

Health Consultation

CHILDHOOD BLOOD LEAD ANALYSIS NEAR THE
GERDAU AMERISTEEL PLANT
SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

SEPTEMBER 30, 2008

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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HEALTH CONSULTATION

CHILDHOOD BLOOD LEAD ANALYSIS NEAR THE
GERDAU AMERISTEEL PLANT
SAYREVILLE, MIDDLESEX COUNTY, NEW JERSEY

Prepared By:

New Jersey Department of Health and Senior Services
Under a Cooperative Agreement with the
U.S. Department of Health and Human Services
The Agency for Toxic Substances and Disease Registry

Statement of Issues

This Health Consultation (HC) has been prepared in response to questions raised by members of the Gerdau Ameristeel Community Advisory Panel (GACAP) regarding area children's blood lead levels. Citizen members of the GACAP asked the NJDHSS if children living near the Gerdau Ameristeel Plant had higher blood lead levels than other children. This HC briefly discusses why lead is of concern to area residents, identifies the geographic areas of concern as noted by members of the GACAP, and provides summary data available from the New Jersey Department of Health and Senior Services (NJDHSS) Childhood Lead Poisoning Prevention Program for children in those areas. The NJDHSS, with the cooperation and assistance of the Agency for Toxic Substances and Disease Registry/National Center for Environmental Health (ATSDR), has developed this HC to address those concerns.

Additionally, during the course of several meetings in 2007 and 2008 there have been other questions raised regarding the health effects of lead, as well as concerns about other potential lead exposures. Those issues will be addressed in a separate fact sheet.

Background

The Gerdau Ameristeel Plant, located on North Crossman Road in Sayreville, Middlesex County, NJ, began operating over 100 years ago and has been part of Gerdau Ameristeel since October 2002.¹ The plant is an active facility that receives and processes over 600,000 tons of scrap metal annually in the production of rebar and other products.

The plant is located approximately 750 feet west of the nearest residence within the Horseshoe Road neighborhood, 1000 feet northeast of the nearest residence in the Kimball Drive neighborhood; and approximately 3200 feet east of the nearest residence of the Sheffield Towne Square neighborhood. It is also located approximately 500 feet to the southwest of the Horseshoe Road/Atlantic Resources Superfund site.

Dust and particulate matter, noise and odors emanating from the plant have resulted in numerous complaints by area residents. In order to work with its neighbors and other stakeholders potentially impacted by the plant's operation, the plant established the Gerdau Ameristeel Community Advisory Panel. The GACAP's organizing meeting took place on August 9, 2007. The NJDHSS was invited to attend and began participating in September. At the September meeting members developed and prioritized a list of concerns relating to the plant; the health aspects of exposure to dust was the highest ranked concern.²

One way in which area residents can be exposed to contaminants from the Gerdau Ameristeel plant is through air. In response to those concerns, the plant established an air monitoring program. The program, which began implementation by December 2007, included three monitoring stations (one to the northwest of the mill, one to the northeast, and one on a residential property on Modzelewski Terrace in the Horseshoe Road neighborhood to the east of the mill). The monitoring program measured PM 2.5, PM 10 and metals, including arsenic, copper, iron, lead, mercury, and nickel. A more complete evaluation of the air monitoring results will be done by the NJDHSS in a separate health consultation.

Although levels of lead in air did not exceed either the National or the New Jersey Ambient Air Quality Standard of 1.5 microgram per cubic meter of air ($\mu\text{g}/\text{m}^3$) it did occasionally exceed the New Jersey Department of Environmental Protection's (NJDEP) Reference Concentration (RfC)³ of 0.1 $\mu\text{g}/\text{m}^3$. The NJDEP defines⁴ an RfC as "an estimate (with uncertainty spanning about an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of harmful effects during a lifetime. It can be derived from various types of human or animal data, with uncertainty factors generally applied to reflect limitations of the data used."

