11-1961

Benthal Activity (1961)

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Benthal Activity in the Pool

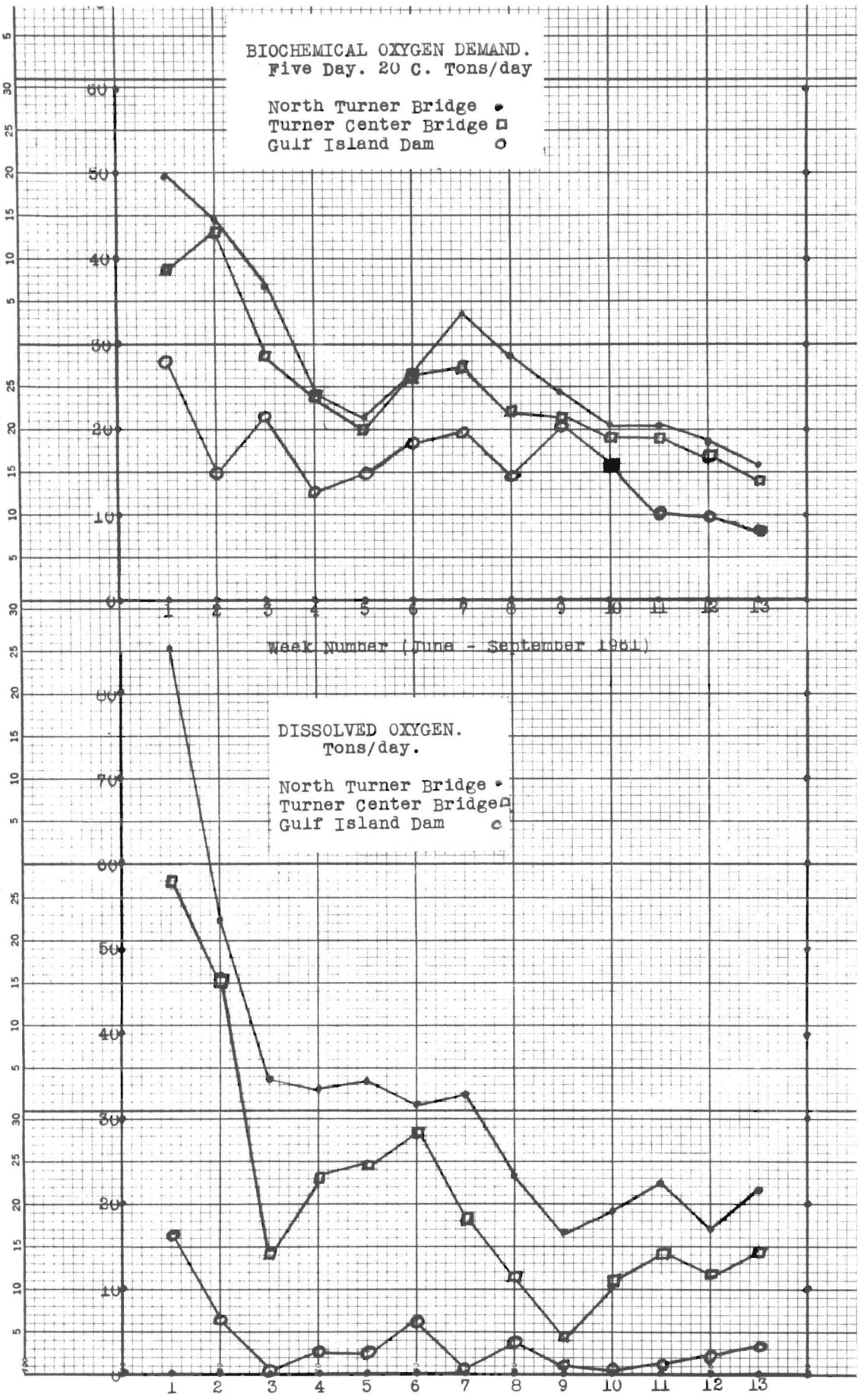
The daily Biochemical Oxygen Demands and the Dissolved Oxygen content of the river water passing through the Pool have been employed to obtain data as to the over-all activity of the Benthal in the Androscoggin Pool.

Daily (except Sunday) determinations were made on water sampled at North Turner and Turner Center Bridges, and Gulf Island Dam. For the purpose of calculation the figures for Sunday were obtained by averaging the Saturday and Monday results.

Analyses were begun June eight and continued until September nineteen. The data are listed in Table D.O.-B.O.D.#1 and summarized in Tables S.#1, S.#1A, S.#1B, and S.#2.

At all three stations there was present more than sufficient dissolved oxygen to meet all five day B.O.D. requirements until about June eighteen. After this date and until the close of the test period the conditions were,

1. North Turner Bridge. For the twelve week (weeks #2 to #13 incl.) period there were six weeks of surplus oxygen and six weeks when a deficit existed. However, over the entire period there was a small excess of oxygen over that required for the five day B.O.D. demands.
2. Turner Center Bridge. Although on the average there was a small surplus of oxygen at North Turner, by the time two days later, the water arrived at Turner Center usually a deficit of oxygen existed. Considering the reaeration at the Rips and a two day ordinary reaeration, a considerable pick-up of B.O.D. must have occurred between these two stations.


