Rule adoption of the Revised Total Coliform Rule
RULE REVISIONS OF *R309-100, R309-105, R309-110, R309-200, R309-210, R309-211, R309-215, R309-220, R309-225*

This packet contains the necessary changes to R309-105, R309-110, R309-200, R309-210, R309-211, R309-215, R309-220, and R309-225 to adopt the Revised Total Coliform Rule.

These rule revisions were substantive and were filed with the Division of Administrative Rules for publication in the January 15, 2016, Utah Bulletin. The 30-day formal comment period ended on February 16, 2016. A public hearing was held on January 20, 2016, a copy of the transcript of that hearing is attached. Written comments were also received and are attached as well.

To be exact - the Division's proposed rule package is nearly verbatim the federal package with the exception of continuing to allow quarterly monitoring for non-community system (both transient and non-transient) which operate year-round.

The Division has received 6 comment letters from individuals or institutions opposing the rule change. Of the six comment letters, four represent systems for which the the proposed rule is more stringent (non-community year round operations). We have attached the comments received as well as a summary of the comments.

The Division has prepared a general response to the comments stating we had not provided a health based reason for the proposed element which is more stringent than the federal rule.

Included in the packet are the following items:

1. Utah Code, Title 19 - Environmental Quality Code, Chapter 04 - Safe Drinking Water Act, 19-4-105 - Rulemaking authority and procedure.
2. Additional information providing the health-based reasons for pursuing the monthly schedule for sampling.
3. Public hearing transcript and summary.
4. Comment letters received with summary.

Please note we are asking for authorization to file the effective date notices with two conditions:

1. In the event the Division is not funded adequately during this Legislative session, the Division will not file the effective notices and will not be able to implement the rule at all. In this circumstance, the Division will seek implementation assistance with USEPA Region 8.

2. In order to minimize transition issues, we intend to make Utah's rule changes effective May 1, 2016. Public water systems will still have to comply with the new requirements beginning April 1, 2016. The Division's training and technical assistance will proceed with the federal effective date.

Staff Recommendation:

The Staff recommends the Drinking Water Board authorizes staff, pending Division funding, to proceed with filing the effective date notices to become effective in Utah on May 1, 2016, for the following substantive changes to R309-105, R309-110, R309-200, R309-210, R309-211, R309-215, R309-220, and R309-225 with the Division of Administrative Rules.

In order for the Board to direct the Division to finalize the Administrative Rules as noted above, the Board must make the finding that there is sufficient Health Based reasons for the proposed rule to be more stringent than the corresponding federal regulation.

Utah Code

Title 19 – Environmental Quality Code

Utah Code

Title 19 - Environmental Quality Code

Chapter 04 - Safe Drinking Water Act

19-4-105 - Rulemaking authority and procedure.

19-4-105. Rulemaking authority and procedure.

(1) Except as provided in Subsection (2), no rule which the board makes for the purpose of the state administering a program under the federal Safe Drinking Water Act may be more stringent than the corresponding federal regulations which address the same circumstances. In making the rules, the board may incorporate by reference corresponding federal regulations.

(2) The board may make rules more stringent than corresponding federal regulations for the purpose described in Subsection (1), only if it makes a written finding after public comment and hearing, and based on evidence in the record, that the corresponding federal regulation is not adequate to protect public health and the environment of the state. Those findings shall be accompanied by an opinion referring to and evaluating the public health and environmental information and studies contained in the record which form the basis for the board's conclusion.

Additional Information providing health-based reasons

Revised Total Coliform Rule: Impact on Public Health

The Utah Division of Drinking Water (DDW) believes that the Revised Total Coliform Rule (RTCR) is critical to protecting the public health. The switch to monthly monitoring is a vital part of DDW's continued mission to ensure the public health. The following items from academic studies and the EPA's public comment period on the RTCR act as evidence of that conviction.

CDC Statistics on E. Coli

The US Centers for Disease Control and Prevention (CDC) estimates that there are 73,000 cases of illness each year in the US due to E. coli O157:H7 (Mead et al. 1999). The CDC estimates that about 15 percent of all reported E. coli O157:H7 cases are due to water contamination (Rangel et al. 2005). Active surveillance by CDC shows that 6.3 percent of E. coli O157:H7 cases progress to HUS (Griffin and Tauxe 1991; Gould et al. 2009) and about 12 percent of HUS cases result in death within four years (Garg et al. 2003). About 4 to 15 percent of cases are transmitted within households by secondary transmission (Parry and Salmon 1998).

> *Prevention (CDC) to better understand the epidemiology of E. coli O157. E. coli O157 outbreaks (>2 cases of E. coli O157 infection with a common epidemiologic exposure) reported to CDC from 1982 to 2002 were reviewed. In that period, 49 states reported 350 outbreaks, representing 8,598 cases, 1,493 (17%) hospitalizations, 354 (4%) hemolytic uremic syndrome cases, and 40 (0.5%) deaths. Transmission route for 183 (52%) was foodborne, 74 (21%) unknown, 50 (14%) person-to-person, 31 (9%) waterborne, 11 (3%) animal contact, and 1 (0.3%) laboratory-related. The food vehicle for 75 (41%) foodborne outbreaks was ground beef, and for 38 (21%) outbreaks, produce. (Rangel et al. 2005)*

Alpine, Wyoming Case Study

Wyoming has both a similar groundwater chemistry and infrastructure requirements to Utah's. In this example the community water system was in compliance with the current TCR Rule standards, and thus sampling monthly. Had it been a transient system, sampling quarterly the source of the outbreak and the detection of the E. Coli could have gone as long as 6 months before required sampling would have found the cause.

> *"A 1998 outbreak of waterborne Escherichia coli O157;H7 in a community water system in Wyoming resulted in 157 ill persons. Among the persons exposed to the tap water the attack rate was significantly lower in town residents than in visitors (23% vs 50%) and decreased with increasing age. The lower attack rate*

among exposed residents, especially adults, is consistent with the acquisition of partial immunity following long-term exposure." (Olsen, SJ).

During the time of the outbreak there was a large family reunion gathering being held in Alpine. This represented a statistically significant transient population to compare to the long time community residents of Alpine. When looking at the persons infected in the Wyoming outbreak by ages we see that the numbers of those infected from both a transient population and younger averages between 40%-60% of the population as opposed to those living in the community system ranging from 12%-33%, all correlating with those living there longest having the greatest odds of immunity preventing their contracting the illness. This is significant to the current request for monthly monitoring as those systems represent a transient population that will have no long term exposure and built up immunity, thus making them an even greater at-risk population for contracting waterborne bacteriological diseases. The CDC's study of the Alpine, Wyoming E. coli outbreak concludes:

"Small water systems, defined as those that serve fewer than 3,300 people, collectively serve approximately 40 million people, or 15% of the United States population (25). Small drinking water systems may be less likely to be adequately chlorinated and to routinely monitor for contaminants (25). The outbreak reported here confirms the potential of these small, unprotected and unchlorinated water systems to be an important source of infection with E. coliO157:H7 and other pathogens. Stronger enforcement of existing regulations and perhaps broadening of current regulations, such as the proposed ground water rule designed to prevent illness from drinking water from groundwater sources through disinfection, are needed to protect rural drinking water systems in the United States." (Olsen SJ)

Surveillance for Waterborne Disease Outbreaks Associated with Drinking Water --- United States, 2007--2008

Results: *A total of 24 states and Puerto Rico reported 48 outbreaks that occurred during 2007--2008. Of these 48 outbreaks, 36 were associated with drinking water, eight with WNID, and four with WUI. The 36 drinking water--associated outbreaks caused illness among at least 4,128 persons and were linked to three deaths. Etiologic agents were identified in 32 (88.9%) of the 36 drinking water--associated outbreaks; 21 (58.3%) outbreaks were associated with bacteria, five (13.9%) with viruses, three (8.3%) with parasites, one (2.8%) with a chemical, one (2.8%) with both bacteria and viruses, and one (2.8%) with both bacteria and parasites. Four outbreaks (11.1%) had unidentified etiologies. Of the 36 drinking water--associated outbreaks, 22 (61.1%) were outbreaks of acute gastrointestinal illness (AGI), 12 (33.3%) were outbreaks of acute respiratory illness (ARI), one (2.8%) was an outbreak associated with skin irritation, and one (2.8%) was an outbreak of hepatitis. All outbreaks of ARI were caused by Legionella spp.*

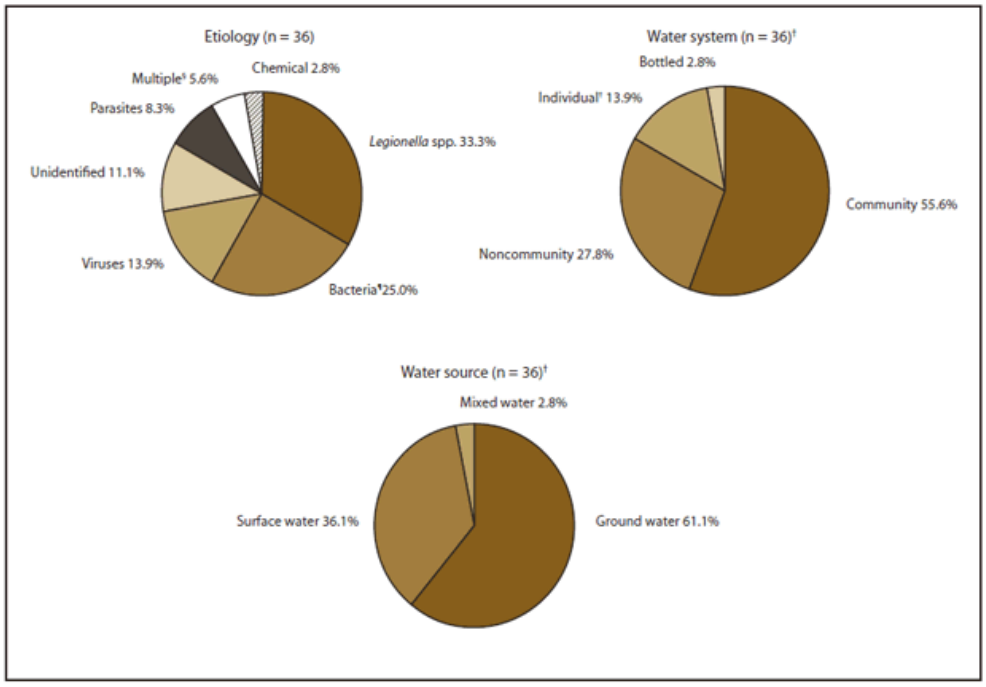
A total of 37 deficiencies were identified in the 36 outbreaks associated with drinking water. Of the 37 deficiencies, 22 (59.5%) involved contamination at or in the source water, treatment facility, or distribution system; 13 (35.1%) occurred at points not under the jurisdiction of a water utility; and two (5.4%) had unknown/insufficient deficiency information. Among the 21 outbreaks associated with source water, treatment, or distribution system deficiencies, 13 (61.9%) were associated with untreated ground water, six (28.6%) with treatment deficiencies, one (4.8%) with a distribution system deficiency, and one (4.8%) with both a treatment and a distribution system deficiency. No outbreaks were associated with untreated surface water. Of the 21 outbreaks, 16 (76.2%) occurred in public water systems (drinking water systems under the jurisdiction of EPA regulations and water utility management), and five (23.8%) outbreaks occurred in individual systems (all of which were associated with untreated ground water). Among the 13 outbreaks with deficiencies not under the jurisdiction of a water system, 12 (92.3%) were associated with the growth of Legionella spp. in the drinking water system, and one (7.7%) was associated with a plumbing deficiency. In the two

