Iron King Mine & Humboldt Smelter Site

U.S. Environmental Protection Agency • Region 9 • San Francisco, CA • August 2008

EPA Begins Site Investigation

The U.S. Environmental Protection Agency (EPA) invites the public to a community meeting to discuss its plans to conduct a comprehensive investigation of the historic contamination associated with the Iron King Mine and the Humboldt Smelter Site (the "Site").

The meeting will be held on August 20, from 6:30-8:30 p.m., at the Humboldt Elementary School, 2750 S. Corral St., Humboldt, AZ.

During the meeting EPA will make a presentation that will include information about the steps in the Superfund cleanup process, the scope of the investigation, the community involvement process, and the availability of a federal grant to hire an independent environmental professional to help the community understand cleanup documents.

To organize the community involvement process, EPA will conduct interviews with interested parties. If you have information about the site that you would like to share or are interested in learning more about the site cleanup process, please contact the Community Involvement Coordinator (CIC) listed at the back of this fact sheet.

What is Superfund?

Superfund is the commonly-used name for the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), a federal law enacted in 1980 and amended in 1986. CERCLA enables EPA to respond to hazardous waste sites that threaten public health and the environment. EPA identifies and ranks sites according to threats to nearby populations from actual or potential contamination of soils, groundwater, surface water or air.

Under CERCLA, EPA identifies those parties that are responsible for the contamination, and then may require them to perform cleanup activities with EPA oversight. EPA may use Superfund monies to perform the cleanup itself and then seek to recover the cleanup costs from the responsible parties.

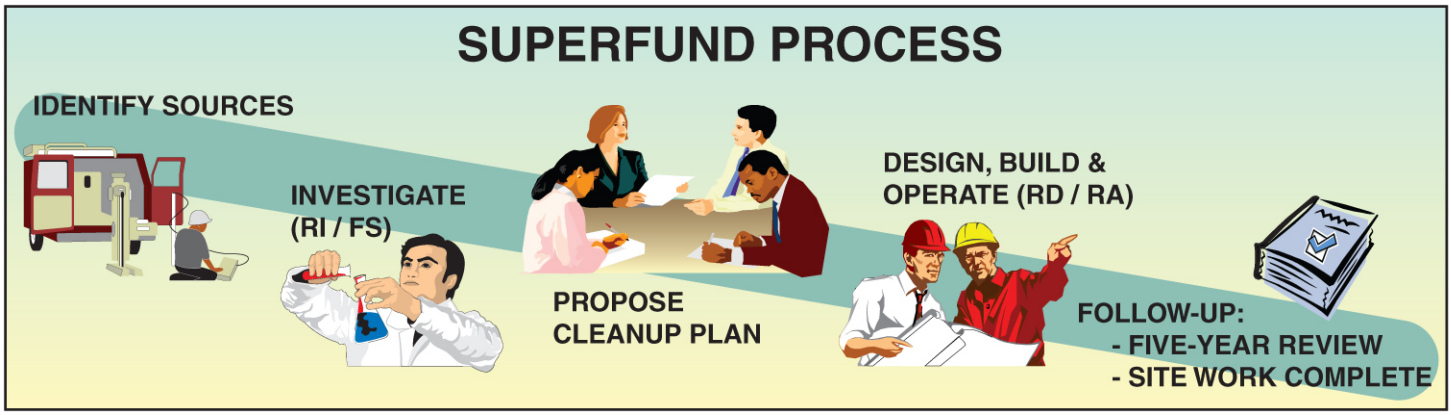
Community Meeting

August 20, 2008
6:30-8:30 p.m.

Humboldt Elementary School
2750 S. Corral St.
Humboldt, AZ

What is the problem?

Due to past mining and smelting operations, arsenic, lead and other metals have contaminated soil, *sediments**, surface water and *groundwater* on-site at levels above *background*.



**Words in italics are defined in the glossary on Page 5*

Status of Superfund Listing

On March 19, 2008, EPA proposed adding the Site to EPA's National Priorities List (NPL), commonly called the Superfund List.

Placing the site on the NPL allows EPA to use federal resources to conduct cleanup activities at the site, including investigating the sources of contamination and determining what measures may be necessary to protect human health and the environment.

EPA received comments from the community on EPA's NPL proposal for this Site. Public comments can be viewed at http://www.regulations.gov. Keyword search: **EPA–HQ–SFUND–2008–0086.**

EPA will review and consider each comment received and announce its decision in the Federal Register.