BIOCHEMICAL OXYGEN DEMAND.
Five Day. 20 C. Tons/day
North Turner Bridge •
Turner Center Bridge □
Gulf Island Dam o
Week Number (June - September 1961)
DISSOLVED OXYGEN.
Tons/day.
North Turner Bridge •
Turner Center Bridge □
Gulf Island Dam o
Week Number (June - September 1961)

3. Gulf Island Dam. A moderate and continuous deficit of oxygen was present at this location throughout the twelve week summer period. The average daily five day B.O.D. leaving the Pool was 15.2 tons per day and the accompanying D.O. averaged 2.6 tons per day.

Conclusions. Statistically the results would appear to indicate that,

a. There was an average daily loss of 11.1 tons of five day B.O.D. during the passage of water through the Pool accompanied by a detectable loss of 25.8 tons of oxygen. This may be due to a pick-up of 14.7 tons of B.O.D. per day.

b. If the reaeration at the North Turner Rips is considered to be about one ppm and all other oxygen gain ignored, then the average daily pick-up of B.O.D. would be 22.3 tons.

In the 1960 report, a factor of two ppm was used for the reaeration over the Rips just South of North Turner Bridge. This figure was based on a few tests made some year's ago when the entering water had a much lower D.O. than now. An effort will be made next year to evaluate this oxygen pick-up.

c. Assuming that all oxygen gain is that indicated in a previous section of this report (14 tons/day) then the B.O.D. increase in the water passing through the pond was about 29 tons/day. cf. Table S.#2.

These results indicate a definite addition to the water of oxygen consuming matter during passage through the pond.

Suspended solids and Benthal appear to be the major sources of this B.O.D.

Comparing this years results with those obtained during a similar period in 1960, the following observations may be made.

1. The five day B.O.D. load entering the Pool was less this year than in 1960 and the loss of B.O.D. was about one half that last year.
2. Ignoring all reaeration, the figures are:

	1961	1960
av. B.O.D. loss	11.1 T/D	23.5 T/D
av. D.O. loss	25.8 T/D	30.6 T/D

   indicating only a slight reduction in the amount of oxygen lost. The B.O.D. contributed in the Pool was 7.1 T/D in 1960 and 14.7 T/D in 1961. B.O.D. leaving the Pool was 18.7 T/D 1960 and 15.2 T/D 1961.
3. During the two day passage from North Turner Bridge to Turner Center Bridge, the average B.O.D. loss was only 2.7 tons per day but the average loss of dissolved oxygen was 9.7 tons per day.
4. Fortunately the daily average volume of river flow was almost exactly the same during the two test periods.
5. All procedures were the same as those described in the 1960 report.

Table D.O.-B.O.D. #1

NORTH TURNER BRIDGE

Dissolved Oxygen - Biochemical Oxygen Demand

Date	FLOW	DISSOLVED OXYGEN			B.O.D. 5 day 20°C		
	MT/d	ppm	T/d	Wk avg T/d	ppm	T/d	Wk avg T/d
June							
8	16.85	8.33	140.4		3.43	57.8	
9	15.04	7.28	109.5		5.50	82.7	
10	14.50	6.71	97.3		4.16	60.3	
11*	14.31		104.9 -			61.2 -	
12	17.31	6.50	112.5		3.58	62.0	
13	14.53	5.76	84.3		3.03	44.3	
14	13.80	5.90	81.4	85.5(1)	4.31	59.5	49.7
15	13.12	6.68	87.6		3.80	49.9	
16	13.04	6.80	88.7		3.51	45.8	
17	12.15	6.20	75.3		3.77	45.8	
18*	10.02		70.0 -			40.6 -	
19	11.42	5.65	64.7		3.09	35.3	
20	9.56	4.76	45.5		3.63	34.7	
21	8.91	3.15	28.1	53.5(2)	4.10	36.5	44.4
22	10.85	5.43	58.9		5.51	59.8	
23	14.09	2.68	37.8		4.27	60.2	
24	14.04	4.90	68.8		3.00	42.1	
25*	11.77		70.9 -			42.2 -	
26	13.04	5.60	73.0		3.24	42.2	
27	11.64	4.93	57.4		3.06	35.6	
28	8.59	3.70	31.8	34.8(3)	3.53	30.3	36.6
29	8.42	4.00	33.7		6.00	50.5	
30	8.42	2.71	22.8		4.48	37.7	
July							
1	7.59	1.10	8.4		4.28	32.5	
2*	6.43		16.7 -			27.4 -	
3	8.59	2.90	24.9		2.59	22.3	
4*	7.75		36.9			24.7	
5	9.75	5.00	48.8	33.4(4)	2.78	27.1	24.4
6	8.37	6.03	50.5		3.78	31.6	
7	7.56	2.42	18.3		2.55	19.3	
8	7.72	3.42	26.4		3.09	23.9	
9*	7.86		28.0 -			21.6 -	
10	8.13	3.64	29.6		2.38	19.4	
11	10.45	4.15	43.4		2.79	29.2	
12	10.13	4.40	44.6		1.96	19.9	
13	8.16	5.45	44.5	34.4(5)	3.25	26.5	21.4
14	7.80	3.65	28.5		1.97	15.4	
15	6.83	2.82	19.0		2.82	19.3	
16*	5.64		31.3 -			19.9 -	
17	9.48	4.60	43.6		2.17	20.6	
18	9.48	4.36	41.3		2.58	24.5	
19	9.40	3.31	31.1	31.9(6)	3.43	32.2	26.7
20	8.24	4.10	33.8		4.91	40.5	
21	7.83	2.43	19.0		3.39	26.5	
22	7.53	2.85	21.5		2.33	17.6	
23*	7.21		33.2 -			25.2 -	

*Sunday calculated: Saturday plus Monday divided by two.

