



10545 Armstrong Avenue
Foothill, CA 95655
Tele: [916] 876-6000
Fax: [916] 876-6160
Website: www.srbsd.com

April 18, 2008
Mr. Paul Betancourt
Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670

Board of Directors
Representing:

- County of Sacramento
- County of Yolo
- City of Citrus Heights
- City of Elk Grove
- City of Folsom
- City of Rancho Cordova
- City of Sacramento
- City of West Sacramento

Mary K. Snyder
District Engineer
Stan R. Dean
Plant Manager
Wendell H. Kido
District Manager
Marcia Maurer
Chief Financial Officer

Dear Mr. Betancourt:

Thank you for meeting with us in Fresno (April 16th, 2008) to discuss the Delta Mercury TMDL Basin Plan Amendment. As per our discussion, the District believes that the following modifications to the TMDL will make it more effective:

1. Retain fish tissue goals and focus on fish monitoring, including small fish,
2. Remove water column methylmercury goals,
3. Create total mercury allocations (*without total mercury, you can't have methylmercury*),
4. Remove methylmercury concentration limits (*this is a barrier to total mercury reductions that could be achieved through offsets*),
5. Allow mercury offset projects to be implemented as a viable compliance option in the near term,
6. Retain methylmercury studies, and
7. Provide overall guidance and direction on future studies of methylmercury management effectiveness through use of an expert peer review panel.

With respect to offsets, the District submitted a feasibility study to the Regional Board staff in 2005 outlining viable pilot projects and issues associated with legal liability and credit ratios. In general, we need this Basin Plan Amendment to:

- Provide a defensible offset credit ratio that is proportional to a discharger's contribution to the impairment, and
- Provide durability for the credits earned from implementing a pilot offset project (*to work like a bank account, and not expire in 5 years*).

Consistent with U.S. EPA Trading Policy, the District has demonstrated through the implementation of a bioaccumulation study that its discharge does not create a "hot spot" and a pilot offset project is a viable compliance option. The executive summary of that study, as well as the executive summary of the parent Offset Feasibility Study, are attached for your reference.

Technology in balance with nature

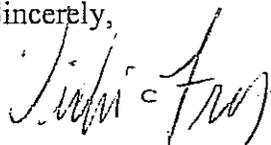
Mr. Paul Betancourt
April 18, 2007
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As we stated in our comment letter of April 9th, 2008, the Mercury TMDL MUST recognize the responsibility of the State of California for the legacy mercury discharges, and assign a load reduction to, perhaps, the State Lands Commission. Unless this Mercury TMDL names the State directly, the politicians will not do much, if anything, to provide necessary funding to reduce this massive source of mercury loading to the Delta. By naming the State Lands Commission as a responsible party, then perhaps Prop 84 funds and other sources of state financial assistance can be made available to participate.

In closing, any offset program must include the over-riding principle that offsets are proportional to the discharger's contribution to the impairment, as stated by the SWRCB in Resolution 2005-0060 (full quote provided below for your reference). The District is committed to being a collaborative partner with the Regional Board in addressing the mercury impairment issues and believes offsets are a viable means to help address the impairment. However, for that collaborative partnership to be successful, it requires close communication, give-and-take, and a true commitment to find creative solutions to a very difficult and complex problem through an effective stakeholder process. We believe that Board Member oversight and/or facilitation in a future stakeholder collaboration effort will help to ensure real and meaningful progress occurs.

We appreciate your consideration of our concerns.

Sincerely,

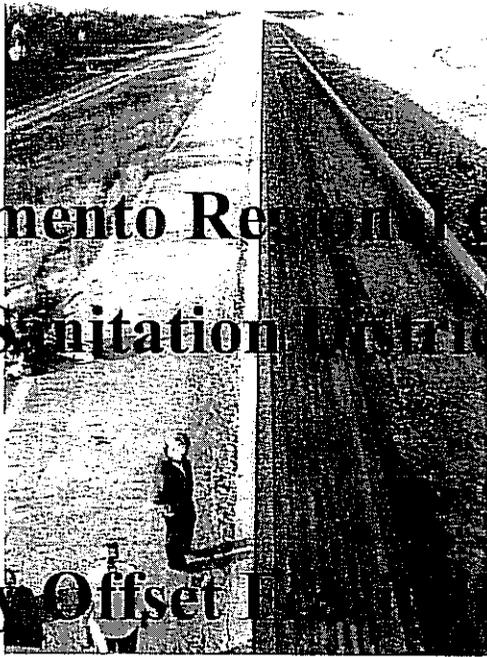
 for Wendell Kido
Wendell Kido, Chief
Policy and Planning

