

# Sediment Quality Objectives Advisory Committee

## 8<sup>th</sup> Meeting, March 29, 2005

Note: The list of attendees and the meeting agenda follow the meeting minutes. Additional materials from the meeting (PowerPoint presentations) have been sent to each Committee member and interested party, along with this meeting summary.

Another note: The summary captures the major issues presented and discussed during the meeting, though they are not intended as an exhaustive record of all comments made. Where it contributes to the readability of the summary, discussion of the same issue that occurred at more than one place during the meeting is summarized together. Items on which the Committee expressed general agreement are indicated **in bold**, although it is important to emphasize that the Committee did not vote on these items. General agreement was assessed by the facilitator through the nodding of multiple heads, the absence of any objection, and more nodding of heads when he summarized the apparent agreement. Specific commitments by State Board staff, SCCWRP, the facilitator, or Committee members are also indicated **in bold**.

### ***Meeting objectives***

The primary goal of the meeting was to review draft materials developed by the three application subcommittees (NPDES discharge, dredging, 303d listing).

### ***Review of progress***

Chris Beegan noted that his main emphasis currently is on developing the policy support document, which will detail the rationale for the approach (es) taken to sediment quality objectives (SQO) and provide a context for the draft objectives themselves. The draft objectives, due to be released for comment this August, are not intended to be the Functional Equivalent Document (FED), which will be released about four or five months the release of the draft objectives.

The primary focus of the draft objectives (to be released this August) is on meeting the legislative requirement to make station-level determinations about the status of a site. This is the minimum policy requirement. While the State Board would like to have more fully developed strategies and policy for other applications, this is not required to meet the basic policy goal.

The main concerns expressed recently by other agencies related to how the SQOs might affect dredging and disposal, especially in San Francisco Bay. Dredging/disposal policy in San Francisco Bay has been modified to take account of the long timeframe needed to reduce contaminant loads in the Bay. In addition, dredged material is used in wetlands restoration projects. Staff at other agencies have questioned how SQOs would be used in these contexts and were concerned about whether the application of SQOs would work at cross purposes to existing policy.

Chris emphasized that the best opportunity for stakeholder involvement and input is now, prior to the public release of the draft objectives.

Steve Bay reviewed recent progress on the scientific and technical tasks (see PowerPoint presentation distributed with this summary). Several points came up for discussion and clarification.

Development of the SQOs is focusing on surficial sediment, down to one foot in depth. While this raises potential problems in terms of applying SQOs to dredging (see dredging subcommittee section below), there are explicit reasons for this. First, the intent of the policy is a focus on the active surface layer. Second, deeper sediments are often anoxic and chemical and biological differences related to this would tend to confound relationships being sought between the three legs of the Triad. Third, the available data break naturally into surface (usually much less than one foot in depth) grab samples and deeper cores collected for dredging and disposal purposes. Fourth, it is not clear that deeper sediment (beyond 18 inches, for example) directly affects conditions at the surface, in most cases. The SQOs will also not apply to the intertidal.

There are instances in the database where complete data for all parameters is not available. For example, some of the target list of key chemistry constituents may be missing. This is not necessarily a problem with more traditional analysis approaches such as ERM. However, for more sophisticated analyses with more stringent requirements re missing data, this could cause sites to be removed from the analysis. In such cases, the project is using data estimation techniques to fill in data gaps. In these cases, missing data are estimated based on their statistical distribution and correlation with other parameters at other sites.

Detection limits from the many different studies being used are “all over the board” and the strategies commonly used for dealing with data below the detection limit are not appropriate in this situation. If, for example, values below detection limit are replaced with either “0” or one-half the detection limit, this has a substantial effect on the data analysis results. The science team is therefore using an “imputation” method based, on the characteristics of the data, to provide an alternative to using either 0, the DL, or ½ the DL. The analyses will be run both ways, with the estimated data and with the data as reported. The intent is to try to reduce the statistical noise in the relationships among the various parameters. There was some discussion of other approaches used to estimate the distribution of data values below detection limits and no serious disagreements with the general approach were expressed. However, some Committee members were interested in seeing the frequency of non-detects, which Steve Bay indicated differ across parameters. **Steve agreed to provide a summary of the frequency of non detects.**

