	87°42'15"	17.8	17.7	2.1	6.5	12.2	5.2	57.9	30.04	2	1	SSE	1-5	-		
32	19	1415	42 35 15	87 37 45	15.8	15.6	2.4	7.3	12.2	5.0	39.6	30.02	3-5	2	ENE	15-18	100		
33	19	1514	42 27 00	87 45 50	14.2	13.8	3.7	6.0	17.4	6.0	17.4	30.02	3-5	2	ENE	15-18	100		
34	20	0820	42 21 50	87 46 50	13.4	13.3	4.3	7.2	12.2	7.2	12.2	29.97	6-8	3	SE	15-18	100		
35	20	0835	42 21 55	87 43 50	14.7	14.7	4.6	9.2	7.6	6.4	21.9	29.97	6-8	3	SE	15-18	100		
36	20	0958	42 22 10	87 34 10	15.1	15.0	3.0	5.0	13.7	4.6	76.2	30.08	1/4	4	NNW	25-30	100		
37	20	1030	42 22 15	87 29 15	14.8	14.7	3.0	5.1	21.3	4.9	61.0	30.06	1	1	NNW	1-5	100		
38	20	1100	42 22 25	87 23 05	15.1	14.9	3.0	5.5	18.3	4.5	94.5	30.06	1	1	NNW	1-5	100		
39	20	1130	42 22 40	87 17 00	14.8	14.8	3.0	5.6	24.4	4.3	102.1	30.00	3	1	N	1-5	100		
40	20	1200	42 23 00	87 10 45	14.8	14.7	6.1	6.1	21.3	4.0	107.6	29.98	3	2	SE	15-18	100		
41	20	1230	42 23 15	87 04 15	13.6	13.4	9.3	6.8	21.3	4.2	112.1	29.98	3	2	SE	15-18	100		
42	20	1321	42 23 15	86 57 20	13.2	12.8	7.6	4.4	76.2	4.2	131.1	29.94	5	1	SE	12-15	100		
43	20	1430	42 23 20	86 51 15	14.4	14.2	9.1	4.5	67.1	4.3	120.7	29.94	5	1	SE	12-15	100		
44	20	1500	42 23 25	86 45 05	14.5	14.4	9.1	4.6	45.7	4.4	70.1	29.94	5	1	SE	12-15	100		
45	20	1533	42 23 30	86 41 40	15.1	14.4	9.1	4.7	51.8	4.4	76.2	29.90	15+	3	S	20	100		
46	20	1730	42 22 50	86 34 10	18.5	18.4	3.0	5.6	36.6	5.0	54.9	29.89	15+	3	S	20	100		
47	20	1800	42 23 00	86 28 05	19.1	18.9	4.6	4.9	34.4	4.6	44.2	29.90	10	1	S	1-5	100		
48	20	1830	42 23 25	86 22 00	19.0	18.4	6.1	7.0	24.4	7.0	24.4	29.90	10	1	S	1-5	100		
49	20	1842	42 23 35	86 19 35	20.1	19.5	7.6	12.0	12.2	12.0	12.2	29.90	10	1	S	1-5	100		
50	21	0840	42 25 35	86 18 40	20.2	-	-	-	-	18.4	9.1	29.88	8	1	SE	1-5	100		
51	21	0910	42 30 00	86 18 20	20.1	19.4	7.6	8.7	16.8	8.7	16.8	29.88	8	1	SE	1-5	100		
52	21	0947	42 35 45	86 17 30	19.5	18.5	8.5	5.2	25.9	5.0	29.0	29.88	8	1	SE	1-5	100		
53	21	1100	42 35 50	86 20 20	18.0	17.3	8.5	4.5	42.7	4.4	47.2	29.84	8	1	WSW	15-18	100		
54	21	1330	42 35 20	86 33 00	17.3	17.2	6.1	4.7	48.8	4.4	76.2	29.87	8	3	SW	12-15	75		
55	21	1441	42 39 45	86 25 45	18.2	18.1	3.0	4.7	39.6	4.6	68.6	29.87	8	3	SW	12-15	75		

Continued

Appendix Table 1.--(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution						Deepest reading (meters)	Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)
					Metalimnion			Surface							Direction	Velocity (mph)	
					Upper limits (meters)	Lower limits (meters)	Temperature (°C)	Depth (meters)	Temperature (°C)	Surface (°C)							
56	June 21	1510	42°42'30"	86°21'05"	17.6	6.1	4.9	36.6	4.6	46.3	29.87	8	3	SW	12-15	75	
57	21	1540	42 45 20	86 16 15	18.4	16.5	6.4	22.9	6.4	22.9	29.87	8	3	SW	12-15	75	
58	22	0820	42 46 10	86 19 05	15.6	12.2	5.6	35.1	4.8	48.2	29.87	1/2	8	WNW	15-18	25	
59	22	0850	42 46 05	86 25 20	16.1	8.5	4.6	51.8	4.3	72.5	29.87	1/2	8	WNW	15-18	25	
60	22	0920	42 46 00	86 31 35	15.7	8.5	4.4	64.0	4.3	75.6	29.87	1/2	8	WNW	15-18	25	
61	22	0950	42 45 50	86 37 45	15.0	9.1	8.9	15.2	4.4	94.5	29.87	15+	8	WSW	1-5	25	
62	22	1020	42 45 40	86 43 55	15.2	9.1	8.1	13.7	4.4	100.6	29.87	15+	8	WSW	1-5	25	
63	22	1050	42 45 35	86 50 00	14.6	10.7	6.9	21.3	4.0	137.2	29.87	15+	8	WSW	1-5	25	
64	22	1159	42 45 25	86 58 25	14.7	6.1	7.1	18.3	4.7	164.6	29.87	15+	8	WSW	1-5	25	
65	22	1250	42 45 05	87 07 00	16.5	9.1	6.6	15.2	4.0	152.4	29.88	15+	1	WSW	12-15	25	
66	22	1321	42 45 00	87 12 45	17.5	3.0	6.5	18.3	4.0	143.3	29.88	15+	1	WSW	12-15	25	
67	22	1351	42 44 50	87 19 30	17.8	9.1	6.7	21.3	4.4	121.9	29.88	15+	1	WSW	12-15	25	
68	22	1421	42 44 30	87 24 20	15.3	3.0	6.3	21.3	4.1	99.9	29.87	15+	1	WSW	1-5	25	
69	22	1451	42 44 20	87 30 40	15.2	3.0	6.1	15.2	5.0	73.2	29.87	15+	1	WSW	1-5	25	
70	22	1521	42 44 15	87 36 40	13.6	3.0	6.5	21.3	5.4	43.6	29.87	15+	1	WSW	1-5	25	
71	22	1545	42 44 05	87 41 35	11.4	4.6	5.8	11.3	5.6	14.3	29.87	15+	1	WSW	1-5	25	
72	22	1553	42 44 05	87 43 20	11.4	4.6	5.8	9.1	5.7	13.7	29.87	15+	1	WSW	1-5	25	
73	23	0832	42 44 50	87 40 30	11.5	7.6	5.8	12.2	5.6	19.8	30.11	15+	0	-	>1	0	
74	23	0935	42 45 40	87 36 10	13.9	3.0	5.9	12.2	4.2	53.3	30.11	15+	0	-	>1	0	
75	23	1119	42 47 10	87 28 15	15.1	7.6	6.8	13.7	4.0	99.0	30.14	15+	0	NNW	1-5	25	
76	24	0839	42 45 00	87 41 20	11.5	1.5	6.4	10.7	6.0	17.1	30.07	6-8	1	SE	1-5	0	
77	24	0944	42 51 40	87 40 25	13.1	4.6	6.9	11.3	5.3	29.0	30.07	6-8	1	SSW	12-15	0	
78	24	1117	42 58 00	87 33 50	15.0	6.1	6.1	21.3	4.0	76.2	30.04	6-8	1	S	12-15	0	
79	24	1353	42 53 00	87 29 45	15.6	6.1	6.3	15.2	4.2	92.9	29.97	6-8	3	S	18-20	0	
80	24	1500	42 56 05	87 35 50	14.4	5.8	6.3	15.2	4.3	56.1	29.96	10	3	SSW	20	0	

