

MEMORANDUM
Department of Ecology
P. O. Box 829
OLYMPIA, WASHINGTON
98501

Publication No. 71-e15

TO: Nelson Graham

DATE: March 1, 1971

FROM: Ron Lee

SUBJECT: Ridgefield Wildlife Refuge
Wetlands Pumping Project

Listed in Table 1 are the bacteriological results of the Ridgefield Wildlife Refuge project. Station locations are presented as an attachment. Samples were collected about an hour prior to pumping (2/2/71) and again the next day during the pumping operation (2/3/71). The data suggests that no significant increase in bacteriological contamination occurred due to the draining of these wetlands. An increase in nutrients, however, was observed 50 yards downstream from the wetlands wastewater discharge (Table 2). The presence of ammonia (NH₃) indicates recent contamination and results from decomposition of organic nitrogen which is high in the wastewater sample.

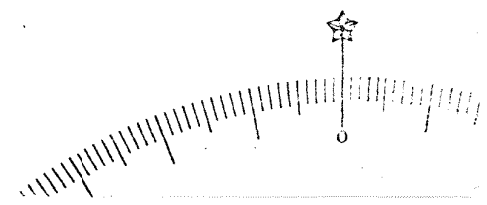
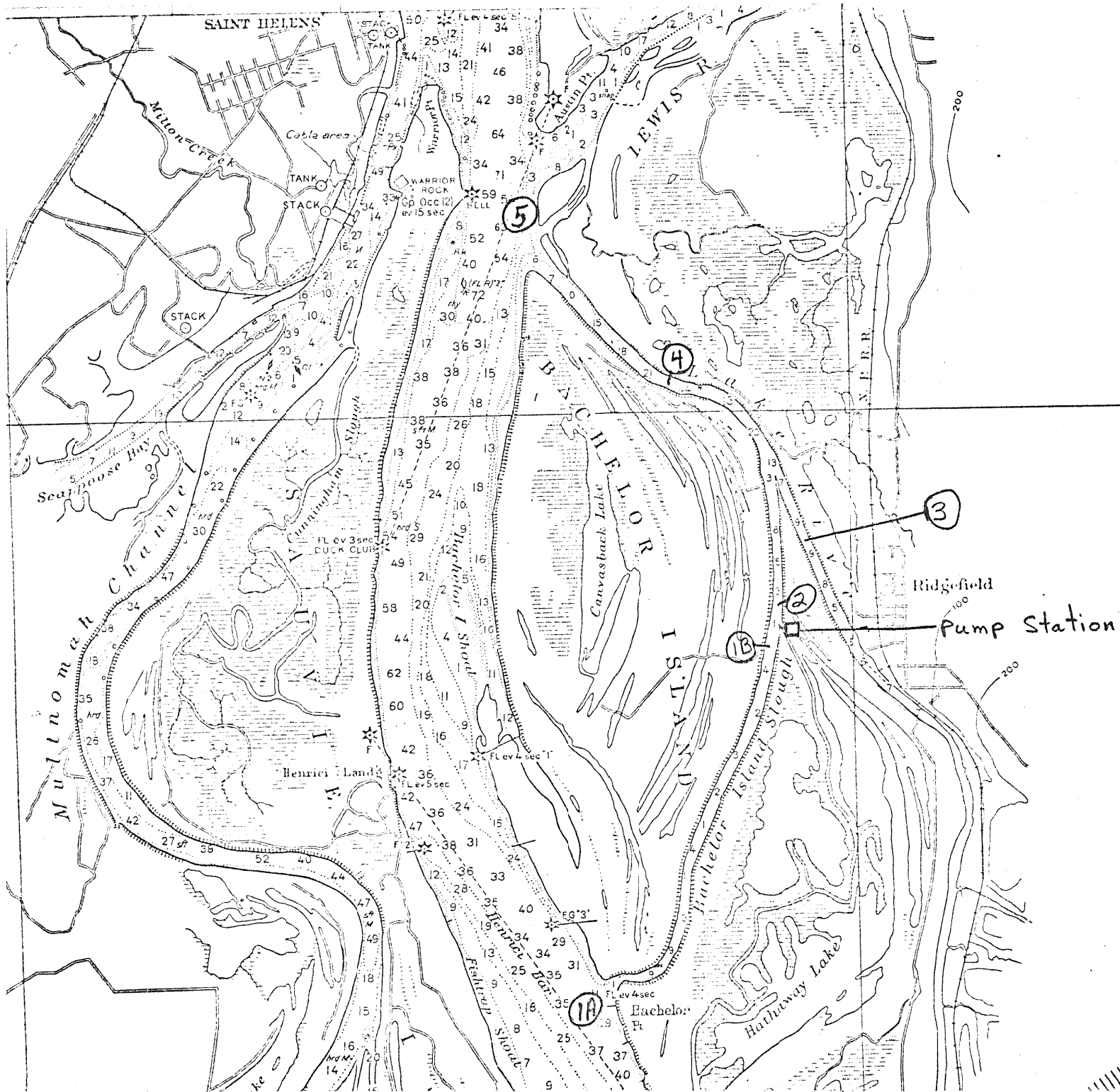
Table 1.

Date	Station	Colonies/100 ml	
		Total	Fecal
2/2/71	1A	400	<100
	2	460	<200
	3	480	<100
	4	680	<200
	5	700	<100
	Wastewater (Pump Station)	620	<200
2/3/71	1A	220	<100
	1B	<400	<100
	2	<400	<100
	3	<400	<100
	4	<400	<100
	5	500	<100
	Wastewater (Pump Station)	1500	<100

Table 2. Nutrient data in ppm as N or P

Location	NO ₃	NH ₃	Organic N	O-PO ₄	Total PO ₄
50 Yds. Upstream (1B)	0.50	0	0.175	0.045	0.178
Wastewater Discharge	0.20	0.04	0.777	0.046	0.165
50 Yds. Downstream (2)	0.53	0.03	0.355	0.060	0.206

RL:lg



STATE OF WASHINGTON
WATER POLLUTION CONTROL COMMISSION
ANALYTICAL REPORT SHEET

Routing
Original to Lab
Copies to: Ron Lee

PP

to: R. Lee

The following are the analytical results from survey conducted at:

COLUMBIA R. & LAKE RIVER NEAR RIDGEFIELD

LAB. NO.	STATION NO.	col/100ml								
		TOT. COLIF.	FECAL COL.							
71-306	1	400	< 100							
307	2	460	< 200							
308	3	480	< 100							
309	4	680	< 200							
310	5	700	< 100							
311	SPECIAL PUMP STATION WETLANDS	620	< 200							
315	1A	220	< 100							
316	1B	< 400	< 100							
317	2	< 400	< 100							
318	3	< 400	< 100							
319	4	< 400	< 100							
320	5	500	< 100							
321	SPECIAL WETLANDS	1500	< 100							
		PPM ✓	PPM	PPM /	PPM /	PPM ✓	PPM	PPM	PPM	PPM
		NO ₃ -N FILT	NO ₂ -N FILT	NH ₃ -N	OR. KJEL-N	O-Phos-P	T-Phos-P	T-Phos-P	T-Phos-P	O-Phos-P
71-0312	Special	0.20	0.010	0.038	0.777	0.034	0.164	0.165	0.165	0.046
313	1-A	0.50	0.005	0.0	0.175	0.049	0.178	0.178	0.178	0.045
314	2	0.53	0.005	0.026	0.355	0.038	0.206	0.206	0.206	0.060

Notes:

Date 2-16-71 by Stephen D. Roth
Supervising Chemist