



# Iron King Mine & Humboldt Smelter Superfund Site

U.S. Environmental Protection Agency • Region 9 • San Francisco, CA • September 2011

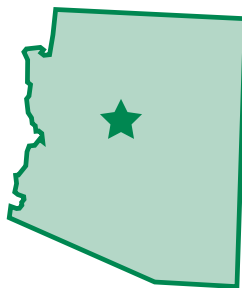
## Frequently Asked Questions

### What is Superfund?

Superfund is the commonly-used name for the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Superfund is a federal law that enables the U.S. Environmental Protection Agency (EPA) to respond to hazardous waste sites that threaten public health and the environment. There are four main stages to EPA's cleanup process: 1) investigation of the contamination at the site, 2) evaluation of cleanup options (called the "feasibility study"), 3) selection of the cleanup action (called "remedy selection"), 4) designing the cleanup, and 5) performing the cleanup. Throughout the process, EPA seeks to involve the community. While studies are ongoing, EPA sometimes performs shorter, focused cleanup actions for areas with greater contamination. Presently, EPA continues to investigate the contamination at the Iron King- Humboldt Smelter site (IKHS) and has also started the feasibility study.

### Where is the Iron King Mine – Humboldt Smelter Superfund Site?

The site is located in Dewey-Humboldt, AZ. The site contains the following areas: the Iron King Mine; the Humboldt Smelter; portions of the Galena Gulch, Chaparral Gulch, and the Agua Fria River; nearby residential yards; and groundwater.



### Who is responsible for the contamination? Who will pay for the cleanup?

The term "Potentially Responsible Parties" or "PRPs" refers to companies or individuals who are potentially responsible for generating, transporting, or disposing hazardous substances associated with the site. PRPs also include current owners and operators of the site and parties who were owners or operators during a time of disposal. Once the remedy is selected, EPA may negotiate with the PRPs to perform cleanup activities under EPA oversight and/or to help pay EPA's cleanup costs.

### What are the Contaminants – Where Did They Come From?

Starting in the 1800s, ore was excavated from the Iron King Mine and was processed on-site. More than 6 million cubic yards of waste materials remained after the mine closed. These include waste rock, mine tailings, and mine drainage water. These mining waste materials have high levels of arsenic. At the Humboldt smelter, ore was smelted to make industrial metals. Waste materials include smelter ash, more metals tailings, and a hardened material called "slag." The smelter ash and tailings materials contain high levels of arsenic and lead. Arsenic and lead also occur naturally in Humboldt area rocks, soils, and groundwater at elevated levels. When arsenic is found in soils in the area, it could come either from the mine or smelter, and/or from natural occurrence of these metals. It can be complex to determine where the site contamination is. The type of rocks in the area, storm water movement, people digging or moving soils, and other factors can all cause the levels of arsenic and lead in soils to vary.

---

## What are the health risks associated with the site?

Based on information from the site investigation, EPA performs what is called a risk assessment to evaluate the potential for health effects in the future for persons exposed to contamination from the site. It takes into account the toxicity of the contaminants themselves, the levels of contamination, and how people might be exposed. The risk assessment assists EPA in deciding whether, and where, cleanup actions may be needed. EPA drafted a human health risk assessment in 2009. The assessment indicated that there is a potential long-term health risk in some cases due to lead and arsenic in the Humboldt area. EPA is collecting additional residential samples to help identify where this risk exists and what the background arsenic and lead levels are. The feasibility study phase in the Superfund process focuses on evaluating cleanup options that will reduce the health risks posed by the site to people, animals, and plants.

## If there is arsenic and lead at my property, is it automatically a significant health risk?

No. Almost all properties in Arizona have some levels of arsenic and lead. The risk will depend on how high the concentrations are in your yard and how much soil you are exposed to. The levels of arsenic and lead can vary across a wide range.

## Is the drinking water safe to drink?

The municipal water supply currently meets federal drinking water standards. However, some private wells have arsenic concentrations above the federal drinking water standard. Groundwater sampling information EPA has gathered to date suggests strongly that this arsenic is not from the site but occurs naturally in the rocks in the ground in this area. EPA will be performing additional investigation on the groundwater to ensure this is the case.



## Is it safe to eat vegetables or fruits grown in the garden?

Gardening in soil with elevated levels of arsenic has two main issues: cleaning soil from the edible portion of the plant and absorption of arsenic by the plant. It is always a good health practice to wash all fruits and vegetables thoroughly whether they are bought or homegrown. Washing the soil from your homegrown fruits and vegetables is one of the most effective ways of reducing your exposure to not only arsenic but to pesticides and germs. Most edible plants absorb some small amounts of arsenic, but usually do not contain enough arsenic to be of health concern. If in doubt, peel root crops like carrots, rutabagas, radishes, and turnips. Also, eat a mix of homegrown and commercial products to help reduce your potential exposure.



