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Memo to: James Milton

From: Hans Cregg

Subject: Mabton STP



On February 27, 1974, an efficiency study was conducted at the Mabton Sewage Treatment Plant. The plant is operated in an efficient and conscientious manner. The operator, although he possesses very little test equipment, makes good use of those items and methods at his disposal. Lab results indicate a 76% reduction in BOD and an extremely low coliform count (see data summary). There is very little reduction in total solids and COD. Any recommendations for improvement should focus upon these two parameters.

HC:jmh

Efficiency Study

City Mabton Plant Type Primary Pop. Served 1056 Design 1050  
 Receiving Water Yakima River Perennial X Intermittent \_\_\_\_\_  
 Capacity \_\_\_\_\_  
 Date 2/27/74 Survey Period 8 hours Survey Personnel Hans Cregg  
 Comp. Sampling Frequency 1/2 hour Sampling Alequot 1000 mls.  
 Weather Conditions (24 hr) Fair Are facilities provided for complete by-  
 pass of raw sewage? \_\_\_\_\_ Yes X No/Frequency of bypass Never occurred  
 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<sub>2</sub> \_\_\_\_\_ #/day Post Cl<sub>2</sub> 15 #/day

Field Results

Determinations	Influent				Effluent			
	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp °C	13.0	12.0		13.0	14.0	12.0		13.0
pH (Units)	7.6	7.0		7.4	7.2	6.4		7.2
Conductivity (µmhos/cm <sup>2</sup> )	1400	1200			1400	1250		1300
Settleable (mls./l)	6	5	5.5	5	.7	.3	.5	3

Laboratory Results on Composites

	Influent	Effluent	% Reduction
Laboratory No.	<u>74-584</u>	<u>74-585</u>	
5-Day BOD ppm	<u>180</u>	<u>43</u>	<u>76</u>
COD ppm	<u>307</u>	<u>331</u>	<u>No reduction</u>
T.S.S. ppm	<u>648</u>	<u>571</u>	<u>12</u>
T.N.V.S.S. ppm	<u>396</u>	<u>380</u>	<u>4</u>
T.S.S. ppm	<u>184</u>	<u>92</u>	<u>50</u>
N.V.S.S. ppm	<u>32</u>	<u>13</u>	<u>60</u>
pH (Units)	<u>7.5</u>	<u>7.3</u>	
Conductivity (µmhos/cm <sup>2</sup> )	<u>910</u>	<u>860</u>	
Turbidity (JTU's)	<u>81</u>	<u>55</u>	

Lab No.	Sampling Time	Coliforms/100 ml (MF)			Cl <sub>2</sub> Residual	
		Total Coliform	Fecal Coliform	Fecal Strep	15 sec	3 min.
74-586	0900	< 20	< 10		.2	1.0
587	1100	< 20	< 10		.3	1.0
588	1330	< 20	< 10		.1	.75
589	1430	< 20	< 10		.1	.75
590	1500	< 20	< 10		.1	.75
591	1530	< 20	< 10		.3	1.0

Additional Laboratory Results

NO <sub>3</sub> -N ppm	-	---
NO <sub>2</sub> -N ppm	-	---
NH <sub>3</sub> -N ppm	-	21.3
T. Kjeldahl-N ppm	-	28.9
O-PO <sub>4</sub> -P ppm	-	---
T-PO <sub>4</sub> -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 rate  
face of area

Plant Loading Information

\_\_\_\_\_ Average daily flow rate (mgd)

\_\_\_\_\_ Peak flow rate (mgd)

Dry \_\_\_\_\_

Wet \_\_\_\_\_

