

The History of PCBs

When Were Health Problems Detected? (Page 2)

1865-1972 1973-2001

1973 --- GE wrote to EPA, saying, "The low order of toxicity to man is supported by several decades experience in the U.S. electrical industry," GE urged EPA not to regulate PCBs. In its comments, Monsanto stated that "PCB has always been considered less hazardous than many other chemicals in everyday use." [11]

1973 --- Researchers begin reporting that marine mammals are suffering from reproductive problems associated with high organochlorine residues (such as PCBs). [23] Some scientists now believe that as more PCBs reach the oceans, all large marine mammals could become extinct. [26]

1973 --- U.S. Food and Drug Administration establishes a tolerance level of 5.0 parts per million (ppm) in fish. (Though in many parts of the country it would be years before local fish were actually tested, due to the high cost.)

1973 --- The Organization for Economic Cooperation and Development (OECD) urged all member countries to limit the use of PCBs and develop control mechanisms. (PCBs have not been manufactured in North America since 1977, but continued for 2 more decades in other parts of the world.) [2]

1974 --- A General Electric in-house memo reveals that both GE and Westinghouse were secretly aware of the possibility of transformer explosions ten years before the EPA issued warnings about it. "As you know," GE engineer T. L. Mayes cautioned his colleagues, "Westinghouse had a network transformer explosion recently, resulting in two fatalities." Mayes also mentioned that some grades of PCBs apparently create an explosive gas when transformers malfunction - a danger the company concealed from its customers. Neither were customers informed that when burned (as in an explosion), PCBs create dioxins and dibenzofurans - although the manufacturers knew this by 1970 at the latest. In fact, PCBs were aggressively marketed as safety products; the manufacturers even convinced insurance companies to require their customers to use PCB transformers. Monsanto, Westinghouse, and GE publicly denied explosion problems. [11]

1974 --- Files show that EPA and the federal Centers for Disease Control (CDC) knew about the dioxin and PCB contamination throughout eastern Missouri but waited nine years before taking any action to protect the public. C.D. Stelzer caught EPA officials in outright lies when they claimed they knew nothing about dioxin contamination in Missouri until "after 1980." [1, 5] For more information, read: <http://www.rachel.org/search/index.cfm?St=1> Enter: "Why is EPA Ignoring Monsanto?"

1974 --- A publication by the American National Standards Institute (ANSI) titled "Guidelines for Handling and Disposal of Capacitor- and Transformer-Grade Askarels Containing [PCBs]" which states that "medical records over a nearly 40-year period show that the only adverse health effects experienced by U.S. workers exposed to [PCBs] . . . during the manufacture of these liquids . . . have been limited to occasional cases of nonchronic chloracne or other temporary skin lesions or irritations." William Papageorge, a Monsanto employee, chaired the ANSI committee. [16]

1975 --- In a letter from William Papageorge, of Monsanto, to Dan Albert in Westinghouse's Personnel Department, he warned Westinghouse at length of the risk of skin irritation, chloracne, injury to cellular tissue, "serious liver injury" (emphasis in original), and even death, from PCB exposure. [\[16\]](#)

1975 --- Monsanto's lab submitted its findings from a two-year study of PCBs' effects on rats. An early draft of the report said that in some cases, PCBs had caused tumors. George Levinkas, Monsanto's manager for environmental assessment and toxicology, wrote to the lab's director: "May we request that the [PCB] 1254 report be amended to say 'does not appear to be carcinogenic.'"

The final report adopted the company's suggested language and dropped all references to tumors. [\[5\]](#)

1975 --- A farming family in Bloomington, Indiana, unknowingly spread 100 tons of PCB contaminated sludge (300 ppm) on their fields. The soil tested at 50 ppm and the milk from their cows was measured at 5 ppm (more than twice the maximum allowable limit). This level of contamination endangered both them and their livestock and 80 tons had to be completely removed. [\[6\]](#)

1975 --- 124,000 cans of salmon from Lake Michigan were seized because of a PCB. [\[6\]](#)

1976 --- Congress passed the Toxic Substances Control Act which outlawed the manufacture, sale, and distribution of PCBs except in "totally enclosed" systems, within 3 years. It was the only chemical Congress itself has ever banned. However, enclosed transformers and capacitors are STILL allowed to contain PCBs.

