

Monsanto

FROM: NAME & TITLE

E. T. Mollica

DATE

December 8, 1977

CC:

L. A. Miller

R. A. Stohr

SUBJECT

PCBs

REFERENCE

TO

F. J. Fitzgerald

The enclosed questions and answers develop the suggested response for Mr. Hanley's use relative to the Monsanto position regarding disposal of PCBs in the environment.

In preparation for developing these responses, a meeting was held with Bob Isham, George Levinskis, Anna Navarro, Dick Stohr and David Wood to determine the continuing issues on PCBs following Monsanto's phase-out from the business. The enclosed responses were then developed with Messrs. Isham and Stohr, and have not been reviewed by anyone outside MIC.

The second group of responses attached were developed previously regarding the Monsanto phase-out from PCBs and may be of additional information.

Q: What is Monsanto going to do to clean up PCB from the environment (Hudson River or Lake Michigan)?

A. Ladies and gentlemen, let me put that question in perspective. There are essentially three issues with respect to PCBs in the environment -- disposal of PCBs per se as liquids, disposal of electrical devices containing PCBs and the removal of PCBs from lakes, streams and rivers.

In the first two problems incineration is the best known technology for destroying PCBs. Adequate incineration capacity is available to completely destroy all PCB mixtures coming from used transformer fluids in the years ahead. A leading incineration service is also working on equipment that will shred a PCB capacitor and then incinerate the liquid dielectric material in one operation.

The question of disposal of PCBs in waterways is a very complex issue. There is no known technology that will guarantee 100% collection and disposal of PCBs from mud and silt bottoms. Dredging is not a practical solution. Not only are the costs extremely high, but more importantly the dredging operation itself recirculates PCBs, which have settled into the bottom materials, back into the waterway. Quite frankly dredging is impractical. In

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addition the disposal of dredge bottoms cannot be satisfied by incineration because of the contamination with water and mud. Therefore, such materials would have to be disposed in land fills. That is a controversial solution to such problems.

Other approaches to the problem of destroying PCBs are under investigation.

Presently, development of specific bacteria to break down the PCBs are under investigation at a number of laboratories including:

- Ontario Foundation in Canada
- Institute of Fermentation in Japan
- General Electric's Schenectady Lab
- Also, a new method using high-energy electrons to destroy PCBs in water was reported by the Massachusetts Institute of Technology in November 1977.

We are hopeful that one or more of these methods will lead to a practical method of destroying PCBs in contaminated river and lake bottoms.

Q: What is Monsanto doing specifically about the problems you created?

A: As I indicated, the best way to rid the environment of PCBs is through high temperature incineration of liquid PCBs. That technology is well-advanced and Monsanto can offer nothing more here. The newer developments for bacterial or high-electron destruction offer a hope for clean-up of PCBs in the environment. We are continuously monitoring these and other developments with universities, our former customers and the U.S. Environmental Protection Agency. If our scientists feel any development could lead to a practical method of clean-up, we would lend our support to move the solution along. Even though we have ceased manufacturing of PCBs we have provided samples for future environmental research work. We're also continuing our PCB medical research in laboratory animals to supplement existing data.

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Q: Do you think Monsanto has acted in a socially responsible manner with PCBs?

A: We think we've acted in a highly responsible manner! Since the early 1930s PCBs have offered the electrical industry increased fire resistant benefits in transformers and capacitors. The very inertness and fire resistance of PCBs offered people and equipment a degree of protection from fires and explosions over the alternative product, mineral oil. With the recognition that PCBs were highly persistent in our environment we took positive steps to limit their use. In 1976 we announced we would completely exit this business when a suitable replacement dielectric fluid was found. We attempted to develop an alternative dielectric fluid to replace PCBs. With industry acceptance of other, non-Monsanto products, we phased out of the dielectric fluids business in 1977.

We took these actions, not from the threat of government action, but from a realization that PCBs' historical benefits to mankind no longer balanced the newly discovered risks to our environment.

Q: Now that Monsanto has stopped making PCBs, are there any other producers?

A: PCBs are still being manufactured in Germany, France, Spain, Italy and certain eastern European countries. The significant point is that no legislation prohibiting the manufacture or use of PCBs in enclosed systems exists in Europe. However, Monsanto has chosen to cease manufacturing at Newport, South Wales as a matter of company policy.

(Note: Germany - Bayer; France - Prodelec; Spain - Flix; Italy - Caffaro. Little, if any, of this PCB material has entered the U.S. market through the years, even though it theoretically could be imported until January 1, 1979 under the Toxic Substances Control Act.)


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