outbreaks with unknown deficiencies, one was associated with a public water supply, and the other was associated with commercially bottled water. The 70 previously unreported outbreaks included 69 Legionella outbreaks during 1973--2000 that were not reportable previously to WBDOSS and one previously unreported outbreak from 2002.

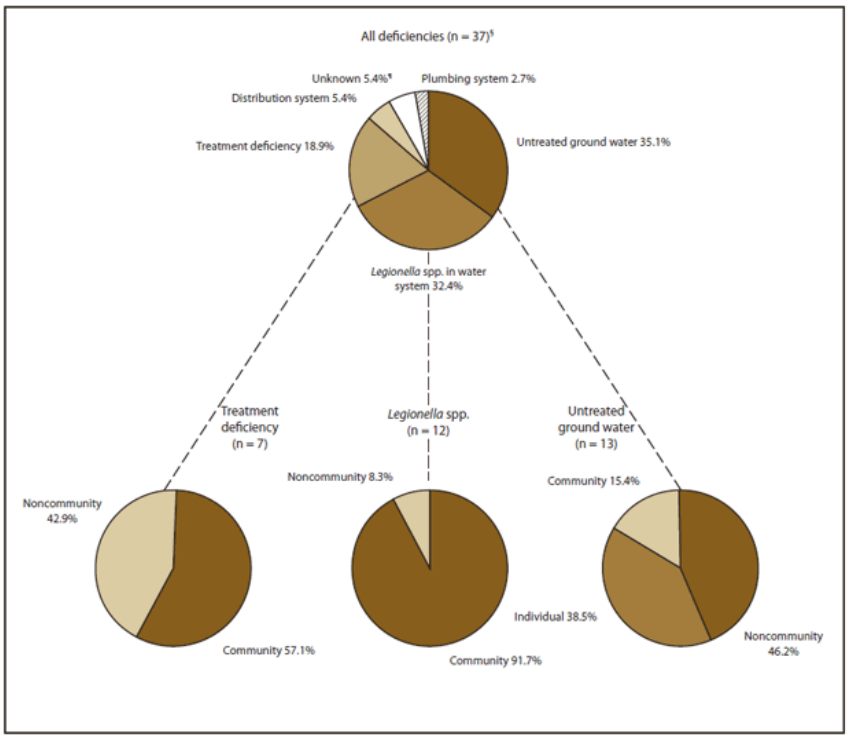
Interpretation: *More than half of the drinking water--associated outbreaks reported during the 2007--2008 surveillance period were associated with untreated or inadequately treated groundwater, indicating that contamination of groundwater remains a public health problem. The majority of these outbreaks occurred in public water systems that are subject to EPA's new Ground Water Rule (GWR), which requires the majority of community water systems to complete initial sanitary surveys by 2012. The GWR focuses on identification of deficiencies, protection of wells and springs from contamination, and providing disinfection when necessary to protect against bacterial and viral agents. In addition, several drinking water--associated outbreaks that were related to contaminated ground water appeared to occur in systems that were potentially under the influence of surface water. Future efforts to collect data systematically on contributing factors associated with drinking water outbreaks and deficiencies, including identification of groundwater under the direct influence of surface water and the criteria used for their classification, would be useful to better assess risks associated with groundwater.*

During 2007--2008, Legionella was the most frequently reported etiology among drinking water--associated outbreaks, following the pattern observed since it was first included in WBDOSS in 2001. However, six (50%) of the 12 drinking water--associated Legionella outbreaks were reported from one state, highlighting the substantial variance in outbreak detection and reporting across states and territories. The addition of published and CDC-investigated legionellosis outbreaks to the WBDOSS database clarifies that Legionella is not a new public health issue. During 2009, Legionella was added to EPA's Contaminant Candidate List for the first time.

Percentage of waterborne disease outbreaks associated with drinking water, by etiology, water system, and water source --- Waterborne Disease and Outbreak Surveillance System, United States, 2007--2008*



Percentage of waterborne disease outbreaks associated with drinking water, by predominant illness and etiology --- Waterborne Disease and Outbreak Surveillance System, United States, 2007--2008



Bullet Point Items from The Federal Register on the RTCR:

- The National Research Council strongly suggests that the number of identified and reported outbreaks in the CDC database for surface and ground waters represents only a small percentage of the actual number of waterborne disease outbreaks (NRC 1997; Bennett et al. 1987; Hopkins et al. 1985 for Colorado data). Underreporting occurs because most waterborne outbreaks in community water systems are not recognized until a sizable proportion of the population is ill (Perz et al. 1998; Craun 1996), perhaps 1 percent to 2 percent of the population (Craun 1996). EPA drinking water regulations are designed to protect against endemic waterborne disease and to minimize waterborne outbreaks. In contrast to outbreaks, endemic disease refers to the persistent low to moderate level or the usual ongoing occurrence of illness in a given population or geographic area (Craun et al. 2006).
- The risk of acute illness and death due to viral contamination of drinking water depends on several factors, including the age of the exposed individual. Infants and young children have higher rates of infection and disease from enteroviruses than other age groups (USEPA 1999). Several enteroviruses that can be transmitted through water can have serious health consequences in children. Enteroviruses (which include poliovirus, coxsackievirus, and echovirus) have been implicated in cases of flaccid paralysis, myocarditis, encephalitis, hemorrhagic conjunctivitis, and diabetes mellitus (Dalldorf and Melnick 1965; Smith 1970; Berlin et al. 1993; Cherry 1995; Melnick 1996; CDC 1997; Modlin 1997). Women may be at increased risk from enteric viruses during pregnancy (Gerba et al. 1996). Enterovirus infections in pregnant women can also be transmitted to the unborn child late in pregnancy, sometimes resulting in severe illness in the newborn (USEPA 2000b).
- Other waterborne viruses can also be particularly harmful to children. Rotavirus disproportionately affects children less than five years of age (Parashar et al. 1998). However, the pentavalent rotavirus vaccine licensed for use in the United States has been shown to be 74 percent effective against rotavirus gastroenteritis of any severity (Dennehy 2008). For echovirus, children are disproportionately at risk of becoming ill once infected (Modlin 1986). According to CDC, echovirus is not a vaccine-preventable disease (CDC 2007). The elderly are particularly at risk from diarrheal diseases (Glass et al. 2000) such as those associated with waterborne pathogens. In the US, approximately 53 percent of diarrheal deaths occur among those older than 74 years of age, and 77 percent of diarrheal deaths occur among those older than 64 years of age. In Cabool, Missouri

(Swerdlow et al. 1992), a waterborne E. coli O157:H7 outbreak in a ground water system resulted in four deaths, all among the elderly. One death occurred from HUS (kidney failure), the others from gastrointestinal illness. Furthermore, hospitalizations due to diarrheal disease are higher in the elderly than younger adults (Glass et al. 2000). Average hospital stays for individuals older than 74 years of age due to diarrheal illness are 7.4 days compared to 4.1 days for individuals aged 20 to 49 (Glass et al. 2000). It is anticipated that the requirements of the RTCR will help reduce pathways of entry for fecal contamination and/or waterborne pathogens into the distribution system, thereby reducing risk to both the general population as well as to sensitive subpopulations such as children, pregnant women, and the elderly.

- Acute Gastrointestinal Illness (AGI) symptoms may be more severe in immunocompromised persons (Frisby et al. 1997; Carey et al. 2004). Such persons include those with acquired immune deficiency syndrome (AIDS), cancer patients undergoing chemotherapy, organ transplant recipients treated with drugs that suppress the immune system, and patients with autoimmune disorders such as lupus. In AIDS patients, Cryptosporidium, a waterborne protozoa, has been found in the lungs, ear, stomach, bile duct, and pancreas in addition to the small intestine (Farthing 2000). Immunocompromised patients with severe persistent cryptosporidiosis may die (Carey et al. 2004). For the immunocompromised, Gerba et al. (1996) reviewed the literature and reported that enteric adenovirus and rotavirus are the two waterborne viruses most commonly isolated in the stools of AIDS patients. For patients undergoing bone-marrow transplants, several studies cited by Gerba et al. (1996) reported mortality rates greater than 50 percent among patients infected with enteric viruses. It is anticipated that the requirements of the RTCR will help reduce pathways of entry for fecal contamination and/or waterborne pathogens into the distribution system, thereby reducing risk to both the general population as well as to sensitive subpopulations such as the immunocompromised.
- Additionally, EPA used several other techniques to compare benefits and costs including a break-even analysis and a cost effectiveness analysis. EPA developed a break-even analysis to inform the discussion of whether the benefits justify the cost of the regulation. The break-even analysis (see chapter 9 of the RTCR EA) was conducted using two example pathogens responsible for some (unknown) proportion of waterborne illnesses in the United States: shiga toxin-producing E. coli O157:H7 2 (STEC O157:H7) and Salmonella. In the break even analysis, CDC and Economic Research Service (ERS) estimates were used for STEC O157:H7 and Salmonella infections, respectively. Valuations of medical cases were developed using the ERS Foodborne Illness Calculator.

