

**MTCA Science Advisory Board Meeting Summary**  
**October 23, 2006**  
**9:00 AM – 4:00 PM**

**Center for Urban Horticulture**  
**NHS Room A**  
**3501 NE 41st Street**  
**Seattle, WA**

Agenda:

Approve 9/15/06 meeting summary  
Establishing Moderate Levels of Arsenic and Lead in Soil  
MTCA Rule Revision – Use of the TEFs for Dioxin and PAHs.

Attendees:

SAB Members Present: Dr. Hank Landau, Dr. Bruce Duncan, Dr. Marjorie Norman, Dr. Elaine Faustman, Dr. Mike Riley

Agency Staff and Presenters: Dave Bradley, Dawn Hooper, Pete Kmet, Craig McCormack, Hun Seak Park

Audience: Norm Peck, Paul Agid, Jim W. White, Marcia Bailey, Darlene Schanfald, Bill Beckley, Russ Busch, Denise Ashbayh, Lee Dorigan

I. Agenda Review; Review of 9/15/06 Meeting Summary

Ecology reviewed the agenda and goals for the meeting. Ecology noted that members of the audience would be invited to provide brief comments on discussion presentations prior to Board deliberations.

Ecology announced appointing Dr. Mike Riley, SS Papadopolus and Associates, to the Board and re-appointing Dr. Elaine Faustman, University of Washington. Their terms extend through July 31, 2009.

Ecology commented on a letter received from Darlene Schanfeld that expressed concern that members of the Board may have a conflict of interest as a result of their affiliation with certain consulting firms. Ecology conducted a careful review and concluded that Dr. Landau, Geosphere Inc., and Dr. Norman, independent consultant, do not have an economic interest or nor do they represent the referenced companies and therefore do not have a conflict of interest. Dr. Landau clarified that while he indeed has no current involvement with Landau and Associates, he did review a report from Landau and Associates to Rayonier 10 or more years ago. Dr. Norman also made a similar clarification that, while working for Foster Wheeler she was remotely engaged in work associated with the Rayonier site more than 5 years ago.

Ecology reviewed the established process for Board members to disclose potential sources of conflict of interest or bias, such as economic interest in the regulatory outcome of matters within the purview of the Board or affiliation with an interested party. Board members are asked to make such disclosure at the time they are being considered for membership on the Board, during the annual meeting of the Board and at anytime during the year that issues arise that may constitute a conflict of interest. Dr. Landau reminded the Board that he is working on several contracts related to arsenic issues and organic contaminants and offered to answer any questions. Dr. Faustman informed the Board that she is currently conducting pesticides and metals (including arsenic) research related to exposure to children and that this work is funded by a NIEHS grant.

Ecology asked Board members for revisions to the September 15, 2006 meeting summary. The summary will be finalized based on the suggested revisions. Dr. Faustman noted that she has unresolved concerns regarding the fish consumption issue and plans to write a letter explaining her concerns. She is especially concerned with using census data to adjust a small sample size to represent an entire population.

#### Opening Remarks – Dr. Landau

Science Advisory Board members received a letter from the Summit Law Group (representing Rayonier) regarding Board consideration of the proposed rule revision. Dr. Landau stated that he views the Board as functioning as a consultant to Ecology with the responsibility of the SAB to advise Ecology on issues as requested by Ecology. This does not mean that the Board always agrees with Ecology. He recognized the potential for any board member to have a bias and the need for balance and noted that current involvement should not alter a Board member's object review of issues as presented by the agency.

Board members discussed a range of reactions to receiving the letter from reading the letter after consulting with Ecology to another's refusal to open the letter. Board members all thought that a review of the letter would be appropriate only upon request by Ecology. It is the role of the agency to set agendas and priorities for the Board.

#### Policy suggestion:

There was a general consensus amongst Board members that any materials for Board review should come through Ecology. Ecology would disclose what is received and

advise Board members about how to proceed. This prevents a conflict of interest in the case where some receive communications and others don't.

Dr. Faustman remarked that this would be consistent with the NAS Conflict of Interest process. She posed a scenario of someone inviting a Board member to lunch to discuss a topic before the Board. Should this be declared by the Board member?

Dave Bradley noted that some of the issues raised in the Rayonier letter are already imbedded in Ecology's questions to the Board and that some of these questions appear to no longer be issues. He stated that Ecology needs time to review the letter to determine if there are additional issues that need to be brought before the Board.

