

Fifth Report of the Regular Limnological Survey  
of Lake Biwa (1971)  
I. Abiotic Environments<sup>1)2)</sup>

By

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This is the fifth report\* on the abiotic environments of Lake Biwa during 1971. When we compare these data with those of 1970, some remarkable features may be noticed. In January, both the water temperature and the saturation value of the dissolved oxygen were higher in 1971. Alkaline tendency and lower saturation value of the dissolved oxygen were common features in both February and March in this year. Higher temperature of water accompanying higher saturation value of the dissolved oxygen was noteworthy in Ie-1, Nb-2 and Nb-5 in April and May; lower value of the oxygen saturation in the hypolimnion compared to the one in the epilimnion at Ie-1 of May, 1971, can also be pointed out. In July, 1971, water temperature of the epilimnion was generally higher but the saturation value of the dissolved oxygen was generally lower. In comparison with remarkable low saturation value of the dissolved oxygen seen during the summer stagnation period of 1970, it did not decrease less than 50-60% in 1971. Alkaline tendency of the epilimnion in both November and December of 1971 was also noteworthy. Another remarkable phenomenon during one year observation of 1971 was striking low value of the transparency at Ie-1. It began in July continuing to the end of this year; the values in November and December were approximately half of the ones in 1970.

An interpretation of the above-mentioned features must be dealt with the phytoplankton data which will be printed in the next issue of this Memoirs.

The series of reports were edited by the Director of the Station, Syuiti Mori, and the present part, on the abiotic environments, was arranged by Shoji Horie.

Samples were collected by T. Narita, A. Kawabata and T. Ueda, and other members of the Otsu Hydrobiological Station have assisted this survey in many ways.

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1) Contribution from the Otsu Hydrobiological Station, Kyoto University, No. 227.

2) JIBP-PF Publication No. 145.

		Depth	Temp.(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Station	Ie-1	0	8.6	7.3	7.54	92
Date	Jan. 12, 1971	1	8.4	7.3	7.52	91
Weather	Clear	2	8.4	7.3	7.49	91
Air temperature	6.7°C	5	8.35	7.3	7.44	90
Wind direction	ESE	10	8.32	7.3	7.47	91
speed	0.7 m/sec	15	8.32	7.2	7.40	90
Cloud form	KC	20	8.31	7.3	7.44	90
amount	2	30	8.30	7.3	7.49	91
Transparency	8.5 m	40	8.30	7.3	7.48	91
Wave	Smooth	50	8.30	7.3	7.47	91
Mud temperature	7.0°C	60	8.29	7.3	7.63	92
		70	6.95	—	—	—
		72(B)	7.0	7.3	7.44	87
Station	Ie-1	0	6.8	—	—	—
Date	Feb. 10, 1971	1	6.9	—	6.99	82
Weather	Snow	2	6.9	7.5	6.90	81
Air temperature	2°C	5	6.9	7.5	6.92	81
Wind direction	NE	10	6.9	7.5	6.89	81
speed	1.3 m/sec	15	6.9	7.5	6.88	81
Cloud form	S	20	6.9	7.5	7.00	82
amount	10	30	6.9	7.5	6.89	81
Transparency	6.9 m	40	6.9	7.5	6.94	81
Wave	Rippled	50	6.95	7.5	7.01	82
Mud temperature	6.9°C	60	6.95	—	6.98	82
		70	6.95	7.5	7.14	84
		(B)	6.95	—	—	—
Station	Ie-1	0	7.6	7.4	7.38	88
Date	Mar. 12, 1971	1	6.85	7.3	7.38	86
Weather	Clear	2	6.6	7.4	7.43	86
Air temperature	3.9°C	5	6.45	7.4	7.41	86
Wind direction	—	10	6.43	7.4	7.29	84
speed	0 m/sec	15	6.43	7.4	7.42	86
Cloud form	SC	20	6.4	7.6	7.36	85
amount	—	30	6.4	7.6	7.37	85
Transparency	8.5 m	40	6.23	7.6	7.36	85
Wave	Smooth	50	6.23	7.6	7.35	85
Mud temperature	6.4°C	60	6.27	7.6	6.49	75
		70	6.23	7.5	7.39	85
		(B)	6.33	—	—	—

