

Emerging Issues for Health Officers

Massachusetts DEP
Drinking Water Program

Lead in Drinking Water

LCR & LCCA

Source of Lead

- Drinking Water Sources Usually Do Not Have Lead.
- Corrosive (i.e., low pH or acidic) Water Can Cause Leaching of Lead from Service Lines and Plumbing Materials into Drinking Water.

Lead Regulations

MassDEP Implements Federal Safe Drinking Water Act (SDWA) Programs to Address Lead in Drinking Water.

- Lead and Copper Rule (LCR)
- Lead Contamination Correction Act (LCCA)
- Lead Ban 1986 – No Lead Pipe or Lead Solder
- The Reduction of Lead in Drinking Water Act - New Definition of Lead Free - January 4, 2014
“not more than a weighted average of 0.25% lead with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures.”

What is the LCR?

- Designed to Minimize the Ingestion of Lead and Copper Through Drinking Water by Reducing the Corrosiveness of Finished Water.
- Does Not Set a Maximum Contaminant Level (MCL) for Lead.
- Sets Action Levels:
 - Lead = 0.015 mg/L or 15 ppb
 - Copper = 1.3 mg/L or 1300 ppb
- Requires a Treatment Technique for Lead and Copper when an Action Level is Exceeded.

LCR Sampling

- Sampling Based on Population
 - E.g. 100,000 persons - 100 samples, 100 persons - 5 samples
- Sample Sites are Those Likely to Have Lead
- Initially, PWSs Must Collect One Set of Samples During Two Consecutive Six Month Periods
- If Lead and Copper Levels are Low, Sampling May be Reduced
- PWS Asks Homeowners/Occupants to Volunteer to Collect Samples from Indoor Taps
 - Taps Must be Used Regularly, Such as Kitchen Taps
 - Taps Must Not be Used for 6 Hours Prior to Sampling
- Samples Must be Analyzed by a State-Certified Laboratory.
- PWSs Must Provide Sample Results to Participating Homeowners.

Use of the LCR Lead Action Level

The 90th Percentile Value is Identified for Each Sampling Round, it is this Value that is Compared to the Action Level

If the 90th Percentile Value is Over the Lead Action Level, the PWS Must:

- Conduct Public Education (All Customers)
- Collect Additional Water Quality Parameters
- Collect a Source Water Lead Sample
- If Necessary, Submit Optimal Corrosion Control Treatment Recommendations and Install Treatment
- If After Installing Treatment the PWS Still Exceeds the Action Level, the PWS Must Replace **7%** of their Lead Service Lines Every **12** Months Until the Results are Below the Action Level for 2 Consecutive Sampling Periods.

Current LCR Results

- There are 1735 PWS in Massachusetts
- LCR Applies to Approximately **800** Community Water Systems and Non-Transient, Non-Community Water Systems
- **21** of 800 LCR PWSs Have Current Lead Levels Above the Lead Action Level Including **4** Schools
- **2** of the 21 Systems are Required to Perform Lead Service Lines Replacements
- MassDEP is Working with these Systems to Bring them Back Below the Lead Action Level

What is the LCCA?

- 1988 SDWA Voluntary Program for Schools and Childcare Facilities to Reduce Lead in Drinking Water
- MassDEP is Responsible for Managing the LCCA in Massachusetts.
- MassDEP and Partners use Training and Education to Encourage Schools and Childcare Facilities to Address Lead and Copper in Drinking Water
 - 5 Year Survey to Update Status (due March 15, 2016)
- PWSs Provide Demonstration Samples to Assist their Local School Districts to get Started on LCCA Actions

Private Wells

- The LCR Does Not Apply to Private Wells
- The MassDEP Private Well Guidelines Recommends that Homeowners Test their Water for Lead and Copper
- Local Boards of Health are Encouraged to Follow MassDEP's Private Well Guidelines
- Recommendations for Private Wells Over the Action Levels:
 - Flushing of Pipes Prior to Use
 - Use of Bottled Water
 - Point of Use (at the tap) Home Treatment Systems such as Ion Exchange, Reverse Osmosis and Activated Carbon

LCR Contact Information

Contact Person	Region	Telephone	Email
Andrea Lemerise	CERO	(508)767-2723	Andrea.Lemerise@State.MA.US
Tatyana Karpenko	NERO	(978)694-3233	Tatyana.Karpenko@State.MA.US
Giliane Tardieu	SERO	(508)946-2805	Giliane.Tardieu@State.MA.US
Dan Laprade	WERO	(413)755-2289	Daniel.Laprade@State.MA.US
Frank Niles	Boston	(617)574-6871	Frank.R.Niles@State.MA.US

