

MEMORANDUM

January 20, 1976

To: Howard Steeley and Gerry Calkins

From: Scott Jeane

Subject: Columbia River High School, Clark County

I conducted a routine efficiency study on the above plant on September 9, 1975. The small package plant is extended aeration serving only the school (1200 students and faculty). Summer recess of classes presented a past problem in plant loading. The plant is to be superceded in 1976 by connection to the new Salmon Creek STP. Influent sampling was initiated at 1130 hr. after the operator arrived and shut off the sludge return which discharges upstream of the comminutor.

No flow recording equipment is provided. The odor sprays on the aeration chamber are not chlorinated and release aerosols adjacent to a school playground and parking lot. The clarifier did not have a surface barrier to prevent floating solids from being carried over into the contact chamber or outfall.

Flows were measured by the operator over 16 hours (no flow observed between 0100 hr and 080 hr) using a bucket stopwatch. Total flow was .077 MGD.

The plant's effluent is meeting permit requirements for BOD (<5 mg/l), T.S.S. (5 mg/l), fecal coliform (20 colonies/100 ml), and pH (6.8). The plant's discharge is approximately twice the maximum required by the permit. Nutrient levels were rather high for $\text{NO}_3\text{-N}$ at 39 mg/l while $\text{NH}_3\text{-N}$ was only 3.1 mg/l. Other loading and parameter information is shown on the attached sheet.

The supervising operator was helpful and impressive in his knowledge and operation of the plant.

The single most important environmental change that will take place when this plant's effluent is picked up by the new plant will be the elimination of high nutrients and potential health hazard waste from Salmon Creek. The creek is a playground for the more adventurous local children.

GSJ:ee

STP Survey Report Form

Efficiency Study

City Columbia River High School Plant Type Extended Aeration Pop. Served _____ Design Capacity _____
 Receiving Water Salmon Creek Perennial X Intermittent _____

Date 9/9/75 Survey Period 1000 - 1430 hrs. Survey Personnel Scott Jeane

Comp. Sampling Frequency _____ Sampling Alequot _____

Weather Conditions (24 hr) overcast - had been raining Are facilities provided for complete by-

pass of raw sewage? Yes No / Frequency of bypass _____

Reason for bypass _____ Is bypass chlorinated? Yes No

Was DOE Notified? _____ Discharge - Intermittent _____ Continuous _____

Plant Operation

Total flow .077 MGD How measured Bucket and stopwatch by operator

Maximum flow 20,000 Time of Max. 1300 hrs.

Minimum flow 3,500 Time of Min. 1700 hrs and 2400 hrs.

Pre Cl₂ _____ #/day Post Cl₂ _____ #/day

Field Results

Influent

Effluent

Determinations	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp °C	23	21		22	21	19.1		20.0
pH (Units)	7.4	6.8		7.2	7.0	6.8		6.8
Conductivity (umhos/cm ²)	950	650		710	850	650		730
Settleable Solids (mls/l)	--	--	--	--	--	--	--	--

Laboratory Results on Composites

Laboratory No.	Influent	Effluent	% Reduction	lbs/day
	4183	4184		
5-Day BOD ppm	810	<5.	99%	3.21
COD ppm	1070	14.		
T.S. ppm	992	483		
F.N.V.S. ppm	387	291		
F.S.S. ppm	298	5	98%	3.21
T.V.S.S. ppm	14	<1.		
pH (Units)	7.9	7.2		
Conductivity (umhos/cm ²)	710	640.		
Alkalinity (JTU's)	120	8.0		

Laboratory Bacteriological Results

Lab No.	Sampling Time	Colonies/100 ml (MF)			Cl ₂ Residual	
		Total Coliform	Fecal Coliform	Fecal Strep	3 min.	
4185	1000	20 Est.	<10		0.5	- 1.0
4186	1130	Sample bottle broken			0.5	- 1.1
4187	1430	20 Est.	<10		0.5	- 1.2

Additional Laboratory Results

		#/day
NO ₃ -N ppm	39.0	25.0
NO ₂ -N ppm	0.10	.06
NH ₃ -N ppm	3.1	1.99
T. Kjeldahl-N ppm	2.08	1.33
O-PO ₄ -P ppm	2.3	1.47
T-PO ₄ -P ppm	2.3	1.47

Operator's Name Wesley Miller Phone No. _____

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) _____ MGD

Plant Loading Information

Annual average daily flow rate (mgd) Peak flow rate (mgd)
 Dry _____ Dry _____
 Wet _____ Wet _____

COMMENTS: Plant influent flow fluctuates highly with heavy flow near lunch time. Plant is to be removed and sewage collected and treated by the new Salmon Creek STP in early 1976.