

August 15, 1974

WA-34-2060

Memo to: Rhys Sterling and Howard Bunten
From: Shirley Prescott *SP*
Subject: Efficiency Survey Conducted at St. John STP.



Scott Jeane and I conducted a routine study of the St. John STP on 5/1/74. Influent and effluent were composited hourly beginning at 1000 hours. The field and laboratory results are shown on the attached report forms.

The plant area was fenced and equipment appeared to be functioning satisfactorily. However, there was a great lack of "housekeeping" which can possibly be attributed to the fact that Mr. Andor, plant operator, also serves his town as everything from dog catcher to meter reader or whatever occasion arises. There was some laboratory equipment visible but it did not appear to have had any use in recent months.

While Mr. Andor's housekeeping left something to be desired, he did seem to have a good knowledge of the plant and its capacities.

The plant was built in 1951 with a capacity of 400 gallons per minute. The population of St. John is 420 people but during the school year the population raises to 600.

SP:jmh

STP Survey Report Form

Efficiency Study

Trickling

City St. John Plant Type Filter Pop. Served 400-600 Design 400 GPM
Capacity

Receiving Water Pleasant Creek Perennial Intermittent _____

Date 5/1/74 Survey Period 7 hours Survey Personnel S. Jeane - S. Prescott

Comp. Sampling Frequency Hourly Sampling Alequot 1000 ml

Weather Conditions (24 hr) Dry-windy Are facilities provided for complete by-pass of raw sewage? Yes _____ No/Frequency of bypass Emergency only

Reason for bypass _____ Is bypass chlorinated? _____ Yes No

Was DOE Notified? _____ Discharge - Intermittent _____ Continuous _____

Plant Operation

Total flow 150,000 GPD How measured Parshall Flume

Maximum flow .145 MGD Time of Max. 1015

Minimum flow 1 MGD Time of Min. 1400

Pre Cl₂ _____ #/day Post Cl₂ 3 - 4 #/day

Field Results

Influent

Effluent

<u>7</u> Determinations	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp °C	15	13		14	14	12		12
pH (Units)	8	7.8		7.8	8.3	8		8
Conductivity (µmhos/cm ²)	820	690		750	850	750		800
Settleable Solids (mls/l)	11	.4	4.3		0	0	0	0

Laboratory Results on Composites

	Influent	Effluent	% Reduction
Laboratory No.	<u>74-1436</u>	<u>1437</u>	
5-Day BOD ppm	<u>76</u>	<u>40</u>	<u>47</u>
COD ppm	<u>106</u>	<u>67</u>	<u>37</u>
T.S. ppm	<u>450</u>	<u>427</u>	<u>5</u>
T.N.V.S. ppm	<u>270</u>	<u>272</u>	<u>--</u>
T.S.S. ppm	<u>83</u>	<u>37</u>	<u>55</u>
N.V.S.S. ppm	<u>8</u>	<u>3</u>	<u>63</u>
pH (Units)	<u>7.8</u>	<u>7.8</u>	
Conductivity (µmhos/cm ²)	<u>670</u>	<u>730</u>	
Turbidity (JTU's)	<u>22</u>	<u>17</u>	

Laboratory Bacteriological Results

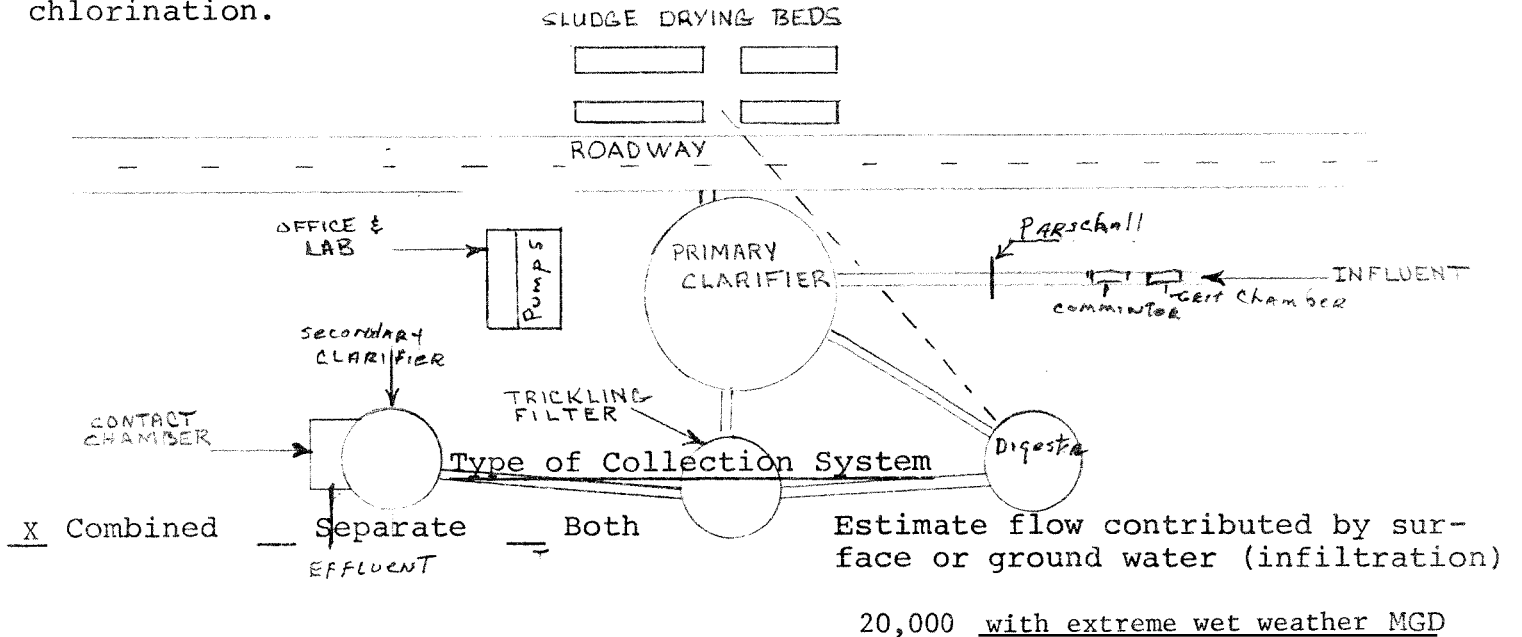
Lab No.	Sampling Time	Colonies/100 ml (MF)			Cl ₂ Residual	
		Total Coliform	Fecal Coliform	Fecal Strep	15"	3 min
	Samples were not delivered from airport until too late to analyze.				.4	.75
					.5	1.0
					.4	.75
					.3	.75
74-1818	5/23/71	<20	<10			

