

Appendix C

Comment Letters

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SEP 26 2006

QUALITY CONTROL BOARD

Mr. Bruce Wolfe

Executive Officer

California Regional Water Quality Control Board

San Francisco Bay Region

1515 Clay Street, Suite 1400

Oakland, CA 94612

Dear Mr. Wolfe:

Thank you for the opportunity to review the Staff Report dated August 4, 2006 entitled, "Total Maximum Daily Load for Mercury in the Walker Creek Watershed" and associated Proposed Basin Plan Amendment. These documents contain proposed water quality standards changes and TMDLs for mercury in the Walker Creek watershed. We appreciate the hard work to develop these documents.

We reviewed the proposed water quality standards changes and proposed TMDLs to determine whether they are consistent with applicable federal regulations. This letter provides summary comments; detailed comments and recommendations are provided in the enclosure.

While we fully support the proposed aquatic life and wildlife fish tissue objectives for water bodies in the Walker Creek watershed, and commend your staff for their careful and thorough development, we are concerned that the package of water quality standards changes does not appear to meet all federal requirements. The Proposed Basin Plan Amendment proposes to vacate the current Basin Plan mercury water column objective for water bodies in the Walker Creek watershed; however, objectives for the protection of human health through fish consumption, the primary route of exposure, are not proposed. Clean Water Act (CWA) section 303(c)(2)(B) requires that whenever a state reviews and revises or adopts new water quality standards, it must adopt specific numerical criteria for priority toxic pollutants listed in section 307(a), for which criteria guidance have been published under section 304(a), if the absence of such criteria could reasonably be expected to interfere with a designated use of a water body. EPA published its revised human health criteria for mercury in January 2001 (Water Quality Criterion for the Protection of Human Health: Methylmercury, Office of Water, U.S. EPA 2001, EPA-823-R-01-001). This revised criterion is fully protective of human health through fish consumption. Since you are proposing to revise your mercury objectives, revised objectives that are fully protective of human health through fish consumption must be included in the package of water quality standards changes. We are available to discuss this issue further on September 20, 2006, when our staffs will be meeting.

Concerning the TMDL analyses, we are concerned that not all applicable water quality standards were considered. Walker Creek and Soulejule Reservoir are both designated for REC-1 and aquatic life uses, which protect human health through fish consumption (bioaccumulation). The narrative bioaccumulation objective to protect aquatic life, wildlife, and human health applies to both water bodies. The analyses in the Staff Report and the Proposed Basin Plan Amendment are not clear as to whether the TMDLs are set at levels necessary to implement human health water quality standards to protect for bioaccumulation.

Our comments in this letter do not constitute an approval, disapproval or determination by EPA under Clean Water Act section 303(c) or 303(d). We will act upon any water quality standards and TMDL submittal following formal State adoption and submittal to EPA.

We commend your staff for their hard work on this difficult mercury TMDL. We are committed to working with the State to identify approaches that address our shared goals of accomplishing reductions of mercury levels in the Walker Creek watershed while ensuring that legal requirements are met. If you have any questions concerning these comments, please call me at (415) 972-3572 or refer staff to Diane Fleck at (415) 972-3480.

Sincerely yours,


Alexis Strauss
Director, Water Division

Enclosure
US EPA Comments on Proposed Basin Plan Amendment and Staff Report
Walker Creek Mercury TMDL and Water Quality Standards
dated August 4, 2006

I. Water Quality Standards Issues

1. California Toxics Rule: The Staff Report at section 1., Introduction, states on page 1 that the Basin Plan is the document that contains water quality standards applicable to the San Francisco Bay region. This may be confusing since the California Toxics Rule (CTR) also contains water quality standards applicable to the San Francisco Bay region. We recommend adding a citation to the CTR, as well as referencing the Basin Plan.

