

CHRONOLOGYNew Bedford Area PCB Contamination and Control

- 1941 Cornell Dubilier Electronics Incorporated begins operations in New Bedford. PCBs are used in the manufacture of electronic capacitors.
- 1947 Aerovox Corporation first uses PCBs as an impregnation fluid in the commercial manufacture of electronic capacitors.
- 1971 Aroclor 1016 is substituted for Aroclor 1242 in the manufacture of electronic capacitors at both Aerovox and Cornell Dubilier.
- 1973 Aerovox Corporation is sold to Belleville Industries, Inc. which subsequently changed its name to Aerovox Incorporated.
- 1973 Camp Dresser and McKee, under contract to the Southeastern Regional Planning and Economic Development District (SRFEDD), prepares a "Greater New Bedford Solid Waste Study" (48). A number of industrial waste dump sites in New Bedford, Acushnet, Dartmouth and Fairhaven are listed.
- 1974 New England Aquarium report documents the presence of low level PCB contamination throughout Buzzard's Bay (70).
- 1976 EPA sampling of Aerovox, Cornell Dubilier and the New Bedford Wastewater Treatment Plant reveal significant levels of PCBs in the industrial and municipal discharges. High levels of PCBs are also found in harbor sediments and marine life.
- 1976 EPA publishes report titled "New England PCB Waste Management Study" (37). Aerovox and Cornell Dubilier were identified as users of PCBs and the New Bedford Municipal landfill was documented as a disposal location.
- 1976 Woods Hole Oceanographic Institute initiates PCB sampling of sediments and marine life in New Bedford Harbor and Buzzard's Bay.
- 1976 Massachusetts Division of Marine Fisheries (DMF) initiates sampling of Buzzard's Bay finfish and shellfish for PCBs.
- 1977 Monsanto (the only American producer of PCBs) ceases the production and sale of PCBs.
- 1977 Massachusetts DMF initiates sampling lobsters for PCBs.

- 1977 Massachusetts Department of Public Health (DPH) issues warnings that lobsters and bottom feeding finfish from a defined area in Buzzard's Bay should not be consumed after learning the foodstuffs contain PCBs in concentrations exceeding 5 ppm. USFDA determines that the situation constitutes an intrastate matter and therefore is not within Food and Drug's jurisdiction.
- 1977 GCA Corporation prepares a report under contract to EPA titled "PCB Compounds Emanating from the New Bedford Municipal Wastewater Incinerator" (60). The study concludes that only two to three percent of the PCBs present in sewage sludge before incineration are released with the flue gas. The scrubber water effluent was found to contain 16 to 37 percent of the PCB input, the ash contained up to fourteen percent.
- 1977 EPA publishes a report entitled "PCBs Removal in Publicly-Owned Treatment Works" (62). This document states that PCB removal in municipal treatment processes is strongly correlated with solids removal, i.e., typical secondary treatment plants can be expected to remove 80-90 percent of the PCBs present in the wastewater, typical primary plants up to 50 %.
- 1977 Aerovox develops a process to remove a large percentage of PCB impregnating fluid from faulty capacitors. Company submits proposal to DEQE requesting approval for the disposal of evacuated capacitors in the New Bedford Municipal landfill. DEQE disallows practice after determining that each ton of evacuated reject capacitors would contain 13 pounds of Aroclor 1016.
- 1977 An industrial hygiene survey conducted at Aerovox by the National Institute for Occupational Safety and Health (NIOSH) finds high levels of PCBs in the factory's atmosphere. All 54 air sampling results exceeded the recommended NIOSH limit of 1 ug/m³. The range (measured as Aroclor 1016) of atmospheric PCB concentrations was found to be 10-1260 ug/m³ (33).
- 1977 Aerovox and Cornell Dubilier cease the production of PCB containing capacitors. Dioctyl phthalate (DOP) fluid is substituted for PCB. Contamination of DOP fluid in at least one factory, however may have allowed for the continued manufacture of PCB contaminated electronic capacitors into the 1980s.
- 1978 Massachusetts DEQE initiates an annual sediment sampling program with over 20 stations in New Bedford Harbor and Buzzard's Bay.
- 1978 U.S. EPA Region I prepares a summary report of all PCB data in New England titled, "Polychlorinated Biphenyls in New England" (71).
- 1978 Southeastern Massachusetts University conducts a study of PCB levels in Buzzard's Bay shellfish (72). Oysters in the Slocum's River exhibit relatively low levels of PCB contamination.

