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Heavy Metal Politics: the on, off, then on again arsenic rules

By Mark J. Spalding (September 2001)

Arsenic normally occurs naturally in groundwater as a result of minerals dissolving over time from rocks and soil. Arsenic also occurs naturally in air, plants, and animals. Arsenic concentrations in drinking water are highest in the West and some parts of the Midwest. However, not all arsenic in drinking water got there naturally. Some comes from mining's legacy of polluted water and scarred landscapes, as well as from industrial run-off. Specifically, arsenic is a byproduct of copper smelting, mining, and coal burning. Thus U.S. industries release thousands of pounds of arsenic into the environment every year. As a result, heavy metals like arsenic, poisons like cyanide and acids pollute ground and surface water and ultimately migrate into drinking water. For this reason, it has been argued that the costs of cleaning up some of the contamination should lie with industry and mining interests under the "polluter pays" principle.

International studies have linked long-term exposure to arsenic in drinking water to cancer of the bladder, lungs, skin, kidney, nasal passages, liver, and prostate. In 1999, the US National Academy of Sciences (NAS) published findings that arsenic in drinking water can cause bladder, lung, and skin cancer, and may cause kidney and liver cancer. Current regulations, unchanged since the 1940s, permit tap water to contain arsenic at levels of 50 parts per billion (ppb). According to NAS estimates, one out of 100 people who drink water containing 50 ppb will get cancer (based on drinking two liters of water per day over the course of a lifetime). That is an extremely high cancer risk when measured by standards established by the U.S. Environmental Protection Agency (EPA). EPA normally assigns standards for toxins and contaminants that represent no more than a one-in-10,000 risk factor for cancer. No other developed nation allows that much arsenic in drinking water.

On March 20, 2001, the Bush-administration EPA rescinded a Clinton-administration ruling that would have lowered the amount of arsenic allowable in drinking water. Clinton had acted on the ruling on January 17, just three days before leaving office. The Clinton-administration rule lowered the permissible level to 10 ppb, the same standard for arsenic adopted by the World Health Organization (WHO) and the European Union. Bush said the rescission of the ruling on arsenic levels in drinking water was part of an administration-wide review of Clinton's "last-minute rulings" for lack of sound science or pragmatic cost-benefit analysis.

EPA Administrator Christine Whitman vigorously defended the decision to roll back the Clinton-administration regulation. Whitman alleged, at the time, that the Clinton rule had been crafted in haste and without adequate scientific study. "The previous administration didn't take the time to fully understand the impact of this decision in those areas of the country where you have a great deal of naturally occurring arsenic," Whitman said. The reduction would not have taken effect until 2006, she said. "We will have a new standard by 2006 (and) it will certainly be well below 50" parts per billion. (Associated Press)

The suspension of the rule was applauded by many business and mining groups, which feared that tighter arsenic limits would be costly. They asserted that the standards would have provided negligible public health benefits in view of the costs they would have imposed on not just

industry but, more important, on households. Forcing industry to pay for the discharge of arsenic-contaminated effluent is of course a great idea, but in the end households end up paying the costs, through higher product prices, reduced wages, or reduced wealth (*e.g.*, if their mutual fund includes shares of a mining company). They further argued that Clinton had little regard for the costs to small communities that would have to change their filtration systems. As always, there's no free lunch.

However, by not having industry pay for their "externalities," doesn't the cost of lunch currently only fall on those (1 in 100) who suffer cancer as a result? Isn't cost spreading more fair? Especially cost spreading to the customers and clients of the industry who are benefiting from the production in question?

The Clinton/Gore administration had asserted instead that policies that protect the environment need not come at a high cost if they take advantage of technological advances. Regardless, a study issued in August 2001 and conducted by the National Drinking Water Advisory Council, (which advises the EPA on drinking water safety) firmly stated that the Clinton administration had done a "credible job" of calculating the costs to water systems of toughening the standards to 10 ppb.

According to business and mining interests, Bush made the right decision on the arsenic standards because their science does not support the standards Clinton tried to ram through. Meanwhile, those in the environmental community suggest it is the current 50 ppb standard for arsenic that is not defensible scientifically and that it is the lower standard selected by the Clinton administration (without haste) and based on the WHO world standard for arsenic that is scientifically defensible. Of course, which standard is "scientifically defensible" depends on which scientist is defending it. Reportedly, some researchers in the Harvard School of Public Health were skeptical about the studies critiquing the 50 ppb standard. In any event, there seems to be a very vocal dissenting view, which of course is typical of environmental policy issues and is what makes them so challenging to work on. The hard science is never as conclusive as attorneys, social scientists, and policymakers would like.

Regardless, postponing the tightening of standards for arsenic in drinking water has drawn a storm of protest from Democrats, environmentalists, and moderate Republicans (see Daschle and Olson). Seeking to reverse the Bush ruling, the Democratic-led Senate and the Republican House of Representatives each passed legislation recently to force the Bush administration to tighten arsenic limits to at least 10 ppb.

A new National Academy of Sciences report issued in September 2001 found that the health risks posed by arsenic are much greater than previously assumed by the Clinton EPA. The review focused on alternative standards—ranging from as low as 3 ppb to as high as 20 ppb. The academy concluded that there was a higher risk of lung or bladder cancer than had been thought at any of those reduced levels. In fact, the new information raised questions whether the 10 ppb limit proposed by the Clinton administration was low enough. Even at 3 ppb, the risk would be several times higher than the EPA's maximum acceptable cancer risk. According to the NAS panel of scientists, arsenic may also increase the chance of other diseases, but more study is needed to pinpoint the exposure risk. In addition, some foreign researchers have linked

arsenic exposure to diabetes, respiratory and cardiovascular ailments, and birth defects. Finally, the new NAS study may not be relevant to children, who may be more susceptible, according to the Children's Environmental Health Network which points out that the NAS study committee has no pediatricians or scientists or clinicians with pediatric expertise among its panel of nine experts. Nonetheless, pleased environmentalists said the study seriously undermined the rationale for blocking the Clinton administration rule.

Confronted with the new the National Drinking Water Advisory Council and NAS reports, on 11 September, 2001, EPA concluded it must adopt a stringent new standard for the amount of arsenic allowed in the nation's drinking water that is at least as tough as the one proposed by the Clinton administration. The decision ends the controversy regarding one of the most poorly conceived environmental decisions the Bush administration has made.

Where science and policy intersect, there is a need for objectivity. The President and his administration should not have allowed themselves to be blinded by a conservative agenda and special interests, which assumed all actions by Clinton had to be undone. Fortunately, the science was strong enough to ultimately prevent the rescission of the arsenic rulings, but what if fewer people and organizations had been watching? Where would we be now?

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