Committee members also expressed an interest in seeing the geographic areas or regions the science team is defining. They offered to review and comment on them, based on their own detailed knowledge of specific areas they work with. Different types of benthic communities may require different versions of the benthic index in order to achieve a consistent level of protection throughout the state. **Steve Bay offered to generate maps showing the major habitat zones the project is working with.**

Steve Bay also reviewed the distinction between the project’s approach to direct and indirect effects. Direct effects, on aquatic life, will have SQOs based on data (sediment chemistry, benthic infauna, toxicity), quantitative thresholds, and quantitative site scores that reflect narrative descriptions of condition (e.g., likely impacted). Indirect effects, on wildlife and human health, on the other hand, will be addressed by recommending a consistent approach to use in different situations. This is because scientific knowledge is not yet adequate for reliably linking sediment concentrations to wildlife and human health impacts, and because of the fact that actual impacts depend to a large extent on site-specific conditions. The indirect impacts / bioaccumulation issue will therefore be addressed through site-specific case studies. For human health, there already

exists an assessment and management framework for part of the process, in terms of human health risk assessment methods and consumption advisories based on fish tissue levels.

Laura Hunter informed the Committee of recent efforts in San Diego Bay to document recreational and subsistence fishing and consumption patterns. She also highlighted policy decisions at the state level to incorporate concepts of environmental justice and sustainability into policy making.

### ***SSC meeting***

The Scientific Steering Committee (SSC) is meeting next week at SCCWRP, on April 7 and 8. The April 7 session will be open to observers, with an opportunity from 2 – 4 pm for observers to comment and engage in discussion with the SSC. The afternoon of April 8 may, but may not, provide another opportunity for such interaction. Advisory Committee members were encouraged to take advantage of this opportunity, either by attending in person (or via phone) or by forwarding their comments to Brock Bernstein, who will summarize the Advisory Committee's concerns for the SSC.

### ***Application subcommittee reports***

The Committee heard from two of the application subcommittees, for dredging and disposal and for NPDES discharger permitting. The 303d listing subcommittee did not meet.

### ***Dredging and disposal***

The dredging and disposal subcommittee reviewed the major issues identified and discussed in their draft guidance document (see two related documents distributed with this summary). They reviewed the existing state and federal systems for regulating these activities, both of which have a strong emphasis on effects-based testing. The federal system, in particular, under MPRSA, is well established, with its own guidance and procedures and state SQOs will not supersede the current tiered testing approach, nor will the Army Corps change the federal approach in any way to fit the new SQOs. State regulation, however, as implemented under CWA, is somewhat more flexible.

One of the major problems in applying the SQOs directly to dredge material testing is that SQOs will apply only to the active surface layer, while dredge material testing applies to the entire volume of dredged material. Another fundamental difference is that SQOs will apply to sediment in place and dredge material testing incorporates disposal mechanisms into the testing regime. Therefore, SQOs would most likely be useful in this application as supplemental information.

Committee members identified a number of other issues, none of which were completely resolved during the discussion. Parts of some harbors, bays, and estuaries are not static, but are characterized by sometimes intense episodes of sediment movement and/or resuspension that may involve mixing of the surface layer. Focusing on an arbitrarily defined surface layer (i.e., one foot depth) may not be appropriate in all situations. The Committee also discussed the SQO's potential role in cleanup dredging. It was not considered appropriate to apply SQOs immediately to the newly exposed surface, since it will not have had time to equilibrate, physically, chemically, or biologically, with surface conditions. There may need to be some waiting period before SQOs can be applied in such situations. While the state of Washington has made some attempts to predict what the newly exposed bottom will ultimately look like, based primarily on chemistry, these efforts are based on a long (more than 20 years) time series of data from dredged

and disposal sites in Puget Sound. The issues surrounding sediment surfaces newly exposed through dredging will differ from place to place. For example, in San Francisco Bay, normal sediment movement will tend to cover dredged locations relatively quickly. In Los Angeles Harbor, dredging may expose bedrock with naturally elevated levels of certain constituents.