Chapter 9 of the RTCR EA has a complete discussion of the break even analysis and how costs per case were calculated. Based on either example pathogen considered in the break even analysis, a small number of fatal cases annually would need to be avoided, relative to the CDC's estimate of cases caused by waterborne pathogens, in order to break even with rule costs. For example, under the RTCR, just two deaths would need to be avoided annually using a three percent discount rate based on consideration of the bacterial pathogen STEC O157:H7. Alternatively, approximately 3,000 or 8,000 non-fatal cases, using the enhanced or traditional benefits valuations approaches,3 respectively, would need to be avoided to break even with rule costs. As expected based on its costs, the lower cost of the RTCR relative to the Alternative option means that fewer cases need to be avoided in order to break even. See Exhibit VI–25.

- However, sensitivity analyses showed that the fundamental conclusions of the EA do not change over a wide range of assumptions tested, and that the RTCR provides benefits over the 1989 TCR.

References

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Public Health Perspective on Monthly Bacteriologic Sampling
On
Non-Community (Transient and Non-transient) Water Systems
Addendum - Year Round versus Seasonal Operations

The information presented by the Division of Drinking Water (DDW) at the public hearing on January 20, 2016, characterized public water systems as sampling monthly or quarterly. In the compliance data submitted, DDW did not differentiate between non-community systems which operate seasonally versus those operated year-round. DDW has clarified the compliance data presented below with the following criteria:

- Data represents bacteriological compliance over the last 10 year period (January 2006 to present)
- Violations have been divided into
    - Community systems - Monthly monitoring (defaults to year-round)
    - Non-community – Quarterly monitoring
        - Seasonal systems
        - Year-round systems
- Violation types
    - 21 = Acute quality – immediate public health affects (E.coli detected)
    - 22 = Non-acute – indication of a breach in the integrity of the water system infra-structure and possible contamination.
    - Monitoring = violation of any TCR required monitoring (routine, repeat and additional next month samples)

To compare the violation data across the quarterly versus monthly basis for monitoring, we have calculated the approximate number of times or events samples are expected (required) from water systems each year. If we calculate the number from each type of system we expect for community systems to have 5,700 sample events (475 systems x 12 months), Non-community year-round systems to have 924 sample events (231 systems x 4 quarters per year) and Seasonal non-community systems to have approximately 963 sample events (321 systems x 3 quarters open per year on average).

The monthly sample events represent 75% of the required sample events versus 12% for the Non-community year-round quarterly sample events and 13% for the Seasonal non-community systems.

In comparing the sample events to the violations issued, the systems required to sample quarterly represent 25% of required sample events (12% for Year-round and 13% for Seasonal), they collectively generated 67% of the monitoring violations issued (35% for Year-round and 32% for Seasonal).

Monitoring violations are concerning as they represent a void of information on the quality of water delivered to the consumer.

It has been indicated that systems operating year round are generally in better condition due to the fact there is a year round presence at the system. Division compliance data does not support this claim, see Table 1 below

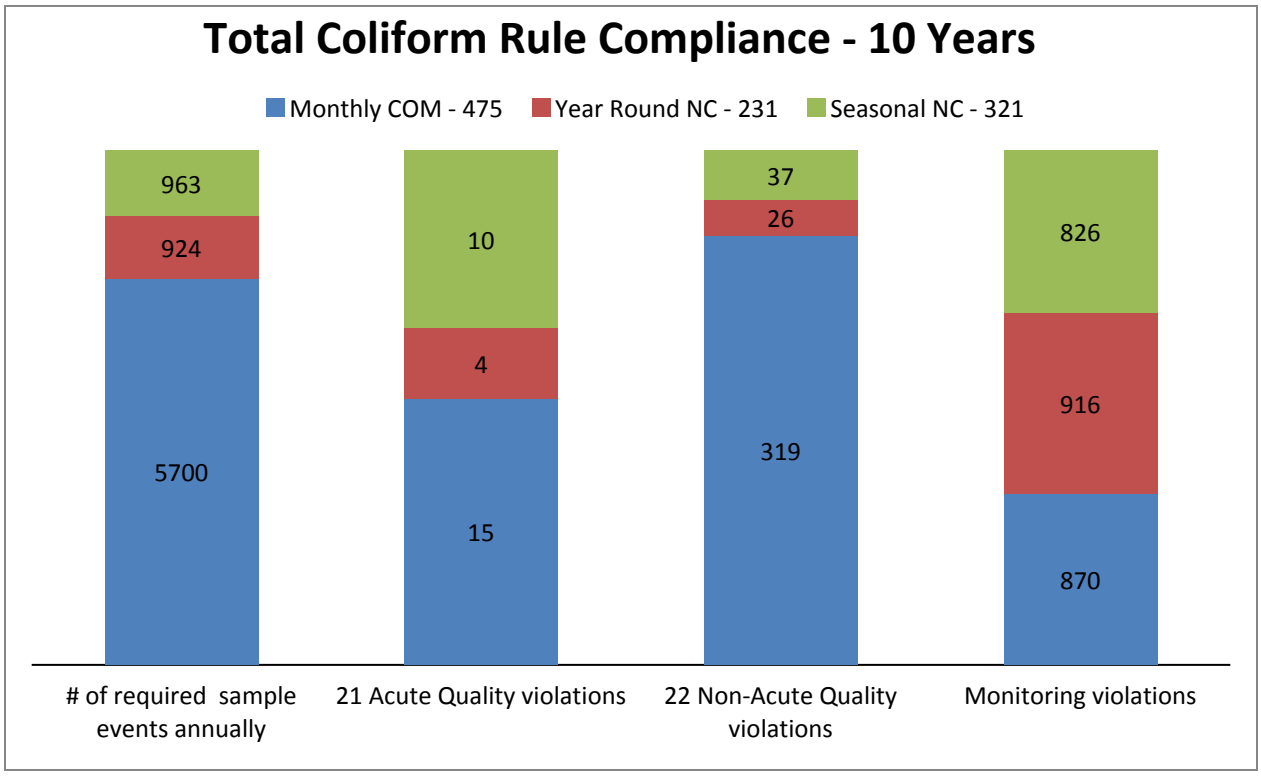

Table 1

Further, if you breakdown each type of system individually (community, non-community seasonal, and non-community year round) and annualize the violations to a single year and look at the percentages across systems of that type, you come up with the numbers in the table below (Table 2). It shows that indeed seasonal systems have the highest percentages across all types of violations except for non-acute quality, where community systems have the highest

percentage. It also shows year round systems are second in all categories except for non-acute violations. Seasonal and Year round systems have significantly higher monitoring violation rate than community systems.

The Division contends the higher non-acute violation rate for community systems is due to the more frequent monitoring frequency and we could expect to see a corresponding increase for the other types of systems if the frequency was increased.

The Division also contends the non-acute violation poses an opportunity for the system to find and fix potential pathways of contamination at an increased rate and thereby reduce the occurrence of water contamination events and limit the exposure of the public to potentially contaminated drinking water.

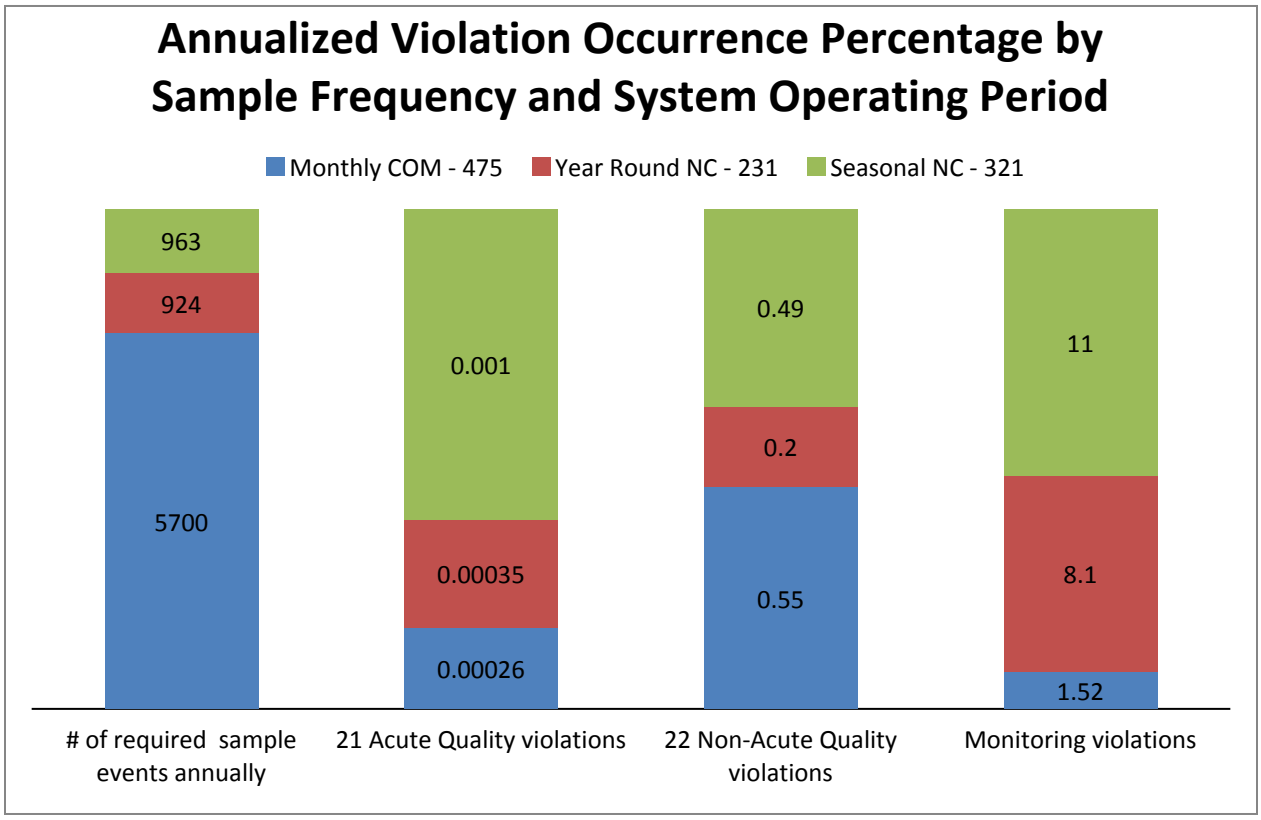

Table 2

A further break down of the compliance data sorted by common owners show the same lack of distinction between year-round operations and seasonal. There are approximately 13 water system owners who own and operate multiple water systems in the State. Two of those

owners have essentially the same number of year-round systems as they do seasonal systems. Table 3, below illustrates the compliance of systems owned and operated by those owners. Again, DDW data does not support this claim.

