



Delta Tributaries Mercury Council

~ Meeting Minutes ~

Tuesday, 19 May 2009

12:30 p.m. – 4:15 p.m.

**California Dept. Fish & Game - Yolo Bypass Wildlife Area Headquarters
45211 County Rd 32B (Chiles Rd), Davis, CA 95618**

Facilitator: Stephen McCord, LWA

Meeting Minutes by: Stephen McCord, LWA

Attendees

In Person

Joel Herr, Systech Water Resources
Janis Cooke, CVRWQCB
, CVRWQCB
, SRCS
Greg Marquis, CA DOC
Cy Oggins, DOC
Dave Lawler, BLM – CASO
John Key, BLM – CASO
Peter Graus, Mother Load F.O. BLM
Wes Heim, Moss Landing Marine Labs
Jacob Fleck, USGS
John Rasmussen, UC Berkeley (retired)
Ivan Sturman, Ad-hoc AntiHg Committee

Chris Foe, CVRWQCB
Tim Stevens, CA DFG
, Blue Sky Water Technologies
Peter Halpin, Caltest
Becky Wood, ATS
, CVRWQCB
Sherri Norris, CA Indian Environmental Alliance
Bill Montes-Pak, CA Indian Environmental Alliance
, UC Davis
Shaun Ayers, UC Davis
Carrie Monohan, The Sierra Fund

Via Teleconference

Leah Wills
, Clean Water Action
, City of Vacaville

I. Introductions and Agenda Review

II. Project Updates

- USGS studies in Bear/Yuba—Fieldwork is completed, some lab work remains along with producing final reports.
- Miscellaneous studies in Yolo Bypass—funding was halted, yet reports are still being worked on and are due as internal drafts this summer; some additional work is being done now in seasonal wetlands
- BLM mine site clean ups—Projects are being planned in the Sierras and Cache/Putah watersheds
- State Board policy (offsets, MeHg criteria)— no progress (no staff assigned)

- AML Forum—next meeting is scheduled for June 3 at the State Lands Commission; contact for more information
- Delta Mercury TMDL—The new Delta TMDL website set up by CCP is <http://www.deltamehgtmdl.net>; the NPDES methylmercury/mercury discharge data report is available at http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/delta_hg/other_technical_reports/index.shtml
- 303(d) list of impaired waters—The revised list will be heard before the Regional Water Board on June 11. Mercury impairment listings increased from ~60 to ~100 with new data.
- Biosentinel monitoring—SFEI in the San Francisco Bay area has added a biosentinel fish monitoring element. Preliminary results highlight the South Bay as more contaminated. A separate project in Marsh Creek (base of Mt Diablo mine watershed)

III. Presentations

“Potential impact of suction dredging on mercury associated with hydraulic mining sediments at the S. Yuba River – Humbug Creek Delta” by Jacob Fleck (USGS)

The USGS collaborated with BLM and others to study mercury hotspots in Sierran rivers. This particular talk focused on sampling and analyses of river sediments around the mouth Humbug Creek in the South Yuba River, including experiments on the effects of suction dredge mining on mercury bioavailability.

Silt/clay particles (< 63 μm) had the highest THg and reactive Hg(II) concentrations. Concentrations in this fraction were highly variable at the site. The potential amount of mercury released by dredging various soil layer was estimated and found to vary by nearly 5 orders of magnitude, depending on dredge size and soil layer excavated. Total amounts were represented a significant (1-100%, depending on dredge size and water year) fraction of the total load measured in the South Yuba River.

Tank and lab experiments were conducted to evaluate the size fractions of sediment particles and their mercury reactivity. The tank experiment indicated that TSS and THg stay significantly elevated (>20X) in the tank following the dredging compared to original river water concentrations >2 days. Lab experiments indicated that the silt/clay mobilized by dredging are likely to increase both Hg reactivity and methylation in downstream environments under the right conditions.

“Yolo Bypass total mercury distribution as measured in bulk and sieved samples” by Wes Heim (Moss Landing Marine Lab)

Dr. Heim talked about mercury concentrations in sediment collected from the Yolo Bypass. He presented a brief background on floodplains, with some details specific to the Yolo Bypass floodplain. The Yolo Bypass is a complex flood management system built on a natural system. Today the Bypass is managed for multiple purposes. Sediment conditions are complicated by multiple discharges and mixed land uses.

