

Emerging Constituents Workgroup

March 24, 2009

ATTENDEES:

LeAnne Hamilton, IEUA	Max Rasouli, City of Riverside
Cindy Li, CRWQCB	Steve Fitzsimmons, OCWD
Steve Bay, SCCWRP	Carrie Guo, MWDSC
Keith Maruya, SCCWRP	Ben Pak, CBWM
Karen Baroldi, OCSD	Dianne Francis, City of Corona
Melissa Dale, MWDSC	Heather Collins, CDPH
Robert Kent, USGS	Norris Brandt, EVMWD
Carmen Burton, USGS	Joe LeClaire, WE Inc.
Jason Dadakis, OCWD	Sam Fuller, SBVMWD
Jeff Mosher, NWRI	Mark Bulot, SBVMWD
Nira Yamachika, OCWD	David Aladjem, SBVMWD/WMWD
Kathy Kunysz, MWDSC	Douglas Headrick, SBVMWD
Greg Woodside, OCWD	Edward Filadelfia, EMWD
Roger Lewis, LACSD	Gerry Thibeault, CRWQCB
Linda Garcia, WMWD	Tim Moore, Risk Sciences
Bobby Gustafson, City of SBMWD	Jack Nelson, YVWD
Valerie Housel, City of SBMWD	Mark Norton, SAWPA
Sean McCarthy, CDPH	Regina Patterson, SAWPA

Call to Order / Introductions

The Emerging Constituents Workgroup (EC) meeting was called to order at 1:35 p.m. at the Santa Ana Watershed Project Authority located at 11615 Sterling Avenue, Riverside, California. Introductions were made.

Approval of February 10, 2009 Meeting Summary

Mark Norton asked if there were comments or revisions to the February 10, 2009 Meeting Summary. The following revisions/corrections were made: page 2, next to last paragraph, change "John" to "Jon"; page 2, last paragraph, replace "Board" with "State Board"; page 3, second paragraph, add "MWD" to the reference to "NWRI/OC", and replace "to" with "too". Hearing no additional revisions, the meeting summary was received and filed as amended.

Third Draft Summary Phase-I Report – Risk Sciences

Tim Moore presented the third draft Summary Phase-I Report of the Emerging Constituents Workgroup referring to page 14 and a previous discussion of the Workgroup of how Section 13522 of Porter-Cologne worked regarding contamination. It specifies that when contamination is found to exist there is an obligation to do a remediation plan. He stated that his interpretation of the one molecule rule was in error. There is now no discussion in this section of how this section might be used. It is still a regulatory concern and somewhat dependent on how draft regulations are being properly implemented. Also, Footnote 10 has been revised due to Section

5410 being incorrectly sighted. The poisoning section was accidentally omitted. It is now back in as Footnote 34.

LeAnne Hamilton asked if the second highlighted paragraph on page 14 stating “The proposed revisions establish the maximum allowable concentration effluent in water supply wells at 50%” is correctly stated? She inquired about whether it says “recycled water” or “effluent”. Mr. Moore said he will verify it for the correct wording.

David Aladjem said the draft language in regulations gives them enough flexibility that even if the numerical standards are not met, they can look at something and say it is okay. Steve McCarthy said there are allowances for alternatives. Mr. Moore said he is considering saying the proposed revisions will resolve this and include the actual copy of the revisions as one of the appendices.

In referring to page 15, item 3, Mr. Moore said this area was the most difficult to rewrite and capture opposing views. It was unintentionally implied that this sentence was being used to describe exactly how many parameters should be analyzed. What we intended to say is if the sole concern is a surrogate tracer to supplement your TOC and TSS, that according to our experts, there are a relatively few chemicals that could be used to serve as tracers.

Jeff Mosher commented that he sees the logic for talking about the ECs as tracers, and the NWRI/MWD/OCWD study is useful to show concentration. It may be more instructive to have a series of surrogate indicators that are not emerging contaminants because they will be able to inform if the treatment is working or not. Meaningful monitoring is needed. When monitoring, we want to see that what is being monitored for informs us, is the treatment working, and are there unknowns coming through that weren't there before. The only way to get there is through a broad surrogate indicator constructed monitoring program that may not have a lot of ECs. It would be useful to recommend that there is a monitoring program as a research component to understand things better, to understand if treatment is working, and to see if things are coming through that weren't there before. Isotopic driven methods are expensive. Mr. Moore said as we go into the next phase, if you decide you want a tracer, do you want it to be an EC, or is there something else that will work better? Mr. Mosher said a combination of some ECs without eliminating the others.

