

Publication No. 79-e23

WA-59-1010

INFORMATION _____
FOR ACTION _____
PERMIT _____
OTHER _____

TO: Claude Sappington

FROM: Carl Nuechterlein

SUBJECT: Class II Inspection - Colville, Washington

DATE: November 20, 1979

State of
Washington
Department
of Ecology



On September 18, 1979, Roger Ray and I met Ron Harbolt, the Colville Treatment Plant operator. Treatment there consists of a three (3) lagoon system with a separate polishing and chlorine contact pond. Influent enters the headworks which has a rectangular weir with end contractions. Effluent passes through a 90° v-notch weir into a small drainage into the Colville River. Composite samples were set up to take 24 hour composites of influent and effluent. A 250 ml sample was taken every 30 minutes by both samplers. The influent sampler was set up in a still area just before the weir. The effluent sampler was set up after the polishing pond and just before the weir.

The operator measures flow with a ruler at the headworks measuring right on the weir. Using a square and level we checked his flows. Results were:

DOE	909,000 Gallons Per Day
Colville	829,000 Gallons Per Day

The velocity of approach to this weir is extremely high. There is only a 22" separation from the discharge pipe to weir. The weir is a 24" rectangular weir with 2" end contractions. Maximum depth behind the weir is 22". Maximum measurable flow would be 15". A stand pipe flow chamber exists at the headworks but it is plugged up.

Effluent flow is through a 90° v-notch weir with a maximum head of 12". The operator measures flow in a stand pipe which has a styrofoam float and a stick with scale attached. Using a square and level we checked his readings. Results were:

DOE	543,371 Gallons Per Day
Colville	421,024 Gallons Per Day

Bacteriological samples were taken upon arrival on September 19, 1979, and later in that same day. One metal plater discharges into the city system so we also tested for cadmium, chromium, nickel and total cyanide.

CHECK
 INFORMATION _____
 FOR ACTION _____
 PERMIT _____
 OTHER _____

State of
 Washington
 Department
 of Ecology



TO: Claude Sappington
 FROM: Carl Muechterlein
 SUBJECT: Class II Inspection - Colville, Washington

DATE: November 20, 1979 - Page Two

Samples were collected on September ¹⁹20, 1979, and split with the operator. The influent sampler malfunctioned and only 6000 ml was collected. It was still sampling, but not taking a full 250 ml at each sample. The results of the testing were as follows:

	<u>DOE</u>		<u>Colville</u>		<u>NSPDES Permit</u>
	<u>Influent</u>	<u>Effluent</u>	<u>Influent</u>	<u>Effluent</u>	<u>Effluent (Weekly)</u>
BOD ₅ (mg/l)	110	9	51.4	5	60
T.S.S. (mg/l)	59	13	59	9	60

The results show that they are within permit conditions. These results also show that the operator has problems with the BOD testing. His results were approximately half of our results. A follow-up of his lab procedure is required.

The lab results also showed a violation in pH of discharge.

<u>Permit Limit</u>	<u>Colville</u>	<u>DOE</u>
6.5 - 8.5	8.9	8.9

The pH results for the month of September ran from 8.0-9.4 with an average of 8.7. These high numbers probably come from the extreme algae growth that was occurring in the lagoons.

An additional problem was noticed. The flow from a trailer park next to the headworks discharged after the influent weir. Its flow contribution was not measured, although not believed to be significant.

CJN/mjc



DATA SUMMARY

ORIGINAL TO:
..GN.....
COPIES TO:
.....
.....
.....
LAB FILES...

RECEIVED

9-18-79
Collected By E. Neuchterlein

Source COLVILLE STP

Date Collected 9-18, 19-79

Log Number: 79-3385 86 87 88 89

Station:	INP Comp.	Chlor. MP Comp.	@ 0938	@ 1305	@ 1000				
pH	7.9	8.9							
Turbidity (NTU)									
Sp. Conductivity (umhos/cm)	1010	972							
COD	210	87							
BOD (5 day)	110	9							
Total Coliform (Col./100ml)									
Fecal Coliform (Col./100ml)			<1	<1					
NO3-N (Filtered)	2.2	<1							
NO2-N (Filtered)	2.2	<1							
NH3-N (Unfiltered)	9.6	2.6							
T. Kjeldahl-N (Unfiltered)									
O-PO4-P (Filtered)	3.2	1.6							
Total Phos.-P (Unfiltered)	4.5	2.0							
Total Solids	650	580							
Total Non. Vol. Solids	480	470							
Total Suspended Solids	59	13							
Total Sus. Non Vol. Solids	15	3							
Total Cyanide					<.001				
Cadmium					<.01				
Chromium					<.01				
Nickel					.05				

