

MEMORANDUM
June 27, 1973

State of
Washington
Department of
Ecology



TO: Howard Bunton
Ron Pine
Ron Devitt
& Files

FROM: Darrel Anderson

SUBJECT: LEAVENWORTH STP

On May 23, 1973, an STP survey was conducted at the town of Leavenworth, Washington. The survey period was from 0830 - 1630 hours. Survey personnel were Darrel Anderson and Jim Armstrong. Composites were made every half hour in 1200 ml portions. A second composite for COD and 5-day BOD was taken on June 13, 1973 from 0730 to 1130 by Scott Jeane, due to a seedling problem which gave erroneous results in the May 23 composite.

The BOD reduction for the June 13 composite was 95% and the COD reduction was 80%. Total solids and total non-volatile solids reduction during the May 23 survey was 17% and 16% respectively, total coliform colonies did not exceed 1800/100 ml, and fecal coliform colonies did not exceed 200/100 ml.

Flow measurements taken during both survey periods indicate a very high flow with respect to the designed capabilities of the S.T.P. plant. Flows ranged from 350,000 g/day to 250,000 g/day, with approximately 1,500 people using the system. The plant is designed for 3,000 people and a total average daily flow of 300,000 g/day.

The survey was conducted during an unusually dry period which indicates that during heavy runoff periods flow standards for the STP plant are undoubtedly exceeded.

The oxidation ditch has a dissolved oxygen reading of 7.0 ppm, the clarifier 8.0 ppm and the chlorine chamber was 9.0 ppm. There was a high flow of waste water in the oxidation ditch which caused high flocculation levels in the clarifier; therefore, much of the flocculant did not settle out and was discharged into the chlorine contact chamber.

There is a definite indication of hydraulic overload of the clarifier and more retention time is needed. Also, there is a spillage of wastewater out of both sides of the oxidation ditch caused by the brush aerators.

Bill Lay, the operator of the plant, indicated to me that he was having problems with plugging of the sludge line from the bottom of the clarifier.

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He pointed out that the sludge line is smaller in diameter from the bottom of the clarifier and increases in diameter as it reaches the sludge wet well. He also stated that the plugging occurs at a 45° elbow near the base of the clarifier sludge line. On May 17, 1973 an air induction line was installed into the sludge line to help combat the plugging problem, but during the time of the survey the air induction system was not operating and the sludge line was plugged.

During the second sampling period for BOD and COD on June 13, 1973, the sludge air induction system was operating and the sludge line was not plugged. Also, only one of the aeration brushes was being used in the oxidation ditch.

DA:vb

STP SURVEY REPORT FORM

(EFFICIENCY STUDY)

City Leavenworth Plant Type Oxidation Ditch Population 1,500 Design 3,000
 Served Capacity
 Receiving Water Wenatchee River Engineer Saxon & Kennedy, Inc.
 Date 5-23-73 Survey Period 0830-1630 Survey Personnel Darrel Anderson & Jim Armstrong
 Comp. Sampling Frequency Every 1/2 hr. Weather Conditions Cloudy-warm
 (last 48 hours)
 Sampling Alequot 1200 ml/1/2 hr.

PLANT OPERATION

Total Flow 290,000 g/day How Measured "V" Notch Weir - 90°
 Max. (Flow) 350,000 g/day time of Max. 1000 hrs. Min. 250,000 g/day Time of Min. 0700-0800
 Pre Cl₂ _____ #/day Post Cl₂ 25 #/day

FIELD RESULTS

Determinations	Influent				Effluent			
	Max.	Min.	Mean	Median	Max.	Min.	Mean	Median
Temp. °C	14	12	13.3	13	13	12	12.9	13
pH	8.2	6.2	7.1	7.1	6.6	6.4	6.2	6.4
Conductivity (umhos/cm)	250	156	193.3	200	167	137	153.8	155
Settleable Solids	12	3.5	12.3	5.5	0.3	> .1	0.16	> .1

