

**STATE WATER RESOURCES CONTROL BOARD  
BOARD MEETING SESSION--DIVISION OF WATER QUALITY  
JULY 15, 2008**

**ITEM 11**

**SUBJECT**

CONSIDERATION OF A RESOLUTION APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY REGION (BASIN PLAN) AMENDING MERCURY WATER QUALITY OBJECTIVES IN WALKER CREEK AND SOULAJULE RESERVOIR AND THEIR TRIBUTARIES AND ESTABLISHING A TOTAL MAXIMUM DAILY LOAD AND IMPLEMENTATION PLAN TO REDUCE MERCURY IN THE WALKER CREEK WATERSHED

**DISCUSSION**

On January 23, 2007, the San Francisco Bay Regional Water Quality Control Board (San Francisco Bay Water Board) adopted Resolution No. R2-2007-0010 ([Attachment I](#)) amending the Basin Plan by establishing new methylmercury water quality objectives and vacating an existing mercury objective for Walker Creek and Soulajule Reservoir and their tributaries, and establishing a Total Maximum Daily Load (TMDL) and implementation plan to reduce mercury in the Walker Creek Watershed. Walker Creek and the Soulajule Reservoir are both listed on the federal Clean Water Act (CWA) 303(d) list as not meeting water quality standards due to elevated levels of mercury. The sources of mercury are historic mercury mines, depositional sediments from historic mining, and natural background. Walker Creek, located in western Marin County, California, is a 21-kilometer stream that flows through a historic mercury mining district and into Tomales Bay.

Because Walker Creek and Soulajule Reservoir are listed as not meeting water quality standards, CWA section 303(d) requires that a TMDL be established. A TMDL specifies load allocations for nonpoint sources and wasteload allocations for point sources that, when implemented, are expected to result in attainment of applicable water quality standards. State law requires an implementation plan and schedule to ensure that the TMDL is achieved. The TMDL addresses the mercury impairment and ensures that water quality standards will be achieved.

The beneficial uses most sensitive to mercury impairment in Walker Creek are the freshwater habitats of cold water species, preservation of rare and endangered species, fish spawning habitat, and wildlife habitat. In Soulajule Reservoir, the water contact recreation beneficial use is impaired due to high levels of mercury in sport fish typically consumed by humans. The amendment establishes site-specific numeric water quality objectives for methylmercury in Walker Creek, Soulajule Reservoir, and all tributary waters; a specific timeframe for compliance with objectives and allocations; the necessary elements of a TMDL; and an implementation framework for ensuring compliance.

## **Water Quality Objectives**

The amendment establishes two site-specific numeric water quality objectives for methylmercury, expressed as fish tissue objectives in Walker Creek, Soulajule Reservoir, and all tributary waters. These fish tissue objectives reflect current scientific information and the latest U.S. Environmental Protection Agency (U.S. EPA) and U.S. Fish and Wildlife Service (USFWS) guidance and were calculated using a method recommended by USFWS. This amendment also vacates the four-day average mercury water column water quality objective for Walker Creek, Soulajule Reservoir, and all tributary waters replacing it with the new fish tissue objectives. The existing one-hour average water column mercury objective continues to apply.

## **TMDL Targets and Allocations**

The amendment establishes targets, the loading capacity, wasteload allocation, and load allocations for mercury in Walker Creek, Soulajule Reservoir, and all tributary waters. The four water quality targets are all expressed as total mercury and set equal to, or more stringent than, either existing or proposed water quality objectives. Two of the targets, designed to protect wildlife, are set to be more stringent than the methylmercury fish tissue objectives in this amendment, because the targets are expressed as total mercury. The third target, designed to protect aquatic organisms, is set equal to the existing one-hour average water quality objective for mercury concentrations in the water column. The fourth target is designed for the protection of humans who consume Soulajule Reservoir fish and individuals who may potentially consume Walker Creek fish in the future. The fourth target is set equal to the federally-adopted water column mercury concentration in the California Toxics Rule.

