

TO: Dan Neal, Ron Pine, Ron Devitt

FROM: Hans Cregg

SUBJECT: Medical Lake (LAGOON)

DATE: July 2, 1973

State of  
Washington  
Department  
of Ecology



On May 16, 1973, an efficiency study was conducted on the Medical Lake lagoon system. The system consists of three lagoons, two of which are influent lagoons and one effluent lagoon. The operator has the option of switching the incoming waste water between the two influent lagoons.

Laboratory results indicate that the solids reduction is rather low and does not meet water quality standards. The data regarding coliforms is somewhat indecisive due to laboratory error.

HC:bjj

Attachments

## STP SURVEY REPORT FORM

## (EFFICIENCY STUDY)

City Medical Lake Plant Type Lagoon Population 3500 Design Capacity  
 Receiving Water Deep Creek Engineer W. E. Thompson  
 Date 5-16-73 Survey Period 8 hours Survey Personnel Hans Cregg, Jim  
 Comp. Sampling Frequency Hourly Weather Conditions Clear & warm  
 (last 48 hours)  
 Sampling Alequot 1000 mls

## PLANT OPERATION

Total Flow \_\_\_\_\_ How Measured \_\_\_\_\_  
 Max. (Flow) \_\_\_\_\_ Time of Max. \_\_\_\_\_ Min. \_\_\_\_\_ Time of Min. \_\_\_\_\_  
 Pre Cl<sub>2</sub> none #/day Post Cl<sub>2</sub> none #/day

## FIELD RESULTS

## Influent

## Effluent

Determinations	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp. °C	15	14	14.4	14.2	23	18.8	21.5	22
pH	8.2	7.6	7.8	7.8	10.5	10.0	10.3	10.4
Conductivity (umhos/cm)								
Settleable Solids	8.0	7.7	7.9	7.9	<.1	<.1	<.1	<.1

## LABORATORY RESULTS ON COMPOSITE IN PPM

Laboratory Number	Influent	Effluent	% Reduction
	73-1849	73-1850	
5-Day BOD	158	29	81.65
COD	376	196	47.88
T.S.	625	458	26.72
T.N.V.S.	358	265	25.98
T.S.S.	203	128	39.95
N.V.S.S.	21	24	-12.50
pH	7.4	10.6	
Conductivity	850	460	
Turbidity	70	56	20

Medical Lake

BACTERIOLOGICAL RESULTS

$\text{Na}_2\text{S}_2\text{O}_3$  added to sample before sample ~~XXXX~~ was taken ~~XXXX~~

LAB #	SAMPLING TIME	COLONIES/100 MLS (MF)		Cl Residual	
		Total	Fecal	ppm	(after secs)
73-1851	1000	400	<400	NONE	NONE
73-1852	1200	<400	<400		
73-1853	1600	<400	<400		

Operator's Name \_\_\_\_\_ Phone # \_\_\_\_\_

Comments: Coliform count was taken without the benefit of chlorination.

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## WATER QUALITY LABORATORY

## DATA SUMMARY

Goal, Pro./Obj. 3 2 2 3

Log Number: 73-1849 1850 1851 1852 1853

STORET

[illegible]

Note: All results are in PPM unless otherwise specified. ND is "None Detected"  
Convert those marked with a \* to PPB (PPM  $\times 10^3$ ) prior to entry into STORET

Summary By Stephen D. Roll Date 5-29-73