Analytical Chemistry
Special Study 70-6
Job No. 1630346

STUDY OF THE OPEN AIR COMBUSTION OF PAPER CONTAINING AROCLOR 1242

INTRODUCTION

It has been proposed from the observed distribution of polychlorinated biphenyls in tissue samples taken from marine organisms that global eco-distribution of these materials occurs via aerial transport (wind currents, airborne particulate matter, etc.)

A qualitative experiment has been performed with the objective of determining if Aroclor in N.C.R. paper is destroyed or volatilized when the paper is disposed of by open burning.

SUMMARY

Under the conditions of this experiment:

1. Aroclor 1242 is easily volatilized from N.C.R. paper containing Aroclor under open air combustion conditions using a Bunsen burner.

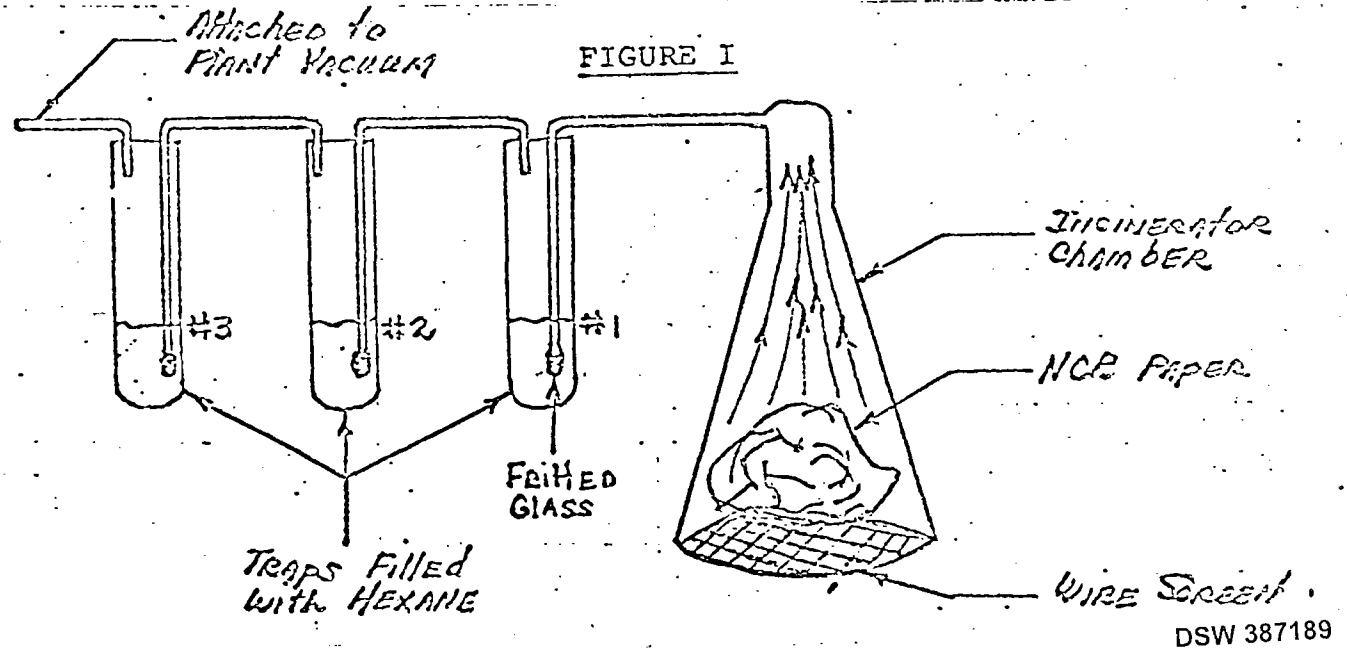
2. Aroclor 1242 undergoes little thermal decomposition at Bunsen burner temperatures.

3. It appears that air pollution could occur via open burning of N.C.R. paper or other Aroclor containing materials.

DISCUSSION

The experiment was carried out in the following manner. Approximately 3g (1 sheet) of paper (CB 15# white, 8½ x 11, long grain, F-3468-4-24-64, The N.C.R. Company) was placed in the incinerator chamber of the apparatus shown in Figure I.