- 1978 U.S. EPA study titled "Environmental Assessment of Polychlorinated Biphenyls (PCBs) Near New Bedford, Massachusetts, Municipal Landfill" (9) concluded that atmospheric release of PCBs from the landfill is most likely the principal mode of their escape. Sampling conducted during the summer of 1977 found atmospheric PCB levels in excess of 1 ug/m³, the NIOSH recommended eight hour exposure limit.
- 1978 Tibbetts Engineering Corporation submits an unsolicited proposal to DEQE titled "PCBs Analysis of Materials Dredged from the New Bedford Harbor Bottom from 1-30 Years Ago and Subsequently Used as 'Fill' on Dry Land for Various Projects" (69). Ten upland sites which have been filled by materials dredged from New Bedford Harbor during the years 1948 to 1978 are identified in this report.
- 1979 Massachusetts Department of Public Health exercises its legal authority to close areas of Buzzard's Bay to the taking of lobsters, finfish and shellfish because of PCB contamination (44).
- 1979 Massachusetts Representative Roger Goyette forms an ad hoc committee to assess the PCB contamination problem in New Bedford.
- 1979 Camp Dresser and McKee, on behalf of the City of New Bedford, submits an application for a waiver of the secondary municipal wastewater treatment requirement to EPA (38). Data on PCBs in harbor sediments, shellfish and wastewater are included.
- 1980 Aerovox's wastewater discharge permit (NPDES #MA0003379) expires.
- 1980 Gidley Laboratories, Inc. under contract to the Dartmouth Conservation Commission publishes a report on PCB monitoring (68). Gidlab concluded that the PCBs in New Bedford's municipal landfill are not polluting the Dartmouth town wells.
- 1980 University of South Carolina graduate students test a PCB air sampler at the New Bedford municipal landfill. Sampling conducted during June detected 25-53 ng/m³ PCBs (Aroclor 1016 plus 1254) upwind of the landfill (73). No downwind results were obtained.
- 1980 DEQE and EPA designate New Bedford Harbor PCB problem as a priority issue in the 1980 State - EPA agreement.
- 1981 A report on the PCB Data Needs and Dredge Techniques for the Acushnet River - New Bedford Harbor Area is prepared by Richard Tomczyk, DEQE, in compliance with 1980 State - EPA Agreement (74).
- 1981 Secretary Bewick of the Massachusetts Executive Office of Environmental Affairs establishes a PCB task force. DEQE chairs committee and holds monthly meetings to coordinate activities.

- 1981 Malcolm Pirnie, Inc. under contract to DEQE/DWPC prepares a Draft "Acushnet River Estuary PCB Study" (75). PCB contaminated areas of New Bedford Harbor and Buzzard's Bay are identified. Additional sampling of sediments, marine life, air and water is recommended. An estimated project cost for removal of 90 percent of the PCB contaminated sediments is given as \$130 million.
- 1981 Small scale epidemiology study of New Bedford residents is undertaken by Massachusetts Department of Public Health, Harvard's School of Public Health and the Centers for Disease Control in Atlanta, Georgia (50). Results of the limited blood testing study reveals that those tested are among the highest PCB contaminated in the United States. Fish eaters and industrially exposed workers were selected for study.
- 1981 Massachusetts Division of Marine Fisheries prepares a comprehensive "Polychlorinated Biphenyl (PCB) Analyses of Marine Organisms in the New Bedford Area, 1976-1980" (45). The report concludes: "Review of the data collected to date indicate that sampling results are insufficient to establish definitive PCB trends in the biota of New Bedford Harbor." DMF subsequently petitions the Massachusetts Department of Public Health to reopen one area closed to the taking of lobsters due to PCB pollution.
- 1981 EPA coordinates the inspections of four sites in the New Bedford area for compliance with PCB regulations under the Toxic Substance Control Act (TSCA): Aerovox, Cornell Dubilier, the New Bedford Municipal Wastewater Treatment Plant and the Fairhaven Municipal Wastewater Treatment Plant.
- 1981 EPA and State officials meet with representatives of Aerovox and Cornell Dubilier to discuss TSCA sampling results. Both firms prepare limited site clean up and monitoring proposals.
- 1981 Representative Roger Goyette of New Bedford chairs ad hoc/PCB task force meeting at Woods Hole.
- 1981 Enforcement of Massachusetts Department of Public Health's lobster closure is fully enacted for the first time since its issuance in 1979. Bureaucratic snafus are overcome and two Environmental Affairs agencies (Division of Marine Fisheries and Division of Law Enforcement) assist DPH's enforcement effort.
- 1981 EPA and Massachusetts Coastal Zone Management personnel visit PCB contamination sites in Bloomington, Indiana; Waukegan, Illinois; and the Upper Hudson River region in New York state.
- 1981 Massachusetts Division of Water Pollution Control (DWPC) Technical Assistance Branch collects over 100 sediment samples and fourteen harbor water column samples for PCB analyses by Cambridge Analytical Associates. Results document sediment concentrations in 1000's ppm in the upper reach of the estuary (42).

