



MTBE and Water Update

January, 1998

**Lori Stewart
USEPA**



The Office of Science and Technology Policy (OSTP) Water Quality Findings Included...

- **Comprehensive national monitoring to describe the occurrence of MTBE and other fuel oxygenates has not been completed to date.**
- **MTBE detections that OSTP identified included:**
 - **About 7% of 592 storm water samples collected in 16 cities between 1991 and 1995. Ranged from 1.2ug/L to 8.7 ug/L.**
 - **About 5% of 1500 groundwater wells. Most detections occurred in shallow groundwater in urban areas. Concentrations of MTBE in ground water greater than about 30 ug/L originate from point sources. Only 7 wells had concentrations above 10 ug/L.**



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- **In 51 public drinking-water systems (derived from ground water), and in 6 of 7 states that provided information. Nearly all the detections were at concentrations less than 20 ug/L.**
 - **The OSTP report stated that “this indicates that the consumption of drinking water was not a major route of exposure for these systems.”**
 - **MTBE is significantly less degradable than other fuel (or BTEX) compounds and sorbs only weakly to soil and aquifer materials (thus, migrates more rapidly than BTEX).**
 - **The presence of MTBE does not prevent the application of conventional remedial methods (air stripping, carbon adsorption, and soil vapor extraction) for gasoline spills but it does raise the cost.**



OSTP RECOMMENDATIONS ON MTBE AND WATER

- **Obtain more complete monitoring data and other information that would enable an exposure assessment, characterization of major sources of MTBE, and characterization of the relation between use of MTBE and other oxygenates in gasoline and water quality.**
- **Complete additional behavior and fate studies.**
- **Complete aquatic toxicity tests to define the threat posed to aquatic life and establish, if warranted, a Federal water-quality criteria.**



California MTBE Concerns

- **The City of Santa Monica detected MTBE concentrations of up to 610 parts per billion (ppb) in the five wells in its main groundwater source, the Charnock Wellfield, and at levels above 70 ppb at its Arcadia Wellfield. This has resulted in a loss of about 50% of its drinking water supply.**
- **EPA's San Francisco Regional office is working closely with the state of California and Santa Monica and is undertaking a federal enforcement effort at the at the Charnock wellfield.**
- **EPA is also assisting State enforcement efforts at the Arcadia wellfield.**



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- **As of December, 1997, CA has sampled 12% of public water systems and 23% of drinking water sources.**
 - **Of the systems sampled, 3.5% have MTBE detections (only 5 above 20 ug/L including two in Santa Monica).**
 - **Of the drinking water sources sampled, 1.3% reported MTBE detections, also at very low levels in most cases.**
 - **CA passed legislation in 1997 requiring more studies on MTBE, establishment of a state drinking water standard, and other state fuels management initiatives.**
 - **CA Congresswoman Debra Bowen held a hearing on MTBE in November, 1997. EPA participated.**
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- **Senator Boxer (D-CA), held a hearing on MTBE in CA in December, 1997. Senator Boxer then wrote to the Administrator, suggesting that EPA:**
 - **Set an emergency drinking water standard for MTBE**
 - **Study corrosive effects of MTBE on tanks and pipelines**
 - **Study the health risks of exposure to MTBE**
 - **Prepare an MTBE phaseout plan**
 - **Congressman Bilbray (R-CA) has introduced legislation to exempt CA gasoline from federal RFG requirements, including the 2.0% by weight oxygen minimum.**
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EPA ACTIONS

MTBE Health Advisory

- **The Office of Water (OW) issued, in December, 1997, a new Advisory for MTBE in Drinking Water. Advisories are not legally enforceable federal standards.**
- **The new advisory provides a range of 20 to 40 ug/L for taste and odor detection levels.**
- **The advisory includes a comparison of this range with levels where health effects have been seen in animals, stating that it is highly unlikely that human health effects would be experienced at the taste/odor levels.**



Drinking Water Contaminant Candidate List

- **MTBE is included on the draft Drinking Water Contaminant Candidate List required by the Safe Drinking Water Act (SDWA).**
- **The list will be published in February, 1998 with final decisions on whether to establish a standard on at least 5 contaminants by August, 2001.**

Additional Monitoring

- **MTBE is also a strong candidate for the Unregulated Monitoring List, also required by the SDWA to be published by August, 1999.**
- **OW is also working with the USGS to target monitoring**



efforts under the National Ambient Water Quality Assessment (NAWQA) program.

- **Under a cooperative agreement with EPA, USGS is conducting a retrospective assessment of MTBE data from 12 Northeast States.**

MTBE and Water Research Group

- **The EPA Office of Research and Development (ORD) is leading a cross-office taskgroup to identify MTBE research needs.**
- **A workshop was held in October, 1997 to present an initial assessment of research needs to industry (oil and oxygenate reps.) and academic groups. EPA is seeking assistance from industry in conducting the research.**
- **The Agency plans to distribute the Research Strategy for**



external review in March, 1998.

Inhalation Health Effects Research Also Planned

- **The Agency is currently reviewing comments on guidance to industry on further research requirements under Section 211 of the CAA.**
- **The animal research focuses on the short and long-term inhalation effects of conventional gasoline and MTBE gasoline.**
- **The 211 testing requirements will also include an extensive array of human exposure research to quantify personal exposure to vehicle emissions in micro environments.**
- **The research will be completed at varying intervals over the**



next five years.

Underground Storage Tank Program

- **Since the adoption of federal underground storage tank (UST) regulations in 1988, over one million tanks have been closed.**
- **About 400,000 of the one million active tanks covered by EPA UST program have been upgraded or replaced.**
- **During the past decade, over 178,000 fuel releases have been remediated out of over 340,000 confirmed releases.**
- **USTs installed after 1988 are currently required to comply with regulations to prevent leaks. All USTs installed prior to**



December 1988 must be upgraded, closed, or replaced to meet these requirements by December 1998.

- **In addition to regulations for preventing leaks, the EPA regulations have required leak detection methods to be in place for all USTs since 1993.**