LABORATORY RESULTS ON COMPOSITE IN PPM

Laboratory Number	Influent	Effluent	% Reduction
	72-1911/73-2165	72-1913/73-2166	
5-Day BOD	85/131*	200 / 6*	-/95.5
COD	106/272*	49 / 54*	-/80
T.S.	244	202	17
T.N.V.S.	143	120	16
T.S.S.	83	43	48
N.V.S.S.	18	13	28
pH	7.2	6.5	
Conductivity	270	210	
Turbidity	50	40	

*Second composite taken on 6-13-73

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Leavenworth STP

BACTERIOLOGICAL RESULTS

Na₂S₂O₃ added to sample Before sample After was taken none

LAB #	SAMPLING TIME	COLONIES/100 NLS (MF)	Cl Residual	
			pptm	((after secs)
73-1905	0830	500	.4	.75
73-1906	1000	1000	.2	.75
73-1907	1155	< 400	.2	.75
73-1908	1330	350	.75	1.0
73-1909	1500	1800	.2	.75
73-1910	1630	200	.2	.75

operator's Name Bill Lay

Phone # 509-548-7722

Comments: _____

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

FORM APPROVED
 PUBLIC NOTICE NO. 47-11523

CHECK ONE <input checked="" type="checkbox"/> 1ST-AUDIT <input type="checkbox"/> 4C-AUDIT	DATE OF AUDIT 5-23-73	PLANT DESCRIPTION CODE (See Official User Only)
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A. GENERAL INFORMATION

1. PROJECT (Title, Number)	SCOPE OF PROJECT (new plant, additions, etc.) NEW PLANT - 2955	
2. PLANT LOCATION (City, County) LEAVENWORTH - CHELSEA	IDENTIFICATION OF ARLAS SERIALIZED CITY OF LEAVENWORTH, KS	
3A. PERCENTAGE OF AREA POPULATION SERVED (%) 100%	3B. PLANT DESIGN (population equivalent) 3,000	3C. SERVED BY PLANT (Domestic)

4. TYPE OF COLLECTION SYSTEM <input checked="" type="checkbox"/> COMBINED <input type="checkbox"/> SEPARATE <input type="checkbox"/> BOTH		5. ESTIMATE FLOOD CONTROL RISK FROM SURFACE OR GROUND WATER (infiltration, etc.) UNK.
6. YEAR PRESENT SYSTEM PLACED IN OPERATION	6A. SEWER	6B. PLANT
7. YEAR COMMUNITY BEGAN SEWAGE TREATMENT 1940	PART IN 1940 + 1948	1971
7A. SIZE OF PLANT SITE (acres) ONE ACRE	7B. APPROXIMATE AREA LEFT FOR EXPANSION (acres) ONE ACRE	

8A. IN THE SPACE PROVIDED BELOW FURNISH A SIMPLIFIED FLOW DIAGRAM OR A WRITTEN DESCRIPTION OF THE PLANT UNITS IN FLOW DIAGRAM FORM, INCLUDING THE METHOD OF ULTIMATE SLUDGE DISPOSAL. SHOW APPROXIMATE SURFACE ELEVATION OF STABILIZATION POND AND NUMBER OF CELLS. INDICATE WHETHER FLOW TO AND FROM PLANT IS BY PUMPING OR GRAVITY.
REFER TO FIG. 1 & 2 ATTACHED