Table D.O.-B.O.D. #1 (continued)

NORTH TURNER BRIDGE

Dissolved Oxygen - Biochemical Oxygen Demand

Date	FLOW MT/d	DISSOLVED OXYGEN ppm	T/d	Wk avg T/d	B.O.D. 5 day 20°C ppm	T/d	Wk avg T/d
July							
24	9.34	4.80	44.8		3.50	32.7	
25	8.96	3.35	30.0		3.11	27.9	
26	11.69	1.11	13.0	33.0 (7)	4.01	46.9	33.7
27	11.85	5.00	57.9		4.59	53.2	
28	9.53	3.17	30.2		3.02	28.8	
29	7.61	2.81	21.4		2.79	21.2	
30*	6.43		33.4 -			25.0 -	
31	9.18	4.94	45.4		3.14	28.8	
August							
1*	8.51		30.7*			30.4	
2	7.29	2.20	16.0	23.2 (8)	4.37	31.9	28.9
3	7.24	3.00	21.7		4.24	30.7	
4	6.37	2.13	13.6		4.03	25.7	
5	7.02	2.01	14.1		3.76	26.4	
6*	5.62		21.1 -			28.2 -	
7	7.80	3.60	28.1		3.85	30.0	
8	6.72	3.00	20.2		3.43	23.0	
9	6.37	1.55	9.9	16.7 (9)	4.04	25.7	24.5
10	6.37	1.83	11.7		3.98	25.4	
11	6.45	1.87	12.1		3.85	24.8	
12	6.48	2.00	13.0		3.33	21.6	
13*	5.05		22.0 -			20.7 -	
14	7.26	4.28	31.1		2.73	19.8	
15	6.45	2.50	16.1		2.79	18.0	
16	6.21	2.81	17.5	19.2(10)	3.67	22.8	20.6
17	6.29	2.85	17.9		3.44	21.6	
18	6.53	2.11	13.8		4.09	26.7	
19	6.10	2.50	15.3		2.84	17.3	
20*	4.91		22.4 -			17.8 -	
21	7.24	4.80	29.5		2.52	18.3	
22	7.37	4.95	36.5		2.29	16.9	
23	6.83	2.52	17.2	22.4(11)	3.55	24.5	20.5
24	7.10	2.90	20.6		3.85	27.3	
25	6.24	2.45	15.3		3.15	19.7	
26	6.37	2.55	16.2		3.00	19.1	
27*	4.59		21.2 -			17.5 -	
28	7.45	3.50	26.1		2.13	15.9	
29	6.83	3.75	25.6		2.67	18.2	
30	6.40	2.32	14.8		3.32	21.3	
31	6.21	2.60	16.1	17.0(12)	3.06	19.0	18.6
September							
1	6.26	1.90	11.9		3.10	19.4	
2	6.45	1.56	10.1		3.08	19.9	
3*	5.10		14.6 -			16.6 -	
4*	5.64	3.36	19.0		2.37	13.4	
5	7.32	4.90	35.9		2.23	16.3	
6	7.34	3.74	27.5		2.64	19.4	
7	6.29	3.60	22.6	21.7(13)	2.30	14.5	15.8
8	6.16	3.13	19.3		3.06	18.9	
9	5.67	2.00	11.3		2.30	13.0	
10*	5.64		16.1 -			14.8 -	
11	6.32	3.32	21.0		2.64	16.7	