In addition, Committee members pointed out that maintenance and cleanup dredging are conducted for different purposes and that the application of SQOs might well be different in each case. Similarly, capping of disposal sites and use of dredged material in restoration pose their own particular problems for use of SQOs. For example, in restoration work, subtidal sediments may be placed into an intertidal environment where SQOs do not apply. It is not clear whether SQOs based on subtidal marine/estuarine conditions can help predict whether sediments will be suitable for use in an intertidal environment. A new upland testing manual is being developed by the Army Corps of Engineers and is intended to help address this issue. However, it was pointed out that decisions about use of dredged material in restoration projects in San Francisco Bay is not being made under federal jurisdiction but rather under the guidance of the multistakeholder Dredged Material Management Office (DMMO).

A Committee member pointed out that there is inherent risk associated with the use of all dredged materials and it is therefore important to have the ability to assess marginal risk, i.e., is this particular use making conditions better or worse?

Two larger issues were raised. First, recognition in San Francisco Bay that there is widespread contamination that the timing of natural processes means that it will take decades to clean up has led to a policy in which dredged sediment used for restoration need not be pristine, but merely cleaner than what existed before restoration. The regulatory approach has thus accepted a process of incremental but steady improvement. Some Committee members expressed concern that the strict application of SQOs could disrupt this approach. Committee members involved in this process in San Francisco Bay recommended that the SQO policy include a mechanism for conducting this sort of tradeoff of comparative environmental risks.

Second, some Committee members were concerned about whether the SQOs would achieve desired levels of protection, citing the law's requirement that SQOs achieve the most sensitive species. Chris Beegan responded that the State Board staff have determined that the benthic infauna constitute the most sensitive organisms and that the SQOs focus specifically on these. Discussion later in the meeting also noted that both subcommittee reports were more reactive than proactive, i.e., responding to a problem once detected rather than attempting to achieve a level of protection that would prevent problems. The facilitator pointed out that the structure of the SQOs will merely describe a number (probably four or five) of levels of condition. These could as easily be used to describe an existing condition as to describe a desired condition to be maintained and/or achieved. This sort of decision is well within the realm of policy making; however, science will inform decisions about where the thresholds between different categories of condition will be set.

### **NPDES point source discharge permitting**

The NPDES discharge subcommittee reviewed their approach to framing guidance for this management application (see PowerPoint presentation distributed with this summary).

One of the main issues identified by Committee members was the need to more rigorously define what "site" and "station" mean, in operational terms. While Chris Beegan has made it clear that

the SQOs are meant to apply to stations rather than areas or regions, it is yet clear how far beyond the extent of a single benthic grab sample the site score would apply. This issue necessarily implies a strong link to the 303d listing / delisting policy.

Much of the guidance presented by the subcommittee involved targeted monitoring and assessment efforts and it was noted that there is little or no explicit guidance on designing such monitoring programs. There may be a need for some design and analysis guidance in the SQOs.

It was also noted that the application of SQOs will not occur in a static environment. Nearly all the estuary and bay environments are characterized by sediment transport. This process is missing from most NPDES permits and TMDLs and the SQOs may provide an opportunity to both acknowledge its importance and develop a means of dealing with it.

Several Committee members suggested that the draft guidance, as presented, stressed the TMDL process more than was necessary. There may be many situations in which a TMDL will not be necessary (e.g., if there are not multiple sources) but the steps outlined in the guidance would still be needed. There should be a distinction between TMDLs and TMDL-like processes. Could consider the suggested guidance as a linkage analysis.

While there was no report from the 303d listing subcommittee, several Committee members suggested that a single sample should not drive the link between SQOs and NPDES discharge permitting and 303d listing.

Committee members suggested that the guidance define a mechanism for moving from recognition of a problem to some sort of sediment management action, perhaps more directly than through a TMDL-like process.

In addition, it will not be possible to link an old problem with no current discharge (e.g., legacy pesticides) to the NPDES permitting process.