- 1981 DWPC undertakes New Bedford municipal sewer sampling program.
- 1981 Versar, under contract to EPA, prepares a voluminous report titled "Comprehensive List of Industrial Facilities located Within Region I which May Handle or Use PCB Materials" (76). Ten New Bedford area companies are listed, however neither Aerovox nor Cornell Dubilier are cited. The firms noted include two bakeries, three fish processors, three rubber products manufacturers, an equipment rental firm and a welding equipment manufacturer.
- 1981 DMF conducts additional lobster sampling and again appeals to DPH for a reopening of Area III to commercial lobstering. DMF's most recent sampling of 42 lobsters captured in November 1981 contain an average PCB concentration of 1.0 ppm.
- 1981 Massachusetts DEOE nominates New Bedford Harbor as a priority federal Superfund site.
- 1982 EPA Environmental Impact Office initiates a regional New Bedford PCB Environmental Impact Study.
- 1982 U.S. Coast Guard joins state and federal agencies in the sampling of harbor sediments. USCG posts a warning sign in the heavily contaminated area seaward of Aerovox.
- 1982 Massachusetts Department of Public Health, in cooperation with the Centers for Disease Control in Atlanta, publishes the results of a second PCB blood test conducted on New Bedford area residents. Findings support the 1981 results which show that heavy fish eaters and industrially exposed persons generally contain high PCB levels (50,51).

Chronology

New Bedford Area PCB Contamination and Control (update to June 1982)

PCB Pollution in the New Bedford, Massachusetts Area: A status Report

- May 1982 U.S. EPA issues Consent Order to Aerovox under which the company will perform environmental studies leading to proposed remedial action for that portion of company property adjacent to the Acushnet River.
- May 1982 U.S. EPA issues Consent Order to Cornell-Dubilier Electronics to undertake remedial action at the company's facility. Those actions include: evaluation of waste dielectric fluid handling system; evaluation of company's PCB discharges to the municipal sewer system; removing PCB - contaminated sediments from waste streams; controlling the release of PCB - contaminated soils from plant yard; and, monitoring groundwater in vicinity of plant for PCB's.
- May 1982 Executive Order No. 216 established the Governor's Acushnet River Estuary PCB Commission to analyze the PCB problem and to make recommendations to the Governor on appropriate responses.
- June 1982 Sediment samples taken near the existing Route 6 bridge linking New Bedford and Fairhaven show PCB levels to be below 50 ppm, the Massachusetts hazardous waste threshold. This removes some environmental obstacles and allows design work for bridge renovation to proceed.
- June 1982 Massachusetts DEQE conducts sampling program in New Bedford Sewer lines. Results, issued in October of 1982, show that limited portions of the lines are contaminated with PCB's. These samples also show that significant amounts of PCB's (up to 500-700 lbs./year) are being discharged from the Wastewater Treatment Plant into Buzzards Bay.
- June 1982 The Commonwealth of Massachusetts submits areas of the Acushnet River Estuary, New Bedford Harbor, and Buzzards Bay, as well as certain waste disposal sites in New Bedford, as a candidate for listing on the federal Superfund National Priorities List. New Bedford is designated by the Commonwealth as its top priority site.
- July 1982 PCB contaminated sites in the New Bedford area are added to the federal Superfund National Priorities List.
- August 1982 Utilizing a Superfund Contractor, EPA initiates a comprehensive assessment of the PCB problem in the New Bedford area. Environmental investigations include: sampling at the New Bedford Landfill and Sullivan's Ledge; an area-wide ambient air monitoring program; a sediment PCB profile for the Acushnet River Estuary and the

Harbor; biotic sampling from the Estuary, Harbor and nearby Buzzards Bay; and, a detailed study of contamination in the municipal sewer system. An engineering firm (Metcalf & Eddy) is contracted to establish a computerized data storage and retrieval system for samples taken in the New Bedford area.

September 1982

Governor's Acushnet River Estuary PCB Commission presents interim status report. It contains a series of recommendations of priorities for funding of studies and projects.

December 1982

U.S. EPA issues an Administrative Order to the City of New Bedford for violations of the Clean Water Act. The Order requires the implementation of specified operation and maintenance programs at the Wastewater Treatment Plant.

December 1982

U.S. EPA holds public meeting in New Bedford. State and federal officials review status of remedial action, request and receive public comment on proposals and timetable.

