

April 11, 1974

WA-42-9070

State of
Washington
Department
of Ecology



Memo to: John Arnquist
From: Darrel Anderson
Subject: Coulee City Lagoons Survey.

On March 19, 1974, Mike Harris and I conducted an efficiency survey of the Coulee City sewage lagoons.

During most of the survey period, extreme wind conditions were present which caused high turbidity in the effluent water and is very evident in the lab data. No percent reduction were calculated due to this interference.

The lagoon operator, Mr. Trude, indicated to me that the west lagoon floods during the wet periods of the year due to the storm drains which are connected to the sewer lines.

The effluent water empties into an unnamed lake adjacent to the west lagoon. I could not determine if there was any flow out of the lake. Mr. Trude indicated that during the dry season there is very little water in the lake.

There is no Cl_2 added to the effluent. Also there are no flow devices available at the lagoons.

DA:jmh

STP Survey Report Form

Efficiency Study

City Coulee City Plant Type Lagoons Pop. Served 580 Design Unknown
 Capacity
 Receiving Water No name lake Perennial Intermittent xx
 Date 3-19-74 Survey Period 0800-1600 Survey Personnel D. Anderson, M. Harris
 Comp. Sampling Frequency 1/2 hr Inf. Sampling Alequot 600 ml
 1 hr Eff.
 Weather Conditions (24 hr) Clear, warm Are facilities provided for complete by-
 pass of raw sewage? Yes No/Frequency of bypass unknow
 Reason for bypass unk Is bypass chlorinated? Yes No
 Was DOE Notified? Discharge - Intermittent Continuous

Plant Operation

Total flow No flow device How measured ND
 Maximum flow ND Time of Max. ND
 Minimum flow ND Time of Min. ND
 Pre Cl₂ No Cl₂ #/day Post Cl₂ No Cl₂ #/day

Field Results

Influent

Effluent

Determinations	Influent			Effluent				
	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp °C	11.0	10		11.0	10.0	7.0		8.0
pH (Units)	7.7	6.6		--	8.4	7.6		--
Conductivity (µmhos/cm ²)	1650	1025		--	1650	1400		--
Settleable Solids (mls/l)	5.0	0.9	2.0	1.5	2.0	0	--	--

Laboratory Results on Composites

	Influent	Effluent	% Reduction
Laboratory No.	<u>74-875</u>	<u>74-876</u>	
5-Day BOD ppm	<u>20*</u>	<u><20</u>	<u>NO</u>
COD ppm	<u>78</u>	<u>82</u>	<u>NO</u>
T.S. ppm	<u>738</u>	<u>889</u>	<u>NO</u>
T.N.V.S. ppm	<u>493</u>	<u>632</u>	<u>NO</u>
T.S.S. ppm	<u>20</u>	<u>125</u>	<u>NO</u>
N.V.S.S. ppm	<u>None Det.</u>	<u>93</u>	<u>NO</u>
pH (Units)	<u>8.0</u>	<u>8.9</u>	
Conductivity (µmhos/cm ²)	<u>1300</u>	<u>1400</u>	
Turbidity (JTU's)	<u>12</u>	<u>23</u>	

Laboratory Bacteriological Results

Lab No.	Sampling Time	Colonies/100 ml (MF)			Cl ₂ Residual
		Total Coliform	Fecal Coliform	Fecal Strep	
74-877*					No Cl ₂
878					
879					
880					
881					
882					

*Samples arrived too late to run.