## How can I tell if I have been exposed to arsenic or lead, either from the mine and smelter, or naturally?

First, ask your health care provider to take an exposure history. A document on how to take an exposure history is available at [http://www.atsdr.cdc.gov/HEC/CSEM/ex-phistory/docs/exposure\\_history.pdf](http://www.atsdr.cdc.gov/HEC/CSEM/ex-phistory/docs/exposure_history.pdf)

For some chemicals, blood or urine sampling can tell if you have been exposed. Ask your health care provider if he or she can do these tests or recommend where you could go to have them done. Your health care provider will need some specific information about possible environmental exposures, such as time spent in contaminated areas and activities conducted in and around the site. Without that information your health care provider may not be able to tell you what your testing results mean.

For site-specific information about the contaminants, routes of exposure, and potential adverse health effects, please contact the EPA Community Involvement Coordinator, listed on page 4, who will put you in contact with an EPA toxicologist.

---

## What is the Agency for Toxic Substances and Diseases Registry (ATSDR) and what do they do? How does their work differ from EPA's work?



The Agency for Toxic Substances and Disease Registry (ATSDR) is a federal agency that conducts health assessment activities to determine whether people could be harmed

from coming into contact with potential environmental hazards based on available information or the collection of new data. In the report, ATSDR reviews community health concerns, provides information on how people might have been or might now be exposed to hazardous substances, and lists actions that can be taken to reduce exposures to protect public health. EPA focuses on the environmental contamination and the cleanup of the contamination. EPA conducts investigations to determine the nature and extent of the contamination, and assess the treatability of the site contamination to determine the best way to clean up environmental contamination.

Together these two agencies provide the information they need to make sure their families are protected from actual or potential threats to human health from contaminants released into the environment.

### Where can I get blood or urine testing for exposure to Site Contaminants?

People who are interested in getting blood or urine testing can consult with their physician. ATSDR and ADHS are exploring other options for the community.

### If I have a health problem now, did it come from arsenic or lead at the site – or in the Humboldt area?

It can be very difficult to link health effects any one person may have today conclusively to site contamination. EPA's risk assessment helps us decide whether and where to take actions to eliminate health risks to protect human health today and in the future. While this is extremely important, the EPA risk assessment cannot evaluate whether contaminants you may have been exposed to in the past caused

health effects you have today. This type of evaluation is typically done by a health professional that has the person's medical history/records for review. A consult or medical exam can also be helpful in this determination. The type of health effects that may be caused by arsenic and lead are known and a health care professional or toxicologist can assist. EPA will be developing remedial alternative for the Site to protect human health and the environment.

### What areas of the site should residents avoid?

EPA recommends that the community avoid trespassing on to the Iron King Mine and Humboldt Smelter properties. The community should also avoid contact with any tailings located in the Chaparral Gulch.

### What do I do if I see someone trespassing on the smelter properties?

EPA has worked with the property owners to ensure their properties have signs and are fenced to the extent practicable. EPA conducted an assessment of fences at the mine and smelter properties in October 2010 and continues to work with the property owners to ensure that breaches in fences are repaired. EPA has also worked with the property owners to ensure that signs are posted around their properties to deter trespassers. However, if trespassers are seen on the smelter property or community members would like to report suspicious or criminal activity, contact the Yavapai County Sheriff's Department at (928) 771-3260 or call 9-1-1 in case of emergency. For environmental concerns, call the Environmental Protection Agency Message Line: (800) 231-3075.

### What cleanup and interim actions have been done so far?

Four residential yards were cleaned up by a responsible party in 2006. EPA is currently conducting an interim removal action at the Site to address residential yards that have significantly elevated levels of arsenic and lead in the soil. This cleanup effort began in mid September 2011 and is expected to be completed in early October. As part of this effort, EPA is also removing the small tailings pile located in the Chaparral Gulch. Portions of the Humboldt Smelter Property will be temporarily sealed with a fixative agent and fine-grained tailings on selected areas of the Iron King Main Tailings Pile will be covered.

To reduce dust generation from the contaminant source areas, a portion of the Iron King Mine large tailings pile has been covered with compost, and the Humboldt Smelter ash pile will be covered with a soil sealant. These measures will be in place until a final remedy is selected for the site.

EPA is concurrently developing and evaluating cleanup options for the entire site, including additional residential yards. The community will have an opportunity to provide comments on EPA's cleanup proposal during the Proposed Plan stage.

## When is the site going to be cleaned up?

EPA is still actively investigating and filling in critical data gaps to inform the remedial decision. In late 2012, EPA will present the preferred remedy to the public. During this time, the community will have the opportunity to provide comments on the preferred remedy. EPA plans to select the cleanup action in late 2013. Depending on the type and scope of the cleanup selected, EPA will then proceed to implement the cleanup remedy.

