

August 9, 1974

Memo to: John Glynn

From: Dan Glantz

Subject: Blaine STP Survey



A survey of the Blaine treatment plant was made on June 11, 1974. Samples were composited on the half hour commencing at 0900 and ending at 1600.

The plant is fenced and the office, lab and yard are well maintained. The two sludge beds were cleared out and the operator informed me it is only necessary to use them about twice a year. However, overall, the plant does not appear to be doing the job.

Attached lab data shows poor reduction in solids and although there is a heavy Cl_2 residual, coliform readings are excessive. The chlorinator is auto/flash mix and, according to the specifications, is designed for 63 minutes contact. This, obviously, is not happening. The effluent flows immediately toward the harbor with practically no detention time, except as may be provided by high tide.

It is my understanding a grant is being applied for which should provide funds to bring this plant to the required standard.

DG:jmh

STP Survey Report Form

Efficiency Study

City Blaine Plant Type Primary Pop. Served 1800 Design Capacity 260
 Receiving Water Drayton Bay Perennial X Intermittent _____
 Date 6/11/74 Survey Period 0900-1600 Survey Personnel D. Glantz
 Comp. Sampling Frequency 1/2 hour Sampling Alequot 800 ml (adj. to flow)
 Weather Conditions (24 hr) Clear, warm Are facilities provided for complete by-
 pass of raw sewage? (wet well overflow) Yes _____ No/Frequency of bypass Depends on weather
 Reason for bypass Storm water Is bypass chlorinated? Yes _____ No X
 Was DOE Notified? _____ Discharge - Intermittent X Continuous _____

Plant Operation

Total flow 92,000 GPD How measured Recorder
 Maximum flow 120,000 GPD Time of Max. 1000
 Minimum flow 72,000 GPD Time of Min. 0900
 Pre Cl₂ 0 #/day Post Cl₂ 26 #/day

Field Results

Influent

Effluent

<u>15</u> Determinations	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp °C	15.5	14.0		15.0	16.0	14.5		15.0
pH (Units)	7.8	7.4		7.6	7.4	7.0		7.2
Conductivity (µmhos/cm ²)	650	400		575	650	450		600
Settleable Solids (mls/l)	11.0	5.0	7.3	6.7	Trace	0	0	0

Laboratory Results on Composites

	Influent	Effluent	% Reduction
Laboratory No.	<u>74-2543</u>	<u>2544</u>	
5-Day BOD ppm	<u>110</u>	<u>88</u>	<u>20%</u>
COD ppm	<u>205</u>	<u>154</u>	<u>25%</u>
T.S. ppm	<u>454</u>	<u>395</u>	<u>13%</u>
T.N.V.S. ppm	<u>249</u>	<u>222</u>	<u>11%</u>
T.S.S. ppm	<u>108</u>	<u>63</u>	<u>42%</u>
N.V.S.S. ppm	<u>17</u>	<u>10</u>	<u>41%</u>
pH (Units)	<u>7.6</u>	<u>7.3</u>	
Conductivity (µmhos/cm ²)	<u>690</u>	<u>690</u>	
Turbidity (JTU's)	<u>44</u>	<u>36</u>	

Laboratory Bacteriological Results

Lab No.	Sampling Time	Colonies/100 ml (MF)			Cl ₂ Residual	
		Total Coliform	Fecal Coliform	Fecal Strep	15"	3'
74- 2545	0900	>40,000	>4,000		.75	>1.0
2546	1000	>40,000	>4,000		.75	>1.0
2547	1100	>40,000	>4,000		.75	>1.0
2548	1200	>40,000	>4,000		.5	1.0
2549	1300	>40,000	>4,000		.5	>1.0
2550	1500	>40,000	>4,000		.5	>1.0