January 1983

U.S. Coast Guard initiates a study to determine whether PCB's are being transported out of the highly contaminated northern portion of the Acushnet River Estuary in the water column. Their results, released in April 1983, indicate that between 1,000 - 2,000 lbs/year migrate through the Harbor toward Buzzards Bay.

May 1983

A public meeting is held in New Bedford by U.S. EPA to publicly present the Remedial Action Master Plan (RAMP). The RAMP outlines studies to be conducted to further delineate contamination problems and a timetable for further actions. Presentation of the RAMP follows several months of public comment and state and federal agency review.

June 1983

The final report of the Governor's Acushnet River Estuary Commission, in the form of comments on the RAMP, are submitted. The Commission ceases activity.

July 1983

The Massachusetts Legislature approves a \$150,000 item in the State Department of Environmental Quality Engineering budget "for the administration of a program for the City of New Bedford for a participation public education, and local coordination activities relative to the problem of P.C.B. contamination in the New Bedford area . . ."

August 1983

U.S. EPA allocates \$3.4 million to fund remedial investigations and feasibility studies for New Bedford area.

September 1983

U.S. EPA issues CERCLA 106 Order to Cornell-Dubilier Electronics (CDE) requiring the company to remove PCB - contaminated sediments from portions of the municipal

sewer system downstream of the plant. EPA further orders the City of New Bedford to assist CDE in the sewer line clean-up. The City is also required to monitor PCB levels in the effluent of the Wastewater Treatment Plant for one year. To date no tests have been made.

November 1983

Massachusetts Department of Public Health issues a warning to pregnant and nursing women against eating bluefish due to elevated levels of PCB's found in samples. (No link was suggested between PCB's in the Acushnet River Estuary/New Bedford Harbor area and bluefish with PCB body burden). This action parallels similar testing and concerns by New Jersey (December 1982) and Rhode Island (February 1983). New Jersey tested striped bass (ave. 1.3 ppm in edible meat) bluefish (1.8), white perch (1.2), white catfish (1.9) and eels (3.3), taken from waters of the northern shore and 4 river basins of that state. Rhode Island found 23 of 25 samples of striped bass to be below 2 ppm.

December 1983

The City of New Bedford files a request for a waiver from federal Clean Water Act requirements to establish secondary treatment at the Wastewater Treatment Plant. The application states that no PCB's are presently being discharged in effluent from the plant.

December 1983

The National Oceanic and Atmospheric Administration (NOAA) files suit in federal court against Aerovox and Cornell-Dubilier Electronics for damages and losses of natural resources. The Attorney General's Office of the Commonwealth of Massachusetts files a similar suit.

January 1984

U.S. EPA performs a stack test at the sewage sludge incinerator of the New Bedford Wastewater Treatment Plant. The test will determine the efficiency of PCB destruction of the unit and will determine whether certain toxics by-products are being generated during the incineration process (results pending).

Chronology (update from January 1984)

Feb., 1984 EPA joins NOAA as plaintiffs in US vs. AVX.

May, 1984 RI/FS Work Plan approved for Modelling of Fate, Distribution & Transport of PCBs and Heavy Metals in the Esturay/Harbor/Bay system.
Contractors: Battelle Labs, Hydroqual Inc.

Aug., 1984 Draft Remedial Investigation/Feasibility Study (RI/FS) on the Acushnet River Estuary released.

Aug. 22, 1984 Public Mtg. to present cleanup alternatives.

Sept., 1984 Addendum to RI/FS on the Acushnet River Estuary released.

Sept. 26, 1984 Public Mtg. to receive RI/FS comments.

Sept., 1984 Sampling begins for Battelle's Model.

Oct., 1984 Administrative Order to City of New Bedford to fence in Sullivan's Ledge.

Oct. 22, 1984 Public hearing to receive RI/FS Comments.

Nov, 1984 RI (drilling) begins at Sullivan's Ledge.

Nov. 10, 1984 Public comment period for Acushnet R. Estuary RI/FS extended to Jan. 15, 1985.

Dec., 1984 Sampling & Analysis Report on New Bedford Incinerator submitted to EPA for review.

Jan. 15, 1985 Public comment period closes.

Jan., 1985 1st round of well sampling at Sullivans Ledge.

Feb., 1985 EPA begins discussions with COE/Waterways Experiment Station (WES) on technical feasibility of dredging and disposal of contaminated sediments.

April, 1985 EPA requests proposal of work from WES for additional studies to evaluate outstanding technical issues.

May, 1985 Press release announcing ROD delay and COE involvement.

May, 1985 2nd round of well sampling at Sullivans Ledge.

July, 1985 Warning signs replaced by EPA; City of New Bedford agrees to fence off playgrounds in the Coffin St. cove area.

Aug., 1985 Final proposal for additional studies presented to EPA by COE.