Site Boundaries

Presently, the full extent of soil *contamination* and possible groundwater contamination has not been assessed. The EPA has identified five Areas of Interest at the Site (see Figure 1):

- Iron King Mine – The Iron King Mine Proper Area, Iron King Operations Area, Former Fertilizer Plant Area, and ancillary associated properties
- Humboldt Smelter and ancillary associated properties
- Off-site Soil in the vicinity of the Site
- Waterways - Including the Chaparral Gulch, Galena Gulch, Aqua Fria River, and adjoining drainage channels and outfalls
- Groundwater, both shallow *alluvial* and deep bedrock groundwater

History of Iron King Mine and Humboldt Smelter

The Site encompasses areas of contamination from two separate facilities: the Iron King Mine property and the Humboldt Smelter property. The smelter is situated less than one mile east of the Iron King Mine property. The Humboldt Smelter property is bordered by the Town of Humboldt to the west and north, the Agua Fria River to the east, and the Chaparral Gulch to the south.

The Iron King Mine area covers approximately 153 acres. The majority of this area is covered by tailings and waste rock piles. There are five retention ponds, at least five mine shafts, a collapsed mine shaft (glory hole), and areas of stained soil.

The Iron King Mine was an active mine from 1904 until 1969. The mine was expanded in 1936 to remove lead, gold, silver, zinc, and copper from under ground. A 140-ton mill was erected to crush ore and was expanded to 225-ton capacity in 1938. A cyanide processing plant was added to the site in 1940 to treat the mill tailings to enhance precious metal recovery. Waste rock and tailings were deposited in large piles adjacent to actual mine property boundaries. More recently, the mine tailings from the site have been used to create fertilizer.

The Humboldt Smelter occupies approximately 182 acres. This area is covered in approximately 763,800 square feet of yellow-orange tailings, over 1 million square feet of grey smelter ash, and 456,000 square feet of slag.

The Humboldt Smelter operated from the late 1800s until the early 1960s. The original smelter burned down in 1904 and a smelter that processed 1,000-tons of ore per day was rebuilt in 1906. This smelter operated until 1918 and then intermittently between 1922 and 1927. The smelter reopened in 1930.

EPA to Conduct Investigation

In the upcoming months, EPA will initiate the field investigation portion of the Remedial Investigation and Feasibility Study ("RI/FS"). The primary objectives of the RI/FS are to determine the nature and extent of contamination and to gather sufficient information so that EPA can select a *remedy* that eliminates, reduces, or controls risks to human health. The investigation will include the collection of airborne *particulates*, groundwater, surface water, surface soils, subsurface soils, and sediment data. Specifically, the field investigation will involve the following tasks:

- Collection of meteorological data for *ambient air* sampling
- Ambient air sampling for *inorganic* constituents to evaluate potential off-site migration of airborne contamination
- Surface and subsurface soil sampling to characterize the nature and extent of contamination