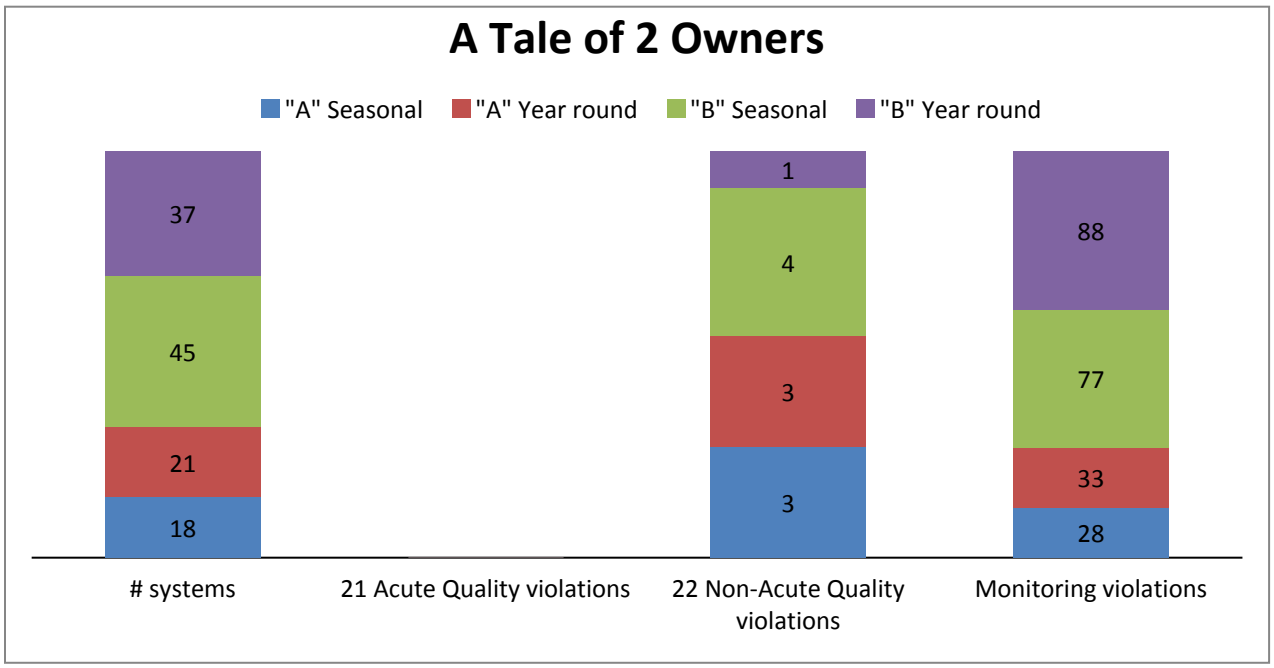

Table 3

Case Study 1- (Year round operation)- In 2011 two systems were implicated in a disease outbreak cluster of 72 individuals. Camp Shawnee and Camp Ben Lomond (both summer camps primarily serving children) missed their 4th quarter 2010 and 1st quarter 2011 samples. They sampled on May 2, 2011, these samples were satisfactory (showing an absence of Total Coliform Bacteria). The illness outbreak occurred in August of 2011. It is highly likely if these systems had sampled in June, July and August the outbreak could have been prevented.

Case Study 2- (Seasonal) Maple Dell Scout Camp is scheduled to open in June each year. In 2008 the system sampled in January and no other samples were collected until after approximately 100 people (mostly juveniles), experienced diarrhea; abdominal pain; fever; nausea and/or vomiting after the Fourth of July weekend. This outbreak was caused by exposure to the waterborne bacteria *Camplobacter*, and would have likely been detected by a total coliform bacteria sample.

Public Hearing

January 20, 2016

January 20, 2016 Public Hearing

Revised Total Coliform Rule

Roy McDaniel, LDS Church (transient non-community & non-transient non-community)

> Example of Ben Lomond/Shawnee Camp had lots of rain that year. Doesn't believe increased monitoring would have caught the problem. This system now has a surface water treatment plant and monitors monthly without the rule change. (Pages 33-34, 43)

Kristine Hegmann, Mill-D Subdivision (transient non-community, seasonal system)

> Shouldn't be a one size fits all rule. No justification for the rule change. It's an unnecessary burden from Washington. (Pages 34-36)

Ryan White, LDS Church (transient non-community & non-transient non-community)

> Example of Maple Dell Boy Scout Camp, it is a seasonal system and shouldn't have been included as a case study. (Pages 36-37)

Chris Bramhall, Kirton Mconkie law firm for LDS Church (transient non-community & non-transient non-community)

> More of a cost benefits analysis and administrative convenience than a public health issue. Not objecting to seasonal systems going to monthly sampling. Doesn't think that the year round systems have as many positive samples as the seasonal systems, they are not susceptible to the same kinds of interference (shut down and restart). Doesn't think it will decrease the administrative burden on the department. Need to look at the frequency of non-transient systems getting positive samples. Cost will be an additional $40,000 in just sampling, not counting personnel time. (Pages 37-43)

Dean Christensen, Mount Air Water Corporation (transient non-community seasonal system)

> This would be an incredible cost increase to go from two to three samples a year on a quarterly basis to six or seven or eight samples. It would be a significant increase when people are only there probably overnight. (Page 44)

Russ Johnson, Geneva Rock Products (non-transient non-community year round)

> Concerned about samples having to be taken first Monday of every month. If it's any time during the month to sample, okay with the rule change. (Pages 44-46)

Mike Markham, Samak Country Estates (non-transient non-community year round)

> Kind of support the once a month sampling. Disagree with having to mail boil orders to customers, faster to call everyone in this system. (Pages 45-46)

Michael Goodman, Mount Tabby ID (transient non-community seasonal system)

> Operate maybe four months a year, water master isn't always there so there isn't someone qualified to take the samples. (Page 46)

Neutral/Positive:

Russ Johnson, Geneva Rock Products (non-transient non-community year round)

Mike Markham, Samak Country Estates (non-transient non-community year round)

Negative:

Roy McDaniel, LDS Church (multiple system types and operating periods)

Kristine Hegmann, Mill-D Subdivision (transient non-community, seasonal system)

Ryan White, LDS Church (multiple system types and operating periods)

Chris Bramhall, LDS Church (multiple system types and operating periods)

Dean Christensen, Mount Air Water Corporation (transient non-community seasonal system)

Michael Goodman, Mount Tabby ID (transient non-community seasonal system)

ORIGINAL

REVISED TOTAL COLIFORM RULE

Public Meeting

JANUARY 20, 2016
1:00 p.m.

DEPARTMENT OF ENVIRONMENTAL QUALITY
195 North 1950 West
Salt Lake City, Utah 84116

Reported By:
Rossann J. Morgan
- Certified Shorthand Reporter -
- Registered Professional Reporter -

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January 20, 2016 1:00 p.m.

PROCEEDINGS

MR. BOUSFIELD: Good afternoon. My name is Ken Bousfield. I'm the division director of the State Division of Drinking Water and also the executive secretary to the drinking water board. According to my Timex watch, it is 2:00 [sic], and so we'll begin this meeting. I will be moderating this session.

By way of background, this meeting deals with Revised Total Coliform. It was originally promulgated and finalized by the EPA and will go into effect on April 1st of 2016. In order for the State to maintain privacy and privacy means, the responsibility to implement the Federal Safe Drinking Water Act, in order for the State to continue to do this, we must adopt a corresponding State rule.

The rule has been proposed and submitted to the drinking water board and the board authorized staff to proceed with rulemaking relative to this rule. That involves filing with the State Division of Administrative Rules and receive -- allow a time for receiving comments relative to this rule.

The particular rule that staff presented to the board contains certain elements that are more stringent than the Federal rule and there is a State

statute governing this situation, and I'd like to read from the statute by way of background.

There's a section one and a section two relative to rulemaking authority and procedures. "Except as provided in Subsection (2)" -- which I'll read later. This is Subsection (1) -- "no rule which the board makes for the purposes of the State administering a program under the Federal Safe Drinking Water Act may be more stringent than the corresponding Federal regulations, which addresses the same circumstances. In making the rule, the board may incorporate by reference corresponding Federal regulations."

Now, Subsection (2). "The board may make rules more stringent than corresponding Federal regulations for the purpose described in Subsection (1)," which I just read, "only if it makes a written finding after public comment and hearing, and based on evidence in the record, that the corresponding Federal regulation is not adequate to protect public health and the environment of the state. These findings shall be accompanied by an opinion referring to and evaluating the public health and environmental information and studies contained in the record which form the basis for the board's conclusion."

Having read the statute, you'll notice in the

agenda that is available -- and if you don't have a copy, there are some on the table by this front door -- that we're going to have, first of all, an explanation of the total coliform rule and, specifically, how it is more stringent than the Federal rule. And secondly, some justification as to why it is more stringent, and then we'll open it up to public comment.

Relative to anyone who wishes to offer comment, we ask that you state your name clearly so that the recorder can pick up that information. And with that, we'll proceed as outlined in the agenda and turn time over to Patti Fauver and ask her to introduce herself to set an example as to what the expectation is.