Continued

Appendix Table 1.--(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution							Barometer (inches)	Visibility (miles)	Sea	Wind		Cloud coverage (percent)
					Metalimnion				Deepest						Direction	Velocity (mph)	
					Surface (°C)	Upper limits (°C)	Depth (meters)	Lower limits (°C)	Temperature (°C)	Depth (meters)	Temperature (°C)						
81	June 24	1530	42°58'05"	87°40'20"	13.5	13.3	6.1	6.8	10.7	4.0	51.8	29.96	10	3	SSW	20	0
82	24	1600	43 00 15	87 45 55	13.5	13.4	5.2	6.9	9.1	5.3	28.0	29.96	10	3	SSW	20	0
83	24	1615	43 01 20	87 48 40	14.1	14.1	3.1	5.4	15.2	5.3	18.3	29.96	10	3	SSW	20	0
84	25	0820	43 01 35	87 51 15	12.2	12.0	3.1	6.8	10.7	6.2	15.2	29.91	4-6	1	SSE	1-5	100
85	25	0836	43 01 40	87 48 00	13.7	13.0	5.5	7.2	8.5	5.7	18.3	29.91	4-6	1	SSE	1-5	100
86	25	0905	43 01 45	87 42 00	13.5	13.3	7.6	6.6	13.7	5.1	50.3	29.91	4-6	1	SSE	1-5	100
87	25	0928	43 01 50	87 37 15	15.5	15.3	6.1	6.1	16.8	4.2	61.0	29.90	4-6	1	SSW	1-5	100
88	25	1030	43 01 55	87 30 20	16.0	16.0	3.1	6.3	16.8	4.1	82.3	29.90	4-6	1	SSW	1-5	100
89	25	1100	43 02 00	87 24 10	17.3	17.1	9.1	6.2	24.4	4.2	95.1	29.90	4-6	1	SSW	1-5	100
90	25	1130	43 02 07	87 17 50	17.8	17.4	9.1	6.2	27.4	4.6	86.9	29.90	4-6	1	SSW	1-5	100
91	25	1210	43 02 15	87 09 30	16.9	16.7	6.1	6.1	24.4	4.2	74.7	29.90	4-6	1	SSW	1-5	100
92	25	1240	43 02 20	87 03 00	17.0	16.8	6.1	6.3	21.3	4.2	76.2	29.85	6-8	3	S	15-18	100
93	25	1316	43 02 25	86 58 00	15.4	15.3	6.1	5.7	21.3	4.2	91.4	29.84	6-8	3	S	15-18	100
94	25	1430	43 02 40	86 49 30	15.6	15.4	6.1	5.6	21.3	4.2	94.5	29.84	15+	3	S	18-20	100
95	25	1500	43 02 45	86 43 20	15.6	15.3	9.1	5.8	21.3	4.4	94.5	29.84	15+	3	S	18-20	100
96	25	1530	43 02 50	86 37 05	15.9	15.8	6.1	8.2	15.2	4.2	92.9	29.84	15+	3	S	18-20	100
97	25	1600	43 02 55	86 31 00	15.5	15.3	6.1	7.5	15.2	4.3	86.9	29.84	15+	3	SSE	20-25	100
98	25	1635	43 03 00	86 24 10	16.2	15.7	9.1	7.9	18.3	4.3	76.2	29.84	15+	4	S	25	100
99	25	1815	43 02 45	86 19 00	20.2	16.5	15.2	6.5	24.4	6.5	24.4	29.76	15+	5	S	25	50
100	25	1825	43 03 00	86 17 00	20.4	-	-	-	-	20.1	13.7	29.76	15+	5	S	25	50
101	26	1046	43 03 30	86 18 25	19.4	19.2	9.1	5.7	20.4	5.5	21.9	29.87	1/16	1	W	12-15	50
102	26	1302	43 03 30	86 17 50	19.3	17.3	12.2	4.8	25.9	4.7	30.5	29.91	5	3	WNW	18-20	50
103	27	2210	43 03 00	86 24 10	16.8	16.7	6.1	7.2	15.2	4.2	76.2	30.14	15+	3	NNE	15-18	0
104	27	2358	43 03 00	86 24 10	17.8	17.6	6.1	7.3	15.2	4.1	73.2	30.14	15+	3	NNE	15-18	0
105	28	0125	43 03 00	86 24 10	18.2	18.0	4.6	8.0	10.7	4.2	74.7	30.13	15+	1	NE	12-15	0
106	28	0210	43 03 00	86 24 10	18.1	17.9	6.1	7.2	15.2	4.1	76.2	30.13	15+	1	NE	12-15	0
107	28	0405	43 03 00	86 24 10	17.9	17.8	3.7	7.0	16.8	4.1	76.8	30.13	15+	1	ENE	12-15	12
108	28	0600	43 03 00	86 24 10	17.9	17.8	4.6	7.3	18.3	4.1	76.2	30.13	15+	1	ENE	12-15	12

Continued

Appendix Table 1.--(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution						Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)			
					Surface Temperature (°C)	Metalimnion		Deepest Temperature reading (°C)	Depth (meters)	Upper limits Temperature (°C)				Depth (meters)	Lower limits Temperature (°C)		Depth (meters)	Direction	Velocity (mph)
						Temperature (°C)	Depth (meters)												
Cruise IV																			
1	July 7	0845	43°03'05"	86°17'25"	16.6	16.2	4.0	5.7	12.8	5.6	19.2	29.79	6-8	1	NE	1-5	50		
2	7	0859	43 02 20	86 22 20	16.1	15.1	8.2	4.6	21.3	4.3	45.7	29.79	6-8	1	NE	1-5	50		
3	8	1149	43 03 05	86 17 20	17.0	16.9	0.9	12.7	16.1	12.7	16.1	30.06	15+	1	SSW	1-5	0		
4	8	1207	43 02 30	86 21 15	17.4	16.2	11.3	7.0	19.8	4.4	49.4	30.06	15+	1	SSW	1-5	0		
5	8	1236	43 01 30	86 27 00	18.2	17.5	12.2	6.9	24.4	4.5	80.8	30.06	15+	1	SSW	1-5	0		
6	8	1645	43 00 35	86 33 00	18.6	17.7	9.1	6.8	21.3	4.3	94.5	30.02	15+	1	SSW	1-5	0		
7	9	0802	43 03 20	86 18 05	16.3	16.1	3.0	6.8	21.9	6.8	21.9	30.10	15+	1	ESE	1-5	0		
8	9	0819	43 03 05	86 21 40	16.7	16.4	6.1	7.3	15.2	4.2	57.3	30.10	15+	1	ESE	1-5	0		
9	9	0831	43 03 00	86 24 10	17.9	16.4	6.1	5.3	27.4	4.3	76.2	30.10	15+	1	ESE	1-5	0		
10	9	0945	43 02 55	86 31 00	18.6	18.5	6.1	5.9	24.4	4.2	86.0	30.10	15+	1	ESE	1-5	0		
11	9	1115	43 02 50	86 40 50	17.8	16.9	7.6	6.8	21.3	4.2	100.6	30.10	15+	1	ESE	1-5	0		
12	9	1145	43 02 40	86 47 00	17.6	16.9	9.1	5.6	27.4	4.3	92.9	30.10	15+	1	ESE	1-5	0		
13	9	1215	43 02 30	86 53 05	17.9	17.2	9.1	6.3	21.3	4.3	91.4	30.10	15+	1	ESE	1-5	0		
14	9	1228	43 02 25	86 58 00	17.6	17.3	6.1	5.8	24.4	4.1	91.4	30.12	4-6	1	SSE	1-5	0		
15	9	1330	43 02 15	87 03 30	18.4	17.2	12.2	5.6	27.4	4.3	80.5	30.12	4-6	1	SSE	1-5	0		
16	9	1400	43 02 05	87 09 20	18.4	17.1	12.2	6.3	27.4	4.6	65.5	30.12	4-6	1	SSE	1-5	-		
17	9	1430	43 04 50	87 13 20	19.1	17.3	12.2	6.2	24.4	4.4	72.5	30.13	4	1	SE	1-5	-		
18	9	1500	43 04 45	87 19 20	19.2	18.2	12.2	6.3	24.4	4.4	79.2	30.13	4	1	SE	1-5	-		
19	9	1530	43 04 40	87 25 40	19.2	17.8	15.2	6.1	27.4	4.7	89.0	30.13	4	1	SE	1-5	-		
20	9	1638	43 01 50	87 37 15	17.9	17.4	10.7	6.5	16.8	4.2	76.2	30.13	4	1	SE	1-5	-		
21	9	1730	43 01 45	87 42 30	17.7	17.2	12.2	6.5	21.3	4.9	53.3	30.13	4	1	SE	1-5	-		
22	9	1810	43 01 40	87 47 40	17.6	16.6	12.2	7.5	27.4	7.5	27.4	30.13	4	1	SE	1-5	-		
23	9	1820	43 01 40	87 49 55	17.8	-	-	-	-	15.2	17.4	30.13	4	1	SE	1-5	-		
24	10	0827	43 01 35	87 50 40	16.0	15.8	6.1	14.1	16.1	14.1	16.1	30.10	3	1	SE	10-12	100		
25	10	0910	43 01 40	87 46 15	17.3	16.8	12.8	6.6	25.9	6.0	33.5	30.10	3	1	SE	10-12	100		