8B. NOTE ANY SIGNIFICANT OR UNIQUE PROCESSING CONDITIONS.
N/A

9. RECEIVING STREAM

9A. NAME OF STREAM WENATCHEE RIVER		9B. STREAM FLOW IS <input checked="" type="checkbox"/> PERMANENT <input type="checkbox"/> INTERMITTENT <input checked="" type="checkbox"/> NATURAL <input type="checkbox"/> REGULATED		<input checked="" type="checkbox"/> INTERSTATE <input type="checkbox"/> INTRASTATE
<input checked="" type="checkbox"/> RURAL <input type="checkbox"/> URBAN		<input type="checkbox"/> REGULAR <input type="checkbox"/> COASTAL		
B. CURRENT PERFORMANCE AND PLANT LOADING INFORMATION				
1A. ANNUAL AVERAGE DAILY FLOW RATE (mgd) 85,000	1B. PEAK FLOW RATE (mgd)		1C. MINIMUM FLOW RATE (mgd)	
	DRY WEATHER 50 TO 75	WET WEATHER 160 TO 170	50	
2. AVERAGE DOB OF RAW SEWAGE (5 DAY 20°C) (ppm) 85	3. AVERAGE SETTLEABLE SOLIDS OF RAW SEWAGE (5 DAY 20°C) (mg/l) 4.5			
4. AVERAGE SUSPENDED SOLIDS OF RAW SEWAGE (mg/l) UNK	5. AVERAGE SOLID CONCENTRATION OF RAW SEWAGE (mg/l) UNK			
6A. 5 DAY BOD	6B. SETTLEABLE SOLIDS (mg/l)	6C. TOTAL SOLID EQUIVALENT	6D. SOLID FLOWS (mgd)	
UNK	UNK	UNK	UNK	

24. DOES PLANT HAVE STANDBY POWER GENERATOR FOR MAJOR ELECTRICAL FACILITIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	25. ADEQUATE ALARM SYSTEM FOR POWER EQUIPMENT FAILURE? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
26. ARE CHLORINATION FACILITIES PROVIDED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, ANSWER QUESTION 27	27. IF YES, IS CHLORINATION CONTINUOUS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF NO, EXPLAIN REASON FOR UNINTERMITTENT CHLORINATION

28. PURPOSE OF CHLORINATION

29. TYPE OF CHLORINATION

FISHER & PORTER

30. POINT OF APPLICATION OF CHLORINE
AFTER CLARIFIER

31. AVERAGE FLOW RATE OF CHLORINE (lb/day)
TWENTY FIVE TONS PER DAY

32. MINIMUM SUPPLY OF CHLORINE STOCKS ON PREMISES (lb)
100 LBS

33. CAN BYPASSED SEWAGE BE CHLORINATED? YES NO

34. CHLORINE RESIDUAL IN EFFLUENT
0.25 MG/L AT END OF 15 MINUTES AVERAGE

35. ARE FACILITIES PROVIDED FOR COMPLETE BYPASS OF RAW SEWAGE?

YES NO IF YES, ANSWER A THROUGH G BELOW, ANSWER H IN EITHER CASE.

36. FREQUENCY (times weekly)
ONCE EVERY 6 MO.

37. AVERAGE DURATION (hours)
SIX HOURS

38. REASON FOR BYPASSING
TO CLEAN CLARIFIER

39. ESTIMATED FLOW RATE DURING BYPASS IS
 WITHIN HYDRAULIC CAPACITY OF PLANT
 BEYOND HYDRAULIC CAPACITY OF PLANT BY

40. DOES SEWAGE OVERFLOW IN DRY WEATHER?
 YES NO

41. TYPE OF DIVERSION STRUCTURE
MANUAL SHOWER GATE

42. AGENCIES NOTIFIED OF BYPASS ACTION

43. DO OPERATORS HAVE OPTION TO BYPASS INDIVIDUAL PLANT UNITS? (If no, has this caused any operational problems?)

YES NO *ALL UNITS EXCEPT CLARIFIER.*

44. ARE BACK FLOW DEVICES PROVIDED AT ALL CONNECTIONS TO CITY WATER SUPPLY? (If no, explain)

YES NO

45. CHECK TYPE OF BACK FLOW PREVENTION DEVICE

DOUBLE CHECK VALVE PRESSURE OPERATED PHYSICAL DISCONNECT OTHER (specify)