1976 --- After returning to Monsanto, Paul Wright of IBT Labs was given a \$1,000 award for "forestalling EPA's promulgation of unrealistic regulations to limit discharges of polychlorinated biphenyls." A year later, IBT Labs was found out, and Wright, Calandra, and another IBT exec were eventually convicted of federal fraud charges. [\[11\]](#)



1976 --- Doctors at Mt. Sinai Hospital announced the results of their study which showed that nearly half of all workers at the GE plants had developed some type of skin problem; many of which were known types associated with PCB exposure. [\[6\]](#)

1977 - Monsanto stopped manufacturing PCBs in the U.S. and GE finally stopped dumping PCBs into the Hudson River. Dr. Robert Kornis published his population study on people from Poughkeepsie, NY who were drinking water from the Hudson as high as 100 ppm PCBs. This study showed increased incidences (5 to 10 times) of colorectal cancer in men in Poughkeepsie. The FDA proposed lowering the PCB tolerance levels from 5 to 2 ppm for fish and shellfish, which was postponed until 1984 due to industry opposition. Occidental Petroleum (owner of Hooker Chemical) was held responsible for the toxic waste site at Love Canal and ordered to pay cleanup costs. It was in this context in 1977 that ARCO took over all of the holdings of Anaconda worldwide. It is naive to think that ARCO was not fully aware of these PCB problems and the cleanup liabilities of Anaconda within a short time after the takeover. [\[6\]](#)

1978 --- President Jimmy Carter declared Love Canal a disaster area and ordered the evacuation of all homes in the area due to toxic chemicals. In Sept., The USDA destroyed nearly 400,000 pounds of poultry and pork in Billings, Montana because a mere 200 gals of PCB/oil mixture had leaked from a transformer into their feed. That same month, Dr. Robert Dougherty, at Florida State, released his report which showed that sperm counts had fallen so low among students

that 23% were functionally sterile. He attributed this trend in part to increased levels of PCB in their semen. [\[6\]](#)

1979 --- The Environmental Protection Agency issued final regulations banning the manufacture of polychlorinated biphenyls (PCBs), after a 3-year phase-out period. In addition, the EPA rules gradually ended many industrial uses of PCBs over the next five years, but allowed their continued use in existing enclosed electrical equipment under controlled conditions. [\[46\]](#)

1979 --- A study followed employees who had worked at Monsanto's PCB production plant. J. Zack & D. Munsch, Mortality of PCB Workers at the Monsanto Plant in Sauget, Illinois (Dec. 14, 1979)(unpublished report), 3 Rec., Doc. No. 11. The authors of this study found that the incidence of lung cancer deaths among these workers was somewhat higher than would ordinarily be expected. The increase, however, was not considered "statistically significant" and the authors of the study did not suggest a link between the increase in lung cancer deaths and the exposure to PCBs.

1980 - Congress passed the Superfund Law designed to provide financing for cleanup of the country's major toxic waste sites.

1980s --- Researchers began to find that workers exposed to PCBs were dying of skin cancer and, perhaps, of brain cancer. Westinghouse and Monsanto maintain that they always informed their workers completely about the hazards of PCBs, but during the 1990s, thousands of workers began to sue for damages, saying the companies misled them. [\[1\]](#)

1980s --- Prior to her dismissal, Rita Lavelle, of the U.S. EPA under Pres. Reagan, allegedly used the billion dollar Superfund program for political ends. In addition, congressional investigations in 1982 and 1983 revealed Lavelle had private discussions with officials at Monsanto and other corporations concerning regulatory matters. When Congress subpoenaed documents—including those related to contamination at Times Beach, Missouri -- the EPA initially withheld the information on the advice of the White House and Department of Justice. The level of stonewalling reached a crescendo when Congress discovered EPA officials had ordered the wholesale shredding of sensitive files. The showdown with Congress ultimately forced Reagan to replace EPA administrator Anne Gorsuch-Burford with William D. Ruckelshaus, who had headed the agency at its inception. Ruckelshaus' resume, however, contains more than one entry to that has received criticism. Environmentalists point out that during his career, Ruckelshaus has had many close ties to polluting industries—including a directorship at Monsanto. [\[1\]](#)

1980s --- Monsanto begins funding phony "public interest" groups, such as the American Council on Science and Health, run by Elizabeth Whelan, to defend Monsanto's products, including PCBs, the cancer-causing herbicide 2,4,5-T, the artificial sweetener Nutrasweet, and the genetically engineered hormone rBGH, which is now being added to much of the world's milk supply (by injection into dairy cows.) [\[24\]](#)

