MEMORANDUM

Water Pollution Control Commission
P. O. Box 829
OLYMPIA, WASHINGTON
98501

Publication No. 70-e09

WA-28-2020

TO: Nelson - Merley

DATE: 5-19-70

FROM: Ron Lee

SUBJECT: Lackamas Creek Survey Results

On May 4, 1970, a survey was conducted on Lackamas Creek to determine present total coliform, dissolved oxygen, temperature, turbidity, and nutrient levels in selected areas above and below the Andrew Egg Ranch and Lackamas Valley Milling Company.

Dissolved oxygen concentrations were high at all stations with percent saturation values ranging from 94% to 110% (Table 1 - Figure 1). Nutrient data results for the most part are inconclusive. Nitrate and Kjeldahl nitrogen levels, however, were found to increase at stations 5 and 6 below the Andrew Egg Ranch, when compared to station 4 above (Table 2). An increase in nitrate was also observed immediately below the Lackamas Valley Milling Company.

Total coliform data are difficult to interpret when upstream counts often exceed downstream counts in areas of potential bacteriological contamination (Table 1). Reversals of expected results may be explained by difficulty in obtaining representative water samples. In general, swamp or marshy areas (stations 4,5 and 9), highly turbid water (station 7), and small streams receiving pasture land drainage (stations 1-7) are inherently difficult to sample representively. The two areas mentioned above are most likely to pollute adjacent receiving waters when it rains; such was not the case during this survey.

RL:ah

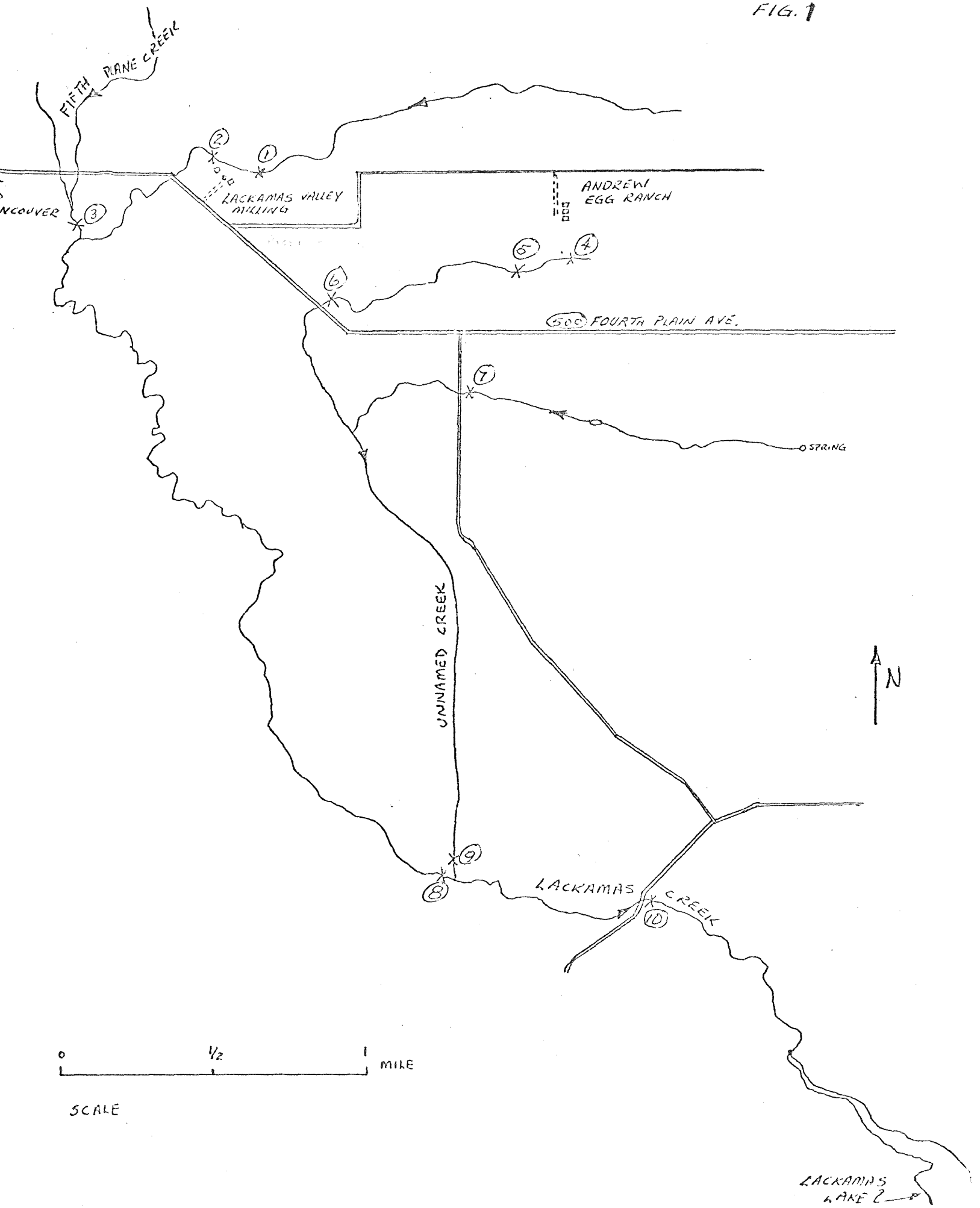
Table 1. Dissolved oxygen, temperature, and total coliform data for ten sampling stations on Lackamas Creek.