		Depth	Temp.(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Station	Ie-1	0	10.9	7.4	8.39	108
Date	Apr. 16, 1971	1	10.8	7.4	8.27	106
Weather	Cloudy	2	10.6	7.4	8.38	107
Air temperature	12.5°C	5	9.6	7.4	8.29	104
Wind direction	—	10	9.0	7.3	8.17	101
speed	—	15	8.9	7.3	8.29	102
Cloud form	S	20	8.9	7.3	8.27	102
amount	10	30	8.3	7.3	8.28	100
Transparency	5.2 m	40	8.1	7.2	8.30	100
Wave	—	50	7.7	7.2	8.27	99
Mud temperature	7.0°C	60	7.3	7.2	8.15	96
		70	6.9	7.1	7.83	92
		77(B)	6.9	—	—	—
Station	Ie-1	0	18.2	7.4	7.80	117
Date	May 12, 1971	1	13.7	7.4	7.79	107
Weather	Clear	2	12.8	7.4	7.90	106
Air temperature	21.6°C	5	11.8	7.4	8.13	107
Wind direction	—	10	11.4	7.4	8.10	105
speed	—	15	11.1	7.4	8.06	104
Cloud form	—	20	10.8	7.4	7.92	102
amount	—	30	9.2	7.2	7.70	95
Transparency	6.7 m	40	8.05	7.1	7.69	93
Wave	—	50	6.8	7.1	7.29	85
Mud temperature	7.0°C	60	6.5	7.1	7.22	84
		70	6.4	7.1	7.09	82
		(B)	6.45	—	—	—
Station	Ie-1	0	20.1	7.4	6.67	104
Date	June 14, 1971	1	19.2	7.6	6.71	103
Weather	Partly-Cloudy	2	19.3	7.5	6.68	103
Air temperature	25.2°C	5	18.6	7.5	6.66	101
Wind direction	—	10	17.2	7.5	6.71	99
speed	—	15	12.45	7.3	7.23	96
Cloud form	SC	20	11.7	7.3	7.29	95
amount	10	25	10.25	—	—	—
Transparency	7.0 m	30	9.7	7.3	7.18	90
Wave	—	40	7.5	7.2	7.34	87
Mud temperature	7.2°C	50	6.95	7.2	7.26	85
		60	6.75	7.2	7.18	84
		70	6.55	7.0	6.57	76

		Depth	Temp.(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Station	Ie-1	0	25.1	8.4	5.36	92
Date	July 13, 1971	1	25.1	8.4	5.37	92
Weather	Cloudy	2	25.0	8.4	5.36	91
Air temperature	27.2°C	5	24.9	8.4	5.47	93
Wind direction	N	10	18.6	7.4	5.13	78
speed	2.1 m/sec	15	13.8	7.6	5.49	75
Cloud form	KC	20	11.0	7.1	5.81	75
amount	9	25	9.7	—	—	—
Transparency	5.9 m	30	8.8	7.6	5.75	71
Wave	Rippled	40	7.5	7.0	6.19	74
Mud temperature	—	50	6.9	7.0	6.02	70
		60	6.5	6.9	5.55	64
		70	6.4	6.8	5.07	58
		(B)	6.5	—	—	—
Station	Ie-1	0	27.6	9.0	5.34	96
Date	Aug. 16, 1971	1	27.6	9.0	5.39	97
Weather	Cloudy	2	27.6	9.0	5.37	96
Air temperature	29.2°C	5	27.0	8.2	5.39	96
Wind direction	SW	10	22.6	7.3	4.21	69
speed	3.2 m/sec	15	14.6	7.0	4.82	67
Cloud form	SC	20	10.1	7.0	5.50	69
amount	—	25	9.4	—	—	—
Transparency	3.8 m	30	8.8	7.1	5.81	71
Wave	Rippled	40	7.7	7.1	5.85	70
Mud temperature	7.0°C	50	7.1	7.1	5.49	65
		60	6.7	7.0	5.79	67
		70	6.6	6.9	5.14	60
Station	Ie-1	0	24.05	7.6	5.91	99
Date	Sept. 16, 1971	1	23.43	7.8	5.97	99
Weather	Clear	2	22.95	7.8	5.94	98
Air temperature	25.8°C	5	22.70	7.8	5.97	98
Wind direction	—	10	22.54	7.6	5.94	97
speed	—	15	20.68	7.2	5.11	81
Cloud form	KC	20	15.34	7.1	5.40	76
amount	8	25	9.82	—	—	—
Transparency	4.0 m	30	8.55	7.0	6.39	78
Wave	—	40	7.65	7.0	6.48	77
Mud temperature	7.6°C	50	7.14	7.0	6.15	72
		60	6.70	7.1	5.64	66
		70	6.60	6.9	5.42	63
		(B)	6.64	—	—	—