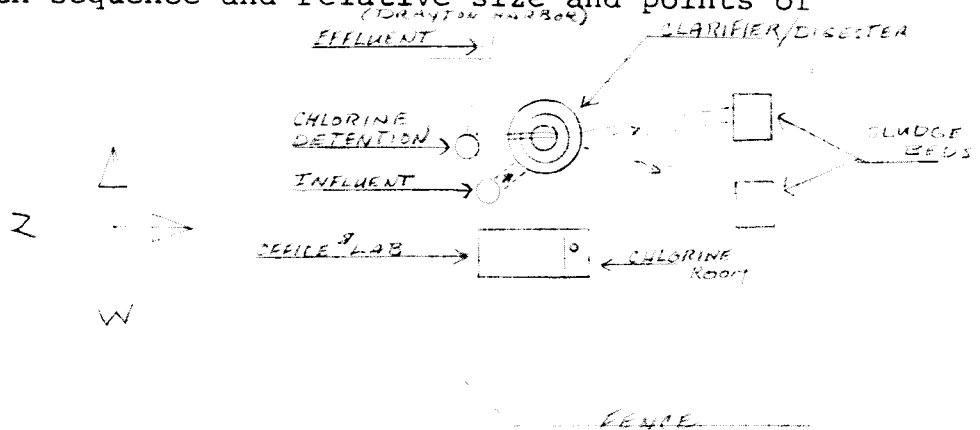
Additional Laboratory Results

NO ₃ -N ppm	-	.02	
NO ₂ -N ppm	-	ND	
NH ₃ -N ppm	-	(1)	
T. Kjeldahl-N ppm	-	(1)	
O-PO ₄ -P ppm	-	1.92	
T-PO ₄ -P ppm	-	14.0	

(1) Sample holding time expired

Operator's Name Traverse Skallman - Supt. Phone No. 332-8311 (City Hall)
John Mathers - Contract Oper. 332-6534 (Home)

Furnish a flow diagram with sequence and relative size and points of chlorination.



Type of Collection System

Combined Separate Both

Estimate flow contributed by surface or ground water (infiltration)

(During storm) 50,000 MGD

Plant Loading Information

Annual average daily flow rate (mgd)

Peak flow rate (mgd)

Dry 80,000 GPD

Dry 100,000 Gpd

Wet 100,000 GPD

Wet 500,000 GPD

COMMENTS: Mr. Skallman states application for funds to separate storm sewers

has been made.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

DATA SUMMARY

ORIGINAL TO:
D. GLANTZ.....
COPIES TO:
.....
.....
LAB FILES.....

Source BLAINE STP

Collected By D. GLANTZ

Date Collected 6-11-74

Goal, Pro./Obj. _____

Log Number:	74-2543	44	45	46	47	48	49	50			STORET
Station:	INF	EFF	0900	1000	1100	1200	1300	1500			
pH	7.6	7.3									00403
Turbidity (JTU)	44	36									00070
Conductivity (umhos/cm)@25°C	690	690									00095
COD	205	154									00340
BOD (5 day)	110	88									00310
Total Coliform (Col./100ml)	-	-	>4x10 ⁴	>4x10 ⁴	>4x10 ⁴	>4x10 ⁴	>4x10 ⁴	>4x10 ⁴			31504
Fecal Coliform (Col./100ml)	-	-	>4000	>4000	>4000	>4000	>4000	>4000			31616
NO3-N (Filtered)		.02									00620
NO2-N (Filtered)		ND									00615
NH3-N (Unfiltered)		-*									00610
T. Kjeldahl-N (Unfiltered)		-*									00625
O-PO4-P (Filtered)		1.92									00671
Total Phos.-P (Unfiltered)		14.0									00665
Total Solids	454	395									00500
Total Non Vol. Solids	249	222									
Total Suspended Solids	108	63									00530
Total Sus. Non Vol. Solids	17	10									

Note: All results are in PPM unless otherwise specified. ND is 'None Detected'
 Convert those marked with a * to PPB (PPM X 10⁻³) prior to entry into STORET
 * NOT ANALYZED due to heavy loading in this area and expiration of the holding time.
 Summary By Stephen P. Roll Date 7-17-74