# Technical Review Workgroup for Metals and Asbestos
# Asbestos Committee Annual Report:
# Accomplishments and Activities for Calendar Year 2016

## Members

**Region 1**
Gary Lipson

**Region 2**
Charles Nace (co-chair)
Nick Mazziotta

**Region 3**
Jack Kelly

**Region 4**
Tim Frederick
Nardina Turner

**Region 5**
Elizabeth Nightingale

**Region 6**
Anna Milburn

**Region 7**
Dave Williams
Jeff Pritchard

**Region 8**
David Berry (co-chair)

**Region 9**
Daniel Stralka

**Region 10**
Jed Januch
Julie Wroble

**Office of Emergency Management (OEM)**
Janine Dinan
Terry Smith
Brian Schlieger

**Office of Research and Development (ORD)**
Maureen Gwinn

**Office of Superfund Remediation and Technology Innovation (OSRTI)**
Cheryl Hawkins
Andrea Kirk (co-chair)
Edward Gilbert
Les Szabo

**Technical Review Workgroup: Asbestos Committee Accomplishments of Calendar Year 2016**

**Reports and Guidance Development on Asbestos Site Characterization and Risk Assessment (completed and active projects)**

1. **PROJECTS TO IMPROVE THE SAMPLING AND ANALYSIS OF ASBESTOS IN SOIL AND AIR:** The Technical Review Workgroup (TRW) is dedicated to supporting and promoting consistent application of the best science in the field of risk assessment for asbestos at contaminated sites to fulfill EPA's core mission to protect human health and the environment. To support this mission, the TRW continually evaluates current asbestos-related sampling and analysis research, products and tools. An overview of these efforts for 2016 is below.

   A. Low magnification Transmission Electron Microscopy (TEM) analysis for assessing Superfund sites: The TRW concluded an extensive study of different microscopy methods for asbestos analysis. This study produced a wealth of comparative data and revealed sources of variability among methods and contract laboratories. Analysis of this data allowed The TRW to update the August 2011 memorandum concerning low magnification TEM analysis at the Libby Superfund site. It also allowed for reduction of variability, and thus improved precision, of current asbestos-related research projects.

   B. National Asbestos Data Entry Sheet (NADES): The TRW updated the NADES spreadsheets according to feedback from end users, and to allow for calculation of confidence intervals based on asbestos analytical method ISO10312. NADES is a data management tool that facilitates recording and transmittal of national sampling results for asbestos for the methods most often employed in analysis of samples from Superfund Sites. Data management services are provided for Polarized Light Microscopy (PLM) analysis of bulk materials, in air and dust using TEM and air samples using Phase Contrast Microscopy (PCM). NADES includes checks and error codes to guide data entry and electronic data deliverables for import into Scribe software or other data management tools.

   C. Fluidized Bed Asbestos Segregator (FBAS) research: Asbestos TRW members from Regions 8 and 10 continued development and evaluation of the TRW-sponsored FBAS. They are conducting multiple studies including method improvement, method comparison, and an inter-laboratory evaluation in collaboration with EPA's Environmental Response Team. The FBAS air elutriates asbestos particles from soil allowing quantification of asbestos fibers at much lower levels. The ability to quantify the asbestos content in soil accurately is important for cleanup decisions and for determining if cleanup standards have been attained. If proven effective, the FBAS may be able to replace the currently recommended Activity-Based Sampling method for evaluation of asbestos exposure and human health risk. Activity-Based Sampling is a time-consuming, labor-intensive method for estimating human exposures to asbestos fibers released from soil to the breathing zone as a result of soil disturbance activity by humans.

2. **RISK ASSESSMENT SUPPORT:** The TRW Asbestos Committee continues to develop guidance, provide clarification on existing guidance and to support regional risk assessors with site-specific questions. TRW members work collaboratively with Regional personnel to ensure consistency across asbestos-contaminated sites nationally. The following projects were undertaken to support work being conducted in the regions.

A. Framework Update: The TRW is incorporating updates to the Framework for Investigating Asbestos-Contaminated Superfund Sites (i.e., "Framework"). The information and resources within the Framework document provide the tools needed to support site characterization and exposure estimates for risk-based removal and remedial actions. The Framework is being updated to incorporate the latest science and recommendations from the TRW.

B. Applicability of Non-Cancer Reference Concentration (RfC) for Libby Amphibole Asbestos (LAA) to Other Amphiboles: The TRW summarized the available data on the relative non-cancer potency of LAA vs. other forms of asbestos and other amphiboles. Following the evaluation, the TRW will make a recommendation to OSRTI management on whether the LAA RfC may be used to evaluate hazard of non-cancer respiratory effects of other amphiboles. This recommendation will be made once appropriate risk calculations for less-than-lifetime asbestos exposures have been determined (see C. below).

