

**MEMORANDUM**

**August 3, 2010**

**TO: SCIENCE PANEL MEMBERS:**

Bruce Duncan, Ph.D., Chair, Science Panel, U.S. EPA Region -10  
Elaine Faustman, Ph.D., University of Washington  
Teri Floyd, Ph.D., Floyd/Snider  
Michael Riley, Ph.D., Anchor OEA, LLC  
Rosalind Schoof, Ph.D., Environ Corp.

**FROM: MARTHA HANKINS, DEPARTMENT OF ECOLOGY, TOXICS CLEANUP PROGRAM**  
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**CC:** Chance Asher, Dave Bradley, Pete Kmet, Craig McCormack

**SUBJECT: UPCOMING SCIENCE PANEL MEETING**

**DETAILS:**

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| Meeting Date | August 25, 2010 (Wednesday)  |
| Time         | 9 am to 3:30 pm, a light lunch will be provided                                    |
| Location     | UW Botanic Gardens, Isaacson Classroom<br>3501 NE 41st Street, Seattle, Washington |

Enclosed are the agenda and meeting materials (some of which are included for your reference). Please bring these with you.

**MEETING MATERIALS AND TOPICS**

We have three items on the agenda for this meeting. The main topic is a review of freshwater sediments standards being developed by Ecology. However we will spend the first part of the meeting on “business” topics. It is appropriate to discuss on an annual basis the goals and topics for the upcoming year and identify and disclose any potential conflicts of interest. The final topic for this meeting – and related to the topics you will expect to see over the next year – is a summary of ongoing Ecology efforts to update the MTCA Cleanup Regulation and the Sediment Management Standards (SMS) rule.

## Business

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We will take a bit of time at the beginning of the meeting to go over our operating procedures and plans for the next year. The Science Panel is a new entity, and it is appropriate to review the purpose and focus.

As part this discussion, we will review the topics planned for the next couple of years. Because the Toxics Cleanup Program is in the process of updating the MTCA Cleanup Regulation, most of the questions we plan to bring to the Science Panel over the next couple of years relate to scientific aspects of various rulemaking issues. A week before the meeting we will send you (via email) a list of topics we anticipate for the next year or two.

## Freshwater Sediment Standards

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A major rulemaking focus is the integration of requirements in the SMS rule and the MTCA Cleanup Regulation for addressing contaminated sediments. The effort includes both big picture issues – how to make decisions about protecting human health at sediment sites – and a number of specific sediment-related topics.

### Introduction

As part of the rule making process, Ecology is developing both chemical and biological freshwater sediment standards. In the enclosed meeting materials, you will find the draft technical report, *Development of Benthic SQVs for Freshwater Sediment in Oregon, Washington, and Idaho*.<sup>1</sup> This report describes the method used to develop freshwater standards protecting the benthic community against toxicity.

This work is the result of a cooperative process between federal and state agencies, collectively called the Regional Sediment Evaluation Team (RSET).<sup>2</sup> This multi-agency task force was charged with developing a sediment evaluation framework for the Pacific Northwest. RSET developed a framework for assessing and characterizing freshwater and marine sediments in Idaho, Oregon, and Washington. Interim freshwater sediment quality values were developed in 2003 and were incorporated into the framework with the caveat that in Washington they are used as guidelines only. The RSET agencies have been participating in the effort to update the freshwater sediment quality values using data gathered since the development of the 2003 interim guidelines.

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<sup>1</sup> SQVs are sediment quality values, sometimes called sediment quality guidelines (SQGs). The terms SQV and SQG are used interchangeably.

<sup>2</sup> The RSET participants are Idaho Department of Environmental Quality, National Oceanic and Atmospheric Administration, Oregon Department of Environmental Quality, Washington State Department of Ecology, Washington State Department of Natural Resources, US Environmental Protection Agency, US Fish and Wildlife Service, and the US Army Corps of Engineers.