Similarly, the Staff Report at section 3, Problem Statement, states, "In addition, the California Toxics Rule (CTR) mercury objectives, incorporated into the Basin Plan by reference, apply." This may be confusing, since CTR criteria are federally promulgated criteria, and directly apply to water bodies in the Walker Creek watershed. We recommend changing this sentence to read, "In addition, the California Toxics Rule (CTR) mercury criteria apply."

2. New Fish Tissue Wildlife Objectives: The Staff Report at section 5, Proposed Water Quality Objectives, proposes two new fish tissue objectives for the protection of aquatic organisms and wildlife: a fish tissue methylmercury objective of 0.05 mg/kg in TL3 fish between 5 and 15 cm, and 0.10 mg/kg in TL4 fish between 15 and 35 cm. We support these objectives as protective of aquatic organisms and wildlife in the Walker Creek watershed, based on the list of species at Table 5.3, page 30 of the Staff Report. We suggest you discuss these objectives with the US Fish and Wildlife Service, if you have not done so already.

Rescission of Numeric Water Column Mercury Objective: On page 31, the Staff Report states that the Basin Plan objective of 25 ng/l as a 4 day average will be vacated where the new fish tissue objectives will apply. While we support replacing the objective, a protective human health numeric objective must be adopted either prior to or simultaneous with vacating the Basin Plan objective. Alternatively, if the wildlife objectives can be shown to be also protective of human health, then the new objectives would satisfy the requirement to adopt protective human health numeric objectives.

The Clean Water Act (CWA) requires states to adopt scientifically defensible numeric criteria consistent with EPA's current CWA 304(a) criteria guidance. CWA section 303(c)(2)(b) states "such State shall adopt criteria for all toxic pollutants listed pursuant to section 307(a)(1)... for which criteria have been published under section 304(a)." States are required to adopt specific numeric criteria for CWA 307(a) priority toxic pollutants (e.g., mercury), which are based on EPA's 304(a) criteria or other scientifically defensible methods. See 40 CFR 131.11.

3. MUN Use: In Chapter 5 of the Basin Plan, the Sources of Drinking Water Policy, which was incorporated into the Basin Plan in 1989, states that all waters of the State have been assigned a Municipal and Domestic Supply designation, with certain exceptions. The Basin Plan does not appear to include the MUN use for water bodies in the Walker Creek watershed, other than for Soulejule Reservoir. 40 CFR Part 131.6 requires that use designations consistent with the provisions of Clean Water Act sections 101(a)(2) and 303(c)(2) must be included in each state's water quality standards submitted to EPA for review. Please update Chapter 2 of the Basin Plan, as appropriate.

4. Use of COMM Beneficial Use: In the Staff Report at section 3, Problem Statement, it states, "In Soulejule Reservoir, the beneficial use of COMM is impaired due to high levels of mercury in sport fish typically consumed by humans." (Page 10, second paragraph.) However, the most recent version of the Basin Plan on your website does not indicate that the COMM use applies to Soulejule Reservoir. If you intend to add the COMM use to Soulejule Reservoir in this set of Basin Plan Amendments, the proposed Amendment must be clear that Chapter 2, Beneficial Uses, is also proposed for changes, to add the COMM use to Soulejule Reservoir.

II. TMDL Issues

1. TMDLs for Unlisted Water Bodies: The Staff Report at section 2, Project Background, states that the TMDL applies to freshwater portions of Walker Creek and tributaries draining to the freshwater (i.e., non-tidally influenced) reaches of Walker Creek (first paragraph, page 4). In the following paragraph, it states that, "The following water bodies are downstream of historic mercury mines and addressed by this TMDL: Soulejule Reservoir, Arroyo Sausal, Walker, Salmon and Chileno Creeks." (second paragraph, page 4). The proposed Basin Plan Amendment states that Walker Creek and Soulejule Reservoir are impaired by mercury, and that the TMDL applies to Soulejule Reservoir and the freshwater portions of Walker Creek (page 4, first paragraph). The Basin Plan also states that it establishes a concentration based TMDL for mercury in the Walker Creek watershed (page 4, second paragraph). However, only Walker Creek is listed on the current 303(d) list for mercury.