46. USES OF TREATMENT PLANT EFFLUENT

NONE

47. USES OF RECEIVING STREAM WITHIN 10 MILES OF OUTFALL

SPORT FISHING

48. HAVE THERE BEEN ANY ODOR COMPLAINTS BEYOND THE PLANT PROPERTY? (If yes, explain)

YES NO

49. OBSERVED APPEARANCE AND CONDITION OF EFFLUENT, RECEIVING STREAM, OR DRAINAGE WAY

good

15. STABILIZATION POND		16. DAILY AND DAILY MAINTENANCE RECORDS	
A. WAS ALL THE SOLID EXPOSED SURFACE MAINTAINED?		<input type="checkbox"/> YES <input type="checkbox"/> NO	
B. WERE ALL THE SOLID EXPOSED SURFACES MAINTAINED?		<input type="checkbox"/> YES <input type="checkbox"/> NO	
C. WATER LEVEL (FEET)		HIGH LOW MEDIUM	
F. ADEQUATE CONTROL OF DEPTH?		G. ESCAPE VELOCITY?	
<input type="checkbox"/> YES <input type="checkbox"/> NO		<input type="checkbox"/> YES <input type="checkbox"/> NO	
H. ANY REPORTS OF SOLID WASTE CONTAMINATION FROM POND? (If yes, give details)			
<input type="checkbox"/> YES <input type="checkbox"/> NO			
I. MOSQUITO BREEDING PROBLEM?		J. CAN SURFACE RUN-OFF ENTER POND?	
<input type="checkbox"/> YES <input type="checkbox"/> NO		<input type="checkbox"/> YES <input type="checkbox"/> NO	
IF YES, NAME OF SPECIES IF KNOWN			

C. SUPERVISORY SERVICES

1. IS A CONSULTING ENGINEER RETAINED OR AVAILABLE FOR CONSULTATION ON OPERATING AND MAINTENANCE PROBLEMS?

YES NO IF YES IS IT ON: CONTINUING BASIS OR UPON REQUEST BASIS

IF CONTINUING BASIS, WHAT IS THE FREQUENCY OF VISITS:

2. DO OPERATORS AND OTHER PERSONNEL ROUTINELY ATTEND SHORT COURSES, SCHOOLS OR OTHER TRAINING ACTIVITIES?

YES NO

IF YES, CITE COURSE SPONSOR AND DATE OF LAST COURSE ATTENDED

IF NO, DO YOU KNOW OF ANY COURSES AVAILABLE TO SERVE THIS AREA?

NO

3A. ARE ALL EQUIPMENT AND PARTS OF THE PRESENT PLANT STILL IN OPERATION? YES NO (if no, explain)

B. ARE PROCESSING UNITS OPERATING AT DESIGN EFFICIENCY? YES NO (if no, explain)

4. HAVE THERE BEEN ANY DIFFICULTIES WITH THE SEWAGE TREATMENT PLANT?

A. STRUCTURAL YES NO (if yes, explain)

ROTOR IN OXIDATION DITCH SPLASHES OVER RETAINING WALL. SLUDGE LINE IS SMALLER DIAMETER OF CLARIFIER AND LARGER DIAMETER AT DEEP WELL, WHICH CAUSES PLUGGING. INSTALLATION OF SEWER LINES.

B. MECHANICAL YES NO (if yes, explain)

FLOW CHART IS NOT OPERATING

C. OPERATIONAL YES NO (if yes, explain)

PLUGGING OF SLUDGE LINE DURING PERIODS OF HIGH RUN-OFF.

D. BASED ON OPERATING EXPERIENCE TO DATE WHAT IF ANY CHANGES WOULD YOU RECOMMEND TO IMPROVE OPERATION OF THE PLANT?

ADDITIONAL OF LARGER COMMUNICATOR INSTALLED AT INFLUENT

3. ARE OPERATIONS IN THIS FACILITY (or all components, check appropriate boxes) (include) YES NO

REPORTED? YES NO

FREQUENCY	WASTED	FLUM	SOLIDS HANDLED	CHEMICALS USED	HOLSTER	SLUDGE HANDLED	SLUDGE USED	COST DATA	WATER USED	WATER CHARGE	OTHER
DAILY											
WEEKLY											
MONTHLY											
ANNUALLY											

4. ARE LABORATORY RECORDS MAINTAINED? (check appropriate box)

NOT AT ALL DAILY WEEKLY MONTHLY ANNUALLY

IF MAINTAINED CHECK FORM OF RECORD BELOW.

