

Implementation of the Revised Total Coliform Rule in Michigan
Final Report of the Revised Total Coliform Workgroup
March 4, 2014

Introduction

In August 2013, the Michigan Department of Environmental Quality (MDEQ), Office of Drinking Water and Municipal Assistance (ODWMA) established a Revised Total Coliform Rule (rTCR) Workgroup (Workgroup) consisting of drinking water staff from the ODWMA and several representatives from Michigan's local health departments (LHD). The goal of the Workgroup was to develop recommendations to give to MDEQ management on how certain requirements of the newly promulgated rTCR are best implemented in Michigan.

All Workgroup members agreed that the rTCR will require more time and resources to administer than the current Total Coliform Rule (TCR) does, especially at noncommunity water supplies (NCWS). The need for additional resources could be a critical issue for many of Michigan's LHDs.

Background

On February 13, 2013, the United States Environmental Protection Agency (USEPA) published in the Federal Register, 40 CFR Parts 141 and 142 of the National Primary Drinking Water Regulations, Revisions to the Total Coliform Rule; Final Rule. The compliance date of the rTCR is April 1, 2016.

The intention of the USEPA in promulgating the revisions to the existing TCR was to increase public health protection by requiring public water supplies (PWS) to find and fix potential pathways of fecal contamination into their distribution systems. To achieve this, the rTCR requires a PWS to perform an assessment of its system to identify sanitary defects and then to take action to correct the defects. The assessments are triggered by certain criteria, including a PWS having a certain number of positive total coliform samples or an *Escherichia coli* (*E. Coli*) positive sample. In addition, the rTCR changes the current maximum contaminant level (MCL) from total coliform to *E. Coli*. These changes will affect Michigan's community water supplies (CWS) and NCWSs somewhat equally.

However, the rTCR includes other requirements that will impact Michigan's NCWSs significantly more than Michigan's CWSs. These requirements largely focus on monitoring frequency, triggers that increase the frequency of monitoring, requirements that must be achieved before a monitoring frequency can be reduced, and increased regulation at seasonally operated NCWSs.

Complicating matters is that in certain areas of the rTCR, the USEPA allows each state some discretion in deciding how to implement the requirements. This created a somewhat unusual problem for Michigan because in Michigan, the MDEQ contracts with LHDs to implement the NCWS program. Therefore, decisions on how to implement the rTCR in Michigan could not be made solely by MDEQ staff; rather the MDEQ needed to include representatives from the LHDs in the decision making process. Consequently, in August 2013, the ODWMA established an rTCR Workgroup consisting of representatives from the ODWMA and several LHDs. A list of the Workgroup members appears at the end of this report. The purpose of the Workgroup was to develop recommendations to give to MDEQ management on how the rTCR is best implemented in Michigan so that public health protection is maintained or improved while the need for increased resources at the state and local levels is kept to a minimum. This final report contains the Workgroup's recommendations and a section on some of the other issues the rTCR will bring that were of importance to many of the Workgroup members.

Workgroup Recommendations for the rTCR Implementation

The Workgroup focused on the requirements within the rTCR for which the USEPA allowed state discretion. A brief description of the reasoning behind why the recommendation was made is included. Also, rule references are included with each recommendation.

Recommendation 1: Level 2 Assessments at NCWSs should be conducted primarily by LHD staff, with assistance from MDEQ staff, if needed. The Workgroup does not recommend that third-party contractors conduct the Level 2 Assessments in Michigan. (§141.2)

The Workgroup agreed that allowing the Level 2 Assessments to be conducted by third-party contractors in Michigan would require more resources than it would save. An entire program would have to be created to ensure that contractors had the education, training, and ability to do the assessments. Procedures for the approval of contractors would have to be developed, and of most concern to the Workgroup, were the procedures that would need to be in place to deny a contractor from performing assessments due to lack of education or credentials, or poor performance.

The NCWS Level 2 Assessments will be conducted by the LHDs. However, MDEQ staff will be available to assist.

Recommendation 2: The Workgroup recommends that dual purpose samples not be allowed in Michigan. (§141.402)

The MDEQ's drinking water analysts' experience with dual purpose samples has not been positive. They believe it has caused more confusion and sampling errors than collecting the samples separately, as required by both the TCR and the Groundwater Rule. Therefore, the Workgroup recommends that dual purpose samples not be

allowed under the rTCR. This will not result in an increase in the number of samples collected from what is currently required under the TCR.