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

OR Colville

Stevens

MONTH Sept

1979

(ENTITY)

(COUNTY)

POPULATION SERVED 4500

NPDES PERMIT NO. 002261-6

DATE	FLOW		PLANT INFLUENT					PLANT EFFLUENT														
	PH	BOD (MG/L)	SUSP. SOLIDS (MG/L)	TEMPERATURE (°F)	D.O.	Settling Solids (mg/l)	PH	DO (MG/L)	BOD (MG/L)	% BOD REMOVAL	LBS. BOD DISCHARGED	SUSP. SOLIDS (MG/L)	% SUSP. SOLIDS REMOVAL	LBS. SUSP. SOLIDS DISC.	CHLORINE		COLIFORM		Flow	Temp.		
															LBS. USED	RESIDUAL (MG/L)	TOTAL (#/100ml)	FECAL (#/100ml)				
1															50							
2															50							
3															51							
4	.75	7.8	60.5	6.6	2	9	8.0	4.6	4.1	93.2	14.4				54	.1				.48	6.0	
5	.85	8.0		6.6		10	8.2								50	.3					.48	6.0
6	.85	8.0		6.6	2.8	11	8.0	9.3				38.1	60.2	154.4	45	.3			0		.48	6.0
7	.7	8.0		6.8		11	8.6								45	.1					.48	6.0
8															40							
9															40							
10	.75	7.9		6.6		10	9.0								20	0					.48	6.0
11	.8	8.0	67.2	6.4	2.6	20	9.3	11.0	7.3	89.1	29.6				50	.4					.48	6.0
12	.75	8.0		6.6		10	9.2								50	.4					.48	6.0
13	.8	8.1		6.6	1.1	15	9.4	13.5				38.7	61.3	139.4	30	.1			1		.48	6.0
14	.8	7.8		6.6		10	9.0								40	.1					.48	6.0
15															35							
16															35							
17	.75	7.9		6.4		10	9.2								30	.05					.4	6.0
18	.8	7.7	71.1	6.6	3.3	10	8.9	7.3	12.7	82.1	45.8				20	0					.4	6.0
19	.75	7.8		6.6		8	8.9								45	.05					.50	6.0
20	.5	7.6		6.8	3.1	10	8.6	7.4				22	62.7	99.1	50	.05			0		.54	6.0
21	.8	7.8		6.8		12	8.7								50	.05					.5	6.0
22															50							
23															50							
24	.75	7.7		6.6		20	8.5								45	0					.54	6.0
25	.75	7.9	51.4	6.6	1.6	10	8.5	4.6	6	88.3	27				45	0					.52	6.0
26	.5	8.0		6.6		5	8.4								60	.1					.53	6.0
27	.75	7.8		6.6	1.6	12	8.3	7.8				7.7	92.7	34	60	0			0		.53	6.0
28	.75	7.9		6.6		15	8.2								65	.1					.53	6.0
29															60							
30															60							
31																						
TOT.	7.7	7.9	250.2	6.6	1.2	11.5	8.7	8.2	7.5	88.2	29.2	24.6	19.2	106.7	44.5	.13					.48	6.0
MAX.	.7	8.1	71.1	6.8	3.3	20	9.4	13.5	12.7	93.2	45.8	38.7	92.1	154.4	65	.4					.54	6.0
MIN.	.75	7.6	51.4	6.4	.2	5	8.0	4.6	4.1	82.1	14.4	7.7	60.2	34	20	0					.4	6.0
AVG.	.787	7.9	62.6	6.6	1.2	11.5	8.7	8.2	7.5	88.2	29.2	24.6	19.2	106.7	44.5	.13					.48	6.0

LIMITATIONS	MONTHLY																					
	WEEKLY																					

Per. Letter

Notice Viol.

Order

Docket

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE.

Water Sewer Dept
 NAME AND TITLE
Berry [Signature]
 SIGNATURE

