

Polychlorinated Biphenyls (PCBs) in Upstate South Carolina

Catawba/Wateree River Basin
Advisory Commission
November 14, 2014



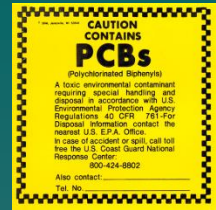
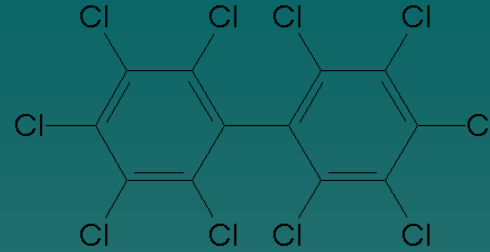
PCBs 101



- ◆ What are PCBs?
- ◆ What are/were PCBs used for?
- ◆ Use of PCBs between 1930 and 1975
- ◆ What are the health effects from PCBs?
- ◆ Statutory authority
- ◆ Situation in upstate South Carolina
- ◆ Latest developments in North Carolina
- ◆ Contact information



What are PCBs?



- ◆ PCBs are a group of 209 chemical compounds called congeners.
- ◆ PCB commercial formulations contained mixtures of 50 – 100 different congeners (e.g., Aroclor 1260).
- ◆ Approximately 1.4 billion pounds were produced in U.S. between 1929 and 1977; possibly half were released into the environment
- ◆ PCBs were important in industrial applications because they do not decompose over time, are heat resistant, provide elasticity to plastics and have low electrical conductivity.



What are/were PCBs used for?



Dielectric fluid

Hydraulic fluid

Heat transfer fluid

Cutting oils

Lubricants

Pump oils

Carbonless copy paper

Plasticizers

Caulk/sealants

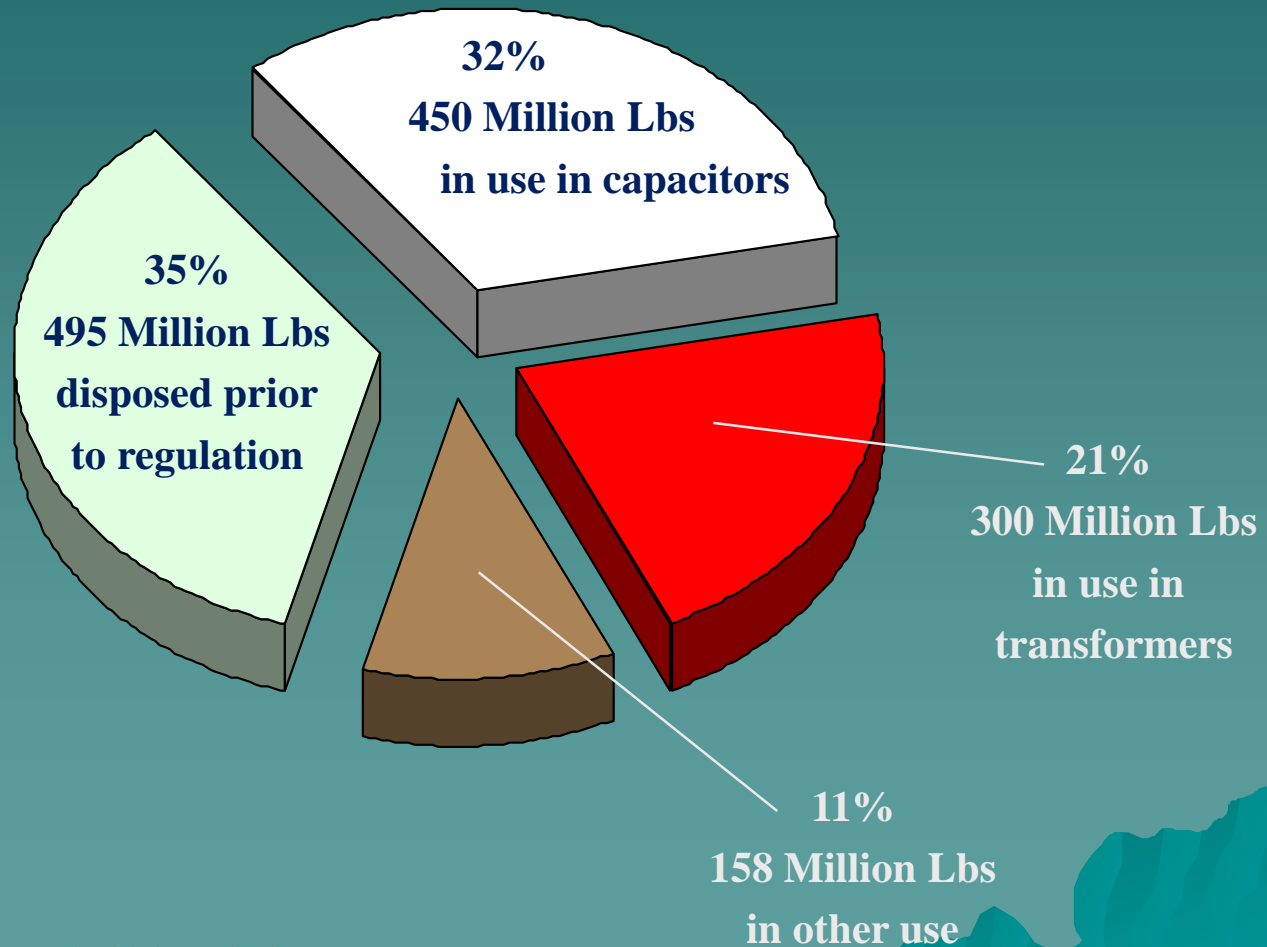
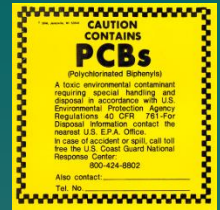
Paint/coatings