The Revised Total Coliform Rule (RTCR) under the Safe Drinking Water Act



Total Coliform Rule (TCR)

- Distribution System Monitoring for Bacteria
 - Community PWSs – Monthly
 - Non-Community PWSs – Can Qualify for Quarterly
- Screening for Total Coliform
- Number of Testing Sites Depends on Population Served
- If Total Coliform is Detected Follow-up Testing for *E. coli*
- Two Maximum Contaminant Levels
 - Monthly MCL Based on Total Coliform-Positive Samples
 - Acute MCL Based on Combination of Total Coliform-Positive and *E. coli*-Positive Samples
- Violations Require Public Notification

Key Changes From TCR to RTCR

- RTCR Goes Into Effect April 1, 2016
- Compliance for Total Coliform Changes from Maximum Contaminant Level (MCL) to “Assessment Triggers”
- Expansion of the *E. coli* MCL
- Criteria for Quarterly (Reduced) Monitoring
- Changes to Sampling Requirements
- New Requirements for Seasonal PWSs
- New Violations and Public Notification Requirements

Coliform “Assessments”

- MCL for Total Coliforms has Been Eliminated.
- Direct PWSs to “Find and Fix” Problems that Might Contribute to Bacterial Contamination.
- Conduct “Assessments” to Find Sanitary Defects.
- The Nature of the Assessment (Level 1 vs. Level 2) Varies Depending on the Sampling Size and the Type, Number and Recurrence of Positive Samples.

Level 1 Assessments

- A Level 1 Assessment is a Basic Examination of the Components and Operation of the PWS.
- The Level 1 Assessment is Intended to be a Self-Assessment Completed by a Responsible Party of the PWS.

Level 2 Assessments

- Evaluates the Same Elements as the Level 1 Assessment, but in Greater Detail.
- Level 2 Assessments Will Include Significant Record Review, Additional Data Collection and Field Investigations.
- Level 2 Assessments May be Performed by a Certified Operator , Technical Assistance Provider Contracted with the State, or Other Water System Professional Approved by MassDEP
- MassDEP May Choose to Perform the Assessment, and if so Will Notify the PWS in Writing Within 10 Days.

Quarterly Monitoring Under RTCR

- Monthly Monitoring is the Default for All PWSs
- Quarterly Monitoring Possible for Non-Community PWS Serving $\leq 1,000$ and Using Only Groundwater (Not Under the Influence of Surface Water)
- Seasonal Systems Must Do Quarterly Monitoring:
 - Must Identify the Period of Highest Vulnerability on their Sampling Plans , and
 - Must Collect Samples During those Periods.

Quarterly Monitoring Criteria

- To Remain on Quarterly Monitoring, PWSs Must Demonstrate the Following:
 - Clean Compliance History for 12 Months
 - Free of Sanitary Defects
 - Compliance with the Zone 1 Source Protection Requirements
 - Compliance with the Certified Operator Requirements
 - No Disinfection
 - All Sources are Constructed in Accordance with the PWS Guidelines.

Seasonal System Requirements

- Seasonal System Definition - Non-Community Water System that is Not Operated as a Public Water System on a Year-Round Basis, and Starts Up and Shuts Down at the Beginning of Each Operating Season.
- Seasonal PWSs Must Demonstrate Completion of a MassDEP Approved Start-Up Procedure Every Year.
- Seasonal PWSs that Do Not Depressurize but Close to the Public May Seek a MassDEP Exemption from Certain Requirements.
- **A MassDEP Letter Was Sent to Boards of Health (2/18/16) Requesting Support and Assistance Spreading the Word**

Required Seasonal Start-Up Procedure

- Notify the Certified Operator
- Activate Source(s); Inspect all System Components; and Flush the Entire Distribution System
- Collect Coliform Samples in Accordance with the Coliform Sampling Plan
- Complete Certification Form and Submit to MassDEP No Later than Seven Days Before Opening to the Public
- Other Start-Up Procedures May Apply, Including Chlorination Procedures, Atmospheric Tank Disinfection and Flushing and Re-Installing Water Meters and Backflow Prevention Devices

Violations Under RTCR

- Treatment Technique Violations:
 - Failure to Conduct a Level 1 or Level 2 Assessment Within the Required 30 Days.
 - Failure to Correct any Sanitary Defect Identified During an Assessment by the Approved Corrective Action Schedule Dates.
 - Failure by a Seasonal System to Complete a MassDEP Approved Start-Up Procedures Before Supplying Water to the Public.
- All Treatment Technique Violations Require a Public Notice be Issued Within 30 Days of the PWS Learning of the Violation.

