



Bay RMP Technical Review Committee Meeting

September 14, 2017

San Francisco Estuary Institute

Meeting Summary

Attendees

| TRC Member | Affiliation | Representing | Present |
|----------------------|-------------------------|---------------------|----------------|
| Nirmela Arsem | EBMUD | POTWs | No |
| Rod Miller | SFPUC | POTWs | Yes |
| Tom Hall | EOA, Inc. | POTWs | Yes |
| Amy Chastain | SFPUC | POTWs | No |
| Eric Dunlavey | City of San Jose | POTWs | Yes |
| Bridgette DeShields* | Integral Consulting | Refineries | Yes |
| Chris Sommers | BASMAA (EOA, Inc.) | Stormwater | Yes |
| Shannon Alford | Port of SF | Dredgers | Yes |
| Ian Wren | San Francisco Baykeeper | NGOs | No |
| Richard Looker | SFB RWQCB | Water Board | Yes |
| Luisa Valiela | US EPA | US-EPA IX | Yes |

*Chair

Guests and Staff

- Paul Salop - Applied Marine Sciences
- Mary Lou Esparza - CCSF (Remote Access)
- Naomi Feger - RWQCB (Remote Access)
- Phil Trowbridge - SFEI
- Jennifer Sun - SFEI
- Ila Shimabuku - SFEI
- Rebecca Sutton - SFEI
- Diana Lin - SFEI
- Jay Davis - SFEI (Remote Access)

1. Introductions and Review Agenda

Phil Trowbridge presented the agenda for today's meeting and raised the importance of three morning items: the decision on whether to archive tern eggs for PBDE analysis, developing a strategy for laboratory intercomparison studies, and a check-in on the 10-year plan for Status and Trends Monitoring. He also notified the TRC that part of Item 9, a preview of Alicia Gilbreath's Annual Meeting talk on pollutant loads entering the margins) would be skipped and that the meeting should end early.

2. Decision: Approve Meeting Summary from June 8, 2017 and confirm/set dates for future meetings.

Bridgette DeShields brought forward the meeting summary from the June Technical Review Committee meeting for any comments or edits. None were made.

Everyone except Shannon Alford confirmed their registration for the RMP's Annual Meeting on October 6. Phil Trowbridge continued by reminding TRC members of the November 1 Multi-Year Planning Workshop as well as the next scheduled TRC meeting on December 14. Phil then proposed that March 8 be the date for the following TRC meeting, continuing to use the second Thursdays of the month.

Decision:

- Eric Dunlavey motioned to approve the June 8, 2017 TRC meeting summary. Chris Sommers seconded the motion. The motion for approval was carried by all present members.

Action Items:

- Finalize the June 8, 2017, TRC meeting summary and post to the public meetings folder. (Ila Shimabuku, 9/25/17)
- Create a calendar event for the March 8, 2018, TRC meeting. (Ila Shimabuku, 9/25/17)
- Adjust the calendar event for the November 1, 2017, Multi-Year Planning meeting to include TRC members. (Ila Shimabuku, 9/25/17)
- Reach out to all TRC and SC members to confirm their planned attendance at the RMP's Annual Meeting. (Phil Trowbridge, 9/25/17)

3. Information: Steering Committee Meeting Summary from July 19, 2017

Phil Trowbridge quickly summarized the July Steering Committee meeting by explaining that the Steering Committee accepted the Technical Review Committee's recommendations regarding funding for special studies and were able to secure funding for all TRC-recommended projects by combining RMP funds with Supplemental Environmental Project funds.

4. Decision: Recommendation for Analyzing Archived Tern Eggs for PBDEs

Phil Trowbridge introduced Jennifer Sun's proposal to analyze PBDEs in archived tern eggs. These tern egg samples were collected in 2016 with the intended analysis for PBDEs, once funding had become

available. This sample set is comprised of twelve field samples and four quality-control samples which requires a total budget of \$14,300 for sample analysis.

The type of PBDEs that has historically been present in terns are penta-brominated PBDEs that were phased out of production in 2004. The main purpose of these analyses will be to evaluate trends in PBDEs in tern eggs. If PBDE levels continue to plateau or decline, analysis of PBDEs in tern eggs could be taken off the Status and Trends design after two more rounds of sampling (2018 and 2021).