Childhood Blood Lead Levels

The concentration of lead in blood is an excellent indicator of exposure to lead. Current state regulations, in accordance with federal Centers for Disease Control and Prevention (CDC) guidelines, require health care providers to perform a blood lead test on all one and two year old children. This is the age at which lead poisoning is most damaging to the developing nervous system. New Jersey State regulation requires all clinical laboratories to report the results of all blood lead tests to the NJDHSS. Prior to July 1999, only blood lead tests above 20 micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$) were reportable. While the current CDC blood lead guideline is 10 $\mu\text{g}/\text{dL}$, all blood-lead test data are reportable to the NJDHSS' Childhood Lead Poisoning Prevention Surveillance System.

Geographic areas of concern

Residents living near the Gerdau Ameristeel Plant initially identified the Horseshoe Road neighborhood as an area in which there was interest in historic childhood blood lead levels. These streets include:

- Horseshoe Road
- Modzalewski Terrace
- Wilbur Place
- Siegel Place
- Guilfoyle Terrace

Later, two additional neighborhoods to the west of the plant were also identified, and are referred to as the Sheffield Towne Square community and the Kimball Drive area. Streets in the Sheffield Towne Square community include:

- River View Drive
- Eagle Court
- Heritage Square
- Heather Way
- Concord Square
- Alpine Way
- Golden Square
- Mystic Court

Sierra Court
Sheffield Town Square
Harmony Way

The Kimball Drive area includes the following streets:

Byrnes Lane (East and West)
Delikat Lane
Faith Drive (East and West)
Gwizdak Court
Karwatt Court
Kimball Drive (East and West)
Lantern Lane
Lisa Court
Mochen Court
Pero Court
Rodie Court
Seidler Lane
Telegraph Lane
Tutty Circle

Results

Sayreville:

Data from the Childhood Lead Poisoning Prevention Surveillance System was reviewed for the period July 1999 through April 2008 for Sayreville. A total of 6,139 Sayreville children were tested during this period.

For Sayreville as a whole, the age range for children tested was less than 1 month to 16.8 years. The range of blood lead levels in Sayreville children was 0 to 42 µg/dL. There were 54 children (0.9%) found to have a blood lead level above the CDC guideline during this time period. The average (geometric mean) blood lead level was 2.6 µg/dL with a 95% confidence interval (CI) of 2.5 to 2.7 µg/dL. A Confidence Interval is the most likely range where the average blood-lead value should be found, based on the data. The blood lead levels measured in Sayreville children are similar to statewide average levels.

Horseshoe Road Area:

Since 1999, there have been no reported blood lead tests among children living in the Horseshoe Road area. This indicates that either there have been no one or two year old children in this area since 1999, or children did not receive required screening.

Sheffield Towne Square Community:

For the period July 1999 through April 2008, 40 children had blood lead tests completed and reported to the NJDHSS. No test results were elevated; that is, at or above 10 µg/dL.

Kimball Drive Area:

For the period July 1999 through April 2008, 129 children had blood lead tests completed and reported to the NJDHSS. One child had a blood lead level of 10 µg/dL, reported in 2006. This one elevation represents about 0.8% of the Kimball Drive area children, as compared to 0.9% of children in Sayreville, with elevated blood lead levels.

Combined areas:

For the Sheffield Towne and Kimball Drive communities combined, the geometric mean of all blood lead levels is 2.6 µg/dL, with a 95% CI of 2.4 to 2.7 µg/dL. This is very similar to Sayreville as a whole. One child had a blood lead at the CDC blood lead guideline of 10 µg/dL. This would have been reported by the NJDHSS to the Middlesex County Health Department for follow-up. In general, a child with a blood lead level between 10 and 19 µg/dL⁵ will be retested and may be assigned a case manager to ensure that medical and environmental needs (relating to lead exposures) are met.

