



Environmental Update #5

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Understanding the Hazards of Arsenic in Drinking Water

What is arsenic and how widespread is its presence in groundwater?

Arsenic is a naturally occurring element found in rocks, soils, water, and plants. It may be released into the environment through natural processes such as erosion, volcanic activity, or forest fires. Arsenic also can enter the environment through application of agricultural pesticides, mining, and smelting operations. Arsenic is found in groundwater throughout the United States, with the highest concentrations located in water systems of the American West.

What kind of environmental hazard does arsenic pose to communities?

Arsenic has long been known to be a toxic substance, but recent studies have linked long-term ingestion of arsenic from drinking water to bladder cancer, lung cancer, kidney cancer, and liver cancer as well as damage to the cardiovascular, pulmonary, and neurological systems of the body. A 1999 study by the National Academies of Science National Research Council reported that arsenic in drinking water may pose an even higher cancer risk than originally thought. The study collected data from Bangladesh, China, Chile, and Finland, and showed that individuals who consumed water with 20 parts per billion (ppb) of arsenic per day have a 7 in 1,000 risk of developing bladder or lung cancer. The risk dropped to 3 cases in 1,000 at a 10-ppb arsenic level and 1.5 cases in 1,000 at 5 ppb. On the basis of this and other information, the National Research Council report recommended that the U.S. Environmental Protection Agency (EPA) enact a new standard allowing a maximum of 10 ppb of arsenic in water.

What is EPA doing to reduce the threat of arsenic in water?

A decision to change the arsenic standard to 10 ppb was originally made by the U.S. Environmental Protection Agency (EPA) last January during the last days of the Clinton Administration, but incoming Administrator, Christine Whitman, requested a delay in enactment until the agency could receive further public comment. Whitman said that, while scientists agree that 50 ppb is too high, an independent review was needed to decide how much arsenic levels in drinking water need to be lowered. The Bush Administration was concerned about the financial costs of enacting the standard to small communities and wanted to determine if a ceiling on arsenic concentrations as low as 10 ppb is necessary. However, on October 31, Whitman announced that the agency will move forward to enact the 10 ppb standard. The new rule will be implemented in 2006.

What are the financial costs of enacting the new standard likely to be?

At present, an estimated 4,000 communities will need to make upgrades of their water systems to reach a 10 ppb level. The National Rural Water Association projects that the cost of implementation to households in these communities will range from \$100 to \$500 per year.