Station	D.O. (ppm)	Temp. (°C)	Total coliform (counts/100ml)
1	12.2	13.2	750
2	11.8	14.0	430
3	11.1	14.1	1900
4	10.6	13.0	1320
5	10.4	13.1	780
6	10.0	13.4	5900
7	9.4	14.0	4900
8	11.7	13.9	680
9	10.9	14.1	620
10	11.6	14.0	620

Table 2. Nutrient and turbidity data for ten selected stations on Lackamas Creek.

Station	Turb. (JTU)	Nitrate-N (mg/l)	Nitrite-N (mg/l)	Kjeldahl-N (mg/l)	NH_3-N (mg/l)	Ortho PO_4-P (mg/l)
1	4	0.26	0.001	0.10	0.12	0.04
2	5	0.39	0.002	0.08	0.08	0.05
3	7	0.74	0.006	0.08	0	0.05
4	7	0.70	0.001	0	0	0.03
5	2	1.38	0.003	0.10	0.04	0.03
6	7	1.34	0.008	0.28	0	0.09
7	120	0.48	0.002	0.18	0.16	0.16
8	8	0.64	0.002	0.12	0.04	0.03
9	9	0.62	0.003	0.12	0	0.08
10	7	0.56	0.002	0.28	0.08	0.04

FIG. 1


FIFTH PLANE CREEK
NCOUVER
LACKAMAS VALLEY MILLING
ANDREWS EGG RANCH
500 FOURTH PLAIN AVE.
SPRING
UNNAMED CREEK
LACKAMAS CREEK
N
0
1/2
1
MILE
SCALE
LACKAMAS LAKE

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Original to LAB.
Copies to:
RON LEE

STATE OF WASHINGTON
WATER POLLUTION CONTROL COMMISSION

ANALYTICAL REPORT SHEET

To: RON LEE

The following are the analytical results from survey conducted at:

LACKAMAS CREEK

Collected 5-4-70

LAB. NO.	STATION NO.	µmhos SP. COND.	J.T.U. TURBIDITY	mg/l NITRATE N	mg/l NITRITE N	mg/l KJELDHAL N	mg/l AMMONIA N	mg/l O-PO4 P.
70-2046	1	37.4	4.4	0.26	0.001	0.10	0.12	0.04
2047	2	38.7	4.9	0.39	0.002	0.08	0.08	0.05
2048	3	75.4	7.3	0.74	0.006	0.08	0	0.05
2049	ANDREWS 4	46.1	6.8	0.70	0.001	0	0	0.03
2050	5	45.6	2.2	1.38	0.003	0.10	0.04	0.03
2051	6	49.0	7.4	1.34	0.008	0.28	0	0.09
2052	7	33.0	120	0.48	0.002	0.18	0.16	0.16
2053	8	57.5	8.0	0.64	0.002	0.12	0.04	0.03
2054	9	58.4	8.7	0.62	0.003	0.12	0	0.08
2055	10	57.8	7.4	0.56	0.002	0.28	0.08	0.04

Notes:

Summarized by EU. DENKE

Date 5-7-70