American River Watershed Mercury TMDL
Stakeholder Meeting

Meeting Summary

Meeting Date: March 17, 2011 (9:30 am – 12:30 pm)

Location: Central Valley Water Board
11020 Sun Center Drive, #200
Rancho Cordova

Attendees: See attached.

Agenda Items:

- Welcome, Introductions, and Agenda Review
- Strategies for estimating total mercury, methylmercury, and sediment sources loads in the American River watershed.
- Next Steps

Central Valley Water Board staff welcomed everyone, reviewed the purpose of the meeting and meeting logistics, and led a round of introductions of meeting participants.

Stephen Louie (Central Valley Water Board) stated that the April 13 meeting will not be a CEQA Scoping meeting. CEQA Scoping meetings need to be noticed at least 45 days in advance. The CEQA Scoping meeting will be scheduled for a later date. The April stakeholder meeting topics will include updates to the source analysis and brainstorming ideas for the implementation program.

Patrick Morris (Central Valley Water Board) gave an update on the State-wide mercury TMDL project, which is still in the planning stages. It is not known how the American River TMDL project will evolve as the State-wide project is developed. Currently, Central Valley Water Board staff is continuing the development of the American River TMDL project as planned. The State Water Board is planning on developing a State-wide water quality objective for mercury in fish tissue in about the same time frame as the State-wide mercury TMDL.

Michelle Wood and Sarah Gatzke (CVRWQCB) gave a slide presentation that provided:

- Source analysis background
- Land use analyses
- Methods used to estimate inorganic mercury, sediment, and methylmercury loads from a variety of sources

The PowerPoint presentation was shown in the meeting room and via web conference. The slide presentation is available on the web. Key topics discussed are summarized below.

<u>Background</u>

The source analysis is a key element of the development of a TMDL. The source analysis will attempt to identify sources and quantify load and concentrations of total and methyl- mercury

and sediment. For the most part, loads are estimated for source types or land cover types at a sub-watershed scale, and not for specific individual sources of mercury or sediment. Staff used GIS (Geographic Information Systems) to identify and quantify land cover types in the American River watershed. The source analysis employed data and loading rates from local and regional sources, as well as rates from the literature to estimate sources and loads.

Sources of Mercury and Sediment

Identified sources of inorganic mercury, methylmercury, and/or sediment to the American River watershed include for non-point sources: atmospheric deposition, mines, upland area erosion, dredge tailings, springs, bank erosion, suction dredging, open water habitat, and wetland habitat and for point sources: urban runoff and NPDES discharges. Another component of a source analysis is to identify the loss processes of mercury and sediment in the watershed. Identified loss processes include: sediment deposition, evasion, water diversions, photo-degradation, and uptake by biota. Loss process estimates will be described at a later time.

Source Load Estimates

The remainder of the presentation displayed the specific technical strategies used to estimate loads for total mercury, methylmercury, and sediment, which included using USEPA's REMSAD mercury deposition model and CALTRAN's runoff coefficients for estimating loads coming from air deposition, revised Universal Soil Loss Equation (RUSLE) for soil erosion estimates, GIS analyses for source locations including mines and springs, and mine loading rate estimates from Feather River, South Yuba River, and Deer Creek monitoring data. Please refer to the presentation slides for specific calculations and more information about data sources. Wherever possible, comparisons of multiple load estimate methods for the different mercury sources were evaluated. All load estimates are preliminary and will be updated as needed as monitoring results and new data are evaluated.

Load estimates that still need to be completed include mercury and methylmercury losses, and mercury loading from dredge tailings, bank erosion, and suction dredging.

Comments Regarding Load Estimate Strategies

1. GIS coverage information may need some validation, for example, the NWI database sometimes erroneously identifies WWTP facility ponds as open water. The final land use assessment should be qualified to identify and correct such possible errors.
2. CALTRAN's runoff coefficients were designed to estimate runoff from small scale projects and this may not be appropriate for large scale and watersheds.
3. Mercury does not behave like water; it is very sticky. We need to recognize that there's a lot of variability in how much mercury may run off (2-60%).
4. Please update slide figures to reflect that PG&E no longer owns the Geysers.
5. Since many entities are currently undergoing FERC re-licensing, there may be hydrologic and sediment models that are available to verify or assist in loading estimates. Reservoir operators will likely have estimates of sedimentation in reservoirs.
6. The American River watershed includes many inter- and intra- watershed transfer of water, and these should be included in the load estimates.
7. The modeled value that indicated forested areas lose 1.4 tons/acre/year of soil may be an overestimate. The Tahoe National Forest office has other estimates of soil loss from coniferous forest and maps of mass wasting and disturbed areas within the Tahoe

National Forest. RUSLE (Revised Universal Soil Loss Equation) typically underestimates mass wasting.

8. Caution should be taken when using mercury data sampled from Coast Range springs to estimate mercury loads from Sierra springs because the geological structure of the springs are different. Use of mercury concentration data collected for Coast Range and Mill Creek springs to estimate mercury loads from American River Watershed springs could result in over-estimates. Community water systems that use water from springs might have data for constituents in spring water.
9. If it is shown that mercury from air deposition is more available for methylation than mercury in stream beds or soil, the greater methylation potential should be taken into account in the source estimates.
10. Regarding implementation, erosion control best management practices may not stop the movement of very fine particles, which tend to be enriched in mercury in comparison to large particles.

Stakeholders are encouraged to submit data, land cover information, soil loss estimates and other pertinent information to the Central Valley Water Board staff for consideration in revising the source analysis.

Next Steps:

- The April 17 meeting topics will include updates for source analyses and possible implementation actions.

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Attendees

Ben Ransom, PCWA
Bill Templin,* CA DWR
Bonnie Van Pelt,* USBR
Brad Gacke, SMUD
Carol Atkins, CA DFG
Carol Kennedy,* Tahoe National Forest
Carrie Monohan,* The Sierra Fund
Charlie Alpers, USGS
Dan Corcoran, EID
Diane Fleck,* U.S. Environmental Protection Agency
Drea Traeumer,* EM Hydrology
Fred Nelson, Self
Gene Lee, USBR
Janis Cooke, Central Valley Water Board
Justin Wood,* Friends of Deer Creek
Kim Morales, El Dorado National Forest
Lauren Dailey,* CA DFG
Leslie Case,* CALTRANS
Marie Davis, PCWA
Mark Fowler, Placer County Fish and Game
Martin Schumann, Self
Melissa Marquez,* Eldorado County & Georgetown Divide RCD
Michael Garabedian, Friends of the North Fork
Michelle Wood, Central Valley Water Board
Patrick Morris, Central Valley Water Board
Rex Bell,* PG&E
Rick Eddy, Self
Rod Miller,* City of Folsom
Sarah Gatzke, Central Valley Water Board
Sarah Staley,* City of Folsom
Scott McReynolds,* CA DWR
Stephanie Suess,* Mewuk Indians
Stephen Louie, Central Valley Water Board
Stephen McCord, Larry Walker Associates
Steve Sarantopoulos*
Steve Tyler, Self
Tom Maurer,* USFWS

* People who attended by Webinar/conference call.