Decision:

- The proposal to analyze archived tern egg samples for PBDE analysis should be brought to the SC for approval. (Consensus)

Action Item:

- Revise the funding request memo for PBDEs in Tern eggs and put it on the agenda for the SC (Phil Trowbridge, 11/1/17)

5. Discussion: Laboratory Intercomparison Studies for Critical RMP Analytes

Don Yee began his presentation on laboratory intercomparison studies by stating that the RMP would like to develop a more comprehensive approach for how and when these studies are performed. Large amounts of the RMP budget are spent on Status and Trends monitoring. Laboratory intercomparisons boost confidence in methodology and results, act as an insurance policy for unforeseeable changes in analysis procedures and analytical contractors, and provide many other benefits. Don outlined two strategies that differ based on whether certain analytes can be archived. He recommended that for persistent contaminants (e.g., PCBs, etc.) that can be archived and analyzed at later dates, different matrices should be stockpiled for later analysis at different labs. For analytes that degrade when archived or require frequent measurements (nutrients, selenium, etc.), rolling intercomparison work is necessary to evaluate and assess possible biases in methods, labs, etc.

Don highlighted intercomparison work for particulate and dissolved selenium as well as organics analysis in fish tissue as the highest priority and recommended that these be conducted as soon as possible. The TRC agreed with these priorities and highlighted PFASs, selenium in fish tissue, organics in bird eggs, and organics in bivalves as also being priorities. In general, however, possible intercomparison studies will need to be evaluated and prioritized on a case-by-case basis as opportunities arise.

Several strategic questions arose: how many labs should be involved in one intercomparison study; how large does a bias need to be indicate a problem; once conclusions about methodologies have been drawn do they need to be tested again down the line; how big or small do changes in cost, personnel, methods, etc., need to be in order to trigger intercomparisons; and whether more language on when the RMP is notified of these changes should be included in laboratory contracts. Two general strategic structures were proposed. One approach would be to run low-level intercomparison efforts for each round of sampling and have a separate protocol for targeted intercomparison studies when certain red flags arise. The low-level intercomparison could be in the form of “back-comparing” using archives from the last round of monitoring to see if the lab is still getting the same results before running the new samples. Another approach was to conduct large efforts every four to six years.

Overall, the TRC agreed on the value of intercomparison work and expressed interest in continuing to develop a more clear and robust strategy. A few members were also interested in surveying for intersecting interest from related programs, labs, agencies, and researchers (e.g., in Puget Sound or NOAA) and seeing whether others would be interested in contributing joint intercomparison work to reduce costs.

Action Item:

- Develop a more specific plan for intercomparison studies to discuss at the December TRC meeting. (Don Yee, 12/14/17)

6. Discussion: Status and Trends Design and Projected Costs through 2027

Phil Trowbridge introduced this agenda item by presenting the compiled budgets and expenses for Status and Trends work since 2014 and past S&T expenses for each cruise type. He highlighted the fact that close to half (43%) of S&T expenses are for USGS suspended sediment and USGS nutrients work. Another chart showed past S&T expenses separated by the types of work. The leading expense based on the type of work was subcontracted laboratories (29%) followed by subcontracted field work (27%). He continued by listing some possible, future cost-saving options for S&T.

There was a discussion about how much more data are needed on legacy pesticides to support a de-listing decision. There are public-perception consequences to having impairments for the Bay. Richard Looker agreed to look into the matrix that is driving the impairment. Phil Trowbridge will gather up all the RMP data on legacy pesticides collected since the last listing cycle (2006). The TRC will discuss this information in December and decide about including legacy pesticides in the 2019 S&T monitoring.

Sampling of sediment in the margins for 2022, 2024, and 2026 should be confirmed by the TRC before proceeding. Margins sampling could be combined with open Bay sediment sampling or could be scheduled based on weather conditions.

Overall, TRC members agreed with Phil's approach to planning for the costs of Status and Trends work, with the assumption that planning costs for intercomparison studies will be reduced. The numbers he proposed and the overall increase of the Status and Trends budget from \$1.0 million to \$1.2 million were approved for planning purposes.

The TRC also agreed to conduct future sediment cruises during the summer season only. Additional special studies during the winter season will be added if there is a need to collect data during the wet season.