Additional Laboratory Results

NO ₃ -N ppm	-	4.10	
NO ₂ -N ppm	-	.20	
NH ₃ -N ppm	-	8.8	
T. Kjeldahl-N ppm	-	10.6	
O-PO ₄ -P ppm	-	1.10	
T-PO ₄ -P ppm	-	6.38	

Operator's Name Tony Andor Phone No. 648-3413

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



Plant Loading Information

Annual average daily flow rate (mgd)	Peak flow rate (mgd)
Dry <u>150,000 GPD</u>	Dry <u>400 GPM, 576,000 GPD</u>
Wet _____	Wet _____

COMMENTS: _____

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

ORIGINAL TO:
G. S. JENSEN....
COPIES TO:
.....
.....
LAB FILES

DATA SUMMARY

Source St. Johns STP

Collected By G.S.J.

Date Collected 5-1-74

Soil, no./Obj. _____

Log Number:	74-1436	37	38	39	40	41	STORET
Station:	WE	EE					
pH	7.8	7.8					
Turbidity (JTU)	22	17					070
Conductivity (umhos/cm)@25°C	670	730					0095
COD	106	67					00340
BOD (5 day)	76	40					00310
Total Coliform (Col./100ml) *			-	-	-	-	31504
Fecal Coliform (Col./100ml) *			-	-	-	-	31616
NO3-N (Filtered)		4.10					00620
NO2-N (Filtered)		.20					00615
NH3-N (Unfiltered)		2.8					00610
T Kjeldahl-N (Unfiltered)		10.6					00625
Ortho-P (Filtered)		1.10					00671
Total Phos -P (Unfiltered)		6.38					00665
Total Solids	450	427					00500
Total Non Vol. Solids	270	272					
Total Suspended Solids	83	37					00530
Total Sus. Non Vol. Solids	8	3					
Chlorides	11.	11.					

Note: All results are in PPM unless otherwise specified ND is "None Detected"
Convert those marked with a * to PPB (PPM X 10³) prior to entry into STORET

* ARRIVED TOO LATE TO RUN

Summary By Stephen P. Roll Date 5-15-74

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

ORIGINAL TO: .GLANTE.....
COPIES TO:
.....
.....
LAB FILES.....

DATA SUMMARY

Source St Johns STP

Collected By GLANTE

Date Collected 5/23/74

Goal, Pro./Obj. _____

Log Number: 74-1818

											STORET
Station:											
pH											00403
Turbidity (JTU)											00070
Conductivity (umhos/cm)@25°C											00095
COD											00340
BOD (5 day)											00310
Total Coliform (Col./100ml)	<20										31504
Fecal Coliform (Col./100ml)	<10										31616
NO3-N (Filtered)											00620
NO2-N (Filtered)											00615
NH3-N (Unfiltered)											00610
T. Kjeldahl-N (Unfiltered)											00625
O-PO4-P (Filtered)											00671
Total Phos.-P (Unfiltered)											00665
Total Solids											00500
Total Non Vol. Solids											
Total Suspended Solids											00530
Total Sus. Non Vol. Solids											

Note: All results are in PPM unless otherwise specified. ND is "None Detected"
Convert those marked with a * to PPB (PPM X 10³) prior to entry into STORET

Summary By Stephen P. Nell Date 5-30-74