The allocations are assigned to four sources of mercury in the Walker Creek Watershed. The Gambonini Mine site, an abandoned mercury mine, is assigned the wasteload allocation of 0.5 milligrams (mg) total mercury per kilogram (kg) suspended sediment. The Soulajule Watershed and Reservoir, which contains two abandoned mercury mines, are assigned the wasteload allocation of 0.04 nanograms (ng) dissolved methylmercury per liter water and 0.5 mg total mercury per kg suspended sediment. The downstream depositional features<sup>1</sup> are assigned a load allocation of 0.5 mg total mercury per kg suspended sediment. Background<sup>2</sup> is given a load allocation of 0.2 mg total mercury per kg suspended sediment. There is an implicit margin of safety through dilution by clean sediments downstream of the mine sites, as well as setting the measurement of the targets in total mercury rather than in methylmercury. The net effect of these clean sediments is that the mercury laden sediments from the mine will continue to be diluted in the down stream reaches of Walker Creek. Expressing the targets in total mercury may provide an additional margin of safety because methylmercury could be as low as 83 percent of the total mercury. Therefore, the additional margin of safety could be as high as 17 percent.

## **Implementation**

Implementation actions are designed to build upon previous and ongoing efforts to reduce mercury loads in the Walker Creek Watershed. Compliance with the TMDL targets and allocations will be determined by demonstrating compliance with specified implementation

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<sup>1</sup>Applies to sediment released from creek beds, banks, and floodplains downstream of the Gambonini Mine and Soulajule Reservoir.

<sup>2</sup>The background allocation applies to the areas in the Walker Creek Watershed outside of the influence of the Gambonini Mine site or Soulajule Reservoir.

measures and any applicable waste discharge requirements or waiver of waste discharge requirements. Implementation actions are organized by the mercury sources and the responsible party(ies) considered appropriate to implement TMDL actions with the given completion date for those actions (See Table 7-y, Page 9, of Attachment II<sup>3</sup>).

## **Monitoring**

The TMDL includes three types of monitoring: water quality, fish tissue concentrations, and implementation actions. The amendment contains locations for baseline water quality monitoring data that will continue to be monitored for suspended particulate, methyl- and total mercury concentrations during dry and wet seasons. Fish tissue mercury concentrations will be monitored to aid in understanding mercury in the food web and to assess progress towards attaining the wildlife and human health targets.

Monitoring of the implementation actions ensures improvement is being made; addresses any uncertainty in various aspects of the TMDL development; ensures implementation measures are being carried out; and guarantees that the TMDL remains effective, given changes that may occur in the watershed after TMDL development.

Five years after adoption of the TMDL, the San Francisco Bay Water Board will evaluate monitoring results and assess progress made towards attaining targets and load allocations. Beginning in 2012 and approximately every five years thereafter, the San Francisco Bay Water Board will evaluate site specific, sub-watershed-specific, and watershed-wide compliance with the specified implementation measures.

## **Cost Estimate: Agricultural Water Quality Control Program**

San Francisco Bay Water Board staff determined that all downstream depositional areas could be considered grazing lands. As a result, the San Francisco Bay Water Board estimated costs for reducing mercury discharges and methylmercury production on grazing lands in a range between \$1.5 to \$2.5 million over a ten-year period. This range of costs is associated with alternative methods of reducing sediment discharges and enhancing habitat conditions on Walker Creek and its tributaries.

## **Executive Officer Corrections**

During review of the Basin Plan amendment, San Francisco Bay Water Board staff found that it was necessary to make several minor, non-substantive corrections to the language for clarity and consistency. San Francisco Bay Water Board Resolution No. R2-2007-0010, adopted on January 23, 2007, allows its Executive Officer to make such corrections to the amendment language as needed. The Executive Officer made the corrections in a memorandum dated April 3, 2008 ([Attachment II](#)). The memorandum includes the underline/strikeout version of the Basin Plan amendment showing these non-substantive corrections. The changes include corrections of typographical errors in the water quality objectives so that they specify the standards as methylmercury in fish tissue.

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<sup>3</sup> Attachment II: The memorandum itself has 4 attachments: Attachment 1 is the basin plan amendment language with the Executive Officer corrections shown in double underline/strikeout; Attachment 2 is the final revised basin plan amendment language in single underline/strikeout; Amendment 3 is the memo from Dyan Whyte to Stephen Blum; and Attachment 4 is the memo from Jill Marshall to Bruce Wolfe.

## **POLICY ISSUE**

Should the State Water Resources Control Board (State Water Board) approve the amendment to the Basin Plan to: (1) establish new methylmercury water quality objectives in Walker Creek and Soulajule Reservoir and their tributaries, (2) vacate an existing objective for Walker Creek and Soulajule Reservoir and their tributaries, and (3) establish a TMDL and implementation plan to reduce mercury in the Walker Creek Watershed?

## **FISCAL IMPACT**

San Francisco Bay Water Board and State Water Board staff work associated with or resulting from this action will be addressed with existing and future budgeted resources.

## **REGIONAL WATER BOARD IMPACT**

Yes, approval of this resolution will amend the San Francisco Bay Water Board's Basin Plan.