Gerry Thibeault said all other monitoring is still in place, this is only related to EC monitoring. This is for monitoring related to either wastewater discharges, recycled water recharges, or imported water recharges. This is the only component of monitoring related to ECs. The Workgroup is not about making recommendations to drop other constituents from monitoring programs.

Mr. Moore asked that Mr. Mosher state what it misstates. Mr. Mosher said it is an opportunity to make a recommendation that a robust monitoring program that's meaningful and provides information for understanding treatment occurrence may be what the industry is looking for. Having a couple of tracers may not be robust enough to provide a full picture of what is happening over time. Mr. Moore said the purposes are to detect and note the presence of wastewater, or to characterize. The first purpose can be accomplished in relatively few and the second purpose when doing more comprehensive characterization may take more. The number

and type of things you analyze for will be driven by that purpose, but if the sole purpose is tracing, then you don't need many. Mr. Moore referenced the last sentence in paragraph 5 on page 16 which states "The Workgroup strongly endorses the State Board's decision to convene a Blue Ribbon Panel of Experts to explore such issues."

Ms. Kunysz asked for clarification on page 4 in the second sentence of the third paragraph emphasizing that it formerly stated that we were working on a "water quality monitoring program" not "water quality protection program". Mr. Moore responded that it might be a monitoring program, but that he did not want to prejudge the precise nature of what will be developed in Phase 2. Following a brief discussion, the group agreed to replace the word "protection" with "investigation" in the subject sentence. Ms. Kunysz also requested that the word "develop" be deleted from the second sentence in the first paragraph below section V.

Concern was raised regarding paraphrasing Shane Snyder's testimony. Mr. Moore said he will revise the text to quote more of what is precisely stated. **Mr. Moore said the summary report will be done by the end of next week.**

Presentation – MWDSC

Ms. Carrie Guo provided a presentation entitled "PPCP Quality Assurance/Quality Control: Lessons Learned" discussing analytical methods, detection and reporting levels (MDL and MRL), QA/QC protocols and reporting criteria.

Tim Moore asked how the thresholds are chosen for field blanks, and how does it fit with SWAMP guidelines? Ms. Guo said it is standard practice to report analyte concentrations in samples that are at least two times that in field blanks. Standard EPA protocol for precision is 20% relative percent difference for duplicate samples. Standard EPA protocol for accuracy is 70-130% spike recovery for matrix fortified (spiked) samples. The results that don't fit into the criteria are not taken out of the PPCPs. This is kept as a guideline and record to observe for trends. Because there are so many analytes being analyzed, and there being no standardized method, we don't want to remove the data points.

Ms. Guo reported the analytes that are prone to analytical difficulties are sulfamethoxazole, erythromycin, ciprofloxacin, caffeine, carbamazepine and ibuprofen. Sulfamethoxazole can be reduced by chlorine.

Ms. Guo said the major challenges for analyses of PPCPs include ultra trace levels, and the need to collect large sample volumes (2-4 liters per sample). Problems encountered with QA include low levels in the field blanks especially with sulfamethoxazole, and some of the analytes are prone to analytical difficulties.

Shane Snyder's isotope dilution approach, which has worked well for complex matrices, has been adopted and used by MWDSC. In addition to Shane Snyder's method, there is EPA's method 1694 and the USGS method. Collaboration is being done with Shane Snyder's lab on the new Water Research Foundation project 4167. The goal of the project is to produce a list of analytes that everyone can use, and to run several round robin tests to produce a better database to see what analytes are prone to problems and to see the causes of the differences. The project is expected to produce some conclusions by the end of next year.

