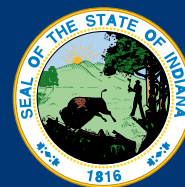




Activities in Indiana



ATSDR in Partnership With Indiana

The Agency for Toxic Substances and Disease Registry (ATSDR) is the lead public health agency responsible for implementing the health-related provisions of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). ATSDR is an Atlanta-based federal agency with more than 400 employees and an annual budget for 2003 of approximately \$82 million. ATSDR is responsible for assessing the presence and nature of health hazards at specific Superfund sites, helping to prevent or reduce further exposure and illnesses resulting from those hazards, and expanding the knowledge base about the health effects of exposure to hazardous substances.

ATSDR works closely with state agencies to carry out its mission to serve the public by using the best science, taking responsive public health actions, and providing trusted health information to prevent harmful exposures and disease related to toxic substances. ATSDR provides funding and technical assistance to states and other partners through cooperative agreements and grants to identify and evaluate environmental health threats to communities. These resources enable state and local health departments and other grantees to further investigate environmental health concerns and to educate communities. From **fiscal years 1986 through 2003**, ATSDR awarded more than **\$3.5 million**—more than **\$600,000** in the last 2 years—in direct funds and services to **Indiana** for comprehensive support of its environmental health unit. In addition to direct funds and services, ATSDR staff provides technical and administrative guidance for state-conducted site activities.

ATSDR Site-Specific Activities Public Health Assessment-Related Activities

One of the agency's important mandates is to conduct **public health assessments** of all National Priorities List (NPL) sites and of other sites where a significant threat to public health might exist. **Thirty-nine** sites

have been designated to the NPL in **Indiana**.

A public health assessment

is a written, comprehensive evaluation of available data and information on the release of hazardous substances into the environment in a specific geographic area. Such releases are assessed for current or future impact on public health. ATSDR, in collaboration with public health and environmental officials from **Indiana**, has conducted **61** public health assessments in the state, including the following recent example.

- **Keil Chemical Company**—In 1999, Representative Peter J. Visclosky (D-1st-IN) asked ATSDR to conduct a public health assessment on behalf of petitioners concerned with potential air emissions from the Keil Chemical Company in **Hammond**. Residents were concerned that the incidence of pediatric cancers in their neighborhood may have been caused by the release of 1,2-dichloroethane (ethylene dichloride, or EDC) and vinyl chloride (VC) from the plant during the Pyro-Chek manufacturing process. EDC and VC are by-products of the process.

A final public health assessment released in June 2001 concluded that contaminants detected in samples from an air monitoring station 1.5 miles from the site were not at levels of health concern. During the exposure investigation, VC and other contaminants were not detected; EDC was detected below levels of health concern. No contaminants were detected in the soil or wastewater above health comparison values, and people would not be exposed to wastewater generated by the plant or exposed to on-site contaminated soils. Therefore, this site does not currently represent a health hazard.

The Pyro-Chek process no longer is used at this site, and supplies of EDC have been removed.

ATSDR awarded more than \$600,000 in the last 2 years in direct funds and services to Indiana.

The **Indiana State Department of Health (ISDH)** conducted a review of reported cases of childhood cancers to determine whether cancer rates in children living in the Lake County area are elevated. ISDH concurrently released its findings in a health consultation and concluded that rates of childhood cancer were not elevated for Lake County or for the community surrounding the Keil Chemical Company.

A **health consultation** is a written or oral response from ATSDR to a specific request for information about health risks related to a specific site, chemical release, or hazardous material. A health consultation is a more limited response than a public health assessment is. To date, **72** documented health consultations have been conducted at **51** sites in **Indiana**, including the following recent examples.

- **Vapor Intrusion of Perchloroethylene (PCE) in a Residential Community**—Region 5 ATSDR and ISDH were asked by the **Indiana Department of Environmental Management (IDEM)** to evaluate possible health effects from exposures to elevated levels of perchloroethylene (also known as PCE, tetrachloroethylene, or PERC) detected in some **Evansville** residential houses. While investigating groundwater contamination associated with the Former Crescent Cleaners site in Evansville, IDEM detected elevated levels of PCE in groundwater and soil. Because the soil in this area is sandy, IDEM evaluated the potential for PCE vapors from the groundwater to infiltrate nearby homes and businesses. IDEM continues to conduct additional sampling studies of contamination of indoor air, soil, and groundwater to characterize the extent of the PCE plume.