Continued

Appendix Table 1.--(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution										Barometer (inches)	Visi-bility (miles)	Sea	Wind		Cloud coverage (percent)
					Metalimnion					Deepest								Direction	Velocity (mph)	
					Surface (°C)	Upper limits (meters)	Temperature (°C)	Depth (meters)	Lower limits (meters)	Temperature (°C)	Depth (meters)	Temperature (°C)	Depth (meters)							
26	July 10	0945	43°06'30"	87°48'00"	17.5	16.5	13.7	6.7	22.9	5.0	41.1	30.10	3	1	SE	10-12	100			
27	10	1015	43 10 50	87 49 30	17.3	16.5	13.7	6.8	25.9	5.3	42.7	30.10	3	1	SE	10-12	100			
28	10	1053	43 15 10	87 51 10	17.1	16.8	7.6	10.8	21.3	9.4	26.5	30.07	4	3	SE	20-25	100			
29	11	0835	43 01 40	87 49 10	16.5	16.4	12.2	9.5	18.3	9.5	18.3	30.03	4	3	SE	15-18	100			
30	11	0905	43 01 40	87 43 00	17.0	16.8	12.2	6.5	21.3	4.6	48.8	30.03	4	3	SE	15-18	100			
31	11	0935	43 03 55	87 39 40	17.0	17.0	9.8	6.5	18.3	4.2	69.5	30.03	4	3	SE	15-18	-			
32	11	1005	43 08 30	87 39 15	16.8	16.7	10.7	6.2	18.3	4.5	76.2	30.03	4	3	SE	15-18	-			
33	11	1035	43 13 00	87 39 00	16.4	16.2	10.7	5.7	18.3	3.8	100.6	30.04	6-8	3	SE	15-18	-			
34	11	1105	43 17 40	87 38 45	16.8	16.8	9.1	5.6	21.3	4.4	106.7	30.04	6-8	3	SE	15-18	-			
35	11	1135	43 21 05	87 38 30	16.8	16.8	9.1	5.5	21.3	4.2	122.8	30.04	6-8	3	SE	15-18	-			
36	11	1235	43 28 30	87 39 20	16.6	16.6	7.6	6.0	15.2	4.4	74.7	30.04	6-8	3	SE	15-18	-			
37	11	1305	43 35 00	87 40 50	16.5	16.3	8.2	7.0	12.2	4.8	46.3	30.04	6-8	3	SE	15-18	-			
38	11	1329	43 38 35	87 41 30	16.2	15.0	5.2	6.2	13.7	5.1	29.3	30.04	6-8	3	SE	15-18	-			
39	11	1430	43 38 30	87 38 40	16.7	15.7	7.6	6.0	14.3	4.4	51.8	29.98	4	3	SSE	25	-			
40	11	1522	43 43 10	87 40 15	15.6	15.6	1.5	7.2	13.7	7.2	17.7	29.98	4	3	SSE	25	-			
41	12	0845	43 45 05	87 38 45	12.8	11.2	8.2	6.1	16.1	6.0	25.3	29.79	3-4	7	SSE	1-5	0			
42	12	0915	43 49 10	87 38 35	14.8	14.3	7.6	6.9	13.7	4.9	37.8	29.79	3-4	7	SSE	1-5	0			
43	12	0945	43 53 45	87 39 00	14.9	14.0	6.1	5.9	15.2	5.2	28.3	29.79	3-4	7	SSE	1-5	0			
44	12	1015	43 57 25	87 38 35	15.5	14.9	6.1	4.7	25.9	4.6	30.5	29.79	3-4	7	SSE	1-5	0			
45	12	1030	43 57 00	87 37 25	16.1	15.3	7.6	6.1	16.8	4.3	39.0	29.79	3-4	7	SSE	1-5	0			
46	12	1234	43 55 45	87 32 00	16.7	16.0	7.0	6.6	10.7	4.2	60.0	29.79	6-8	7	SSE	1-5	0			
47	12	1450	44 03 15	87 23 30	-	-	-	-	-	-	-	29.79	6-8	7	SSE	1-5	0			
48	12	1600	44 03 50	87 29 45	18.7	15.8	9.1	7.0	14.3	4.3	47.2	29.79	4-6	6	S	1-5	0			
49	12	1617	44 04 30	87 33 10	18.0	14.0	7.6	5.2	15.2	4.9	19.2	29.79	4-6	6	S	1-5	0			
50	13	0835	44 04 45	87 34 30	16.9	-	-	-	-	4.1	12.2	29.94	8-10	0	NNW	1-5	-			

Continued

Appendix Table 1.--(Continued)

Cruise and Br cast number.	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution						Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)	
					Surface Temperature (°C)	Upper limits		Metalimnion		Deepest reading (meters)				Direction	Velocity (mph)		
						Temperature (°C)	Depth (meters)	Temperature (°C)	Depth (meters)								
51	July 13	0920	44°03'50"	87°29'45"	17.3	15.4	9.1	7.3	12.2	4.2	48.8	29.94	8-10	1	NW	1-5	-
52	13	0936	44 03 50	87 26 50	17.8	16.9	10.7	6.2	16.8	4.3	76.2	29.94	8-10	1	NW	1-5	0
53	13	1032	44 03 50	87 20 00	18.1	16.7	12.2	6.4	15.2	3.9	94.5	29.94	8-10	1	NW	1-5	0
54	13	1100	44 03 10	87 13 40	17.6	16.2	12.2	6.4	15.2	3.8	129.5	29.94	8-10	1	NW	1-5	0
55	13	1130	44 02 25	87 07 30	18.1	16.6	12.2	6.4	15.2	3.9	129.5	29.94	8-10	1	NW	1-5	0
56	13	1200	44 01 40	87 01 25	17.7	15.6	15.2	6.6	21.3	4.0	113.7	29.94	8-10	1	NW	1-5	0
57	13	1243	44 00 30	86 53 30	18.3	15.7	12.2	6.7	18.3	4.1	149.4	29.94	8-10	1	NW	1-5	0
58	13	1345	43 59 35	86 47 00	18.9	16.2	12.2	6.0	21.3	4.2	146.3	29.87	15+	0	SE	1-5	0
59	13	1427	43 58 30	86 38 25	17.8	16.7	18.3	5.8	27.4	4.4	74.7	29.87	15+	0	SE	1-5	0
60	13	1530	43 57 20	86 36 40	19.2	16.6	18.3	5.6	27.4	4.3	57.6	29.87	15+	1	SW	12-15	0
61	13	1600	43 57 20	86 31 50	19.2	19.2	1.5	17.7	4.0	17.2	14.0	29.87	15+	1	SW	12-15	-
62	14	0854	43 57 20	86 32 55	18.3	18.0	7.6	17.3	9.8	16.6	18.3	29.76	4-6	1	NW	15	50
63	14	0940	43 57 20	86 36 40	18.0	17.1	18.9	5.2	32.0	4.5	56.4	29.76	4-6	1	NW	15	50
64	14	1006	43 57 20	86 35 20	18.1	16.8	21.3	5.9	30.5	4.6	36.6	29.76	4-6	1	NW	15	50
65	14	1147	43 55 15	86 42 00	17.7	16.4	15.2	6.6	22.9	4.3	128.0	29.79	10-12	1	N	15-18	50
66	14	1240	43 53 00	86 42 00	18.3	16.6	15.2	6.0	27.4	4.1	131.1	29.79	10-12	1	N	15-18	50
67	14	1400	43 46 00	86 40 30	17.9	16.8	18.3	6.7	27.4	4.6	62.5	29.79	15+	3	NNE	15-18	50
68	14	1430	43 41 45	86 39 00	18.3	17.7	12.2	5.2	45.7	4.3	82.3	29.79	15+	3	NNE	15-18	50
69	14	1500	43 37 20	86 37 15	18.8	17.8	15.2	6.1	33.5	4.9	64.0	29.79	15+	3	NNE	15-18	50
70	14	1530	43 43 10	86 34 55	-	-	-	-	-	-	-	29.79	15+	3	NNE	15-18	50
71	14	1600	43 28 50	86 32 15	18.5	16.7	13.7	6.5	25.0	4.9	43.6	29.79	15+	3	NNE	15-18	50
72	14	1630	43 24 10	86 29 40	18.3	17.5	9.1	5.2	23.8	4.7	28.3	29.79	15+	3	NNE	15-18	50
73	14	1644	43 22 50	86 27 25	19.0	18.8	7.3	16.8	12.2	16.8	12.2	29.79	15+	3	NNE	15-18	50
74	15	0835	43 20 30	86 26 45	17.4	16.4	10.7	7.0	16.1	6.8	17.7	30.06	15+	0	N	1-5	0
75	15	0905	43 15 55	86 26 45	18.3	18.2	11.3	5.2	20.7	4.8	25.9	30.06	15+	0	N	1-5	0