Attachments (2)

cc: Central Valley Regional Board Members
Central Valley Board Executive Officer, Pamela Creedon
Mary Snyder, SRCSD District Engineer

Reference STATE WATER BOARD RESOLUTION NO. 2005-0060, item 8. (underline added for emphasis)

"Directs State Water Board staff to develop a State policy for water quality control that establishes alternative methods to allow dischargers to meet mercury effluent limitations that are directed to preventing contributions to excursions above water quality standards. The policy shall allow dischargers to perform other activities aside from eliminating more mercury from their discharges than they would be required to remove by applicable technology-based effluent limitations. This policy shall require more rigorous activities for: (a) dischargers not in compliance with their wasteload allocations and/or other applicable criteria or objectives; and (b) dischargers seeking to increase their mercury load. The policy shall include provisions that recognize the efforts of those dischargers who are meeting or outperforming their wasteload allocations, and that recognize the expenditures made by dischargers who are employing higher treatment levels. The policy shall not include requirements that would leverage existing point source discharges as a means of forcing dischargers to bear more than their fair share of responsibility for causing or contributing to any violation of water quality standards. In this context "fair share" shall refer to the dischargers' proportional contribution to the impairment. The policy shall also include provisions that prevent localized disparate impacts."



**Sacramento Regional County
Sanitation District**

Mercury Offset Responsibility Study



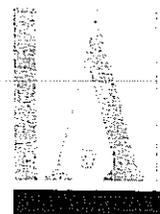
Report of Findings



March 2005



**LARRY
WALKER**



ASSOCIATES

- Sulphur Creek Floodplain Stabilization and Water Treatment – Stabilize or contain erodible floodplain sediments in an area contaminated by abandoned mercury mines and hydrothermal springs, and/or manage mercury discharges from this area using a semi-passive treatment system.

The second phase of the MLR project evaluation process called for estimating MLR credits, approximating implementation costs, and identifying legal liability issues. The following offset ratios are applied to the MLR estimates to determine the number of pounds of credit that each MLR project would receive.

- Uncertainty – This ratio accounts for uncertainty or variance in the load reduction estimates for a MLR project. It provides reasonable confidence that at least the targeted (mean estimate) reduction would be achieved if the project is implemented under the proposed crediting scheme.
- Location – This ratio accounts for differences in equivalency between mercury loads at SRWTP’s outfall and at the MLR project site. It is assumed that equivalency is measured at/in the Delta, downstream of the Cache Creek Settling Basin.
- Bioavailability – This ratio accounts for potential differences in bioavailability among sources of mercury.

In this study, implementation costs for creditable activities are compared based on a 20-year credit period. Although many legal liability issues were raised and discussed during this study, important legal liability issues remain unresolved. SRCSD believes resolution of two immediate issues are highly significant to future evaluation or development of any offset: (1) the availability of credit for each short-listed MLR project as affected by TMDL wasteload allocations; and (2) the potential regulatory mechanisms such as NPDES permits or waste discharge requirement that could be required at the offset project site.

Based on the available information, the Cache Creek Settling Basin Improvement and Maintenance project was identified as the most likely feasible offset project. A visual assessment of the three short-listed MLR projects is provided in Table ES-1.

A complimentary research project was selected to address the most relevant uncertainty in current understanding of relative bioavailability between treated municipal wastewater and other mercury sources. The study work plan was framed by three management questions:

- Management Question 1 – Does mercury discharged from SRWTP cause a localized bioaccumulation hot spot?
- Management Question 2 – How much of the mercury in Delta fish comes from SRWTP’s discharges, and how would that amount change in response to foreseeable increases or decreases in SRWTP’s mercury load to the Delta, or other operational changes at SRWTP?
- Management Question 3 – What are the relative effects of mercury loads from various sources in the watershed and from SRWTP’s effluent on the concentration of mercury in fish that people and wildlife eat?