In a health consultation released in October 2003, ATSDR concluded that this site poses a public health hazard because long-term exposure to PCE could have resulted in an increased cancer risk. Although mitigation systems were installed in homes and in one business that had elevated

PCE levels, only one system was effective; two others failed. Repairs were made to the systems that failed, but test results are not yet available to determine their current effectiveness.



Installed mitigation system for PCE vapor at a business in Evansville.

Future exposures to PCE pose an indeterminate public health hazard, because PCE levels could be present or increase over time in buildings without mitigation systems. These levels could increase or be found in other buildings if existing mitigation systems are not maintained or if the plume continues to migrate to other areas.

ISDH is planning to conduct a needs assessment and to provide community members with information that will assist in answering their questions about the possible health effects from PCE.

- **Methyl tert-Butyl Ether (MTBE) Contamination in a School Water System and in Residential Wells**—MTBE, a gasoline by-product, was first found in the well that supplies the **Lincoln Elementary School** and residences in **Roselawn** in March 2000; these concentrations increased in 2001 and 2002. Exposure stopped in April 2002, when the school was provided with an alternate water supply and affected residences were provided with filters to remove MTBE from the water. IDEM performed sampling of the school and selected areas surrounding it, including a nearby gas station. IDEM then asked ISDH to review existing data from the site and evaluate the public health implications of contamination at the school and surrounding neighborhoods. ISDH and IDEM provided information to the community during a public availability session in May 2002.

In a health consultation released in March 2003, ISDH and ATSDR concluded that as long as an alternate water supply is used and the residential filters on the water from contaminated water wells are maintained, people are not likely to become ill from the drinking water at the school or in the nearby residences. The contaminated groundwater poses no apparent public health hazard, because the contaminant levels are lower than those

expected to cause adverse health effects. ISDH and ATSDR also recommended continuing the investigation to identify the geographical extent of the MTBE plume and other private wells that might be impacted.

- **Prestolite Battery Plant**—The former Prestolite Battery Plant in **Vincennes** is undergoing redevelopment efforts to return the property to productive land use. While the plant was in operation, manufacturing process wastes and wastewater became laden with lead, lead oxides, lead sulfates, and sulfuric acid. These lead-containing sludges and wastewater were discharged to an on-site sewer system. Over time, these sewer lines became plugged with lead-contained sludges and, as a result of leaks and sewer line back-ups, the soils around these sewers and associated pumps became contaminated. Additionally, lead dust was also released from the plant's ventilation system. The lead dust is believed to have contaminated the surface soils, sediments, and groundwater near the plant. Accidental spills of process materials also contributed to the lead contamination of on-site soils. All residences near the former Prestolite site have been placed on municipal water.

In a health consultation released in September 2003, ISDH concluded that no apparent health hazard exists at the site. Off-site and on-site contamination are still present, but at levels that are not expected to cause human health concerns. However, ISDH also concluded that a physical hazard is present on-site because of construction debris, and ISDH recommended its removal.

An **exposure investigation** collects information on specific human exposures through biologic sampling, personal monitoring, related environmental assessment, and exposure-dose reconstruction. ATSDR staff members have conducted **four** exposure investigations in **Indiana**, including the following recent example.

- **Keil Chemical**—**Hammond** residents were concerned that emissions from Keil Chemical are adversely impacting their health, and they petitioned ATSDR to evaluate whether chemical releases from the Keil Chemical facility posed a health hazard. To make the health evaluation, ATSDR proposed an exposure investigation to sample the community's air for chemicals emitted by the facility.

The purpose of the exposure investigation released in February 2001 was to determine whether residents who live downwind from the facility are being exposed to airborne EDC and VC at health hazard levels. The investigation was jointly completed by the **Hammond Department of Environmental Management**, ATSDR, and the residents of Hammond. Data used included the following: air samples collected downwind of Keil's EDC and VC emissions, source samples collected at Keil during air sampling, and dispersion modeling of the emissions after air sampling. The target population was all residents who live within 1.5 miles of the facility.