LOG BOOK TABULAR SHEET SEPARATE BY OPERATION CONTROL CHARTS GRAPHS

WHAT PLANT AND/OR LABORATORY EQUIPMENT, GAGES AND METERS ARE CALIBRATED PERIODICALLY?

5. IS LABORATORY TESTING ADEQUATE FOR THE CONTROL REQUIRED FOR THIS SIZE AND TYPE OF PLANT?

YES NO (if no, explain)

B. INDUSTRIAL WASTES DISCHARGED TO MUNICIPAL SYSTEM	A. NUMBER AND TYPES OF INDUSTRIES DISCHARGING TO SYSTEMS <i>NONE</i>
B. POPULATION EQUIVALENT (POD) OF INDUSTRIAL WASTES (per <i>POD</i>)	C. POPULATION EQUIVALENT (SS) OF INDUSTRIAL WASTES (per <i>POD</i>)
D. VOLUME OF INDUSTRIAL WASTES (POD)	E. COMPOSITION AND CHARACTERISTICS OF INDUSTRIAL WASTES <i>NO</i>
F. MAJOR DIFFICULTY EXPERIENCED WITH INDUSTRIAL WASTE (explain)	

6. HAVE INDUSTRIAL EFFLUENT PROBLEMS BEEN SOLVED? YES NO (if yes, how?)

7A. METHOD OR METHODS USED TO ASSESS INDUSTRIAL WASTE TREATMENT COST (check appropriate box)

NO CHARGE BY CITY PROPERTY TAX WATER USE ASSESSMENT CHARGE BASED ON FLOW

CHARGE BASED ON BOD CHARGE BASED ON SS OTHER METHODS (describe)

COMMENT ON HOW CHARGE IS COLLECTED (fixed charge, sliding scale, etc.)

9. IS INDUSTRIAL WASTE ORDINANCE IN EFFECT AND ENFORCED? YES NO

10. WHO PROVIDED INITIAL INSTRUCTION IN THE OPERATION OF THE PLANT?

NO INSTRUCTION PROVIDED

11. IS A MANUAL OF PRACTICE OR INSTRUCTIONS AVAILABLE? YES NO

IF YES, WHO WROTE AND PROVIDED IT? *SAYTON & KIRKMAN - FLOYD*

12. ESTIMATE OF MAN-HOURS PER WEEK DEVOTED TO LABORATORY WORK AND MAINTENANCE OF RECORDS AND REPORTS

15 HRS

13. PLANT PERSONNEL (Annual Average Staff for Most Recent Year Reported in Section "F")

JOB CATEGORY	NUMBER	TOTAL MAN-HOURS PER WEEK	TOTAL NUMBER CERTIFIED OR LICENSED	RANGE IN YEARS EMPLOYED AT PRESENT PLANT	RANGE IN YEARS OF EXPERIENCE IN THIS PLANT
1. SUPERINTENDENT					
2. OPERATORS	<i>1</i>	<i>15</i>	<i>1</i>	<i>2</i>	<i>2</i>
3. LABORATORY TECHNICIANS					
4. LABORERS					
5. PART-TIME LABORERS					
6. TOTAL					

F. LABORATORY CODES

Enter test codes opposite appropriate items. If any of the below tests are used to monitor industrial wastes place an "X" in addition to the test code.

CODES

- 1 - 7 or more per week 3 - 1, 2, or 3 per week 5 - 2 or 3 per month 7 - Quarterly 9 - Annually
 2 - 4, 5 or 6 per week 4 - as required 6 - 1 per month 8 - Semi-Annually

ITEM	RAW	PRIMARY EFFLUENT	MIXED LIQUOR	FINAL	SLUDGE			RECEIVING STREAM
					RAW	SUPER-NATANT	DIGESTOR	
1. BOD								
2. SUSPENDED SOLIDS								
3. SETTLEABLE SOLIDS	2	2						
4. SUSPENDED VOLATILE								
5. DISSOLVED OXYGEN	2	2						
6. TOTAL SOLIDS								
7. VOLATILE SOLIDS								
8. pH	2	2						
9. TEMPERATURE								
10. COLIFORM DENSITY								
11. RESIDUAL CHLORINE		2						
12. VOLATILE ACIDS								
13. H. B. STABILITY								
14. ALKALINITY								
15.								
16.								
17.								
18.								
19.								

