

February 1, 1973

FRC: D. L. EMERY
CHLOR ALKALI DEPARTMENT

TO MEMORANDUM

A. Kampfer
R147

RE: INCREASE IN Hg LEVELS IN MERCURY FUME STACK

Mercury emission from the mercury fume stack has increased from a value of 0.4 lbs/day early in the history of running brine on the end boxes to a level of 2.8 lbs in October, 3.8 lbs in November, 6.9 lbs in December, and more recently 21.3 lbs in January. Mercury additions have also increased to cells. Control of Mercury Continues to be a Major Problem, and if I ever have an ulcer it may be over our inability to control mercury losses.

Results of tests made by John McCall and Larry Jones on January 31 on Cell 42 indicated a level approximately 10 times the 2.5 mg/M³ expected from previous data although the vapor level above the brine in the sump was normal. The mercury contained in the brine was also normal. A meeting between John McCall, Larry Jones, Bill Stock and myself was held on February 1 to discuss the results and future investigations.

It was agreed that we would:

1. Compare the difference in Hg vapor level above a cell inlet box with a straight mercury discharge with that above an end box with the mercury discharge pipe turned down.
2. Compare the mercury vapor level in an end box before and after cleaning.
3. In addition to the above but not discussed at the meeting, I would like John to evaluate the effect on this system that would be caused by adding a brine cooler identical to the four coolers installed on the plant expansion in
 - (a) series with the present brine cooler which would reduce flow but give the coolest brine.
 - (b) parallel with the present brine cooler which would not reduce flow. However flow still could not exceed the capacity of system leaving the pump tanks.

Walter Pou is expediting the repair of sprays in the mercury fume system. Design is also underway to replace this system with one using more suitable materials of construction.

Bill Stock is investigating the replacement of the mercury fume blower with a steam ejector.

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Memorandum

February 1, 1973

Page 2

In addition the cyclones installed to remove mercury from the brine leaving the pump tanks are inoperative as a result of a rubber failure and plugging. This system should be made operative immediately since this is resulting in a possible loss of 150 pounds per day. We don't know where the mercury goes after leaving here but it would be hard to understand how this material could keep from being caught in the iron flock created and removed in the clarifier. If plugging of the cyclones continues, then we should take further steps to eliminate this problem. This mercury is worth \$600/day in monetary value alone.

D L Emery
D. L. EMERY

DLE:fs

cc: Mr. F. J. Mabry
Mr. F. S. Williams
Mr. R. E. Podhora
Mr. John McCall
Mr. Bill Stock
Mr. Bill Mallett
Mr. Don Kallcock
Mr. A. Rambikur
Messrs. Bill Faragher/G. F. Stephens

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