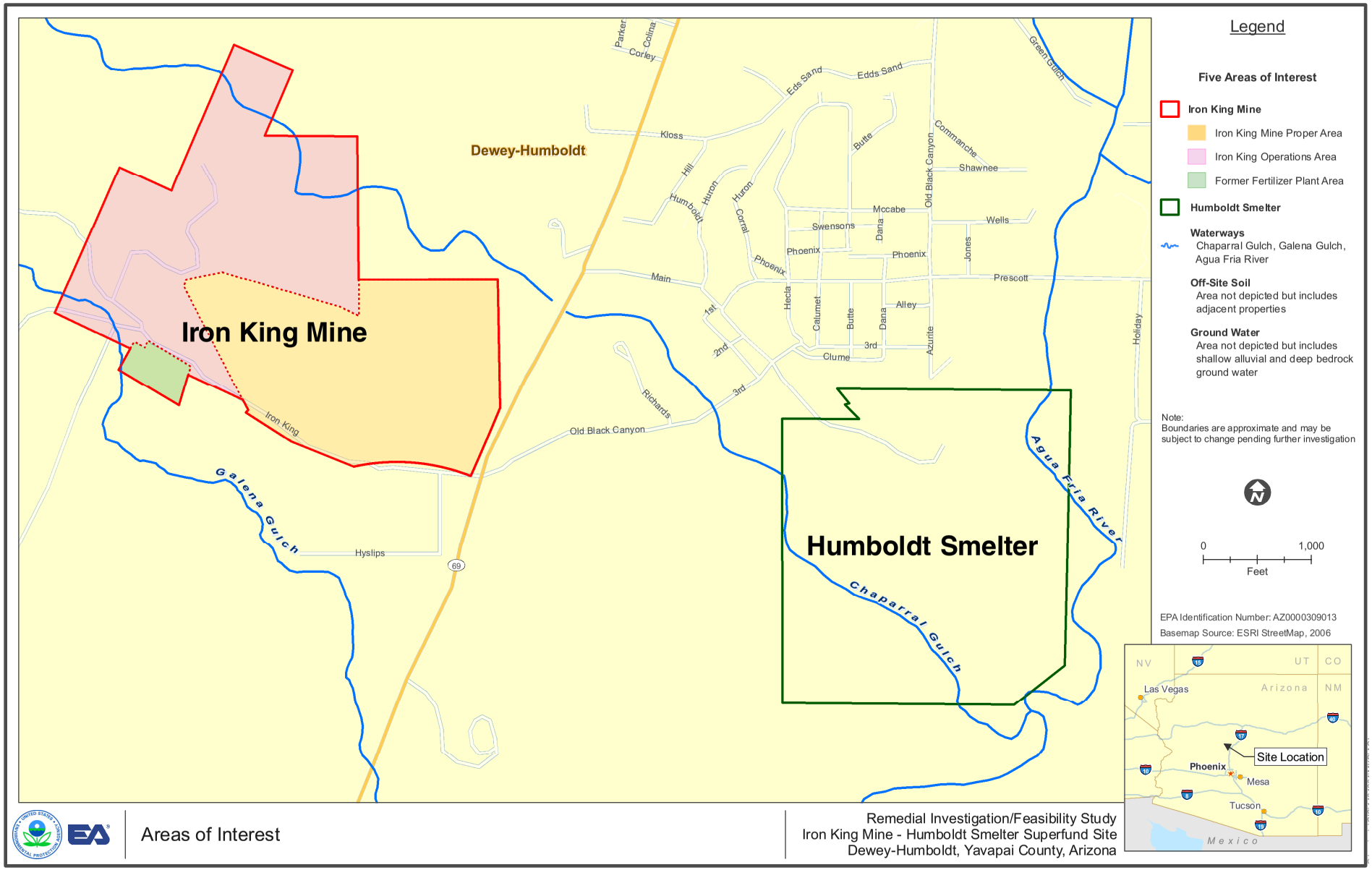


Figure 1: Iron King Mine & Humboldt Smelter Site Areas of Interest

- Groundwater sampling from 1 deep (bedrock) and 5 shallow (alluvial) newly-installed monitoring wells
- Preliminary radiological screen of contaminated areas
- Tap water sampling from private and municipal wells
- Sediment and surface water sampling from the Site waterways, washes, and the dam,
- Sediment and surface water sampling from five on-site *impoundments* at Iron King Mine and the retention pond at Humboldt Smelter
- Volumetric estimates of the mine tailings
- Storm water evaluation of Iron King Mine drainage pathways
- Collection of *geotechnical* testing data from soil borings
- *National Historic Preservation Act, Section 106* review to determine if any historical or cultural resources will be affected by this project
- Ecological habitat survey

After the field investigation is complete, EPA will conduct a human health *risk assessment* and ecological risk assessment. The human health risk assessment will evaluate commercial/industrial, residential, construction worker, recreational, and trespasser exposure scenarios for the areas identified during the investigation, as appropriate. The ecological risk assessment will characterize and quantify, where appropriate, the current and potential ecological risks that would prevail if no further cleanup action is taken.

All of this information will be compiled and presented in a *Remedial Investigation* Report (RI Report). The RI Report is an in-depth document that compiles the data needed to determine the nature and extent of contamination at a Superfund site and establishes site cleanup criteria. The RI Report will be followed by an analysis of ways to address the contamination.

What Follows the Investigation?

The *Feasibility Study* will describe and analyze the potential cleanup alternatives for the Site. Individual alternatives will be assessed against EPA's *evaluation criteria* and a comparative analysis of options will be performed.

EPA will identify the preferred cleanup remedy in a Proposed Plan and will share this in a public meeting which is accompanied by a public comment period. After all public comments are reviewed, EPA will document the selected remedy in a legal document called a *Record of Decision* (ROD).

Following the ROD, EPA will design, construct, test, operate and/or perform the necessary cleanup activities. The public is encouraged to share its issues and concerns throughout the Superfund process.

