

STATE OF WASH
DEPARTMENT C
DANIEL J. EVANS
GOVERNOR

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MEMORANDUM

TO: Mike Palko
FROM: Ron Devitt
SUBJECT: Alcoa at Wenatchee

On July 13, 1972, Pat Lee and I conducted surveys on the municipal and domestic wastewater treatment systems and discharges at Alcoa Aluminum at Wenatchee.

There are two effluents. The downstream, "76 line" discharge is the process water from the southeast section of the plant after it passes through the industrial clarifier.

The upstream "combined" discharge (near the pump house) contains the treated sewage and the process water from the northwest area of the plant.

Composite samples were taken from the following sampling locations;

A. "76 line" - (see picture #1) Samples were taken at the outfall from the industrial clarifier. The process water from the southeast section of the plant is treated chemically to precipitate the solids. This accounts for the wide fluctuation of pH. No settleable solids were observed. The water was extremely clear and was reminiscent of a swimming pool.

B. "Combined effluent" - (see picture #3) Samples were taken from the manhole north of the sewage treatment plant. The only source of reference to the location is three power poles uphill from the pump house. At this point, the effluent is the combination of C and D below. The treated sewage enters this line below the sampling site before discharge. The appearance of the effluent in the river is rather chalky as shown by picture #2.

C. "Carbon Plant effluent" - Samples were secured as it entered the common manhole with D below. The process water arises from the carbon plant area in the northwest area of the plant.

D. "Cast House effluent" - Samples were taken as it entered the same manhole as C above. The combination of C and D form the effluent that was sampled at B.

E. STP influent - The major significant variations were an increase in temperature and flow and a decrease in sewage strength associated with shift change due to shower and hygienic activities of personnel.

F. STP effluent - the treatment unit was working very well. The flash chlorine residual was greater than 1.0

STP SURVEY REPORT FORM

(EFFICIENCY STUDY)

Wenatchee
 y Alcoa - Domestic Plant Type Activated Sludge Population ? Design ?
 Served Capacity
 Receiving Water Wenatchee River Engineer Mike Palko
 Date 7/13/72 Survey Period 1000-1600 Survey Personnel Ron Devitt
 Comp. Sampling Frequency 1/2 hour Weather Conditions Cloudy - hot
 (last 48 hours)
 Sampling Alequot MGD x 20,000 ml/sample

PLANT OPERATION

Total Flow 17,300 gallons in 5 hours How Measured 90° "V" Notch-totalizer
 Max. (Flow) .1 MGD Time of Max. 1215 & 1600 hrs. Min. .035 MGD Time of Min. 1100 hrs.
 Pre Cl₂ -- #/day Post Cl₂ 5.5 #/day

FIELD RESULTS

7 on influent
 8 on effluent

Determinations

Temp. °C

pH

Conductivity
 (umhos/cm)

Settleable
 Solids

Influent

Effluent

	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp. °C	27.0	21.4	22.5	21.8	22.1	21.2	21.4	21.5
pH	7.8	7.4	7.6	7.6	7.6	6.9	7.2	7.2
Conductivity (umhos/cm)	----	----	----	----	----	----	----	----
Settleable Solids	20	1	8	2	Nil	Nil	Nil	Nil

Only 3 Settleable Solids

LABORATORY RESULTS ON COMPOSITE IN PPM

Laboratory Number	Influent	Effluent	% Reduction
	72-2547	72-2548	----
5-Day BOD	33	<2	>94
COD	116	8	93
T.S.*			
T.N.V.S.*			
T.S.S.*			
N.V.S.S.*			
pH	7.8	7.4	---
Conductivity	488	413	---
Turbidity	26	4	---

* No solids data due to lab error.