## What are the potential future uses of the site?

In July 2009, EPA met with current site owners, locally elected officials, Arizona Department of Environmental Quality (ADEQ) staff, Dewey-Humboldt town staff, and interested community members to discuss the site's potential future uses. During these meetings, stakeholders generally expressed a desire for the following set of reuse goals for the Site: 1) Encourage future uses that are consistent with Town's General Plan (preserve low-density lifestyle),

2) Ensure that continued industrial uses are contained and regulated by ADEQ, 3) Provide public educational resources on the historic mining and smelting heritage of the town, 4) Foster renewable energy opportunities, 5) Provide public recreational access, and 6) Ensure individual economic development opportunities. A reuse assessment was completed in June 2010 and can be found online at: <http://www.epa.gov/region09/ironkingmine>.

## How will the site affect my property's value and my ability to sell my property?

Contaminated sites may have an effect on nearby residential property values, and EPA cannot control market prices. A great many factors influence property values. Property values are most appropriately discussed with local authorities who are knowledgeable about the local economy and other local conditions that may influence property values.



Real estate agents, banks, other lenders, appraisers, and public or private assessors may be able to provide information about property values. Local government agencies—such as your taxing authority—may also be able to give you information on property values. The Arizona Department of Realtors can provide you with a Residential Seller's Property Disclosure Statement to report the environmental conditions of your property. Their website is <http://www.re.state.az.us/>

## Who can I contact for more information?

Contact EPA's Community Involvement Coordinator, David Cooper, to be added to the site mailing and/or email list or visit the following websites:

<http://www.epa.gov/region09/ironkingmine>

<http://www.azdeq.gov/environ/waste/sps/statesites.html#ironking>

**David Cooper**

EPA Community Involvement Coordinator

(415) 972-3245

Toll-free message line: (800) 231-3075

[cooper.david@epa.gov](mailto:cooper.david@epa.gov)



**Felicia Calderon**

ADEQ Community Involvement Coordinator

(602) 771-4167

[calderon.felicia@azdeq.gov](mailto:calderon.felicia@azdeq.gov)



## Tips for Safe Gardening, Safe Play, and a Safe Home

### Working in the Garden and Yard

- Avoid eating or drinking while working in the yard or garden because contaminated soil and dust might get on your food and you could accidentally swallow it.
- Dampen soils with water before you garden to limit the amount of dust you inhale.
- Avoid working in the yard on windy days, when dust can be stirred up and possibly increase your exposure.
- Consider wearing a mask if you spend time in dusty areas.
- Wash your hands after gardening.
- Wash work clothes to remove dust and dirt.
- Take your shoes off at the door to avoid tracking soil into your home.



### Creating Play Areas for Children

- Fill sandboxes with sand or soil from an outside source such as a commercial gardening center.
- Cover bare soil with grass or other material such as mulch.
- Keep children from playing in contaminated soil. The most likely way for children to become exposed to arsenic is from ingesting (eating) dirt.
- Have children wash hands and faces after they play in the yard.



### Cleaning Your Home

### Preparing Fruits and Vegetables

- Clean your hands, cutting boards, and kitchen tools with hot, soapy water and rinse well before and after handling your fruits and vegetables.
- Soak garden produce in cool water and rinse thoroughly until the water runs clear. Commercial vegetable cleaning products are available in supermarkets to help free soil residues from your produce. These products work well with leafy vegetables. Vinegar can also be used for cleaning produce.
- Scrub firm fruits and root crops with a vegetable-cleaning brush to remove dust and dirt before peeling or eating.
- Peel root crops like carrots, rutabagas, radishes, and turnips.
- Wash berry fruits like strawberries and blackberries, and remove the “caps” (the tops of the berries where the stem and leaves attach).
- Buy Some, Grow Some: Eat some fruits and vegetables from your garden and some from the farmer’s market or grocery store. Eating a mix of homegrown and commercial products can help reduce your potential exposure.

- Remove work and play shoes before entering your house.
- Damp-mop floors and wipe down counters, tables, and window ledges regularly.
- To reduce dust levels in the home, consider upgrading your vacuum cleaner bags to those that filter better or simply change your bags more often. Some persons may want to buy a vacuum cleaner with a HEPA (high-efficiency particulate air) filter to better reduce dust levels.
- Wash the soil from homegrown fruits and vegetables before bringing them into your home.
- Keep pets out of areas of contaminated soil. Dogs and cats carry contaminated soil on their feet and fur into the home. Bathe your pets frequently.



# Iron King Mine & Humboldt Smelter Superfund Site

## Frequently Asked Questions

Printed on 30% Postconsumer  Recycled/Recyclable Paper

---

United States Environmental Protection Agency  
Region 9  
75 Hawthorne Street (SFD-6-3)  
San Francisco, CA 94105  
Attn: David Cooper (IKHS 10/11)

---

FIRST-CLASS MAIL  
POSTAGE & FEES  
**PAID**  
U.S. EPA  
Permit No. G-35

*Official Business  
Penalty for Private Use, \$300*

*Address Service Requested*