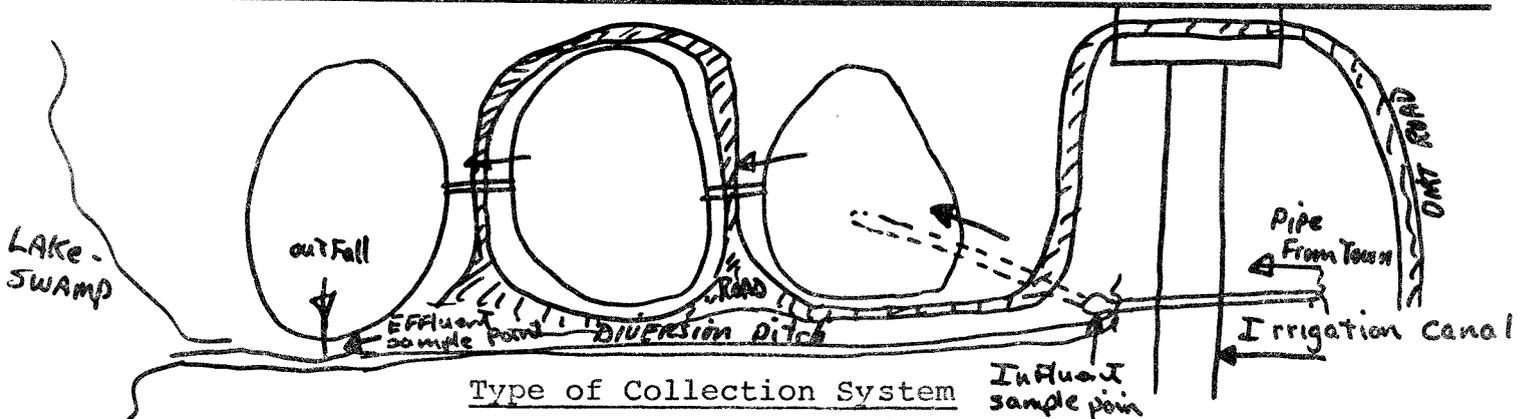
Additional Laboratory Results

	EFF
NO ₃ -N ppm -	2.95
NO ₂ -N ppm -	.05
NH ₃ -N ppm -	.3
T. Kjeldahl-N ppm -	2.3
O-PO ₄ -P ppm -	1.20
T-PO ₄ -P ppm -	2.00

Operator's Name M. G. Trude Phone No. 632-5331

Furnish a flow diagram with sequence and relative size and points of chlorination.

HWY 283 - DRY FALLS DAM



Type of Collection System

Combined Separate Both

Estimate flow contributed by surface or ground water (infiltration)

Considerable But unknown MGD

Plant Loading Information

Annual average daily flow rate (mgd)

Peak flow rate (mgd)

Dry _____

Dry _____

Wet _____

Wet _____

COMMENTS: NO FLOW DEVICE AVAILABLE

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

ORIGINAL TO: APKIS
COPIES TO:
.....
LAB FILES:

DATA SUMMARY

Source COLLEGE CITY S.P.

Collected By MA HAYES

Date Collected 3/12/74

Goal, Pro./Obj. _____

Log Number:	70	27A	27C	27D	27E	27F	27G	27H	27I	27J	STORET
Station:	4-F	5-F									
pH	8.0	8.4									00403
Turbidity (JTU)	12	25									00070
Conductivity (umhos/cm)@25C	1200	1400									00095
COD	70	80									00340
BOD (5 day)	50*	620									00310
Total Coliform (Col./100ml)			***	***	-	-	-	-			31504
Fecal Coliform (Col./100ml)			***	***	-	-	-	-			31616
NO3-N (Filtered)		2.10									00620
NO2-N (Filtered)		.05									00615
NH3-N (Unfiltered)		.3									00610
T. Kjeldahl-N (Unfiltered)		9.3									00625
O-PO4-P (Filtered)		1.27									00671
Total Phos.-P (Unfiltered)		7.00									00665
Total Solids	738	889									00500
Total Non Vol. Solids	492	630									
Total Suspended Solids	20	125									00530
Total Sus. Non Vol. Solids	ND	97									

Note: All results are in PPM unless otherwise specified. ND is "None Detected"
Convert those marked with a * to PPB (PPM X 10³) prior to entry into STORET

* ESTIMATED
A * APPLIED TO ALL STORET VALUES

Summary By William J. Edwards Date 3/14/74

U.S. DEPARTMENT OF THE INTERIOR
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
**SEWAGE TREATMENT PLANT OPERATION AND MAINTENANCE
PRACTICES QUESTIONNAIRE**

FORM APPROVED
BUDGET BUREAU NO. 42-11527

CHECK ONE: <input type="checkbox"/> 1ST AUDIT <input type="checkbox"/> RE-AUDIT	DATE OF AUDIT	PLANT DESCRIPTION CODE (For Official Use Only)
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A. GENERAL INFORMATION

1. PROJECT (State, Number)	SCOPE OF PROJECT (new plant, additions, etc.)
2. PLANT LOCATION (City, county) <i>COULTE City - GRANT</i>	IDENTIFICATION OF AREAS SERVED