Table D.O.-B.O.D. #1

TURNER CENTER BRIDGE

Dissolved Oxygen - Biochemical Oxygen Demand

Date	FLOW	DISSOLVED OXYGEN			B.O.D. 5 day 20°C		
	MT/d	ppm	T/d	Wk avg T/d	ppm	T/d	Wk avg T/d
June							
8	16.85	8.10	136.5		2.70	45.5	
9	15.04	6.31	94.9		3.10	46.6	
10	14.50	6.18	89.6		3.70	53.7	
11*	14.31		93.6			50.6	
12	17.31	5.63	97.5		2.75	47.6	
13	14.53	5.64	82.5 -		2.72	39.8 -	
14	13.80	4.61	63.6		3.33	46.0	
15	13.12	5.85	76.8		3.47	45.5	
16	13.04	4.45	58.0	58.3(1)	2.94	38.3	38.7
17	12.15	4.93	59.9		3.63	44.1	
18*	10.02		54.8			36.9	
19	11.42	4.35	49.7		2.60	29.7	
20	9.56	4.73	45.2 -		3.17	30.3 -	
21	8.91	3.65	32.5		3.77	33.6	
22	10.85	4.65	50.5		5.49	59.6	
23	14.09	2.70	38.0	46.5(2)	3.06	43.1	43.4
24	14.04	3.67	51.5		3.79	53.2	
25*	11.77		50.6			45.4	
26	13.04	3.80	49.6		2.88	37.6	
27	11.64	4.52	52.6 -		2.67	31.1 -	
28	8.59	3.29	28.3		2.80	24.1	
29	8.42	4.20	35.4		4.21	35.4	
30	8.42	1.41	11.9	14.3(3)	3.68	31.0	28.7
July							
1	7.59	0.87	6.6		4.36	33.1	
2*	6.43		4.4			28.6	
3	8.59	0.25	2.2		2.80	24.1	
4*	7.75		10.0 -			24.5 -	
5	9.75	2.00	19.5		2.55	24.9	
6	8.37	5.15	43.1		3.34	28.0	
7	7.56	3.50	26.5	23.0(4)	2.42	18.3	24.0
8	7.72	1.82	14.1		2.90	22.4	
9*	7.86		13.0			23.8	
10	8.13	1.45	11.9		3.08	25.1	
11	10.45	3.12	32.6 -		2.45	25.6 -	
12	10.13	3.06	31.0		3.24	32.8	
13	8.16	4.35	35.5		3.09	25.2	
14	7.80	2.47	19.3	24.8(5)	2.34	18.3	20.1
15	6.83	2.15	14.7		2.77	18.9	
16*	5.64		18.2			16.8	
17	9.48	2.28	21.6		1.55	14.7	
18	9.48	3.52	33.4 -		1.49	14.1 -	
19	9.40	3.12	29.3		2.55	24.0	
20	8.24	3.18	26.2		4.26	35.1	
21	7.83	2.43	19.0	28.4(6)	3.73	29.2	26.6
22	7.53	2.85	21.5		2.79	21.0	
23*	7.21		33.2			24.1	
24	9.34	4.80	44.8		2.91	27.2	
25	8.96	2.75	24.6 -		2.84	25.5 -	

*Sunday calculated: Saturday plus Monday divided by two.

Table D.O.-B.O.D. #1

TURNER CENTER BRIDGE

Dissolved Oxygen - Biochemical Oxygen Demand

Date	FLOW	DISSOLVED OXYGEN			B.O.D. 5 day 20°C		
	MT/d	ppm	T/d	Wk avg T/d	ppm	T/d	Wk avg T/d
July							
26	11.69	2.12	24.8		2.97	34.7	
27	11.85	2.00	23.2		3.81	44.1	
28	9.53	2.32	22.1	18.3 (7)	3.14	29.9	27.3
29	7.61	1.54	11.7		2.21	16.8	
30*	6.43		9.5			21.8	
31	9.18	0.79	7.3		2.91	26.7	
August							
1	8.51	3.47	29.5 -		2.04	17.4 -	
2	7.29	2.74	20.0		3.77	27.5	
3	7.24	2.45	17.7		3.97	28.7	
4	6.37	1.62	10.3	11.6 (8)	3.36	21.4	22.4
5	7.02	1.41	9.9		3.81	26.8	
6*	5.62		8.5			27.4	
7	7.80	0.90	7.0		3.58	28.0	
8	6.72	1.16	7.8 -		3.14	21.0 -	
9	6.37	1.20	7.7		3.87	24.7	
10	6.37	0.65	4.1		3.29	21.0	
11	6.45	0.90	5.8	4.7 (9)	2.65	17.1	21.8
12	6.48	0.57	3.7		3.12	20.2	
13*	5.05		3.1			23.0	
14	7.26	0.34	2.5		3.55	25.8	
15	6.45	0.91	5.9 -		3.23	20.8 -	
16	6.21	3.10	19.3		3.03	18.8	
17	6.29	1.95	12.3		2.82	17.7	
18	6.53	1.65	10.8	11.5(10)	3.24	21.2	19.1
19	6.10	2.30	14.0		3.18	19.4	
20*	4.91		8.1			19.7	
21	7.24	0.30	2.2		2.78	20.1	
22	7.37	1.90	14.0 -		2.32	17.1 -	
23	6.83	3.98	27.2		2.64	18.0	
24	7.10	2.63	18.7		3.19	22.7	
25	6.24	1.85	11.5		3.24	20.2	
26	6.37	2.06	13.1	14.4(11)	3.25	20.7	19.0
27*	4.59		10.4			18.7	
28	7.45	1.02	7.6		2.25	16.8	
29	6.83	1.80	12.3 -		2.36	16.1 -	
30	6.40	3.10	19.8		2.84	18.2	
31	6.21	2.28	14.2		2.73	17.0	
September							
1	6.26	1.66	10.4		2.99	18.7	
2	6.45	1.49	9.6	11.9(12)	2.60	16.8	17.0
3*	5.10		8.2			17.1	
4*	5.64	1.21	6.8		2.64	17.5	
5	7.32	1.92	14.1 -		1.84	13.5 -	
6	7.34	2.87	21.1		1.96	14.4	
7	6.29	4.00	25.2		1.95	12.3	
8	6.16	2.17	13.4	14.5(13)	2.12	13.1	14.0
9	5.67	2.00	11.3		2.15	12.2	
10*	5.64		10.9			16.1	
11	6.32	1.68	10.6		3.17	20.0	
12	5.70	1.63	9.3 -		1.71	9.8 -	