		Depth	Temp.(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Station	Ie-1	0	19.25	7.8	6.52	100
Date	Oct. 15, 1971	1	19.20	7.9	6.58	101
Weather	Clear	2	19.20	7.8	6.53	100
Air temperature	17.8°C	5	19.15	7.8	6.58	101
		10	19.10	7.6	6.46	99
Wind direction	N	15	18.95	7.6	6.41	98
speed	2.3 m/sec	20	18.90	7.6	6.50	99
Cloud form	KC	25	11.70	—	—	—
amount	5	30	9.10	7.0	6.29	78
Transparency	5.3 m	40	7.80	7.0	6.44	77
Wave	Gentle	50	7.10	7.0	5.98	70
Mud temperature	6.8°C	60	6.80	7.0	5.63	66
		70	6.60	6.8	4.66	54
Station	Ie-1	0	14.8	8.7	7.14	100
Date	Nov. 17, 1971	1	13.8	8.8	7.15	98
Weather	Cloudy	2	15.0	8.7	7.17	101
Air temperature	9.5°C	5	15.0	8.7	7.16	101
Wind direction	SW	10	15.0	8.7	7.17	101
speed	2.3 m/sec	15	15.0	8.7	7.07	99
Cloud form	SC	20	15.0	8.2	6.99	98
amount	10	25	14.95	—	—	—
		30	10.2	7.0	5.60	71
Transparency	3.5 m	40	8.6	7.0	6.09	74
Wave	Smooth	50	7.9	7.0	6.01	72
Mud temperature	7.4°C	60	7.0	6.8	5.38	63
		70	6.95	6.8	5.34	63
		(B)	7.0	—	—	—
Station	Ie-1	0	10.9	8.0	7.36	95
Date	Dec. 16, 1971	1	10.9	7.8	7.56	97
Weather	Clear	2	10.9	7.9	7.50	97
Air temperature	11.3°C	5	10.9	8.0	7.63	98
Wind direction	S	10	10.8	7.8	7.39	95
Speed	5 m/sec	15	10.7	7.8	7.40	95
Cloud form	KC	20	10.7	7.4	7.55	97
amount	4	30	10.3	7.3	7.26	92
Transparency	3.8 m	40	9.2	6.8	5.53	68
Wave	Gentle	50	7.7	6.8	5.41	65
Mud temperature	7.3°C	60	7.7	6.8	4.91	59