Continued

Appendix Table 1.---(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Surface temperature (°C)	Temperature distribution						Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)	
						Metalimnion			Deepest						Direction	Velocity (mph)		
						Upper limits temperature (°C)	Depth (meters)	Lower limits temperature (°C)	Depth (meters)	Temperature (°C)	Depth (meters)							Temperature (°C)
76	July 15	0935	43°11'20"	86°26'45"	18.4	18.2	12.2	5.0	25.9	4.5	45.7	30.06	15+	0	N	1-5	0	
77	15	1005	43 06 45	86 26 45	18.6	18.4	12.2	7.1	21.3	4.3	74.7	30.06	15+	0	N	1-5	0	
78	15	1035	43 01 25	86 27 45	18.9	18.8	12.2	7.5	18.3	4.4	76.2	30.06	15+	0	N	1-5	0	
79	15	1140	43 00 35	86 33 00	18.5	18.2	13.7	6.0	22.9	4.3	95.1	30.06	15+	0	N	1-5	0	
80	15	1448	43 02 40	86 20 00	18.9	18.6	9.8	9.0	16.1	4.7	41.8	30.08	15+	3	NW	20-22	0	
81	16	0958	43 03 05	86 17 20	18.1	16.8	7.6	6.0	15.2	6.0	15.2	30.20	15+	0	SW	1-5	-	
82	16	1034	43 02 40	86 20 00	18.9	18.1	10.4	5.1	22.6	4.5	40.2	30.20	15+	0	SW	1-5	-	
83	16	1155	43 01 20	86 17 55	18.8	17.6	8.5	5.4	22.9	4.8	30.5	30.20	15+	0	SW	1-5	-	
84	16	2115	43 03 00	86 24 10	19.6	18.4	11.3	6.2	24.4	4.2	74.7	30.14	15+	0	-	>1	-	
85	16	2325	43 03 00	86 24 10	19.2	18.4	11.3	6.6	22.9	4.3	74.7	30.12	15+	0	-	>1	0	
86	17	0102	43 03 00	86 24 10	19.3	18.5	11.3	6.9	21.3	4.4	74.7	30.12	15+	0	-	>1	0	
87	17	0240	43 03 00	86 24 10	19.3	18.5	11.3	6.6	22.9	4.2	74.7	30.11	15+	0	SSE	1-5	0	
88	17	0421	43 03 00	86 24 10	19.1	18.4	10.7	7.0	18.3	4.2	74.7	30.13	15+	1	SE	10-12	0	
89	17	0605	43 03 00	86 24 10	19.1	18.4	9.1	6.9	18.3	4.2	74.7	30.11	10	1	SE	10-12	0	
90	18	0856	42 58 15	86 16 40	19.3	18.7	4.6	5.3	22.9	4.8	29.0	29.81	6-8	1	SSW	1-5	-	
91	18	1602	42 02 15	86 16 10	20.2	20.1	3.0	6.2	13.1	5.8	18.3	29.81	6-8	1	SSW	1-5	-	
Cruise V																		
1	28	0853	43 03 05	86 17 15	20.4	20.4	2.4	6.4	12.8	6.3	15.2	29.97	4-5	1	SSW	1-5	100	
2	28	1004	43 02 20	86 22 20	-	-	-	-	-	-	-	29.97	4-5	1	SSW	1-5	100	
3	28	1203	43 00 35	86 33 00	22.8	17.2	11.3	6.3	22.9	4.2	89.9	29.97	4-5	1	SSW	1-5	100	
4	29	0925	43 03 00	86 17 40	19.6	19.4	6.1	6.4	13.4	6.2	16.8	29.92	6	7	SW	1-5	-	
5	29	0956	43 03 00	86 24 10	21.4	21.2	6.1	5.3	36.6	4.4	75.3	29.92	6	7	SW	1-5	-	
6	29	1100	43 02 40	86 30 10	22.1	21.7	9.1	7.1	21.3	4.3	79.9	29.92	6	7	SW	1-5	-	
7	29	1130	43 02 25	86 36 30	22.2	20.9	13.7	6.3	24.4	4.4	94.5	29.92	6	7	SW	1-5	-	
8	29	1200	43 02 00	86 42 40	22.2	21.0	13.7	5.9	27.4	4.3	103.0	29.92	6	7	SW	1-5	-	
9	29	1230	43 01 45	86 48 50	22.2	21.4	12.2	6.8	24.4	4.3	94.5	29.92	6	7	SW	1-5	-	
10	29	1310	43 01 20	86 58 00	22.2	21.1	13.7	6.6	24.4	4.2	93.8	29.92	6	7	SW	1-5	-	

Continued

Appendix Table 1.--(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution						Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)	
					Surface (°C)	Upper limits		Metalimnion		Deepest reading (meters)				Direction	Velocity (mph)		
						Temperature (°C)	Depth (meters)	Temperature (°C)	Depth (meters)								Temperature (°C)
11	July 29	1405	42°59'15"	87°04'45"	22.3	21.1	13.7	6.3	24.4	4.3	79.2	29.92	6	7	SW	1-5	-
12	29	1435	42 59 10	87 11 00	22.8	20.4	13.7	7.0	21.3	4.4	75.3	29.92	6	7	SW	1-5	-
13	29	1505	42 59 05	87 17 15	23.1	21.0	13.7	7.1	24.4	4.3	82.9	29.94	4	1	WSW	1-5	-
14	29	1535	42 59 00	87 23 30	23.3	21.9	12.2	6.8	24.4	4.3	91.4	29.94	4	1	WSW	1-5	-
15	29	1605	42 58 55	87 29 45	23.2	21.9	12.2	6.8	24.4	4.4	91.4	29.94	4	1	WSW	1-5	-
16	29	1635	42 58 50	87 36 05	23.1	21.8	12.2	6.0	27.4	4.4	76.8	29.94	4	1	WSW	1-5	-
17	29	1712	43 01 50	87 37 15	23.0	22.2	9.1	6.8	21.3	4.3	76.2	29.94	4	1	WSW	1-5	-
18	29	1810	43 01 45	87 44 05	23.0	21.6	10.7	7.1	15.2	5.1	38.7	29.94	4	1	WSW	1-5	-
19	29	1825	43 01 40	87 47 05	22.4	21.7	7.9	6.7	15.2	6.0	18.3	29.94	4	1	WSW	1-5	-
20	29	1840	43 01 45	87 50 00	20.3	18.6	7.0	6.9	11.3	6.8	12.2	29.94	4	1	WSW	1-5	-
21	30	0831	43 01 20	87 49 40	21.5	21.0	4.6	6.2	13.7	5.9	16.5	30.02	2	1	N	1-5	-
22	30	0846	43 00 20	87 47 00	22.4	21.8	9.8	6.3	15.8	5.5	21.3	30.02	2	1	N	1-5	-
23	30	0916	42 58 10	87 41 35	22.7	22.0	10.1	6.6	17.1	4.5	45.4	30.02	2	1	N	1-5	-
24	30	0946	42 56 20	87 37 15	22.8	22.4	10.1	6.8	18.3	4.2	55.5	30.02	2	1	N	1-5	-
25	30	1015	42 54 05	87 31 55	23.3	22.1	19.2	6.2	23.5	4.5	61.0	30.02	2	1	N	1-5	-
26	30	1026	42 53 20	87 30 00	23.3	21.7	13.7	6.6	21.3	4.1	94.5	30.02	2	1	N	1-5	-
27	30	1127	42 52 30	87 33 20	23.4	22.5	9.1	7.2	21.3	4.4	74.1	30.02	2	1	N	1-5	-
28	30	1348	42 53 05	87 35 45	23.3	22.5	8.5	7.0	17.4	4.2	54.9	30.02	2	1	-	>1	-
29	30	1445	42 47 00	87 41 15	23.6	22.1	7.6	6.1	13.7	5.9	19.8	30.02	2	1	-	>1	-
30	31	0852	42 44 05	87 43 25	21.6	21.6	9.8	15.1	13.4	15.1	13.4	29.88	6	3	NNW	15-18	100
31	31	0909	42 44 15	87 39 25	22.8	22.5	8.8	6.0	16.1	5.7	22.9	29.88	6	3	NNW	15-18	100
32	31	0925	42 44 20	87 36 05	23.1	22.9	9.1	5.7	21.3	4.6	47.2	29.88	6	3	NNW	15-18	100
33	31	1016	42 44 25	87 31 40	22.8	22.8	9.1	6.2	22.9	4.7	76.2	29.90	6	3	NNW	18-20	100
34	31	1114	42 44 30	87 27 30	22.8	22.8	12.8	5.4	30.5	4.4	94.5	29.90	6	3	NNW	18-20	100
35	Aug. 1	0845	43 00 25	87 49 10	21.7	21.4	6.1	7.9	12.8	7.5	15.2	29.98	10	1	W	1-5	-