Table D.O.-B.O.D. #1

GULF ISLAND DAM

Dissolved Oxygen - Biochemical Oxygen Demand

Date	FLOW	DISSOLVED OXYGEN			B.O.D. 5 day 20°C		
	MT/d	ppm	T/d	Wk avg T/d	ppm	T/d	Wk avg T/d
June							
8	16.85	6.85	115.4		2.00	33.7	
9	15.04	6.25	94.0		2.59	39.0	
10	14.50	5.72	82.9		2.80	40.6	
11*	14.31		81.3			44.7	
12	17.31	4.60	79.6		2.82	48.8	
13	14.53	4.68	68.5 -		2.52	36.9 -	
14	13.80	4.56	62.9		3.34	46.1	
15	13.12	5.30	69.5		2.25	29.5	
16	13.04	3.05	39.8	37.0	1.95	25.4	28.0
17	12.15	2.40	29.2		1.15	14.0	
18*	10.02		23.8			23.8	
19	11.42	1.60	18.3		2.95	33.7	
20	9.56	1.61	15.4 -		2.44	23.3 -	
21	8.91	2.00	17.8		2.28	20.3	
22	10.85	3.35	36.3		2.23	24.2	
23	14.09	1.51	21.3	16.4(1)	2.22	31.3	28.0
24	14.04	0.38	5.4		2.16	30.3	
25*	11.77		8.7			32.1	
26	13.04	0.91	11.9		2.60	33.9	
27	11.64	1.13	13.2 -		2.07	24.1 -	
28	8.59	0.01	0.1		1.79	15.4	
29	8.42	1.90	16.0		2.07	17.4	
30	8.42	1.29	10.9	6.6(2)	1.94	16.3	14.9
July							
1	7.59	0.98	7.4		1.98	15.0	
2*	6.43		5.7			13.9	
3	8.59	0.45	3.9		1.48	12.7	
4*	7.75		2.0 -			13.7 -	
5	9.75	0.00	0.0		1.50	14.6	
6	8.37	0.23	1.9		3.18	26.6	
7	7.56	0.00	0.0	0.3 (3)	2.08	15.7	21.6
8	7.72	0.00	0.0		3.50	27.0	
9*	7.86		0.0			22.0	
10	8.13	0.00	0.0		2.08	17.0	
11	10.45	0.00	0.0 -		2.69	28.1 -	
12	10.13	0.03	3.0		2.32	23.5	
13	8.16	0.25	2.1		2.03	16.6	
14	7.80	0.98	7.6	2.7(4)	1.28	10.0	12.8
15	6.83	0.46	3.1		2.22	15.2	
16*	5.64		1.7			11.0	
17	9.48	0.03	0.3		0.72	6.8	
18	9.48	0.13	1.2 -		0.72	6.8-	
19	9.40	0.04	0.4		1.97	18.5	
20	8.24	0.48	0.4		1.81	10.0	
21	7.83	0.12	0.9		1.98	15.5	
22	7.53	1.34	10.1	2.6(5)	1.72	13.0	14.8
23*	7.21		5.3			13.5	
24	9.34	0.44	0.4		1.49	13.9	
25	8.96	0.10	0.9 -		2.11	18.9 -	

*Sunday calculated; Saturday plus Monday divided by two.

Table D.O.-B.O.D. #1 (continued)

Gulf Island Dam

Dissolved Oxygen - Biochemical Oxygen Demand

Date	FLOW	DISSOLVED OXYGEN			B.O.D. 5 day 20°C		
	MT/d	ppm	T/d	Wk avg T/d	ppm	T/d	Wk avg T/d
July							
26	11.69	2.58	30.2		1.93	22.6	
27	11.85	0.80	9.3		1.10	12.7	
28	9.53	0.19	1.8	6.1(6)	2.11	20.1	18.5
29	7.61	0.01	0.1		2.40	18.3	
30*	6.43		0.6			18.1	
31	9.18	0.11	1.0		1.94	17.8	
August							
1	8.51	0.00	0.0 -		2.37	20.2 -	
2	7.29	0.04	0.3		3.38	24.6	
3	7.24	0.20	1.4		2.68	19.4	
4	6.37	0.07	0.4	0.5 (7)	3.00	19.1	19.6
5	7.02	0.02	0.1		2.45	17.2	
6*	5.62		0.3			18.4	
7	7.80	0.06	0.5		2.51	19.6	
8	6.72	0.10	0.7 -		2.77	18.6 -	
9	6.37	0.10	0.6		2.65	16.9	
10	6.37	0.09	1.9		1.84	11.7	
11	6.45	0.09	0.6	3.7 (8)	2.13	13.7	14.5
12	6.48	1.40	9.1		1.96	12.7	
13*	5.05		7.3			14.0	
14	7.26	0.76	5.5		2.09	15.2	
15	6.45	0.09	0.6 -		2.70	17.4 -	
16	6.21	0.37	2.3		3.44	21.4	
17	6.29	0.25	1.6		2.45	15.4	
18	6.53	0.03	0.2	1.0 (9)	3.75	24.5	20.9
19	6.10	0.08	0.5		3.59	21.9	
20*	4.91		0.8			20.0	
21	7.24	0.17	1.2		2.81	20.3	
22	7.37	0.05	0.4 -		3.05	22.5 -	
23	6.83	0.00	0.0		2.75	18.8	
24	7.10	0.20	1.4		2.92	20.7	
25	6.24	0.06	0.4		2.48	15.5	
26	6.37	0.08	0.5	0.6 (10)	2.47	15.7	15.9
27*	4.59		0.7			14.5	
28	7.45	0.12	0.9		1.78	13.3	
29	6.83	0.00	0.0 -		1.86	12.7 -	
30	6.40	0.07	0.5		1.94	12.4	
31	6.21	0.45	2.8		1.07	6.6	
September							
1	6.26	0.10	0.6		2.21	13.8	
2	6.45	0.44	2.8	1.4 (11)	1.83	11.8	10.4
3*	5.10		2.0			11.0	
4*	5.64	0.23	1.3		1.88	10.3	
5	7.32	0.00	0.0 -		0.91	6.7 -	
6	7.34	0.78	5.7		1.47	10.8	
7	6.29	1.08	6.8		1.03	6.5	
8	6.16	0.15	0.9		1.55	9.6	
9	5.67	0.05	0.3	2.2(12)	1.97	11.2	10.0

