Attributes Summary

Report for the CCL Work Group

Plenary Meeting

May 12, 2003

The April 25 Conference Call included the following participants:

Participants:

- Laura Anderko
- Douglas Crawford-Brown
- Mike Dourson
- Alan Elzerman
- Jeff Griffiths
- Nancy Kim
- Benson Kirkman
- Brian Ramaley
- Graciela Ramirez-Toro
- O. Colin Stine
- Craig Stow
- Ed Thomas
- Lynn Thorp
- Daniel Wartenberg
- Tom Carpenter, Yvette Selby, and other EPA staff
- Jo Anne Shatkin and other Cadmus staff
- Dave Drain, Perot Systems Gov't Services
- Facilitator: Abby Arnold
- Facilitation Team Members Doug Owen, Amy Kyle, and Sara Litke

On the April 25th Call:

Nancy Kim reviewed her approach for scoring attributes with NRC. She summarized the discussion of NRC committee members, her data evaluation, and difficulties encountered with scoring.

Observations from Attribute Scoring

- Potency

  "How much of a contaminant causes illness?"

  - Approach worked fairly well. Data was available for most contaminants.
  - Scoring based on No Observable Adverse Effect Level (NOAEL) or Lowest Observable Adverse Effect Level (LOAEL) avoided dependence of uncertainty factors
  - Nutrients may need different scoring approach than xenobiotics

Observations from Attribute Scoring

- Severity

  "How bad is the health effect?"

  - Scored based on most sensitive health effect, i.e., the same effect as used to score Potency
  - Most scored high first time – reevaluated approach
  - Scores may need to be adjusted where severe effects occur above LOAEL

Observations from Attribute Scoring

- Prevalence

  "How commonly does a contaminant occur in water?"

  - Recommended temporal and spatial aspects, but temporal and spatial data are sparse: used population exposed and number of detects to derive prevalence with water data, or used production data
  - Used a hierarchy of data types
  - Preference would be for % detects over number of detects
  - Detection limits decrease over time and could affect detection frequency and this needs to be addressed

Observations from Attribute Scoring

- Magnitude

  "What is the expected concentration relative to the level causing a health effect?"

  - Used median detections among detects only
  - May want to consider other statistics
  - Issue raised over redundancy of potency attribute (in two scores), and suggestion to link magnitude to severity
  - Address what is the added value of magnitude

Observations from Attribute Scoring

- Persistence/mobility

  "What is the likelihood that a contaminant will be found in the aquatic environment?"

  - Scored based on amplification, solubility, stability (average x 10/3)

  - Naturally occurring chemicals may need different scale than xenobiotics

Next Steps/Issues for Discussion

- Do we agree/disagree that the five attributes identified by the NRC are the correct attributes? If not, why and is there an alternative?
- If we agree, do we agree with the definition? If not - what is an alternative definition?
- What data elements should be used? For each data element - do you consider it data or information? Need definitive agreement on hierarchy as well.
- Consider whether to use raw/scored data

Further Next Steps on Attributes

- Prepare a document on pros/cons of various data/approaches
- Consider whether can automate scoring
- Consider how to address uncertainty
- Consider how to address sensitive subpopulations
- Consider whether to use magnitude, link it to severity, or if redundant, to exclude it as an attribute
- Address attribute scoring for microbes