



The Ground Water Rule: The First 387 Days

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CT DPH Drinking Water Section
Information Systems Unit

Annual Technical Conference and Vendor Exposition
February 23, 2011

Information Systems Unit

Unit Responsibilities

Data Systems Management (SDWIS, ESS, GIS, DWSCAD)	Water System Inventory Maintenance
Rule Implementation and Compliance Determination	State and Federal Reporting Requirements
Monitoring Requirements and Schedules	Document Management and Archiving
Electronic Data Interchange (EDI)	Website Design and Maintenance
Data Quality Control	Freedom of Information (FOI) Requests

Connecticut Department of Public Health Drinking Water Section - Unit Responsibilities

Planning

[Water Supply Plan Process & Review](#)
[Water Utility Coordinating Committee \(WUCC\) Process](#)
[Sale of Excess Water \(SEW\) Permits](#)
[Source Abandonment Permits](#)
[Reservoir Capacity Monitoring](#)
[Water Conservation, Water Use Restrictions, & Drought Planning](#)
[Water Company Screening Applications](#)
[Certificate Phase 1A feasible interconnection evaluation](#)
Proposed Legislation Review
[Department of Environmental Protection Diversion Permit Review](#)
Potable water supply options for contaminated areas
Water Planning Council

Source Water Protection

[Well siting permits](#)
[Water company land permits](#)
[Watershed survey review/approval](#)
Water Company recreational land use permits
[Pesticide permits](#)
Source Water Protection workshops, education, stakeholders meetings
Local project reviews
Spill/Bypass Response
[Department of Environmental Protection Diversion Permit Review](#)
[Drinking Water Quality Management Plan development](#)
[Connecticut Environmental Policy Act & State Agency project reviews](#)
[Class III land verification](#)

Compliance Regions

Sanitary Surveys (Routine & Priority)
[General Technical Assistance to Public Water Systems/Consumers](#)
Project Reviews & DWSRF/STEAP/STAG Technical Reviews
[Certificate of Public Convenience and Necessity – Phase 1B and 2](#)
Consumer Complaints
[Security/Emergency Response](#)
Sanitary Survey Response Compliance
[Cross Connection Control](#)
[GWUDI Reviews](#)

Enforcement and Certification

[Maximum Contaminant Level \(MCL\) Violations](#)
[Monitoring and Reporting Violations](#)
[Public Notification Rule Violations](#)
[Formal Enforcement Actions and Tracking](#)
[Drinking Water Standard Exceedances](#)
[Lead and Copper Action Level Exceedances and Requirements](#)
[Consumer Confidence Reports](#)
[Monthly Operating/Treatment Log Violations](#)
Enforcement Targeting Tool Response
Attorney General Referrals
[Certification of Operators](#)
[Operator Training](#)
[Technical Assistance to Operators](#)
[System Operator Compliance](#)
Operator Investigations
Operator Disciplinary Actions
[Certification of Backflow Personnel](#)
[WTP Classification Form reviews](#)

Information Systems

[Rule Implementation and Compliance Determination](#)
[Monitoring Requirements and Schedules](#)
[Water System Inventory Maintenance](#)
[Water System Contact Information](#)
[Electronic Data Interchange \(EDI\)](#)
Data Systems Management (SDWIS, ESS, DWSCAD)
Geographic Information Systems (GIS)
Document Management and Archiving
Website Design and Maintenance
Data Quality Assurance/Quality Control
[CT and EPA Reporting Requirements](#)
[Bottled Water Source Review](#)
Fluoridation
[Annual Public Water System Violations Report](#)

Capacity Development

[Drinking Water Revolving Loan Fund](#)
Grants Management
Capitalization Grant
Public Water System Supervision Grant
Water Protection Coordination Grant
EPA Performance Partnership Agreement
Federal Special Appropriations Projects ([STAG-Drinking Water Projects](#))
[Capacity Development Coordinator](#)
Regulation Development Coordinator
Contracts
Asset Management Training
Quality Management Plan
Quality Assurance Project Plan
Outreach and Education Support
Records Retention Policy



Topics

- Monitoring Requirements
- Monitoring Plans
- Sanitary Surveys
- Significant Deficiencies
- Corrective Actions
- 4-log Inactivation and Compliance Monitoring
- Future Expectations



