

**Environmental Management Division
Bureau of Drinking & Groundwater
Public Water Supply Program**

The federal government revised the Total Coliform Rule portion of the Safe Drinking Water Act on February 13, 2013. One of the revisions includes a requirement for public water systems to have formal assessments when bacterial contamination is detected. This requirement is now part of Administrative code ch. NR 809 (published March 2016).

The Public Water Section has developed guidance for inspectors responsible for conducting these assessments. It is intended that this guidance be inserted in an existing chapter of the Public Water Section's operations handbook chapter dealing with inspections.

The proposed guidance sets forth in plain language the responsibilities of state inspectors for completing these assessments, including the minimum steps involved.

The DG Program is now soliciting comments from the public on this proposed guidance, for a 21-day notice period. Once the 21-day notice period is complete, all comments will be considered, revisions will be made as needed, and the final section will be inserted into the Public Water Supply's operations handbook chapter 2.

Comments related to this draft guidance should be sent to:
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2.8 RTCR Assessments

2.8.1 General

Formal “Assessments” are required in response to Total coliform and *E. coli* contamination. These are inspections specifically designed to identify and correct any “sanitary defects” that might allow microbiological contamination to enter the distribution system. There are two different levels of these assessments. Level 1 Assessments are only performed by community water systems. They are not as in depth as Level 2 assessments. Level 2 Assessments are performed by DNR & County inspectors and require a more rigorous inspection of the system. Assessments **must be completed within 30 days of the trigger**.

Level 1 assessment triggers.

1. For public water systems taking 40 or more samples per month, the public water system exceeds 5.0% total coliform-positive samples for the month.
2. For public water systems taking fewer than 40 samples per month, the public water system has two or more total coliform-positive samples in the same month.
3. The water supplier fails to take every required repeat sample after any single total coliform-positive sample.

Note: Non-community public water systems do not do Level 1 Assessments in Wisconsin

Level 2 assessment triggers.

1. An *E. coli* MCL violation, as specified in s. NR 809.30, Wis. Adm. Code.
2. A second Level 1 trigger within a rolling 12-month period
3. For public water systems with approved annual monitoring, a Level 1 trigger in two consecutive years.

Note: Non-community water systems require a Level 2 Assessment for any Level 1 trigger in Wisconsin

A treatment technique violation occurs if a system fails to complete required corrective actions by the state approved deadline. **For more detail on treatment technique violations please see chapter 12.**

The protocol for **follow-up samples** after an assessment trigger occurs is discussed in **chapter 6**. Sampling to investigate the potential sources of contamination, for the purpose of developing a corrective action plan, is discussed in 2.8.5 below. *E. coli* MCLs and TTVs require systems on reduced monitoring to go on increased monthly monitoring frequencies. This is also discussed in **chapter 6**.

2.8.2 Federal Rule

The Federal Revised Total Coliform Rule (RTCR) was promulgated in the Code of Federal Regulations on February 13, 2013. It replaces the Total Coliform Rule (TCR), promulgated in 1989. The requirements for Level 1 and Level 2 Assessments are part of the RTCR.

2.8.3 Authority & Responsibilities

The requirements to conduct assessments are established in ch. NR 809.313, Wis. Adm. Code.

2.8.4 Scope

The minimum elements of an assessment include review and identification of inadequacies in sample sites; sampling protocol; sample processing; atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could

affect distributed water quality, including water storage; and source and treatment considerations that bear on distributed water quality. In general RTCR assessments are similar to sanitary surveys, however, RTCR assessments differ in that the focus is on identifying and correcting a known contamination event. Sanitary surveys are broader in scope, but assessments are more urgent in nature. The federal rules also use different terminology for the problems discovered during RTCR assessments than sanitary surveys. When performing RTCR assessments inspectors are looking for “sanitary defects.” These are substantially similar to significant deficiencies; however, sanitary defects only involve problems with “barriers to contamination.” Not all significant deficiencies are sanitary defects, but virtually all sanitary defects are significant deficiencies.

2.8.5 Investigative Sampling

In addition to the normal two sets of two clean investigative samples following chlorination, many RTCR Level 2 assessments require a more intensive investigation of the contamination source to inform the appropriate corrective action. This is especially necessary if no obvious sanitary defects are discovered that can correct the contamination issue and contamination persists even after batch chlorination. When well samples are required it is ideal to have a faucet at the well to eliminate any piping issues. Sampling options to consider are listed in the appendix to this section.

2.8.6 DWS Data Entry

Regional DG field staff are responsible for maintaining and updating the DWS records for assessments and any associated corrective action plan and schedule to address sanitary defects identified during an assessment.