Decision:

- Conduct sediment cruises in the summer seasons and conduct special studies for winter sediment sampling, if necessary. (Consensus)

Action Items:

- Revise S&T Design based on feedback from the TRC and include it in the Multi-Year Plan (Phil Trowbridge, 11/1/17)
- Determine why the RMP decided to test for water column toxicity every 2 years instead of less frequently and report back to the TRC. (Jay Davis, 12/14/17)
- Report back to the TRC in December with information on the matrix drives the continuing 303d listing for legacy pesticides and information on OEHHA guidelines for legacy pesticides in fish tissue. (Richard Looker, 12/14/17)
- Send information to TRC on all RMP data on legacy pesticides collected after 2006. Include both data tables and time series plots. (Phil Trowbridge, 11/15/17)
- Agendize a discussion of deploying radio-controlled moorings for bivalve samples for the December TRC meeting. (Phil Trowbridge, 12/14/17)

Lunch

7. Information: Overview of New Report on Per and Polyfluoroalkyl Substances (PFASs)

Phil Trowbridge commenced the second half of the day by introducing Meg Sedlak and her presentation on the new Synthesis and Strategy Report for Per and Polyfluoroalkyl Substances (PFASs). Meg began her presentation by highlighting that Rebecca Sutton, Diana Lin, and Adam Wong played large parts in generating this report that involved synthesizing 10 years of findings with PFASs, reviewing recent literature to determine whether any of the CEC tiers for PFASs need reassessment, and developing our recommended monitoring strategy. PFASs are widely manufactured with over 3,000 different PFASs in industry because they are chemically inert, thermally stable, and have surfactant characteristics. There are quite a few sources for PFASs in the Bay and they are especially difficult to track. While PFOSs and PFOAs have been found to bioaccumulate and be harmful to human and ecological health, toxicity data are lacking for other long-chain PFASs that are predicted to behave similarly.

The recommendations outlined out in the PFAS strategy including monitoring seals, sediment, and a few species of fish, as well as using advanced analytical screening techniques to reveal other possible PFASs of concern. It also includes recommendations for stormwater sampling that would be compared to stormwater work in 2010 to assess whether there have been decreases in concentrations of discontinued PFASs. TRC members were supportive of the strategy and also suggested exploring external interest that could morph into more funding for future PFAS studies. Comments on the PFASs report are due by the end of September.

8. Discussion: Update on AQUA-GAPS Passive Sampler Deployment

Diana Lin began her presentation by explaining that Aquatic Global Passive Sampling (AQUA-GAPS) is a global effort to measure a set list of persistent organic pollutants worldwide using passive samplers. The RMP was suggested by one of the leading participants, Derek Muir, to be in charge deploying a passive sampler in the San Francisco Bay. The passive sampler was deployed at the Dumbarton Bridge on July 25, 2017, and will be retrieved in late October.

A short discussion took place regarding whether these passive samplers could provide quantitative data to augment or replace water samples. A few members expressed interest in asking researchers in charge of other stations if they are doing any intercomparability studies with concurrent water samples. The predicted water concentrations from the sampler in SF Bay could be compared to water concentrations from past RMP water cruises to see if they match.

Action Items:

- Ask Derek Muir about comparing results from the passive samplers to measured water concentrations. Report back to the TRC with the results from AQUAGAPS and how water concentrations from past RMP cruises compare. (Diana Lin, 6/30/18)

9. Information: Preview of Annual Meeting Presentations

Jennifer Sun gave a preview of her Annual Meeting talk on non-targeted analysis of contaminants of emerging concern in the Bay. The TRC provided feedback on the presentation.

10. Information: Update on Pulse, Annual Meeting, and Other Communications Products

Phil Trowbridge reminded the TRC of the RMP's Annual Meeting and the reception to follow, for which Jay Davis is recruiting RMP alumni. The Pulse is in its final stage and will be ready for distribution soon. Jay will contact reporters about covering the Annual Meeting, Pulse, and the 25th anniversary.

11. Information: Status of Deliverables and Action Items

Phil Trowbridge mentioned reports that have been completed in the recent months and highlighted the PFASs strategy and the Guadalupe Mercury Monitoring manuscript as reports that are currently out for review.

12. Discussion: Plan agenda items for future meetings

The group reiterated the following topics for inclusion in future TRC meetings: intercomparison studies, pesticides in fish tissue, margins planning, frequency of water-toxicity testing, and an update on the AQUA-GAPS project.

13. Discussion: Plus/Delta

One member expressed gratitude for the timely preparation of the agenda package, succinct and effective presentations, and general organization of TRC meetings.

Adjourn