F. OPERATION AND MAINTENANCE COST FOR PLANT

YEAR OF OPERATION	SALARIES/WAGES	ELECTRICITY	CHEMICALS	MAINTENANCE	OTHER ITEMS	TOTAL
MOST CURRENT YEAR 19						
PRIOR YEAR 19			N/A			
PRIOR YEAR 19						
PRIOR YEAR 19						

EVALUATION PERFORMED BY	TITLE	ORGANIZATION
DARREN L. ANDERSON	ENVIRONMENTAL TECH II	DEPT of Ecology
JIM ARMSTRONG		" " "

INFORMATION FURNISHED BY	TITLE	ORGANIZATION	DATE
BILL LAY	MAINTENANCE	CITY OF ...	5-23-73

G. INDICATORS BY EVALUATOR

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

2. GENERAL COMMENTS ON HOUSEKEEPING AND MAINTENANCE

House keeping is poor and maintenance is poor.

3. REQUIREMENTS OF HIGHER AUTHORITY

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

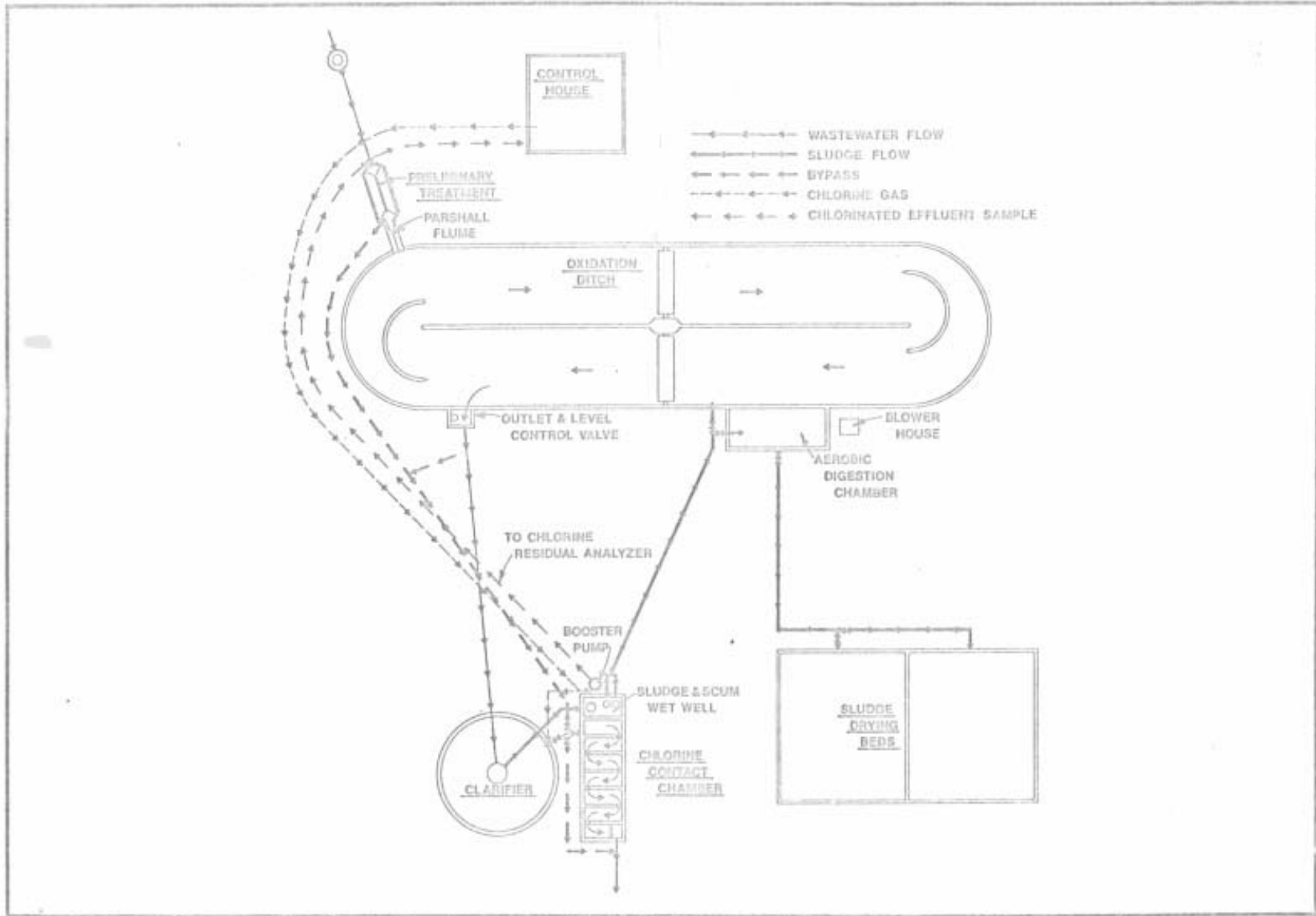
YES NO

3D. 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

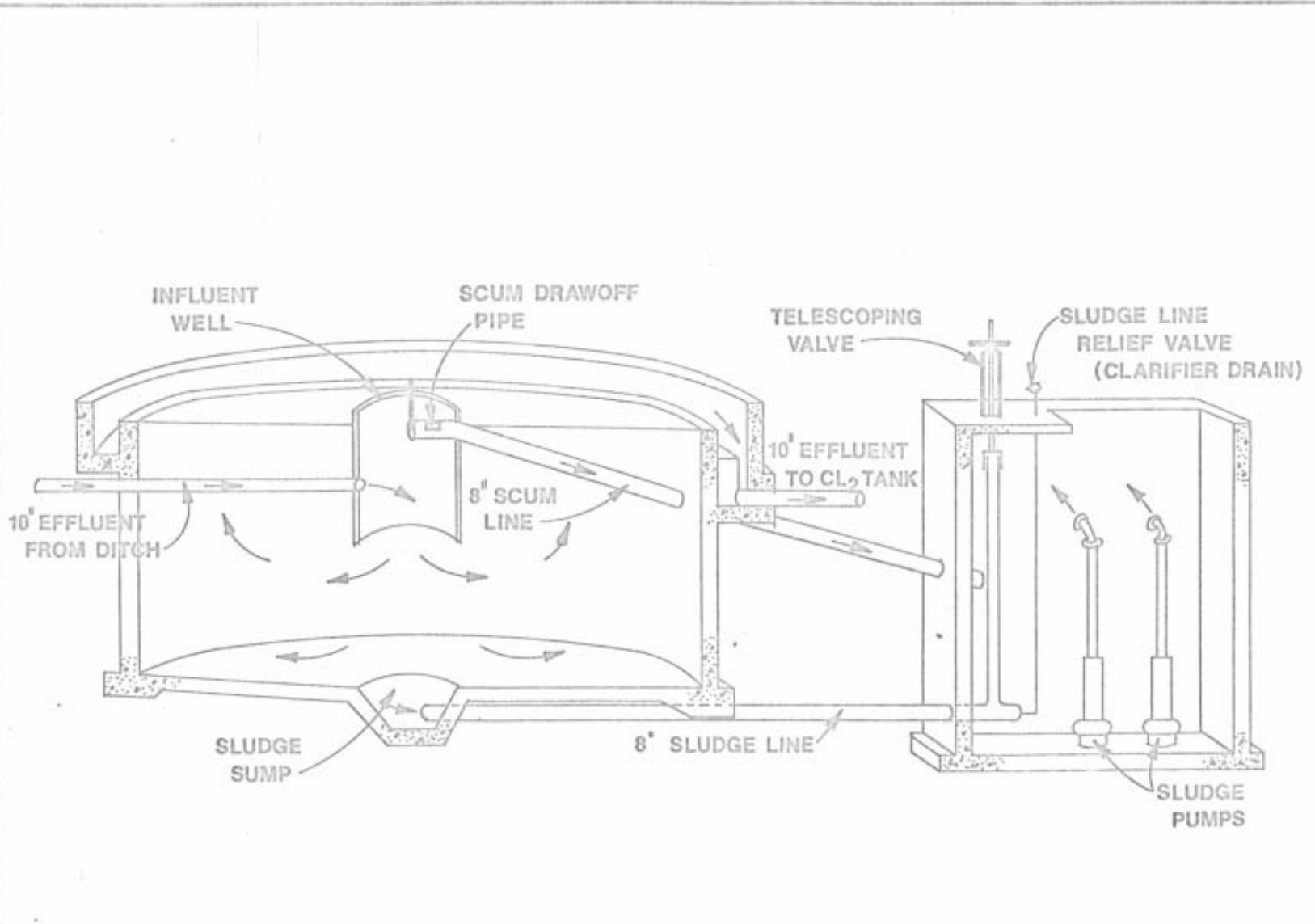


SAXTON & KENNEDY, INC.
 WEST 1625 FOURTH AVENUE

CONSULTING ENGINEERS
 SPOKANE, WASHINGTON

FLOW DIAGRAM

FIG.NO. 1



SAXTON & KENNEDY, INC.
 WEST 1625 FOURTH AVENUE

CONSULTING ENGINEERS
 SPOKANE, WASHINGTON

CLARIFIER & SLUDGE WET WELL

