

## ARSENIC IN GROUND WATER

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### ARSENIC IN GROUND WATER – AN UPDATE

On October 31, 2001 Christine Todd Whitman, Administrator of the Environmental Protection Agency announced that the new arsenic Maximum Contaminant Level (MCL) for public water systems would be 10 parts per billion (ppb), matching the value originally adopted by the Clinton Administration on January 22, 2001. In late January 2001, the Bush Administration delayed implementation of the new MCL pending further evaluation of studies completed since the 1999 National Academy of Science (NAS) arsenic assessment. The update evaluations were completed by the NAS on health risks, the National Drinking Water Advisory Board (NDWAB) on implementation costs by small water systems and by the EPA's Science Advisory Board (SAB) on potential benefits.

There are 74,000 public water systems in the nation that must meet this new MCL of which approximately 4,000 will have to install treatment systems or employ other measures to remain in compliance. Of the systems affected by the new MCL, nearly 97 percent serve less than 10,000 people. The systems must be in compliance by 2006.

Although the arsenic MCL is not legally enforceable for private wells, the health risk information is relevant to well owners who may use ground water containing arsenic (As). Homeowners with drinking water containing arsenic have several removal techniques to consider. The technologies work best when the form of the arsenic is arsenate [5+ valence, As(V)]. Arsenate will be the predominant form of arsenic in aerobic, oxygen rich water environments. In situations where ground water is anaerobic (low oxygen content), arsenite [3+ valence, As(III)] is likely to be the predominant type of dissolved arsenic. Available information indicates that chlorine, ferric chloride and potassium permanganate are effective at oxidizing As(III) to As(V). Ozone and hydrogen peroxide should also be effective pre-oxidizers for arsenic. The most effective treatments for arsenic removal are reverse osmosis and ion exchange using activated alumina. For most homeowners a Point of Use (POU) system in the kitchen is an appropriate remedy to reduce arsenic levels in drinking water.

A water test for arsenic is on the order of \$20 to \$30. The Trust recommends that homeowners test their well water once for arsenic. For additional testing recommendations please visit the Trust web site at: [www.agwt.org](http://www.agwt.org).

The Update Arsenic Evaluations may be viewed at:

NAS Report: <http://www.nap.edu/books/0309076293/html/>

NDWAB Report: <http://www.epa.gov/safewater/ars/ndwac-arsenic-report.pdf>

SAB Report: <http://www.epa.gov/sab/ec01008.pdf>

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