Continued

Appendix Table 1.--(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution							Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)	
					Surface (°C)	Metalimnion		Depth (meters)	Temperature (°C)	Depth (meters)	Temperature (°C)				Deepest reading	Direction		Velocity (mph)
						Upper limits (°C)	Lower limits (meters)											
36	Aug. 1	0900	42°59'30"	87°46'20"	21.9	21.7	9.1	6.7	15.2	5.6	23.2	29.98	10	1	W	1-5	-	
37	1	0930	42 56 20	87 40 45	22.2	22.2	9.1	6.4	18.3	4.9	44.8	29.98	10	1	W	1-5	-	
38	1	1000	42 56 00	87 35 05	22.2	22.2	10.7	5.7	21.3	4.1	53.0	29.98	10	1	W	1-5	-	
39	1	1030	42 54 10	87 29 15	22.3	22.2	12.2	6.1	27.4	4.2	92.9	29.98	10	1	W	1-5	-	
40	1	1100	42 52 20	87 23 30	22.3	22.2	12.2	6.4	24.4	4.4	94.5	29.98	10	1	W	1-5	-	
41	1	1130	42 50 30	87 17 50	22.4	22.3	12.2	6.4	24.4	4.2	110.9	29.98	10	1	W	1-5	-	
42	1	1200	42 48 40	87 12 00	22.5	22.3	13.7	6.0	27.4	3.9	134.1	29.97	15+	1	W	1-5	-	
43	1	1230	42 46 50	87 06 10	22.8	22.6	13.7	6.2	27.4	3.9	140.2	29.97	15+	1	W	1-5	-	
44	1	1312	42 45 25	86 58 25	22.8	22.6	12.2	6.9	24.4	4.0	158.5	29.97	15+	1	W	1-5	-	
45	1	1415	42 44 40	86 54 20	23.0	22.0	15.2	6.6	27.4	4.0	158.5	29.94	15+	1	W	12-15	-	
46	1	1445	42 44 45	86 48 10	22.9	22.5	16.8	6.7	30.5	4.0	140.2	29.94	15+	1	W	12-15	-	
47	1	1515	42 44 50	86 42 00	22.7	22.2	15.2	7.7	30.5	4.3	97.5	29.94	15+	1	W	12-15	-	
48	1	1545	42 45 00	86 36 00	22.3	21.5	13.7	7.4	27.4	4.4	96.9	29.94	15+	1	W	12-15	-	
49	1	1649	42 46 10	86 23 45	22.2	21.1	12.2	6.7	27.4	4.3	76.2	29.91	15+	1	WSW	1-5	-	
50	1	1753	42 46 20	86 18 25	21.3	20.2	6.1	6.6	18.3	4.2	48.8	29.91	15+	1	WSW	1-5	-	
51	1	1827	42 46 20	86 15 20	21.3	21.3	1.8	6.5	12.5	6.4	15.2	29.91	15+	1	WSW	1-5	-	
52	2	0847	42 46 20	86 15 20	20.7	20.6	5.2	6.4	17.4	6.4	17.4	29.78	10	1	SW	1-5	75	
53	2	0910	42 46 20	86 18 25	21.1	20.6	7.6	8.6	13.7	4.2	48.8	29.78	10	1	SW	1-5	75	
54	2	1029	42 35 45	86 17 25	21.8	21.0	7.6	6.6	18.3	6.1	30.5	29.78	10	1	SW	1-5	75	
55	2	1132	42 35 45	86 20 30	21.7	21.0	7.0	7.1	18.3	4.6	46.0	29.78	12-15	1	SSW	1-5	75	
56	2	1230	42 35 45	86 26 35	21.7	21.4	9.1	7.5	18.3	3.9	64.0	29.77	8-10	1	SSW	1-5	75	
57	2	1310	42 35 45	86 33 20	22.4	21.7	14.3	7.4	25.9	4.3	76.2	29.73	12	1	SSE	1-5	75	
58	2	1420	42 32 40	86 29 00	22.4	21.8	9.1	7.9	21.3	4.2	62.5	29.73	12	1	SSE	1-5	75	
59	2	1500	42 28 20	86 23 10	22.7	22.1	7.6	7.6	16.8	4.8	38.7	29.73	12	1	SSE	1-5	75	
60	2	1530	42 25 00	86 18 45	23.3	22.6	8.2	9.2	15.8	9.2	15.8	29.73	12	1	SSE	1-5	75	

Continued

Appendix Table 1.--(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution						Barometer (inches)	Visibility (miles)	Sea	Wind		Cloud coverage (percent)			
					Metalimnion		Deep		Surface temperature (°C)	Depth (meters)				Temperature (°C)	Depth (meters)		Temperature (°C)	Direction	Velocity (mph)
					Upper limits	Lower limits	Upper limits	Deep reading											
61	Aug. 3	0842	42°27'55"	86°20'00"	22.8	22.7	7.6	7.6	7.6	15.5	7.5	17.7	29.82	15+	3	WNW	18-20	0	
62	3	0900	42 23 55	86 23 35	22.0	22.0	8.5	8.5	6.2	28.7	5.8	33.5	29.82	15+	3	WNW	18-20	0	
63	3	0930	42 23 50	86 29 50	22.1	22.1	9.1	9.1	7.8	21.3	4.6	51.8	29.82	15+	3	WNW	18-20	0	
64	3	1000	42 23 50	86 35 55	22.3	22.1	12.2	12.2	5.0	36.6	4.2	61.0	29.82	15+	3	WNW	18-20	0	
65	3	1042	42 23 40	86 41 40	22.2	22.1	14.3	14.3	4.6	45.1	4.3	76.2	29.86	15+	3	NW	15-18	25	
66	3	1150	42 23 40	86 48 30	22.5	22.3	15.2	15.2	7.9	27.4	4.3	104.2	29.86	15+	3	NW	15-18	25	
67	3	1229	42 23 30	86 53 30	22.9	22.6	15.2	15.2	7.0	30.5	3.9	137.2	29.88	15+	3	WNW	15-18	25	
68	3	1330	42 23 25	86 58 00	23.0	22.7	15.2	15.2	7.8	24.4	4.0	131.1	29.85	15+	8	W	12-18	25	
69	3	1400	42 23 20	87 04 00	23.1	22.7	15.2	15.2	7.0	24.4	4.0	122.5	29.85	15+	8	W	12-18	25	
70	3	1430	42 23 10	87 09 30	23.3	22.8	15.2	15.2	7.2	24.4	4.3	112.8	29.85	15+	8	W	12-18	25	
71	3	1500	42 23 05	87 15 00	23.4	22.7	13.7	13.7	6.6	24.4	4.1	112.8	29.85	15+	8	W	12-18	25	
72	3	1530	42 22 55	87 21 00	23.3	22.6	13.7	13.7	6.7	24.4	4.4	100.6	29.85	15+	8	W	12-18	25	
73	3	1600	42 22 45	87 27 00	23.5	22.5	15.2	15.2	6.7	25.0	4.6	74.1	29.85	15+	8	W	12-18	25	
74	3	1633	42 22 10	87 34 10	23.8	22.7	15.2	15.2	7.0	27.4	4.5	73.2	29.85	15+	8	W	12-18	25	
75	3	1740	42 22 00	87 37 25	23.7	22.8	12.2	12.2	7.0	24.4	5.2	50.6	29.85	15+	8	W	12-18	25	
76	3	1810	42 21 55	87 42 30	23.3	22.9	11.0	11.0	5.9	21.3	5.7	30.2	29.85	15+	8	W	12-18	25	
77	3	1825	42 21 55	87 45 15	23.0	22.5	8.5	8.5	6.9	14.0	6.8	18.3	29.85	15+	8	W	12-18	25	
78	4	0836	42 24 00	87 43 50	23.2	22.8	9.8	9.8	6.5	18.3	5.5	28.7	29.92	3	0	-	>1	75	
79	4	0941	42 24 00	87 39 30	23.2	22.8	12.8	12.8	5.9	22.9	5.1	48.8	29.92	3	0	-	>1	75	
80	4	1118	42 24 00	87 25 45	22.6	22.5	13.7	13.7	5.8	25.9	4.4	91.4	29.94	3-5	1	S	10	75	
81	4	1255	42 29 20	87 29 20	22.9	22.6	13.7	13.7	6.9	22.9	4.7	82.3	29.92	4	1	S	12-15	100	
82	4	1325	42 33 10	87 32 50	22.9	22.6	13.7	13.7	6.5	24.4	4.8	76.8	29.92	4	1	S	12-15	100	
83	4	1400	42 37 30	87 36 35	22.9	21.0	12.2	12.2	6.9	20.4	4.6	60.4	29.92	4	1	S	12-15	100	
84	4	1430	42 40 30	87 40 00	21.6	20.6	9.8	9.8	5.7	13.7	4.8	29.9	29.92	4	1	S	12-15	100	
85	4	1456	42 44 15	87 43 15	21.4	20.0	7.0	7.0	8.3	14.3	8.3	14.3	29.92	4	1	S	12-15	100	