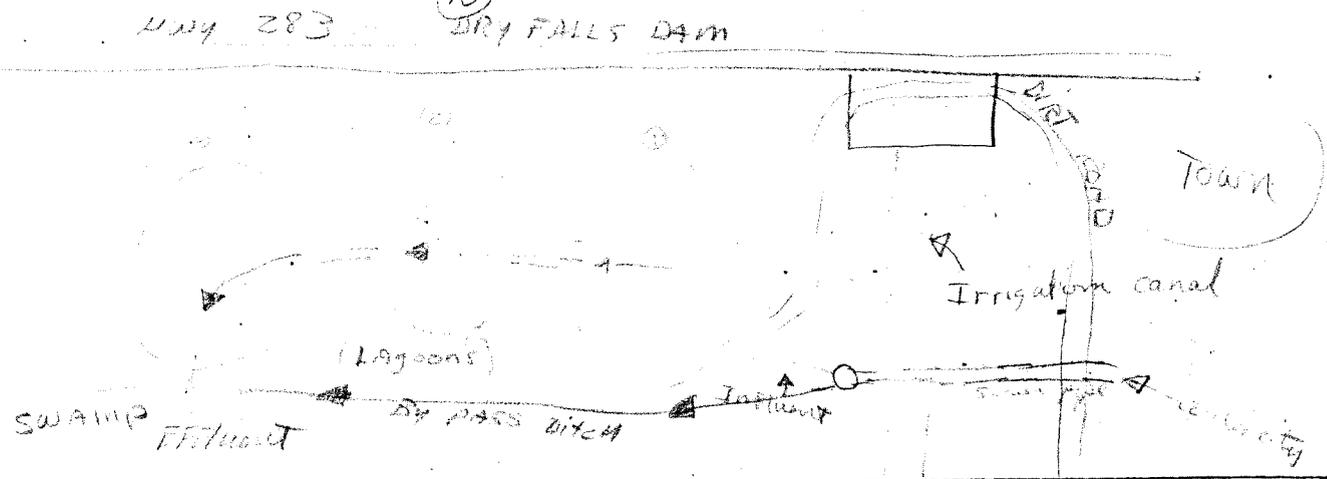
3A. FRACTION OF AREA POPULATION SERVED (%)	3B. PLANT DESIGN (population equivalent)	3C. SERVED BY PLANT (domestic)
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4. TYPE OF COLLECTION SYSTEM		4B. ESTIMATED FLOW CONTRIBUTED BY SURFACE OR GROUND WATER (infiltration, mgd)
<input type="checkbox"/> COMBINED <input type="checkbox"/> SEPARATE <input type="checkbox"/> BOTH		

5. YEAR COMMUNITY BEGAN SEWAGE TREATMENT	6. YEAR PRESENT SYSTEM PLACED IN OPERATION		
	6A. SEWER	6B. PLANT	6C. ANCILLARY WORKS

7A. SIZE OF PLANT SITE (acres) <i>2 Acres</i>	7B. APPROXIMATE AREA LEFT FOR EXPANSION (acres)
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8A. IN THE SPACE PROVIDED BELOW FURNISH A SIMPLIFIED FLOW DIAGRAM OR A WRITTEN DESCRIPTION OF THE PLANT UNITS IN FLOW SEQUENCE. INCLUDE THE METHOD OF ULTIMATE SLUDGE DISPOSAL. SHOW APPROXIMATE SURFACE AREA OF STABILIZATION PONDS AND NUMBER OF CELLS. INDICATE WHETHER FLOW TO AND FROM PLANT IS BY PUMPING OR GRAVITY.



8B. NOTE ANY SIGNIFICANT OR UNIQUE PROCESSING CONDITIONS.

9. RECEIVING STREAM

9A. NAME OF STREAM <i>LAKE NO NAME</i>		<input type="checkbox"/> INTERSTATE	<input type="checkbox"/> INTRASTATE
<input type="checkbox"/> PERENNIAL	<input type="checkbox"/> INTERMITTENT	<input type="checkbox"/> NATURAL	<input type="checkbox"/> REGULATED
		<input type="checkbox"/> COASTAL	

B. CURRENT PERFORMANCE AND PLANT LOADING INFORMATION

1A. ANNUAL AVERAGE DAILY FLOW RATE (mgd)	1B. PEAK FLOW RATE (mgd)		1C. MINIMUM FLOW RATE (mgd)
	DRY WEATHER	WET WEATHER	
2. AVERAGE BOD OF RAW SEWAGE (5 DAY 20°C) (ppm)	3. AVERAGE SETTLEABLE SOLIDS OF RAW SEWAGE (mg/l)		
4. AVERAGE SUSPENDED SOLIDS OF RAW SEWAGE (mg/l)	5. AVERAGE COLIFORM DENSITY OF RAW SEWAGE (mpn/100 ml)		

5. ANNUAL AVERAGE PLANT REDUCTION

6A. BOD (%)	6B. SETTLEABLE SOLIDS (%)	6C. SUSPENDED SOLIDS (%)	6D. COLIFORM DENSITY (%)
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G. NOTATIONS BY EVALUATOR

1. ADDITIONAL REMARKS (If remarks refer to a particular item, identify by number)

City Hall 124 N. 5th - 632-5331
Tuesday - 0800 M.G. Trade - operator

2. GENERAL COMMENTS ON HOUSEKEEPING AND MAINTENANCE

3. REQUIREMENTS OF HIGHER AUTHORITY

3A. DOES THE PLANT PROVIDE THE DEGREE OF TREATMENT PRESENTLY REQUIRED BY THE STATE? (If no, explain)

YES NO

3B. ARE THERE ANY PENDING ACTIONS (enforcement conferences, change in water quality standards, etc.) THAT WOULD REQUIRE UPGRADING OF TREATMENT BY THIS PLANT?

YES NO (If yes, explain)

3C. NUMBER OF STATE INSPECTIONS OF PRESENT PLANT TO DATE.

4. IS ANY FOLLOW-THRU ACTION REQUIRED TO (1) CORRECT DEFICIENCIES IN THE PLANT OR ITS OPERATION OR (2) RESOLVE INDUSTRIAL WASTE PROBLEMS? (If yes, describe required corrective action) YES NO