Dave noted that four factors are important: Transparency; responsiveness, priority setting, clean policy/process. He affirmed that the agency welcomes public input. Ecology will take this issue under consideration and develop a procedure for the Board to consider when issues are raised by outside interests.

## II. MTCA Rule Revision – Use of the TEFs for Dioxin and PAHs.

Dave Bradley summarized, using PowerPoint slides, proposed amendments to the MTCA cleanup regulations and background information (see attachment). These amendments would clarify how TEFs are to be used for mixtures of dioxins & furans, carcinogenic PAHs and PCBs. SAB specific responses are captured in this document.

Dave Bradley posed a series of questions to the Board related to these amendments and asked the SAB to provide conclusions. The results of this discussion are summarized in an attached document.

### **Audience Comment:**

Bill Beckley: It appears the proposal is changing from what was proposed last June. Will there be another opportunity for public comment on the rule?

Dave responded that there will be another formal public comment period as part of the rule-making process. Ecology is considering comments as they are received. All comments will be compiled and responded to as part of the rule-making process.

Darlene Schanfald: What are the changes relative to June?

Dave responded that the most significant change is the GI absorption fraction for dioxins. Ecology is recommending an absorption fraction of 0.4 (40%) instead of the 100% currently used as the default for other chemicals.

Russ Busch: When the TEFs were determined, was absorption considered? He commented that the tribe is looking at highly exposed populations and is concerned about this variability may not be considered when making this modification to the adsorption rate.

**SAB Discussion Notes:**

See the revised discussion paper for Board conclusions: November 2006 Science Advisory Board Review of Issues Related to Mixtures of Dioxins/Furans, Polycyclic Aromatic Hydrocarbons & Polychlorinated Biphenyls.

**III. Status on Establishing Moderate Levels of Arsenic and Lead in Soil**

David Bradley introduced Eric Weber from Landau and Associates. Eric and others from Landau prepared a Technical Memorandum regarding Arsenic and Lead Mobility in Area-wide Contamination-Impacted Soils. Eric provided a review of the technical memo.

He noted there are several factors that support area wide contamination is not a threat to ground water:

- The arsenic and lead species likely to be present ( $As^{+3}$  and  $Pb^{+2}$ ) are relatively immobile in shallow soil conditions.
- Extensive soil profile data confirms arsenic and lead are generally limited to the upper part of the soil profile.
- Ground water quality data, while limited, do appear to confirm lack of mobility
- The equilibrium partitioning model, as used by Ecology in the MTCA rule, uses assumptions that are not consistent with shallow soil contamination.
- The  $K_d$  for arsenic assumed in the MTCA rule appears to be conservative for shallow area wide soil contamination.

Dr. Landau asked if smelter emissions affect the pH of the soil within the TSP area?

Response: Unknown

Dr. Faustman asked if consideration had been given to plotting soil concentrations and nearest ground water concentrations. Dr. Riley suggested looking in more detail at specific wells in South Vashon and Maury Islands and comparing ground water concentrations with known soil concentrations.

Answer: This was considered and rejected because of the lack of detectable arsenic concentrations in ground water.

Dr. Landau asked if any study has looked at soil concentrations over time.

Response: None available.

Dr. Faustman asked if a loading/mass balance study had been done?

Response: This was looked at but lack of data on pesticide application rates limits the usefulness of this approach.

Dr. Landau suggested modeling the depletion of arsenic and lead over time to better model shallow area wide soil contamination.

The Board discussed whether the default arsenic Kd of 29 used in the MTCA rule is appropriate or overly conservative. There was general consensus that this Kd is appropriate for a highly protective approach but may not be applicable to area wide soil contamination because of species present and pH of shallow soils. Board members suggested that a bench test could be conducted to determine Kd values for various geographic settings.

**Audience Comment:**

Norm Peck (Ecology): Observed that Kd could vary with season of the year as a result of fluctuating ground water conditions and irrigation. He also noted that reducing conditions such as those caused by petroleum contamination could mobilize even low levels of arsenic contamination.

Paul Agid: Remarked that the Port of Seattle has been looking at arsenic issues at SeaTac airport for some time. They have noted seasonal differences as well as microscale differences. He suggested looking at ground water data within Smelter impacted areas with soil concentrations greater than 200 mg/kg.

Next Meeting:

December 11, 2006  
9:00 a.m. – 4:00 p.m.  
University of Washington Graham Visitor Center  
2300 Arboretum Dr. E  
Seattle, WA

Meeting adjourned.

\*Summary Approved by SAB 12/11/06