Technical Review Workgroup for Metals and Asbestos Bioavailability Committee Annual Report:
Accomplishments and Activities for Calendar Year 2015

Members

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TRW Bioavailability Committee Accomplishments of 2015

Reports and Guidance on the Bioavailability of Metals in Soil

1. **Published Manuscript: “Predicting Oral Relative Bioavailability of Arsenic in Soil from In Vitro Bioaccessibility”**

2. **Initiated Development of a Report to Validate the Arsenic IVBA Assay**
   Developed the first draft of the Arsenic IVBA Validation Report. This report will provide the basis for validation and regulatory acceptance of the arsenic IVBA assay. Once approved for regulatory use, the arsenic IVBA assay can be used to replace animal bioavailability.

3. **Initiated Development of a Round Robin Study to Support the Arsenic IVBA Assay**
   Initiated development of a multi-laboratory round-robin study to establish consensus values for the arsenic IVBA assay using several soil reference materials.

4. **Initiated Evaluation of Bioavailability/Bioaccessibility of Other Metals**
   Conducted a survey of EPA regions to determine the need to evaluate bioavailability/bioaccessibility methods of other metals (e.g., other than lead and arsenic).

5. **Finalized Lead Bioaccessibility Sampling Guidance**

6. **Initiated Development of a White Paper for Measurement of RBA of Dioxins and PAHs**
   The Dioxin/PAH Subcommittee of TRW Bioavailability Committee developed the first draft of a white paper focused on evaluation and recommendations for animal models to measure RBA of dioxins and polycyclic aromatic hydrocarbons (PAHs) in soil and soil-like materials.

7. **Finalized “Phosphate Amendment Fact Sheet”**
8. Continued Development of a New Flat Creek Reference Soil Material for Lead and Arsenic
   In collaboration with U.S. Geological Survey (USGS), the TRW Bioavailability Committee continued development of a new soil Reference Material (Flat Creek Soil Reference Material) for lead and arsenic, using material collected from a Superfund site in Region 8. The new Reference Material is intended to replace the depleted National Institute of Standards and Technology (NIST) Soil Reference Materials (SRMs), and to be used as Quality Control standards in analyses of arsenic and lead levels in soil IVBA assays.

   Completed the final report for the swine bioassay on the relative bioavailability of arsenic for the new Flat Creek Soil Reference Material. To be posted on the TRW Bioavailability Committee website.

    Continued development of the draft report on a multi-laboratory round robin analysis of the new Flat Creek Soil Reference Material to establish consensus values for lead IVBA and for lead and arsenic concentrations analyzed using EPA Method 3051A (microwave extraction). To be posted on the TRW Bioavailability Committee website.

    Continued progress of a manuscript on the development and analysis of the new Flat Creek Soil Reference Material, reporting on the development process, consensus values for standard analyses, and results of additional in vitro and in vivo testing. Source for the soil is the Iron Mountain/Flat Creek (Montana) Superfund site in Region 8.

12. Publication of SW-846 Method 1340
    Method 1340 (In Vitro Bioaccessibility Assay for Lead in Soil-) is available on the Validated Methods page at: http://www3.epa.gov/epawaste/hazard/testmethods/sw846/new_meth.htm#1340

Communication, Training, and Outreach

1. Hotline. The TRW Bioavailability Committee responds to questions from inquiries made either by telephone to the TRW Bioavailability Committee hotline (toll-free 1-866-282-8622) or via bahelp@epa.gov. The TRW Bioavailability Committee responded to ten requests for assistance in 2015. Of these calls, three requests were from state and federal agencies. The remainder were received from other sources (public, non-governmental organizations, and engineering and consulting firms). Three requests were from outside the U.S. (New Zealand and France).
2. **Community Outreach.** Collaborated with the University of North Carolina and the University of Arizona to develop community outreach materials and presentations on bioavailability.


4. **Presentations/Reports/Publications/Training:**
   
   
   
   
   
   
   
   
   


Coordination/Support with States, Regions, EPA Program Offices, and Other Federal Agencies

1. **USGS:** Continued collaboration for the development and analysis of a new lead and arsenic soil Reference Material.

2. **All EPA Regions:** Conducted a survey to determine the need for evaluation of bioavailability/bioaccessibility methods for other metals (e.g., other than lead and arsenic).

3. **EPA Region 6:** Reviewed and commented on “Selection of the Relative Bioavailability Adjustment Factor for the Baseline Human Health Risk Assessment San Jacinto River Waste Pits Remedial Investigation/Feasibility Study CERCLA Docket No. 06-03-10” for dioxin.

4. **EPA Region 8:** Collaborated with Region 8 on the development of a consensus approach and regression analysis to predict arsenic RBA from an IVBA assay.

5. **EPA Region 9:** Collaboration with ORD-RTP and ORD NHEERL-RTP to provide support on Reviewed Arsenic Bioavailability IR Site 22 – Former Naval Weapons Station Seal Beach Detachment Concord (Concord, CA).

6. **Interstate Technology & Regulatory Council (ITRC):** Bioavailability in Contaminated Soil Team – Several members of the TRW are participating on an ITRC workgroup that is developing guidance documents and internet-based training on bioavailability of lead, arsenic and PAHs in soil.