MS. FAUVER: Good afternoon. Maybe. Well, I'm short, so that might work. Okay. That's better. I already apologized to Ken for turning my back on him, it's not intentional, but I would rather face the audience.

MR. BOUSFIELD: And Patti, please state your name for everyone.

MS. FAUVER: Sure. I'm Patti Fauver. I'm the rules section manager for the Division of Drinking Water. It's my job to implement the Federal Safe Drinking Water Act rules with regard to monitoring and quality, and this is one of the rules that falls under my

purview.

The Total Coliform Rule is kind of a basic rule that applies for all systems in the state. We've had various versions of it. The last time it was changed was in -- the Federal rulemaking was in 1989. It became effective in the state of Utah in 1991. So we've had this rule around for, at least, a career for most people, but for 25 years, and it was revised -- published in 2013 and effective in 2016. So it becomes effective on all systems April 1st of 2016.

Just a point of clarification, it's a Federal rule and whether or not the State adopts it or not, it's still effective April 1st, 2016, by Federal law. Okay? So whether we adopt it or not, it's still a change that systems will have to adhere to.

What I want to do with this presentation is, I've got a lot of slides. I'm not going to spend a lot of time on every slide. I've given them in the packet for your information. What I want to do is kind of highlight where the rule changes. I want to highlight especially where the rule is more -- our recommendation will be slightly more stringent than the Federal rule. Okay? So we'll go ahead and proceed in that vain. So we have it up on the screens and we have a handout with the same slides.

So again, the purpose of the Revised Total Coliform Rule is to protect -- improve public health protection by finding and reducing the pathways which gave us sanitary defects through which fecal contamination and pathogens, disease causing organisms can enter the distribution system.

And again, the objectives are to evaluate effectiveness of treatment, if you're required to disinfect or to have service water treatment; determine the integrity of the distribution system and the delivery system; and signal the possible presence of microbial contamination. So those are the objectives of the original Total Coliform Rule that we put forth with this revision.

So if you look at the RTCR, what does -- the field that it contains -- and it's really six different elements. We have the MCLs or the Maximum Contaminant Levels that are allowed, you have a Monitoring component, you have a Find and Fix. That changes slightly, and what happens, the consequences of finding or having total coliform-positive samples. We'll talk about that in just a little bit with those actions attached.

We have increased oversight over seasonal systems. That's a basic requirement. There's reporting and recordkeeping requirements, and violations, public

notice, consumer confidence, ramifications for some systems but not necessarily all systems we have.

So this is just a quick snapshot of the Utah public water systems. In any given day, those numbers or counts will change slightly. We have just over a thousand public water systems pretty much equally divided between non-community water systems, both transient where different people are there all the time, and non-transient which are more like workplaces, industry. And then community water systems where you serve people day in and day out in their home environment, where people are bathing in the water, drinking the water, cooking with the water, et cetera.

So some slides on kind of a compare and contrast format with the current rule, which ends March 31st and the new one which starts April 1st, they both have MCLs. One of the changes is that the term "fecal coliform" is going to go away. In fact, the analysis that allows for fecal -- fecal coliform analysis is not going to be allowed after April 1st.

So one of the things you should do is check with your laboratory, make sure that they're running the E. coli analysis. Most of the laboratories we deal with, we're not aware of any that still run the fecal analysis, but it would be a good thing for you to check on. It has

to be an E. coli analysis.

As far as the acute quality violation, that is expanded slightly with some of the loop holes in the old rules be filled. The routine monitoring stays the same with -- based on system size and type. Something new with the new rule is, is looking in your water system. "Doing assessment," is what it's called. And if you find issues, to correct them. So that assessment and corrective action based on the monitoring results is a new requirement. And then there's still public notice requirements for violations. Just the violation list has expanded. So some things you haven't done, public notice on in the past will be required in the future.

This slide addresses the loop holes in the fecal coliform and E. coli determination. In the old rule, if you had an acute -- E. coli-positive or fecal-positive sample and you failed to take any other samples, technically it was not a violation. That loop hole is now closed. If you don't take the follow-up samples, you will get the same violation as if each of those follow-ups are positive. So that's what this slide does, is it closes those loop holes and makes it a requirement that the system take all the samples that are required or get the violation anyway.

So for routine monitoring, what most systems

do month in, month out, quarter in, quarter out, the current rule allows non-community systems, both transient and non-transient, to sample quarterly. Community water systems sample monthly and seasonal samples are not -- or seasonal systems are not treated any differently than the year-round systems for those non-community types.

The change for the RTCR are for systems -- community water systems, there really is no change at all on the routine monitoring. We're proposing that for non-transient non-community and transient non-community systems that they will sample monthly as well.

It is a requirement. The base monitoring, under the new rule, is monthly for all seasonal systems. So we have 350 of our 500 transients or non-community water systems that are seasonal and the base requirement, which isn't anymore stringent than the Federal rule, would be monthly anyway, but we're proposing that across the board.

This kind of is a summary of all of those. One of the things you should note on this slide is, you have the routine monitoring there in the center column. We're proposing that month to month. So this is -- as Utah would implement and we eliminate the other two columns on either side of that routine.

We're not going to look at increased

monitoring and we're not going to look at reduced monitoring. If every system is on monthly monitoring, we don't have to evaluate whether or not you exceeded triggers for increased monitoring. With no increased monitoring, we don't have to evaluate whether or not you meet quality criteria and a clean compliance for a period of time to get back to a reduced state. It's really a simplified version.

You do have to look at your sample site plan. What the revised rule allows is some -- some situational flexibility. If you have a very small system, we can have -- accommodate the upstream and downstream samples of different sites. If you're happy with your current sample site plan, you don't need to do anything. We're just going to roll it over.

But if you want to take advantage of some of the flexibility that's offered, it doesn't change the number of samples you have to take, it just allows for a different sample location. The original sample site stays the same, whether it's upstream, downstream ones will be modified. If you don't -- if you're happy with the current one you have, just leave it. It just rolls over.

We're looking at transitioning to the Revised Total Coliform Rule. Everyone -- community water systems

will just continue to do what they normally do. For non-- the non-community water systems, we would have you begin sampling monthly when you're open for operation. So if you open in July, you start sampling in July. If you open in May, you start sampling in May.

This slide is in here because this is a Federal requirement, but we would not be utilizing this slide. That's why the "X" is there. The same with this one. The same with this one.

And this returns, Yo-Yo effect. It's confusing to us. We believe it will be confusing to you. It will be confusing to anyone who's trying to help you get back on track, what sample frequency are you on, because it depends. It could be -- it could be any frequency and we're proposing to not -- not allow that.

Okay. One of the benefits of this particular rule is the number of repeat samples is reduced. The current requirement for systems serving less than a thousand population is four repeat samples. The new requirement is three. It's three across the board. It would still be the original sample site and five connections upstream and five connections downstream, but that fourth one would go away. No repeat samples.

Likewise, probably the most hated piece of the current total coliform rule is the following month --

after you had a positive-sample event, the following month -- and that is whether you're sampling monthly or quarterly -- you have to take at least five samples. If you're on monthly monitoring, you just take your next month sample. There's no increase. It's do your next month's sample and you're good to go. We follow up on the positive sample with repeats and anything with the groundwater rule, but next month you're back to base monitoring with one, two, whatever the base monitoring is.

For seasonal systems, EPA was very focused on the seasonal systems, looking at those as a risk to public health. They require that they -- the definition that a seasonal system is a system that's not operated on a year-round basis, and every state will tailor that definition in some way. So EPA had a very vague definition there and finalized it that way.

One of the things that's required is a start-up procedure. It's not new to Utah. We've actually had it on the books since 1979. What is new is that you're going to have the document that you performed this as a seasonal system. So you perform the inspection, the start-up procedure, and then you need to certify to us that you've done that. That's not something you do for every month, that's something you do

when you start your system up. One time a year you perform the checklist, notify -- certify to us that it's done, and then you proceed on with your operating year.

Again, the base monitoring for seasonal systems is monthly. There is an element that that can be reduced, but to reduce it, the State has to designate when is the most vulnerable time for your system to take a sample, and then you have to sample in that window; whether that's a specific week or a specific time frame.

The challenge and the challenge that the State is not -- does not want to do is to predict an unpredictable event. By the very nature of bacteriological sampling, it's -- if you're responding to A-typical events and -- in weather events, accidents, contamination events, and to predict those is really impossible, and that's why we're not in a position to do that. So base monitoring for seasonal systems is monthly.

So is the seasonal requirements because this is probably the biggest change to this particular rule -- just to reiterate. Seasonal start-up procedures, you need to utilize those, if you haven't already. Here's the -- opens up, starts up and shuts down the beginning and ending operating period. If you maintain pressure in your system throughout the year, then that system is

considered to be a year-round system and we would expect monitoring of that system year-round.

Again, at the beginning of its operating season, it's not every month, it's not every sample, it's just at the beginning of the operating season, we need to do the start-up procedures and certify that they've been completed. And that concludes inspecting the system, disinfecting the system, flushing the system. You need to take a sample, a preseason sample for total coliform and E. coli.

Once you have all that, then you -- we have an online form you fill out and submit and that's how you certify that that's been done. If you don't do that, that's a new violation that you will receive, failure to complete the start-up procedures. Technically, if you don't do it and don't report it to us, that's a separate violation that you could receive. So that's seasonal systems.

When you have any MCL violation, you have to give public notice. So this is talking about public notice. That doesn't change. What does change is the consequence of having just total coliform-positive samples. If you have a total coliform-positive sample and you have a repeat sample, you can get an additional one.

So for small systems, the standard is you have two -- more than one sample in a month that's total coliform positive, today, that would be a non-acute quality violation. In April, that will be a trigger. What that will do is trigger the assessment. It will trigger the operator to go out and look at the water system to see, find problems that have allowed that situation to occur. Go out and look at your system, you fill out the form, you submit it to us. That is what is expected.

