



Activities in Mississippi



ATSDR in Partnership With Mississippi

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 a budget for 2004 of approximately \$73 million. ATSDR assesses the presence and nature of health hazards at specific Superfund sites, helps to prevent or reduce further exposure and illnesses resulting from those hazards, and expands 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. In **fiscal years 1994–2003**, ATSDR awarded more than **\$1 million** in direct funds and services to **Mississippi** for financial support of specific environmental health activities. 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 ATSDR'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. A public health

assessment is a written, comprehensive evaluation of available data and information about 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 **Mississippi**, has conducted nine public health assessments in the state, including the following recent examples.

- **Davis Timber Company**—The Davis Timber Company site is in southeastern Mississippi near **Hattiesburg**. The company conducted timber-processing and wood-preserving operations at the site beginning in 1966. Wood-treatment operations using pentachlorophenol (PCP) began in 1972 and continued until 1987. The **Mississippi Department of Environmental Quality (MSDEQ)** has documented intentional and unintentional releases of contaminants from the facility's wastewater treatment holding ponds. Fish kills have occurred on the lakes and ponds downstream of the site. Fish from those lakes have been contaminated with PCP and chlorinated dioxins and furans.

In January 2003, ATSDR released a final public health assessment for the site. ATSDR concluded that the site is a current public health hazard because of physical hazards that could cause bodily injuries to children and adults who trespass on the site. The site was a past public health hazard (before 1990) because residents who ate contaminated fish from Country Club Lake were exposed to dioxins and furans at levels of health concern. The estimated amount of dioxin exposure in some residents who repeatedly ate fish from the lake might have increased the possibility for altered social behavior and for thyroid cancer and

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might have caused mild damage to the immune system. The site is a potential future public health hazard because dioxins and furans are present in on-site soils and sediment. If the site is used for residential development, children and adults could have greater, daily contact with contaminated soils. Insufficient information exists about the degree of surface and subsurface soil contamination on the site.

Recommendations in the public health assessment included collecting surface and subsurface soil samples from on-site areas and surface soil, surface water samples from East and West Mineral creeks, and fish samples from County Club Lake and other lakes where people may fish for consumption; limiting access to the site to reduce the threat posed by physical hazards; and characterizing the extent of contamination to on-site and off-site groundwater.

- **American Creosote Works, Inc.**—American Creosote Works, Inc., in **Louisville**, is a former wood-preserving and timber-processing facility that operated from 1912 until 1998. Eight monitoring wells are on the site, and creosote has been detected in groundwater but not at levels of health concern. The U.S. Environmental Protection Agency (EPA) plans to install a monitoring well in the aquifer from which the municipal water supply is drawn to show that it is not being impacted by site contaminants.

Part of the site may be used for a water-based wood-treating process called chromated copper arsenate (CCA). If no major objections are raised from community members, EPA will work to clean up creosote on parts of the site where the CCA process may be used.

ATSDR is in the process of conducting a public health assessment and is reviewing recent sampling data. In March 2003, ATSDR held a public availability session in Louisville to hear residents' health concerns related the site.

- **Kerr-McGee**—In April 2003, ATSDR held a public meeting and public availability session to discuss and hear about community health concerns related to the Kerr-McGee site in **Columbus**. ATSDR staff will assemble information about the community health concerns, investigate those

concerns, and communicate the findings back to the community.

- **Naval Construction Battalion Center**—In October 2003, ATSDR held a public availability session to hear health concerns related to the Naval Construction Battalion Center site in **Gulfport**. A public health assessment is planned for the site.

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. **Twenty-four** health consultations have been developed at **17** sites in Mississippi, including the following recent example.

- **Dupont Chemical Company**—The Dupont Chemical Company Plant in **DeLisle** is a titanium dioxide manufacturing plant. The facility injects several million pounds of hazardous waste (iron chloride) into underground injection wells every year. In 2001, the plant's former workers and local residents petitioned ATSDR to conduct a health consultation. The residents and former workers believe this site has impacted their health. Some community members expressed concerns that chemical releases from the plant could have contaminated the community's water and air. They did not, however, have any specific health complaints. One resident had undergone hair analysis and was chelated by a physician seven times because of a fear of manganese poisoning. According to the petitioner, a number of residents have undergone hair analysis and believe that exposure occurred through contaminated groundwater.

In April 2003, ATSDR released a public comment version of the public health assessment for this site. ATSDR classified the site as no public health hazard because area wells currently are not impacted by the plant. Groundwater testing from three different sources revealed that for most wells, levels of metals in the water were below threshold of any known health effects. Some samples had elevated metal levels but not at levels that would be associated with health effects such as cancers, birth defects, neurologic diseases, fibromyalgia, and chronic sinusitis.

ATSDR also concluded that hair mineral analysis results do not reliably indicate either environmental exposures or the need for treatment (i.e., chelation therapy) for environmental disease.

In homes where lead and copper levels in water samples exceeded the technical treatment action level, ATSDR recommended further sampling to identify the source of those levels, and the **Mississippi Department of Health (MSDOH)** has agreed to conduct further groundwater testing for those individuals if requested by residents.

ATSDR is developing a health consultation evaluating the DeLisle area's exposure to air emissions from the Dupont DeLisle plant and its potential for public health impact. ATSDR also is developing a health consultation about the plant's dioxin-congener contaminated waste and its potential for public health impact.

