Monsanto

FROM (NAME & LOCATION): R. E. Keller - R&D Laboratories - 1700 So. Second St.

DATE: March 13, 1969

SUBJECT: AROCLORS - FEDERAL WATER POLLUTION CONTROL ADMINISTRATION

REFERENCE: CP 3/5/69 Memo to EW on Phone Call from Robert Rock, FWPCA

TO: Elmer Wheeler
General Offices

cc: H. S. Bergen - GO
W. R. Richard - GO
R. E. Kelly - GO
C. Paton - GO
W. F. Waychoff/ W. E. Schalk
/J. E. Springate - GO
E. S. Tucker - Res. 2

Per our agreement with reference to the above memo from C. Paton, I called Mr. Robert Rock of the Federal Water Pollution Control Administration, Alameda, California on March 12.

I explained that we have no methods in writing for the specific detection and measurement of Aroclor in the ppb range in water. I commented that we have an analytical program underway and expect to have these methods for release in the near future. I gave Rock the Holmes et al, Nature 216 227 (1967) reference and explained that we are in the process of investigating this work. I also reviewed Jensens earlier work in Sweden and qualified it with the comment that to the best of our knowledge the specific analytical details have not been published. Rock seemed satisfied with our general discussion about methodology.

He asked if we were familiar with work done by Reisbrough at the University of California and that at the Patuxent, Maryland Laboratories of the USDI. I said we knew about this work. I explained that we felt that no one in the U.S. has actually identified chlorinated biphenyls by mass spectroscopy or a similar technique. Upon questioning Rock on this point, he thought there would be a release of this information in the not too distant future from another laboratory. This means we should move even faster to get ourselves in a comparable knowledge position analytically.

The laboratory that Rock is associated with has considerable expertise on the analysis of water for trace chlorinated hydrocarbons (including pesticides). They have techniques for measurement in the part per trillion range using concentration schemes (5 kilograms of water) coupled with gas chromatography and electron capture plus microcoulometric detection procedures. Rock seemed willing to discuss this openly and he left the door open for a future contact if we feel it is in order.

At this point Rock had specific application and toxicity questions about Aroclors where he needs answers to prepare himself for questions from others. I explained that the answers to these must come jointly from the business group and/or the Medical Department.

15

TRAN 058754

IN 10 REV. 11-65

PLAINTIFF'S EXHIBIT
209
10-25-95

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He listed the following questions and I promised that an authority would reply shortly. Will you handle?

1. Would polychlorinated biphenyl type materials such as those in our Aroclors be expected to be found in domestic wastes (household)?

2. Same question as 1, but in industrial wastes?

3. If the answer to 2 is yes - would this be a result of a breakdown of a marketed product following use or as a waste from a manufacturing process in which polychlorinated biphenyls are used?

4. Would chlorinated biphenyls be found in oil/gasoline refinery effluents?

5. Do we have toxicity data - especially for fish?

6. Can we provide chemical/physical property data for our Aroclor products - especially solubility in water?

   I commented that the solubility in water is extremely low (< 1 ppm) based on our recent work. He was very interested in this comment - said it followed some theories about affinity for suspended matter with reference to San Francisco Bay.

Rock impressed me as being quite knowledgeable about this whole subject. His approach and reasoning seemed very rational. We should keep him in mind as a future contact when we reach a position where it is timely and beneficial to exchange information with certain other laboratories.

REK

R. E. Keller

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