Community Involvement Process

EPA policy and Superfund law establish a strong program of public participation in the site cleanup process. The purpose of the Community Involvement program is to help community members become involved in the decision-making process by developing two-way communication between the affected community and EPA. It focuses on answering the community's questions about the cleanup effort, providing information to the community about site activities, and incorporating community issues and concerns into Agency decisions.

A Community Involvement Plan (CIP) will be developed to organize the way EPA provides cleanup information and access to the decision-making process to the community. During community interviews with local residents, elected officials and other interested parties, EPA gathers a list of issues and questions the community is concerned about so that they may be considered during the cleanup process, and particularly when a cleanup remedy is proposed. EPA also identifies the best means to share cleanup information and receive public feedback.

Throughout the process, there will be a number of public meetings. Typically, these events occur when the remedial investigation report is released and when EPA's preferred cleanup method is identified. There will also be a formal public comment period when the EPA proposes a cleanup plan. These meetings and the comment period will be announced through fact sheets and through public notices advertised in the ***Prescott Valley Tribune*** and the ***Daily Courier***.

An EPA CIC is assigned to work with the community on this site. The CIC is available to answer questions, maintain the mailing list and coordinate community involvement activities. Contact information can be found on page 5.

Technical Assistance Grant Available

EPA offers a Technical Assistance Grant (TAG) to a community affected by a Superfund site by providing money for activities to help the community participate in decision making. An initial grant up to $50,000 is available to a qualified community group so they can contract with an independent technical advisor to interpret and help the community understand technical information about their site.

Glossary

Alluvial – Relating sand deposited by flowing water.

Ambient Air – Any unconfined portion of the atmosphere: open air, surrounding air.

Background - The concentration of a substance in air, water, or soil that occurs naturally or is not the result of human activities.

Contamination - Introduction into water, air, and soil of microorganisms, chemicals, toxic substances, wastes, or wastewater in a concentration that makes the medium unfit for its next intended use.

Feasibility Study - Analysis of the practicability of various proposed cleanup methods.

Geotechnical – Below-ground investigation by boring, sampling, and testing the soil strata to establish its compressibility, strength, and other characteristics likely to influence an earth-moving project.

Groundwater - The supply of fresh water found beneath the Earth's surface, usually in aquifers, which supply wells and springs. Because groundwater is a major source of drinking and irrigation water, there is growing concern over contamination from leaching agricultural or industrial pollutants.

Impoundment - A body of water or sludge confined by a dam, dike, floodgate, or other barrier.

Inorganics – Chemical substances of mineral origin, not of basically carbon structure.

National Historic Preservation Act, Section 106 – Federal legislation that requires the protection of historical, archeological, and cultural resources.

Evaluation criteria – The nine evaluation criteria are as follows: 1) Overall protection of human health and the environment, 2) Compliance with ARARs (applicable or relevant and appropriate standards), 3) Long-term effectiveness and permanence, 4) Reduction of toxicity, mobility or volume, 5) Short-term effectiveness, 6) Implementability, 7) Cost, 8) State acceptance, and 9) Community acceptance

Particulates – Fine liquid or solid particles such as dust, smoke, mist, fumes, or smog, found in air.

Record of Decision – A public document that explains which cleanup alternative(s) will be used at National Priority List Sites.

Remedial Investigation – An in-depth study designed to gather data needed to determine the nature and extent of contamination at a Superfund site.

Remedy – Long-term action that stops or substantially reduces a release or threat of a release of hazardous substances.

Risk Assessment - Qualitative and quantitative evaluation of the risk posed to human health and/or the environment by the actual or potential presence and/or release of specific pollutants.

Sediment - Topsoil, sand, and minerals washed from the land into water, usually after rain or snow melt.

Contact Information

If you have questions or concerns, please contact any of the following individuals:

U.S. EPA Contacts

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Mailing List Coupon

You may have received this factsheet as part of a bulk mailing list. If you would like to be added to EPA's mailing list for this Site, please fill out the coupon below and return it to: David Cooper, Community Involvement Coordinator, U.S. EPA, 75 Hawthorne St. (SFD-3), San Francisco, CA 94105 or e-mail the information to: cooper.david@epa.gov

Name _____

Mailing Address _____

City, State _____ Zip _____

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75 Hawthorne Street (SFD-3)
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Attn: David Cooper (IK/HS 8/08)

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