If the Regional Board will be adopting TMDLs for water bodies that are impaired but are not included on the current 303(d) list, the Board must clearly identify each water body as water quality limited for mercury and in need of a TMDL for mercury. The Board should provide a specific record supporting this conclusion for each water body, and why it is important to adopt a TMDL for each water body at this time. The Board should notice the identification of each water body as water quality limited and needing a TMDL either before or as part of the public notice for this TMDL, and the record of impairment for each water body should be available for public review during the public comment period.

We recommend this process as a way to ensure that the TMDL development is clear and transparent to the general public. We also believe it will serve to increase public awareness of impairments in water bodies that have not been previously identified as water quality limited.

Upstream TMDLs and Informational TMDLs: It may also be that there are water body segments that are not themselves impaired, but are upstream from the impaired water bodies to which the TMDL applies, and that it is necessary to establish allocations for upstream sources in order to meet water quality standards in the downstream segments for which the TMDL is necessary. Finally, it also may be that the Regional Board is establishing informational TMDLs under CWA section 303(d)(3) for some segments that are not impaired themselves, and that do not contain sources of the pollutant that must receive allocations in order for the downstream water bodies to meet water quality standards. The Staff Report is unclear as to which segments fall into which categories. This needs to be clarified.

2. Consideration of All Applicable Water Quality Standards: TMDLs must be set at levels necessary to implement the applicable water quality standards. We are concerned that a showing has not been made that these TMDLs are set at levels necessary to implement the narrative objective for bioaccumulation which protects aquatic life, wildlife and human health through fish consumption. For example, the REC-1 and COMM uses protect human consumption of fish, and the TMDLs must be set at levels necessary to implement any associated applicable water quality objectives based on these human health uses.

In addition, if a numeric water quality objective is adopted pursuant to our comment #2 under Water Quality Standards Issues, the TMDL analysis must show that the TMDL is set at levels necessary to implement any new objective to protect human health for fish consumption.

CTR Criteria: As the Staff Report notes, the CTR mercury criteria apply to all waters of the Walker Creek watershed. The Staff Report in section 6, TMDL Water Quality Targets, states that human health will be protected by attainment of the CTR criteria on Walker Creek and Soulejule Reservoir. Although the CTR 0.050/0.051 ug/l criteria are legally applicable criteria to these waters, and the TMDLs must be set at levels necessary to implement these standards, the TMDLs must also be set at levels necessary to implement the bioaccumulation standard which specifically states that "effects on aquatic organisms, wildlife, and human health will be considered." Meeting the CTR criteria may not be sufficient to show that the TMDLs are set at levels necessary to implement the bioaccumulation standard.

The CTR criteria are no longer EPA's Clean Water Act 304(a) criteria guidance values for mercury for the protection of human health. In January, 2001, EPA revised its 304(a) human health criteria from 0.050/0.051 ug/l (the CTR criteria values) to 0.3 mg/kg in fish tissue (using national default fish consumption values). (Water Quality Criterion for the Protection of Human Health: Methylmercury, Office of Water, U.S. EPA2001, EPA-823-R-01-001.) The new criterion is based on EPA's revised human health methodology, and fully accounts for bioaccumulation and biomagnification through the food chain. Fish consumption is the primary route of exposure of mercury for humans. The CTR criteria do not fully account for bioaccumulation and biomagnification through the food chain, and thus, may not be sufficiently protective of human health through fish consumption. In order to address the human health prong of the narrative bioaccumulation objective, we suggest using a fish tissue target either based on the consumption patterns of fish from the water bodies, or if unknown, based on EPA's default consumption values.