Continued

Appendix Table 1.--(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution										Wind		Cloud coverage (percent)					
					Surface temperature (°C)	Upper limits					Metalimnion					Deepest reading (meters)		Barometer (inches)	Visibility (miles)	Sea	Direction	Velocity (mph)
						Temperature (°C)	Depth (meters)	Temperature (°C)	Depth (meters)	Temperature (°C)	Depth (meters)	Temperature (°C)	Depth (meters)	Temperature (°C)	Depth (meters)							
86	Aug. 5	0838	42°44'10"	87°42'05"	22.1	21.8	6.1	6.3	14.9	6.3	14.9	6.3	14.9	29.90	15+	3	NNE	15-18	25			
87	5	0950	42 44 20	87 36 05	22.2	21.9	11.6	6.5	18.3	4.6	45.7	4.6	45.7	29.90	15+	3	NNE	15-18	25			
88	5	1128	42 44 30	87 27 30	22.2	21.1	13.7	7.1	21.3	4.1	94.5	4.1	94.5	29.90	15+	3	NNE	15-18	25			
89	7	0920	42 48 10	86 16 55	17.1	16.7	6.1	5.5	18.3	4.5	29.0	4.5	29.0	30.06	10	0	N	1-5	25			
90	7	1336	43 01 20	86 16 20	16.7	16.5	0.9	5.4	13.7	5.2	16.1	5.2	16.1	30.06	10	0	N	1-5	25			
91	7	1720	43 03 00	86 24 10	20.2	20.1	6.1	6.4	19.8	4.7	62.5	4.7	62.5	29.99	15+	2	NNW	15	50			
92	7	1932	43 03 00	86 24 10	20.4	20.3	9.1	6.7	18.3	4.2	71.6	4.2	71.6	29.99	15+	1	N	12-15	75			
93	7	2125	43 03 00	86 24 10	20.6	20.2	11.0	6.8	18.3	4.2	73.2	4.2	73.2	29.99	15+	1	N	12-15	75			
94	7	2255	43 03 00	86 24 10	20.4	20.0	10.7	7.2	18.3	4.4	73.2	4.4	73.2	29.99	15+	1	N	12-15	75			
95	8	0058	43 03 00	86 24 10	20.3	19.4	9.8	6.9	15.2	4.4	73.2	4.4	73.2	29.95	15+	1	ENE	1-5	100			
96	8	1412	42 58 10	86 16 55	13.8	13.4	1.5	5.5	15.2	4.9	24.4	4.9	24.4	29.91	6-8	1	SSE	1-5	100			
97	8	1430	43 01 20	86 16 20	14.4	14.1	1.5	6.8	7.6	5.2	14.6	5.2	14.6	29.91	6-8	1	SSE	1-5	100			
Cruise VI																						
1	18	0949	43°02'20"	86°22'20"	17.8	17.4	10.1	7.0	19.2	4.6	54.9	4.6	54.9	29.92	2	1	SSE	12-15	100			
2	18	1145	43 00 35	86 33 00	16.2	15.8	9.1	5.9	24.4	4.3	88.4	4.3	88.4	29.87	3-4	7	-	1	100			
3	19	0825	43 03 05	86 17 45	19.2	18.6	8.5	8.0	16.5	8.0	22.9	8.0	22.9	29.91	10	1	WNW	12-15	50			
4	19	0840	43 03 00	86 20 50	18.9	18.8	8.5	7.5	16.8	5.3	45.1	5.3	45.1	29.91	10	1	WNW	12-15	50			
5	19	0900	43 03 00	86 24 10	16.9	16.0	9.1	5.8	21.3	4.3	73.2	4.3	73.2	29.93	10	1	WNW	1-5	50			
6	19	1000	43 02 55	86 30 50	17.8	17.6	4.6	6.1	24.4	4.3	82.3	4.3	82.3	29.93	10	1	WNW	1-5	50			
7	19	1030	43 02 50	86 36 50	19.3	19.2	9.1	5.7	32.0	4.3	91.4	4.3	91.4	29.93	10	1	WNW	1-5	50			
8	19	1100	43 02 40	86 43 15	19.8	19.3	18.3	6.3	32.0	4.3	102.1	4.3	102.1	29.93	10	1	WNW	1-5	50			
9	19	1130	43 02 35	86 49 25	19.8	19.1	16.8	6.0	30.8	4.4	97.5	4.4	97.5	29.93	10	1	WNW	1-5	50			
10	19	1204	43 02 25	86 58 00	20.5	19.9	17.4	6.3	34.1	4.4	94.5	4.4	94.5	29.93	10	1	WNW	1-5	50			
11	19	1300	43 01 20	87 01 45	20.8	20.1	21.3	6.1	34.1	4.6	82.9	4.6	82.9	29.98	15	1	WNW	1-5	50			
12	19	1330	43 01 00	87 07 15	20.8	20.1	18.3	6.4	29.0	5.0	74.7	5.0	74.7	29.98	15	1	WNW	1-5	50			
13	19	1400	42 59 20	87 13 30	21.4	20.1	17.7	5.6	30.5	4.4	61.0	4.4	61.0	29.98	15	1	WNW	1-5	50			
14	19	1430	42 59 20	87 19 40	21.8	20.6	19.2	6.4	32.0	4.7	82.3	4.7	82.3	29.98	15	1	WNW	1-5	50			
15	19	1500	42 59 20	87 26 00	22.3	21.1	19.8	7.0	29.0	4.6	89.0	4.6	89.0	30.00	15+	1	SW	1-5	75			

