



# USEPA Drinking Water Regulatory Update

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# Status of EPA Drinking Water Regulations

## ★ Final

- Stage 1 Disinfectants/Disinfection Byproducts Rule
- Interim Enhanced Surface Water Treatment Rule
- Filter Backwash Recycling Rule
- Long-term 1 ESWTR
- Radionuclides Rule
- Arsenic Rule

## ★ Proposed

- Radon Rule
- Groundwater Rule
- 6-year review of existing regulations

## ★ In development

- Stage 2 D/DBP Rule and Long-term 2 ESWTR
- Contaminant Candidate List review

# Microbial and Disinfection Byproduct Control

- ✱ Control of microbial pathogens and disinfection byproducts inter-related
  - ✱ Increase disinfection, increase DBPs
- ✱ Regulatory control a multistage process
  - ✱ Increase filtration, disinfection treatment
  - ✱ Decrease DBPs by controlling precursors, treatment
- ✱ Several regulations in sequence

# Interim Enhanced Surface Water Treatment Rule

- ☀ For SW systems >10,000 people

- ☀ Enhanced filtration

- Combined filter effluent <0.3 NTU 95% of time
- Turbidimeters on individual filters
- Filter assessments if >1.0 NTU

- ☀ Antibacksliding for disinfection

- Disinfection profiles

- ☀ All SW systems

- ☀ Extended sanitary surveys and corrections of significant defects

- Includes source water assessments, distribution systems

- ☀ Began January 1, 2002

# Long-Term 1 Enhanced Surface Water Treatment Rule

- ✦ Applies to SW systems serving <10,000
- ✦ Promulgated January 14, 2002
  - ✦ FR 67, #9, pp1811-1844
  - ✦ Most provisions enforced beginning 2005
- ✦ Basically same as IESWTR
  - ✦ Combined filter effluent turbidity <0.3NTU
  - ✦ Turbidimeters on individual filters
    - Report all turbidities >1.0 NTU
    - Follow-up work on filter performance
  - ✦ Disinfection profiling

# Long-Term 2 ESWTR

- ★ Provides for additional disinfection to control *Cryptosporidium*
  - Will require extensive initial *Cryptosporidium* monitoring in sources
  - Smaller systems monitor only for *E. coli*
- ★ Monitoring results will determine additional treatment requirements beyond IESWTR
  - “Microbial tool-box” of possible approaches
  - UV, ozone, chlorine dioxide are possible disinfectants
  - Most CA systems will require minimal enhancements
- ★ Linked to Stage 2 D/DBPR
  - Expect proposals late 2002
  - Final rules stated for mid 2003 (more likely, 2005)
  - Compliance dates from 2004 to 2011 (2006-2013??)

# Filter Backwash Recycling Rule

- ☀ Promulgated June 8, 2001
  - ☀ FR 66, #111, pp31085-31105
- ☀ Elements only apply to surface water systems with conventional or direct filtration that recycle within treatment plant
  - ☀ Recycle liquids to plant headworks by June 8, 2004 (June 8, 2006, if capital construction required)
  - ☀ No sludge recycling
  - ☀ Provide plant recycle information by June 8, 2003
- ☀ Basically already required in CA

# Groundwater Rule

- ✱ Proposed May 10, 2000
  - ✱ FR 65, #91, pp 30193-30274
- ✱ Promulgation expected early 2003
  - ✱ Not much happening right now

# Proposed GWR Elements

- ✦ Sanitary surveys for all GW systems
  - ✦ Source, well, distribution system, O&M, etc
- ✦ Hydrogeologic assessments for undisinfected systems
  - ✦ Based on source water assessments
  - ✦ Karst, fractured rock and gravel aquifers are vulnerable
- ✦ Source monitoring, if fecal bacteria in distribution or if sensitive aquifer
  - ✦ Likely both fecal bacteria and virus indicators
- ✦ Corrective action, if system deficiencies or positive fecal contamination in well
- ✦ If disinfecting, 4-log disinfection of viruses