- Existence of a significant localized effect caused by SRWTP effluent could obviate the approval of an offset project that would allow that to continue. The bioavailability study would determine if such a localized effect exists. Feasibility of the program would be contingent upon a determination of no significant localized effect.
- Regulators have been unable to quantify a MLR credit for research or outreach. Without credit, there would be no motivation to SRCSD to fund such activities.

The program implementation schedule in Section 7 accounts for constraints imposed by the MLR project's requirements for inter-agency collaboration and more detailed pre-project evaluations and design.

March 2008

Final Report

***Localized Mercury
Bioaccumulation Study***

Prepared for:

Sacramento Regional County Sanitation District

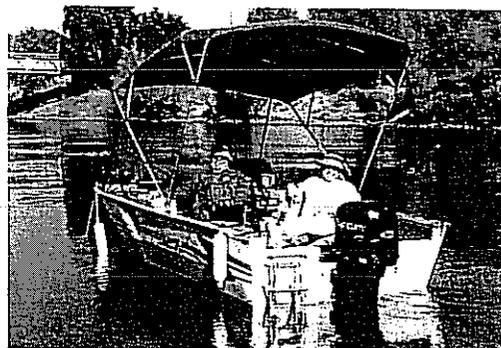
Prepared by:

Larry Walker Associates, in association with:

Applied Marine Sciences

Studio Geochimica

University of California Davis



bioaccumulation or inherent risk to consumers. Therefore, it was important to determine whether there is a quantifiable, detrimental, localized mercury bioaccumulation effect in the lower Sacramento River caused by effluent discharged from the SRWTP outfall. The study described in this report was intended to address this question.

Study Components

This study was funded by SRCSD and conducted by a project team consisting of consultants, university researchers, and SRCSD staff. In addition, a Technical Advisory Committee of national experts was assembled during preparation of the work plan to provide independent review and comment on the work plan, its implementation, and the findings in this report.

Monitoring stations were established both upstream and downstream of the outfall, and within the effluent plume (**Figure ES-1**). Monitoring of water, sediments, and biota (the Asiatic clam, *Corbicula fluminea*, and fish) was conducted monthly during a period of low flow in the river (July – December 2006) on the assumption that any differences in mercury concentrations in water, sediments, and biota would be most pronounced during that period, and therefore any effects of SRWTP effluent on the river would be most detectable. Two stations were upstream of the outfall (GB and R-1); one station was within the outfall's mixing zone (R-2b) and two more were farther downstream (R-3 and RM44).

Fish sampling focused on small biosentinel species, which have been shown to provide strong site-specific and time-specific measures of relative methylmercury exposure. Key fish species studied were the Mississippi silverside (*Menidia audens*), prickly sculpin (*Cottus asper*), and juvenile black bass (*Micropterus salmoides*, *Micropterus punctulatus*). Sampling was conducted in the fall season of 2005 and 2006 at Garcia Bend and River Mile 44, to "bookend" the study reach. In addition, several regional sites as far as 150 miles upstream and throughout the Delta downstream were sampled.

A portion of this study included community education, fish consumption evaluations, and evaluation of the effectiveness of methods of communicating risk from eating fish from the Delta. Anglers on the Sacramento River between River Miles 40 and 50, 4 miles upstream and 6 miles downstream of the SRWTP outfall, were surveyed roughly monthly between June 2006 and June 2007. The project team communicated with fish-consumers about mercury contamination during angler surveys and in meetings with community-based organizations representing some of the groups identified in the surveys.

Clam Results

There was substantial variation among stations and times in the concentrations of methylmercury in both resident and transplanted clams. There was no consistent trend over the study period in methylmercury concentrations for resident clams at any station. For transplanted clams, tissue concentrations decreased during the study period at all stations except RM44.

Mean dry-weight methylmercury concentrations in transplanted clams were 11% higher downstream of the SRWTP outfall. Mean dry-weight methylmercury concentrations in resident clams were 13% higher downstream of the SRWTP outfall and were very similar in magnitude to those for resident clams. However, if station R-2b (within the effluent mixing zone) is removed from this analysis, the upstream reach and the downstream reach have identical mean concentrations of methylmercury, which indicates that the difference between upstream and downstream reaches was due exclusively to high concentrations at station R-2b. Results of

the longer-living prickly sculpin provided evidence to the contrary, exhibiting a *decrease* of about 10% from Garcia Bend to River Mile 44.

