PLAINTIFF'S EXHIBIT

ETCO-651

ETHYL CORPORATION

INTER-OFFICE

TO: Mr. D. E. Park

FROM: J. D. Mueller

SUBJECT: Status of Asbestos Fibers in Caustic Chlorine

February 23, 1977

The following items outline the present status of our evaluation of the problem of asbestos contamination of the operating diaphragm cells in No. 1 Cell Room.

- As of September, 1976, when OHSA inspected the plant we were in compliance with the present standard which was reduced from 5 fibers/cc (defined as fibers > 5μ length) to 2 fibers/cc in July of 1976. (Our largest value was 1.6 fibers/cc in the cell rebuilding area.)

- The proposed NIOSH standard is 0.1 fibers/cc which we could not meet without a totally enclosed system

- Operators presently wear masks when handling the asbestos.

- All present diaphragm cells of Dow, Hooker, Diamond, and PPG use either asbestos or polymer modified asbestos diaphragms. The newest dimensionally stable anode cells are using polymer modified asbestos which is baked on. Hooker was thinking of setting up a baking operation at Taft which would service cathodes for their customers in this area. This would remove the contamination problem from the plant. I do not know if Hooker's process could meet the proposed NIOSH standard or not. Hooker was working on an all polymer diaphragm, but since I have not heard any more about it, I assume they have not developed it at this time. Diamond was the first to develop the polymer modified asbestos diaphragm and is currently using it as their newly designed dimensionally stable anode cells.

- There is too much diaphragm cell investment nationwide to make shutting these cells down practical.

- Membrane cell technology (DuPont's Nafion) is just developing and is best utilized where lare evaporation investment is not justified. It requires a different cell design from diaphragm cells. New large scale expansions are being built with large, polymer modified, dimensionally stable anode diaphragm cells and quadruple effect evaporators.

- Dimensionally stable anodes have been evaluated for installation in No. 1 Cell Room and cost savings as well as power savings can be achieved if I.C.D. can sell the additional caustic and Allied can evaporate it. Preliminary discussions with Allied indicate that they could do it if we concentrated the cell liquor. Nothing has been done on this evaluation in the last few years and we have not looked at the effect of the polymer modified asbestos diaphragms. These diaphragms are only designed for D.S.A. operation.

- Asbestos content of our effluent water is not regulated at this time. If a standard were developed, we would probably have difficulty meeting it. This could ultimately require filtration of our effluent and subsequent handling of the asbestos which could again make compliance with the proposed NIOSH standard difficult.

J. D. Mueller

JDM/jg