



Comments to the Proposed Mercury Provision, California Water Quality Control Board

Below are several comments to the proposed Mercury provision. Please consider that I do not claim to understand the content of all the appendices provided or the nuances involved in the translator concepts employed. Rather my comments are based more on past experience collecting, analyzing and interpreting mercury in water column data for the better part of 10 years in and around reclaimed and active mining ponds in the Marysville area. I apologize in advance if some of the issues in the comments have already been addressed or are tangential to the provision.

- 1.) Has the practicality of the provision been considered sufficiently? I think it is commonly accepted that numeric standards for water column data can become unworkable if they arise from chemicals that occur at very low concentrations, have low water solubility and are further complicated by bioaccumulation. I would very much like to see the comments from the analytical laboratories that typically contract this work.
- 2.) It seems that the errors associated with the statistical analysis, translator application and the inherent laboratory error associated with the proposed standards could be considerable. The provision will probably require a re-evaluation of “clean hands – dirty hands” sampling as well as significant changes to laboratory QA/QC. While cost is not usually considered greatly in the provision, it is a very real consideration (see below).
- 3.) Mercury Analysis Method - The Draft Provisions require that "the discharger shall use any U.S. EPA-approved method that has a quantitation limit lower than 0.5 ng/L for total mercury" (page A-11). However, no current U.S. EPA-approved method has a quantitation limit lower than 0.5 ng/L. U.S. EPA Method 1631 Revision E (Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Atomic Fluorescence Spectrometry) requires in Section 1.5 that "The minimum level of quantitation (ML) has been established as 0.5 ng/L". The *quantitation limit* itself is equal to (not lower than) 0.5 ng/L, meaning that analytical *results* will be reported as less than this limit. In order to make compliance possible, the draft provision should therefore be altered to require a "quantitation limit equal to or lower than 0.5 ng/L for total mercury." A similar distinction should be made for the 0.06 ng/L methylmercury quantitation limit.
- 4.) The data interpretation is the most interesting facet of the provision at least based on our past work. Analysis of many data sets from mercury in water column work demonstrated two important trends (1) “soluble” (via physical separation) mercury was quasi consistent in our samples at very low concentrations, (2) total mercury varied widely but was always correlated very strongly to TSS (total suspended solids). Inspection of the solids entrained in the samples typically showed that mercury concentrations at 0.5 mg/kg or less or “background”. This illustrates the problem that total mercury in water in excess of

the proposed provision could arise from suspended solids of background soil or sediment. Is it prudent then to either consider additional framework to address this or re-consider the use of a numeric total mercury provision?

Respectfully Submitted,

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