

E.C. Electroplating/Garfield Groundwater Contamination Site

Garfield, Bergen County, NJ

APRIL 2010

What is the purpose of this Health Consultation?

The U.S. Environmental Protection Agency (EPA) tested dust, sump water and sump and floor sediment from basements in more than 160 houses and other properties in Garfield, New Jersey, for the chemical chromium. The EPA did this testing because the groundwater beneath these properties is contaminated with a form of chromium called hexavalent chromium. The EPA then asked the New Jersey Department of Health and Senior Services (NJDHSS) and the federal Agency for Toxic Substances and Disease Registry (ATSDR) if the amount of hexavalent chromium they found in dust and other materials can harm people's health.

What is hexavalent chromium and how can it affect people's health?

Hexavalent chromium is a toxic metal that can cause several health problems. Most of what we know about the health effects from hexavalent chromium is from studies of people who work with (and are exposed to high amounts of) hexavalent chromium. Workers who inhale hexavalent chromium can have irritation of the lining of the nose, runny nose, and breathing problems (asthma, cough, shortness of breath, wheezing). Workers have also developed allergies to chromium compounds, which can cause breathing difficulties and skin rashes. Hexavalent chromium can also cause lung cancer. Recent studies have also shown that swallowing hexavalent chromium can cause oral or intestinal cancers in laboratory animals. Swallowing it can also cause anemia, and irritation and ulcers in the stomach and small intestine.

There are no studies that have looked at health effects of hexavalent chromium in children. It is likely that children would have the same risk of health effects as adults, but we don't know if children are more sensitive to hexavalent chromium than adults.

How are people in this area of Garfield exposed to hexavalent chromium?

In late 1983, more than 3,600 gallons of a chromium-containing chemical solution was discharged from a storage tank at the E.C. Electroplating company, located at 125 Clark Street in Garfield, Bergen County. The solution got into the groundwater that was beneath the property. Groundwater flows toward the Passaic River, approximately 2,500 feet west of the site. In addition to the E.C. Electroplating company, the EPA is currently investigating other potential sources of chromium in or near the area.



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Hexavalent chromium dissolves in water. If hexavalent chromium-contaminated water gets into a basement through cracks or sumps, the hexavalent chromium can form a residue and be left behind as the water evaporates. This is most likely what happened in some of the houses located above the contaminated groundwater. As the residue of hexavalent chromium is left behind, people can be exposed through swallowing dust and sediment and inhaling dust that becomes airborne. People can also be exposed to hexavalent chromium by touching sump water. People who use their basements more often, especially basements that have high amounts of hexavalent chromium in the dust, sediment or sump water, may have higher exposures to hexavalent chromium, and be at higher risk for health problems.

What do NJDHSS and ATSDR conclude?

NJDHSS and ATSDR have reached three conclusions regarding potential health risks to residents from hexavalent chromium exposures.

- *For properties where hexavalent chromium was found, and if in the future there are **no** changes in the use and condition of the basement:*

NJDHSS and ATSDR conclude that children and adults were, are, and will continue to be exposed to hexavalent chromium at levels that can harm their health. People can be exposed to the harmful levels of hexavalent chromium by accidentally swallowing contaminated dust. This is a public health hazard. Hexavalent chromium was also found in air and sump water, but we believe the amount is not likely to harm health.

- *For 1) properties that were tested where conditions change in the future, or where re-contamination occurs in the future; or 2) properties that have not been tested but which may presently be contaminated:*

NJDHSS and ATSDR conclude that the accidental swallowing of surface dusts contaminated with hexavalent chromium could be very harmful to people's health. This could pose an urgent public health hazard.

- *For the Roosevelt Elementary School #7 (tested by the EPA because of concerns that children attending the school might be exposed to hexavalent chromium):*

The NJDHSS and ATSDR conclude that accidentally swallowing surface dusts at the Roosevelt Elementary School #7 is not expected to harm people's health, based on the low concentrations of hexavalent chromium found there.

What do the NJDHSS and ATSDR recommend for the future?

The NJDHSS and ATSDR recommend that the EPA take short- and long-term steps to minimize or prevent resident exposures to surface dust contaminated with hexavalent chromium from occurring.

What will happen next?

The EPA will remove chromium residue from the basements of properties where hexavalent chromium was found at levels that present a health concern. Residences that are cleaned will be checked regularly to find out if recontamination occurs. Additional long-term cleanup activities are currently being evaluated and may be necessary to address recontamination.

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Residents of homes with hexavalent chromium concentrations above levels that present a health concern have already been advised to take the following precautions:

- Limit the use of the basement as much as possible.
- If the basement is used:
 - Remove shoes before re-entering the rest of the house and clean the bottom of shoes with a wet wipe or paper towel.
 - Wash hands.
 - If cleaning, use wet cleaning techniques, such as mopping, as opposed to dry techniques such as sweeping and dusting.
- Frequently wash items that come in contact with a child's mouth, such as toys.

Properties with water infiltration problems in the area of concern that have not yet been sampled will be offered sampling by EPA.

Residents of homes with water infiltration problems that have not yet been sampled are advised to take the above precautions to reduce potential exposure to hexavalent chromium until EPA can fully evaluate these homes.

Finally, because of community concerns about cancer, the NJDHSS is going to evaluate the rates of cancers in the area that can be caused by hexavalent chromium exposure.

Where can I get more information?

For more information about this health consultation, please call:

- New Jersey Department of Health and Senior Services:
Glenn Pulliam, Health Assessor (609) 826-4984, email: Glenn.Pulliam@doh.state.nj.us
- Agency for Toxic Substances and Disease Registry:
Leah Graziano, Senior Regional Representative (732) 906-6932, email: lge2@cdc.gov
or visit our website at: <http://www.atsdr.cdc.gov/>
Use Search function and type "EC Electroplating"

For more information on the testing and cleanup of the basements and the site, please call:

- Environmental Protection Agency:
Melissa Dimas, Community Involvement Coordinator (212) 637-3677, email: dimas.melissa@epa.gov
Joseph Cosentino, On-Scene Coordinator (732) 906-6983, email: cosentino.joseph@epa.gov