We don't expect every -- every time you have that situation, go find something, but what we do expect is you go out and look at your system. As long as you file that assessment form with us, we'll have an online form and paper form that you'll need to file with us. And as long as that is done, there's no violation. There's no public notice. If you don't do that, that becomes a treatment technique violation. This new terminology, you'll have to get used to. I didn't like it, but it's just that is what it is. It's a treatment technique violation for failure to perform the assessment and that comes with public notification requirements for failure to do that assessment.

And there's different levels of the assessment depending on the -- whether or not it's just

total coliform and if it's E. coli, or if you have repeated total coliform violation situations. It's just not a positive sample. You have one positive sample and all your follow-ups are okay, then it's -- it's okay. You know, it's not a violation, it's not a trigger. It's when you have that -- what is currently a non-acute quality violation that becomes the trigger. And that's been confusing the State folks the last three years, so we'll help walk you through that.

So these assessments would be triggered. The level is based on the bacteria you find. Again, it requires -- the Level 1 requires a self-assessment by the operator on the system. If it's a Level 2, then we're going to have a third party come and do that assessment. You know, an additional set of eyes. And again, as long as that is done, there's no -- for Level 1, there's no violation.

We're just really looking at your system, seeing if there's any -- was any A-typical events. Did we have a heavy rainstorm? You know, like we had with the snow pack -- which seems like a very distant past, we had lots of systems where the spring box got buried in the snow and we had a weird spring runoff and we had lots of bacteria problems because the spring boxes were inundated with surface water. Did that happen? You

know, if that's the cause, we list it, we do the remediation and we go forward. Did you have a fire? Whatever that A-typical event is. What is your sampling procedure? That might be a possibility, but you look at any of those things that affect the quality and note that on the assessment.

Again, we're looking for anything that could cause the contamination. It could be a cross connection. Those of you that live in Davis County are well aware of that situation we've had in the last couple years. It could be that if you ran out of chlorine, if you're required to disinfect. If that's the case, we fill the bottle and try to be more careful of that. It could be something with the source.

But we look at those and if we find the problem, then you're required to fix it. If you find the problem, we going to require that you fix it, similar to the way you find a problem during your sanitary survey, we require you to fix it. The timelines are identical. I guess my take-home from this slide is, if it's called a sanitary defect or we call it a significant deficiency, it's treated the same way and you should treat it the same way. It's a pathway for contamination to enter your system and it needs to be fixed. This is just a graphical form of that and what triggers the assessment.

Level 2 is -- the difference with Level 2 is, again, if you have E. coli, E. coli is a closer link to public health consequences and, unlike the total coliform non-acute quality violation, if you're detecting E. coli, it is an MCL violation. MCL for E. coli is contained, and if you're detecting E. coli, we're getting excited, you should be getting excited, responding quickly, and at that point we will have a third party come and look at your system. That's the Level 2 assessment. There's public health consequences of a higher degree and we need to make sure we find what's wrong, if we can, and fix it.

The assessment forms are, again, a new element of this rule that's part of the find and fix philosophy with this rule. And the hope is that if we're finding these things quicker and fixing them quicker, ultimately the sample -- the water delivered by water systems is going to be better and safer for people to drink.

So the corrective action is if you find something, we're expecting you to get it fixed. There's a timeline again, 30 days to respond back to us with the assessment and 120 days to fix the issue. And if you can't get it fixed within that 120 days, then we need to get a corrective action plan in place that gives you a reasonable amount of time to fix whatever issue it is.

Depending on the issue, that reasonable amount of time will vary.

So again, monitoring and reporting violations and public notice is the same but the list is expanding. Our current total coliform rule, we have five violations; full implementation of the RTCR is 22 violations. If we go with monthly monitoring for everyone, it reduces that number to 12 potential violations.

There is consumer confidence reporting language to accommodate that change from a non-acute quality violation to a trigger for an assessment, and that will be required for community water systems. Again, there's some changes to the mandatory health effects for the public notice that's required for all systems if you have a violation. So non-acute quality monthly violation goes away, it's replaced by the trigger for an assessment, but if the assessment isn't done, that's when that becomes a violation.

Analytical Methods. Again, that fecal coliform analytical method is no longer allowed after April 1. So make sure you, again, check with your lab. And there are no variances or exemptions for any microbial rule. The RTCR's microbial rules, there isn't any. And they list the best available technology to prevent that, and cross connection control, infection of

your distribution system. You have -- already have treatment, you do the things for that.

So that was quick and dirty, and I realize that. So one of the things we'll be having is training all around the state for water. I call them dog and pony shows, but we'll have training around the state at various locations with rural water and have AWWA, and I would advise you to look at one that's close to you and attend one of those because it's important to stay up to date with the rule and it is changing. With that, any quick questions I can answer on those requirements?

MS. KRISTINE HEGMANN: First of all, I apologize for being late, but the directions on this are wrong and so I would like to state that. Did you happen to state the evidence of how many people are having issues with coliform? I clearly realize you guys are the messenger. I clearly realize that that's --

(Court reporter interrupted.)

MS. KRISTINE HEGMANN: Okay. I know you're the messenger. I get all that, but I would like to know before this implementation across all these systems what the actual evidence is that this particular thing is becoming an issue, because I have to say that in the area that -- I represent Mill-D and Big Cottonwood. We've been told every time we have a survey that we have the

most pristine water in the whole state, and when we have the survey, we have three people that can't even agree on what they're asking us and make up rules going along. So I have little confidence that this was well thought out. So I would like to see the evidence. I know you guys are the messengers and you have to follow, but what triggered the coliform -- I mean, looking at Michigan and those issues, but what happened here that everybody (inaudible). By the way, I support clean water because I'm currently an infectious disease epidemiologist. I just don't know why we're doing this.

MS. FAUVER: So -- and I apologize for the error. We left out the zero.

MS. KRISTINE HEGMANN: Yeah, yeah.

MS. FAUVER: Sorry for that.

MS. KRISTINE HEGMANN: I'm sorry I was late.

MS. FAUVER: Ken mentioned, as the hearing officer, that this -- we're to proceed with a presentation of what rule requirements were, and then the next phase is presenting evidence -- presenting the information on the public health consequences, and then open it for public comments. So it's not been provided yet, but I think it's next on the agenda.

MS. KRISTINE HEGMANN: Okay. Thank you.

MS. FAUVER: Any further questions?

(No response from attendees.)

MR. BOUSFIELD: Let's start with the statistics about the health justification.

MS. FAUVER: Sure. So if you haven't picked up the handouts by the door, there's three handouts. One was the agenda, one was the presentation, and the next one, which I don't have, is the Public Health Perspective on Monthly Bacteriologic Sampling on Non-Community Water Systems.

One of the things, initially, to understand is non-community water systems is really two different categories. There's the category that is serving 25 of the same people nearly six months out of the year. That's the smallest group of systems we have. Those are called non-transient non-community water systems. They mainly -- there's 69 of those in the state. If you want to categorize them, they're rural schools and industry. You know, you'll get Thiokol, you'll get Hercules, which I believe is now ATK. Those are the examples of non-transient non-community water systems where you have the same people going there for the workday.

The other group, which is much larger, is kind of our catchall, and that include systems like second-home subdivisions, rural churches, kids camps, campgrounds, highway rest stops. It's pretty much

anything that serves -- that is considered public, which the public definition is, it serves 15 service connections or serves 25 people for 60 days out of the year. So anything -- any system that meets that, that doesn't serve a year-round population in their homes or, say, 25 people for six months out of the year, gets bumped into this last category. It's a board one.

One of the things with the total coliform rule is one of only two Federal rules that apply to all systems. It doesn't matter what type it is, it applies across the board to all systems. It really is kind of the cornerstone of public health protection. We view it as such forever.

The total coliform rule -- the total coliform, in and of itself, is not directly linked to public health consequences but what it -- where it shouldn't be is in the drinking water system. So it's what we call an indicator bacteria that if it appears in the drinking water system, then we need to look at how it is getting into that system and where's that pathway for that contamination. Because if we get total coliform in the system, we don't know what else is coming with it, and that's one indicator of bacteria.

It also happens to coincide with E. coli and E. coli has very direct use of public health consequences

and, as the rule construct, when it's E. coli, we're paying a lot more attention to it and we're looking at that and we respond accordingly with the boilers and such.

But total coliform is really a pretty big indicator in all the research. As much as people want to say it's not perfect, nobody has come up with an alternative yet. In over a hundred years, I've used total coliform as an indicator of bacteria. So it's shown it's a good indicator. It's fairly inexpensive, $15 to $25 is what a sample costs.

And the other part of it is, it has a very rapid turnaround time. Instead of having to wait days and days and days or weeks for a result, in most cases we can have results in 24 hours. Most of the newer analytic methods give you results, both the total coliform and E. coli, in 24 hours, and that's why it's a very good indicator. It's quick, it's inexpensive, and it shouldn't appear -- that bacteria shouldn't be in the public water systems.

And many times when you see unsatisfactory results for total coliform, because total coliform -- if you look at a system and find physical deficiencies of some sort, minor, major -- they coincide with that a fair amount. And that includes sources, tastes, the cross

connection issues we had these two summers, security breaches. We'll find something, not all the time, but often. Again, it's quick and it's -- so looking historically, non-community water systems have collected samples on a calendar basis, and we have community water systems that sample on a monthly basis.

So in order to present information, we've got to come up with a way to compare apples with apples. So if you're reading through that, what we came up with was sample events. If you look at the different -- the number of samples that our systems have with the different types, then you look at what the requirements are and you start to look at how many sample events we have for a community water system, that one is pretty easy. We have systems made for one sample a month up to 200.

But what I'm concerned with is how many -- how many times do we require to take a sample? And that's once a month. So many samples a month. So we have 12 events for a community water system every year, whereas for a non-transient non-community, by the nature of the industry, they're in operation year-round but they're in operation four calendar quarters. So those ones are easy. If we take the number of non-transient systems and we multiply it out, we come up with a number.

Now, the ones that are slightly tricky are the transient ones because we have many of those. Over 73 percent of those, if you look at just that category, transient non-community, we have 350 out of our 400-and-some-odd systems that are seasonal. They're not open year-round. So we can't use four; right? So if we use the factor of three on average, because some aren't year-round, you come up with a number for the number of sample events.