The exposure investigation concluded that concentrations of EDC and VC detected in Hammond's ambient air do not pose a public health hazard. Emissions of EDC and VC are ongoing and variable, indicating inconsistent efficiency of air pollution control. Past exposures will be addressed in an ATSDR petitioned health consultation.

Health Education and Community Activities

Indiana has been a participant in ATSDR's cooperative agreement program since 1988. Under this program, **ISDH** has received funding and technical assistance for the development of community education and activities associated with human exposure to hazardous substances in the environment. During fiscal year 2003, nine different educational materials were developed in support of environmental health education activities at 10 sites.

Activity in **Elkhart** (the Conrail Rail Yard site) began with a community needs assessment as the basis for a comprehensive health education program for residents. Among material developed for residents was a brochure on handling common household chemicals. This brochure was also used for health education at other sites throughout the state.

Considerable health education activity has been conducted for residents near the **Bedford** General Motor site. Sixty-nine percent of residents and 20% of physicians responded to a community needs assessment focused on polychlorinated biphenyls (PCBs). Seventy-six percent of residents responded that they would like to receive information on how to protect their family's health, and 56% of physicians responded that they would like to receive information on ways their

patients could protect their health. These results led to news releases, community informational meetings, and the development of fact sheets addressing health issues associated with PCBs. In November 2002, physicians from the Great Lakes Center for Children's Health met with local health care providers to discuss health effects associated with PCBs. At the same time, ATSDR, the U.S. Environmental Protection Agency, and state and local health department representatives met with residents to provide background data and address misconceptions about PCBs and about individual health issues.

Health Studies

Health studies are investigations conducted to determine the relations between exposures to hazardous substances and adverse health effects. Health studies also define health problems that require further investigation through, for example, health surveillance or an epidemiologic study. Following are examples of health studies or investigations that ATSDR conducted or supported in Indiana.

- **National Exposure Registry (NER): Trichloroethylene (TCE) Subregistry**—NER comprises chemical-specific subregistries designed to aid in assessing the long-term health consequences of low-level, long-term exposures to hazardous chemicals identified at hazardous waste sites. TCE, a synthetic chemical that does not occur naturally in the environment, was selected for NER's first chemical subregistry. The greatest source of TCE in the environment is industrial; factories use TCE to remove grease from metals. TCE also can enter air and water when it is released from hazardous waste sites. Occupational and animal studies suggest that TCE is associated with neurotoxicity, genotoxicity, and immunotoxicity. However, data concerning nonoccupational exposures, such as environmental exposures and their potential health effects are sparse and inconclusive. ATSDR has selected sites across the United States at which TCE exposures have occurred. At these sites, initial (or baseline) and follow-up interviews have been conducted; 4,986 people from 15 areas associated with hazardous waste sites in five states have been enrolled in the subregistry.

The Indiana sites included in the TCE Subregistry are all in **Elkhart** and include the Gemeinhardt Company Inc., Superior Street Area, Elkhart

Central Area (formerly known as the Marshall-Gordon Street Area), and the Conrail Rail Yard. Baseline data collection occurred in 1989; follow-up interviews were conducted in 1990, 1991, 1993, 1995, 1997, and 2000.

- **Baseline Analysis of the TCE Subregistry Risks of Health Outcomes Among Female Registrants: The Impact of TCE Exposures on Women**—Existing information on the impact of health for females exposed to hazardous substances, particularly the low-level, long-term exposures found at waste sites, is sparse. Most information on the health impact of chemical exposure comes from occupational studies of predominantly healthy male workers and from toxicologic studies of higher levels and shorter duration. To gain more knowledge about the potential impact of TCE environmental exposures on females, the data collected as part of the NER TCE Subregistry was used to compare the female subpopulation reporting rates with (1) national norms as determined by National Health Interview Survey and (2) their male counterparts' rates for 19 health conditions and 6 symptoms.

Study results were suggestive that the environmental exposures (TCE and other chemicals) experienced by the TCE Subregistry members might have had a greater health impact on the female registrants than on the male registrants.

For more information, contact ATSDR toll-free at 1-888-42ATSDR (1-888-422-8737) or visit the ATSDR Web site at www.atsdr.cdc.gov.