Continued

Appendix Table 1.--(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Surface Temperature (°C)	Temperature distribution						Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)
						Metalimnion			Deepest						Direction	Velocity (mph)	
						Upper limits Temperature (°C)	Depth (meters)	Lower limits Temperature (°C)	Depth (meters)	Temperature (°C)	Depth (meters)						
16	Aug. 19	1530	42°59'30"	87°32'15"	22.4	21.1	21.3	6.4	30.5	4.4	87.8	30.00	15+	1	SW	1-5	75
17	19	1606	43 01 50	87 37 15	22.4	21.1	21.3	6.4	30.5	4.5	76.2	30.00	15+	1	SSW	1-5	75
18	19	1700	43 01 45	87 42 15	23.0	20.5	19.8	6.1	30.5	4.6	51.2	30.00	15+	1	SSW	1-5	75
19	19	1720	43 01 45	87 46 20	22.0	20.3	20.7	6.5	28.3	6.5	28.3	30.00	15+	1	SSW	1-5	75
20	19	1739	43 01 35	87 50 40	21.5	-	-	-	-	20.4	15.2	30.00	15+	1	SSW	1-5	75
21	20	0845	43 05 00	87 50 10	21.2	20.4	13.7	13.6	19.5	13.6	19.5	30.10	3	1	NNW	1-5	50
22	20	0954	43 15 10	87 51 15	21.0	18.9	22.3	6.6	30.5	6.4	32.0	30.11	3-4	1	NNE	1-5	50
23	20	1058	43 15 15	87 49 30	21.6	20.2	19.2	6.5	29.6	4.6	47.2	30.13	3	1	NNE	1-5	100
24	20	1157	43 15 45	87 43 55	21.4	21.0	18.9	6.4	25.9	4.3	94.5	30.14	3	1	NNE	1-5	100
25	20	1307	43 18 45	87 47 00	21.4	20.6	20.7	5.9	30.5	4.4	59.1	30.14	3	1	NNE	1-5	100
26	20	1336	43 21 45	87 49 55	21.1	19.5	21.9	17.3	22.9	17.3	22.9	30.16	4-6	1	ENE	12	75
27	21	0853	43 26 05	87 46 50	20.5	19.3	18.9	5.0	30.5	4.8	42.7	30.23	10	3	SE	15-18	25
28	21	0931	43 29 45	87 41 05	20.9	20.3	18.3	7.1	24.4	4.6	80.5	30.23	10	3	SE	18-20	25
29	21	1000	43 32 15	87 37 10	21.0	20.6	18.3	6.0	26.8	4.2	106.7	30.23	10	3	SE	18-20	25
30	21	1048	43 38 35	87 41 30	20.8	20.1	14.3	6.9	25.9	6.9	25.9	30.23	10	3	SE	18-20	25
31	21	1120	43 38 00	87 39 30	20.4	19.6	15.8	4.8	25.9	4.6	47.2	30.26	10	3	SE	18-20	25
32	21	1245	43 36 40	87 32 50	20.6	20.3	16.8	6.6	22.3	4.3	100.6	30.26	10	3	SE	12-15	25
33	21	1413	43 42 40	87 39 10	21.0	20.2	13.4	7.4	23.2	7.4	23.2	30.28	10	3	SE	12-15	50
34	22	0940	43 48 00	87 31 45	20.6	20.5	16.8	6.5	20.7	4.4	64.0	30.26	6-8	5	SE	18-20	25
35	22	1015	43 53 05	87 33 10	20.7	20.5	17.7	6.5	24.4	4.4	51.8	30.26	6-8	5	SE	18-20	25
36	22	1045	43 56 45	87 36 10	20.7	20.3	25.9	6.9	24.4	4.8	45.7	30.24	6-8	5	SE	15-18	0
37	22	1238	44 02 50	87 34 45	20.7	20.4	12.8	5.2	20.1	5.1	23.8	30.24	6-8	5	SE	15-18	0
38	23	0820	44 05 10	87 35 45	20.6	20.4	8.2	8.2	12.2	8.2	12.2	30.06	1/2	1	SE	10-12	100
39	23	0835	44 04 50	87 32 40	20.8	20.6	13.1	5.7	19.5	5.4	21.3	30.09	3/4	3	SE	12-15	100
40	25	0657	44 05 10	87 35 45	20.9	20.3	4.6	6.4	8.2	5.5	12.2	29.98	4-5	0	SSE	1-5	100

Continued

Appendix Table 1.--(Continued)

Cruise and BT cast number	Month and day	Time (BST)	Latitude (North)	Longitude (West)	Temperature distribution										Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)	
					Surface (°C)	Upper limits		Metalimnion		Deepest		Depth (meters)	Temperature (°C)	Depth (meters)				Temperature (°C)	Direction		Velocity (mph)
						Temperature (°C)	Depth (meters)	Temperature (°C)	Depth (meters)	Temperature (°C)	Depth (meters)										
41	Aug. 25	0712	44°04'50"	87°32'40"	21.5	20.9	9.1	5.0	16.8	4.8	19.2	29.98	4-5	0	SSE	1-5	100				
42	25	0743	44 04 00	87 26 05	21.4	20.7	15.8	6.2	25.0	4.2	76.2	29.97	4	0	SW	1-5	100				
43	25	0840	44 03 15	87 19 40	21.1	20.4	18.3	6.2	27.4	4.1	88.4	29.97	4	0	SW	1-5	100				
44	25	0910	44 02 30	87 13 30	21.2	20.1	19.8	5.3	28.0	3.9	131.1	29.97	4	0	SW	1-5	100				
45	25	0940	44 01 50	87 07 20	21.2	20.3	19.8	5.3	28.0	4.0	138.1	29.97	4	0	SW	1-5	100				
46	25	1010	44 01 25	87 01 15	21.1	20.6	15.8	5.4	31.4	4.0	115.2	29.97	4	0	SW	1-5	100				
47	25	1102	44 01 20	86 50 05	21.4	20.7	10.7	6.3	27.7	4.8	146.3	29.97	1	1	S	1-5	100				
48	25	1200	44 00 40	86 43 20	20.1	20.0	4.6	5.9	23.8	4.3	116.7	29.97	1/2	1	S	1-5	100				
49	25	1236	43 59 45	86 38 40	18.0	17.9	4.6	5.8	25.0	4.4	76.2	29.96	1/2	1	SW	12-15	100				
50	25	1347	43 57 15	86 30 30	19.4	-	-	-	-	19.2	15.2	29.96	2-4	1	W	1-5	100				
51	25	1420	43 52 45	86 30 40	17.6	17.2	9.8	5.2	36.6	5.2	36.6	29.96	6-8	1	W	12-15	100				
52	25	1450	43 48 05	86 32 20	19.5	16.9	12.2	5.2	33.5	4.9	41.8	29.96	6-8	1	W	12-15	100				
53	25	1520	43 43 40	86 33 50	19.2	17.0	15.2	6.3	32.0	5.7	39.0	29.96	6-8	1	W	12-15	100				
54	25	1550	43 40 00	86 35 00	19.5	16.7	15.2	5.5	33.5	4.6	50.3	29.96	6-8	1	W	12-15	100				
55	25	1620	43 35 50	86 34 15	20.1	19.1	16.8	4.8	35.7	4.6	39.6	29.90	4-6	1	SSE	1-5	100				
56	25	1650	43 32 20	86 31 55	20.3	19.6	13.1	12.5	28.7	12.5	28.7	29.90	4-6	1	SSE	1-5	100				
57	25	1740	43 26 00	86 28 40	20.8	20.4	13.7	17.7	20.4	17.7	20.4	29.90	4-6	1	SSE	1-5	100				
58	25	1810	43 21 35	86 28 05	20.2	19.7	11.3	13.6	21.9	13.6	21.9	29.90	4-6	7	-	>1	100				
59	25	1840	43 17 40	86 23 40	20.7	-	-	-	-	19.8	15.2	29.90	4-6	7	-	>1	100				
60	25	1910	43 03 55	86 25 55	21.1	20.8	10.7	16.0	18.3	16.0	18.3	29.90	4-6	7	-	>1	100				
61	25	1940	43 09 40	86 21 25	20.6	19.8	11.6	10.5	22.6	10.5	22.6	29.90	4-6	7	-	>1	100				
62	25	2010	43 05 35	86 19 00	21.1	21.1	11.0	8.7	25.0	7.4	29.0	29.90	4-6	7	-	>1	100				
63	26	1845	43 02 55	86 18 35	21.5	21.0	13.7	8.4	20.7	6.4	32.0	30.06	15+	7	E	1-5	0				
64	26	1855	43 02 20	86 22 20	21.3	20.9	11.3	7.3	23.5	4.9	46.9	30.06	15+	7	E	1-5	0				
65	26	1945	43 01 40	86 36 35	20.2	20.0	10.7	6.1	22.9	4.3	76.2	30.06	15+	7	E	1-5	0				

