Rationale for Not Setting a Federal MCL for Perchlorate

The fundamental goal of drinking water standards is to protect public health. This requires that regulatory agencies obtain the best available scientific information about a specific substance before a standard can be considered. Then, equally important, they must ensure that resources are directed toward high priority risks and not unnecessarily consumed. Otherwise, there are simply fewer resources available for the greatest public health needs.

In the case of perchlorate, the best available science combines with risk prioritization to suggest a maximum contaminant level (MCL) is not warranted. This is reflected in the failure of perchlorate to meet any of the Environmental Protection Agency's (EPA) three criteria (see http://www.epa.gov/safewater/sdwa/theme.html#3) for setting a drinking water standard:

1. EPA must find that a contaminant may cause an adverse effect on human health.

- In its peer-reviewed January 2005 report, *Health Implications of Perchlorate Ingestion*, the National Academy of Science (NAS) states: "The committee emphasizes that inhibition of iodide uptake by the thyroid has been the only consistently documented effect of perchlorate exposure in humans" (p 110) and "Inhibition of iodide uptake by the thyroid clearly is not an adverse effect" (p 111).

2. EPA must find the contaminant is present in drinking water systems at a frequency and a level of public health concern.

- NAS stated the first possible adverse effect from perchlorate was hypothyroidism, noting that it would take prolonged daily exposures of at least 14,000 parts per billion (ppb) before there could be a risk of adverse effects. Even a ten-fold safety factor on this number, to account for sensitive populations (fetuses of women in danger of hypothyroidism), would still require daily consumption of 1,400 ppb perchlorate before there could be any risk of adverse health effects.

- EPA's national monitoring of public drinking water systems determined the rough average of perchlorate when it was being detected was around 10 ppb. (See http://www.epa.gov/safewater/ucmr/data.html)

3. EPA must find that regulation of the compound will result in a meaningful reduction in risk to human health

- Because the levels of perchlorate in drinking water are nowhere near the levels that could have an adverse effect, establishing an MCL for perchlorate would only affect levels that have non-adverse effects or no effect at all, and would therefore offer no meaningful public health benefit.

Even if perchlorate concentrations from foods are accounted for in considering a federal MCL, it would still require exposure to perchlorate in drinking water at levels hundreds or thousands of times higher than what's being detected in the environment for a risk of adverse health effects to occur.

EPA's own Office of the Inspector General concluded on April 10, 2010 that "EPA's interim perchlorate health advisory (HA) of 15 µg/L issued on January 8, 2009, (EPA 2008a) provides for an ample margin of safety to protect against adverse effects in humans" and "protects against all human biological effects from exposure." Because of this, the EPA IG went on to say that "potentially implementing a perchlorate level below 15 µg/L does not decrease the occurrence of adverse effects in the public."

It is important to recognize that a U.S. EPA decision not to issue an MCL would not mean that there is no regulatory action relating to perchlorate. The agency has recently released a Health Reference Level of 15 ppb, based on the findings of the NAS panel and more recent FDA studies. Individual states also retain the authority to regulate perchlorate in drinking water and have taken a range of protective actions.