Recommendation 3: Each LHD can independently determine whether or not to allow the non-seasonal NCWSs* under their jurisdiction to transition into the rTCR at their current monitoring frequency. (§141.854(c))

Most of the LHD representatives on the Workgroup did not want to arbitrarily increase all of the NCWSs to quarterly monitoring on the date the rTCR becomes effective because they felt that the NCWSs that are currently monitoring on an annual basis were operated and maintained very well, had properly constructed wells, and had no sanitary defects. Also, several LHD representatives felt an increase to quarterly monitoring at all NCWSs would require even more resources to administer. However, other LHD representatives felt that their health departments may not have the resources to perform the required Level 2 Assessments at the NCWSs that monitor annually; and therefore, they may opt to require all of their NCWSs to monitor no less than quarterly once the rTCR is in effect.

Recommendation 4: A monitoring violation for a missed sample at a transient NCWS* on quarterly monitoring will not be counted if the missed sample is collected before the end of the next quarter. Note: This is only allowed for the purposes of determining eligibility for remaining on or qualifying for quarterly monitoring. (§141.854(a)(4))

The USEPA included this provision to alleviate the burden to the states of one monitoring violation triggering a transient NCWS monitoring quarterly into monthly monitoring. This provision does not apply to non-transient NCWSs or any NCWS on annual monitoring. This is only allowed for the purposes of determining eligibility for remaining on or qualifying for quarterly monitoring -- a missed sample is still a monitoring violation subject to public notification and other requirements of the rTCR.

The Workgroup discussed the possibility of a transient NCWS missing samples quarter after quarter. Would this be allowed to occur repeatedly? Members agreed that missed samples should only be allowed once or twice before the system would be required to monitor monthly.

Recommendation 5: Seasonally operated NCWSs* should be required to monitor no less than quarterly while in operation. (§141.854(i)(2))

Currently, many seasonal NCWSs collect a routine total coliform sample only once a year. Workgroup members agreed that collecting only one sample per year is not protective of the public health for systems that are shut down for a portion of the year. Many seasonal systems are campgrounds and children's camps. Increasing monitoring to quarterly will ensure that susceptible populations are better protected from enteric diseases caused by pathogenic strains of *E. coli*. Therefore, the Workgroup

*Applies to only NCWSs serving 1,000 people or less using only a groundwater source of water.

recommends that all seasonal NCWSs be required to monitor quarterly as of the rTCR compliance date.

Recommendation 6: The LHDs, on a case-by-case basis, will review and approve the monitoring schedule for NCWSs using only groundwater that serve over 1,000 people at certain times during the year and fewer than 1,000 people at other times during the year. If a LHD allows a NCWS to reduce monitoring when they serve fewer than 1,000 people, the justification will be included in the NCWS's sample siting plan. (§141.857(d))

When this was first discussed by the Workgroup, generally members were not in favor of allowing a NCWS to increase/decrease monitoring on a monthly basis dependent upon whether they had served more than or fewer than 1,000 people during the month. But upon further discussion, members agreed that there are cases in which it made sense to allow it. Therefore, the Workgroup recommends allowing increased/decreased monitoring when it makes sense to do so by adding a written justification for it in the system's sample siting plan.

Other Issues and Concerns Related to the rTCR

Resource Demands

At each meeting held, the Workgroup discussed the increase in workload that the rTCR will bring. Performing triggered Level 2 Assessments will require additional resources; but they could be considered insignificant when compared to the additional resources that may be needed to conduct the yearly Level 2 Assessments required for NCWSs to remain on annual monitoring.