Table D.O.-B.O.D. #1 (continued)

Gulf Island Dam

Dissolved Oxygen - Biochemical Oxygen Demand

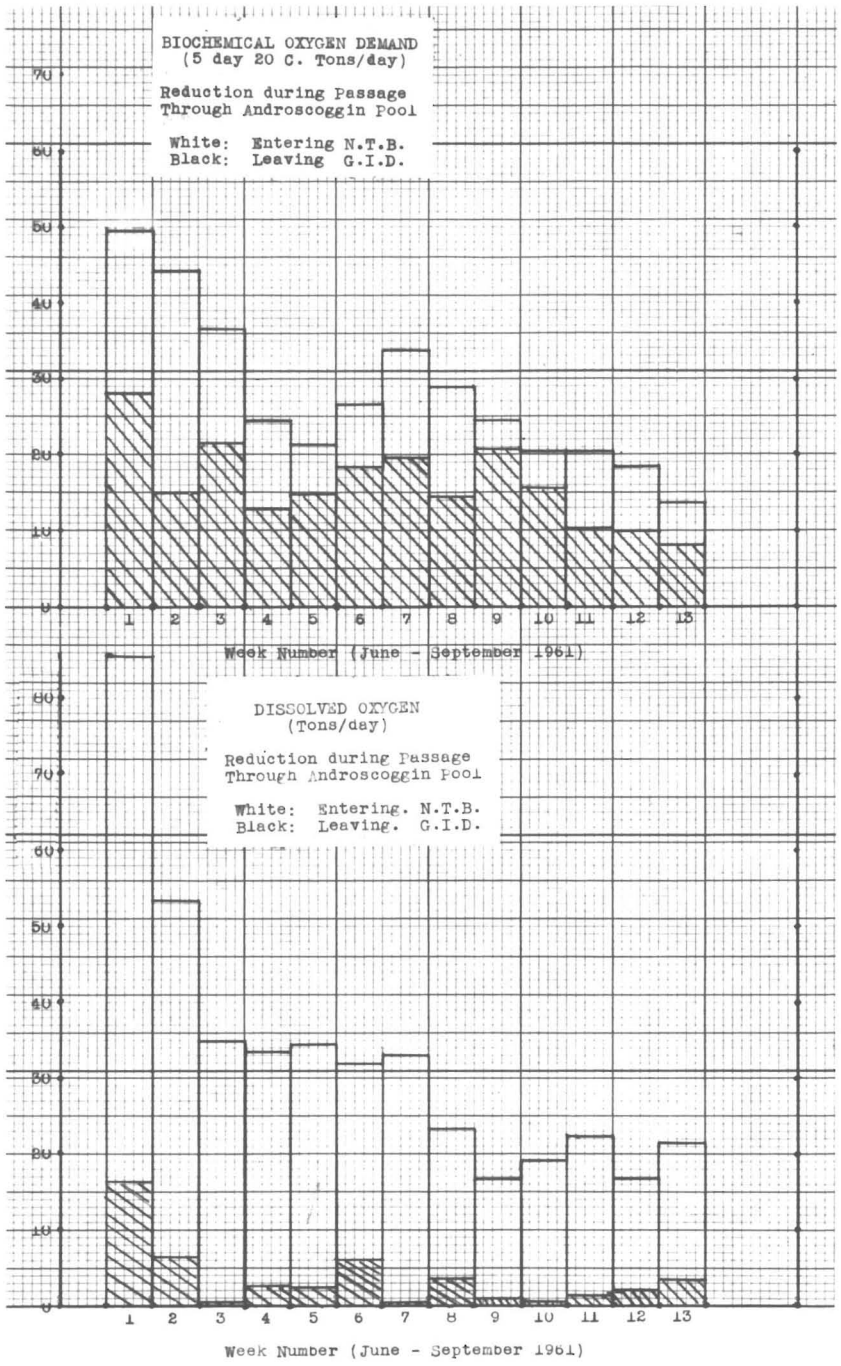
Date	FLOW MT/d	DISSOLVED OXYGEN ppm	T/d	Wk avg T/d	B.O.D. 5 day 20°C ppm	T/d	Wk avg T/d
September							
10*	5.64		0.6			11.5	
11	6.32	0.14	0.9		1.86	11.8	
12	5.70	0.05	0.3 -		1.52	8.7 -	
13	5.70	0.47	2.7		1.87	10.7	
14	5.70	1.75	9.9		0.83	4.7	
15	6.70	0.83	5.7	3.4 (13)	1.47	9.8	8.1
16	6.10	0.13	0.8		1.29	7.9	
17*	6.24		1.7		1.44	9.0	
18	5,89	0.46	2.7		1.59	9.4	
19	6.59	0.06	0.4 -		0.75	4.9 -	

