Activities in Alabama

ATSDR in Partnership With Alabama

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 1989 through 2002**, ATSDR awarded more than **$7.1 million**—more than **$260,000** in the last 2 years—in direct funds and services to **Alabama** 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. **Seventeen** sites have been designated to the NPL in **Alabama**.

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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 **Alabama**, has conducted **21** health assessments in the state. Following are recent examples of public health assessments conducted in Alabama.

- **American Brass, Incorporated (ABI)**—The ABI site is an abandoned secondary smelter and foundry in a rural agricultural area near **Headland**. In 1996, the **Alabama Department of Public Health** (**ADPH**) and ATSDR were asked to review environmental sampling data (soil, surface water, groundwater, sediment, and air) to determine whether contamination at the site posed a public health hazard. ADPH and ATSDR have worked with the U.S. Environmental Protection Agency (EPA) since 1996 during its removal and remediation phases. In a final health assessment released in 2003, this site was classified as a public health hazard for trespassers because of the potential for physical injury. For nearby residents, the ABI site poses no apparent public health hazard due to chemical exposure. High levels of contaminants (especially copper, lead, zinc, and aroclor 1260) are on-site, but the site is heavily vegetated. Although off-site migration may occur, sample results from nearby residences have not shown levels of contaminants that exceed screening values.

  The ABI site may have posed a public health hazard in the past for workers due to the metal, pesticide, and polychlorinated biphenyl (PCB) contamination in on-site soils. However, more data are needed to evaluate this pathway more fully.

- **Anniston**—ATSDR has been involved with a range of activities in **Anniston**. In response to community concerns about elevated blood PCB levels, ATSDR is working with the U.S. Environmental Protection Agency (EPA) Region IV, **ADPH**, and the **Alabama Department of Environmental Management** (**ADEM**) to characterize environmental contamination in west Anniston. In May 2001, a public health assessment prepared by ADPH for the Monsanto Company/Solutia Inc. site in Anniston concluded that exposure to elevated PCB levels in surface soil at some residences poses a public health hazard and could result in an increased risk for adverse health effects for children. The assessment also concluded that the levels of PCBs in surface soil in several areas posed a public health hazard to children in the past, and that not enough information exists to know whether PCBs are in dust inside homes where the PCB-contaminated surface soils have not been cleaned up. For this reason, people at those homes may also be exposed by breathing PCB-contaminated dust.

  A number of health consultations and exposure investigations have been released over the past several years. Table 1 lists recent documents related to investigations in Anniston.

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. It is a more limited response than a public health assessment is. To date, **91** documented health consultations have been conducted at **54** sites in **Alabama**. Following are recent examples of health consultations conducted in the state.

- **Anniston PCB Site**—A health consultation on this site was released for public comment in February 2000, then revised and released as a final document in July 2003. The final document reflects changes made in response to public comments and provides perspective on recent work and advancements. In this document, ATSDR reviewed data collected by EPA and others to determine whether PCBs, pesticides, and dioxins in soil, blood, and air are a public health hazard. The document concludes that (a) exposures to PCBs in some residential soils present a public health hazard; (b) approximately half of the 2,712 persons tested did not have detectable levels of PCBs (<5 micrograms per liter [µg/L]) in their blood, but approximately 500 persons had elevated blood PCB levels (>20 µg/L); (c) exposures to PCBs in air are an indeterminate public health hazard; and (d) further sampling and evaluation are needed to assess fully the scope of environmental contamination and to determine the important exposure pathways.

  Because it is difficult to provide an accurate description of the public health hazards at this site, public health conclusions and estimates of exposures will be reevaluated as ongoing investigations.

- **Childhood Blood Lead Levels in Anniston**—ATSDR prepared a health consultation to address questions and concerns about environmental lead contamination and blood lead levels among children in **Anniston**. The consultation, released in June 2003, summarizes four activities aimed at

Table 1. Recent Documents Related to Investigations in Anniston

Title	Document Type	Release
Evaluation of Soil, Blood, and Air Data From Anniston, Alabama	Health consultation	July 30, 2003 (final)
Assessment of Four Activities Addressing Childhood Blood Lead Levels in Anniston, Alabama	Health consultation	June 26, 2003 (final)
Blood Lead Screening in Anniston, Alabama	Health consultation	March 11, 2003 (final)
Anniston PCB Air Sampling	Health consultation	January 17, 2003 (public comment)
Exploring Opportunities for PCB-Related Health Studies [from ATSDR's January 2002 expert panel]	Report	Spring 2002 (final)
ATSDR Childhood Blood Lead Screening Project	Report	2002 (final)
Exposure Investigation, Solutia Inc.	Exposure investigation	October 22, 2001 (final)
Monsanto/Solutia Inc.	Public health assessment	May 2001 (final)
Evaluation of Lead in the Surface Soil at the Oxford Lake Softball Complex	Health consultation	January 22, 2001 (final)
Evaluation of Lead in Residential Surface Soil From Anniston, Alabama	Health consultation	January 8, 2001 (final)
Toxicological Profile for Polychlorinated Biphenyls (Update)	Toxicological profile	November 2000

characterizing childhood blood lead levels, collectively evaluates the findings of those four activities, makes recommendations, and outlines ongoing activities and future planned activities. The activities were conducted by ATSDR, **ADPH**, and the **Calhoun County Health Department** (**CCHD**); the activities were aided by environmental investigations conducted by EPA and **ADEM**.

Ball field in Anniston.

This consultation concluded that evidence from all four activities shows that the number of cases of elevated blood lead levels in Anniston is below both state of Alabama and national averages. All four activities found evidence that children were exposed to lead. Other conclusions are that area physicians are providing screening services for blood lead, and that increased communication and information sharing will minimize misunderstandings about blood lead levels.