So if we calculate that out and we look at that statistic, you turn back to the figures in the back of the packet, you'll see that that logic carried out through the figures, we come up with the sample events of -- for monthly events, we have 5,688 in the state. That's how many times system samples. And for quarterly events, we come up with 1,722. So just take those numbers and you look at the number of violations we can attribute to those types of system that average monthly versus quarterly, you come up with some interesting statistics.

For quarterly sample events, for monitoring violations, so 23 percent of the events equate to 66 percent of our violations. So many systems that are required to sample quarterly don't. There's a lot of monitoring violations.

If you look at just non-acute quality violations, you'll get -- 26 percent of those violations are attributed to those systems that sample quarterly. Even more compelling to me is the number of systems -- the percent that are acute quality violations. Sixty-one percent of our acute quality violations are attached to systems that sample quarterly.

If we look at boiler orders, we have 28 percent of the boiler orders in the state that are attached to those systems that sample quarterly. So that shows us that there's an issue with systems that sample quarterly. One, if not taking the sample -- and not taking the sample really is -- it's problematic. We don't know what the quality is. If we didn't have monitoring violations, would we have more positive samples or would they be negative? And the answer really is we don't know. We don't know. So likely those percentages would probably go up. Not all of them would be bad samples, but some of them would. So you have -- you have that information based on -- just out of the database.

For right now, how many systems sample quarterly, how many systems sample monthly, and the violations we attribute to them. So we look at the quality issues. The acute quality ones are concerning,

but even more concerning are a couple case studies that I put in here. The last three -- question?

UNIDENTIFIED SPEAKER: Sorry. Just over a period of four or five years? One year?

MS. FAUVER: The data is pulled -- all the data except for the acute quality violations. The acute quality violations are 2007 to present. The other was just current calendar year.

MS. RACHAEL CASSADY: All of 2015.

MS. FAUVER: All of 2015. I suspect the percentages wouldn't change if it was all -- all the same.

So with our case studies, I'm going to take two systems. I'm going to take case study number two first because that was further in the past. If you look at the Maple Dell Boy Scout Camp, we had it scheduled -- in our database, it's scheduled to open every June.

In 2008, we didn't receive any samples until July when the system sampled in response to illness complaints. They had about a hundred people, mostly boy scouts, juveniles, with diarrhea, abdominal pain, fever, nausea, vomiting after they spent the weekend at the camp the 4th of July weekend.

With the investigation, the outbreak was caused by waterborne bacteria, Camplobacter, and would

have likely -- if the system had sampled, one, it might have been detected, but even better if it would have sampled monthly, we would have had an ongoing record to see that the system not only opened up clean but stayed clean as these kids came in.

In case study number one, more recent in 2011, we had two systems that are linked hydraulically that were implicated in the disease outbreak of 72 individuals. It was Camp Shawnee and Camp Ben Lomond. Again, summer camps primarily serving children and juveniles.

They missed their fourth-quarter sample in 2010, they missed the first-quarter sample in 2011. This is a system that's opened year-round. They sampled on May 2nd of 2011. That sample was satisfactory. So we had a good sample in May, and they were -- they were in compliance with us in May. That sample in May counted for the second-calendar quarter. This system did not have a requirement to sample until the end of September. In August, they had an illness outbreak and 72 kids got sick.

So this is kind of an illustration. If that system had sampled monthly, we had three opportunities to find that there was a problem before kids had gotten sick. It's not a guarantee we would have found it, but

it's probably a likely that we would have.

So those are -- those are two -- three systems that had waterborne disease outbreaks. Those are the ones that are the most recent. We had -- if I try to remember, in my tenure with the State, it started in 1987, we've had less than ten -- I think we've had less than five waterborne disease outbreaks that have been confirmed with the public water system, and three of those are on systems that sample quarterly in recent past. So I think that's going to be compelling reasons that we -- that we make this minor change to monthly for everyone.

The other part of this, too, is that we go onto the timeliness of these samples. If systems on a quarterly basis sample, it's kind of goes -- again, an illustration of case study number one. You have systems that sample quarterly. Many of them miss that first-calendar quarter. So they're open in June -- they actually open end of May, first of June and many times that sample is forgotten.

If you look at the last figure I provided over the last six years, on average, 40 systems a year miss that sample. We don't know about it because, again, the sample is not due until the end of June.

We don't send a statement until the middle of

July. We run violations the end of July, we notify systems, "Oops, you forgot to sample." And that usually -- they usually get that letter the last week in July, first week in August. And now they've gone through the whole season, at least half their operating system, with no information on the quality of the water, and then they'll take a sample. We think that's really not an adequate sample, but their systems would be in compliance. So that's where that monthly sampling -- that increased surveillance would be very protective of public health because, again, we don't know until we get the sample results and that lack of information is problematic.

So again, the simplicity fact, the reduced monitoring -- the quarterly monitoring opens up increased sampling for systems and then qualifying to go back down. We don't -- we didn't allow in the 1991 version of the rule. Anything less than quarterly, we're not even contemplating that.

Even with the quarterly samples, every single month, you might -- your sampling schedule might change. It might go monthly. If certain things occur, then you might go back down and you might trigger the next three months to go back monthly. It becomes a Yo-Yo effect that becomes confusing to our staff and I can only

imagine -- we don't deal with rules every day, it would be confusing to this system staff, and then it would mean more violations.

So I think from a simplicity standpoint, again, we're already going from five violations, we're proposing 12, 22 would just be that much harder.

So in summary, with our documentation, is -- you know, total coliform samples indicate acute quality violations. What that means is you get a single drink of water, it might lead to a health outcome. That's what "acute" means.

In the acute quality, if you find one, we're issuing boiler orders or we may or may not have a waterborne disease outbreak, but we will require public notice. When you require public notice, you're going to have to answer to your customers and perhaps the press. As OSHA, this last summer, kind of told us that one of the things that you will have to answer most likely is, "So how long has this been going on?" "Is our water okay?" When did you last know?" When did you last test?" And in some cases, we've had to answer, "The last sample we have on record is last year." And I guess I propose that to you, do you want to have that be your answer?

I think we're -- I believe the only

acceptable answer is "last month," because when you don't have a sample, you really don't know what the quality of the water is. So how do you answer truthfully to your public, "Oh, we will only tested it last year," and we think that's unacceptable. So I didn't attach to that all the statistics.

So I don't know, Ken, do you want me to -- do you want to open it for questions or do we open it for comment?

MR. BOUSFIELD: Are there any questions relative to what Patti has presented in this part of her presentation?

(No response from attendees.)

MR. BOUSFIELD: Seeing none, let's open it for public comment. Relative to the public comment, I invite you to come up to the table, sit in the chair and state your name and then offer whatever comment you have. And with that, we open it up for public comment.

(No response from attendees.)

MR. BOUSFIELD: I can out wait you, you know.

(Laughter in room.)

MR. ROY MCDANIEL: I'm Roy McDaniel. I've worked for the LDS Church since 2012. I have managed the drinking water of which has basically addressed a lot of these issues.

One of the things that was brought up in the point was the Ben Lomond, Shawnee Camp, which I'm very familiar with, more familiar with than I'd like to be. And specifically, I remember at that time -- we have several camps in the area of the Ben Lomond, Shawnee Camp, and there was a very major rainstorm that came and occurred that caused all of our springs and all that area to have total coliform-positive samples.

We have, later, done a lot of improvements to that camp, but my point is that, based on my experience with the Ben Lomond, Shawnee Camp and all the other camps in the area, I'm not so sure the increased monitoring would have caught that. Because, based on our analysis and analysis of some of the -- in talking with some of the other water systems around there, it appeared that that storm event caused the water quality problem that occurred that month in August and it wasn't necessarily something that happened -- happening all along. I'm not so sure that the increased sampling would have caught that.

MR. BOUSFIELD: Thank you for your comment.

MS. KRISTINE HEGMANN: I have to sit here?

MR. BOUSFIELD: Please.

MS. KRISTINE HEGMANN: Holy smokes, it's the hot seat, isn't it? Hi.

MR. BOUSFIELD: Hopefully you're comfortable in the hot seat.

MS. KRISTINE HEGMANN: Not really. Hi, Kristine Hegmann from Mill-D and Big Cottonwood. I just want to lay some groundwork that I was among the lucky in the biggest waterborne outbreak epidemic in (inaudible). I published some papers with some other people on it. I recognize -- my background is public health, so don't think that I'm anti-public health, I'm not.

The issue to me is one size doesn't fit all. And our system is at approximately 8,000 feet without -- in Big Cottonwood, without any buildings or developments above us. We obtain our water from another ground spring that is operated seasonally; at most, four to five months per year. Over 60 years, to my knowledge, we've never had a coliform, and been told that we have some of the most pristine drinking water in the state.

Regardless, at least once a week, when the -- when the system is up, my husband and I and about five other people walk the line to physically see if there are any breaks in the system. It's got a locked key.

I get the bit about runoff and contamination and all of that. My concern -- to the integrity of the lines for a physical inspection when you're going on a hike, to me, is really your best bet at seeing that

there's not a break in the system and, yeah, I believe in testing. I just think this monthly thing is kind of wack, that's what I'm saying.

So I think there's no real justification for the rule and I believe that it's not your fault, that it's just another sample of unnecessary burdens on our society from Washington, who, you know, think that one size fits all.

We are a very small, little system. I mean, people can't even, like, use the water for the four, four and a half months. And I believe in doing the chlorination and the flushing and the sampling and we do all of that, but this once-a-month thing -- I know we don't have to chlorinate every month, but I still think it's wacky.

And it would be best if those were proportionate to the documented and estimated means of the area. Now, I know you can't tailor a plan for every individual area, but I think -- I think it's wacky. So I just want to go on record and say that it's wacky. That doesn't mean I won't be compliant. Thank you.

MR. BOUSFIELD: Thank you for your comment.

MR. RYAN WHITE: Good afternoon. Ryan White with the LDS Church in charge of compliance -- sampling and compliance. I want to make a comment on the case

study two, where it is a seasonal system at Maple Dell. The additional monthly monitoring, that wouldn't even affect that because the EP's RTCR rule already covers the seasonal for monthly. I'm not sure why that case number two is included. It's already being covered by the RTCR rule for seasonal systems. So including that as a health case for the additional monthly monitoring just doesn't make sense, in my mind. Thanks.

