A New Vision for Clean, Safe Drinking Water: Overview

Potomac River Basin
Drinking Water Source Protection Partnership

October 12, 2010

Victoria P. Binetti, Associate Director
Water Protection Division
US Environmental Protection Agency
Region III
Drinking Water Strategy

- Address contaminants as groups rather than one at a time
- Foster development of new drinking water treatment technologies
- Use the authority of multiple statutes to help protect drinking water
- Partner with states to share more complete data from monitoring at public water systems
Goals for the New Vision

By pursuing these actions, EPA will:

– Provide more robust public health protection in an open and transparent manner
– Assist small communities to identify cost and energy efficient treatment technologies
– Build consumer confidence by providing more efficient sustainable treatment technologies to deliver safe water at a reasonable cost
Address Contaminants as Groups

- Evaluating and addressing contaminants as groups during the regulatory process may:
  - Be less time consuming and resource intensive
  - Account for risks from multiple contaminants
  - Deal more effectively with an increasing number of emerging contaminants
  - Provide water systems with an opportunity to make best long-term decisions on capital investments
Develop New Technologies

- Foster development of new drinking water technologies to:
  - Address health risks posed by a broad array of contaminants
  - Control contaminants that confront utilities today and into the future
  - Provide sustainable safe drinking water at reasonable costs
  - Develop water- and energy-efficient treatment technologies

- Collaborate with universities, technology developers, and the private sector
Use Other Authorities

- Identify opportunities to better understand and improve drinking water quality
- Provide relevant health effects and exposure data
- Ensure that decisions made under other authorities are protective of drinking water
  - Use reviews under Federal Insecticide, Fungicide, Rodenticide Act (FIFRA) to tighten pesticide registration requirements when occurrence data approaches or exceeds levels of concern
  - Use Toxic Substance Control Act to ensure that decisions made for new and existing industrial chemicals are protective of drinking water
  - Use Clean Water Act to protect source waters
Share Access to All PWS Data

- Partnering with states to develop shared access to all public water systems monitoring data
- Developing information technology, data analysis, and communication tools with states to:
  - Target public health issues, conduct program oversight, and provide compliance assistance
- Provide timely information about the quality of drinking water and performance of drinking water systems
Outreach on Addressing Groups

- **Informal Planning Meeting (June 7)**
- **Web Dialogue (July 28-29)**
- **NDWAC (July 21)**
- **Listening Sessions**
  - June 21 – Chicago, IL (AWWA ACE)
  - Aug 11 – Cincinnati, OH (EPA 7th Annual DW Workshop)
  - Aug 16 – Washington, DC (R3 PRB DW SPP)
  - Aug 19 – Rancho Cucamonga, CA (R9 CA/NV AWWA)
- **NDWAC (July 21)**
- **Stakeholder Meeting (September 21)**
- **Possible Consultation at Association Meetings (October)**
- **SAB Consultation (October)**
- **Web Dialogue (July 28-29)**
- **Approach Framework & Potential Groups**
- **EPA Initiates Work on Group(s)**

June | July | August | September | October | November
What have we heard?

- Public health protection should be of paramount importance
- Consider health effect endpoints in grouping of contaminants
- Consider treatment feasibility to identify and address groups of contaminants
- Consider analytical methods and/or use surrogates or indicators of groups of contaminants
What have we heard?

- Consider addressing groups of contaminants at their source
- Consider occurrence and co-occurrence of contaminants
- Evaluate approaches used by States and other countries in grouping contaminants
- Non-Regulatory Approaches:
  - Green Chemistry
  - Health Advisories
What have we heard?

- Suggested Groups:
  - Parent and Degradate Compounds
  - Nitrosamines
  - Estrogenic Compounds/Endocrine Disruptors
  - Volatile Organic Compounds
  - Goitrogens
  - Algal Toxins
  - Pesticides/Herbicides
  - Industrial Chemicals
  - Indicator Compounds
  - Viruses
Statutory Requirements for the Various Drinking Water Regulatory Processes (1996 SDWA Amendments)

- Contaminant Candidate List (CCL)
- Regulatory Determination for CCL
- Unregulated Contaminant Monitoring
- Regulation Development
- Six Year Review
Defining Group(s)
Potential Factors to Consider

- Has similar health effect endpoint
- Removed by common treatment or control processes
- Measured by common analytical method(s), directly or indirectly, under full scan
- Known or likely co-occurrence

The more “promising” groups are likely to have many of these factors in common.
Examples of Currently Regulated Groups

- **Gross Alpha** (essentially group MCLG and MCL)
  - common health endpoints, one method

- **Beta Photon/Particle Emitters** (group MCLG and MCL)
  - common health endpoints, one method

- **Haloacetic Acids** (HAA 5)
  - common method, common control process

- **Viruses**
  - Common control process
Groups for Potential Regulatory Development (Near-Term)

- Carcinogenic VOCs
- Nitrosamines
- Chlorinated DBPs
Potential Groups for Future Consideration

- Perfluorinated compounds (PFCs)
- Pesticides – Organophosphates
- Pesticides – Carbamates
Groups Under Consideration with Issues & Challenges

- Pesticides – Triazines
- Pesticides – Chloroacetanilides
- Cyanotoxins
Framework/Approaches to Address Groups

- Traditional
  - MCL goals for contaminants
  - Feasibility of treatment & analytic methods
  - Determine individual/group MCLs

- Hazard Index
  - Establish benchmark toxicity value (BTV) for contaminants with common health endpoint
  - Develop Hazard Quotient (HQ) for each chemical, Hazard Index (HI) for Group
  - HI <= BTV
Relative Potency Factor

- Evaluate toxicity of chemicals with common mode of adverse action
- Determine relative potencies compared to index chemical
- Consider exposure concentration X relative potency factor, sum for chemicals in group to obtain Total Equivalent Dose
Framework/Approaches to Address Groups (cont’d)

- Summation of Cancer Risk
  - Establish MCLGs of 0 for carcinogenic contaminants
  - Sum cancer risk from individual contaminants at occurrence levels in water system
  - Determine MCLs (individual/group)
  - Evaluate treatment costs & benefits, determine if benefits justify costs
Framework/Approaches to Address Groups (cont’d)

- Treatment Barrier
  - Define MCLG for group or contaminants in group
  - Determine that it’s not economically or technologically feasible to determine levels of contaminants
  - Identify options for installation & operation of treatment barriers to address
  - Identify monitoring parameters to reflect removal of contaminants
Contacts

- For additional information contact:
  - Pamela Barr – barr.pamela@epa.gov
  - Eric Burneson – burneson.eric@epa.gov
  - Wynne Miller – miller.wynne@epa.gov

- Or visit:
  water.epa.gov/lawsregs/rulesregs/sdwa/dwstrategy