

MEMORANDUM

August 12, 1975

To: Howard Steeley, Vern Mainz, and Gerry Calkins

From: G. Scott Jeane

Subject: Weyerhaeuser Chlorine Plant at Longview  
Class II Survey

A composite sampler was set up on the main effluent (Plant #2) of Weyerhaeuser's chloralkali plant on June 16, 1975. Sample time was from 1505 hrs June 16 to 1505 hrs June 17, with a 210 ml sample collected every 1/2 hour. In addition to the composite sample, several spot checks were collected from the waste streams of plants #1 and #2. These test results are recorded below.

	Plant #2			Plant #1	
Hours	1510	- 0915	- 1300	0930	- 1315
Temperature (°C)	23	22.5	24	16	17
pH	6.8	6.9	7.2	6.5	7.0
Conductivity	2000	1990	2000	580	5000
Chlorine (OTA)	0.1	0.15	1.9	0	0

The high conductivity of the Plant #1 waste stream reading was due to a surface discharge to the waste channel from a water hose left running in the nearby salt pile. At 1300 hours on June 17 a 1.9 ppm chlorine residual was measured. This level of chlorine is extremely toxic to aquatic life. The dilution in the receiving water is unknown at this time but Weyerhaeuser has scheduled a study on their dilution zone this summer.

Flow Verification

The two waste streams are measured volumetrically via stainless steel parshall flumes. A Manning flow meter was installed on the major waste stream for 24 hours. The meter recorded flow continuously for 18 hours at which time the electrical ground was lost. Total 24 hour flow was computed from a 12 hour (1930 hrs to 730 hrs) flow multiplied by 2. Weyerhaeuser reported the flow for Plant #2 at 2.3 MGD while our computed flow was 2.5 MGD. The 8% difference may represent a slight decrease in flow not measured by our flow meter while its ground was interrupted.

A flow dimension verification was completed and is attached. The flume is an excellent example of a correctly installed flow measurement facility.

#### Laboratory Analysis Comparison

The 24 hour composite of Plant #2's waste stream was split and analyzed separately by both laboratories. We were unable to run mercury on our samples due to a laboratory relocation move. No significant discrepancies were noted in results between laboratories. The Department of Ecology results of a composite of Plant #1's waste stream is included.

	Plant #2		Plant #1
	Weyerhaeuser	DOE	DOE
pH	8.1	7.6	7.3
TSS mg/l	1	2	2
Hg mg/l	0.006	- - - (See above)	-----
Ni mg/l	0.001	0.1	0.1
Zn mg/l	0.066	0.08	0.11

#### Effluent Loading Evaluation

The permit (WA-003767-2) limitations for chlorine, Mercury, Zinc, and Nickel are in mg/l daily maximum values. The TSS parameter is listed as 246 pounds per day average and 492 pounds maximum. Our samples measured 53.4 pounds per day. All the above parameters plus flow and pH were within present permit limitations.

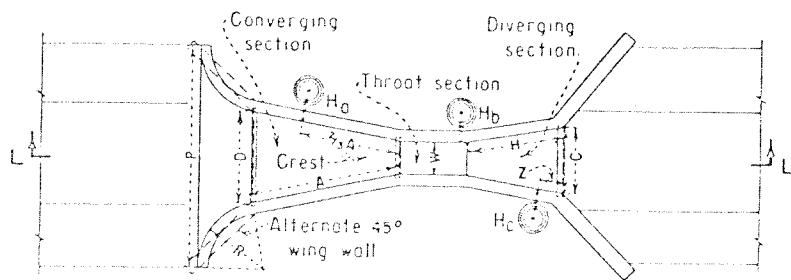
In preparing for the field survey I noticed that monthly monitor sheets submitted by the chlorine plant do not include flow or TSS values.

GSJ:ee

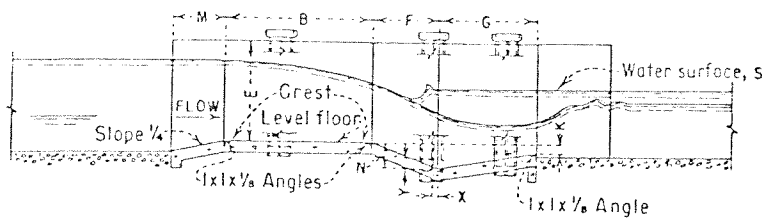
Attachment

# PARSHALL FLUME VERIFICATION

(North Side)