Rubber

Inks/pigments



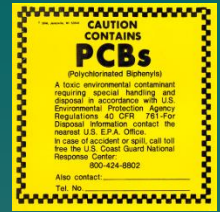
Use of PCBs Between 1930-1975



1930-1975 TOTAL: 1,403 Million Lbs produced



What are the human health effects from PCBs?



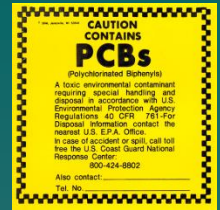
Acute (short-term) – Irritation/burning of eyes, face, and chloracne

Chronic (long-term) – Liver disorders, reproductive effects, developmental effects, and probably cancer

PCBs also have numerous well-documented health effects, including cancer, for animals.



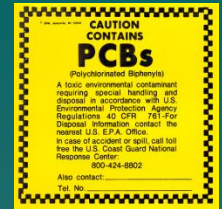
Statutory Authority



- ◆ Section 6(e) of the Toxic Substances Control Act of 1976 (TSCA) generally bans the manufacture, processing, distribution in commerce, and use of PCBs after 1978, but provides for exceptions based on an EPA finding of “no unreasonable risk of injury to health or the environment.”
- ◆ PCB regulations require cleanup of waste containing PCBs as a result of a spill, release or other unauthorized disposal.
- ◆ Spills directly to sewers are subject to final cleanup standards to be established at the discretion of the regional EPA office.
- ◆ The TSCA statute includes no provision for delegating the regulations to a state program.



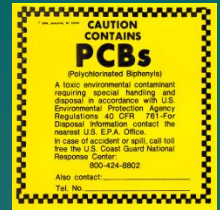
Situation in Upstate South Carolina



- ◆ 30 grease interceptors (GIs) have been contaminated by illegal dumping of PCBs, involving 4 different water utilities.
- ◆ PCB contaminated liquids and solids require cleanup and disposal as PCB remediation waste under 40 C.F.R. § 761.61(c).
- ◆ Cleanup plans (approved by EPA Region 4) are required for contaminated GIs and WWTPs. EPA will issue risk-based PCB approvals (permits) for these cleanups.
- ◆ Some PCB-contaminated sludge was land applied. Evaluation of sampling data is underway in consultation with SCDHEC.
- ◆ State and federal criminal investigation is ongoing.



Latest Developments in North Carolina

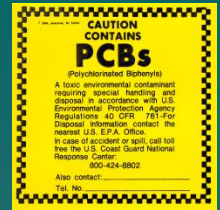


- ◆ Charlotte Mecklenburg Utility Department's Mallard Creek WWTP operators noticed a strong solvent odor and oily sheen in plant influent on 2/6/14. Source of PCBs is believed to be a grocery store GI.
- ◆ CMUD McAlpine WWTP also found to be contaminated with PCBs. Source unknown.
- ◆ Cleanup plans are under development for EPA review.
- ◆ Biosolids land application programs suspended at both plants.
- ◆ PCB contaminated biosolids from Mallard and McAlpine WWTPs being transported for proper disposal.



New SC Regulation

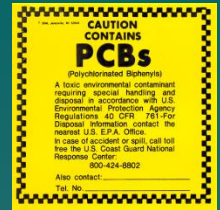
Land application of sludge



- ◆ Requires quarterly monitoring
- ◆ For levels between 1-10 ppm, requires confirmation sampling and 5-day reporting
- ◆ For levels > 10 ppm, requires confirmation sampling, 5-day reporting & soils evaluation
- ◆ Explicitly prohibits land application at 50 ppm or greater
- ◆ Regulation sunsets in 2019



Contact Information



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