LHD representatives were most concerned about the rTCR's increased monitoring requirements. At least three LHD representatives on the Workgroup already perform all the technical, administrative, and clerical tasks needed for the NCWS program for their entire health department. The increase in monitoring data that they will have to enter by hand into WaterTrack could significantly increase their workload. Also, a large part of their time is spent reminding NCWS owners/operators to do what is required. The LHD representatives fear that many of the systems that have been monitoring on an annual basis will quickly trigger into quarterly and/or monthly monitoring, consequently increasing the time that they will have to spend reminding owners/operators to sample; to check if the samples were collected; to perform compliance checks of the data, including an evaluation to determine if an assessment was triggered; to make sure that all of the repeat samples for a positive were collected; etc. Several of the LHD representatives strongly recommend that the monitoring data and compliance work be done by MDEQ staff once the rTCR goes into effect and that each LHD be allowed to decide whether or not to retain the work or relinquish it to the MDEQ.

The LHD members of the Workgroup were asked to complete a workload analysis indicating the time it will take for them to complete the additional requirements in the rTCR. This was a difficult task and involved making many assumptions, including how many NCWSs would be found in noncompliance with the rTCR, especially in the first two-three years after it is in effect. Some of the Workgroup members used existing TCR noncompliance data; others assumed a certain percentage of the total NCWSs would be in noncompliance.

Workload analyses data indicate that each NCWS will require an average of 3.2 hours per NCWS of additional effort per year by the LHDs to implement the rTCR requirements. There was a twofold difference in additional hours between the LHDs that will opt to allow NCWSs on annual monitoring to transition into the rTCR at that frequency (an average of 4.1 hours per NCWS per year) and the LHDs that will no longer allow a NCWS to monitor less frequently than quarterly after the rTCR is in effect (an average of 2.1 hours per NCWS per year). The largest contributor to the twofold increase in hours of effort is likely the requirement to conduct an annual Level 2 Assessment at the NCWSs that monitor annually.

For the workload analysis, the LHD members were also asked to estimate the additional hours in travel that will come with the rTCR because of the new assessment requirements. The responses from all of the LHD members were very close to an overall average of 1 hour of additional travel time per NCWS per year.

From the workload analyses data, it is clear that additional resources will be needed for the LHDs to fully implement the rTCR requirements.

Meeting the Sample Hold Time

Meeting the required 30-hour hold time from collection of a total coliform sample to inoculation of the sample into test media is already difficult for some NCWSs, if they are located in a remote area of the state or located far from a laboratory. Recently, the USEPA has become increasingly concerned about samples that exceed the 30-hour hold time being accepted for compliance without any attempt to recollect and reanalyze the sample within 30 hours. Accepting a sample exceeding 30 hours without an attempt to recollect the sample will not be allowed.

Under the rTCR, several NCWSs will likely have increased monitoring frequencies from what they have today. In addition, the United States Postal Service has closed post offices and cut services, resulting in longer delivery times than before. To meet a 30-hour hold time, remotely located NCWSs will likely have to ship samples overnight. Perhaps privately owned laboratories will recognize the problem and offer courier services to their clients. Whatever the solution may be, it is and will remain the responsibility of the NCWS owner or operator to ensure that samples get to a laboratory and are inoculated onto test media within 30 hours.

Change from a Total Coliform to an *E. Coli* MCL

For years, regulators have required PWSs to institute precautionary measures and post a public notice for a total coliform MCL. After the rTCR is in effect, a total coliform positive will no longer be an MCL or require public noticing.

The changes that the shift from a total coliform to an *E. coli* MCL will bring and how it will affect regulators of both CWSs and NCWSs were discussed at length by the Workgroup. After the rTCR is in effect, it may be more difficult for a regulator to require a PWS with a total coliform positive sample to undertake precautionary measures and make its customers aware of the situation because it will not be a MCL violation.

Further, the rTCR requires that total coliform positive repeat samples be collected until either total coliform is not detected in one complete set of repeat samples or the system has triggered the requirement for an assessment to be performed (§141.858(a)(3)). The rTCR requires that an assessment be completed “as soon as practical after triggered” but that the completed form be submitted within 30 days after the system learns that it exceeded a trigger. A NCWS serving fewer than 1,000 people that has a confirmed total coliform positive will immediately trigger the requirement for an assessment. There will be no requirement for the NCWS to undertake precautionary measures or to post a public notice because they have not violated any MCL. They are not required to collect any additional samples until the next month. They are only obligated to send in the completed assessment form within 30 days. This change will probably be hard for both MDEQ and LHD regulators to adjust to and they may question if this is truly an improvement in public health protection.

Revised Total Coliform Rule Workgroup Members

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