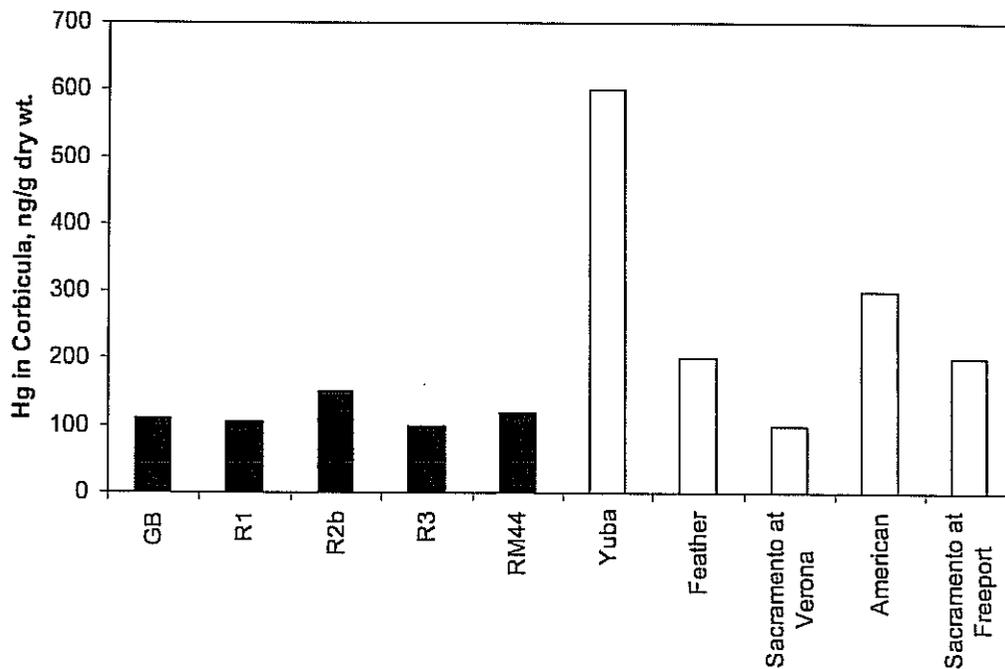


Figure ES-2. Comparison of mercury concentrations in resident *Corbicula* tissues measured in this study (black bars) with concentrations measured by USGS in 1995 as part of the National Water-Quality Assessment program (white bars).

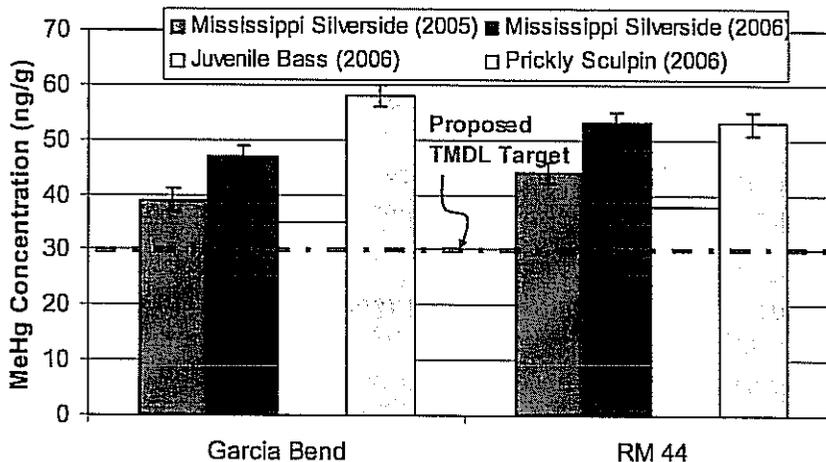


Figure ES-3. Average and standard error methylmercury concentrations in biosentinel fish upstream and downstream of the SRWTP outfall. The proposed TMDL target of 30 ng/g in fish < 50 mm long is shown.

By virtue of their excellent site fidelity and presence in good numbers at all of the extended sampling locations, prickly sculpin provided the strongest measure of relative exposure conditions in the Sacramento River, identifying sources farther upstream as the primary apparent

As many as half of the anglers and community members surveyed were somewhat informed about mercury levels in fish. However, there appears to be no correlation so far between anglers recalling advice about fish contamination and their reducing fish consumption. Thus, attention should be paid to convincing trusted community liaisons to communicate the information in order to increase the impact of the information on behavior.

