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MEMORANDUM

March 23, 1976

To: John Glynn

From: Douglas Houck

Subject: Mt. Vernon STP
Class II Inspection

On November 20 John Glynn, Phil Williams and I met with Mt. Vernon's sewage treatment plant personnel. A tour of the plant was given after which composite samplers were set up to take 24 hour composites of the influent and effluent. A 250 ml sample was taken every 30 minutes by both samplers. The location of the influent sampler was just before the comminutor. The location of the effluent sampler was in a wet well located right after the chlorine contact chamber. The pH meet their NPDES permit requirements and there was no way to check the flow measuring device. They use an in-line turbine type meter. The "Weir" at the end of the chlorine contact chamber was broad-crested and had a high approach velocity. Another problem was the scum line was situated so close to the weir that it was impossible to take a head reading that was not affected by the draw down of the discharging effluent. Although two bacteriological samples were taken they did not arrive at DOE's laboratory in time for analyses. A sample of the plant's distilled water was taken to be analyzed for copper. The plant's laboratory procedures were reviewed and found acceptable. The laboratory did have a few problems. They were experiencing a larger than normal D.O. drop in their BOD dilution water. They were not using a blank fecal coliform sample to check their sterilization technique and they kept their thiosulfate in a clear container located near a window.

The next day Phil Williams and I returned to pick up the samples and split the composites. Due to a sampler malfunction the influent sample was only a 13 hour composite. The following table shows both DOE's and Mt. Vernon's results along with the weekly average limitations.

	DOE		Mt. Vernon		NPDES Permit
	Influent	Effluent	Influent	Effluent	Effluent
BOD_5 (mg/1)	160	13	164	8	45
T.S.S. (mg/1)	210	10	269	13	45

The results show that they are well within their permit limitations.

DH:ee

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

ORIGINAL TO: DH

COPIES TO:

LAB FILES

DATA SUMMARY

Source Mt. Vernon STP Collected By D. Houck

Date Collected 11-20/21-75

Log Number:	75-5415	16	17	18	19						
Station:	0350	1000	INF	EFF	DIST. H_2O						
pH											
Turbidity (JTU)											
Conductivity (umhos/cm)@25°C											
COD											
BOD (5 day)			160.	13.							
Total Coliform (Col./100ml)											
Fecal Coliform (Col./100ml)	*2	*2									
NO3-N (Filtered)											
NO2-N (Filtered)											
NH3-N (Unfiltered)											
T. Kjeldahl-N (Unfiltered)											
O-PO4-P (Filtered)											
Total Phos.-P (Unfiltered)											
Total Solids											
Total Non Vol. Solids											
Total Suspended Solids			214	10							
Total Sus. Non Vol. Solids											
Copper					<.02						
Chlorides					→						

Note: All results are in PPM unless otherwise specified. ND is "None Detected"

* Rejected due to possible contamination of samples arrival too late in the week

Summary By Irene D. Dell Date 12-1-75

Efficiency Study

City Mt. Vernon Plant Type Secondary Pop. Served _____ Design Capacity _____

Receiving Water Skagit River Perennial X Intermittent _____

Date 11-20/21-75 Survey Period 24 hrs. Survey Personnel Houck, Williams, Glynn

Comp. Sampling Frequency 30 min. Sampling Alequot 250 ml

Weather Conditions (24 hr) clear 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 _____ How measured _____

Maximum flow _____ Time of Max. _____

Minimum flow _____ Time of Min. _____

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

Field Results

Determinations	Influent Max.	Influent Min.	Influent Mean	Influent Median	Effluent Max.	Effluent Min.	Effluent Mean	Effluent Media
Temp °C								
pH (Units)								
Conductivity (μmhos/cm²)								
Settleable Solids (mls/l)								

Laboratory Results on Composites

	Influent	Effluent	% Reduction	lbs/day
Laboratory No.	75-5417	75-5418		
5-Day BOD ppm	160	13	92%	
COD ppm				
T.S. ppm				
T.V.S. ppm				
T.S.S. ppm	210	10	95%	
T.V.S.S. ppm				
pH (Units)				
Conductivity (μmhos/cm²)				
Turbidity (JTU's)				

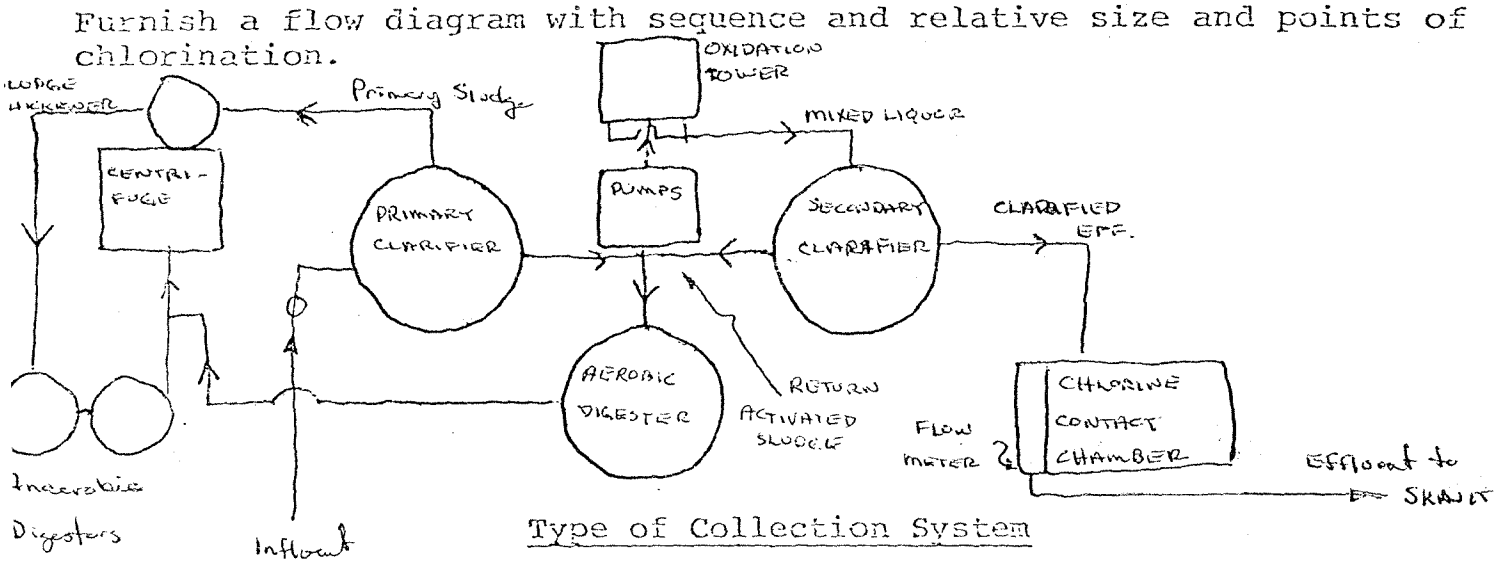
Lab No.	Sampling Time	Colonies/100 ml (MF) Total Coliform	Fecal Coliform	Fecal Strep	Cl_2 Residual

Additional Laboratory Results

NO_3-N ppm -	Cu (distilled H_2O) - <0.02 mg/l
NO_2-N ppm -	
NH_3-N ppm -	
T. Kjeldahl-N ppm -	
O-PO_4-P ppm -	
T-PO_4-P ppm -	

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 (infiltratic

_____ MGD

Plant Loading Information

Annual average daily flow rate(mgd)

Dry _____

Wet _____

Peak flow rate(mgd)

Dry _____

Wet _____

COMMENTS: _____