2.8.7 Reviewing Level 1 Assessments – Community Water Systems

The Level 1 Assessment form is designed to be simple enough for most certified community public water system operators to complete using information they already have, with only limited guidance from DNR staff. Once the form is completed, DNR staff use professional judgment to determine whether or not the operator made a good faith effort in completing the assessment. Correction of any sanitary defects identified during the assessment is required either at the time of the assessment, or in accordance with an approved plan and schedule. It is not always possible, nor is it required, to identify a sanitary defect during a thorough level 1 assessment.

Note, a second level 1 assessment trigger incurred during the following twelve months requires a Level 2 Assessment performed by DNR staff.

2.8.8 Conducting Level 2 Assessments – Community Water Systems

Pre-Assessment Preparation

Prior to performing a Level 2 assessment, DNR field staff review sampling records, past sanitary surveys, well construction reports, and any other documents pertinent to their investigation. In addition, it is recommended that DNR field staff make note of any recent weather events that may have impacted the water supply.

On-Site Assessment

The on-site assessment includes an examination of water system facilities, operational procedures, sampling plans and practices, and relevant records. The assessment form provides a guide to ensure all aspects are addressed, including:

- A. Public Water System and Consecutive System Owner Information

- B. Assessment Agent Information
- C. Recent Changes, Problems, and Pertinent Historical Issues
- D. Monitoring Observations
- E. Source Water (Groundwater) and Pump Observations
- F. Treatment Observations
- G. Surface Water Treatment Systems
- H. Pressure Vessel and Booster Pumps/Station
- I. Water Storage Facility
- J. Distribution
- K. Summarize Sanitary Defects and Unsatisfactory Observations
- L. Explain any Corrective Actions
- M. Proposed Corrective Actions Plan and Schedule
- N. Completeness Checklist
- O. Assessment Agent and Owner Signatures
- P. WDNR Review and Summary

Assessment Documentation

DNR field staff are responsible for completing the Community Water System Level 2 Assessment form and distributing copies to the system representative and DNR file. The system representative, on site when the assessment was conducted, should be noted on the form. Depending on the complexity of the corrective actions noted it may be necessary to write a formal letter describing corrective action steps and deadlines. Completing the form and providing a copy to the system representative is acceptable for assessments where only coliform is found and the system has not had an assessment in the previous 12-month time period. A letter with additional information on the corrective action response is required for repeat confirmed coliform events within a 12-month time period, an *E.coli* MCL, or illness outbreak investigation.

Each section of the form should have a checked response denoting whether elements within that section were identified during the assessment as a potential source of the coliform contamination event. If a section is marked “yes,” then mark all items in that section that apply.

Additional documentation including, pictures, guidance on corrective action options, and/or a letter may be included with any assessment. Inspectors are encouraged to provide any additional resources or letter to provide additional directions they feel are needed. The additional materials will provide the system with directions on current corrective actions required, options for correction, and what additional actions may be triggered if the coliform contamination event is not resolved.

Corrective action due dates may be assigned by the Inspector for potential sanitary defects in consultation with the system representative. Note: Systems with an *E. coli* MCL will remain on boil water until the corrective actions are complete.

2.8.8(a) Public Water System and Consecutive System Owner Information

Provide the system name, PWSID number and contact phone number.

2.8.8(b) Assessment Agent Information

In all cases, DNR field staff perform the Level 2 Assessments. DNR field staff work closely with the operator in charge of the public water system, but the responsibility for ensuring the integrity of the assessment lies with the DNR field staff who perform the assessment.

2.8.8(c) Summarize Sanitary Defects and Unsatisfactory Observations

Any sanitary defect discovered during the assessment must be explained in enough detail that the person responsible for correcting it understands the issue. It is likely that pictures and additional supporting documentation will be needed, especially if the issue is at all complicated. Minor things may just be described in the space provided in Section K.

2.8.8(d) Explain any Corrective Actions

Any sanitary defect discovered during the assessment must have a corrective action. This is a description of what will correct the sanitary defect. However, make sure corrective actions are not something we are prescribing when it is more appropriate for a consultant to advise the correct approach. Professional judgment will often be required. If there is any doubt, please consult with your supervisor. Minor corrections can just be described on the form. More complicated corrections will require additional supporting documentation.

2.8.8(e) Proposed Corrective Actions Plan and Schedule

Corrective actions identified in section L of the assessment form must have a formal corrective action plan and schedule, and must be discussed with the system and agreed to by both parties. This is very similar to corrective action plans for significant deficiencies. This corrective action plan and schedule must be tracked in the DWS PWS Actions screen. Any RTCR corrective action not complete by the agreed upon due date will create a TTV.