		Depth	Temp.(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
		70	8.3	6.8	4.85	59
Station	Nb-2	0	5.2	7.6	9.21	103
Date	Jan. 13, 1971	1	5.2	7.6	9.19	103
Weather	Cloudy	2	5.2	7.6	—	—
Air temperature	6.4°C	(B)	5.15	7.6	9.28	104
Wind direction	SSE					
speed	3 m/sec					
Cloud form	S					
amount	8					
Transparency	1.7 m					
Wave	Rippled					
Mud temperature	—					
Station	Nb-5	0	5.29	7.6	8.86	100
Date	Jan. 13, 1971	1	5.25	7.6	8.87	100
Weather	Cloudy	2	5.21	7.6	8.85	99
Air temperature	7.1°C	3	5.21	—	—	—
Wind direction	NNW	4	5.23	7.6	8.78	99
speed	2 m/sec	4.5(B)	5.6	—	—	—
Cloud form	S					
amount	8					
Transparency	2.3 m					
Wave	Rippled					
Mud temperature	6.4°C					
Station	Na-3	0	6.45	7.6	8.39	97
Date	Jan. 13, 1971	1	6.45	7.6	8.30	96
Weather	Cloudy	2.1(B)	6.6	7.5	8.41	98
Air temperature	6.9°C					
Wind direction	E					
speed	4 m/sec					
Cloud form	S					
amount	8					
Transparency	2.1 m					
Wave	Rippled					
Mud temperature	7.0°C					
Station	Nb-2	0	3.7	7.4	8.40	91
Date	Feb. 12, 1971	1	3.7	7.5	8.30	90
Weather	Cloudy	2	3.65	7.5	8.35	90
Air temperature	2.4°C	2.2(B)	3.65	—	—	—

		Depth	Temp.(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Wind direction	N					
speed	1.8 m/sec					
Cloud form	S					
amount	10					
Transparency	1.5 m					
Wave	Rippled					
Mud temperature	—					
Station	Nb-5	0	3.95	7.5	8.23	90
Date	Feb. 12, 1971	1	3.95	7.4	8.18	89
Weather	Cloudy	2	3.95	7.4	8.20	89
Air temperature	2.4°C	3	3.95	—	—	—
Wind direction	N	4	3.95	7.5	8.21	89
speed	1.8 m/sec	3.8(B)	4.2	—	—	—
Cloud form	S					
amount	10					
Transparency	1.4 m					
Wave	Rippled					
Mud temperature	5.6°C					
Station	Na-3	0	4.9	7.4	7.73	86
Date	Feb. 12, 1971	1	4.9	7.4	7.74	86
Weather	Cloudy	2	4.95	7.5	7.76	87
Air temperature	2.4°C	(B)	5.3	—	—	—
Wind direction	N					
speed	2.0 m/sec					
Cloud form	S					
amount	2					
Transparency	1.1 m					
Wave	Rippled					
Mud temperature	5.3°C					
Station	Nb-2	0	5.3	7.6	8.03	90
Date	Mar. 15, 1971	1	5.3	7.4	8.14	92
Weather	Clear	2	5.3	7.6	7.94	89
Air temperature	4.9°C					
Wind direction	SW					
speed	6.6 m/sec					
Cloud form	KC					
amount	3					
Transparency	1.25 m					
Wave	Gentle					

		Depth	Temp.(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Mud temperature	—					
Station	Nb-5	0	5.6	7.6	7.93	90
Date	Mar. 15, 1971	1	5.6	7.5	7.91	90
Weather	Clear	2	5.6	7.5	7.87	89
Air temperature	5.9°C	3	5.6	—	—	—
Wind direction	W	4	5.57	7.5	7.93	90
speed	4.7 m/sec	(B)	5.8	—	—	—
Cloud form	KC					
amount	4					
Transparency	2.75 m					
Wave	Gentle					
Mud temperature	6.5°C					
Station	Na-3	0	6.2	7.6	7.76	89
Date	Mar. 15, 1971	1	6.2	7.6	7.73	89
Weather	Clear	2	6.2	7.5	7.75	89
Air temperature	—					
Wind direction	W					
speed	0.5 m/sec					
Cloud form	KC					
amount	7					
Transparency	2.2 m					
Wave	Smooth					
Mud temperature	6.7°C					
Station	Nb-2	0	15.1	7.8	7.91	111
Date	Apr. 15, 1971	1	14.85	7.8	7.94	111
Weather	Clear	2	14.4	7.6	7.79	108
Air temperature	15.2°C	2.1(B)	14.45	—	—	—
Wind direction	E					
speed	2 m/sec					
Cloud form	KC					
amount	3					
Transparency	1.2 m					
Wave	Rippled					
Mud temperature	—					
Station	Nb-5	0	14.05	7.6	7.83	108
Date	Apr. 15, 1971	1	13.4	7.6	7.98	106
Weather	Clear	2	12.5	7.6	8.03	107
Air temperature	15.6°C	3	11.25	—	—	—



