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April 21, 2008

Ms. Carrie Austin
San Francisco Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
By e-mail: caustin@waterboards.ca.gov

Subject: Guadalupe River Mercury TMDL and Amended Water Quality Objective

Dear Ms. Austin:

We appreciate the opportunity to provide comments on the Staff Report and Proposed Basin Plan Amendment implementing the Total Maximum Daily Load (TMDL) for Mercury in the Guadalupe River Watershed.[1] The Department supports the overall objective to protect the environment and achieve the best possible water quality by reducing mercury in waters of Guadalupe River Watershed. However we have several concerns after reviewing the Proposed Basin Plan Amendment and accompanying Water Board staff report.

Our comments are attached. We are hopeful that Board would address the issues raised in this response prior to adopting above Bain Plan Amendment. If you have any questions, please call Jagjiwan Grewal of my office at (916) 653-2115.

Sincerely,

JOYCE BRENNER
Acting Office Chief
Stormwater Program Implementation

Attachment

[1] Linked to: http://www.waterboards.ca.gov/sanfranciscobay/press_room/announcements.shtml

Attachment

Comments on Guadalupe River Mercury TMDL and Amended Water Quality Objective

1. Sources of Mercury in the Watershed

The TMDL for Mercury in the Guadalupe River watershed is intended to address mercury in the watershed that originated primarily from mercury mining activities. Stormwater runoff from the Department right-of-way is not a significant source of mercury in the watershed, and residue from mining activities has not been detected on the state highway right-of-way. Please re-evaluate the TMDL and ensure that this is properly considered when determining loads from sources and to develop the most appropriate implementation activities. The staff report states:

> The source control and pollution prevention actions required by the San Francisco Bay mercury TMDL for the urban stormwater runoff source are anticipated to be sufficient to attain the allocation for discharges to waters of the Guadalupe River watershed. [Page 9-12 of the staff report]
>
> The above monitoring requirements [from the SF Bay TMDL] (...) and annual reporting requirements are sufficient for the first 10-year implementation phase of the Guadalupe River watershed mercury TMDLs. [Page 9-13 of the staff report]

The Department is concerned that there is not enough information to fully understand the mercury discharge problem and to ensure that the implementation actions will achieve the required effect. Please include a thorough discussion of these issues and, particularly, how the urban stormwater runoff allocation of 0.2 mg/kg in suspended sediment will achieve the water quality standards for the river. We suggest that this TMDL address the issues related to discharges of mercury from mining activities, and that mercury from urban runoff continues to be addressed by the San Francisco Bay Mercury TMDL. The San Francisco Bay Mercury TMDL provides greater flexibility to the Department and other municipal dischargers in how to address this TMDL. This flexibility is crucial to allow for implementation of effective solutions to meet water quality standards in the river.

2. Background Soil Concentrations

For the Guadalupe River TMDL, the staff report proposes to allocate mercury by the proportionally equivalent concentration. The recommended allocation to urban stormwater runoff is <u>0.2 mg/kg</u> in suspended sediment (annual median, dry weight). More explanation is needed to clarify how this amount accounts for background soil concentrations. The TMDL appears to assume that the background soil concentrations are approximately 0.06 ppm based on the Santa Clara sampling of agricultural areas. We believe that the background assumptions may be low, based on a University of California, Riverside (UCR) compilation of trace element concentrations in 50 different benchmark soils from throughout the state, (*Background*

Concentration of Trace and Major Elements in California Soils, G. R. Bradford, et al., 1996[1]). The report from UCR showed a statewide geometric mean concentration of mercury in uncontaminated soils of 0.2 mg/kg and a relatively wide range from a minimum of 0.1mg/kg to a maximum of 0.9 mg/kg. Since the TMDL watershed includes closed mercury mines, it is likely that mercury is naturally elevated in soils in certain locations. As a result, it is reasonable to expect that in some areas, dust from local soils could cause the roadway sediment to exceed the allocation of 0.2 mg/kg in suspended sediment. Before proceeding with the proposed allocations in this TMDL, it is essential to determine the concentrations currently present in roadway and urban runoff. This assessment is an important factor in the evaluation of the potential impacts of this TMDL.

In addition to soil concentrations, aerial fallout potentially contributes mercury throughout the watershed. Unfortunately, this source is not easily controllable. Research conducted by the Department of Environmental Science and Policy of the Tahoe Research Group at Lake Tahoe has found that the upper sediments in the lake have concentrations of mercury averaging 0.191 ppm[3]. This is a five-fold increase over the mercury present in the local bedrock. This is essentially the same concentration as the sediment goal for San Francisco Bay. The source of the mercury in Lake Tahoe is presumed to be direct atmospheric deposition primarily from regional and global sources. Mercury tends to preferentially settle out at high, cold elevations, so atmospheric deposition in coastal areas may be less. However, the Tahoe data indicates that atmospheric deposition is widespread and potentially significant[2]. Atmospheric deposition of "global" mercury or aerial fallout of local soils with elevated mercury may account for a significant source of mercury from roadways.

On a watershed basis, the load from urban runoff is likely to be insignificant compared with those from mining wastes. The Department believes that focusing on the waste from mining activities would be the most beneficial strategy to attain the water quality standards.

3. Source Control

In section 8.3 *Urban Stormwater Runoff Total Mercury Allocation*, the Staff Report identifies the possible sources of mercury in urban runoff:

> The mercury in urban stormwater runoff results in part from controllable urban sources, such as improperly discarded fluorescent lights, electrical switches, thermometers, and other mercury-containing devices, and from historical and ongoing industrial activities (SFBRWQCB 2004.) Atmospheric deposition and

[1] Posted at: http://www.envisci.ucr.edu/downloads/chang/kearney/kearneytext.html See Table 2
[2] Posted at: http://trg.ucdavis.edu/research/annualreport/contents/lake/article11.html

> naturally occurring mercury in background soils, which are assumed to be difficult to control, also contribute to the mercury in urban stormwater runoff. [Page 8-11of the staff report]

The opportunities for reducing loading from the Department right-of-way are very limited, should this become necessary to meet the allocations assigned to urban runoff. Therefore, the Department believes that source control options should be given greater consideration in this TMDL.

4. Department Total Drainage Area

Table 7-B in the Basin Plan Amendment includes the sources, load allocations (LAs), and waste load allocations (WLAs) for the Guadalupe River Mercury TMDL. The table assigns a wasteload allocation to urban stormwater runoff dischargers and lists eight entities; however the Department is not included. Note C for this table states that the allocation for urban stormwater runoff includes the Department roadways and facilities. The note also states that the allocation is proportionally equivalent to the mass allocation. The Department has 1990 acres of right of way in the watershed. The total watershed area is 102,400 acres so that the Department accounts for 1.9% of the total watershed area. Please revise the information presented in this section and clarify Table 7-B to clearly state what is intended in the notes.

5. No identified technology for achieving the stormwater allocations

The staff report recommends an urban stormwater runoff allocation of 0.2 mg/kg in suspended sediment. Unfortunately, no clearly identified and available technology capable of reducing runoff sediment to this concentration exists. Capturing all stormwater flows and directing them to treatment facilities such as filtration units could potentially meet the mercury removal requirements, but no information indicates that this approach would be effective at achieving the required removals at an optimum cost. The Department requests that the Regional Board discuss feasible alternatives to meet the runoff allocations and provide cost estimates for them, including the costs of constructing retrofit BMPs. Please also consider including a reduction-credit purchase program, which could provide benefit.