TO: Mr. E. J. Bock

CC: Mr. H. H. Bible
Mr. J. L. Gillis
Mr. E. J. Putzell, Jr.
Mr. C. H. Sommer
Mr. M. C. Throdahl
Mr. J. R. Eck

Mr. J. N. Ehlers

Mr. E. S. Bauer
Mr. W. H. Bromley
Mr. A. J.A. Bryan
Mr. J. E. Crawford
Mr. C. P. Cunningham
Mr. W. B. Daume
Mr. J. M. Depp
Dr. L. Fernandez
Mr. R. K. Flitcraft
Mr. D. J. Forrestal
Dr. R. S. Gordon
Mr. J. D. Mahoney
Mr. H. L. Minckler
Mr. Finis Morgan
Mr. H. K. Nason
Mr. E. A. O'Neal
Mr. Sam Pickard
Mr. F. E. Reese
Mr. T. K. Smith

Dr. M. N. Johnson
Mr. E. P. Wheeler

~~Jim McKee~~ – C
~~John Spanio~~ – C
Tom Ford – C
Ed John – B

QUARTERLY REPORT

July, August, September 1969

Pls especially note Aroclors references.
Dan F.

MEDICAL DEPARTMENT

CONFIDENTIAL INFORMATION

This document contains confidential information which is the preperty ef Monsante Company. Only those portions of the document relevant to a duly authorized individual's need to know may be excerpted for him. The report must not be sent outside the company without written approval and the authorized recipient is accountable for its safekeeping, excerpting, or etherwise disclosing of its centents and for its proper disposal. Please destroy this report when you are finished with it.

PRR 025243

SCM 042048

Kelly
EXHIBIT NO. 10
R.G. 12/12/90

SUMMARY OF MOST SIGNIFICANT DEVELOPMENTS

July, August, September 1969

Polychlorobiphenyls (Aroclors) publicity becomes nationwide and portentious. Please read section under Environmental Control.

PRR 025244

SCM 042049

The following is the report of the Medical Department activities during the months of July, August, September 1969.

1. General Medical Supervision

Medical inspections were carried out at Bridgeport, Decatur, El Dorado Refinery and Chemical Plant, Hartford, Kearny, Pensacola, and Trenton. No significant undiscovered problems were present at any of these installations. At Pensacola our No. 3 doctor was lured away by the Pensacola Plant of St. Regis Paper, which offered him a salary higher than our No.1 doctor was receiving. We again recommended salary adjustments on all our full-time physicians and received a partial response from the Textiles Division. We were fortunate, after a 15 month search, in finding an excellent full-time physician for our Decatur Plant. To balance this, we have received word that our principal Queeny Plant physician, who has been with us for five years, is leaving due to the press of his private practice. A search has been started for his replacement. With the affluent society and the more affluent medical profession, this promises to be somewhat difficult.

2. Toxicology

During this period 43 samples were submitted for acute toxicity studies. Seven long-range projects are underway. The most recent one was testing on methylacrylonitrile. This is the monomer that may be extracted from one of our more promising packaging applications.

The flurry of the problem with enzymes in detergents seems to have quieted down. At any rate, P&G has remained surprisingly quiet.

3. Environmental Control

PCB

A. General

Interest and concern regarding the presence of Aroclors (specifically 1254 and 1260) in the environment continued to grow. Newspaper comments (some "viewing with alarm") on the appearance of a new "global contaminant" followed the Wisconsin DDT hearings on proposals to ban the use and sale of this insecticide. The Aroclors or "PCB's" were brought into the testimony as interfering substances which exaggerate the concentrations of DDT being found in fish, food and the environment. An editorial writing service picked up the story and a "canned" editorial appeared in a number of smaller newspapers in various parts of the country--identifying Monsanto as the only United States producer of this new menacing contaminant.

The State Department of Agriculture in Connecticut reported finding PCB's in fish in that state. This led to two articles in the Hartford Times; the first following an interview with the chemist

reporting the findings and a longer story in the Sunday supplement covering Monsanto's position relative to the situation. Subsequently, two five-minute radio tapes prepared by the outdoor and wildlife editor were made available to a syndicated network of 108 radio stations. The first again was an interview of the analytical chemist and the second an interview with a member of the Medical Department.

During the summer we have received reports of PCB's in milk in Georgia and Maryland; in fish and water of Lake Michigan; in fish and oysters in the Gulf of Mexico.

The latter led to sampling of the Escambia River below our Pensacola Plant outfall and approximately 40 ppb (parts per billion) of Aroclor 1254 were found by biologists of the West Florida State University, one-fourth mile below the plant. Studies then done by the Pensacola Laboratories of the Bureau of Commercial Fisheries (U.S. Department of Interior) indicated that 400 ppb killed 50% of shrimp exposed to this concentration for 96 hours. Subsequently, the laboratory found that 5 ppb killed baby shrimp in 18 days.

This is significant since shrimp are not completely a deep seawater organism. Instead they spawn in brackish or fresh waters adjacent to the sea, and we are in danger of being held responsible for the declining shrimp population in the Pensacola Bay area.

Our Pensacola Plant was contacted by the university and the Florida state and local water pollution agencies. Investigation by the plant revealed that Pydraul AC was being used in our air compressors as a lubricant and that approximately two to six gallons a day were being lost to our drains and eventually the river. Pydraul AC contains nearly 50% Aroclor 1254, so the loss represents only one to three gallons a day of PCB. The plant immediately switched back to mineral oil lubricants. It may be a number of years, however, before Aroclor 1254 disappears from the river since bottom samples of mud have shown the presence of several hundred parts per billion of Aroclor. Evidence indicates that the more highly chlorinated PCB's, including Aroclor 1254 are not subject to biodegradation and the solubility of 1254 is only approximately 100 parts per billion.