### ***Subcommittee charge***

The three subcommittees to draft guidance for three applications of the SQO are:

<b>NPDES discharge</b>	<b>303d listing</b>	<b>Dredging</b>
Steve Arita	Bart Chadwick	Josh Burnham
Tom Grovhaug	Paul Johansen	Steve Arita
Ed Kimura	<b>Susan Paulsen</b>	Andy Jahn
<b>Dave Montagne</b>	Linda Sheehan	<b>Paul Johansen</b>
Susan Paulsen		Delphine Prevost
		Mitzy Taggart

Discussion during the course of the meeting identified several specific recommendations for the three subcommittees:

- All subcommittees
  - Consider use of SQOs as a proactive tool, especially for achieving a set level of protection
  - Consider how to incorporate environmental justice concerns

- Summarize rationale behind decisions, judgments, recommendations
- Dredging subcommittee
  - Obtain additional input from SF Board and other Regional Boards
  - Distinguish between administrative differences among Boards and fundamental differences in approach that reflect physical / biological processes and mechanisms
  - Frame relevant portions of document as guidance for specific use(s) of SQOs
- NPDES permitting
  - Include description of management / regulatory context
  - Distinguish between situations that require TMDLs vs. TMDL-like process
  - Identify shortcuts for moving directly to sediment management, when appropriate
  - Address need for monitoring design guidance
  - Think about legacy pesticides with no current discharge and that fall outside of NPDES permits
- 303d listing
  - Address need for definitions of temporal and areal extent in data requirements
  - Address gap between effects-based SQOs and pollutant-based 303d listing.

### ***Next meeting***

The next meeting of the Advisory Committee will be May 2, Monday, in Sacramento, from 9:30 am to 3:30 pm.

## Attendees

Name	Organization	Representing	Position
<i>Staff</i>			
Steve Bay	SCCWRP		
Chris Beegan	State Water Resources Control Board		
Brock Bernstein	Facilitator		
<i>Committee</i>			
Kevin Buchan	WSPA	Industrial SW	Alternate
Bart Chadwick (P)	U.S. Navy	Federal Facilities	Alternate
Tom Grovhaug	Larry Walker Associates	POTWs	Primary
Lisa Haney	L.A. County Sanitation Districts	POTWs	Alternate
Laura Hunter	Environmental Health Coalition	Env. Protection	Primary
Andy Jahn	Port of Oakland	Ports	Alternate
Paul Johansen	Port of Los Angeles	Ports	Primary
Ed Kimura	Sierra Club	Env. Protection	Primary
Susan Paulsen	Flow Science	Industrial Direct	Primary
Paul Singarella	Latham & Watkins	Legacy Pollutants	Primary
Gabriel Solmer	San Diego BayKeeper	Env. Protection	Alternate
Matt Yeager	San Bernardino Cnty. Flood Control	Municipal SW	Alternate
<i>Other Participants</i>			
Fred Lee (P)	G. Fred Lee & Associates		
Jamie Liu (p)	Region V Regional Board		
Jim Marchese	City of Los Angeles		
Sally Mathison	L.A. County Sanitation Districts		
Dave Montagne	L.A. County Sanitation Districts		
David Moore	MEC-Weston		

P indicates participated by phone

**Agenda - CASQO Advisory Committee  
Eighth Meeting  
SCCWRP  
7171 Fenwick Lane  
Westminster, California  
March 29, 2005**

9:30 – 9:35	Welcome and meeting objectives – B. Bernstein
9:35 – 9:55	Summary of project status – C. Beegan
9:55 – 10: 15	Summary of recent technical progress – S. Bay
10:15 – 10:50	Presentation of background materials – B. Bernstein
10:50 – 11:00	Break
11:00 – 12:00	Dredging application – Subcommittee
12:00 – 1:00	Lunch
1:00 – 2:00	NPDES discharge application - Subcommittee
2:00 – 3:00	303d listing application - Subcommittee
3:00 – 3:30	Public forum and discussion of next steps – B. Bernstein