

December 10, 1973

State of  
Washington  
Department  
of Ecology



Memo to: Gerry Calkins

From: Ron Devitt

Subject: Castle Rock Sewage Treatment Plant Survey.

On October 10, 1973, an eight hour efficiency survey was run on the Sewage Treatment Plant at Castle Rock.

Housekeeping was good. Don Curtis, the new operator is full of enthusiasm and anxious to learn. He is looking forward to expansion of the existing plant. Gibbs and Olson Engineers are conducting an infiltration survey, which will probably result in repair and/or replacement of the collection lines.

The pH probe was broken and no field data was obtained for this parameter.

At 1300 hours, a petroleum substance (paint thinner?) came to the plant. Because of the confined nature of the influent channel and poor ventilation, any explosive or toxic chemical presents a serious safety hazard. The odor persisted for about an hour.

At 1530 hours, while checking flow charts, it became apparent that the flow recorder was operating in reverse, e.g. highest flows were reported to be after midnight. Don and I tried to calibrate the meter. It appeared that it was working properly the rest of the day. Erroneous flow data had been reported for approximately the last year.

RCD:jmh

STP SURVEY REPORT FORM

(EFFICIENCY STUDY)

City Castle Rock Plant Type T. Filter Population 1500 Design 5000  
 Served Capacity  
 Receiving Water Cowlitz River Engineer H. Steeley  
 Date October 10, 1973 Survey Period 0930-1730 hours Survey Personnel R.C. Devitt  
 Comp. Sampling Frequency 1/2 hour Weather Conditions Cool-foggy  
 (last 48 hours)  
 Sampling Alequot 1000 mls.

PLANT OPERATION

Total Flow Flow meter not working until 1530 hrs. How Measured \_\_\_\_\_  
 Max. (Flow) .16 Time of Max. 1700 hours Min. .14 Time of Min. 1600-1630 hrs.  
 Pre Cl<sub>2</sub> NA #/day Post Cl<sub>2</sub> 11.5 #/day

FIELD RESULTS

Influent

Final Effluent

13 Determinations

	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp. °C	18.8	17.4	18.3	18.3	17.5	16.1	16.9	17.0
* pH								
Conductivity (umhos/cm)	600	420	540	500	590	500	560	500
Settleable Solids	17	8	14	16	.2	.1	.14	.1

\*pH probe damaged.

LABORATORY RESULTS ON COMPOSITE IN PPM

Laboratory Number	Influent	Effluent	% Reduction
73-3704	73-3704	73-3705	
5-Day BOD	220	56	75%
COD	550	110	80%
T.S.	563	360	36%
T.N.V.S.	286	251	12%
T.S.S.	289	59	79%
N.V.S.S.	14	0	> 99%
pH	7.7	7.4	
Conductivity	600	680	
Turbidity	65	30	
Color	400	265	

BACTERIOLOGICAL RESULTS

Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> added to sample in bottle. After \_\_\_\_\_ min.

LAB #	SAMPLING TIME	COLONIES/100 MLS (MF)		15 sec. 3 min. Cl Residual	
		Total	Fecal	ppm	
73-3706	1030	<400	<200	.15	.75
3707	1130	<400	<200	.2	.75
3708	1315	<400	<200	.3	1.0
3709	1400	<400	<200	.2	.75
3710	1630	<400	<200	.3	1.0

Operator's Name Don Curtis Phone # \_\_\_\_\_

Comments: Trickling Filter Effluent

Temperature	17.0	17.8
Conductivity	550	550
Settleable Solids	2.0	2.0
Time	1000 hrs.	1300 hrs.

Primary Effluent

Temperature	17.0	17.8
Conductivity	550	550
Settleable Solids	Nil	.5
Time	1000 hrs.	1300 hrs.

Nutrients

	NO <sub>3</sub> -N (fil)	NO <sub>2</sub> -N (fil)	NH <sub>3</sub> -N (unfil)	T-Kjeldahl-N (unfil)	O-PO <sub>4</sub> -P (fil)	Total Phos-P (unfil)
Influent	4.05	<.01	20.8	22.8	13.9	18.3
Effluent	.05	<.01	.19.3	30.2	13.1	13.2