As discussed above, the new fish tissue objectives the Board is developing concurrent with this TMDL will need to be protective of human health. Once those objectives are included, or it is shown that the proposed wildlife objectives that have already been developed are also protective of human health, then we expect that the Board will be able to show that if the TMDL is set at levels necessary to implement the human health related fish tissue objectives, then it will also be addressing adequately the narrative bioaccumulation objective.

3. Expression of Sources: In section 4, Source Analysis, it is not clear what the relative magnitude of sources of mercury are to the respective water bodies. It would be helpful to include a table listing the sources of mercury to each of the applicable water bodies, and the current (or the pre-Gammonini Mine clean-up) magnitude of the sources. We understand that estimating the magnitude of some sources may be quite difficult. Sources should be in the same units for comparison purposes. The "background" source category may be broken into its respective components for clarity: air deposition and naturally occurring mercury in the soils; or at least identified throughout the document as containing both air deposition and background soil sources of mercury.

4. Daily Expression of TMDLs: We understand and agree with staff that this specific TMDL and allocations may be better represented as concentration-based, as opposed to mass-based. The fact-specific circumstances do not lend themselves easily to a mass based approach. In accordance with EPA's draft national guidance issue July 11, 2006 concerning the expression of TMDLs in daily terms, we request that you clarify in the amendment that the concentration-based TMDLs are expressed in terms of daily or average daily concentrations.

5. Inclusion of Wasteload Allocations: We also acknowledge that currently, allocations in this TMDL are load allocations; no waste load allocations are included at this time. The TMDL should be clarified to indicate that the wasteload allocations are zero as there are no NPDES-permitted discharges in the project area.



MARIN MUNICIPAL WATER DISTRICT

220 Nellen Avenue Corte Madera CA 94925-1169
www.marinwater.org

September 18, 2006

Ms. Jill Marshall
San Francisco Bay
Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Re: Total Maximum Daily Load for Mercury in Walker Creek

Dear Ms. Marshall:

Thank you for the opportunity to provide comments on the proposed Basin Plan Amendment and Total Maximum Daily Load (TMDL) for Mercury in Walker Creek. The Marin Municipal Water District supports the Regional Board's efforts to protect and restore the beneficial uses and water quality in waterbodies in the Bay Area. We applaud the work the Board has sponsored in the Walker Creek watershed, to reduce the runoff of mercury from the Gambonini Mine, and support the ongoing efforts to prevent additional mercury contamination of Walker Creek.

We have the following comments on the proposals related to Soulajule Reservoir.

Sources

Historical information exists to indicate that soil and rock were dug and removed from the Arroyo Sausal Creek watershed for the purposes of mercury extraction. No mercury mine sites or tailings piles exist on Marin Municipal Water District (MMWD) property above the water level in Soulajule Reservoir, and consequently, MMWD does not have (nor is it required to have) an industrial stormwater discharge permit for any mining operations. It appears that mercury in the tissue of various species that have been sampled is generated by leaching of mercury from various geologic formations that drain into or underlie Soulajule Reservoir. This conclusion is consistent with observations of fish tissue concentrations of mercury in other Bay Area reservoirs in Marin, Alameda, Contra Costa and Santa Clara County, all of which exceed the 0.3 ppm wet weight screening value. Mercury is a commonly-occurring element in various geologic strata that are pervasive in the San Francisco Bay Area and in Northern California. Given these conditions, the presence of mercury in top predators at concentrations higher than the screening value is not unexpected – indeed, the typical concentration of mercury in top predators for fish species in many parts of the world, including in commercially-sold fish in the United States, is higher than the screening value.

Load Allocation

The load allocations for mercury in sediment are inconsistent. The load allocation for Gambonini Mine is 5.0 mg/kg, the load allocation for reaches of Walker Creek downstream of Gambonini Mine and Soulajule Reservoir is 0.5 mg/kg, and the load allocation for water passing through Soulajule dam is 0.05 mg/kg. Given that mercury in sediment in Soulajule Reservoir is from sources similar to those that affect the downstream reaches, the allocation for Soulajule Reservoir releases should be at least 0.5 mg/kg. Furthermore, there are no anthropogenic discharges of mercury into Soulajule Reservoir, so the distinction between it and downstream reaches of Walker Creek is unnecessary.

