

East Liverpool Air Quality

The levels of manganese in the air in East Liverpool are a public health hazard. Federal and state agencies recommended immediate actions to reduce the amount of manganese in the air. Ohio EPA is enforcing these actions.

How did the investigation of air quality in East Liverpool begin?

The Ohio Environmental Protection Agency (Ohio EPA) has been sampling outdoor air in East Liverpool since 1999. In 2008, the Ohio EPA asked the federal Agency for Toxic Substances and Disease Registry (ATSDR) to look at whether levels of metals in air in the East Liverpool community could pose a health problem for people living in the area. To get information to answer Ohio EPA's question, ATSDR has been working with Ohio EPA, the Ohio Department of Health (ODH), and the United States Environmental Protection Agency (U.S. EPA).

What information did ATSDR review?

ATSDR reviewed data from three places in East Liverpool: the Water Plant site, the Port Authority site, and a site next to the East Elementary School. At these sites, Ohio EPA installed monitors that measure the amount of arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and zinc contained in dust samples pulled from the air. At the Water Plant site, Ohio EPA also collects weather data to understand how dust moves through the air.

ATSDR reviewed air data collected by Ohio EPA between 1999 and 2009.

What did ATSDR find out?

ATSDR found that manganese levels in the air are close to levels that might cause health problems. Of the three sites monitoring air, the Water Plant site had the highest levels of manganese. The Port Authority site and Maryland Avenue (East Elementary School) site had much lower levels. Manganese levels were higher when the wind blew from the direction of the S.H. Bell State Line facility, compared to when it blew from other directions.

Other metals were detected, but not at levels that would cause health concern.



What is manganese?

Manganese is a naturally occurring metal found in rocks and soil. Small amounts of it are important for good health. Foods like beans, nuts, and tea have manganese. Industrial and other human activities can also release manganese into the air.

What are health effects of too much manganese?

Over a long time, breathing or eating too much manganese could cause problems to the nervous system. In children, very high levels could cause problems in learning or remembering. If you have asthma or other breathing problems, you should avoid conditions where there is a lot of dust in the air (bad air quality days). If you are worried about your health, please see your doctor or medical provider.

Where can I find a copy of the ATSDR Health Consultation?

ATSDR wrote its evaluation of manganese exposures in East Liverpool air in a report called a Health Consultation. If you would like to see copies of the Health Consultation,

ATSDR has placed these documents, fact sheets, and other agency materials in the Carnegie Public Library of East Liverpool, 219 E. 4th St., East Liverpool, OH 43920. If you have access to the internet, you can view the materials on-line at:

<http://www.atsdr.cdc.gov/HAC/PHA/HCPHA.asp?State=OH>



What's next?

ATSDR recommended immediate action to reduce the amount of manganese in the air. Ohio EPA and U.S. EPA agree with ATSDR and have been working closely with S.H. Bell to help the company make changes to cut down on the amount of manganese that gets off site and into the community.

What is Ohio EPA doing to address manganese in outdoor air?

Ohio EPA enforces state laws to protect public health and the environment. Ohio EPA identified the S.H. Bell facilities as sources of airborne manganese in the community. They have worked with S. H. Bell over the years to reduce the amount of manganese that gets into the air. In 2008, S.H. Bell took the following steps to reduce manganese getting in community air, including:

- enclosing storage piles and screening operations;
- dust control measures; and
- covering trucks leaving the facilities.

Even with the 2008 changes, manganese levels in the air remained too high. In February, 2010, Ohio EPA ordered S.H. Bell to:

- take further actions to control dust;
- stop handling manganese materials at the facility nearest East Elementary School; and
- enclose areas where manganese containing materials are processed.

You can download the February 2010 Director's Findings and Orders at:

http://www.epa.ohio.gov/portals/27/enforcement/year_2010/SHBell_020810.pdf

Ohio EPA believes these steps will greatly reduce manganese in the air, and plans to continue its air monitoring program to make sure that the changes at S.H. Bell reduce manganese exposures in the community.

What is U.S. EPA doing in your community?

U.S. EPA enforces federal laws to protect the environment. In 2008, U.S. EPA also required S.H. Bell to take steps to reduce the amount of particles that it was releasing into the air. Such steps can reduce the impact of pollution, including manganese, in the community.

In 2009, U.S. EPA conducted the national School Air Toxics monitoring initiative to look at chemicals in air near schools. East Elementary was one of 63 schools across the country chosen for monitoring. Like the air monitoring conducted by Ohio EPA, this study also found high levels of manganese in East Liverpool. Because of this finding, U.S. EPA is putting more monitors to measure smaller dust particles in the community. This will help U.S. EPA and ATSDR better understand how manganese might be taken into the bodies and affect the health of community members.

U.S. EPA is working with Ohio EPA to put more monitors in East Liverpool. This will help make sure that steps taken to reduce airborne manganese are actually working. To read the East Liverpool report or review the data collected, please go to U.S. EPA's website at: <http://www.epa.gov/schoolair>

For more information...

Health-related concerns: call ATSDR's Michelle Colledge at (312) 886-1462 or ODH's Greg Stein at (614) 995-7017

Ohio EPA air monitoring and enforcement actions: call Kristopher Weiss, at (614) 644-2160

U.S. EPA school monitoring program: call Jaime Wagner at (312) 886-9402



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