The study had two main objectives, responding to these two questions:

- What are the concentration and distribution of inorganic mercury in the Yolo Bypass?
- Is the distribution of inorganic mercury consistent with discharge from Cache and Putah Creeks?

Sampling sites were selected in key sediment depositional zones and randomly as permitted (Conoway Ranch did not allow access). Samples were collected in 2007. Based on the data collected, the following conclusions have been drawn:

- Mercury concentrations did not exhibit a banding signal consistent with banded patterns of river discharges seen in aerial photos.
- Missing data in the inaccessible section is key to supporting hypothesis.
- High concentrations of mercury above Cache Creek may be historic deposits or the result of “backing up” of Yolo floodwaters.
- Sieving of samples addressed sand deposits in those samples.

The variability in distribution of total mercury levels may be used to prioritize restoration sites. Also, relatively high levels in the depositional zones of Cache and Putah Creeks encourage sediment load reduction efforts there.

“Contaminants in Fish from California Lakes and Reservoirs” by Jay Davis (SFEI)

The SWAMP sampled 152 lakes across the state (50 randomly; 102 for high popularity) for mercury and other contaminants in sport fish species, and has just released a report on this work. This first part of a five-year cycle sampled lakes throughout the state. The sampling design aimed to respond to three questions: What are the bioaccumulation conditions in CA lakes? Which lakes are candidates for 303(d) listing? Which lakes are candidates for additional sampling?

Results are summarized as follows:

- California now has one of the best datasets and is making substantial progress in defining the problem. While mercury used in mining appears to contribute to higher levels, results were not consistent.
- As in many other states, the problem is widespread.
- Mercury poses the greatest concern among the contaminants monitored. 85% of the lakes tested were above the lowest threshold for mercury. Dieldrin (an organo-chlorinated compound banned from use since the 1970s) was next highest at 21% of lakes exceeding the lowest threshold. Quantifying the severity of the problem depends on the consumption threshold selected.
- There is significant variation among lakes and among fish species. Lakes throughout the state had both high and low levels in various lakes.
- Data from this screening will be valuable in setting priorities for developing TMDLs and for OEHHA in developing safe eating guidelines

IV. Discussion Item: DTMC Future Funding

Stephen McCord explained that Sacramento River Watershed Program's funding for facilitating the DTMC has already run out. Facilitating the DTMC costs approximately \$20,000 per year to organize, prepare for, facilitate, and summarize four quarterly meetings; maintain the DTMC web site and listserv; and maintain regular communication with stakeholders. Additional efforts such as representing the DTMC in stakeholder meetings, supporting SRWP staff participation, and updating the Strategic Plan would be extra.

Participants provided several suggestions for funding, which are a combination of near- and long-term funds, and specific and general uses. Opportunities to look into (and contacts) including:

- 319 grant funds may be available to support the DTMC for a portion of some special projects (Erik Ringelberg)
- The Sierra Fund has funds for a Mining Toxics Workgroup, which addresses mercury in addition to arsenic, lead and asbestos. The DTMC could morph into this workgroup to address these other toxics. (Carrie Monohan, Izzy Martin)
- The Sacramento Regional County Sanitation District, which has been the sole financial supporter of the DTMC since early 2008, could cost share to continue the DTMC. The District has also committed to supporting the stakeholder efforts for developing the Delta mercury TMDL. (Lysa Voight)
- The Department of Water Resources' Integrated Regional Water Management Plan (IRWMP) program is funding several efforts in the Central Valley. The IRWMP in Plumas County was noted as having an element to address mercury contamination. Other IRWMPs such as for Yolo County may have similar elements that the DTMC could support.
- CADC(?) has a Mercury Forum that the DTMC could support (Carrie? Leah?)
- The CA Department of Fish & Game's Supplemental EIR development will incorporate discussions with stakeholders. The DTMC could participate as a technical sounding board throughout that project (Rick Humphries)
- Wallace Kuhl and Associates have already proposed a project for Muir/UCD looking at fish consumption and other environmental justice issues (surveys and signage on Putah and Cache Creeks), and a sampling and Best Management Practices test for Putah Creek with its Streamkeeper. The DTMC could participate in these projects. ()
- The DTMC would be a logical outgrowth of the Stakeholder Science group for the Delta Mercury TMDL.

Stephen will follow up on these suggestions and keep the DTMC informed through the listserv and individual contact.