- **Anniston PCB Air Sampling**—A health consultation released for public comment in January 2003 reviews ambient air PCB data collected by EPA and Solutia Inc. in **Anniston**. The consultation concluded that community members living near the Solutia Inc. facility may be exposed to PCBs via inhalation; these potential exposures pose an indeterminate health hazard. Existing ambient air PCB data suggest it is possible that current Solutia Inc. workers may be exposed to PCBs while on the Solutia Inc. property. In addition, until the source of PCBs is found, potential PCB exposures to Anniston-area workers involved in soil excavation activities pose an indeterminate health hazard.

An **exposure investigation** collects information on specific human exposures through biologic sampling, personal monitoring, related environmental assessment, and exposure-dose reconstruction. Following is an example of an exposure investigation in **Alabama**.

- **Solutia Inc.**—The purpose of the exposure investigation released in October 2001 was to assess the level of exposure to PCBs for children and their families who would most likely have been affected because they live near the Solutia site in **Anniston**. Conclusions for the report are based on blood and dust and surface soil samples collected from 18 families living near the Solutia Inc. facility who volunteered to participate, and are not meant to represent the community at large.

  The investigation found that 5 of 43 adults had elevated blood PCB levels; blood PCB levels in 37 children were not elevated. Blood PCB levels were correlated with age and length of residency near the facility, but were not correlated with soil or house dust PCB levels. Available evidence suggests that past PCB exposures may have exceeded more recent exposures.

Health Education and Community Activities

Alabama has been a participant in ATSDR's cooperative agreement program since 1992. Under this program, **ADPH** has received funding and technical assistance for the development of community education and activities associated with human exposure to hazardous substances in the environment. The state has conducted grand rounds presentations and contacted physicians by letter about specific health concerns related to hazardous waste sites in the state, conducted site-specific community education, and developed and distributed fact sheets or resource guides.

- **Anniston—ADPH** staff members instigated the CCHD Protocol for Assessing Community Excellence in Environmental Health (PACE-EH) activity and participate as ex officio members. Although the activity is not funded by ATSDR, it is a significant, positive approach to engaging the community in addressing its own environmental health interests.

  In spring 2000, ADPH cooperative agreement staff asked CCHD to define the role ADPH should play in Anniston site issues. ADPH received ATSDR approval to fund a community case manager under the cooperative agreement program, and since May 2001 the ADPH community case manager has been fulfilling several roles. These roles are as follows: disseminating available information (health

education [HE]), facilitating affected and involved residents' ability to access health resources (community involvement [CI]), coordinating with EPA to follow up with persons who have both health and environmental concerns (HE and CI), and representing ADPH and its services at local meetings and health fairs.

Health Studies

Health studies are investigations conducted to determine the relationships between exposures to hazardous substances and adverse health effects. They also define health problems that require further investigation through, for example, health surveillance or an epidemiologic study. Following is an example of a health study or investigation that ATSDR conducted or supported in the state of **Alabama**.

- **Hazardous Substances Emergency Events Surveillance System**—HSEES was established by ATSDR in 1990 to collect and analyze information about releases of hazardous substances that need to be cleaned up or neutralized according to federal, state, or local law, as well as threatened releases that result in a public health action, such as an evacuation. The goal of HSEES is to reduce the morbidity and mortality of first responders, employees, and the general public resulting from hazardous substances emergencies. Fifteen state health departments, including Alabama, currently participate in HSEES. HSEES captures data on over 5,000 events annually. Of these, 80% occur at fixed facilities, and 20% are transportation-related events. Most events occur between 8:00 AM and 5:00 PM on Monday through Friday. Persons most often injured are employees.

  The HSEES system is used to generate information for use by states to conduct presentations on planning prevention strategies for industries that account for a significant number of spills; conduct HazMat training courses, including information on the risk for injury from methamphetamine labs; establish and maintain protection areas for municipal water systems; assist with the proper placement of HazMat teams; develop fact sheets on frequently spilled chemicals or chemicals that cause a disproportionate number of injuries (e.g., chlorine and ammonia); develop newsletters for industry, responders, and environmental groups; and conduct presentations for state and local emergency planners.

Minority Health Professions Foundation Research Program

This program supplements the substance-specific information needs of the public and the scientific community and supplies necessary information for conducting comprehensive public health assessments of hazardous waste sites. These goals will be addressed by initiating research to fill ATSDR-identified data needs for priority hazardous substances, and by enhancing existing disciplinary capacities to conduct research in environmental health at the foundation's member institutions, one of which is the **Tuskegee University School of Veterinary Medicine**. The following studies are being jointly conducted by ATSDR and Tuskegee.

- **Multigenerational Toxic Effects of Chlordane on Reproduction and Development in Rats**—Chlordane is an organochlorine pesticide previously used as an insecticide for vegetation and as a termiticide for subterranean control of termites in house foundations. Chlordane is a mammalian toxicant that has been banned from commercial use since 1988. However, because of the environmental persistence of the compound, it is possible that low-level exposure still occurs. The primary objective of this study is to determine the effect of low levels of chlordane on the reproduction and development of rodents over multiple generations.
- **Multigenerational Toxic Effects of Zinc in Rodents**—Mixed results from studies in animals and reports in humans indicate a need for additional studies to help elucidate the effects of zinc on reproduction and development. The specific aims of this research are to investigate the potential toxicity of orally administered zinc on reproductive performance in rats and mice over two successive generations and to evaluate target organ toxicity of orally administered zinc and correlate with reproductive toxicity in rats and mice. The potential toxicity of zinc on target organs will be assessed pathologically and correlated with the effect of zinc on reproductive performance and development over the three generations.

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