1981 ---In a speech, a Monsanto toxicologist claimed, "There has never been a single documented case in this country where PCBs have been shown to cause cancer or any other serious human health problems. In the classical short term exposure, or acute toxicity sense, PCBs are classified as 'slightly toxic' by oral ingestion." Their toxicity was similar, he said, to table salt. "Monsanto, the government and the electrical industry together concluded that the benefits to society of continued PCB use far outweighed the risk." Decades after the Drinker study demonstrated PCBs' toxicity, 25 years after Monsanto's files indicated that dioxin and

dibenzofurans [furans] were contaminants in PCBs, and with a former Monsanto official standing trial for fraud, Monsanto still claimed that PCBs were safe. [\[11\]](#)

1983 --- The federal government evacuated all the citizens from the town of Times Beach, Missouri, because the town was heavily contaminated with dioxins, PCBs, and pesticides. [\[1\]](#)

1987 --- Westinghouse sues its insurers for defense against pending claims at 74 hazardous sites in 23 states. [\[25\]](#)

1987 --- Workers at an Italian capacitor plant who had been exposed to PCBs. Bertazzi, Riboldi, Pesatori, Radice, & Zocchetti, Cancer Mortality of Capacitor Manufacturing Workers, 11 American Journal of Industrial Medicine 165 (1987). The authors noted that lung cancer deaths among ex-employees at the plant were higher than might have been expected, but concluded that "there were apparently no grounds for associating lung cancer deaths (although increased above expectations) and exposure in the plant."

1987-88 --- In a 22 page memo, a Westinghouse staff lawyer describes extensive paper and microfilm records held by the Westinghouse Industrial Hygiene Department: "The majority of the documents in Industrial Hygiene's files are potential 'smoking gun' documents," the memo says. The memo goes on, "The files are filled with documentation which critiques and criticizes, from an industrial hygiene perspective, Westinghouse manufacturing and non-manufacturing operations. This documentation often times points out deficiencies in Westinghouse operations and suggests recommendations to correct these deficiencies. Industrial Hygiene's files contain information which details the various chemical substances used at Westinghouse sites over the years and often times the inadequacies in Westinghouse's use and handling of the substances. The files contain many years of employee test results, some of them unfavorable," the memo says. The memo says Westinghouse executives must ask certain questions before deciding to keep or destroy the smoking gun records. The first question is, "What are the chances of litigation? Is it pending or imminent?" The second question is, "In the case of litigation, which party would have the burden of proof?" "We recommend that all such files generated prior to 1974 be discarded.... In our opinion, the risks of keeping these files on the whole substantially exceed the advantages of maintaining the records..." Westinghouse officials deny that the memo was acted upon. They say they still have all the company's files intact. However, in a lawsuit against Westinghouse by Nevada Power and Light (NP&L), Westinghouse did not produce documents, such as correspondence between Westinghouse and Monsanto, requested by NP&L in a "discovery" proceeding. Monsanto, on the other hand, did produce correspondence with Westinghouse officials. NP&L is suing Westinghouse, GE and Monsanto for \$48.5 million in compensatory damages for costs the utility says it incurred because of PCBs in electric power equipment. Furthermore, in sworn testimony in the NP&L case, three Westinghouse employees or former employees described how files that they maintained about PCBs were taken from them by members of Westinghouse legal staff in the 1980s and never returned to them. Westinghouse attorneys tried to have the "smoking gun" memo declared "privileged" so that it would remain under wraps. On February 9, 1993, Texas Judge Paul R. Davis ruled against Westinghouse, saying the memo "falls within the crime/fraud exemption to privileged documents" under Texas law because, the Judge said, the memo was "prepared, and describe[s] a plan, to commit fraud on the courts of this nation." Westinghouse denies fraudulent intention, but destroying documents that might be needed in foreseeable litigation is forbidden under U.S. law. [\[1,26,27\]](#)

1988 --- The journal Environmental Pollution published an article revealing that marine mammals, such as dolphins, whales and porpoises all contained levels of PCBs that far exceeded that of their terrestrial counterparts. Mediterranean blue-white dolphins, for example, were found to carry 833 parts per million in their blubber ~ nearly 17 times the level requiring goods to be labelled and handled as toxic waste. Marine mammals are acutely sensitive to PCB hormonal effects, and may be threatened with extinction. Numerous scientific studies have occurred on this topic. [\[28\]](#)