V. SRWP Update

SRWP (like many other NGOs) has been severely impacted by the freeze on bond-funded projects. Although a budget deal has been reached, it will still take some time for things to get back to normal. Meanwhile, none of SRWP's direct contractors are working on projects and is working on a very part-time basis. Contact Mary Lee with any questions or concerns.

VI. Other Updates

- Ivan Sturman and John Rasmussen shared copies of a recent essay wherein they challenged the environmental community to lobby the Economic Stimulus Funds to allocate monies for Hg removal. The benefits would be two-fold: employment and the reduction of a health hazard. Their essay cites examples of removal methods and current federal funding of Hg removal. Their literature survey indicated that successful removal methodology is possible in many varied matrices. The Ad-Hoc Committee will continue to attend DTMC meetings and advocate more removal activity by wider distribution of their "Audacious Challenge". The "Challenge" has been revised to correct errors and reinforce their conclusions based on the fact that river transport of Hg-containing sediments to the ocean has been slowed by the diversion of flows from the natural velocities, and to compensate, removal of Hg from the upstream sources of Hg would decrease the time that the concentrations would be lowered in the food chain. The revised "Challenge" is dated June 2009; please discard previous versions.
- Sherri Norris of the California Indian Environmental Alliance shared information about the Alliance and the value of the DTMC and the Abandoned Land Mine Forum for finding new information to update their constituency. Alliance members are not often alerted to meetings and events, so they always appreciate extra efforts to communicate with them.

VII. Meeting Wrap-Up

The next meeting was not set. Future meetings will be determined pending some clarification on funding options.

Agenda items to consider for the next meeting include:

Item	Description / Desired Outcome	Lead
Presentation: Sutter Buttes project	Presentation and feedback for a proposed Sutter Bypass excavation project	Becky Wood (Teichert)
Presentation: Mercury in San Joaquin River Watershed fish	CALFED-funded monitoring data	Slotton
Discussion Item: DTMC Future	Identify potential funding source to continue DTMC	Stephen McCord (LWA)
Discussion Item: Special projects?	Discuss options for special projects that the DTMC could propose for short-term funding	Stephen McCord (LWA)
Presentation: MeHg in POTWs	Compilation and initial findings of MeHg effluent data for Central Valley and Bay Area POTWs	(CV Reg.Bd.); Richard Looker (SFB Reg.Bd.)
Mercury book	Present new book Diagnosis: Mercury	Jane Hightower [trying via UCD Muir Inst.]
BLM mine remediation projects	Overview of mercury mine remediation projects in Putah Cr watershed	Jim Rytuba and Roger Hothem (USGS)
Lake Chemistry Management	Using a Solar-Powered Circulator to control MeHg production in Guadalupe Reservoir	Dave Drury (Santa Clara Valley Water District)

Seasonal Wetland Management for MeHg control	BMP Development for Reducing Low Dissolved Oxygen and Methylmercury Production and Export from Diked Managed Seasonal Wetlands in Suisun Marsh: Overview and Preliminary Findings	Wes Heim (MLML); Stuart W. Siegel (Wetlands and Water Resources, Inc.)
Caged fish study	Study of contaminant biouptake by caged fish in San Francisco Bay area	Josh Ackerman (USGS)
Food chain effects on bioaccumulation	Paper for the Canadian journal of fisheries and aquatic science on the importance of the food chain on mercury bioaccumulation.	Robin Stewart
Hg in birds	Bird field studies	Colin Eagles-Smith (?)
Mercury removal technology	Proprietary technology to reduce mercury concentrations in waste streams	Bill Whiteside (Blue Sky Water Technologies, Inc.)
Hobbie-scale suction dredging permit program	SEIR project for CDFG on statewide general permit	Rick Humphries (SWRCB)
Methylation in situ studies	Pickle jar experiments and lake water experiments	Mark Stevenson (MLML)
Sediment coagulation studies	Twitchell Island low-dose coagulant experiments and effects on mercury discharges	Tamara Krause and Jacob Fleck (USGS)
Funding situation	Discuss situation with major state bond grant programs	Val Connor (SWAMP); (BDCP); Leah Wells (Prop. 84)
Mine remediation funding options	Seek funds and partners for a mine remediation project in project in the Cache/Putah watershed	Bob Schneider (Tuleyome); Greg Reller, BLM (Dave Lawler), Yolo Co staff, Rich Marovich, Carrie Monohan (Sierra report), TMDL staff, A-TR project staff, Wilbur Hot Springs owner