Continued

Appendix Table 1.--(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution						Barometer (inches)	Visibility (miles)	Sea	Wind		Cloud coverage (percent)	
					Metalimnion			Deepest						Direction	Velocity (mp)		
					Surface (°C)	Upper limits (°C)	Depth (meters)	Temperature (°C)	Lower limits (°C)	Depth (meters)							Temperature (°C)
66	Aug. 26	2034	43°01'30"	86°33'10"	19.4	19.3	9.1	5.4	22.9	4.4	94.5	30.06	15+	7	E	1-5	0
67	27	1708	43 03 00	86 24 10	20.5	19.3	10.7	6.1	25.9	4.3	76.2	30.04	6-8	0	ESE	1-5	100
68	27	1930	43 03 00	86 24 10	20.6	19.7	8.2	6.7	22.9	4.3	76.2	30.02	6-8	0	NE	1-5	100
69	27	2100	43 03 00	86 24 10	20.6	20.0	6.7	6.3	20.7	4.3	76.2	30.02	6-8	0	NE	1-5	100
70	27	2305	43 03 00	86 24 10	20.7	20.0	6.7	6.3	18.9	4.3	76.2	30.02	6-8	0	NE	1-5	100
71	28	0100	43 03 00	86 24 10	20.7	20.1	6.4	5.8	25.9	4.3	76.2	30.02	6-8	0	NE	1-5	100
72	29	0833	43 03 00	86 18 00	21.7	21.0	8.2	8.0	21.9	8.0	21.9	30.09	1/4	1	WSW	1-5	75
73	29	0935	43 02 40	86 20 50	21.1	20.4	9.1	5.8	28.0	4.3	56.4	30.09	1/4	1	WSW	1-5	75
74	29	1058	43 01 30	86 33 10	21.0	20.8	4.0	5.8	19.2	4.3	97.5	30.09	1-2	1	W	1-5	50
Cruise VII																	
1	Sept. 8	0821	43 03 10	86 17 10	21.0	21.0	12.8	18.8	15.2	18.8	15.2	30.15	10	7	NE	12-15	100
2	8	0946	43 02 40	86 20 50	20.2	20.0	10.7	6.3	35.1	4.2	50.3	30.15	10	7	NE	12-15	100
3	8	1200	43 00 35	86 33 00	18.8	18.6	15.2	5.8	29.9	4.3	91.4	30.15	15	7	NE	1-5	100
4	9	0824	43 03 05	86 17 40	20.6	20.5	13.7	17.1	18.3	17.1	18.3	30.14	15	1	SE	15	50
5	9	0840	43 03 00	86 21 00	19.5	19.4	13.7	7.5	37.2	4.9	47.5	30.14	15	3	SE	20-25	50
6	11	0926	43 03 05	86 17 40	12.5	11.7	7.6	5.8	13.4	5.0	18.9	30.10	15+	1	N	15	25
7	11	0942	43 03 00	86 21 00	18.7	18.7	13.1	7.2	18.3	4.2	51.8	30.10	15+	1	N	15	25
8	11	0958	43 03 00	86 24 10	18.7	18.6	15.2	6.1	24.4	4.3	76.2	30.10	15+	1	N	15	25
9	11	1116	43 02 55	86 31 00	17.3	17.1	13.7	6.3	24.4	4.4	89.9	30.11	15+	3	N	15-20	25
10	11	1145	43 02 45	86 37 10	16.9	16.8	15.2	5.7	30.5	4.4	100.6	30.11	15+	3	N	18-20	25
11	11	1315	43 02 20	86 58 00	19.2	19.1	18.3	6.2	27.4	4.4	94.5	30.11	15+	3	NNW	15-18	25
12	11	1545	43 01 25	87 21 10	20.2	20.0	18.3	6.4	29.0	4.5	78.6	30.11	15+	3	NNW	15-18	25
13	11	1650	43 01 10	87 27 25	20.3	20.1	21.3	6.8	29.6	4.4	94.5	30.11	15+	3	NNW	15-18	0
14	11	1645	43 01 00	87 33 40	20.4	20.1	24.4	6.9	29.0	4.4	81.7	30.11	15+	3	NNW	15-18	0
15	11	1708	43 01 50	87 46 20	20.4	20.2	24.4	6.7	30.5	4.4	76.2	30.10	15+	1	ENE	1-5	0

Continued

Appendix Table 1.--(Continued)

Cruise and BT cast number	Month and day	Time (EST)	Latitude (North)	Longitude (West)	Temperature distribution							Barom- eter (inches)	Visi- bility (miles)	Sea	Wind		Cloud coverage (percent)	
					Surface Temperature (°C)	Metalimnion		Deepest		Depth (meters)	Temperature (°C)				Reading	Direction		Velocity (mph)
						Upper limits Temperature (°C)	Depth (meters)	Lower limits Temperature (°C)	Depth (meters)									
16	Sept. 11	1755	43°01'45"	87°41'15"	20.8	20.5	23.5	7.5	28.0	4.5	60.0	30.10	15+	1	ENE	1-5	0	
17	11	1815	43 01 40	87 45 15	20.4	20.1	23.5	6.8	28.0	5.1	45.1	30.10	15+	1	ENE	1-5	0	
18	11	1840	43 01 40	87 50 30	20.5	-	-	-	-	20.0	12.8	30.10	15+	1	ENE	1-5	0	
19	12	0955	43 01 35	87 50 00	20.3	-	-	-	-	20.2	11.9	30.18	15+	1	SW	1-5	100	
20	12	1020	42 59 00	87 46 10	20.1	-	-	-	-	20.2	22.3	30.18	15+	1	SW	1-5	100	
21	12	1050	42 57 00	87 41 40	19.9	19.8	25.3	7.0	37.8	7.0	37.8	30.18	15+	1	SW	1-5	100	
22	12	1130	42 52 00	87 35 25	20.5	20.3	25.3	6.7	31.4	4.7	57.9	30.23	10	1	SW	15-18	100	
23	12	1239	42 51 30	87 29 20	20.3	20.1	24.4	6.7	29.9	4.4	94.5	30.23	10	1	SW	15-18	100	
24	12	1347	42 47 10	87 28 15	20.3	20.2	22.9	6.5	29.9	4.4	91.4	30.18	10	1	SW	15-18	100	
25	12	1501	42 45 50	87 36 10	20.6	20.4	25.0	6.7	28.7	5.0	48.8	30.14	4-6	1	S	15	100	
26	13	0845	42 44 10	87 42 35	20.2	-	-	-	-	20.1	15.2	30.08	6-8	3	SSE	12-15	100	
27	13	0900	42 44 20	87 39 25	20.2	-	-	-	-	19.6	21.3	30.08	6-8	3	SSE	12-15	100	
28	13	0941	42 44 20	87 31 00	20.1	20.2	21.3	6.3	29.9	4.5	76.2	30.08	6-8	3	S	12-15	100	
29	13	1050	42 44 25	87 24 25	20.2	20.2	18.3	6.4	25.3	4.3	98.4	30.08	6-8	3	S	12-15	100	
30	13	1125	42 44 30	87 18 15	20.3	20.3	18.3	6.5	27.4	4.1	125.0	30.08	6-8	3	S	15-18	100	
31	13	1155	42 45 00	87 10 50	20.4	20.3	18.3	7.8	24.4	4.1	143.3	30.09	6-8	3	SSW	12	100	
32	13	1226	42 45 10	87 04 30	20.4	20.4	18.3	6.9	27.4	4.0	143.3	30.09	6-8	3	SSW	12	100	
33	13	1305	42 45 25	86 58 25	20.3	20.3	18.3	7.0	30.5	4.0	161.5	30.09	6-8	3	W	10	100	
34	13	1430	42 39 20	86 55 25	19.7	18.4	24.4	7.2	33.5	4.1	161.5	30.06	6-8	3	SE	10	100	
35	13	1500	42 36 45	86 50 25	19.2	18.2	27.4	7.0	33.5	4.2	140.2	30.06	6-8	3	SE	8	100	
36	13	1530	42 34 00	86 45 25	19.8	19.4	21.3	7.2	30.5	4.4	100.6	30.06	4-6	3	SE	6-8	100	
37	13	1600	42 31 20	86 40 25	19.0	18.9	21.3	7.1	30.5	5.0	79.2	30.06	4-6	3	SE	6-8	100	
38	13	1630	42 28 35	86 35 30	19.3	19.2	21.3	4.8	39.6	4.7	73.2	30.06	6-10	1	SE	6	100	
39	13	1700	42 25 55	86 30 35	19.0	19.1	21.3	6.7	30.5	5.2	61.0	30.06	10-12	1	SE	1-5	100	
40	13	1730	42 23 30	86 26 05	19.5	19.4	21.3	7.4	32.0	7.4	44.2	30.06	10-12	1	SE	1-5	100	

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