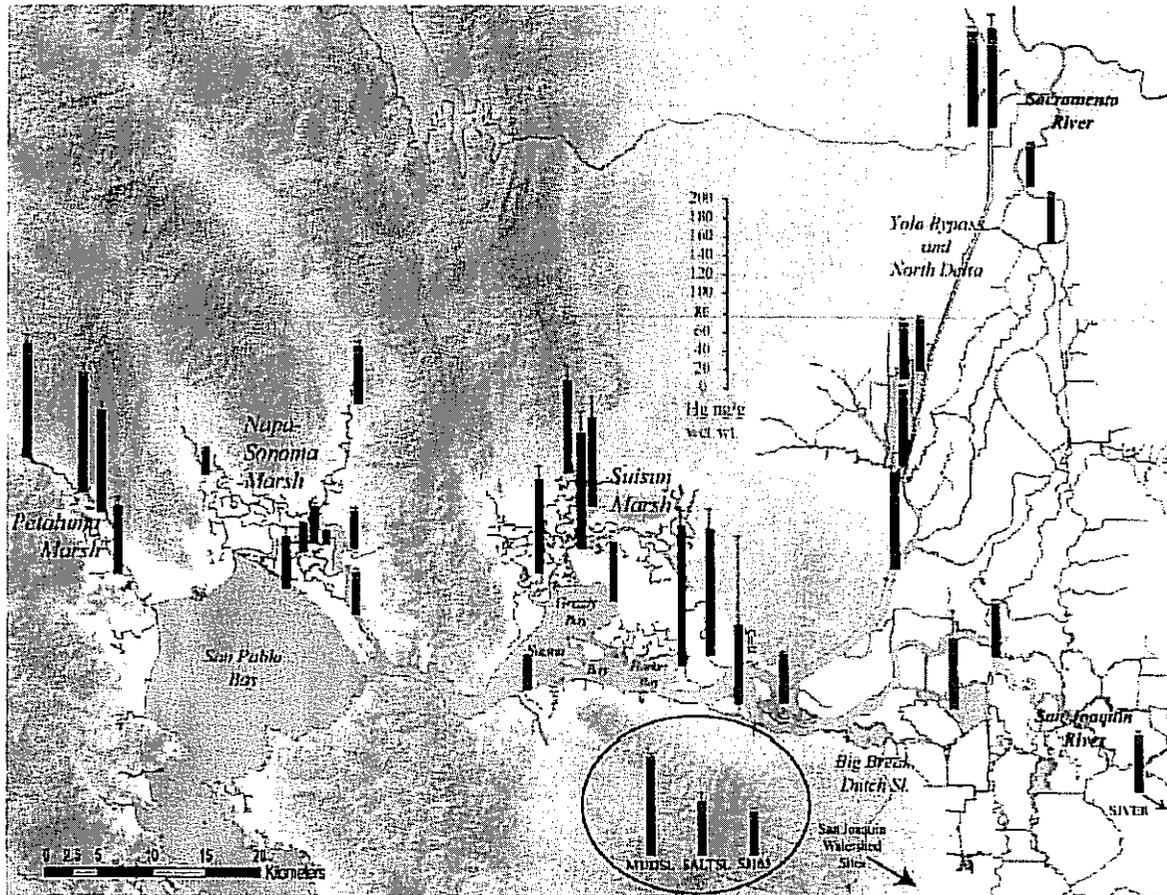


Figure ES-5. Fall 2006 map of silverside spatial mercury distribution. Copied with permission from Slotton et al. (2007).

Overall Conclusions

The null hypothesis used to define a hot spot in a technical sense is rejected by the data presented in this study: there was a measurable (i.e., statistically significant) effect of SRWTP effluent on most bioindicator organisms downstream of the outfall during low-flow river conditions that provide the least amount of dilution. But, the evidence of localized environmental risk is not so clear and convincing that a reasonable decision maker would conclude that some action must be taken locally.

The evidence presented in this report argues that an offset program, which would achieve greater overall reductions in mercury exposure than would an emphasis on continued reductions of mercury in the SRWTP discharge, is acceptable for addressing the regional problem of mercury levels in fish.