

M E M O R A N D U M

February 28, 1977

To: Tom Coleman
From: Mike Morhous
Re: Yakima STP Class II Inspection

State of
Washington
Department
of Ecology



On January 11, 1977 Greg Cloud and I arrived at the Longview Fibre Container Plant as part of the above referenced inspection.

A composite sampler was installed to monitor the plant's total wastewater discharge to the city sewer main. The sampler was located on the discharge side of the wet well pump station. The sampler was adjusted to take a 250 ml aliquot each time alternating pumps were actuated. However, problems experienced with this installation necessitated moving the sampler to the wet well side of the pump station. Due to sampler malfunctions and freezing temperatures a complete 24 hour composite was not obtained. In actuality the composite sample collected was primarily from the first 8 hour work shift. Therefore, it is recommended that the concentrations and loadings subsequently listed for Longview Fibre's effluent composite be compared with Longview Fibre's heavy metals calculations for the first 8 hour shift on January 11.

It should be noted in view of the inaccuracy of the composite sample collected, that this portion of the inspection can be conducted at a future date if necessary.

Water consumption at Longview Fibre was obtained from city water meters on the plant's industrial and domestic water lines.

We then proceeded to the Yakima STP and installed composite samplers at the influent and chlorinated effluent. The influent sampler was located at the grit chamber outfall. The chlorinated effluent sampler was located just below the point of chlorination at the intake of the effluent discharge line. Both samplers were adjusted to take a 250 ml aliquot every thirty minutes.

The plant's flow measuring device is an in-line Sparling flow meter which was not checked for accuracy.

Laboratory procedures and techniques were reviewed with Dorothy Kulczyk, Laboratory Assistant, and all appeared to be in order. The lab has an amperimetric titrater for analysis of total chlorine

residual, however, the procedures manual is on back order. Until the manual has been obtained, the orthotolidine method is being used. The lab personnel should be commended on their conscientiousness and efficiency.

On January 12 Greg and I returned to Longview Fibre and the STP to pick up the composite samplers. As previously mentioned the Longview Fibre composite was not complete. Also the influent composite sample jug at the STP was only half full.

Since the STP analyzes for BOD₅ on the unchlorinated effluent, we split Yakima's 24 hour unchlorinated effluent composite for a comparison of lab results.

Two fecal coliform grab samples were collected. One at the intake of the effluent discharge line at 0915 and one at the outfall of the same line at 0950. A grab sample of sludge was also collected from each of the three digesters for heavy metals analyses.

The following table lists the DOE and Yakima STP results together with NPDES permit effluent limitations. Also provided are the DOE results from Longview Fibre's effluent composite.

MM:ee

cc: Dick Cunningham
Doug Houck
Central Files

	Inf.	DOE Unchl. Eff.	Chl. Eff.	Yakima STP Unchl. Eff.	NPDES (monthly average)
BOD ₅ (mg/l) lbs/day	210	33	24 1469.2	32	45 6197
TSS mg/l lbs/day	192	21	24 1469.2	24	45 6197
pH	7.7	7.6	7.4		
Fecal Coliform (colonies/100 mls) at 0915 at 0950			Est 40 <10		200
Chlorine Residual* (ppm) at 0915 at 0950			5.0 4.5		
Lead mg/l	<.05		<.05		
Zinc mg/l	0.36		0.34		
Nickel mg/l	<.05		<.05		
Chromium mg/l	.02		.02		
Copper mg/l	.09		.05		
Cadmium mg/l	<.02		<.02		
Total Plant Flow (mgd)	7.34				Not to Exceed 16.52

* field analysis (DPD), " <" is "less than" and ">" is "greater than"

DOE Lab Results from Digester
Sludge Analyses - Yakima STP

		Digester #1	#2	#3
Lead	Wet weight	16.3	81	52
	Dry weight	1280	930	1200
Zinc	Wet	26.6	200	92
	Dry	2090	2290	2150
Nickel	Wet	0.41	3.2	1.0
	Dry	32	36	23
Chromium	Wet	4.3	24	14
	Dry	340	270	330
Copper	Wet	7.6	54	26
	Dry	600	620	610
Cadmium	Wet	0.07	1.0	0.52
	Dry	5.5	11	12

All results are in ppm (mg/Kg)

DOE Lab Results from
Longview Fibre Container Plant - Yakima
(approximately 8 hour composite)

	Final Eff.
COD mg/l	1810
lbs/1st 8 hr. shift	107.85
BOD ₅ mg/l	480
lbs/1st 8 hr. shift	28.6
Lead mg/l	27
lbs/1st 8 hr. shift	1.61
Zinc mg/l	0.70
lbs/1st 8 hr. shift	.04
Nickel mg/l	<.05
lbs/1st 8 hr. shift	<.003
Chromium mg/l	6.9
lbs/1st 8 hr. shift	0.41
Copper mg/l	0.8
lbs/1st 8 hr. shift	.048
Cadmium mg/l	<.02
lbs/1st 8 hr. shift	<.001
Total plant flow/1st 8 hr. shift	.033 cfs
pH	10.4
Sp. Conductivity (umhos/cm)	520

"<" is "less than" ">" is "greater than"

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DATA SUMMARY

Source YAKIMA STPCollected By Monahan/ClowDate Collected 1/11-12/77

Log Number:	77-0149	150	151	152	153	154	155	156
Station:	INF.	EFF.	CHLOR. EFF.	SLUDGE 1	2	3	CHLOR. EFF.	outfall of discharge pipe
pH	7.7	7.6	7.4				intake of discharge pipe	
LEAD	WET 5.05		5.05	16.3	81.	52.		
	DRY			1280.	930.	1200.		
Sp. Conductivity (mhos/cm)	670.	500.	530.					
COD	570.	110.	110.					
BOD (5 day)	210.	33. ³²	24.					
Total Coliform (Col./100ml)								
Fecal Coliform (Col./100ml)							EST 40	<10
NO3-N (Filtered)			4.0					
NO2-N (Filtered)			0.0					
NH3-N (Unfiltered)			11.9					
T. Kjeldahl-N (Unfiltered)								
O-PO4-P (Filtered)			6.7					
Total Phos.-P (Unfiltered)			7.2					
Total Solids	580	338	351	%TS 1.27	%TS 8.74	%TS 4.28		
Total Non. Vol. Solids	272	230	236					
Total Suspended Solids	192	21 ²⁴	24					
Total Sus. Non Vol. Solids	24	3	2					
ZINC	WET 0.36 ^{mB/L}		0.31	26.6%	200.	92.		
	DRY			2090	2290.	2150.		
NICKEL	WET 4.05		4.05	0.41	3.2	1.0		
	DRY			33.	36.	23.		
CHROMIUM	WET .02		.02	4.3	24.	14.		
	DRY			340.	270.	330.		
COPPER	WET .09		.05	7.6	54.	26.		
	DRY			600.	620.	610.		
CADMIUM	WET 4.02		4.02	0.07	1.0	0.52		
	DRY			5.5	11.	12.		

Note: All results are in PPM (mg/L) unless otherwise specified. ND is "None Detected"
 "<" is "Less Than" and ">" is "Greater Than"