



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 1  
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BOSTON, MASSACHUSETTS 02114-2023

5 November 2001

Mr. Benjamin Gregson  
Impact Area Groundwater Study Program Office  
PB 565/567 West Outer Road  
Camp Edwards, MA 02542

Re: Relevant Standard for Perchlorate in Accordance With EPA Administrative Order SDWA  
1-2000-0014 (AO3)

Dear Mr. Gregson:

On July 27, 2001 I wrote to you concerning perchlorate in groundwater at Camp Edwards on the Massachusetts Military Reservation. In that letter, I identified 1.5 ppb as the appropriate level for NGB to use "for future cleanup technology and alternative evaluations." On October 4, 2001, you responded to my letter, raising numerous concerns about the 1.5 ppb level and concluding that NGB would "continue to use a 4-18 ppb range for remedial decision making, along with EPA Method 314 and associated reporting limits." The purpose of this letter is to clarify the intent of my July 27 letter and to thereby resolve the issues contained in your October 4 letter.

As you know, NGB is conducting a series of Feasibility Studies for contaminated areas in Camp Edwards pursuant to an order issued by EPA under the Safe Drinking Water Act. That order, which requires compliance with the substantive requirements on the Massachusetts Contingency Plan, compels the NGB to develop a range of alternatives including, at a minimum, an alternative that throughout the entire plume reduces the contaminant concentrations to background conditions and an alternative that throughout the entire plume reduces the contaminant concentrations to levels "that meet or exceed all MCLs, Health Advisories, DWELS, other relevant standards and a cumulative 10<sup>-6</sup> excess cancer risk." (emphasis added). Evaluation of cleanup to background concentrations is an express requirement of the order and of the Massachusetts Contingency Plan. In addition, the NGB is required to develop alternatives that meet the site specific remediation levels within different restoration time periods utilizing one or more different technologies.

Following the development of these alternatives, the NGB is required to evaluate them according to nine specified criteria, including the alternatives' ability to protect human health and the environment. In short, the feasibility studies must develop and then evaluate a variety of remedial alternatives that achieve cleanup goals with different technologies and under different time frames.



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The purpose of my July 27 letter was to provide NGB with a perchlorate level that it could use as a *relevant standard* in developing and evaluating the variety of remedial alternatives required by the order. As you know, perchlorate has emerged as a contaminant of significant concern at Camp Edwards, and no MCL, Health Advisory or DWEL currently exists for the compound. NGB needs to use some level *for purposes of developing and evaluating alternatives*. A final decision about the appropriate cleanup level for perchlorate will be made at the time that the decision document for a specific Area of Contamination is issued by the Agency. We contemplate that the first such decision document will be issued in the spring or summer of 2002 and will address groundwater contamination at Demolition Area 1. That decision will also incorporate the most current thinking on perchlorate including any decisions that come out of the ongoing external peer review process coordinated by the National Center for Environmental Assessment. In the interim, however, it is necessary for NGB to move forward with evaluations that consider a perchlorate standard that is based on current agency guidance and protective assumptions.

The 1.5 ppb cleanup level for perchlorate reflects both current agency guidance and protective assumptions. As you know the development of a national perchlorate standard is an evolving matter that has had a somewhat complicated history. A provisional reference dose was established by the National Center for Environmental Assessment in 1992 that recommended use of a  $1 \times 10^{-4}$  to  $5 \times 10^{-4}$  range for a reference dose. This range was reviewed and affirmed in 1995. A second revision was contemplated in 1999 but was not finalized because of ongoing research on the topic. The current agency guidance, embodied in the June 18, 1999 memorandum *Interim Assessment Guidance for Perchlorate* from Norine Noonan to the Regional Administrators, states:

Because new analyses and data are to be considered, we can predict that the human and ecotoxicology benchmarks are likely to change. The new estimates will reflect greater accuracy and may be either higher or lower than the harmonized benchmark proposed in the February 1999 document (.0009 mg/kg-day). *Therefore ORD recommends that Agency risk assessors and risk managers continue to use the standing provisional RfD range of 0.0001 to 0.0005 mg/kg-day because of continued uncertainty with respect to the impact of the pending data and analyses in the final estimate....* (emphasis in original)

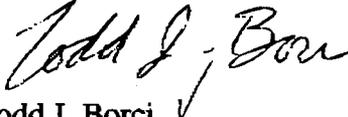
This document provides guidance to EPA Regions concerning Agency activities related to perchlorate.... The guidance is designed to implement national policy on these issues.

In addition to recommending the continued use of a 0.0001 to 0.0005 mg/kg-day reference dose for perchlorate, the extant agency guidance suggests that exposure assumptions could be applied to the reference dose to develop site specific cleanup levels. In the example given in the guidance, the standard default values for adult exposure yield cleanup levels from 4 to 18 ppb. As you know, we applied child exposure values to the appropriate reference dose to derive the 1.5 ppb level, taking into account child exposure and the sensitivity of Cape Cod's sole source aquifer. We believe this is a prudent approach to developing a working standard for perchlorate.

It is thus necessary for NGB to develop method detection limits for perchlorate below the 1.5 ppb relevant standard analytical level and to incorporate that level into its ongoing feasibility study analyses. The final cleanup level for perchlorate will be decided at the time of the issuance of the decision document and will reflect any changes in EPA policy at that time.

If you have any questions, please do not hesitate to call me at (617) 918-1358.

Sincerely,



Todd J. Borci  
Office of Site Remediation and Restoration

cc: James Woolford/EPA HQ  
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