BOROUGH OF SPRING CITY

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SPRING CITY WASTEWATER TREATMENT BULLETIN

Trace Amounts of Polychlorinated biphenyl's (PCB's) found entering the Borough of Spring City's Wastewater Treatment Plant

Working with the Delaware River Basin Commission (DRBC) and the Pennsylvania Department of Environmental Protection (PADEP), the Borough has found trace amounts of PCB's in its wastewater treatment plant discharge water (effluent). This is not an uncommon occurrence in wastewater, but noteworthy and, as such, the Borough is obligated to find its source within the Borough and work towards minimizing or eliminating it. Similar to other municipalities and Sewer Authorities that flow into the Schuylkill River, the Borough has prepared a Pollution Minimization Plan (PMP) for PCB's for the PADEP. The main purpose of the PMP Plan is to improve the water quality of the Schuylkill River by reducing PCB's from entering the waterway from point sources. The Borough is responsible for identifying the source or sources of PCB's entering its sewer collection system and implementing actions to minimize those sources. The Borough is required to prepare and submit an annual report to the PADEP documenting PCB minimization activities in accordance with the approved PMP Plan, until PCB's are minimized to acceptable levels.

What are Polychlorinated Biphenyls (PCB's)?

Polychlorinated biphenyls are mixtures of up to 209 individual chlorinated compounds (known as congeners). There are no known natural sources of PCBs. PCBs are either oily liquids or solids that are colorless to light yellow. Some PCBs can exist as a vapor in air. PCBs have no known smell or taste. Many commercial PCB mixtures are known in the U.S. by the trade name Aroclor.

PCBs have been used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they don't burn easily and are good insulators. The manufacture of PCBs was stopped in the U.S. in 1977 because of evidence they build up in the environment and can cause harmful health effects. Products made before 1977 that may contain PCBs include old fluorescent lighting fixtures and electrical devices containing PCB capacitors, and old microscope and hydraulic oils.

Sources of PCB:

In the U.S., the most commonly used Aroclors were: 1221, 1232, 1242, 1248, 1254, and 1260. These and other Aroclors were used in a variety of materials to enhance insulative properties, improve physical and chemical resistance, and act as plasticizers, coolants, and lubricants.

Approximate usage of PCBs in the US is summarized as follows: Closed system and heat transfer fluids (transformers, capacitors, fluorescent light ballasts, etc.) 60%. Plasticizers: 25%, Hydraulic fluids and lubricants: 10%, Miscellaneous uses: 5%.

Releases of PCB's:

Prior to the regulation of PCBs under the Toxic Substances Control Act in 1975, PCBs were released (both accidentally and intentionally) into the atmosphere, water, and land through sewers, smokestacks, storm water runoff, spills, and direct application to the environment (for example, to reduce dust emissions and to extend the life of some agricultural pesticide formulations). Large volumes of PCBs have been introduced to the environment through the burning of PCB-containing products, vaporization from PCB-containing coatings and materials, releases into sewers and streams, improper disposal of PCB-containing equipment in non-secure landfill sites and municipal disposal facilities, and by other routes (such as ocean dumping).

Based on the current regulation of PCBs, the current primary "new" sources of PCB contamination are limited to outdated or illegal landfills and scrap yards and leaks or explosions of electrical equipment and other equipment (such as locomotive transformers) that may still contain PCBs. Other sources are facilities or sites that were previously contaminated with PCBs (for example, contaminated sediments). From contaminated sites, PCBs are emitted and re-deposited to the environment via volatilization from water and soil, wet and dry depositions, and re-volatilization.

What can sewer users do to help?

Identify and report all known or suspected sources of PCB's, including all PCB containing equipment (capacitors, transformers used in commercial/industrial facilities) within the Borough of Spring City's sewer collection system. Please note that the Borough will work with users to minimize PCB's discharges into its collection system.

Typical Actions to minimize on-site sources may include but not limited to:

- Removal of PCB containing material, including residual, stored on-site;
- Engineering controls (such as caps and containment dikes);
- Fluid change-out;
- Modifications to industrial processes that include or result in PCBs; Substitutions of, or modifications to, raw or finished materials;
- Discharge minimization aimed at overall PCB mass load reduction;
- Remedial activities for spills and leaks (current or legacy);
- Piping system cleanout;
- Routine inspection of the facility, especially during storm events where storm water is a contributor of PCB's.

For More Information:

The following references were used as sources for this publication.

1. The Delaware River Basin Commission provides a source for additional PCB information at http://www.state.nj.us/drbc/quality/toxics/pcbs/.

2. The Agency for Toxic Substances and Disease Registry's ToxFAQs™ for PCB's is a source for additional information and can be found at www.atsdr.cdc.gov/tfacts17.html.

3. USEPA also hosts a PCB page at www.epa.gov/pcb.