Ms. Guo said that to collect field blanks the sampling kit contains an empty field blank bottle with preservatives and a bottle with Milli-Q water (organic pure water). The sampler is asked to pour the Milli-Q water into the actual field blank bottle at time of collection to assess any potential contamination in the sample collection procedure. Some samples are from sample taps and others are grab samples from the surface water. The bottle is submerged under the surface water and filled. The samples are concentrated by solid phase extraction. At the automated solid phase extraction station, a cartridge is preconditioned and the samples are loaded onto the cartridge – absorbed. Technicians are not masked, but general lab procedures are practiced by wearing safety goggles and lab coats. Use of perfumes and antibacterial soaps are discouraged. Regular clothing is not worn for performing extraction analysis. Some analytes require more rigorous cleaning procedures of the lab glassware like cleaning and baking at 400 degrees overnight.

Presentation – NWRI / OC

Jeff Mosher provided draft materials entitled “Managing Contaminants of Emerging Concern in California: A Workshop to Develop Processes for Prioritizing, Monitoring, and Determining Thresholds of Concern” reporting they are preparing for a workshop in April to look at drinking water, water resources and the marine environment. The goal is to produce a written report that will identify the state of the art for these three areas. **He invited input from the Workgroup to be addressed to him within the next couple of weeks.**

Presentation – USGS

Robert Kent provided a flier titled “National Water Quality Assessment Program -- Source Water Quality Assessments” reporting the USGS has been implementing a study unit as a national water quality assessment program in the Santa Ana Basin since 1998. The USGS has been asked to participate in a nationwide study. A Source Water Quality Assessment Program is being done on water services all over the country. It samples water from 15 wells before and after the water is treated.

Wells are chosen at random and separated into four study areas that were broken out for the Inland/Santa basin which was the Bunker Hill/Rialto/Colton, Yucaipa/San Timoteo, Riverside/Arlington/Temescal and Cucamonga/Chino basin. A proportional amount of wells was selected for the GAMA program.

Mark Norton asked when this will begin? Mr. Kent said they will not be producing any local products on this because this is a nationwide synthesis product that will produce statistics on a nationwide basis.

Mr. Kent said he will make the raw data available to this Workgroup.

Presentation – Southern California Coastal Water Research Project (SCCWRP)

Keith Maruya, Principal Scientist of the Chemistry Department at SCCWRP provided a brief history of SCCWRP and its mission. He discussed the presentation in detail covering molecular responses of plasma, cortisol and thyroxine in fish.

Steve Bay stated there are good methods to detect chemically. The chemicals may have biological effects that are expressed differently than how our typical toxicity tests were measured. How do you determine if there is a biological affect? There are so many things to look for that it makes it difficult to say what is the right test to make a determination. Screening tools are being worked on to be able to look at a variety of different biological systems within the organism by looking at changes in the gene expression. This approach is being evaluated as a screening tool to allow us to look at many different responses to pick up a pattern or indication of a biologically significant exposure. Instead of spending years measuring feminization, maybe the thyroid hormone system or the immune response is important.

Mr. Maruya said they will also be looking at wetlands and the occurrence of CECs in habitats along the coast and toxicity identification evaluation procedures to separate metals from organics. There are no standardized methods yet.

The final policy promises a report by May 2010, so recommendations to the panel have to be in written form and finalized by that period. There will be a public comment period and an independent peer review that will go in to the summer with a final hearing for recommendations in November.

Phase 2 Scope of Work and Budget

Tim Moore presented the proposed Scope of Work for Phase 2 reporting the expectation is to be complete by fall. The first meeting in April is to start working the preliminary design of our investigation strategy. The Workgroup will then discuss the regulatory issues 1) how to deal with antidegradation for ECs regarding the presence or absence of something that does not occur naturally; and 2) how will we deal with narrative translators for toxicity objectives and beneficial use impairment. By June, the hope is to discuss results. We will also address what do we analyze, what methods would be used, and what other investigative strategies can be used. Drafting and revising will be done during August and September as long as we get this by June or July at the latest. There are eight monthly meetings planned. **Any comments on the proposed Scope of Work are to be emailed to Tim Moore or Regina Patterson by March 31st.**

Mark Norton provided a breakdown of costs for the FY08-09 EC Workgroup and a proposed FY09-10 budget for review. He reported that SBVMWD and WMWD provided a letter stating they would cover 50% of the costs. **Mr. Norton will revise the budget to include SAWPA's administrative costs.** Invoices will not be sent to any of the other Workgroup agencies.

Future Meeting - April 30, 2009 at 1:30 p.m.

Adjournment

The Emerging Constituents Workgroup meeting adjourned at 4:35 p.m.