

Memo To: Gerry Calkins

From: Allen Moore *AM*

Subject: Ryderwood STP Efficiency Study

Date: January 14, 1975

On November 30, 1974, a grab sample was taken at the Ryderwood S.T.P.

The flow was a very slow 19 gpm which was not sufficient to even drive the sprinkler arms of the trickling filter, even though the low BOD shows the plant was operating very well.

The Postmaster at Ryderwood said there is a bad infiltration problem. This was born out when I visited the STP again on December 10, 1974. The flow at this time was at least 10 times greater than the earlier low flow period.

Also the Postmaster was very concerned about how the community was going to be able to raise enough money to improve the system

The high chlorine residual of greater than 1.0 ppm could be bad biologically in Becker Creek because of the low flow of the creek.

AM:ee
Attachment

STP Survey Report Form

Efficiency Study

Trickling

City Ryderwood Plant Type Filter Pop. Served 280 Design Capacity _____

Receiving Water Becker Creek Perennial Intermittent _____

Date 30 Oct. 74 Survey Period _____ Grab _____ Survey Personnel Allen Moore

Comp. Sampling Frequency _____ Sampling Alequot _____

Weather Conditions (24 hr) Cloudy Are facilities provided for complete by-pass of raw sewage? Yes _____ No/Frequency of bypass _____

Reason for bypass Infiltration-rain Is bypass chlorinated? _____ Yes No

Was DOE Notified? _____ Discharge - Intermittent Continuous _____

Plant Operation

Total flow 19 GPM = 27,260 GPD How measured By hand

Maximum flow _____ Time of Max. _____

Minimum flow _____ Time of Min. _____

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

Field Results

Influent

Effluent

Determinations	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp °C								11.5
pH (Units)								6.6
Conductivity (µmhos/cm ²)								170
Settleable Solids (mls/l)								<.1

Laboratory Results on Composites

Laboratory No.	Influent	Effluent	% Reduction
		<u>74-4325</u>	
5-Day BOD ppm		<u>20.0</u>	
COD ppm		<u>46.0</u>	
F.S. ppm		<u>125</u>	
F.N.V.S. ppm		<u>61</u>	
F.S.S. ppm		<u>.5</u>	
V.V.S.S. ppm		<u>4</u>	
pH (Units)		<u>6.6</u>	
Conductivity (µmhos/cm ²)		<u>150</u>	
Turbidity (JTU's)		<u>16</u>	

Laboratory Bacteriological Results

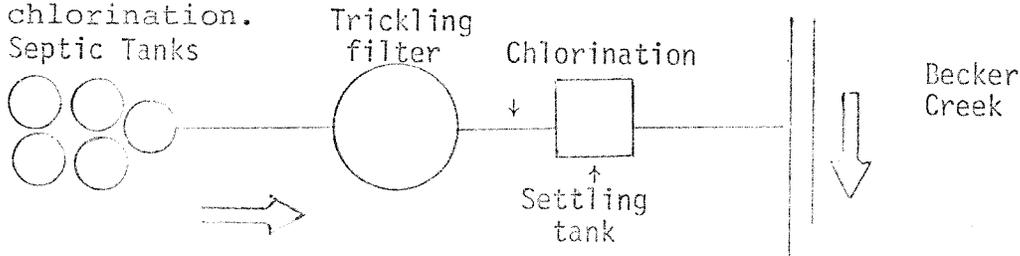
Lab No.	Sampling Time	Colonies/100 ml (MF)			Cl ₂ Residual
		Total Coliform	Fecal Coliform	Fecal Strep	
74-4325	1330	340 Est.	<1		>1.0

Additional Laboratory Results

NO ₃ -N ppm -	2.4
NO ₂ -N ppm -	ND
NH ₃ -N ppm -	2.02
T. Kjeldahl-N ppm -	6.0
O-PO ₄ -P ppm -	1.18
T-PO ₄ -P ppm -	1.45

Operator's Name John Held Phone No. 295-7658

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)

.2 MGD

Plant Loading Information

Annual average daily flow rate(mgd)

Peak flow rate(mgd)

Dry .02 MGD

Dry _____

Wet .2 MGD

Wet _____

COMMENTS: _____