Table S #1

WEEKLY SUMMARY B.O.D - D.O. AND O.D.*
Average Tons per Day

	NORTH TURNER BRIDGE			GULF ISLAND DAM		
Week Number	B.O.D.	D.O.	O.D.*	B.O.D.	D.O.	O.D.**
1	49.7	85.5	⁄35.8	28.0	16.4	-11.6
2	44.4	53.5	⁄ 9.1	14.9	6.6	- 8.3
3	36.6	34.8	- 1.8	21.6	0.3	-21.3
4	24.4	33.4	⁄ 9.0	12.8	2.7	-10.1
5	21.4	34.4	⁄13.0	14.8	2.6	-12.2
6	26.7	31.9	⁄ 5.2	18.5	6.1	-12.4
7	33.7	33.0	- 0.7	19.6	0.5	-19.1
8	28.9	23.2	- 5.7	14.5	3.7	-10.8
9	24.5	16.7	- 7.8	20.9	1.0	-19.9
10	20.6	19.2	- 1.4	15.9	0.6	-15.3
11	20.5	22.4	⁄ 1.9	10.4	1.4	- 9.0
12	18.6	17.0	- 1.6	10.0	2.2	- 7.8
13	15.8	21.7	⁄ 5.9	8.1	3.4	- 4.7
Average 2-13	26.3	28.4	⁄ 2.1	15.2	2.6	-12.6

*Oxygen Deficit or Surplus as indicated
**Compensated for time of passage


BIOCHEMICAL OXYGEN DEMAND
(5 day 20 C. Tons/day)
Reduction during Passage
Through Androscoggin Pool
White: Entering N.T.B.
Black: Leaving G.I.D.
70
60
50
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13
Week Number (June - September 1961)
DISSOLVED OXYGEN
(Tons/day)
Reduction during Passage
Through Androscoggin Pool
White: Entering. N.T.B.
Black: Leaving. G.I.D.
80
70
60
50
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13
Week Number (June - September 1961)