Implementation Measures

MMWD supports the proposed implementation measures for Walker Creek, which include measures for reducing runoff and sedimentation from projects regulated under Section 401 of the Clean Water Act, inclusion of discharge reduction measures in waste discharge requirements and compliance with Marin County's creek permit program. MMWD is also willing to consider augmenting the monitoring data for mercury levels in fish tissue and the water column in Soulajule Reservoir and waters immediately downstream of the reservoir. This information will help to refine the fish consumption advisory information that has been provided by the Office of Health Hazard Assessment and has been publicized by MMWD and other reservoir managers.

We are concerned about the reference to implementation of methylmercury production controls to attain in-reservoir and downstream TMDL targets. We know of no measures that would reduce the leaching of mercury from natural mineral deposits and its uptake into the resident biota, other than eliminating the mercury-laden soil, eliminating the presence of water, or eliminating fish and other biota. The Regional Board staff report proposes a variant of one of these options, in its reference to the elimination of the reservoir. However, this reservoir is a critical element of MMWD's drinking water supply, and is fully permitted with an appropriate water right for this purpose. It is unclear whether or not it would even be possible to eliminate mercury from the soils that surround and underlie the reservoir, and we presume that elimination of the biota in the reservoir and downstream is not an option.

MMWD currently operates two other reservoirs that have fish with concentrations of mercury in their tissue that exceed the screening level, namely Nicasio and Bon Tempe Reservoirs. Nicasio Reservoir is surrounded by grazing land, and is thus subjected to nutrient input from cattle, in addition to the other sources of wildlife, atmospheric deposition, runoff from vegetated hillsides, etc. Bon Tempe Reservoir is surrounded by wilderness and receives nutrient inputs from sources typical of that land use. Both reservoirs are aerated to minimize the volume of water that is anaerobic to prevent taste and odor problems for drinking water that is produced from those reservoirs. Soulajule Reservoir is not aerated, because it is not cost-effective to do so, for the purposes of

producing drinking water for MMWD customers. Even if it were, we do not anticipate that fish tissue concentrations of mercury would be lower than those of Bon Tempe or Nicasio Reservoirs. Even with the aeration that occurs in these reservoirs, mercury concentrations in fish tissue are above the screening value, and are within the range of concentrations found in the following Bay Area reservoirs:

Alameda County: Del Valle Reservoir, Lake Chabot, Shadow Cliffs Reservoir

Contra Costa County: San Pablo Reservoir, Lafayette Reservoir

Santa Clara County: Steven's Creek Reservoir, Lafayette Reservoir

MMWD is interested in reducing the impact of mercury on aquatic organisms in the Walker Creek drainage, and the impact of the bioaccumulation of this mercury on birds and humans who consume these organisms. However, inclusion of a reference to methylmercury production controls for MMWD to implement pursuant to a TMDL is not appropriate, as MMWD is not a discharger of waste to Soulajule Reservoir or to Walker Creek and is not subject to an NPDES permit or waste discharge requirements. As noted above, we recommend that this element of the implementation plan be eliminated and the references to measures to reduce mercury loading in Soulajule Reservoir be merged with those of the downstream depositional areas, as the sources and control mechanisms are the same for both.

Thank you again for the opportunity to provide comments on the proposed Basin Plan Amendment and TMDL. We appreciate the challenges that the Regional Board faces to develop a program that will protect all of the beneficial uses of Walker Creek. This especially true when it comes to addressing the impacts of naturally-occurring and pervasive contaminants such as mercury. We are happy to work with the Regional Board to develop further information on the occurrence of mercury contamination in the Walker Creek drainage, and to identify cost-effective strategies that will meet the Board's water quality objectives.

Sincerely,



Paul Helliker
General Manager