		Depth	Temp.(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Wind direction	E	4	11.1	7.5	8.16	105
speed	2 m/sec	4.3(B)	11.1	—	—	—
Cloud form	KC					
amount	4					
Transparency	0.95 m					
Wave	Rippled					
Mud temperature	11°C					
Station	Na-3	0	13.85	7.5	7.90	109
Date	Apr. 15, 1971	1	13.9	7.5	7.95	109
Weather	Clear	2	13.8	7.4	7.91	109
Air temperature	14.2°C	2.9(B)	13.1	—	—	—
Wind direction	E					
speed	5 m/sec					
Cloud form	KC					
amount	6					
Transparency	1.5 m					
Wave	Rippled					
Mud temperature	13°C					
Station	Nb-2	0	19.85	8.4	7.78	121
Date	May 13, 1971	1	19.8	8.4	7.74	120
Weather	Cloudy	2	—	—	—	—
Air temperature	23°C	(B)	19.6	8.4	7.71	119
Wind direction	SSW					
speed	3.8 m/sec					
Cloud form	SC					
amount	10					
Transparency	1.5 m					
Wave	Gentle					
Mud temperature	18.9°C					
Station	Nb-5	0	18.05	7.7	7.52	113
Date	May 13, 1971	1	17.95	7.7	7.50	112
Weather	Partly-Cloudy	2	17.90	7.7	7.52	112
Air temperature	22°C	3	17.75	—	—	—
Wind direction	SW	3.3(B)	16.15	7.8	7.54	109
speed	3.1 m/sec					
Cloud form	SC					
amount	8					
Transparency	2.2 m					
Wave	Gentle					

		Depth	Temp.(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Mud temperature	15.1°C					
Station	Na-3	0	18.8	7.8	7.61	116
Date	May 13, 1971	1	18.7	7.6	7.57	115
Weather	Partly-Cloudy	2	18.7	7.5	7.56	115
Air temperature	23.4°C	(B)	18.3	—	—	—
Wind direction	SW					
speed	5 m/sec					
Cloud form	SC					
amount	8					
Transparency	1.8 m					
Wave	Rippled					
Mud temperature	18°C					
Station	Nb-2	0	20.95	8.0	6.66	106
Date	June 15, 1971	1	20.90	8.2	6.68	106
Weather	Rain	2	20.90	8.0	6.64	105
Air temperature	21°C	2.2(B)	20.90	—	—	—
Wind direction	N					
speed	1.8 m/sec					
Cloud form	S					
amount	10					
Transparency	1.5 m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	19.2	7.7	6.73	103
Date	June 15, 1971	1	19.15	7.6	6.73	103
Weather	Rain	2	19.15	7.7	6.73	103
Air temperature	20.8°C	3	18.5	—	—	—
Wind direction	NE	3.7	16.1	7.2	6.56	94
speed	1.1 m/sec	4	15.0	—	—	—
Cloud form	S					
amount	10					
Transparency	3.0 m					
Wave	Smooth					
Mud temperature	15.4°C					
Station	Na-3	0	20.75	7.1	6.87	109
Date	June 15, 1971	1	20.7	7.8	6.81	107
Weather	Rain	2	19.25	8.0	6.87	106