## **STAFF RECOMMENDATION**

That the State Water Board:

1. Approves the amendment to the Basin Plan adopted under San Francisco Bay Water Board Resolution No. R2-2007-0010.
2. Authorizes the Executive Director or designee to submit the amendment adopted under San Francisco Bay Water Board Resolution No. R2-2007-0010, as approved, and the administrative record for this action to the Office of Administrative Law and the TMDL and water quality objectives to U.S. EPA for approval.

# DRAFT

## STATE WATER RESOURCES CONTROL BOARD RESOLUTION NO. 2008-

APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY REGION (BASIN PLAN) AMENDING MERCURY WATER QUALITY OBJECTIVES IN WALKER CREEK AND SOULAJULE RESERVOIR AND THEIR TRIBUTARIES AND ESTABLISHING A TOTAL MAXIMUM DAILY LOAD AND IMPLEMENTATION PLAN TO REDUCE MERCURY IN THE WALKER CREEK WATERSHED

### WHEREAS:

1. The San Francisco Bay Regional Water Quality Control Board (San Francisco Bay Water Board) adopted a revised Basin Plan under [Resolution No. R2-2005-0062](#) on May 22, 2002 which was approved by the State Water Resources Control Board (State Water Board) on October 17, 2002 and by the Office of Administrative Law (OAL) on December 7, 2002.
2. On January 23, 2007, the San Francisco Bay Water Board adopted Resolution No. R2-2007-0010 ([Attachment I](#)) amending the Basin Plan to: (1) establish new mercury water quality objectives, (2) vacate an existing objective for Walker Creek and Soulajule Reservoir and their tributaries, and (3) establish a Total Maximum Daily Load (TMDL) and implementation plan to reduce mercury in the Walker Creek Watershed.
3. San Francisco Bay Water Board staff determined that minor, non-substantive changes to the language of the Basin Plan amendment were necessary to correct minor clerical errors, to improve clarity, and to ensure that the amendment is consistent with the Basin Plan update adopted under Resolution No. R2-2007-0010. The San Francisco Bay Water Board's Executive Officer made these minor changes in a memorandum dated April 3, 2008 ([Attachment II](#)<sup>1</sup>).
4. The process of basin planning has been certified by the Secretary for Resources as exempt from the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code section 21000 et seq.) to prepare an Environmental Impact Report or Negative Declaration. The Basin Plan amendment package includes a Staff Report, an Environmental Checklist, a response to comments, an assessment of the potential environmental impacts of the Basin Plan amendment, and a discussion of alternatives. The San Francisco Bay Water Board found that the Basin Plan amendment, Environmental Checklist, Staff Report, and documentation serve as a substitute environmental document under the State Water Board's certified regulatory program and complies with the requirements of the State Water Board's certified regulatory CEQA process, as set forth in the California Code of Regulations, Title 23, section 3775 et seq.

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## **D R A F T**

5. The rescission of the four-day average total mercury water quality objective and the adoption of two fish tissue methylmercury objectives is not anticipated to lower water quality because the new objectives are more stringent and based on more current scientific understanding of mercury bioaccumulation. The TMDL implementation plan is designed to attain the existing Basin Plan narrative water quality objective for bioaccumulation and the two Basin Plan fish tissue water quality objectives for methylmercury. Therefore, because the San Francisco Bay Water Board's action will maintain the level of water quality necessary for the protection of the existing uses, the action is consistent with state and federal antidegradation requirements.
6. The State Water Board finds that the Basin Plan amendment is in conformance with Water Code section 13240, which specifies that Regional Water Quality Control Board to establish Water Quality Objectives, and section 13242, which requires a program of implementation of water quality objectives. The State Water Board also finds that the TMDL as reflected in the Basin Plan amendment is consistent with the requirements of federal Clean Water Act section 303(d).
7. A Basin Plan amendment does not become effective until approved by the State Water Board and until the regulatory provisions are approved by OAL. The TMDL and water quality objectives must also receive approval from the U.S. Environmental Protection Agency (U.S. EPA).

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves the amendment to the Basin Plan adopted under San Francisco Bay Water Board Resolution No. R2-2007-0010.
2. Authorizes the Executive Director or designee to submit the amendment adopted under San Francisco Bay Water Board Resolution No. R2-2007-0010, as approved, and the administrative record for this action to OAL and the TMDL and water quality objectives to U.S. EPA for approval.

### **CERTIFICATION**

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on July 15, 2008.

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Jeanine Townsend  
Clerk to the Board