Monsanto

FROM: R. E. Keller - R&D Laboratories - South Second Street

DATE: April 28, 1970

SUBJECT: AROCLOR ANALYTICAL PROGRAM

REFERENCE:

TO : W. B. Papageorge
General Offices

cc R. E. Kelly - GO
E. P. Wheeler - GO
J. T. Garrett - GO
J. Mason - GO
C. W. Roos - Res. 1
T. M. Patrick - Res. 1
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→ R. H. Munch - Res. 2
Q. E. Thompson - GO

This memo will confirm recent action we have taken to speed up Aroclor analytical projects. Effective April 27, two teams will be working concurrently, backed up by a third team for mass characterization work and dioxin studies.

Team	Projects	Personnel
I	Environmental Residue Analyses Biological/Toxicity Studies Customer and Outside Service Waste Disposal Studies	Tucker* Litschgi Westenberger
II	Biodegradability Studies Product Composition	Emery* Saeger Kinast Gasser
III	Characterization Studies Regulatory Agency Work (Dioxin)	Dietrich* Mieure

Actions relative to the division objectives have been assigned to these teams as shown on the attached. New projects will be assigned when possible to the team responsible for that type of work. Communications should be made through the team coordinator denoted by an asterisk. Please copy me in on all communications.

R. E. Keller

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Attachment

PLAINTIFF'S EXHIBIT 64

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ANALYTICAL PROGRAM (4/70)

FOR

POLYCHLORINATED BIPHENYL ENVIRONMENTAL PROBLEM

The Applied Sciences program for the 3/31/70 Aroclor Environmental Management Plan is outlined by actions shown below. The projects indicated are supportive to the objectives given in the Management Plan. The actions represent work currently in hand. It is expected that this program will be revised continuously on a priority basis consistent with the changing needs of the Management Plan.

	Man Weeks	Target Date
Objective 2 - Inform customers of the PCB problem and the importance of preventing environmental pollution both at their plants or by their products.		5/1/70

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TEAM			Man Weeks	Target Date
	Objective 3 -	Develop products to replace Aroclors for those uses in which Aroclors have been demonstrated to be harmful to the environment and cannot be prevented from escaping into the environment.		12/1/70
II	Action 1)	Develop techniques needed for purity or composition measurements and for biodegradation studies of replacement candidates.	6	
		- More accurate method for isomers in distilled Aroclor 1130 and 1142.	2	
			8	
	Objective 4 -	Develop reliable analytical procedures for determining PCB content of liquids, gases, or solids.		7/1/70
I	Action 1)	Develop improved isolation and GC techniques for more specific and accurate measurement of PCB's.	4+	

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TEAM			Man Weeks	Target Date
I	Action 2)	Develop and issue method for PCB's in air.	3	
II	3)	Produce PCB reference materials by preparative gas chromatography.	6	
II	4)	Show if there is Aroclor product composition change over 40 year manufacturing period.	1	
—	5)	Estimate analytical methodology and program needed for chlorined terphenyls - 5425 and 5460.	-	
			14	

Objective 5 - Develop methods for effective disposal of wastes containing PCB without contaminating the environment. — 10/1/70

I	Action 1)	Examine gas samples from John Zink Co. incineration study.	2

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TEAM			Man Weeks	Target Date
II	Action 2)	Evaluate Vapo-Coupled sand and glass wool for absorption of PCB from water.	3	
II	3)	Set up biodegradability laboratory for semi-continuous activated sludge treatments.	2	
II	4)	Carry out biodegradability studies of Aroclor products per se, HB-40, monoisopropyl biphenyl and potential substitution products.	18	
			25	
	Objective 6 -	Develop methods for reclaiming and reusing off-grade fluids containing PCB.		9/1/70
	Objective 7 -	Determine effects of PCB's on birds, aquatic life, animals and humans.		6/71

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			Man Weeks	Target Date
TEAM I	Action 1)	Correlate PCB residues in tissues with Bio-Test toxicity data -		
		- Rat, chicken and dog feeding studies.	30	
		- Fish studies.	8	
I	2)	Confirm type and amount of PCB in wildlife (fish and birds) from different geographical sources.	6	
			44	
	Objective 8 -	Establish and maintain favorable relationships with customers, the press, governmental agencies, the public and the universities.		Continuous
I	Action 1)	- PCB in scrubber solutions from air samples from NCR coating operations.	2	
I	2)	- PCB in water settling ponds.	2	

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			Man Weeks	Target Date
EAM II	Action 3)	N. Johnson - Major Industrial Fluids Users (Johnson Motors, Water samples for PCB levels discharged.	4	
I	4)	Wisconsin Alumni Research Foundation - PCB in Lake Michigan fish from Lake Michigan pesticide investigations.	1	
I	5)	Ohio FDA - PCB in milk from dairy herds.	1	
I	6)	Inorganic Division - PCB in detergents and components thereof.	5	
II	7)	Determine if commercial DDT, et al, contains trace PCB as contaminant.	3	
III	8)	Determine presence of dioxin and/or related toxic materials in PCB products.	2	
			20	
		4/1/70 Grand Total =	124	

124 X /Week =

R. E. Keller

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