

MEMORANDUM

May 4, 1977

To: Ron Robinson  
From: Mike Morhous  
Subject: Puyallup STP Class II Inspection

State of  
Washington  
Department  
of Ecology



On February 8, 1977 Greg Cloud and I arrived at the Puyallup STP to conduct the above referenced inspection.

Automatic composite samplers were installed at the influent, unchlorinated effluent and chlorinated effluent. The influent sampler was located at the headworks below the grit chamber and comminutor. The unchlorinated effluent sampler was located at the west clarifier. The chlorinated effluent sampler was located at the chlorine contact chamber outfall. All three samplers were adjusted to take a 250 ml aliquot every thirty minutes.

The plant's flow measuring device is a Palmer-Bowlus flume located at the headworks. The accuracy of the flume/recorder was checked by comparing a calculated instantaneous flow with the recorder's instantaneous flow reading. The accuracy of the flume/recorder was 92% of actual instantaneous flow.

The laboratory procedures were reviewed and no major discrepancies were observed. The plant presently uses the orthotolidine colorimetric procedure for analyzing total residual chlorine. However the STP will be acquiring a amperometric titrator when the plant is upgraded.

Two separate grab samples were collected for fecal coliform analysis together with simultaneous total residual chlorine readings using a DPD chlorine test kit. A sludge sample from the secondary digester was also collected for heavy metals and per cent volatile solids analyses.

On February 9 Greg and I returned to pick up the composite samplers. The influent and unchlorinated effluent composites were split with the STP for BOD<sub>5</sub> and TSS analyses.

The following table lists the DOE and Puyallup STP laboratory results together with the NPDES permit limitations.

	D.O.E.			Puyallup		NPDES	
	Inf.	Unchl. Eff.	Chl. Eff.	Secondary Sludge	Inf.	Unchl. Eff.	Final Effluent (weekly avg.)
BOD <sub>5</sub> mg/l (lbs/day)	100	66	65		125	83	167
TSS mg/l (lbs/day)	124	80	66		121	57	125
Fecal Coliforms (Colonies/100 mls)						1369	1800
at 0910			460				1500
at 1010			<20				
* Chlorine Residual							Not less than 0.5
at 0910			1.25				
at 1010			1.35				
Total Plant Flow (mgd)					2.88		
% Volatile Solids				41			
Chromium dry weight (mg/Kg)				44.0			
Copper dry weight (mg/Kg)				310.0			
Lead dry weight (mg/Kg)				550.0			
Zinc dry weight (mg/Kg)				1760.0			
Cadmium dry weight (mg/Kg)				5.6			
Nickel dry weight (mg/Kg)				30.0			

\* Field analysis

"<" is "less than"

In summary, the final effluent was in compliance with the NPDES permit limitations at the time of this inspection and upon completion of my review, the STP appeared to be operating satisfactorily.

MM:ee

cc: Dick Cunningham  
Doug Houck  
Central Files