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STATE OF
WASHINGTON

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Governor

DEPARTMENT OF ECOLOGY

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MEMORANDUM

July 14, 1977

To: Gary Rothwell

From: Douglas Houck

Subject: Weyerhaeuser at Longview Class II Inspection

After conducting a Class II inspection on the Weyerhaeuser pulp mill at Longview I've concluded and recommend the following:

1. At the time of the survey the pulp mill did not meet their NPDES daily average permit conditions for either combined BOD_5 or T.S.S.

2. More stringent control of their total chlorine residual level in their sanitary effluent should be initiated along with an adequate mixing method.

3. The six-foot Parshall flume used to measure the flow entering the primary clarifier appears inadequate.

4. The pulp mill's automatic samplers for both primary and secondary clarifiers gave comparable results for BOD_5. The automatic sampler on the primary clarifier gave comparable results for T.S.S. while the sampler on the secondary clarifier did not.

On April 5-6, 1977, Greg Cloud and myself conducted a Class II inspection on the Weyerhaeuser pulp mill at Longview.

An automatic sampler was installed above a manhole for the pipe that contained all of the effluent from the primary clarifier. The Weyco automatic sampler is installed to sample one half of the effluent from the primary clarifier. Another automatic sampler was installed on the catwalk of the secondary clarifier. It was located such that it sampled approximately six inches from the overflow weir. Weyco's sampler is installed in a control building located approximately 100 yards from the clarifier.

The effluent from the A/C sewer was sampled using just Weyco's automatic sampler. There appeared no easy method for us to install our own sampler. On the 5th, Weyco's pH script chart recorder recorded a pH of 11.5 from approximately 1500-1600. A grab sample taken at 1550 showed a pH of 11.5 and a temperature of 32°C.

Grab samples were taken from both the influent and chlorinated effluent of the sanitary sewage treatment plant. These grabs were not split due to an oversight so that shortly after, Weyco took their own grab samples. All of the grab samples were taken the afternoon of the 6th.

Although a total chlorine residual (TCR) of greater than 6.0 mg/l was obtained at 1520 a fecal coliform grab sample taken at 1515 showed a concentration of 1500 colonies/100 ml. I believe this is due to very poor mixing of the chlorine with the sanitary effluent. At the time of the survey they were simply metering liquid chlorine onto the surface at the beginning of the chlorine contact chamber. The pulp mill's DPD tablets from Hach appeared defective as they were getting a TCR of approximately 1.0 mg/l.

An instantaneous flow measurement of 200 gpm was taken from the 90° V-notch weir used to measure their sanitary flow. The script chart was reading 55 which is said to be actually 230 gpm.

Totalizer readings were taken for the secondary clarifier and the A/C sewer. Due to a mistake a totalizer reading was not taken for the primary clarifier. The flow given is the average flow for the 5th and 6th as given by Weyerhaeuser.

Although I did not have time to actually check the six-foot Parshall flume used to measure the flow coming into the primary clarifier, I did visually inspect it. The primary reason I distrust its accuracy is the design of the approach and converging section of the flume. A few feet from the actual converging section is the vertical outlet of the discharge pipe. For a Parshall flume to be able to measure flow accurately the approach flow conditions should be that of smooth flow uniformly distributed across the width and depth of the flume cross section. There should be no surges, waves or turbulent water entering the converging section. The Weyco flume experiences significant amounts of surging and the approach flow condition is very turbulent. This is the result of a poorly located Parshall flume.

In reviewing their laboratory procedures I found few discrepancies. This is further brought out by the comparable lab results from the split samples. They did not follow Standard Methods for their BOD analysis but they were quite willing to change their methodology to a state approved method. Currently our lab is writing an approved procedure for BOD analysis.

On the 6th, Cloud and I returned to the pulp mill to pick up our samplers and split samples from both their samplers and ours.

The following tables give DOE's and Weyco's laboratory results for both our composite samplers and theirs.

Parameter	DOE	Weyco	NPDES
BOD_5 (mg/l)			
Primary Clarifier Effluent	112/107	131/110	
Secondary Clarifier Effluent	8/6	9/7	
A/C Effluent	/215	/225	
Sanitary Influent (Grab)	47/	/43	
Sanitary Effluent (Grab)	11/	/33	
TSS (mg/l)			
Primary Clarifier Effluent	55/57	50/55	
Secondary Clarifier Effluent	77/36	84/69	
A/C Effluent	/49	/62	
Sanitary Influent (Grab)	71/	/66	
Sanitary Effluent (Grab)	22/	/18	
Total Flow (MGD)			
Primary Clarifier	42.4		
Secondary Clarifier	10.364		
A/C	20.5		
Sanitary (instanstaneous)	.288	.331	

DOE sampler / Weyco sampler

	DOE	Weyco	NPDES (daily average)
Combine BOD_5 (lbs/day)			75,000
DOE's sampler	77,091	85,660	
Weyco's sampler	75,151	78,061	
Combine T.S.S. (lbs/day)			30,000
DOE's sampler	34,534	35,585	
Weyco's sampler	31,698	36,056	

DH:ee

cc: Dick Cunningham
Central Files