4-28-70

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 1 -	Reduce and effectively control the PCB content of all effluent from Monsanto plants.		9/1/70
I Action 1)	Monitor WGK Mississippi River water, sediment and plant effluent for PCB. - 16 Samples in Hand ~~Fish~~ - analyze for PCB.	8	
I 2)	Transfer GC methodology to WGK. Target date 7/1. WGK man will work with ST	1	
I 3)	Determine PCB residues in fish from Choccolocco Creek at Anniston. Phased in later.	4	
		13	
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

		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
Action 1) (4)	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	

II

Known fractions - through tetra.

Schedule Aroclor 1260 or highest aroclor possible and separate by prep. GC

Priority C

Objective 4 -	Develop reliable analytical procedures for determining PCB content of liquids, gases, or solids.		7/1/70
Action 1) (5)	Develop improved isolation and GC techniques for more specific and accurate measurement of PCB's.	4+	

I

No action currently. Chatted with MCL - about SCOT column capability.

			Man Weeks	Target Date
I	Action (6)	2) Develop and issue method for PCB's in air. Schedule - in regular manner	3	
II	(7)	3) Produce PCB reference materials by preparative gas chromatography. Same as Action (4)	6	
II	(8)	4) Show if there is Aroclor product composition change over 40 year manufacturing period. EE will check availability.	1	
	(9)	5) Estimate analytical methodology and program needed for chlorined terphenyls - 5425 and 5460. No action.	-	
			14	

Does Europe have any such samples?

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

I	Action (10)	1) Examine gas samples from John Zink Co. incineration study. Completed.	2	

			Man Weeks	Target Date
II	Action 2) (11)	Evaluate Vapo-Coupled sand and glass wool for absorption of PCB from water. Work underway by Team I - establish absorption isotherm + capacities.	3	
II	(12) 3)	Set up biodegradability laboratory for semi-continuous activated sludge treatments. Glass units for semi-continuous have been built. Could start within week. GC set up with flame. Start with River Di[illegible]	2	
II	(13) 4)	Carry out biodegradability studies of Aroclor products per se, HB-40, monoisopropyl biphenyl and potential substitution products. Wine replacement ingredients for Hydraul blends. Six chlorinated diphenylethers.	18	
			25	

MCL - How broad biodegradability program.

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

			Man Weeks	Target Date
I	Action 1) (14)	Correlate PCB residues in tissues with Bio-Test toxicity data -		
		- Rat, chicken and dog feeding studies. 1000 Cu. Feet - Will store 29 cu. feet in St. L.	30	
		- Fish studies.	8	
		correlate metabolic effects via cow studies. Lower chlorinated isomers disappear more. 2,3,4.		
I	(15) 2)	Confirm type and amount of PCB in wildlife (fish and birds) from different geographical sources.	6	
			44	

Samples from MCL or Europe.

	Objective 8 -	Establish and maintain favorable relationships with customers, the press, governmental agencies, the public and the universities.		Continuous
I	Action 1) (16)	Appleton Paper Co. - PCB in scrubber solutions from air samples from NCR coating operations. Detectable Levels.	2	
I	(17) 2)	GMC Foundry, Bedford, Indiana - PCB in water settling ponds. inactive - no samples	2	

			Man Weeks	Target Date
I	Action (18)	3) N. Johnson - Major Industrial Fluids Users (Johnson Motors, Wisconsin, Lester Casting) - Water samples for PCB levels discharged. Underway.	4	
I	(19)	4) Wisconsin Alumni Research Foundation - PCB in Lake Michigan fish from Lake Michigan pesticide investigations. Completed.	1	
I	(20)	5) Ohio FDA - PCB in milk from dairy herds. Complete.	1	
I	(21)	6) Inorganic Division - PCB in detergents and components thereof. Scheduled later.	5	
I	(22)	7) Determine if commercial DDT, et al, contains trace PCB as contaminant.	3	
III	(23)	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

(24) PCB in HCl from WGK
~~By~~product of chlorination process.
R. E. Keller
of present will check to look at every product where HCl is involved.

db

MONS 036008

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