

PROGRESS REPORT

TECHNICAL SERVICES DEPT. - W.G. KRUMMICH PLANT

JOB NO.

91370:3457

REPORT NO.

1

DATE

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TO RECEIVE DETAIL SECTION

TITLE: Mercury Recovery - DeNora Chlorine Cells

PERSONNEL: C. E. Woodward (J. R. Savage)

PROBLEM: To determine mercury loss sources in the W.G. DeNora Chlorine Facility and to prepare a mercury material balance around the cell house.

SUMMARY:

- Inventory measurements of mercury for 1964 and the first half of 1965 show loss of mercury at the rate of 0.4 pound mercury per ton of chlorine produced. The material balance determined accounts for 0.37 pound mercury per ton of chlorine. Mercury price fluctuations have been between \$5 and \$9 a pound. Expenses of adding make-up mercury average at around \$110,000 a year (mercury cost at \$7 a pound). It is now felt that significant reductions can be made in usages.

Major mercury losses which were identified are listed below with the appropriate mercury value - mercury cost at \$7 a pound.

Loss Source	Mercury Loss Rate, lb/year	Cost of Loss Source, \$/year
With NaOH from Decomposers (13 cells)	2240	15,680
With KOH from Decomposers (9 cells)	2180	15,260
With Sewer Water	3700	25,900
With Vented Hydrogen	3700	25,900
Result of "Load Dumps"	4000	28,000
	15,820	\$109,840

WGK 2835517

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Future Work

- 1) Develop mercury recovery method for pump tank cover water.
- 2) Develop mercury recovery method for caustic and potash filter backwashes.
- 3) Observe performance of replacement hydrogen line coolers.

C. E. Woodward

C. E. Woodward
Technical Services Dept.

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