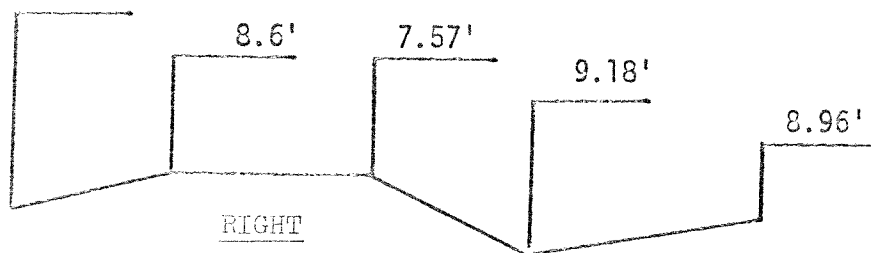
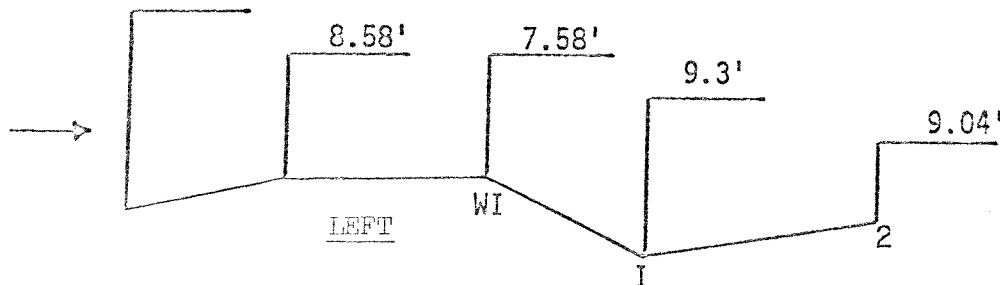
PLAN South Side



SECTION L-L

## LEVEL READINGS (RELATIVE)

North Side



Tolerance on throat width (W)  $\pm 1/64$  inch Yes

Sidewalls of throat

YES

NO

Parallel

X

Vertical

X

Tolerance on other dimensions  $\pm 1/32$  inch.

## DIMENSIONS

	Actual	Standard	$\Delta$
W	18"	18	0
A	4'10"	4'9"	1"
2/3A		3'2"	
B	4'8"	4'7 7/8"	1/8"
C	2'1/2"	2'6"	5 1/2"
D	3'6"	3'4 3/8"	1 5/8"
E	40.5"	3'	3 3/4"
F	1'11"	2'	1"
G		3'	
H	4'9"		
K			
M		1.3"	
N		9"	
P		5.6"	
R		1.8"	
X		2"	
Y		3"	
Z			

## Free-Flow Capacity

Minimum .15 SEC-FT.

Maximum 24.6 SEC-FT.

Submergence ( $H_b/H_a \times 100$ ) 55 %

67-70% submergence max. for free flow conditions.

Approach flow conditions

YES

NO

Standard

X

# STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

## DATA SUMMARY

ORIGINAL TO: G.S.J. II  
COPIES TO:  
.....  
.....  
LAB FILES .....

Source Weyco Chloralkali @ Longview

Collected By G.S.J. II

Date Collected 6-17-75

Goal, Pro./Obj. \_\_\_\_\_

Log Number:	75-2562 63 64										STORET
Station:	#1 Comp.	10-10 #2 Comp	3-3 #2 Comp								
pH	7.3	7.6	7.6								00403
Turbidity (JTU)											00070
Conductivity (umhos/cm)@25°C											00095
COD											00340
BOD (5 day)											00310
Total Coliform (Col./100ml)											31504
Fecal Coliform (Col./100ml)											31616
NO3-N (Filtered)											00620
NO2-N (Filtered)											00615
NH3-N (Unfiltered)											00610
T. Kjeldahl-N (Unfiltered)											00625
O-PO4-P (Filtered)											00671
Total Phos.-P (Unfiltered)											00665
Total Solids	525	801	843								00500
Total Non Vol. Solids	504	774	807								
Total Suspended Solids	2.	1.	2.								00530
Total Sus. Non Vol. Solids	1.	<1.	1.								
Nickel	<0.1	<0.1	<0.1								
Zinc	0.11	0.05	0.08								

Note: All results are in PPM unless otherwise specified. ND is "None Detected"  
Convert those marked with a \* to PPB (PPM X 10<sup>3</sup>) prior to entry into STORET

Summary By Stephen D. Bell Date 6-26-75