1990 --- Studies find children exposed in the womb to PCBs at levels considered "background levels" in the U.S. were found to experience hypotonia (loss of muscle tone) and hyporeflexia (weakened reflexes) at birth, delays in psychomotor development at ages 6 and 12 months, and diminished visual recognition memory at 7 months. [\[29\]](#)

1990 --- EPA research chemist Cate Jenkins wrote a memo to Raymond Loehr, the chair of the Executive Committee of the EPA's Science Advisory Board asking that the EPA reassess the toxicity of dioxins. She said EPA relied on "newly revealed" fraudulent data by Monsanto" to assess dioxin risks and set standards for human health protection. Instead, EPA launched an investigation of Jenkins and she was harrassed in her workplace. For more information, read: <http://www.rachel.org/search/index.cfm?St=1> Enter: "Dioxin and Cancer: Fraudulent Studies." Also: "EPA Investigates Monsanto." This experience raises concerns about the honesty of any Monsanto PCB data as well. [\[30\]](#)

1991 --- The U.S. Department of Health and Human Services labeled PCBs as a probable carcinogen. [\[4\]](#)

1992 --- A compilation study was released linking human reproductive problems with PCBs, due to hormone-like effects. PCBs are now documented disruptors of the human endocrine system. [\[31\]](#)

1993 --- Research shows that people living in the arctic regions are heavily dosed by PCBs which migrated to the region via the atmosphere and settled out in the cold air. Local diets are dominated by consumption of fish, seal and whale meat, which puts the people at serious risk from PCB bioaccumulation up the food chain. [\[32\]](#)

1993 --- "Monsanto's actions involving PCBs have always been responsible," spokesperson Diane Herndon wrote in a 1993 statement. According to GE's Jack Batty, "Public perception about the health risks of PCBs and the scientific facts are in conflict. Most scientists agree that PCBs are not the hazard to human health that was feared in the 1970s." [Actually, the EPA's reassessment found them to be a greater hazard than was feared then.] "PCBs have produced tumors in some laboratory animals, but there is no proof - based on human exposure of more than 40 years - that PCBs cause cancer or any other serious health problems in people." [\[11\]](#)

1994 --- U.S. Fish & Wildlife Service announces the start of a Natural Resource Damage Assessment on the Fox River and Green Bay, to calculation compensation and restoration costs resulting from PCB damages to the system.

1994 --- Researchers report that boys in Taiwan exposed to PCBs while in their mothers' womb developed smaller penises as they mature, compared to normal boys in Taiwan. [\[33\]](#)

1994 --- A Los Angeles jury awarded the Transwestern Pipeline Co. a \$9.7million verdict for PCB harms. From 1968 to 1972, Transwestern Pipeline Co. used a lubricant containing PCBs in the gas compression of its natural gas pipeline across New Mexico, Arizona and part of California. The contamination was discovered in 1981 and cleanup of the pipeline began shortly

thereafter. One of Transwestern's customers, Southern California Gas Co., sued Transwestern for the costs of the cleanup and won an arbitration. The terms of that arbitration were confidential. Transwestern sued Monsanto Co., which provided the lubricant, for equitable indemnification to recover its costs for removing the PCB contamination. Transwestern charged that Monsanto had manufactured a defective product. Monsanto attempted to deny liability, but lost. [34]

1994 --- A 30 page memo by an EPA official accused the EPA of conducting a "fraudulent" criminal investigation of Monsanto. The memo, by William Sanjour to his supervisor, David Bussard, on July 20, describes a two-year-long criminal investigation of Monsanto by EPA's Office of Criminal Investigation. The EPA opened its investigation on Aug. 20, 1990 and formally closed it on Aug. 7, 1992 without taking action against Monsanto. For more information, read: <http://www.rachel.org/search/index.cfm?St=1> and enter "EPA investigates Monsanto." [35]

1995 --- Studies showed (6) that women who eat fish from the contaminated waters of the Great Lakes and Canada give birth to children with an unusually high susceptibility to bacterial infection. PCBs were also shown to damage nerves in the brains of developing mammalian fetuses, leading to behavioral and learning defects. [36]

1997 --- Study links PCBs to cancer in electric utility workers. [37]

1997 --- The U.S. Environmental Protection Agency proposes the Fox River as a federal Superfund site, for PCB hazardous waste cleanup.

