

# Overview of the Long Term 2 Enhanced Surface Water Treatment Rule

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# Overview of the Long Term 2 Enhanced Surface Water Treatment Rule (LT2)

- Final rule, published January 2006, reflects the M-DBP Federal Advisory Committee's Agreement in Principle recommendations.
- Applies to all public water systems using surface water sources or ground water under the direct influence of surface water (GWUDI).
- The purpose of the LT2 rule is to reduce illness linked to *Cryptosporidium* and other microbial pathogens in drinking water and to address risk-risk trade-offs with the control of disinfection byproducts.

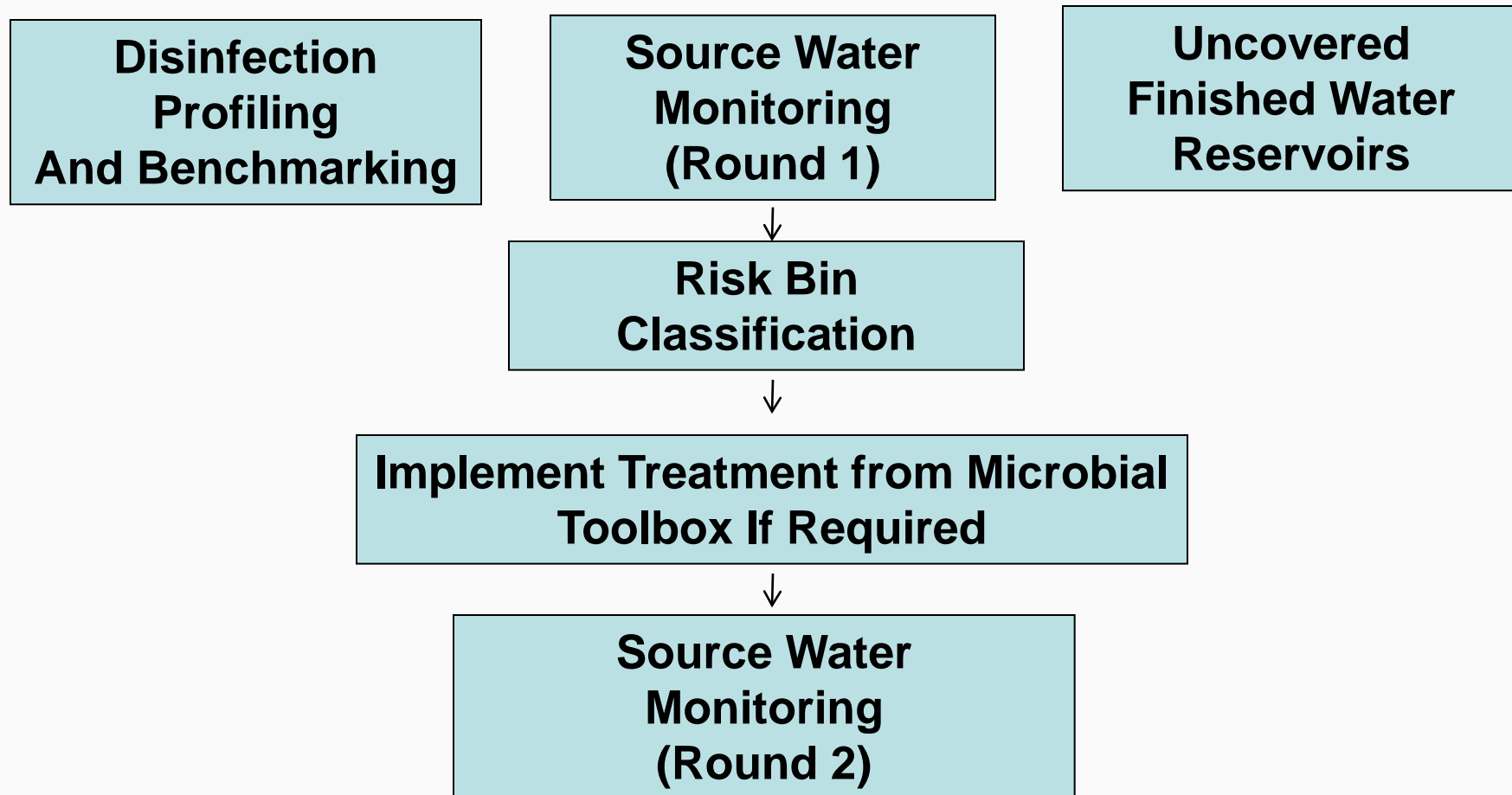


## Overview of LT2 -Continued

- Addresses a number of public health concerns that remained following implementation of the Interim Enhanced Surface Water Treatment Rule (IESWTR)(1999) and Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR)(2002):
  - Supplements existing regulations by targeting higher risk systems (filtered systems with high source water. *Cryptosporidium* concentration and unfiltered systems) for additional *Cryptosporidium* treatment.
  - Continues Disinfection Profiling and Benchmarking to LT2 implementation to address risk-risk tradeoffs with DBP control.
  - **Need for PWSs with uncovered finished water storage facilities to take steps to reduce the risk of contamination of stored (finished) water prior to distribution to consumers.**



# Key LT2 Rule Requirements





# Why are we concerned about UCFWR?

Concern for contamination from bird waste, wild and domestic animal wastes, human activity, algal growth, insects, and airborne deposition.