		Depth	Temp.(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Air temperature	20.8°C					
Wind direction	E					
speed	1.1 m/sec					
Cloud form	S					
amount	10					
Transparency	1.6 m					
Wave	Smooth					
Mud temperature	19.4°C					
Station	Nb-2	0	26.6	7.3	4.58	81
Date	July 12, 1971	1	27.8	7.4	4.79	86
Weather	Cloudy	2	27.9	7.3	4.57	82
Air temperature	27.3°C					
Wind direction	SSW					
speed	6.7 m/sec					
Cloud form	SK					
amount	10					
Transparency	1.05 m					
Wave	Moderate					
Mud temperature	—					
Station	Nb-5	0	25.9	8.0	5.07	88
Date	July 12, 1971	1	26.0	7.7	5.08	88
Weather	Cloudy	2	26.0	7.8	5.06	88
Air temperature	27.0°C	4.2	24.5	7.9	5.01	85
Wind direction	SSW					
speed	5 m/sec					
Cloud form	SK					
amount	10					
Transparency	2.5 m					
Wave	Gentle					
Mud temperature	22°C					
Station	Na-3	0	26.2	7.8	5.16	90
Date	July 12, 1971	1	26.1	7.8	5.08	89
Weather	Cloudy	2	26.2	7.8	5.09	89
Air temperature	26.9°C	2.7(B)	26.1	7.7	4.97	87
Wind direction	SSW					
speed	1.2 m/sec					
Cloud form	SK					
amount	10					
Transparency	1.2 m					

		Depth	Temp.(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Wave	Rippled					
Mud temperature	26°C					
Station	Nb-2	0	26.8	8.5	5.22	92
Date	Aug. 17, 1971	1	26.8	8.5	5.22	92
Weather	Cloudy	1.6	26.75	8.5	5.22	92
Air temperature	25.6°C					
Wind direction	NW					
speed	1.8 m/sec					
Cloud form	KC					
amount	8					
Transparency	1.0 m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	26.8	8.7	4.96	88
Date	Aug. 17, 1971	1	26.7	8.7	4.93	87
Weather	Clear	2	26.7	8.7	5.00	88
Air temperature	25.6°C	3.8	26.55	8.8	5.03	89
Wind direction	NW	4(B)	26.2	—	—	—
speed	2 m/sec					
Cloud form	KC					
amount	6					
Transparency	2.2 m					
Wave	Smooth					
Mud temperature	25.9°C					
Station	Na-3	0	26.7	8.8	5.30	93
Date	Aug. 17, 1971	1	26.75	8.7	5.31	94
Weather	Clear	2	26.6	8.7	5.31	93
Air temperature	26.0°C	2.2(B)	26.2	—	—	—
Wind direction	NW					
speed	2 m/sec					
Cloud form	KC					
amount	6					
Transparency	1.6 m					
Wave	Smooth					
Mud temperature	25.8°C					
Station	Nb-2	0	23.05	8.3	6.48	107
Date	Sept. 17, 1971	1	23.05	8.2	6.48	107
Weather	Cloudy	1.7	23.05	8.2	6.53	108

		Depth	Temp.(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Air temperature	21.6°C	(B)	23.05	—	—	—
Wind direction	NE					
speed	—					
Cloud form	SK					
amount	10					
Transparency	0.6 m					
Wave	—					
Mud temperature	—					
Station	Nb-5	0	22.85	7.8	5.82	96
Date	Sept. 17, 1971	1	22.85	7.8	5.75	94
Weather	Cloudy	2	22.85	7.8	5.69	93
Air temperature	22.6°C	4	22.85	7.8	5.72	94
Wind direction	NE	(B)	22.85	—	—	—
speed	—					
Cloud form	SK					
amount	10					
Transparency	2.3 m					
Wave	Smooth					
Mud temperature	22.5°C					
Station	Na-3	0	23.15	7.9	5.96	98
Date	Sept, 17. 1971	1	23.15	7.9	5.97	99
Weather	Cloudy	2.1(B)	23.05	7.8	6.06	100
Air temperature	22.4°C					
Wind direction	N ..					
speed	—					
Cloud form	SK					
amount	10					
Transparency	1.8 m					
Wave	Smooth					
Mud temperature	23.2°C					
Station	Nb-2	0	17.2	8.2	7.16	105
Date	Oct. 14, 1971	1	17.2	8.2	7.02	104
Weather	Rain	1.8(B)	17.2	8.2	6.92	102
Air temperature	15.6°C					
Wind direction	NE					
speed	—					
Cloud form	S					
amount	10					
Transparency	0.95 m					