# Stage 1 D/DBPR

- ☀ Enforcement

- ☀ Began January 1, 2002 for SW systems >10,000
- ☀ January 1, 2004 for SW <10,000, all GW systems

- ☀ Sets new MCLs for disinfection byproducts

- ☀ Sets Maximum Residual Disinfectant Levels for disinfectants

- ☀ Requires Enhanced Coagulation for conventional treatment systems to control organic carbon precursors

# Disinfectant and Disinfection Byproduct MCLs and MRDLs

- ☀ Total trihalomethanes = 80 ug/L
- ☀ Haloacetic acids (5) = 60 ug/L
- ☀ Bromate = 10 ug/L
- ☀ Chlorine = 4 mg/L
- ☀ Chloramine = 4 mg/L

# Stage 2 D/DBPR

- ★ Will ultimately require TTHM and HAA5 MCL compliance at each monitoring point in distribution system (2008-2011)
  - No averaging across distribution
  - Would control for "hot spots"
- ★ Initial Distribution System Evaluation
  - Substantial additional monitoring to determine new compliance points
  - State must approve new monitoring plan
- ★ Expect proposals mid-2002
  - Final rules slated for mid-2003 ( )
  - Compliance dates from 2004 to 2011??

# Arsenic Rule

- ★ Rule promulgated January 22, 2001
  - ★ FR 66, #14, pp 6975-7066
- ★ MCL set at 0.01 mg/L
  - ★ Based on cost-benefit balance
- ★ Effective date delayed to Feb 22, 2002
  - ★ Administrator reviewed data and assessments
  - ★ MCL stands as set
- ★ 5-year implementation
  - ★ MCL compliance still January 23, 2006
  - ★ CCR reporting beginning February 22, 2002

# Radionuclides Rule

- ★ Final Radionuclides Rule promulgated December 7, 2000
  - FR 65, #236, pp 76707-76753
- ★ Rule effective December 8, 2003
- ★ Addresses uranium, radium, gross alpha, beta and photon emitters

# Radionuclides Rule

- ★ Some MCLs remain the same
  - ★ Gross alpha @ 15 pCi/L
  - ★ Beta and photon emitters @ 4 mrem/yr
  - ★ Radium 226 + 228 @ 5 pCi/L
- ★ New uranium MCL @ 30 ug/L
  - ★ Based on kidney damage, not cancer
- ★ New monitoring requirements
- ★ Only applies to community water systems

# Radon Rule

- ✦ Proposed November 2, 1999
  - ✦ FR 64, #211, pp 59246-59378
- ✦ Final Rule expected late 2002
  - ✦ Expected to be as written
- ✦ MCL = 300 pCi/L
- ✦ Alternative MCL = 4000 pCi/L
  - ✦ Equivalent to outdoor air level
  - ✦ Utilities may use Alternative MCL if states or utilities have multimedia radon mitigation programs that provide equivalent risk reduction
- ✦ Multimedia mitigation criteria proposed
- ✦ R9 states say they will do MMM