- Concerns re: pathogenic bacteria, viruses, and protozoa from bird and animal waste.
- Birds a significant source of contamination-bird feces may contain *Salmonella*, *Mycobacterium*, *Cryptosporidium*, *Giardia*.
- Algal growth-taste, odor, cyanobacterial toxin, DBP formation
- Objects being thrown into reservoir, security issues.
- Airborne deposition-industrial pollutants, vehicle emissions, pollen, dust, particulate matter.



## Addressing the Concerns-2001

- Stage 2 MDP Federal Advisory Committee Agreement in Principle called for addressing all UCFWRs.
- Existing state standards required covers or required systems to meet “Ten States” standards.
- “Ten States” standards (*Recommended Standards for Water Works*, Water Supply Committee of the Great Lakes) calls for reservoirs to have watertight roofs.
- AWWA standards (G200.09) “reservoirs shall be covered and protected from contamination or shall incorporate additional treatment of the water as it leaves the reservoir.”



# UCFWR requirements – Rule Proposal vs. Final Rule

- Rule Proposal
  - Cover the reservoir;
  - Treat UCFWR discharge-provide 4-log virus inactivation; or
  - State approved risk mitigation plan.
- Final Rule
  - Cover the reservoir;
  - Treatment of UCFWR discharge to include at least 4-log virus, 3-log *Giardia*, and 2 log *Cryptosporidium* inactivation and/or removal.
  - State approved risk mitigation plan removed.



## Why were the proposed UCFWR requirements changed?

EPA received significant public comment on the proposed requirements for uncovered finished water storage facilities.

- Several commenters recommended that EPA require all finished water reservoirs to be covered-making an UCFWR equal in quality to a covered reservoir not possible.
- Many commenters supported requiring treatment for *Giardia* and *Cryptosporidium* for PWSs that treat the reservoir discharge-treat as an unfiltered source – 3-log *Giardia*, 2-log *Cryptosporidium*, 4-log virus inactivation and/or removal.
- Some commenters supported the proposed option of allowing risk mitigation plans as a reasonable alternative to the substantial costs associated with covering reservoirs or providing alternative storage.





# Why were the proposed UCFWR requirements changed?

- Treatment only for virus is not protective against the range of pathogens that contaminate UCFWRs.
- EPA concluded that implementing a risk mitigation plan that would provide public health protection equivalent to covering or treating a reservoir is not feasible.
  - Many potential sources of contamination.
  - Significant limitations that all PWSs have in the control measures they can implement for UCFWRs.



## History: Regulatory and Legal Actions Related to UCFWRs

- February 16, 1999 (IESWTR): Public water systems serving  $> 10,000$  could no longer construct UCFWRs.
- March 15, 2002 (LT1ESWTR): Public water systems serving  $< 10,000$  could no longer construct UCFWRs.
- August 11, 2003 (Proposed LT2ESWTR): Options to address UCFWRs: (1) cover, (2) provide 4-log virus inactivation, or (3) system implements a State-approved risk mitigation plan.



## History: Regulatory and Legal Actions (Cont.)

- January 5, 2006 (Final LT2ESWTR): UCFWR requirements: (1) cover UCFWR or (2) treat the discharge to achieve inactivation and/or removal of at least 4-log virus, 3-log *Giardia lamblia* and 2-log *Cryptosporidium*.
- March 27, 2007 (Legal action): Petition for review of EPA's LT2 final agency action for both source treatment requirements and UCFWR requirements.



## History: Regulatory and Legal Actions (Cont.)

- November 6, 2007 (Legal action): U.S. Court of Appeals for the District of Columbia Circuit supported EPA's basis for the final LT2ESWTR UCFWR provision that had been challenged.
- April 1, 2008 (LT2ESWTR): Systems must notify the State of use of any UCFWR.



## History: Regulatory and Legal Actions (Cont.)

April 1, 2009 (LT2ESWTR): Systems must have completed or be on a State-approved schedule to complete

- 1) covering the reservoir, or
- 2) treating the discharge to achieve inactivation and/or removal of at least 4-log virus, 3-log *Giardia lamblia*, and 2-log *Cryptosporidium*.



## Statistics on UCFWRs

- 1970's – approximately 700 UCFWRs.
- 2006 (final LT2 published)- 81 UCFWRs.
- Today,
  - 43 reservoirs have been covered, decommissioned, or installed treatment.
  - 38 uncovered finished water reservoirs are still in use, all are under enforceable schedules to meet LT2 requirements.