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March 14, 2005

Benjamin Grumbles, Assistant Administrator
4101M
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N. W.
Washington, DC 20460

RE: Perchlorate Contamination & Drinking Water

Dear Assistant Administrator Grumbles:

In 2001 the first instance of perchlorate contamination in Massachusetts was identified in groundwater plumes emanating from the Massachusetts Military Reservation on Cape Cod. Since then the Massachusetts Department of Environmental Protection (the Department) has invested significant resources and effort to determine the presence of and identify the sources of perchlorate in drinking water supplies statewide and to evaluate the health risks of perchlorate as new information and research becomes available.

I am writing to provide you with a brief summary of the Department's efforts on perchlorate, inform you of the Department's current plans to propose state drinking water and hazardous waste cleanup standards for perchlorate, and raise issues for your consideration as EPA contemplates setting a federal drinking water standard.

Summary of Massachusetts Perchlorate Efforts

To address perchlorate contamination in Massachusetts, the Department convened an external Science Advisory Committee in 2003 to evaluate the relevant peer-reviewed studies on perchlorate. The Department has also met with perchlorate manufacturers and contractors who use products that contain perchlorate, as well as representatives from the Department of Defense.

Given the limited published studies on perchlorate and its effects on sensitive populations, and consistent with our standard practice, in February 2004 the

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Department issued a drinking water health advisory of 1 ppb for perchlorate, consistent with EPA's actions resulting from its January 2002 perchlorate health assessment document. The 1 ppb advisory level was adopted to be protective of sensitive populations, specifically pregnant women and their fetuses, infants and individuals with thyroid conditions.

In March 2004, the Department initiated the process to establish a drinking water maximum contaminant limit (MCL) for perchlorate by promulgating regulations requiring all public water supplies to test for perchlorate. Several rounds of sampling have been completed statewide. Nine public water supplies have detected perchlorate, seven of the nine have perchlorate ranging from just below 1 ppb to slightly above 3 ppb. However, two water supplies had greater than 45 ppb, one as high as 1300 ppb.

When confronted with the perchlorate plume at the Massachusetts Military Reservation in 2001, most thought that the primary source of perchlorate contamination was the result of military training activities. None of the nine water supplies that have tested positive for perchlorate in Massachusetts appear to have any connection to military bases or activities.

Establishing State Standards

Department staff and our Science Advisory Committee are now evaluating the National Academy of Sciences (NAS) study (January 2005) and other data that was recently made available. I anticipate that the Department will be establishing a reference dose for perchlorate, and proposing a drinking water MCL and hazardous waste cleanup level within the next six weeks. Massachusetts will continue to evaluate all available information in the process of setting drinking water and hazardous waste cleanup standards for perchlorate. To date, we have not been presented with compelling or persuasive data that would cause us to vary significantly from the 1 ppb health advisory that was issued by the Department. I intend to propose standards that will protect the health of sensitive populations.

Scientific Uncertainty and Potential Health Risks

The recently published NAS study recommended a reference dose of 7×10^{-4} mg/kg-day, which is approximately twenty times higher than EPA's original draft reference dose. However, it is important to note that the NAS study did not make a recommendation on an MCL for perchlorate, nor did NAS opine on what percentage of the reference dose should be allocated to ingestion of perchlorate contaminated drinking water.

The recent NAS study recommended a reference dose based on a study with limited data that only evaluated the effect of perchlorate on 7 healthy subjects (six females and one male, ranging in age from 18 to 49), **not** on sensitive populations. Since this is such a limited sample size/data set, and reflects only a 14-day study on healthy adults,

we believe a larger uncertainty factor than NAS applied is appropriate to protect sensitive subpopulations.

Data on perchlorate made available by the Food & Drug Administration in November 2004 indicated that perchlorate was present in a significant number of samples of lettuce and dairy milk. In addition, a recent study on perchlorate in breast milk found, on average, perchlorate at 10 ppb. It would be ill advised to set a drinking water standard without carefully considering the various potential sources and exposure paths of perchlorate. This is particularly true for infants and pregnant women.

Recommendations

More information needs to be gathered about the health effects of perchlorate. EPA and other federal agencies should expand the current knowledge base by conducting and funding additional studies. Until more is known, a cautious approach should be taken to ensure that sensitive populations are not put at risk.

I suggest that EPA should encourage or require broader testing of public water supplies for the presence of perchlorate nationwide. I suspect that Massachusetts' experience with perchlorate is not unique, which could mean that large numbers of people are unknowingly ingesting water with perchlorate at much higher levels than previously assumed.

I strongly encourage EPA to undergo a public review and comment period prior to taking any further action on perchlorate. I welcome the opportunity to discuss this matter with you in greater detail at your convenience.

Sincerely,

Robert W. Golledge, Jr.
Commissioner

Cc: Robert Varney, Regional Administrator US EPA- Region 1