MONSANTO - ANNISTON

REVISED PR&D WORK PLAN

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DATE: September 9, 1970

PROJECT TITLE: Aroclor Pollution Study

DEPARTMENT: 916.07

JUSTIFICATION: To reduce the Aroclor content of the waste water from this department.

COST: Estimated per diem cost:$87
Cost of mandays previously expended: $7,917
Total PR&D cost: $16,083

STATUS OF WORK:

In the 13 day pilot run, initial concentrations of 1000-8000 ppb Aroclor in waste water were reduced to a range of 0-15 ppb upon passing through a series of packed carbon beds*(1) at an average flow rate of 25 cc/min. over 99% of Aroclor removal occurred in the prefilter. This unusual reduction is believed to be due to the filtration of solids on which Aroclor was adsorbed. At higher flow rates (0.5 gpm/ft.^{2}) through the prefilter, these solids plugged the prefilter. The study is presently being divided into two phases: (1) feasibility studies for continuous solids (with Aroclor) removal from limestone pit effluent, and (2) carbon adsorption from the clear stream at the Aroclor sump.

*(1) The adsorber system consisted of prefilter (3.5 inch diameter tube packed to 5.5 inch bed depth) and a series of 1 inch diameter columns packed to a total bed depth of 13.5 ft.

EXPERIMENTAL: I. Demonstrate Aroclor removal by filtration of effluent from the new neutralization pit.

Object: To see if the expected Aroclor concentrations (100-200 ppb) in the effluent of the new pit are similarly reduced by filtration as in the old.

Mandays - 4

Target completion date - 9/21

II. Define the following parameters in packed bed adsorption study on the effluent from the Aroclor sump:

a. Flow rate
b. Bed depth

EXPERIMENTAL: II. (continued)

Object: To determine the loading capacity of carbon and operational parameters in a solid and salt free Aroclor waste stream.

Mandays - 60

Target completion date - 11/27/70

III. Demonstrate Aroclor removal in a semi-continuous adsorption study. Define optimum conditions:

a. Retention time

b. Adsorbent loading capacity

Object: To utilize some cheaper adsorbents than carbon and provide an alternate design.

Mandays - 30

Target completion date - 12/31/70

SAFETY: The waste water effluent from the Aroclor department contains mainly HCl and Aroclor (i.e., in low concentrations). HCl fumes and acid are very corrosive to the skin and mucous tissue. Repeated exposure to Aroclor can cause a condition of chlorance. Hence, any area exposed to the waste water should be washed thoroughly with copious amounts of water. If exposure is in a critical area, as the eyes, consult a physician.

I. Ransaw

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