

M E M O R A N D U M

February 18, 1975

State of
Washington
Department
of Ecology



TO: BILL BURWELL, Spokane Regional Office
FROM: HANS CREGG
SUBJECT: Clarkston STP

On October 23, 1974, an efficiency study was conducted at the Clarkston wastewater treatment plant.

The plant appeared to be in good order and it was evident that good housekeeping practices were being followed.

Laboratory results indicate that BOD and COD reductions are good, 87 and 89%, respectively. ~~The plant, however, falls down on total solids reduction—a mere 34%~~

Coliform counts are less than 20 for total and less than 10 for fecal colonies.

BOD + TSS. With AM STANDARDS

Nutrients Extremely High

HC:bj

STP Survey Report Form

Efficiency Study

City Clarkston Plant Type Secondary Pop. Served 6,800 Design 13000
 Receiving Water Snake River Perennial Intermittent
 Capacity
 Date 5/22/74 Survey Period 8 hours Survey Personnel H. J. Cregg
 Comp. Sampling Frequency hourly Sampling Alequot 1000 MLS
 Weather Conditions (24 hr) showers Are facilities provided for complete by-
 pass of raw sewage? Yes X No/Frequency of bypass once while under
 construction
 Reason for bypass power failure Is bypass chlorinated? X Yes No
 Was DOE Notified? Discharge - Intermittent Continuous

Plant Operation

Total flow 550,000 How measured Totalizer
 Maximum flow Time of Max.
 Minimum flow Time of Min.
 Pre Cl₂ #/day Post Cl₂ 40 #/day

Field Results

| Determinations | Influent | | | | Effluent | | | |
|--|----------|------|------|--------|----------|------|------|--------|
| | Max. | Min. | Mean | Median | Max. | Min. | Mean | Median |
| Temp °C | -- | -- | | -- | -- | -- | | -- |
| pH (Units) | 8.2 | 7.4 | | 7.4 | 7.4 | 6.4 | | 6.4 |
| Conductivity (µmhos/cm ²) | 1200 | 800 | | 900 | 800 | 650 | | 700 |
| Settleable Solids (mls/l) | 20 | 12 | 15 | 13 | NEG | NEG | NEG | NEG |

Laboratory Results on Composites

| | Influent | Effluent | % Reduction |
|--|----------------|----------------|-------------|
| Laboratory No. | <u>74 4228</u> | <u>74 4229</u> | |
| 5-Day BOD ppm | <u>236</u> | <u>31</u> | <u>87</u> ✓ |
| COD ppm | <u>415</u> | <u>46</u> | <u>89</u> ✓ |
| T.S. ppm | <u>709</u> | <u>468</u> | <u>34</u> ✓ |
| T.N.V.S. ppm | <u>390</u> | <u>321</u> | <u>18</u> |
| T.S.S. ppm | <u>241</u> | <u>18</u> | <u>93</u> ✓ |
| N.V.S.S. ppm | <u>51</u> | <u>3</u> | <u>94</u> |
| pH (Units) | <u>7.3</u> | <u>6.9</u> | |
| Conductivity (µmhos/cm ²) | <u>860</u> | <u>660</u> | |
| Turbidity (JTU's) | <u>99</u> | <u>10</u> | |

Laboratory Bacteriological Results

| Lab No. | Sampling Time | Colonies/100 ml (MF) | | | Cl ₂ Residual | |
|---------|---------------|----------------------|----------------|-------------|--------------------------|-----|
| | | Total Coliform | Fecal Coliform | Fecal Strep | | |
| 74-4230 | 1130 | < 20 | < 10 | | 1.5 | 1.0 |
| 74-4231 | 1330 | Est 20 | < 10 | | .5 | 1.0 |
| 74-4232 | 1430 | Est 20 | < 10 | | .5 | 1.0 |
| 74-4233 | 1530 | < 20 | < 10 | | .5 | 1.0 |
| 74-4234 | 1630 | < 20 | < 10 | | .5 | 1.0 |

Additional Laboratory Results

| | |
|----------------------------|------|
| NO ₃ -N ppm - | 25.0 |
| NO ₂ -N ppm - | NO |
| NH ₃ -N ppm - | |
| T. Kjeldahl-N ppm - | |
| O-PO ₄ -P ppm - | 15.1 |
| T-PO ₄ -P ppm - | 17.5 |

Operator's Name Russ Millard Phone No. (509) 758-5541

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

Type of Collection System

Combined Separate Both

Estimate flow contributed by surface or ground water (infiltration)

_____ MGD

Plant Loading Information

Annual average daily flow rate (mgd)

Peak flow rate (mgd)

Dry _____

Dry _____

Wet _____

Wet _____

COMMENTS: _____