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HUMAN HEALTH RISK ASSESSMENT UPDATE

WHAT IS THE STATUS OF THE FINAL HUMAN HEALTH RISK ASSESSMENT REPORT?

EPA completed a preliminary draft Human Health Risk Assessment Report in March 2013 and a final draft report in June 2013. Through September 2013, the EPA received 179 significant comments from various stakeholders. The final draft Human Health Risk Assessment Report and the comments received are on the EPA website at http://www.epa.gov/region6/6sf/new-mexico/homestake_mining/index.html. EPA has addressed all the comments and has posted the responses on the website. Currently, the EPA is in the process of incorporating appropriate comments in the Draft Report. A Final Report is planned for October 2014.

WHAT DOES THE DRAFT HUMAN HEALTH RISK ASSESSMENT TELL US?

The following are the findings from the draft final EPA human health risk assessment:

1. The indoor radon gas levels at the five subdivisions were similar to the levels seen in the indoor radon background location.
2. Risk from outdoor radon gas was slightly higher at the five subdivisions than in the background area. Compared to indoor radon, the risk from outdoor radon is less. Risk from inhalation of radon gas is inherently high in the background air.
3. The excess cancer risk from direct and indirect exposure to soil (ingestion, inhalation, external and produce ingestion), excluding background, was within EPA acceptable risk range.
4. If you are involved in raising cattle or poultry for domestic uses, the increase in excess cancer risk from indirect exposure to soil (i.e. ingestion of meat, ingestion of milk, ingestion of poultry and eggs) is within EPA acceptable risk range, except for ingestion of milk, which is slightly above the upper end of the risk range.
5. If you use well water for domestic consumption, the cancer risk is well above EPA acceptable risk range. Risk from site related contaminants in ground water

were not delineated in this risk assessment. All residences of the five subdivisions have been connected to the Milan municipal water supply system, a response action taken to abate risks from exposure to contaminants in ground water.

HOW WAS THE HUMAN HEALTH RISK ASSESSMENT DEVELOPED?

EPA looked at ways people might be exposed to contaminants both from site and background sources from the following exposure scenarios:

- Radon from both indoor and outdoor sources
- Direct radiation from soil and dust
- Soil contamination around homes
- Contamination from consumption of produce in home gardens
- Consumption of milk and beef from animals locally raised and fed.

For each scenario, EPA estimated how much of each contaminant a person might be exposed to (the dose). Scientific information relating chemicals to health effects (toxicity information) was combined with the dose to estimate the risk that peoples' health might be affected. The risks for individual contaminants were added together to show the total risk from exposure to contamination in the neighborhood.

Methods used to calculate risk were designed to overestimate an 'average' person's risk and are based on very conservative assumptions.

HOW WAS THE LOCAL COMMUNITY INVOLVED IN THE RISK ASSESSMENT?

Members of the Bluewater Valley Downstream Alliance (BVDA) were involved in providing input throughout the process. The community actively assisted EPA in selecting a background location for radon in Bluewater Village and provided access for sampling on private properties. The local community provided historical information and exposure scenarios to EPA. During the conduct of the risk assessment, the community was provided access to Technical Assistance Services for Communities (TASC). The TASC program provides technical assistance through a contractor to review technical documents and help prepare comments.



WHAT DID EPA SAMPLE DURING THE RISK ASSESSMENT?

Radon Sampling

EPA began a year-long radon sampling effort in September 2010 and completed it in November 2011. Four quarters of sampling were completed in homes, both indoors and outdoors, in the five subdivisions south of the Homestake site, and in Bluewater Village. In addition, radon sampling was conducted at various locations on Homestake's property and north of the large tailings pile. During the year-long sampling effort, the EPA collected over 1500 radon samples.

Radiation Scanning and Structures Assessment

By June 2011, EPA completed radiation scanning at 90 properties in the subdivisions south of the Homestake site. Gamma radiation scanning was conducted around each home up to a maximum of one acre surface area throughout the yard. Composite soil samples were collected from each property for radiological and non-radiological analysis. Subsequently, assessment of the structures was conducted at 78 homes that met the EPA criteria for indoor assessment for this project.

Soil Sampling

A total of 744 soil samples were collected from private properties at various locations on Homestake's property, including the irrigation areas. Soil samples were collected in an area south of the residences to evaluate background conditions.

Water Sampling

EPA collected a total of 26 water samples from private properties as well as from the evaporation pond at the Homestake site. Water samples were collected from animal feed tanks and garden hose discharge locations.

