

ANALYTICAL PROGRAM (4/70)

FOR

POLYCHLORINATED BIPHENYL ENVIRONMENTAL PROBLEM

4/8

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.

	<u>Man Weeks</u>	<u>Target Date</u>
<u>Objective 1</u> - Reduce and effectively control the PCB content of all effluent from Monsanto plants.		9/1/70
<u>Action 1)</u> Monitor WGK Mississippi River water, sediment and plant effluent for PCB.	8	Continuous
2) Transfer GC methodology to WGK.	1	5/1
No Action 3) Determine PCB residues in fish from Choccolocco Creek at Anniston.	4	
	<u>13</u>	

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

NEV 027172



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	<u>Man Weeks</u>	<u>Target Date</u>
<u>Objective 3</u> - 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
<u>Action 1)</u> Develop techniques needed for purity or composition measurements and for biodegradation studies of replacement candidates.	6	
<i>Work underway</i> - More accurate method for isomers in distilled Aroclor 1130 and 1142. <i>- Physical Chemistry Group</i>	2	5/1
	8	
<u>Objective 4</u> - Develop reliable analytical procedures for determining PCB content of liquids, gases, or solids.		7/1/70
<u>Action 1)</u> Develop improved isolation and GC techniques for more specific and accurate measurement of PCB's.	4+	
No Action		

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		Man Weeks	Target Date
<u>Action 2)</u> <i>No Action</i>	Develop and issue method for PCB's in air.	3	5/1
<i>Preparative GC lab. 3)</i> <i>Physical Chemistry Lab</i>	Produce PCB reference materials by preparative gas chromatography.	6	5/15
<i>No Action</i>	4) Show if there is Aroclor product composition change over 40 year manufacturing period.	1	
<i>No Action</i>	5) Estimate analytical methodology and program needed for chlorinated terphenyls - 5425 and 5460.	-	
		14	

Objective 5 - Develop methods for effective disposal of wastes containing PCB without contaminating the environment.

10/1/70

Completed. Action 1) Examine gas samples from John Zink Co. incineration study.
Rec'd. 1. Completed 5/8

2

4/15

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		Man Weeks	Target Date
<u>Action 2)</u>	Evaluate Vapo-Coupled sand and glass wool for absorption of PCB from water.	3	5/1
No Action			
Lab. Space Needs 1.1 for Base and RDX	3) Set up biodegradability laboratory for semi-continuous activated sludge treatments. Equipment needs outlined.	2	5/1
	4) Carry out biodegradability studies of Aroclor products per se, HB-40, monoisopropyl bi-phenyl and potential substitution products.	18	
	4 Week Elapsed Time	4	5/15
2 Candidates Aroclor 1242	1 Man Week - Methodology Separation + GC	25	
	3. Man Week - Work up		
	no name Active, Water - (not semi-cont.)		
	Aroclor 1242, Aroclor 1228	1	4/15

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

Action 1) Correlate PCB residues in tissues with Bio-Test toxicity data -

No Action

Arrangements being made for lock tests.

- Rat, chicken and dog feeding studies.

30

1/1/71

- Fish studies.

8

2) Confirm type and amount of PCB in wildlife (fish and birds) from different geographical sources.

6

1/1/71

44

Objective 8 - Establish and maintain favorable relationships with customers, the press, governmental agencies, the public and the universities.

Continuous

Action 1) Appleton Paper Co. - PCB in scrubber solutions from air samples from NCR coating operations. *Per government.*

2

?

No Action

Samples not received as of 4/8.

BSC Papagoorge contact.

Scott will call.

No Action

gas sent to area policeman 3/20.

2) GMC Foundry, Bedford, Indiana - PCB in water settling ponds.

2

?

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740431

Man Weeks Target Date

<i>13 Samples & Completed except for Co. Co.</i>	<u>Action 3)</u> <i>Pogue</i> N. Johnson - Major Industrial Fluids Users (Johnson Motors, Wisconsin, Lester Casting) - Water samples for PCB levels discharged. <i>+ Wheeling Steel + Central Die Casting</i>	4	
		1	4/15
<i>Completed</i>	4) Wisconsin Alumni Research Foun- dation - PCB in Lake Michigan fish from Lake Michigan pesti- cide investigations.	1	4/1
<i>Underway</i>	5) Ohio FDA - PCB in milk from dairy herds.	1	4/15
<i>10 Action</i>	6) Inorganic Division - PCB in detergents and components thereof.	5	
<i>NO Action</i>	7) Determine if commercial DDT, et al, contains trace PCB as contaminant.	3	
<i>NO Action</i>	8) Determine presence of dioxin and/or related toxic materials in PCB products.	2	
		20	
4/1/70 Grand Total		=	124

124 X \$600/Week = \$74,400

R. E. Keller

NEV 027177

db

740432

In Summary we have assumed world-wide leadership in facing the PCB problem. We have educated and pressured our customers and coproducers to fully appreciate the problem. We are leaders in analytical methodology. Our plants are effectively reducing the PCB content of their effluent. We have without ^{waiting for} any orders from any agency selectively and voluntarily discontinued the sale of Aroclors for some uses. We are aggressively developing and introducing product substitutes for uses difficult to control. Where control is possible we are working hard at making it effective and keeping the business.

Successful control to prevent contamination is possible in systems in which brooders are sealed. We are working very closely with our customers to educate and motivate them and have offered technical assistance on their disposal and effluent problems.

Brooder business which we will retain is shown on this chart.
(Show transparency)

We are doing this and at the same time maintaining the image of Monsanto as a responsible member of the business world genuinely concerned with the welfare of our environment.

NEV 021493

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