

June 29, 2017

Mr. David Pimentel
State of California Water Resources Control Board
Post Office Box 100
Sacramento, CA 95812-0100

By e-mail: ddwregunit@waterboards.ca.gov

Re:

Dear Mr. Pimentel:

The California-Nevada Section of the American Water Works Association (CA-NV AWWA) is grateful for the opportunity to offer comments on the two-step process outlined for consideration of a new MCL for perchlorate. CA-NV AWWA is a nonprofit, scientific and educational association of, and for drinking water utilities and professionals with approximately 4,700 individual members in California. To aid the State Water Board's work to evaluate the feasibility of lowering the current Perchlorate Detection Limit for Reporting (DLR), we would like to submit the following formal comments pertaining to the DLR topic.

Role of the DLR in the standard setting process

The Section supports the use of a DLR to evaluate occurrence and compliance with an MCL. The present statutory requirement for setting an MCL is based on the combined consideration of occurrence plus cost-benefit analysis. Since the occurrence component of the MCL determination is so critical, occurrence data must be based on a DLR that shall yield scientifically-reliable analytical data. Therefore, criteria for determining an acceptable DLR must be defined in terms of acceptable precision and accuracy and set in advance of any data gathering effort.

Analytical methods capable of meeting the DLR

A DLR must be set based on the availability of approved and validated methods capable of achieving the DLR. The methods must be commercially available to all testing laboratories (both public and private). This is consistent with EPA's standard setting approach where methods are established based on regulatory priorities and validated prior to any Unregulated Contaminants Monitoring Rule (UCMR) data gathering effort. For Perchlorate, several methods exist which may or may not achieve a scientifically-based DLR lower than the current 4 ppb level.

Laboratory capacity available to support a new MCL

In previous MCL initial statement of reasoning (ISOR) for Perchlorate in 2006, for Hexavalent Chromium in 2016, for 1,2,3-trichloropropane in 2017, the State Water Board has defined sufficient laboratory capacity to be “75% of accredited laboratories able to measure” but with no level of precision and accuracy associated with this value. Analytical capacity must be defined based on a laboratory demonstration of capability either through the existing Water Supply Proficiency Testing program or via an Inter-laboratory Study. Such a study will more thoroughly define true available analytical capacity than the 2016 informal survey conducted by the State Water Board to determine existing and potential Perchlorate method (314.1, 331, 332) availability for lower level analysis. Any Inter-laboratory study must include not just private commercial laboratories but public laboratories as well.

Relationship of the DLR to the MCL

The DLR must be set at the lowest concentration that can produce accurate and precise results and is technically feasible for a sufficient number of laboratories to meet the needs all data users. In Massachusetts, for example, the State Department of Environmental Protection (DEP) established an MCL for Perchlorate at 2 ppb and a DLR that is 50% of the MCL (1 ppb). The lower DLR was established in the context of a Perchlorate-specific certification program where laboratories must demonstrate a 70-130% recovery at the 1 ppb DLR and achieve the same 70-130% recovery on a daily check at 50% of the DLR (0.5 ppb). Setting a scientifically-based DLR below the MCL affords the water system a buffer in managing treatment schemes and minimizes the potential for false positive and analytical variability that could potentially influence MCL compliance. The Section supports this approach so long as there are a sufficient number of accredited laboratories available and with a demonstrated ability to achieve the specified DLR.

DLR should be defined based on a scientific approach

Presently, the State Water Board has no defined criteria for defining an acceptable DLR. In 1999 the Division of Drinking Water embarked on a collaborative effort with public and private laboratory stakeholders to define acceptable DLR criteria for Inorganic Contaminants (IOCs). That effort concluded based on an inter-laboratory study that laboratories must achieve +/-30% of the true value for any given IOC in order to produce reliable analytical data. Similar criteria should be used by the State Water Board to define an acceptable DLR for Perchlorate.

The DLR must be a quantitative value and validated on an ongoing basis. The EPA Laboratory Certification Manual requires laboratory daily checks of the minimum reporting level (MRL) as part of the method quality control (QC). Most recent (2005 or later) EPA methods also now require the laboratory to conduct lowest concentration minimum reporting level (LCMRL) demonstration as part of the initial method validation and for individual labs to demonstrate their ability to meet the LCMRL limit as part of their initial demonstration of capability. The LCMRL is determined based on 7 concentrations with 4 replicates at each level where 50-150% recovery level is achieved at high (99%) confidence. The Federal Register (40CFR136 Appendix B) also defines criteria for method detection limit (MDL) determination based on analysis of concentration in DI water on 7 replicates over a minimum three times over 3 separate days.

The MDL is then calculated as the standard deviation of the 7 replicates by the statistical t-value (or 3.143). The MDL is a presence/absence determination only with a 99% confidence limit. Some or all of these criteria should be incorporated as a requirement for laboratory demonstration to meet a DLR.

MCL should be considered only after a comprehensive data gathering effort

Once a scientifically-based DLR is established and laboratory capacity determined as sufficient, then and only then should the State Water Board initiate a data gathering effort to determine the true nature of statewide occurrence. A similar effort was conducted in 2007 with the California UCMR to establish occurrence data for Perchlorate, 1,2,3-TCP, Hexavalent Chromium and other contaminants of emerging concern (CECs). This effort was helpful in identifying statewide occurrence concerns to some degree but fell short in identifying true occurrence at lower-targeted reporting limits and for the small systems in particular. We strongly support the concept of a statewide data gathering of all water systems to determine true and current source occurrence of Perchlorate based on available, validated analytical methods at scientifically-verified reporting levels.

The CA-NV AWWA Section strongly supports the State Water Board's consideration and effort in evaluating the current Perchlorate MCL. This process must involve the ELAP and its Environmental Laboratory Technical Advisory Committee (ELTAC) stakeholders in defining acceptable laboratory performance and available laboratory capacity with regard to the DLR. The DLR must be scientifically based and clearly defined prior to embarking on any statewide occurrence survey.

Thank you for the opportunity to provide input on this very important and precedent setting topic. We remain available to collaborate in partnership with the State Water Board in our shared effort to protect drinking water and the customers we serve.

Sincerely yours,

Timothy Worley, PhD
Executive Director

cc: R. Zimmer
K. L. Porter