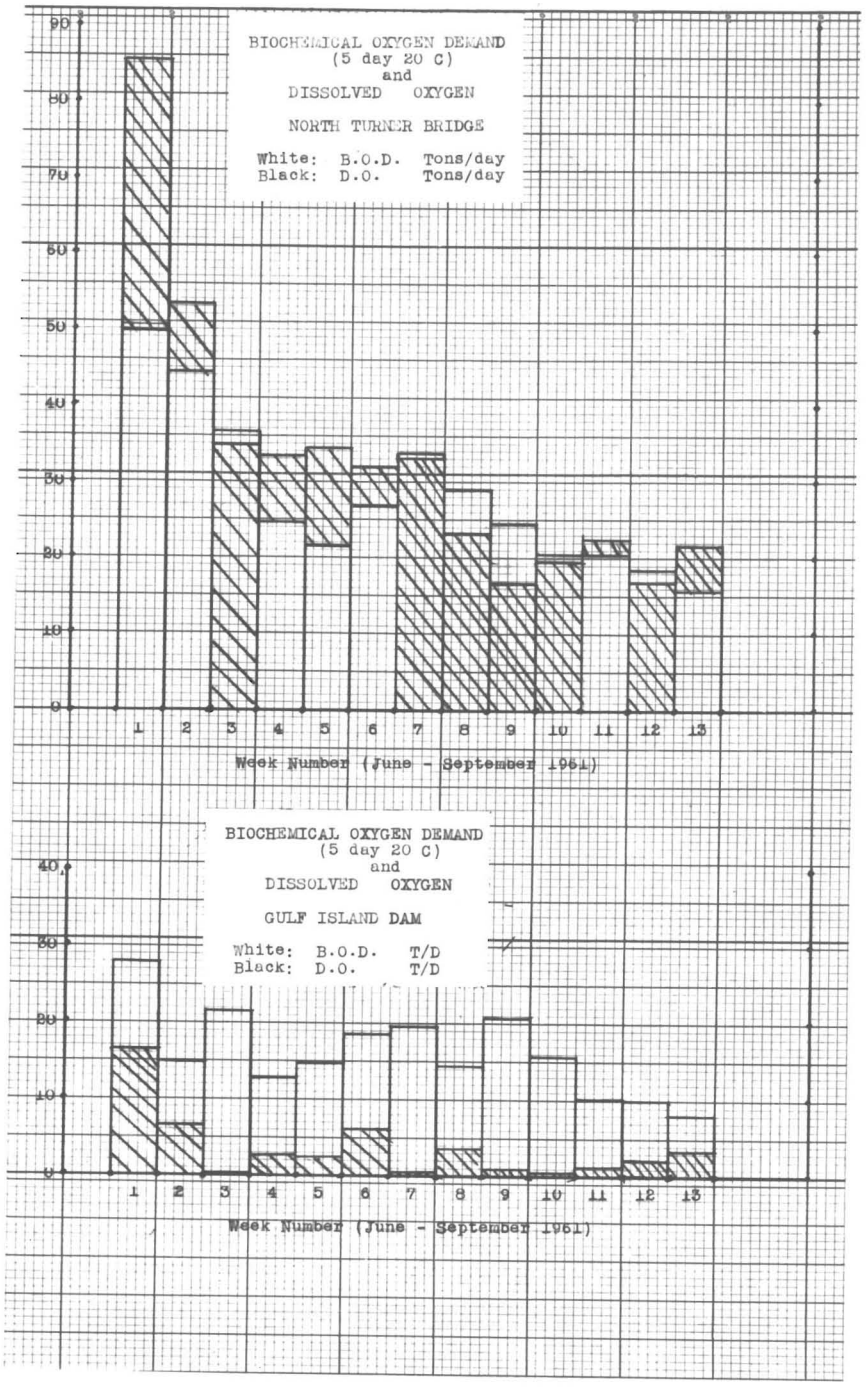

BIOCHEMICAL OXYGEN DEMAND
(5 day 20 C)
and
DISSOLVED OXYGEN
NORTH TURNER BRIDGE
White: B.O.D. Tons/day
Black: D.O. Tons/day
90
80
70
60
50
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13
Week Number (June - September 1961)
BIOCHEMICAL OXYGEN DEMAND
(5 day 20 C)
and
DISSOLVED OXYGEN
GULF ISLAND DAM
White: B.O.D. T/D
Black: D.O. T/D
40
30
20
10
0
1 2 3 4 5 6 7 8 9 10 11 12 13
Week Number (June - September 1961)

Table S #1A

WEEKLY SUMMARY B.O.D. - D.O. and O.D.*
Average Tons per Day

	NORTH TURNER BRIDGE			TURNER CENTER BRIDGE		
Week Number	B.O.D.	D.O.	O.D.*	B.O.D.	D.O.	O.D.**
1	49.7	85.5	+35.8	38.7	58.3	+19.6
2	44.4	53.5	+ 9.1	43.4	46.5	+ 3.1
3	36.6	34.8	- 1.8	28.7	14.3	-14.4
4	24.4	33.4	+ 9.0	24.0	23.0	- 1.0
5	21.4	34.4	+13.0	20.1	24.8	+ 4.7
6	26.7	31.9	+ 5.2	26.6	28.4	+ 1.8
7	33.7	33.0	- 0.7	27.3	18.3	- 9.0
8	28.9	23.2	- 5.7	22.4	11.6	-10.8
9	24.5	16.7	- 7.8	21.8	4.7	-17.1
10	20.6	19.2	- 1.4	19.1	11.5	- 7.6
11	20.5	22.4	+ 1.9	19.0	14.4	- 4.6
12	18.6	17.0	- 1.6	17.0	11.9	- 5.1
13	15.8	21.7	+ 5.9	14.0	14.5	+ 0.5
Average 2-13	26.3	28.4	+ 2.1	23.6	18.7	- 4.9

*Oxygen Deficit or Surplus as indicated
**Compensated for time of passage

Table S #1B

WEEKLY SUMMARY B.O.D. - D.O. AND O.D.*
Average Tons per Day

	TURNER CENTER BRIDGE			GULF ISLAND DAM		
Week Number	B.O.D.	D.O.	O.D.*	B.O.D.	D.O.	O.D.**
1	38.7	58.3	⁄19.6	28.0	16.4	-11.6
2	43.4	46.5	⁄ 3.1	14.9	6.6	- 8.3
3	28.7	14.3	-14.1	21.6	0.3	-21.3
4	24.0	23.0	- 1.0	12.8	2.7	-10.1
5	20.1	24.8	⁄ 4.7	14.8	2.6	-12.2
6	26.6	28.4	⁄ 1.8	18.5	6.1	-12.4
7	27.3	18.3	- 9.0	19.6	0.5	-19.1
8	22.4	11.6	-10.8	14.5	3.7	-10.8
9	21.8	4.7	-17.1	20.9	1.0	-19.9
10	19.1	11.5	- 7.6	15.9	0.6	-15.3
11	19.0	14.4	- 4.6	10.4	1.4	- 9.0
12	17.0	11.9	- 5.1	10.0	2.2	- 7.8
13	14.0	14.5	⁄ 0.5	8.1	3.4	- 4.7
Average 2-13	23.6	18.7	- 4.9	15.2	2.6	-12.6

*Oxygen Deficit or Surplus as indicated
**Compensated for time of passage

Table S #2

B.O.D. and D.O. LOSS: BENTHAL B.O.D.

Average Tons per Day

Week Number	B.O.D.(a) Loss	D.O.(a) Loss	B.O.D. * Benthal	B.O.D. ** Benthal	B.O.D. *** Benthal
1	21.7	69.1	47.4	55.0	61.4
2	29.5	46.9	17.4	25.0	31.4
3	15.0	34.5	19.5	27.1	33.5
4	11.6	30.7	19.1	26.7	33.1
5	6.6	31.8	25.2	32.8	39.2
6	8.2	25.8	17.6	25.2	31.6
7	14.1	32.5	18.4	26.0	32.4
8	14.4	19.5	5.1	12.7	19.1
9	3.6	15.7	12.1	19.7	26.1
10	4.7	18.6	13.9	21.5	27.9
11	10.1	21.0	10.9	18.5	24.9
12	8.6	14.8	6.2	13.8	20.2
13	7.7	18.3	10.6	18.2	24.6
Average 2-13	11.1	25.8	14.7	22.3	28.7

*Statistical difference, NO allowance for Reaeration
**Include average reaeration at N.T.B. only 1.0 ppm or 7.6 T/D
***Includes estimated total average reaeration in the Pool 14 T/D
(a)Loss during passage through the Pool