Tucker Dep. Exhibit 3

The handwritten notes and underlining in this exhibit were made by OMC's counsel.

For a clean copy of the exhibit, see the produced documents.

3-31-8

FF No. Sem.

December 1968

II. Aroclor Wildlife Project

The analytical support work for the Aroclor Wildlife Project can be divided into 4 areas.

1. Develop sensitive and specific in-hand methods for identifying Aroclor in our environment.

2. Initiate an outside toxicological test program and provide necessary analytical methodology.

3. To determine validity of methods used and the results obtained by workers in the residue area.

4. Monitor labs doing research on environmental contamination by Aroclors.

The following progress has been made in the following areas:

1. An F & M 402 High Efficiency Gas Chromatograph has been purchased and set up. This system allows two column operation and a choice of 3 detective systems - electron capture, flame ionization and micro columetric.

   The GC electron capture system is operational and has been completely evaluated with regards to Aroclor sensitivity and potential pesticide interferences using a QF1-Chrom X Sorb W column.

2. The second column (DC 200 Anachrom ABS) will utilize both the flame ionization and micro columetric detectors via an infinitely variable effluent splitter. The electron capture system provides an extremely sensitive method for identifying nanogram amounts of polychlorinated biphenyls and possibly a semi-quantitative estimation of amount present. The flame ionization micro columetric detector while not as sensitive, should provide a better quantitative measure. This second system is not operational because of electronic failure and has not been completely evaluated. The characteristics of the polychlorinated biphenyls on the 2 different columns and 3 detectors will provide for their almost unequivocable identification in unknown samples. Some thin layer and column chromatographic techniques have also been investigated for the isolation of polychlorinated biphenyls from pesticides which interfere with the gas chromatographic determination. In addition to this work, Dr. Mieure has established the operating parameters necessary for the absolute identification of polychlorinated biphenyls by GC/MASS.

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2. An outside toxicity study has been initiated with Industrial Bio-Test Laboratories and the necessary analytical support work completely outlined on paper. Some tissue samples are now in hand and verification of outlined procedure will begin soon. An alternate hot analytical approach using C_{14} tagged Aroclor has also been outlined on paper and is available should its use be necessary.

3. After closely reviewing the available literature, I find it difficult to dispute the identification of the interferring peaks as polychlorinated biphenyls. Still we have not actually demonstrated this on real samples in the labs. For this reason a letter to the Fish and Wildlife people at Patuxent is being drafted requesting duplicate samples of some of the tissues in which they believe they have found polychlorinated biphenyl. These samples will then be subjected to an absolute GC/MASS identification. If polychlorinated biphenyls are found, this still does not prove that Aroclors are the initial source of contamination. To help us determine if Aroclors are the actual source of contamination, the following experiments have been planned.

   a) Water solubility of Aroclor

   b) Incineration of Aroclor containing paper

   c) Analysis of air, water, and soil samples from around our manufacturing sites.

   d) Feeding studies with pesticides that might be metabolized to polychlorinated biphenyls.

4. We have visited several government agencies in Washington to discuss polychlorinated biphenyls. Trips will be planned as deemed necessary.

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V. Aroclor Wildlife

An analysis of the analytical work which will be necessary for the Aroclor-Wildlife project has been carried out. Included were a time table for all future activities with priorities. A formal P.A. is being written in which this information will be incorporated.

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A portion of the Biotest-Aroclor feeding study has been started. Several chickens are being fed Aroclor 1242, 1254, 1260, and 5460, along with two chlorinated naphthalenes (Halowax 1014, 1099) and two insecticides (Toxaphene & Tech. DDT). Tissue samples from these chickens are to be analyzed for chlorinated hydrocarbons by electron capture gas chromatography. In preparation for the arrival of the tissue samples, procedures for the isolation of the chlorinated hydrocarbons have been outlined and are presently being verified.

ED/GC analysis of tap water equilibrated with Aroclor 1242, 1248, and 1254 indicates that the solubility of Aroclor 1242 is approximately 200 parts per billion and that a stable, reproducible emulsion can be formed which contains about twice as much Aroclor. When this study is completed a more detailed memo will be issued.

Aroclor analysis of sediment samples taken from Snow Creek are also in the process of being completed. One sediment sample from the plant out-fall contained 0.25% Aroclor.

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