FIGURE I



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At this point the vacuum was turned on and the paper ignited using a Bunsen burner. After the paper had completely burned, the hexane in each trap, the hexane extracts of the ash and the walls of the incinerator chamber were analyzed for Aroclor by EC/GC (Analytical Method No. 69-13). Hexane samples from trap #1 were also analyzed after extraction with base and acid to remove any oxidized materials.

RESULTS

The qualitative data supporting the conclusions is shown in Figures 2, 3 and 4.

MONSANTO COMPANY
Organic Chemicals Division
Applied Sciences Section
St. Louis, Missouri

3-70 - E. S. Tucker, R. E. Keller

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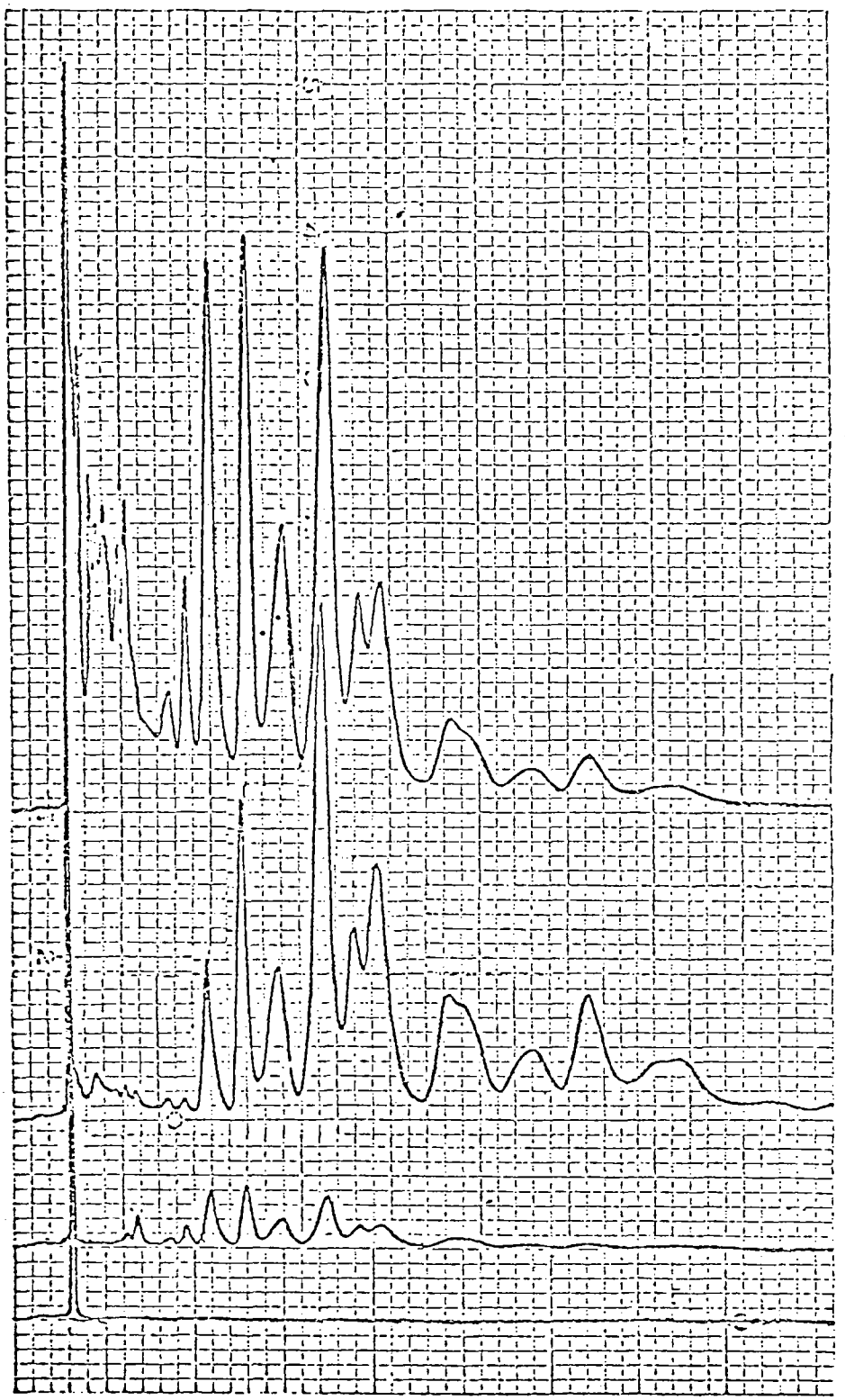

