Publication No. 74-e07

September 3, 1974

Memo to: Ted Trepanier

From: Hans Cregg

Subject: Holiday Inn Efficiency Survey

On August 8, 1974, an efficiency study was conducted at the Holiday Inn Wastewater Treatment Plant located in Seattle (across from the Duwamish Drive In).

The operator was quite ignorant regarding the workings of his plant. It is difficult to visualize how he could have run an efficient operation in the past. The treatment plant looked rundown and evidently has received only the bare minimum of care and attention. The laboratory results obtained from the survey tend to confirm this hypothesis. (See attached sheet for reductions and coliform level.) It becomes readily apparent that the treatment plant rates last on Holiday Inn's priorities.

HC:jmh

STP Survey Report Form

Efficiency Study

City Holiday Inn STP Plant Type PACKAGE AERATION Pop. Served _____ Design Capacity _____

Receiving Water Duwamish River Perennial X Intermittent _____

Date 8/7/74 Survey Period 7 Hours Survey Personnel H. J. Cregg

Comp. Sampling Frequency _____ Sampling Alequot 1000 mls.

Weather Conditions (24 hr) Sunny 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 _____ How measured _____

Maximum flow _____ Time of Max. _____

Minimum flow _____ Time of Min. _____

Pre Cl_2 _____ #/day Post Cl_2 3 #/day

Field Results

___Determinations	Influent Max.	Influent Min.	Influent Mean	Influent Median	Effluent Max.	Effluent Min.	Effluent Mean	Effluent Median
Temp °C	23.0	22.0		22.0	23.0	22.0		23.0
pH (Units)	7.7	7.5		7.6	7.6	7.5		7.6
Conductivity (µmhos/cm²)	750	650		700	700	650		700
Settleable Solids (mls/l)	110	100	103	100	100	90	93	90

Laboratory Results on Composites

	Influent	Effluent	% Reduction
Laboratory No.	74-3253	74-3254	
5-Day BOD ppm	< 200	< 200	0
COD ppm	295	295	0
T.S. ppm	532	488	8
T.N.V.S. ppm	223	209	7
T.S.S. ppm	169	165	3
N.V.S.S. ppm	12	10	8
pH (Units)	7.8	7.6	
Conductivity (µmhos/cm²)	610	550	
Turbidity (JTU's)	42	43	

Laboratory Bacteriological Results

Lab No.	Sampling Time	Colonies/100 ml (MF) Total Coliform	Fecal Coliform	Fecal Strep	Cl_2 Residual
74-3255	0900	$>4 \times 10^4$	>4000		None Detected
3256	1200	$>4 \times 10^4$	>4000		" "
3257	1400	$>4 \times 10^4$	>4000		" "
3258	1500	$>4 \times 10^4$	>4000		" "

Additional Laboratory Results

NO_3-N ppm -	None Detected
NO_2-N ppm -	None Detected
NH_3-N ppm -	19.4
T. Kjeldahl-N ppm -	36.7
O-PO_4-P ppm -	6.8
T-PO_4-P ppm -	15.4

Operator's Name_____ 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)

Dry_____

Wet_____

Peak flow rate(mgd)

Dry_____

Wet_____

COMMENTS:_____

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

ORIGINAL TO: H. Greer
COPIES TO:
LAB FILES

DATA SUMMARY

Source Holiday Inn STP Collected By HJC

Date Collected _____ Goal, Pro./Obj. _____

Log Number: 74- 3253	54	55	56	57	58					STORET
Station:	INF	Eff	0900	1200	1400	1500				
pH	7.8	7.6								00403
Turbidity (JTU)	42.	43.								00070
Conductivity (μmhos/cm)@25°C	610.	550.								00095
COD	295	295								00340
BOD (5 day)	<200	<200								00310
Total Coliform (Col./100ml)	—	—	$>4\times10^4$	$>4\times10^4$	$>4\times10^4$	$>4\times10^4$				31504
Fecal Coliform (Col./100ml)	—	—	>4000	>4000	>4000	>4000				31616
NO3-N (Filtered)		ND								00620
NO2-N (Filtered)		ND								00615
NH3-N (Unfiltered)		19.4								00610
T. Kjeldahl-N (Unfiltered)		36.7								00625
O-PO4-P (Filtered)		6.8								00671
Total Phos.-P (Unfiltered)		15.4								00665
Total Solids	532	488								00500
Total Non Vol. Solids	223	209								
Total Suspended Solids	169	165								00530
Total Sus. Non Vol. Solids	12	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

Summary By Stephen D. Roll Date 8-21-74