Monitoring Requirements

Source Water Monitoring

- Triggered
- Assessment

Treatment Technique Compliance Monitoring

- Residual Disinfectant Concentration
- As directed by the Department

Triggered Monitoring

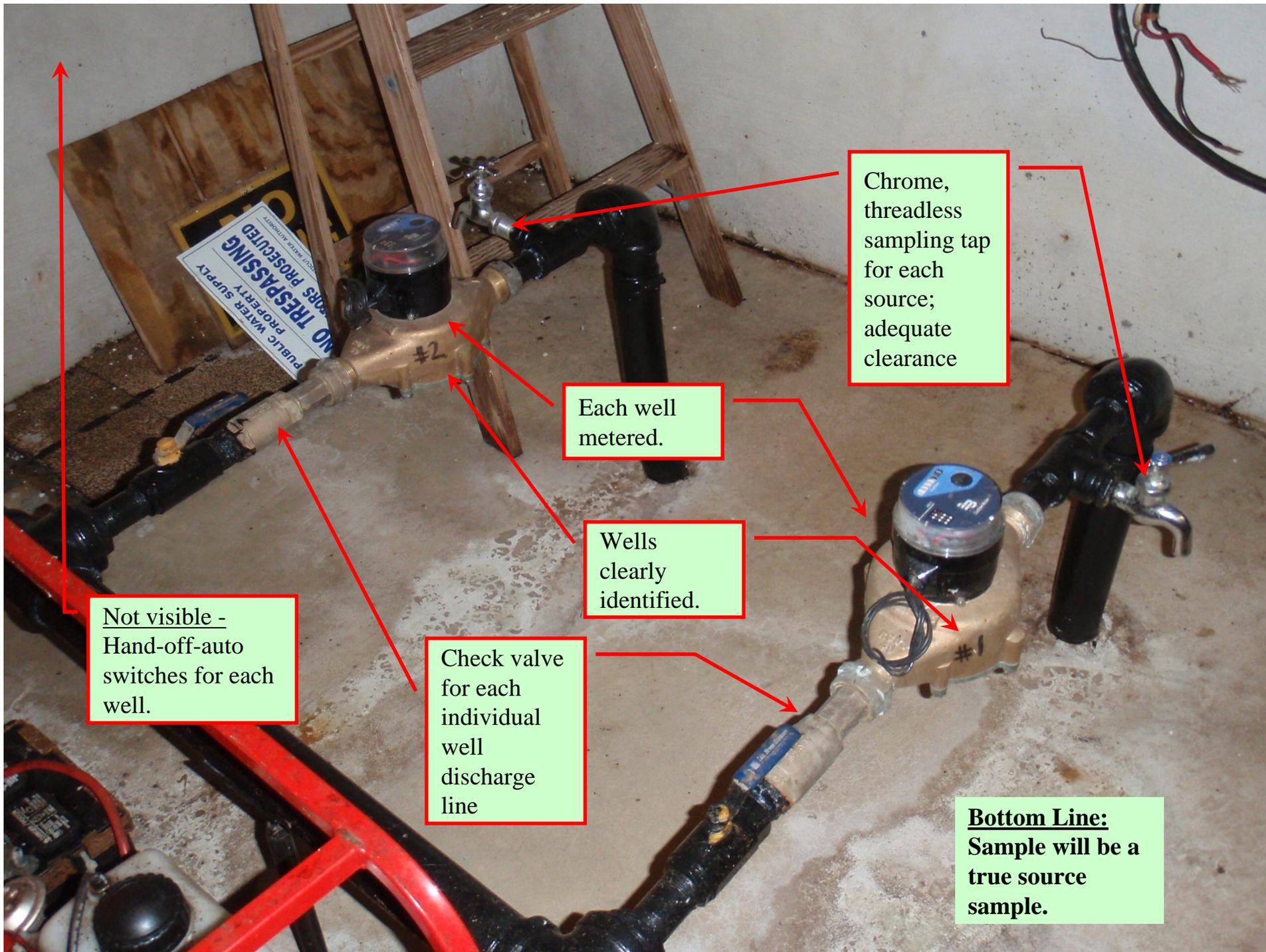
- Any positive Total Coliform Rule sample “triggers” source water monitoring for a fecal indicator (E.coli)
- Within 24 hours, collect at least one sample from each source in use at the time
- Department may grant an extension up to 96 hours if requested in writing
- Consecutive systems must notify their wholesale systems who must collect at least one sample from each source in use at the time