The freshwater standards Ecology is proposing are being developed for use within the existing scientific and policy framework for marine standards already promulgated in rule (Chapter 173-204 WAC).<sup>3</sup>

### Questions of Science and Policy

Freshwater sediment standards are a controversial topic. There exists a wide range of opinions on the scientific and policy issues underlying this topic. Consequently, Ecology is taking several steps to ensure that what we ultimately decide to propose is based on current and solid scientific information. In addition to review by the MTCA Science Panel, these steps include:

**An interagency development process.** Ecology has worked with scientists from other state and federal agencies as part of the RSET process.

**Sediment Workgroup review.** Ecology staff worked closely with a group of sediment experts on a number of rule-related topics, including freshwater sediment standards. Seven meetings were held between November 2009 and June 2010; freshwater sediment standards were discussed at four of the meetings. Meetings were open to the public and all meeting materials are available on the Ecology website. This group reviewed highly technical issues, including total organic carbon (TOC) normalization, comparison to background, use of reference sites, and biological test criteria.

**MTCA/SMS Advisory Group discussion.** Ecology convened an external advisory group to advise generally on MTCA and SMS rulemaking issues. A primary emphasis for this group was providing feedback to Ecology on how various scientific, technical, legal, and policy changes potentially could affect cleanup decisions. Consisting of 20 members representing a broad range of perspectives, this group met seven times between November 2009 and July 2010 and discussed a wide variety of issues; the freshwater sediment standards were discussed by this group July 26, 2010.

**Scientific Peer Review by National Experts.** The draft technical report is currently being distributed for scientific peer review. The enclosed meeting materials include the complete list of questions Ecology is posing for this review process. The questions relate to the general approach, the data used to develop chemical criteria, reliability testing of the chemical criteria, and how the data is interpreted. With respect to biological criteria, Ecology is asking reviewers to consider the technical and scientific aspects of the proposed bioassays.

### Questions for the MTCA Science Panel

As part of the scientific review process, Ecology is bringing this report forward to the MTCA Science Panel. The list of questions developed for the scientific peer review by national experts is long and considerably detailed. (Please look over the complete set of questions included in the meeting materials.) Although we expect the peer reviewers to look at specific technical details of

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<sup>3</sup> A copy of the Sediment Management Standards, Chapter 173-204 WAC, is included with the enclosed meeting materials.

the report, we are asking you to review the general approach used: is it credible, appropriate, and scientifically defensible? In particular, Science Panel input on reliability testing would be particularly helpful to Ecology.

For our meeting on August 25, in order to begin discussing the freshwater sediment standards, please consider the following four questions:

1. Do you agree that the approach for developing freshwater sediment standards described in the draft report *Development of Benthic SQVs for Freshwater Sediment in Oregon, Washington, and Idaho* is within the range of scientific defensibility?
2. Do you agree with Ecology's conclusion that multivariate statistical analysis provides a credible basis for characterizing the relationships between chemical concentrations and biological test results?
3. Do you agree with Ecology's conclusion that the data set used to develop freshwater sediment standards is sufficient to support the development of statewide chemical criteria?
4. Do you believe that the approach used to evaluate the reliability of the criteria is within the range of scientific defensibility?

Please note that not all of the questions going to the peer review are necessarily headed in your direction. As part of the discussion on August 25 we can further refine appropriate questions for your review over the next one or more Science Panel meetings.

One of the topics we would like to discuss on August 25 is a general plan for topics coming for your review over the next 12 months. We have a number of questions related to other MTCA-related scientific topics, and reasonably must acknowledge that feedback from the MTCA Science Panel is most appropriately focused on MTCA issues.

We believe that the freshwater sediment standards are appropriate for your review based on our efforts to integrate cleanup requirements of the Sediment Management Standards with MTCA. However, the level of effort on this issue will need to be balanced with other rulemaking issues (see below).