1998 --- After 28 years of continuous publication, THE ECOLOGIST, England's leading environmental magazine, had major problems finding a publisher, then retailers, willing to risk a Monsanto libel suit for the release of their September/October 1998 issue, which was devoted entirely to Monsanto. A much more limited run was done, but copies are scarce. Monsanto claims they had nothing to do with frightening the publishers or retailers. --- Titles of articles being censored included: The Monsanto Files, An Open Letter to Robert Shapiro, CEO, Monsanto; Seeds of Disaster; Monsanto: A Checkered History; PCBs: Can the World's Sea Mammals Survive Them?; Agent Orange: The Poisoning of Vietnam; Bovine Growth Hormones; Roundup: The World's Biggest-Selling Herbicide; The Terminator Technology; Revolving Doors: Monsanto and the Regulators; Cosy Relations: Monsanto and the UK Environment Agency; Getting The Government On Your Side; Call to Sack UK Biotech Advisers; Corruption of 'Organic' in the US; Monsanto's Failing PR Strategy; The PR Professionals; Monsanto Propaganda and an African Response to it; Why Biotechnology and High-Tech Agriculture Cannot Feed the World; How Monsanto 'Listens' to Other Opinions; Hiding Damaging Information from the Public; SLAPPING Resistance; Monsanto Visits The Guardian; "Monsanto Took Me To Court - and Lost"; A Message from India; "Monsanto, You Have Shamed Us"; The Frankenstein Corporation: Monsanto's Merger with American Home Products; Boycott: Brands and Products to Avoid; Who Are the Real Terrorists?; Return of the Seed Savers. [38]

1998 --- An article in the Ecologist highlights the fact that over the years, key government figures at the Food and Drug Administration (FDA) and other regulatory bodies, have either come from, or gone on to hold senior positions at Monsanto. [39] (That in part might explain why Monsanto gets clearance for its often dangerous products.) The FDA determines the PCB levels allowed in the U.S. food supply, often setting weak standards such as the 2 ppm PCB federal standard for commercial fish and 3 ppm for chicken. (The Great Lakes standard set by the region's states for sport-caught fish is only .05 ppm PCBs.)

1998 --- For 3 years, the Norwegian Polar Institute has found polar bears with both male and female sex organs. This year, 4 hermaphroditic cubs were seen. Researchers fear up to 4% of the bears may be affected. [\[40\]](#)

1999 --- A Philadelphia jury ruled that Monsanto should pay \$90 million in damages to the State of Pennsylvania for selling defective and toxic PCBs that left a 12-story building contaminated after a 1994 fire. PCBs were present in glue used in the ductwork of the 30-year-old Dept. of Transportation headquarters. Elevated levels of PCBs were discovered only after the fire, and state officials cited the contamination as a reason for their decision to demolish the building in August 1998. "This is a very historic case," the state's lawyer said, "one which establishes an incredible precedent: that Monsanto is responsible for PCB contamination, which for years they have ignored and denied all over the country." [\[41\]](#)

2000 --- U.S. Fish & Wildlife Service completes the Fox River Natural Resource Damage Assessment and proposes a compensation and restoration plan. The plan can't be finalized until the Superfund sediment cleanup Record of Decision is finalized by U.S. EPA. (Hopefully, in 2001).

2000 --- EPA discovered that PCBs made in Anniston, Alabama, were contaminated with lead, which may have come from lead vats used in the Monsanto plant (now owned by Solutia, Inc.). 70 percent of the PCB-polluted spots being studied in Anniston have unsafe levels of lead, from 400 to 3,080 ppm (parts per million). 47 landowners have been impacted. Lead is considered one of the nation's top pollution hazards to children because it damages developing neurological systems, causing lowered intelligence and learning problems. Lead also causes anemia, neurological difficulties and reproductive problems in people of all ages, but adults usually show effects only when exposed to high lead levels found in industrial settings. [\[42\]](#)

2000 --- The United Nations Environment Program committee concluded a 3-years process of international treaty negotiations between 120 nations a global, legally-binding ban on 12 persistent organic pollutants (called POPs), including PCBs, Dioxins and Furans. The POPs Treaty will be signed in Stockholm on 22-23 May 2001. Ratification by at least 50 countries will be required before the treaty enters into force, a process likely to take 3-4 years. [\[43,44\]](#)

2001 --- U.S. EPA and Wisconsin DNR are due to release the final proposed cleanup plan for the Fox River.

* [Go back to 1865-1972](#)

* [Go to a more detailed History of PCBs on the Fox River](#)

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