Triggered Monitoring Exceptions

- GWS provides 4-log virus treatment for the source(s)
- Sample is invalidated due to lab error
- Sample is deemed to be caused by a distribution system deficiency per DWS criteria
- Sample is collected at a location that meets predetermined DWS criteria for distribution system conditions that will cause total coliform-positive samples

Planning for Triggered Monitoring

- Plan for source water monitoring in advance!
- Does each source have a sampling tap?
- Is the sampling tap accessible by the sampler?
- Are the source and sampling point ID known for reporting purposes?
- Would a Representative Triggered Source Water Monitoring Plan be appropriate?



Chrome, threadless sampling tap for each source; adequate clearance

Each well metered.

Wells clearly identified.

Check valve for each individual well discharge line

Not visible - Hand-off-auto switches for each well.

Bottom Line:
Sample will be a true source sample.

Representative Triggered Source Water Monitoring Plan

- The plan will propose conducting “representative” monitoring only at those sources that accurately represent the affected distribution TCR sampling site
- Ideal for systems with multiple sources or zones in distribution
- Requires thorough knowledge of system facilities and operation
- Representative Triggered Source Water Monitoring Plan must be submitted for Department review and approval prior to use

Assessment Monitoring

- Reserved for sources that are deemed to be at a higher-risk for fecal contamination
- Source may be tested for the DWS specified fecal indicator(s) once per month, typically for 12 months
- Monitoring could be continued indefinitely if there is continued risk of contamination
- A triggered sample may be used for compliance
- Criteria: separating distance issues, history of TCR MCL violations, <4 Log or unapproved treatment systems, HSA investigation, discontinued use of a 4 Log treatment system

Additional Monitoring and Notification Requirements

- If a triggered or assessment sample is positive for a fecal indicator, within 24 hours:
 - Collect 5 additional (confirmation) source water samples unless immediate corrective action is required by the Department
 - Provide a Tier 1 Public Notification
 - Notify all consecutive systems served by that source
- If a confirmation sample is positive for a fecal indicator:
 - Corrective Action is required
 - Provide a Tier 1 Public Notification

Example of TCR and GWR Monitoring

Subject: CWS with 3 wells (2 are active)

Situation: 3 of 4 routine monthly TCR samples are TC+

of TCR Repeat samples required? 9

of GWR Triggered samples required? 6

Situation Continued: 2 TC+ samples at one well

of GWR Confirmation samples required? 0

If all GWR Confirmation samples are EC-, no additional sampling is required under GWR.



CT Monitoring Report Card

Timeframe: **December 9, 2009 – December 31, 2010**

Triggered Monitoring Requirements: **395**

CWS: **199** NTNC: **75** TNC: **121**

Assessment Monitoring Requirements: **0**

Monitoring Violations: **66 (17%)**

CWS: **22** NTNC: **19** TNC: **25**

Overall Grade: **B-**

Sanitary Surveys

Detailed review of a public water systems encompassing eight (8) categories:

- Source
- Treatment
- Distribution system
- Finished water storage
- Pumps, pump facilities, and controls
- Monitoring, reporting, and data verification
- System management and operation
- Operator compliance with department requirements

Sanitary Surveys

- CWS every 3 years
- NCWS every 5 years
- Regulatory violations and significant deficiencies are documented in a sanitary survey report
- Report will specify timeframes for corrective actions
- System has 30 days to provide a written response
- Violation will be issued for a failure to respond