FIG. 2

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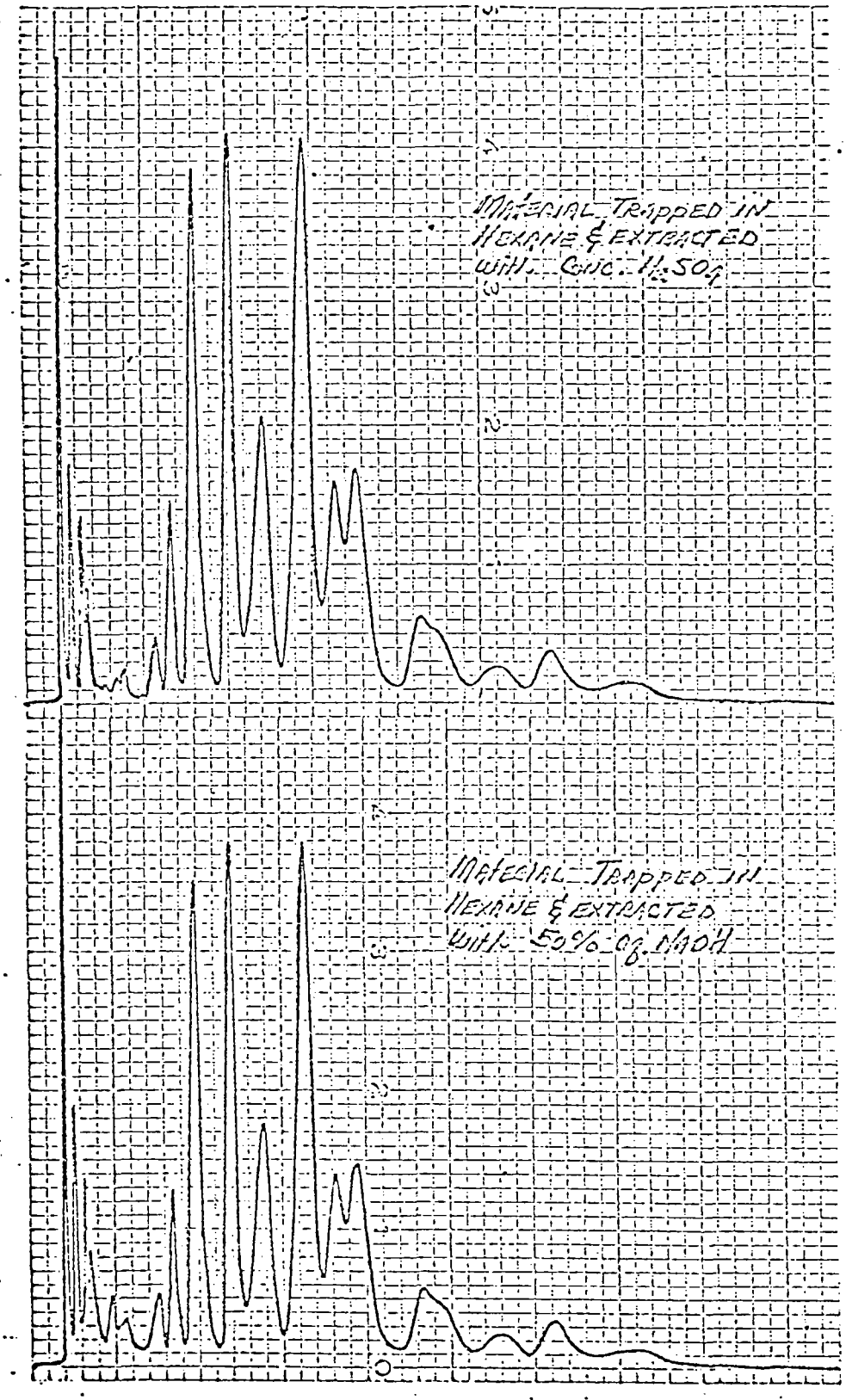