Conclusion

Based on the blood lead levels reported to the NJDHSS from July 1999 through April 2008 it does not appear that children in the two communities to the west of the Gerdau Ameristeel facility are being exposed to unusual amounts of lead, compared to the borough and the State. Because there are no data from children in the Horseshoe Road area, the NJDHSS cannot conclude whether there is an environmental impact to children living in that community. NJDHSS does not have data to determine if childhood blood lead levels prior to July 1999 are comparable to levels reported since then for Sayreville as a whole or the three communities of concern.

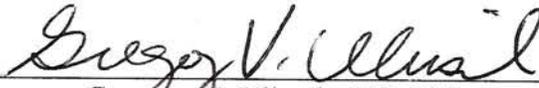
Given these childhood blood lead results and the fact that lead levels in air have been below national and state standards, and only occasionally exceeded the NJDEP Reference Concentration, the NJDHSS concludes that there is No Apparent Public Health Hazard for exposure to airborne lead from the Gerdau Ameristeel Plant.

References

1. Gerdau Ameristeel website, <http://www.gerdauameristeel.com/company/aboutga/oh.cfm>
2. GACAP website, http://sayrevillerecyclingmill.com/CAP_Meeting_Summary_9%206%2007.pdf
3. GACAP website. <http://sayrevillerecyclingmill.com/PM10%20through%2006-08.pdf>
4. NJDEP website, <http://www.nj.gov/dep/airmon/airtoxics/glossary.htm#reference>
5. NJDHSS website, <http://www.state.nj.us/health/fhs/newborn/lead.shtml>

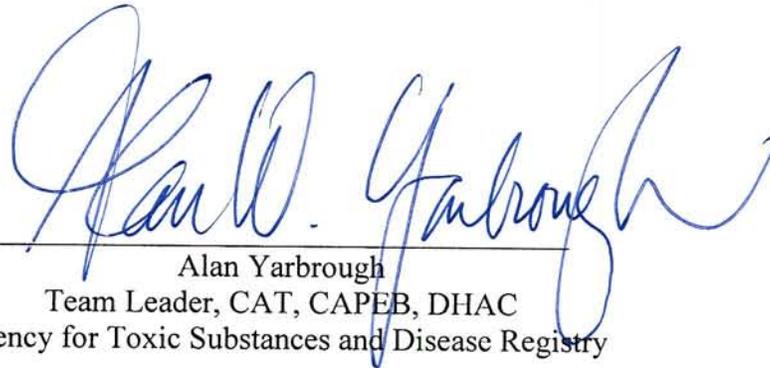
CERTIFICATION

The Health Consultation for the Childhood Blood Lead Analysis near the Gerdau-Ameristeel Plant, Sayreville, Middlesex County, New Jersey was prepared by the New Jersey Department of Health and Senior Services under a cooperative agreement with the Agency for Toxic Substances and Disease Registry. It is in accordance with approved methodology and procedures existing at the time the health consultation was initiated. The cooperative agreement partner performed an editorial review for this document



Gregory V. Ulirsch, MS, PhD
Technical Project Officer, CAT, CAPEB, DHAC
Agency for Toxic Substances and Disease Registry

The Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this health consultation and concurs with its findings.



Alan Yarbrough
Team Leader, CAT, CAPEB, DHAC
Agency for Toxic Substances and Disease Registry

Preparers of Report:

Michael Berry, M.P.H.
Research Scientist
New Jersey Department of Health and Senior Services

Sharon Kubiak
Program Specialist
New Jersey Department of Health and Senior Services

ATSDR Regional Representatives:

Arthur Block
Senior Regional Representative

Leah T. Graziano, R.S.
Associate Regional Representative

ATSDR Technical Project Officer:

Gregory V. Ulirsch, MS, PhD
Technical Project Officer
Superfund Site Assessment Branch
Division of Health Assessment and Consultation

Any questions concerning this document should be directed to:

Hazardous Site Health Evaluation Program
Consumer and Environmental Health Services
New Jersey Department of Health and Senior Services
3635 Quakerbridge Road
P.O. Box 369
Trenton, New Jersey 08625-0369
(609) 584-5367