ATSDR will provide physician and community environmental health education about issues such as hair analysis and appropriate recognition, diagnosis, and treatment of diseases related to environmental exposures.

- **Wood Treating, Incorporated**—In 1999, EPA Region IV asked ATSDR to review data for the Wood Treating, Inc., site in **Picayune**. The purpose of the request was to determine whether levels of contaminants that migrated off-site warranted the posting of warnings and fencing to limit human exposure. The property is in a mostly residential area, and residents had access to the site, drainage ditch, and nearby stream (Mill Creek).

Contamination from semivolatile organic compounds was detected in two samples taken off-site downstream of the facility. ATSDR concluded that exposure may result in a potential increase in risk for some children. ATSDR recommended restricted access to the site until additional sampling could be conducted to determine the nature and extent of contamination.

EPA held a remedial investigation kick-off public availability meeting in Picayune in April 2004. Representatives from EPA Region IV, **MSDEQ**, **MSDOH**, and ATSDR responded to questions from the community. About 125 people attended the meeting. EPA recapped history of the site, then explained the remedial investigation/feasibility

study process. EPA is collecting environment samples at and around the site. ATSDR is reviewing environmental data for the public health assessment.

Health Education and Community Activities

As part of its ongoing outreach activities in affected communities, ATSDR proactively involves communities in identifying their health concerns and developing actions to address them. A needs assessment illustrates this type of involvement. ATSDR is conducting a needs assessment to determine the health education needs of the community and health care providers in relation to the Dupont site in **DeLisle**.

Health Studies

Health studies are investigations to determine the relations 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 are examples of health studies or investigations that ATSDR conducted or supported in Mississippi.

- **Long-Term Health Effects of Methyl Parathion in Children, A Follow-Up Study**—To investigate the long-term health effects of methyl parathion exposure in children, ATSDR conducted neurobehavioral testing on **Mississippi** and Ohio children aged 6 years or under at the time of methyl parathion spraying. Children's exposure status was determined by results of environmental wipe samples for methyl parathion from residences and urine testing for parantrophol (a metabolite of methyl parathion).

ATSDR collected data that included a computer-assisted personal interview and the pediatric environmental neurobehavioral test battery (PENTB). The PENTB consists of interviews and questionnaires for the parent/guardian and neurobehavioral testing of children 4 years of age and older. Data were collected in summer 1999 (year 1) and again in summer 2000 (year 2). In year 1, a total of 146 children in Ohio and 181 children in Mississippi participated in the study; in year 2, a total of 106 (73%) children in Ohio and 154 (85%) children in Mississippi participated.

Exposed children had more difficulties with attention, short-term memory, and motor skills, and parents of exposed children reported that their children contributed more stress to the parent-child system and had more behavioral problems than did unexposed children; however, these effects were not seen consistently in both sites or in both years. No statistically significant differences existed between exposed and unexposed children in tests for general intelligence, the integration of visual and motor skills, and multistep processing for either year of the study. Although some domains essential to neurobehavioral development (such as short-term memory and motor skills) appear to have been affected by exposure to methyl parathion, the results are largely inconsistent.

Study findings were presented at a public meeting in Mississippi in November 2002. A final report on this study was published in fiscal year 2003.

- **Hazardous Substances Emergency Events Surveillance (HSEES) System**—ATSDR established HSEES 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 **Mississippi**, participate in HSEES. Overall, HSEES captures data on more than 8,000 events annually. Of these events, 80% occur at fixed facilities, and 20% are transportation-related events. Most events occur between 8:00 am and 5:00 pm, Monday through Friday. People most often injured are employees.

Minority Health Program

The **Mississippi Delta** Project: Health and Environment is a major component of the ATSDR Minority Health Program. The project began in 1994 as a multiphase initiative to identify and address environmental and other factors that negatively impact human health within a key geographic area. The goal of the project is to prevent or mitigate adverse health effects and reduced quality of life in disadvantaged populations living in communities impacted by identified environmental hazards in the

Mississippi Delta region. This goal is being realized through partnerships with federal agencies, state departments of environmental quality, local health departments, faith-based groups, local community groups, public schools, and institutions of higher education, particularly those that serve large minority populations.

Phase I of the Mississippi Delta Project used a needs assessment to determine the human health problems linked to environmental hazards in the region. Phase II of the project was to support Delta communities through funding a limited number of projects to address problems or needs identified in Phase I and to develop intervention strategies appropriate for preventing adverse health and environmental impacts. The Minority Health Program developed successful collaborative partnerships with community-based organizations to conduct demonstration projects.

In Mississippi, a smoking cessation project called the Butt Out and Be Healthy Program was implemented through the **Jackson-Hinds Comprehensive Health Center**. Phase III of the Mississippi Delta Project will focus on regional health and environmental promotion.

Substance-Specific Research

In 1998, ATSDR funded the **University of Mississippi Medical Center** to study the toxicokinetics of methyl parathion in female rats during chronic dermal exposure. Toxicokinetics is the study of how a toxin gets into the body (absorption), where it goes in the body (distribution), and how it is metabolized and stored in or excreted from the body. The study compared the toxicokinetics after chronic dermal and oral exposure to methyl parathion and measured its transfer to and distribution within the fetus.

Data obtained from this study will be important in modeling the toxicokinetics of methyl parathion following different routes of exposure. These data also will assist in determining the need for and design of additional toxicologic and epidemiologic studies of methyl parathion.

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.