CT Survey Report Card

Timeframe: **December 9, 2009 – December 31, 2010**

Surveys Conducted: **765**

CWS: **205** NTNC: **188** TNC: **381**

Surveys w/Sig. Deficiencies: **285 (37%)**

CWS: **57** NTNC: **56** TNC: **172**

Violations for failure to respond: **225 (29%)**

CWS: **40** NTNC: **38** TNC: **147**

Overall Grade: **D+**

Significant Deficiency

Any situation, practice, or condition in a public water system with respect to design, operation, maintenance, or administration that the department determines to be causing, or has the potential for causing, risks to health or safety of the public served by the system. Significant deficiencies shall include, but are not limited to, defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, including violations of subsection (j)(2) of this section, storage, or distribution system that the department determines to be causing, or have potential for causing, the introduction of fecal contamination into the water delivered to consumers;

Corrective Action

- Required when:
 - A triggered or assessment monitoring sample is fecal indicator positive (if directed by the Department)
 - A source water confirmation sample is fecal indicator positive
 - The water system is notified of a Significant Deficiency

Corrective Action Alternatives

- Correct all significant deficiencies
- Provide an alternate source of water
- Eliminate the source of contamination
- Provide treatment which reliably achieves 99.99 percent (4-log) inactivation or removal of viruses

Corrective Action Timeline

- Within 30 days* :
 - Consult with the Department regarding appropriate corrective action*
- Within 120 days* :
 - Complete the appropriate corrective action; or
 - Be in compliance with a Department-approved corrective action plan and schedule

Non-Compliance = Treatment Technique Violation

* DWS may prescribe corrective actions and completion dates, including interim measures in lieu of the consultation process

Interim Measures

Actions that the Department may specify for the protection of public health pending approval and completion of a corrective action plan

Examples:

- Requiring the system to provide an alternate, temporary source of water
- Requiring the system to provide customers with notices to boil all water to be used for consumption
- Requiring the system to provide temporary disinfection
- Requiring the system to inactivate contaminated water sources



CT Deficiency Correction Report Card

Timeframe: **December 9, 2009 – December 31, 2010**

Significant Deficiencies Identified: **434**

CWS: **104**

NTNC: **76**

TNC: **254**

Corrective Action Plans Approved: **19**

Significant Deficiencies Corrected: **233** (54%)

Treatment Technique Violations: **75** (17%)

Overall Grade: **B-**

4-log Treatment Requirements

- Treatment that reliably achieves 99.99 percent (4-log) inactivation and/or removal of viruses
- Systems that maintain 4-log treatment of viruses are exempt from the source monitoring provisions of the GWR*
- Systems must submit an application for approval of the 4-log treatment system
- Department approval will include specific operating parameters, a minimum residual disinfectant concentration (RDC) and a CT value

** Application must be reviewed and approved by the DPH*

4-log Treatment Compliance Monitoring

- Required to ensure that the approved treatment is effective and public health is protected
- Residual Disinfectant Concentration
 - >3,000 population – continuous monitoring
 - <3,000 population – continuous monitoring or 1 grab sample/day at the time of peak hourly flow

4-log Treatment Compliance Monitoring

- Grab sampling every 4 hours required:
 - Failure of continuous monitoring equipment; or
 - Daily grab sample is less than approved RDC
- At no time may a system be out of compliance with the approved minimum residual disinfectant concentration and CT value for a 4-hour period (Treatment Technique Violation)
- New reporting form under development

Public Notification Requirements

Tier 1 Notice (Within 24 hours):

- Fecal positive Triggered or Assessment sample
- Fecal positive source Confirmation sample

Tier 2 Notice (Within 30 days):

- Treatment Technique Violation
 - Failure to complete corrective action or maintain compliance with corrective action plan and schedule
 - Failure to maintain 4-log treatment

Tier 3 Notice (Within 365 days):

- Monitoring violations

Special Notice

- Continued failure to complete corrective action

Future Expectations

Changes to Reporting Requirements

- Electronic Data Interchange (EDI): New reporting elements for full Ground Water Rule implementation
- New reporting form for 4-log Treatment Compliance

Lab-to-State hosted on the Department's website

- Reporters will upload files directly onto the state server

Drinking Water Watch

- Web application that gives a public view into our Safe Drinking Water Information System

New Regulations

- Inclusion of GWR, LT2, Stage 2 DBPR and LCR Short Term Revisions



Thanks for Listening!

Questions??

Connecticut Department of Public Health Website:
<http://www.ct.gov/dph/publicdrinkingwater>

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