FIG. NO. 2

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
 WATER QUALITY LABORATORY

ORIGINAL TO:
 ..D. Anderson..
 COPIES TO:

 LAB FILES

DATA SUMMARY

Source Leavenworth STP (EPA)

Collected By P.A.

Date Collected 5-23-73

Goal, Pro./Obj. _____

LOG Number:	06	07	08	09	10	11	12	13	STORET	
Station:	0830	1000	1155	1370	1500	1630	INF Comp	Sludge Wet Well	EFF Comp	
pH							7.2	7.4	6.5	00403
Turbidity (JTU)							50	1130	40	00070
Conductivity (umhos/cm)@25°C							270	220	210	00095
COD							106	4280	49	00340
BOD (5 day)							85	3670	<200	00310
Total Coliform (Col./100ml)	500	1000	<400	350	1800	200				31504
Fecal Coliform (Col./100ml)	<160	²¹⁰⁰ 260	<160	100	<160	<160				31616
NO3-N (Filtered)										00620
NO2-N (Filtered)										00615
NH3-N (Unfiltered)										00610
T. Kjeldahl-N (Unfiltered)										00625
O-PO4-P (Filtered)										00671
Total Phos.-P (Unfiltered)										00665
Total Solids							244	4050	202	00500
Total Non Vol. Solids							143	1230	120	
Total Suspended Solids							83	3520	43	00530
Total Sus. Non Vol. Solids							18	990	13	

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

Summary By Stephen D. Roth Date 6-5-73

**STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY**

WATER QUALITY LABORATORY

DATA SUMMARY

ORIGINAL TO:
P. Anderson
COPIES TO:
.....
.....
LAB FILES.....

Source LEAVENWORTH STP

Collected By G. J. J.

Date Collected 6-13-73

Goal, Pro./Obj. _____

LOG Number:	<u>73- 2165 2166</u>							STORET
Station:	<u>INF</u>	<u>EPA</u>						
pH								00403
Turbidity (JTU)								00070
Conductivity (umhos/cm)@25°C								00095
COD	<u>272</u>	<u>54</u>						00340
BOD (5 day)	<u>131</u>	<u>6</u>						00310
Total Coliform (Col./100ml)								31504
Fecal Coliform (Col./100ml)								31616
NO3-N (Filtered)								00620
NO2-N (Filtered)								00615
NH3-N (Unfiltered)								00610
T. Kjeldahl-N (Unfiltered)								00625
O-PO4-P (Filtered)								00671
Total Phos.-P (Unfiltered)								00665
Total Solids								00500
Total Non Vol. Solids								
Total Suspended Solids								00530
Total Sus. Non Vol. Solids								

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

Summary By Stephen D. Roll Date 6-21-73