If the system needs to seek advice from a consultant before a corrective action plan can be agreed to, you can propose dates for fixing the problem, and later update the DWS actions table with information about what the actual corrective action was. During this process you can also extend due dates as necessary as long as due dates have not passed. DNR field staff are responsible for maintaining regular communication with the system during this corrective action process.

2.8.8(f) Completeness Checklist

This section is self-explanatory.

2.8.8(g) Assessment Agent and Owner Signatures

This section is self-explanatory.

2.8.8(h) WDNR Review and Summary

This section is where you summarize your findings. What was the likely cause of the event? Did the corrective action have the desired effect? Was the work satisfactory with all sanitary defects eliminated?

2.8.9 Conducting Level 2 Assessments – Non-Community Water Systems

Pre-Assessment Preparation

Prior to performing a Level 2 assessment, bacteria and nitrate sampling records pertaining to the public water system should be reviewed by the inspector. A sampling history report may be printed from the DWS. Reviewing recent weather events, that may have impacted the water supply, may also be useful. Inspectors should also review past surveys, well construction reports, and any other documents pertinent to their investigation.

On-Site Assessment

The assessment should include an onsite examination of all water system facilities, review of operational procedures, sampling plans, and records. An assessment must include the completion of a non-community Level 2 Assessment form. This form includes four sections.

- A. Event Background Information
- B. Survey of Five Water System Elements (Source, Pumps, Storage, Treatment, Distribution)
- C. Description of the Event
- D. Description for Corrective Actions

Corrective action due dates may be assigned by the inspector for potential sanitary defects in consultation with the system representative. In the rare situations when considering a corrective action for sanitary defects with a due date greater than one year the County Contract (CC) inspector, DNR field specialist, and the DNR field supervisor must consult each other before issuing an agreed upon corrective action and due date. Note: Systems with an *E. coli* MCL will remain on boil water until the corrective actions are complete.

Assessment Documentation

The non-community Level 2 Assessment form must be filled out by DNR or County staff and presented to the system representative. The system representative, on site when the assessment was conducted, should be noted on the form. It is desirable to have the owner present for the assessment but if the owner is not available the owner should be contacted and provided with a copy of the report. Depending on the complexity of the corrective actions noted it may be necessary to write a formal letter describing corrective action steps and deadlines. Completing the form and providing a copy to the owner is acceptable for assessments where only coliform is found and the system has not had an assessment in the previous 12-month time period. A letter with additional information on the corrective action response is required for repeat confirmed coliform events within a 12-month time period, an *E.coli*. MCL, or illness outbreak investigation.

Each section of the form should have a checked response denoting whether elements within that section were identified during the assessment as a potential source of the coliform contamination event. If a section is marked “yes,” then mark all items in that section that apply.

Additional documentation including, pictures, guidance on corrective action options, and/or a letter may be included with any assessment. Inspectors are encouraged to provide any additional resources or letter to provide additional directions they feel are needed. The additional materials will provide the system owner with directions on current corrective actions required, options for correction, and what additional actions may be triggered if the coliform contamination event is not resolved.

Corrective action due dates may be assigned by the inspector for potential sanitary defects in consultation with the system representative. County Contract (CC) inspectors should consult with their DNR field specialist and DNR inspectors should consult their supervisor before issuing any corrective action due dates for sanitary defects greater than one year. This should almost never happen. Note: Systems with an *E. coli* MCL will remain on boil water until the corrective actions are complete.

2.8.9(a) Description of Event

In this section, describe any sanitary defects discovered during the assessment in greater detail. This may include multiple defects from multiple elements of the assessment. Depending upon the complexity of the issue, it may be necessary to include additional documentation to the report.

2.8.9(b) Corrective Actions

In this section, describe in greater detail the corrective actions needed to resolve the sanitary defects identified in the “Description of Event” section. In most instances, the appropriate corrective action will follow logically from the sanitary defect identified, i.e. if they have a rusted-out bacteria-laden pressure tank, the corrective action will be a new tank. However, make sure corrective actions are not something we are prescribing when it is more appropriate for a consultant to advise the correct approach. Professional judgment will often be required. If there is any doubt, please consult with your supervisor.

When the well is the issue, inspectors should present all the evidence of this, however drilling a new well may not correct the problem if the aquifer is contaminated. A consultant should make this determination, not the DNR. Though NR 812.26 allows for the DNR to require contaminated wells to be filled and sealed after three unsuccessful attempts at batch chlorination, this may not be advisable if a new well will not correct the problem. The system, in consultation with a consultant, should follow the approach discussed in NR 812.37(2)(e). Treatment is only allowed to correct bacteriologically contaminated wells if drilling a new well, or hooking on to another safe source is not available.