C. Development of New Risk Calculations for Less-Than-Lifetime Asbestos Exposures: In 2014, IRIS released a reference concentration (RfC) for LAA, applicable to individuals with life-long exposure. It was unclear how this value would apply to individuals who were exposed for shorter lengths of time. General risk calculations for inhaled contaminants are available to risk assessors through the Risk Assessment Guidance for Superfund (RAGS), part F, for non-chronic exposures. However, asbestos risks pose some unique challenges. Exposure to most inhaled contaminants ceases when a person leaves the contaminated area. Asbestos differs from typical inhaled contaminants in that particles can remain in the body for decades, where they continue to elicit a biological response. The TRW is developing new risk calculations that take the unique attributes of asbestos into consideration so that risk assessments more accurately reflect the biological impact of less-than-lifetime asbestos exposure.

**Communication, Training, and Outreach**

1. ***Hotline:*** The TRW Asbestos Committee responds to questions from inquiries made either by telephone (toll-free 1 866-282-8622) or email (asbestoshelp@epa.gov) to the TRW Asbestos Committee hotline. The TRW Asbestos Committee responded to seven requests for assistance in 2016. Of these calls, four were from state or federal agencies. There was one international (Israel) request. The remaining three calls were from other sources (concerned citizens, engineering and consulting firms). Common issues included questions related to asbestos analytical methods and sampling.

2. ***Presentations/Training:*** TRW Asbestos Committee members presented at two conferences in 2016. A third 2016 conference on elongate mineral particles was rescheduled for 2017 at the last minute. TRW members who were scheduled to present at the 2016 meeting will present in 2017 instead. Completed 2016 presentations are listed in the table below.

| | | | | |
|---|---|---|---|---|
| ASTM Michael E. Beard Conference: Asbestos and Fibrous Minerals Analysis and Research | San Antonio, TX | Thursday January 28 2016 - Friday | David Berry Tim Frederick Jed Januch Andrea Kirk Julie Wroble | The Current State of the Fluidized Bed Asbestos Segregator (FBAS) Design and Method Validation (Januch) |

| | | | | |
|---|---|---|---|---|
| | | January 29 2016 | | Method Comparison Study for Asbestos in Soil (Berry and Januch)<br><br>Comparative Methods Study - Results of Sampling and Analysis of Bulk Soils: Sumas Mountain Naturally Occurring Asbestos Site (Wroble) |
| National Association of Remedial Project Managers (NARPM) Training Program | Pittsburgh, PA | May 2, 2016 to May 6, 2016 | Julie Wroble<br>Tim Frederick | Incremental Sampling Methodology & Asbestos: A Case Study |

3. ***Website:*** This website has been migrated to one-EPA format. The TRW continues to support the incorporation of materials, as appropriate.

4. ***Charter:*** Revised the TRW Charter to include TRW members' roles and responsibilities, which are designed to further advance the TRW's mission to support and promote consistent application of the best available science in the field of risk assessment for asbestos at contaminated sites.

5. ***Asbestos Committee Annual Meeting:*** Held October 2016, in Arlington, VA.

**Coordination with Regions, EPA Program Offices, and Other Federal Agencies**

***Region 3:*** The TRW Asbestos Committee supported Region 3 in addressing the Keasbey and Madison Residential Site, the BoRit site, as well as Embreeville hospital.

***Region 6:*** The Quality Assurance Technical Support contractor and TRW member completed and issued the report for the laboratory on-site audit conducted in December 2015 at Bureau Veritas, Kennesaw, GA, in support of a Region 6 site. The report and additional evaluations were completed in 2016.

***Region 7:*** The TRW Asbestos Committee supported Region 7 in discussions related to Building 83 at Army Ammunition Plant in Missouri.

***Region 9:*** The TRW Asbestos Committee supported Region 9 by reviewing the revised CCMA risk assessment for the Atlas Asbestos Mine and Coalinga Superfund sites.

***Region 10:*** The TRW Asbestos Committee supported Region 10 discussions concerning the Sumas Mountain landslide and contamination of the river downstream.

***ORD:*** The TRW Asbestos Committee continued its review of the ORD Analytical Method Comparison report. Review of the additional information provided by ORD (including filter

prep, subcontractor laboratory analysis, and the data reduction and interpretation that appeared in the report) continues.

**Coordination with Other Nongovernment Groups**

- The TRW Asbestos Committee coordinated with researchers from the University of Pennsylvania who work under the NIEHS Superfund basic research program. The University of Pennsylvania team has been studying migration of asbestos fibers through soil. This research will help the Superfund Program determine if fibers remain in place at capped sites. Other projects include epidemiology studies of people who lived near the BoRit and Ambler Superfund sites, studies of strategies for chemo-prevention of mesothelioma in asbestos-exposed individuals, and mechanistic studies of how asbestos causes rapid progression of mesothelioma decades after exposure.

- Members of the TRW Asbestos Committee supported evaluation of the Hertfordshire asbestos detector in at the American Society for Testing and Materials (ASTM). The detector is a new device, still under development, that can detect asbestos fibers in air at near "instantaneous" speeds. If this device proves successful, e.g., rigorous evaluation of the device and results, it could result in great savings in costs and time for asbestos analysis. Sample costs for analysis of TEM samples can run as high as $750 per sample.

- Members of the TRW were contacted by the talc industry concerning the possibility of applying the fluidized bed asbestos segregator preparation method for analysis of mineral fibers in talc. The TRW directed the industry representatives to a commercial laboratory that has a FBAS unit who could perform the analysis they were seeking.