Fig 3

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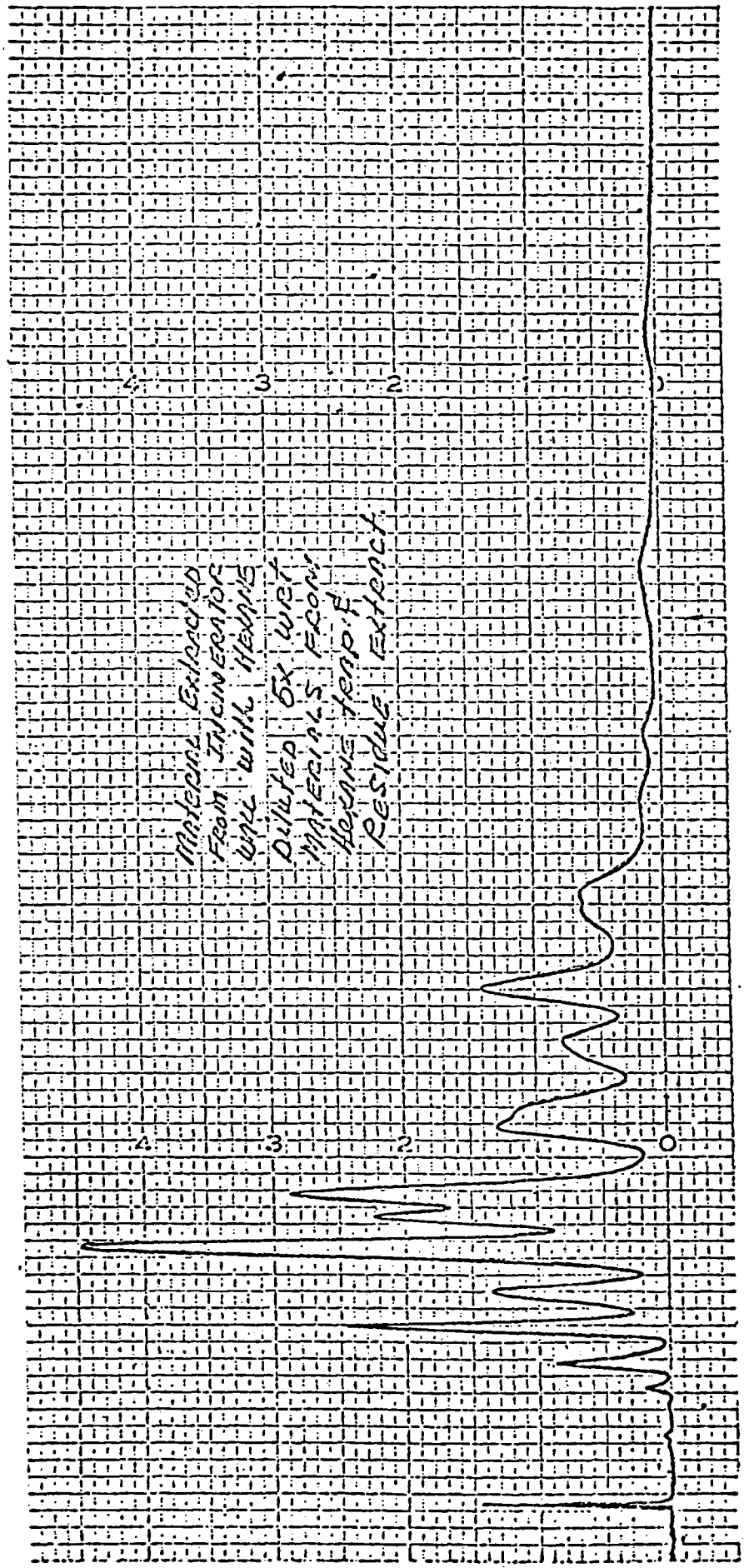

Fig. 4

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