		Depth	Temp.(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	18.6	8.5	6.95	105
Date	Oct. 14, 1971	1	17.9	8.5	6.90	103
Weather	Rain	2	18.5	8.5	6.90	104
Air temperature	16.2°C	3	18.5	8.5	—	—
Wind direction	NE	4	18.5	8.5	6.92	105
speed	—	(B)	18.9	—	—	—
Cloud form	S					
amount	10					
Transparency	1.9 m					
Wave	Rippled					
Mud temperature	19.2°C					
Station	Na-3	0	18.2	8.6	7.16	108
Date	Oct. 14, 1971	1	18.2	8.5	7.06	106
Weather	Rain	2	18.2	8.5	7.08	106
Air temperature	15.9°C	2.2(B)	—	—	—	—
Wind direction	N					
speed	—					
Cloud form	S					
amount	10					
Transparency	1.3 m					
Wave	Smooth					
Mud temperature	18.3°C					
Station	Nb-2	0	12.40	8.2	7.08	94
Date	Nov. 18, 1971	1	12.40	8.2	7.12	95
Weather	Cloudy	1.4(B)	12.35	8.2	7.03	93
Air temperature	12.2°C					
Wind direction	S					
speed	1.5 m/sec					
Cloud form	SC					
amount	9					
Transparency	0.75 m					
Wave	Smooth					
Mud temperature	—					
Station	Nb-5	0	13.4	8.6	7.18	98
Date	Nov. 18, 1971	1	13.35	8.6	7.13	97
Weather	Cloudy	2	13.35	8.6	7.07	96

		Depth	Temp.(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Air temperature	14.2°C	3	13.3	—	—	—
Wind direction	S	4	13.25	8.6	7.04	96
speed	1 m/sec	3.8(B)	13.4	—	—	—
Cloud form	SC					
amount	9					
Transparency	1.5 m					
Wave	Smooth					
Mud temperature	13.9°C					
Station	Na-3	0	13.35	8.4	6.89	94
Date	Nov. 18, 1971	1	13.30	8.4	7.01	95
Weather	Cloudy	1.8	12.85	8.4	6.95	94
Air temperature	14.0°C					
Wind direction	S					
speed	1 m/sec					
Cloud form	SC					
amount	8					
Transparency	1.1 m					
Wave	Smooth					
Mud temperature	13.6°C					
Station	Nb-2	0	6.65	7.7	8.34	97
Date	Dec. 17, 1971	1	6.5	7.6	8.41	97
Weather	Clear	1.3	6.5	7.6	9.54	111
Air temperature	11.2°C	1.7(B)	—	—	—	—
Wind direction	W					
speed	2.3 m/sec					
Cloud form	—					
amount	—					
Transparency	0.9 m					
Wave	—					
Mud temperature	—					
Station	Nb-5	0	8.0	7.7	8.34	100
Date	Dec. 17, 1971	1	7.9	7.7	8.31	100
Weather	Clear	2	7.6	7.7	8.28	99
Air temperature	10.9°C	3	7.55	—	—	—
Wind direction	SSW	3.5	7.8	7.6	8.20	98
speed	3.5 m/sec					
Cloud form	—					
amount	—					
Transparency	1.4 m					

		Depth	Temp.(°C)	pH	O <sub>2</sub> (cc/l)	O <sub>2</sub> (%)
Wave	—					
Mud temperature	8.3°C					
Station	Na-3	0	7.95	7.9	8.04	97
Date	Dec. 17, 1971	1	7.95	7.9	8.31	100
Weather	Clear	1.8	7.9	7.7	8.30	100
Air temperature	11.3°C					
Wind direction	SW					
speed	1.8 m/sec					
Cloud form	—					
amount	—					
Transparency	1.2 m					
Wave	Smooth					
Mud temperature	8.3°C					

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