Vegetation Sampling

A total of 10 samples of vegetables were collected from various gardens in the subdivisions.

Environmental Radiation Ground Scanning Survey

The Environmental Radiation Ground Scanning (ERGS) System, a large tractor mounted gamma scanner was used on an estimated 250 acres of land in order to identify those areas with readings that exceeded the background radiation. The scanning was primarily conducted on Homestake's property south of the large tailings pile and irrigation areas.

WHAT ACTIONS HAS EPA TAKEN SO FAR TO PROTECT HUMAN HEALTH?

Indoor Radon

EPA has installed radon mitigation systems in 9 homes that exceeded the EPA guidance for indoor radon level of 4 pico curies per liter (pCi/L). The source of high radon levels in these homes has not been identified with any specific source. The action was taken to protect human health from high radon levels indoors.

Removal of Soil/Debris

EPA is preparing to take removal action at 19 properties identified as containing radiological contaminated soil/debris unrelated to the Homestake site.

Outdoor Radon

The slightly elevated outdoor radon level at the site compared to the background does not pose an imminent risk to public health. EPA believes outdoor radon levels will likely drop to background levels once the final radon barrier is constructed on the large tailings pile when reclamation is complete at the Homestake site.

WHAT ARE THE UPCOMING REMEDIATION ACTIVITIES AT THE HOMESTAKE SITE?

Pending regulatory approval, Homestake is currently preparing to implement additional groundwater treatment systems to increase treatment capacity. Some of the planned activities are:

Zeolite-Based Uranium Water Treatment System

Homestake is in the process of designing a 1200 gallon per minute (gpm) capacity zeolite-based uranium water treatment system at the site. The proposed 1200 gpm system is designed to supplement the existing 300 gpm pilot treatment system currently being operated at the site and is intended to treat in the impacted plumes wherein uranium is the main constituent of concern (COC). Together, the total treatment capacity of the systems is expected to be able to treat at a rate of up to 1500 gpm. Homestake expects to begin construction of the zeolite-based system on top of the large tailings pile in August 2014 and commission by second quarter of 2015.

Reverse Osmosis Water Treatment System

Homestake currently has a 600 gpm capacity Reverse Osmosis (RO) groundwater treatment system. Due to operational issues the system is not running at fully capacity. Homestake is upgrading the current system to utilize the full capacity and build an additional 600 gpm system. This will allow Homestake to treat 1200 gpm of groundwater by the RO system.

OTHER EPA ACTIVITIES AT THE SITE

EPA is currently reviewing historic information related to the cleanup being conducted at the Homestake site under the Nuclear Regulatory Commission's (NRC's) authority for license termination. EPA is conducting this review to determine if the NRC-directed clean up would meet EPA's requirements for protectiveness under the Superfund law and allow EPA to delist the site from the National Priorities List (NPL) of Superfund sites once the cleanup is complete. In order to assess if the Superfund requirements are met, EPA plans to determine if the investigation, analysis, and cleanup is functionally equivalent to the Superfund remedial investigation and feasibility (RI/FS) process that is performed to support EPA decision-making on site remedies. Performing this process will, among other things, allow EPA to determine if the remedy is protective of human health and the environment and identify all requirements that would have to be met to satisfy the Superfund law and regulations.

If the work performed to date achieves RI/FS equivalency, EPA will issue a Record of Decision (ROD) under its Superfund authority for the existing remedy at the site. If the work does not achieve RI/FS equivalency, EPA intends to have additional RI/FS work performed to achieve equivalency before issuing the ROD on the existing remedy or any other cleanup deemed necessary to meet Superfund requirements. EPA will keep the community informed about the progress of this RI/FS equivalency assessment process and request public comments once the evaluation is complete and before a ROD is issued.

WHERE TO GET MORE INFORMATION

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For press inquiries, please call, EPA Press Office, at 214.665.2200.

On the Web:

You can find more information about the Region 6 Superfund program on EPA's Region 6 website:
<http://www.epa.gov/region6/6sf/6sf.htm>. Specific information about the Homestake site is available at
http://www.epa.gov/region6/6sf/new-mexico/homestake_mining/index.html

Call U.S. EPA at 1.800.533.3508 to receive a Spanish translation of this fact sheet.

Para recibir una traducción en español de esta hoja de datos, comunicarse con la Agencia de Protección del Medio Ambiente de los EEUU (la EPA) al número de teléfono 1.800.533.3508 (llamada gratis).