### **Discussion of Issues related to Updating the MTCA Cleanup Regulation**

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Over the past several meetings, Science Panel discussion have focused on issues related to rulemaking efforts. Recent previous meetings have covered risk-related issues of children's susceptibility to chemical carcinogens, inhalation unit risk, the hierarchy of toxicity values, and concurrent exposure pathway.

Over the past nine months, Ecology has been working with multiple advisory groups on policy, technical, and implementation issues related to updating the MTCA Cleanup Regulation and harmonizing the requirements for cleanup of contaminated sediments specified in the Sediment Management Standards with requirements in the MTCA Cleanup Regulation.

We have been working with three groups:

- MTCA/SMS Advisory Group – the group of 20 members met seven times between November 2009 and July 2010. Two to three additional meetings later this fall will discuss a handful of remaining issues and review preliminary draft rule amendments.
- Sediment Workgroup – eight sediment experts from a variety of backgrounds met seven times between November 2009 and June 2010.
- Vapor Workgroup – this group consists of seven persons with experience addressing vapor intrusion under MTCA; it includes representatives from DOH, EPA, and environmental consultants. This group has met three times since May 2010, with a fourth meeting scheduled in early August and a couple of more meetings anticipated in the fall.

Based on the discussions with these groups, in addition to input from the MTCA Science Panel, Ecology has reached decisions on a number of science-related policy issues. A report summarizing these decisions was prepared for the MTCA/SMS Advisory Group meeting July 26, 2010. *Science Policy Choices Underlying Updates to MTCA Cleanup Levels* is included with the enclosed meeting materials.

We expect to bring for your review and consideration a number of science questions we continue to grapple with. How to protect human health from contaminated sediments has been a major focus of efforts for the past 12 months; and while we have made progress on a decision making framework, considerable questions – scientific, policy, and implementation – remain. You can expect to see several meetings over the next year focus on sediment-related issues, including how chemicals move from sediments into benthic and other organisms, including humans.

On August 25, we would like to 1) update you on where we are in the rulemaking process; 2) summarize where we landed on several issues discussed at previous Science Panel meetings; and 3) identify the issues where Ecology would like to get Science Panel input over the next 12 to 24 months, and discuss the priority and timing for these issues.

In addition, on the agenda you will see a brief amount of time reserved for Terrestrial Ecological Evaluations. The goal is to present work done updating the TEE screening values based on new toxicity information. The Issue Summary included in the meeting materials provides some brief background. We recognize that this is insufficient time to explore this in depth; one question we are considering is whether – given the other issues competing for time – this issue needs to come back for further discussion.

Thank you in advance for your considered input on these important issues. The bulk of the meeting materials is included in this packet. We are still putting together a list of references related to freshwater sediments, and will get that and the list of upcoming topics to you shortly.

## Enclosures

Draft Agenda

Meeting Summary (draft) from the March 25, 2010 Science Panel meeting for your review.

*Science Policy Choices Underlying Updates to MTCA Cleanup Levels*, prepared for the MTCA/SMS Advisory Group July 2010.

*Development of Benthic SQVs for Freshwater Sediment in Oregon, Washington, and Idaho*, draft technical report.

*Description and Use of the RSET Floating Percentile Method Spreadsheets*.

*ASTM E-1706-05, Standard Test Method for Measuring the Toxicity of Sediment-Associated Contaminants with Freshwater Invertebrates* provided for reference purposes.

*EPA/600/R-99/064 Methods for Measuring the Toxicity and Bioaccumulation of Sediment-Associated Contaminants with Freshwater Invertebrates, Second Edition* No paper copy: this is on CD only.

*Sediment Sampling and Analysis Plan Appendix, Sub Appendix C: Freshwater Microtox 100 percent Sediment Porewater Toxicity Assessment, pages C-1 through C-8*

Washington Sediment Management Standards Chapter 173-204 WAC

*Development of Freshwater Sediment Quality Values For Use in Washington State Phase I Report, September 2002*.

CD containing the complete set of sediment reference materials.

TEE Issue Summary