Monitoring Violations

- Monitoring Violations:
 - Failure to Collect All Routine Samples During the Monitoring Period.
 - Failure to Collect All Additional Routine Samples in the Month Following a Total Coliform-Positive Sample (for PWSs Monitoring Quarterly).
 - Failure to Analyze for *E. coli* When a Routine Sample is Total Coliform-Positive.
- All Monitoring Violations Require a Public Notice be Issued Within 1 Year of the PWS Learning of the Violation.

Reporting Violations

- Reporting Violations:
 - Failure to Submit a Monitoring Report in a Timely Manner.
 - Failure to Submit an Assessment Report After Properly Performing an Assessment.
 - Failure to Notify MassDEP of an *E. coli*-Positive Sample on the Same Day that the PWS Learns of the Result.
 - Failure of a Seasonal System to Submit Certification After Following a MassDEP Approved Start-Up Procedure.
- All Reporting Violations Require a Public Notice be Issued Within 1 Year of the PWS Learning of the Violation.

Key Actions Now for Quarterly Systems

- For PWSs Currently on Quarterly Monitoring, Ensure That You Meet the Requirements for Quarterly Monitoring, and Become Familiar with the Triggers for Increased Monitoring.
- For Seasonal PWSs Currently on Quarterly Monitoring, Ensure That Your Coliform Sampling Plan Identifies the Sampling Time When Your PWS is Most Vulnerable to Contamination.

Key Actions Now for Seasonal Systems

- Develop and Obtain MassDEP Approval of a Start-Up Procedure
- Opening Prior to April 1: No Need to Submit the Certification, But You are Encouraged to Follow the Start-Up Procedures
- Opening April 1 or Later: You Must Perform the Start-Up Procedures and Submit the Certification Form with Clean Bacteria Results to MassDEP
- Unsure if PWS is Subject to the Seasonal System Requirement? -- Contact your MassDEP Regional Office Prior to Serving Water to the Public

MassDEP Contacts

Northeast Region

Thomas Mahin - Thomas.Mahin@state.ma.us 978-694-3226

Southeast Region

Richard Rondeau - Richard.Rondeau@state.ma.us 508-946-2816

Central Region

Robert Bostwick - Robert.Bostwick@state.ma.us 508-849-4036

Western Region

Deirdre Doherty - Deirdre.Doherty@state.ma.us 413-755-2148

Boston / Statewide

Drinking Water Program - program.director-dwp@state.ma.us 617-292-5770
<http://www.mass.gov/eea/agencies/massdep/water/drinking/>

Unregulated Contaminant Monitoring Rule (UCMR)

Federal UCMR

- U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR)
- 1996 Amendments to the Safe Drinking Water Act (SDWA)
- Managed by EPA, in coordination with states
- Collects data on contaminants without federal health-based drinking water standards
- Requires monitoring for no more than 30 contaminants, every 5 years
- Provides EPA and others with occurrence data to help EPA develop regulatory decisions (incl. contaminants that may warrant regulation under SDWA)
- UCMR now in its 3rd cycle (thus "UCMR₃")

UCMR3 MONITORING

30 contaminants, including VOCs, SOCs, PFCs, Metals, Hormones, Viruses/Microbiological Indicators

3-Year Monitoring Period: 1/1/2013 to 12/31/2015

Varying tiers of monitoring (frequency, sampling points, analytical methods required) depending on size of the Public Water System and type of contaminant

UCMR3 Reporting, Public Notification, Next Steps

- PWSs reported data to EPA
- Data now available via EPA, and access has been provided to PWSs and states
- All participating PWSs issue public notice to their consumers and Board of Health of the availability of results
- PWSs with one or more detections provide customer and Board of Health information via annual water quality report [Consumer Confidence Reporting Rule (CCR)], including:
 - Contaminant detected and the level of the detection
 - Potential health effect info may also be included
- MassDEP is assessing data and reaching out to PWSs

More Information on UCMR3

EPA UCMR₃ Database

<https://www.epa.gov/dwucmr/occurrence-data-unregulated-contaminant-monitoring-rule>

EPA UCMR

<https://www.epa.gov/dwucmr>

MassDEP Contact Information

Northeast Region

Thomas Mahin - Thomas.Mahin@state.ma.us 978-694-3226

Southeast Region

Richard Rondeau - Richard.Rondeau@state.ma.us 508-946-2816

Central Region

Robert Bostwick - Robert.Bostwick@state.ma.us 508-849-4036

Western Region

Deirdre Doherty - Deirdre.Doherty@state.ma.us 413-755-2148

Boston / Statewide

Drinking Water Program - program.director-dwp@state.ma.us 617-292-5770

<http://www.mass.gov/eea/agencies/massdep/water/drinking/>