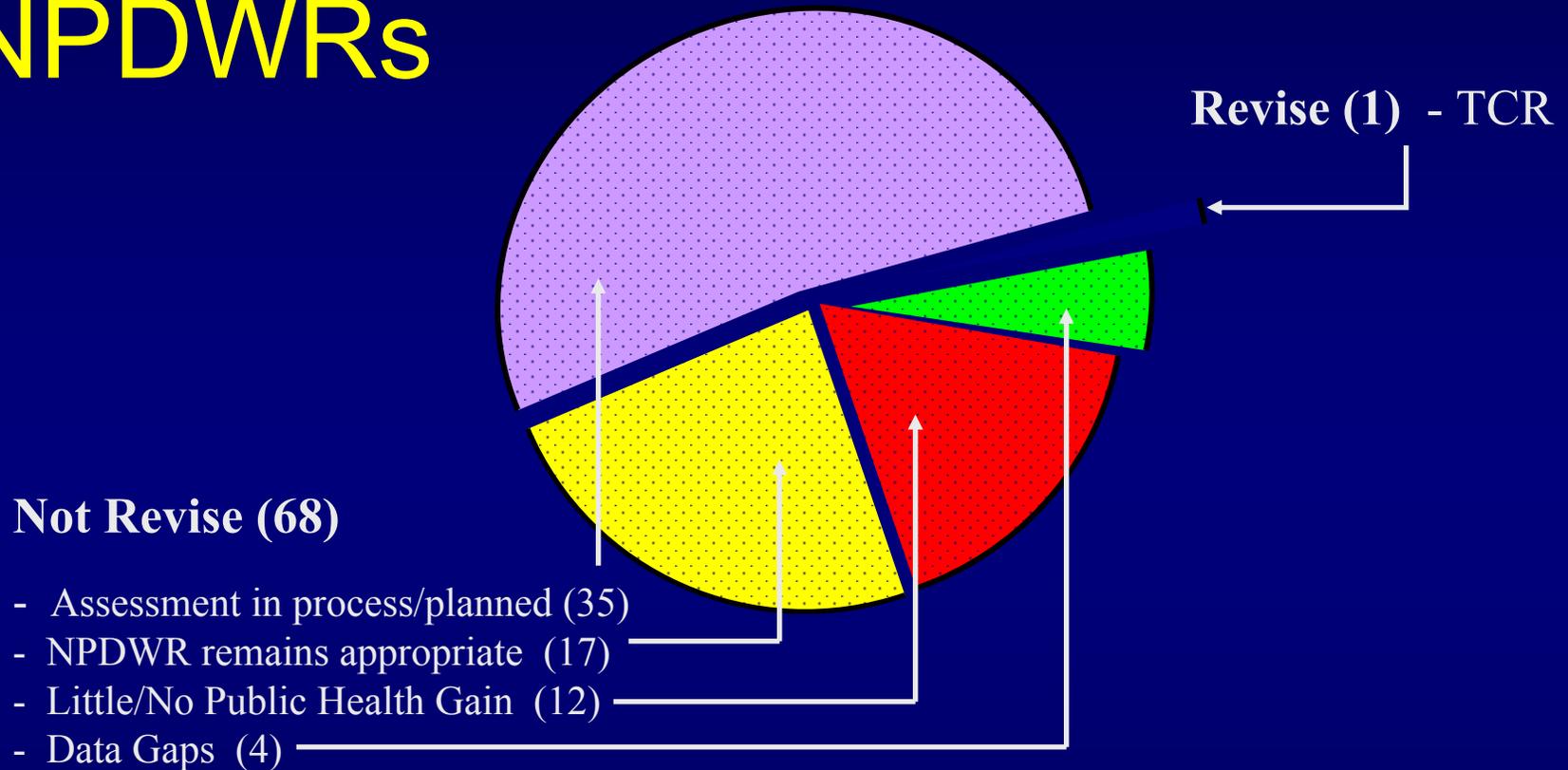
# Future Drinking Water Regs

- ★ EPA must choose contaminants from Contaminant Candidate List (1998) for possible regulation
- ★ Reviewed 12; likely to address 9, but regulate few (if any)
- ★ Expect formal Notice of Intent soon
  - ★ Consider aldrin, dieldrin (?)
  - ★ No regs for *Acanthamoeba*, hexachlorobutadiene, naphthalene, metribuzin, manganese, sulfate, sodium (?)
  - ★ More work on metolachlor, perchlorate, MTBE (?)
- ★ If any regs, no earlier than 2007-2010

# 6-Year Review of Existing Regs

- ★ EPA must review all regs every six years for possible revision
  - First review to be completed by August 2002
  - Request for public comment on draft released April 17
- ★ TCR revision proposed
- ★ No other revisions proposed
- ★ Next round would be in 2008

# Recommended Decisions for 69 NPDWRs



# TCR & Distribution System

- ✱ Decision was made to independently address TCR and distribution system regulations
- ✱ TCR revision to address monitoring, not MCLs
- ✱ Distribution system reg suggested by FACA2
  - ✱ Will consider cross-connection control, other O&M elements
- ✱ Both workgroups just starting
- ✱ Regulations years away (2007-2010?)