

Memo To: Gerry Calkins & Howard Steeley

From: Darrel Anderson *DA*

Subject: Efficiency Study at Woodbrook Lagoon

Date: January 27, 1975

An efficiency study was conducted on Woodbrook Lagoon, Cowlitz County, on November 25, 1974. The lagoon area is fenced but one gate was open near the center of both lagoons and the east end fence is partially torn down.

Since there is no location for taking influent samples, effluent samples were taken every hour for five hours. The effluent samples show good disinfection, less than 10/100 mls., while suspended solids seemed to be high.

DA:ee  
Attachment

STP Survey Report Form

Efficiency Study

City Woodbrook Lagoon Plant Type Aerated lagoon Pop. Served 150 Design 600  
 Receiving Water Ostrander Creek Perennial X Intermittent \_\_\_\_\_  
 Date 11-25-74 Survey Period 1200 - 1600 hrs. Survey Personnel Darrel Anderson  
 Comp. Sampling Frequency every hour Sampling Alequot 1000 mls  
 Weather Conditions (24 hr) rain Are facilities provided for complete by-  
 pass of raw sewage? \_\_\_\_\_ Yes X No/Frequency of bypass \_\_\_\_\_  
 Reason for bypass \_\_\_\_\_ Is bypass chlorinated? \_\_\_\_\_ Yes \_\_\_\_\_ No  
 Was DOE Notified? \_\_\_\_\_ Discharge - Intermittent \_\_\_\_\_ Continuous \_\_\_\_\_

Plant Operation

Total flow 1.0 MGD How measured 90° V Notch Weir  
 Maximum flow \_\_\_\_\_ Time of Max. \_\_\_\_\_  
 Minimum flow \_\_\_\_\_ Time of Min. \_\_\_\_\_  
 Pre Cl<sub>2</sub> 0 #/day Post Cl<sub>2</sub> 2 #/day

Field Results

Influent

Effluent

Determinations	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp °C					9	9		9
pH (Units)					7.4	7.0		7.2
Conductivity (µmhos/cm <sup>2</sup> )					550	525		525
Settleable Solids (mls/l)					NONE		--	--

Laboratory Results on Composites

Influent

Effluent

% Reduction

Laboratory No.	Influent	Effluent	% Reduction
		<u>74-4667</u>	
5-Day BOD ppm		<u>24</u>	
COD ppm		<u>50</u>	
F.S. ppm		<u>242</u>	
F.N.V.S. ppm		<u>137</u>	
F.S.S. ppm		<u>35</u>	
V.V.S.S. ppm		<u>15</u>	
pH (Units)		<u>7.4</u>	
Conductivity (µmhos/cm <sup>2</sup> )		<u>280</u>	
Turbidity (JTU's)		<u>12</u>	

Laboratory Bacteriological Results

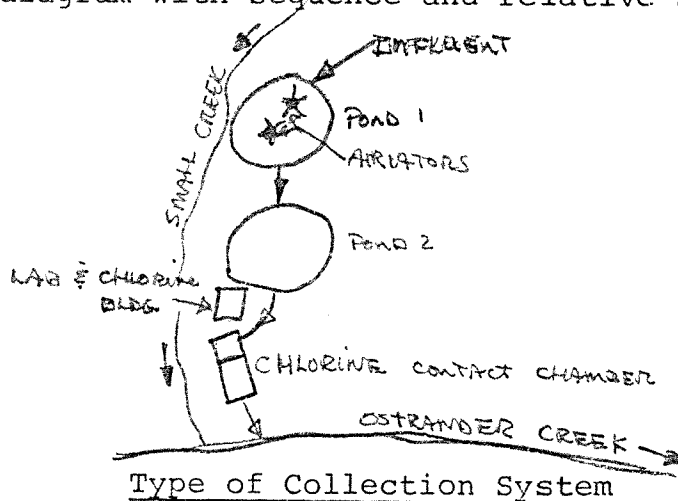
Lab No.	Sampling Time	Colonies/100 ml (MF)			Cl <sub>2</sub> Residual
		Total Coliform	Fecal Coliform	Fecal Strep	
74-4668	1200	< 20	< 10	- -	0.15
4669	1300	Est. 20	< 10	- -	0.15
4670	1400	< 20	< 10	- -	0.15

Additional Laboratory Results

NO <sub>3</sub> -N ppm -	4.14	
NO <sub>2</sub> -N ppm -	.06	
NH <sub>3</sub> -N ppm -	.03	
T. Kjeldahl-N ppm -	1.82	
O-PO <sub>4</sub> -P ppm -	9.0	
T-PO <sub>4</sub> -P ppm -	24.0	

Operator's Name Cowlitz County Health District Phone No. 403-6960

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



Combined  Separate  Both

Estimate flow contributed by surface or ground water (infiltration)

Unknown

MGD

Plant Loading Information

Annual average daily flow rate (mgd)

Peak flow rate (mgd)

Dry \_\_\_\_\_

Dry \_\_\_\_\_

Wet \_\_\_\_\_

Wet \_\_\_\_\_

COMMENTS: \_\_\_\_\_

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

DATA SUMMARY

ORIGINAL TO: . A. W. Moore . . . . .  
COPIES TO:  
.....  
.....  
LAB FILES .....

Source Woolbrook Lagoon STP

Collected By A. W. M.

Date Collected 11-25-74

Goal, Pro./Obj. \_\_\_\_\_

Log Number:	74-4667	68	69	70									STORET
Station:	STP	1200	1300	1400									
pH	7.4												00403
Turbidity (JTU)	12.												00070
Conductivity (µmhos/cm)@25°C	280.												00095
COD	50.												00340
BOD (5 day)	24.												00310
Total Coliform (Col./100ml)	-	<20	<sup>EST</sup> 20	<20									31504
Fecal Coliform (Col./100ml)	-	<10	<10	<10									31616
NO3-N (Filtered)	4.14												00620
NO2-N (Filtered)	.06												00615
NH3-N (Unfiltered)	.03												00610
T. Kjeldahl-N (Unfiltered)	1.82												00625
O-PO4-P (Filtered)	9.0												00671
Total Phos.-P (Unfiltered)	24.0												00665
Total Solids	242												00500
Total Non Vol. Solids	137												
Total Suspended Solids	35												00530
Total Sus. Non Vol. Solids	15												
COLOR	110.												

Note: All results are in PPM unless otherwise specified. ND is "None Detected"  
Convert those marked with a \* to PPB (PPM X 10<sup>3</sup>) prior to entry into STORET

Summary By Stephen D. Roll Date 12-16-74