Other sources of contamination (in milk, etc.) have not been pinpointed but it appears likely that some of our customers' products will be found responsible. For example, our research effort--stimulated by a report that a dishwashing compound was found to contain PCB's by a federal government laboratory in Michigan, revealed that four of five electric dishwashing compounds purchased in a supermarket in St. Louis contained up to 5 ppb of Aroclor.

The possible offects of the contamination are expressed by government and university representatives in terms of implications relating to DDT and chlorinated hydrocarbon pesticides rather than to any "hard" facts. For example, the "Anacapa disaster" allegedly has resulted from DDT and PCB's in anchovies.



HARTOLDMON0011630

Anacapa Island, off the coast of Oxnard, California, is the breeding ground for many sea birds and particularly the brown pelican. Investigations by scientists at the University of California at Berkeley in the last two years have "proven" that the pelican faces extinction because of DDT and "hundreds of parts per million" of PCB's being found in anchovies--the chief diet of the pelican. This year, of 1,000 eggs found on the island, only three had any shells and only one new-born bird was found in the area. (Any possible effect of the oil spill at Santa Barbara has been ruled out).

Briefly, the biological cycle involved is as follows:

1. Fish living in waters containing a few parts per billion of persistent chlorinated hydrocarbons concentrate these compounds in their tissues more than a thousand-fold (e.g., trout in water with one part per billion of DDT will have one part per million of DDT in their tissues after six weeks.)

2. Birds eating such fish concentrate the chlorinated compounds in their fatty tissue and liver.

3. In the liver, the compounds enhance microsomial enzyme activity which affects hormone production.

4. The influence or hormones in turn affect calcium metabolism which leads to the production of eggs with decreased shell thickness or no shell at all. (Colored slides of Anacapa Island show just "blobs" of eggs lying in the nests with the yolks and whites contained only in the shell inner membrane).

   In Washington, in October, a paper will be presented at the meeting of the Association of Official Analytical Chemists entitled, "The Determination of PCB's in Two Bald Eagles." From this may arise proclamations that "the very emblem of American heritage is threatened with extinction due to PCB's"!

The Organic Division, which produces this series of very profitable products, has a concerted effort underway to protect continued sales and uses. It is likely, however, that it will be found impossible to prevent losses to the environment of Aroclors 1254 and 1260 in some customer applications and that public and governmental pressures will lead to restrictions that cannot be met without discontinuing production and sales. Concurrently, action is being directed at protecting the sale and uses of the other polychlorinated biphenyls and terphenyls.

B. Pollution Control

Of immediate local interest, of course, is the low sulfur-in-coal problem. We believe that you have all been briefed on the details of this situation by the Chairman of the Environmental Control Committee, Division Managers (Organic and Inorganic) and the Director of the Public Relations Department. Our role has been one of support



HARTOLDMON0011631

to the local plant managers through divisional pollution liaison representatives and the Control Committee.

We have continually pointed out that the local plants faced a peculiar situation in the St. Louis area that made it impossible to maintain a favorable public image. The most that could be hoped for was to emerge with "a gray hat rather than a black one."

In all other Monsanto plants pollution control activities are proceeding on acceptable schedules. The Seattle Plant was fined $500 (reduced from $2,500) for leaks from valves on storage tanks into the receiving waters by the barge unloading facilities. The fine was imposed by a U. S. attorney at the request of the U. S. Coast Guard under authority granted by pre-turn of the century legislation.

The Port Plastics Plant was the subject of complaints by boaters and fishermen following discharge of milky plastic wastes to the Ohio River during three successive weeks. Ironically, two of the discharges resulted from carelessness on the part of contractor employees working on the new pollution control project.

A two day private meeting of representatives of elemental phosphorus producers to exchange information on the control of environmental pollution techniques was held in September. Inorganic Division personnel attending felt that the exchange would be helpful in cutting some of our expected costs for air pollution control of emissions from tap holes, slag runners, etc. Such a meeting was suggested by one of our staff members in September, 1967.

C. INDUSTRIAL HYGIENE

Routine studies or visits were made to the Decatur, Eugene, Luling, W. G. Krummrich, Pensacola and J. F. Queeny Plants.

Special investigations concerning noise, asbestos, dust exposures and elemental phosphorus in air were made at the Columbia Plant.

A review of any possible hazards incidental to adhesives, solvents and marking paints for Astroturf installation was completed at the request of the business group.

5. General Offices

The good health expected during the summer months, together with vacation schedules has caused some lessening of the dispensary activity. No problems worthy of note occurred.

A total of 931 examinations and 4363 other dispensary visits were carried out.

R. E. Kelly

R. Emmet Kelly, M. D.

REK/ln

PRR 025248
SCM 042053

HARTOLDMON0011632

ORIGINAL

IN THE COURT OF COMMON PLEAS
PHILADELPHIA COUNTY

| | | |
|---|---|---|
| IN RE: PAOLI RAILROAD YARD PCB LITIGATION, | ) | |
| | ) | MASTER FILE NO. 90-0609-C-6 |

EXHIBITS TO THE
DEPOSITION OF R. EMMET KELLY, M.D.
DECEMBER 11-12, 1990

---

GORE REPORTING COMPANY
408 OLIVE STREET ST. LOUIS, MISSOURI
241-6750



HARTOLDMON0011633