MR. BOUSFIELD: Thank you.

MR. CHRIS BRAMHALL: My name is Chris Bramhall. I'm with the law firm of Kirton McConkie, representing the LDS Church, and I'm here with Roy and Ryan today.

As I listened to the comments that were given earlier in the explanation for this rule change, I've just sort of noted some observations, and these will go into our written comments that we'll submit later, but I just wanted to sort of highlight them.

Obviously, what we're looking at here is, essentially, a cost benefit analysis. There's significant additional costs that is being posed on the private sector and the question is, What benefit are we achieving in terms of improvement to public health?

Now, most of the comments that I heard today really go to the issue of administrative convenience and

administrative costs with keeping up with an arguably more complicated recordkeeping system, but I did hear a lot that really addressed the issue of public health.

In particular -- and Ryan touched on this just a moment ago. Both of the case studies, unless I'm mistaken, that were illustrated here, involved seasonal camps and they will be going to a monthly monitoring protocol anyway, and we don't -- we're not objecting to that.

My understanding is that that's part of the Federal rules and there's just -- you know, there's nothing the State can do about that. Where the State does have discretion is in extending those monthly monitoring requirements to non-transient sites, which we have quite a few. We think that there are 34 sites that consists of meeting houses, and an additional eight camps that we have that are year-round camps. And those sites are currently monitored on a quarterly basis, but they're non-transient, meaning that they're used throughout the entire year.

We think that the -- again, that there was a discussion earlier about how many positive -- not positive samples, but I think actual cases of illness that had occurred and there were three of them, I think, and they were all at quarterly sites.

My question is how many of those were at non-transient year-round sites and, I don't know, but I suspect the answer is zero. And there may be sort of a logical explanation for that. These sites that are year-round are operated and maintained on a continual year-round, month after month, year after year, basis. They don't shut down and start up again and they're not susceptible to the same kinds of interferences that -- that seasonal sites are.

And so I guess -- and going back, I understand that you read earlier, before I got here, the State statute that mandates that the State cannot adopt standards that are more stringent than the Federal standards unless that -- those rules are supported by real public health-driven concerns, and we just don't see those public health-driven concerns in the non-transient locations. So I wanted to make that point.

The other point is that it's not really clear that moving to a monthly system on these non-transient sites is going to decrease the administrative burden on the department. The example was given that the potential for violations has now increased to 22 in the case of quarterly sampling and it's only 12 in the case of monthly sampling. So obviously, that's a decrease, but if you multiply that out over 12 months, the total

potential violations under the quarterly system is 88 and under the monthly system is 144. So we don't see that the administrative burden is going down. In fact, may be going up.

Additionally, the administrative burden appears to be what was referred to as the "Yo-Yo effect." That is, if there's positive -- if there's positive tests, that results in increased sampling in the following month and so forth -- or I should say moving from a quarterly to a monthly sampling protocol until the violation -- or until the sampling tests clean, and then it goes back to a quarterly. I understand that that may cause sort of a Yo-Yo effect and difficulty in understanding how frequently a site is supposed to -- is supposed to sample.

However, the question, I think, we need to look at is, How frequently do those non-transient sites actually show positive violations? And so if it's true that that Yo-Yo may go up and down upon occasion, we want to know what the frequency of that would be.

I suspect that -- that those sites are sampling clean a very, very high majority of the time and if, on occasion, there is the opportunity for some, you know, administrative -- additional administrative burden, that that's very infrequent.

And again, we go back to the issue we first raised, which is a cost versus the benefit analysis, and we are -- you know, these costs are guaranteed. They are going to go up. It's a burden on us. We think that the sampling alone is going to cost us an additional $40,000 a year, and that does not count the cost of personnel, time, and travel and so forth to some of these remote sites to do the sampling.

So that's a cost we're going to incur, you know, year in and year out guaranteed versus a potential administrative burden on the State. And I emphasize "administrative burden," because we don't see -- unless there's more data provided, we don't see an actual impact on the public health and improvement on the public health side. So those are my observations. Thank you.

MR. BOUSFIELD: Thank you.

MS. FAUVER: Just a point of clarification. It would be nice and simple if year-round systems with categories as non-transient and seasonal systems are transient, but it's not that simple. We look at who is served by the water system. So you could say that all non-transient systems are year-round, but it's not to say that all transient systems are seasonal. Only about 73 percent of those are.

As far as the examples, the Camp Shawnee, Ben

Lomond is not a seasonal system, at least it wasn't at the time the sample event occurred. It would be -- it would not be a seasonal system subject to monthly monitoring. And you know, when that event occurred, Roy, we had several months after that event that we had E. coli-positive samples. So if we had increased frequency in monitoring, it would have shown up. So the trigger event might have been the rainstorm, but the bacteria persisted for a fairly long time, month to month to month.

So we did have an example, a non-seasonal system and a seasonal system, and that's where the difference in the Federal rule requirements are, for seasonal versus non-seasonal, not non-transient versus transient.

MR. CHRIS BRAMHALL: Thanks for clearing up that distinction.

MS. FAUVER: Sure.

MR. CHRIS BRAMHALL: But I guess I would, then, follow up by saying that's a -- that's a single case and does a single case justify a change to the entire system?

MS. FAUVER: Right. So I guess the follow-up would be, Is the $40,000 the accumulative cost of all your systems or are those only the ones that are

year-round? I suspect it's probably cumulative of all of them.

MR. CHRIS BRAMHALL: No. Only the year-round.

MS. FAUVER: The year-round ones? Is that just Utah or is that --

MR. CHRIS BRAMHALL: Just Utah.

MS. FAUVER: Just Utah. Okay.

MR. ROY MCDANIEL: This is --

MR. BOUSFIELD: Your name again?

MR. ROY MCDANIEL: Roy McDaniel with the LDS Church. One more comment about Ben Lomond, Shawnee Camp. Patti is correct that we have experienced a lot of things after that. We have since gone to a surface water treatment plant there and it is currently a monthly monitoring schedule regardless of whether or not the revised total coliform rule would have gone into effect or not, and that's been happening for several years now.

I think the failure with Ben Lomond, Shawnee didn't have to do with the sampling, it had to do with many other things that probably could have and should have been caught under existing rules and regulations at the time, but were missed because of different reasons at the time. Thanks.

MR. BOUSFIELD: Thank you.

MR. DEAN CHRISTENSEN: Dean Christensen, representing Mount Air Water Corporation. My concern is that I believe we have been in compliance with the quarterly system, and our system is a resort-type system which is not -- there's no water, there's no skiing. It's usually an overnight situation. There are no paid employees. This is an incredible -- I'm not prepared to tell you what the costs are, like 40,000, but this would be an incredible cost increase for us to go from two to three samples a year to a -- on a quarterly system to a monthly. Even if it was six or seven or eight months, it would be significant in our case where our people are only there probably overnight.

MR. BOUSFIELD: Thank you.

MR. RUSS JOHNSON: My name is Russ Johnson. I'm with Clyde Companies, specifically Geneva Rock Products. We're out here at the Point of the Mountain. It's probably our only facility that we have that we have a water system at. So it's a non-transient non-community system. We serve about 75 people. It's industrial.

And my concern -- I have two concerns. First of all, some of us in these smaller systems have other responsibilities besides the water operator, and I wear a lot of hats. I'm in the maintenance division. I deal with the State air quality. I have a lot of things that

I do particularly, not just the water system. So to have that be once a month, it's probably not a big deal. The cost is not a big deal for us, as well, but somewhere in this slide presentation, I thought I saw that they wanted these samples to be taken the first Monday of every month. That's my concern, if that's the case.

I have a -- I have a -- you know, if it's going to be in the month sometime or the first half of the month, that would be okay. But that's one of my concerns about this, is to put a specific day with -- with the other responsibilities that we carry would be -- would be tough to deal with. Thank you.

MR. BOUSFIELD: Thank you.

MS. FAUVER: There's no specific time frame.

MR. RUSS JOHNSON: Okay. Thanks.

MR. MIKE MARKHAM: Mike Markham, Samak Country Estates Water Association. I kind of support the once-a-month checking, but we could -- we could do it every quarter because of the size of our system, but I'm concerned if we get a bad test.

The only thing I disagree with is, on my last test, I was supposed to mail paperwork out to my people that live in the boiler order, which, as slow as the mail is, it never seems to get to where it's supposed to. So I called everybody. Is that going to be sufficient, if I

turn in a report saying that I called all of my people?

MR. BOUSFIELD: I think that would be sufficient.

MR. RUSS JOHNSON: I knew that I read this someplace. It's right here in this draft.

MS. FAUVER: Oh, sorry.

MR. RUSS JOHNSON: I just wanted to make sure. I just wanted to be clear.

MR. MICHAEL GOODMAN: Hi, I'm Michael Goodman from the Mount Tabby Improvement Group. We have a problem with that. You know, we operate maybe four months out of the year and our water master is not always up at our subdivision, and so we don't have anybody else to take a water sample, which needs a qualified person. So that would be a big burden on our system as well as other recreational-type properties. Thank you.

MR. BOUSFIELD: Thank you. Are there any other comments?

(No response from attendees.)

MR. BOUSFIELD: If not, we'll call this meeting to an end. If there are questions that you may have, that you want answers to, Patti's available, I'm available. The comment period -- the oral comment period is closed. There's still an opening for written comments till February 16th.

UNIDENTIFIED SPEAKER: When is this officially going to be decided?

MS. FAUVER: April 1st, the Federal rule is effective. It doesn't matter if we have State rules or not. We're looking at -- we'll have the comment period closed and the drinking water board will address it and either authorize --

(Court reporter interrupted.)

MS. FAUVER: The drinking water board will authorize us to proceed with the adoption the first week in March.

So if you're a transient system and your system does not open, wait for us to let you know when that requirement -- whether it's there or not. If you're a community water system, continue to sample like you always have.

UNIDENTIFIED SPEAKER: Non-transient non-community.

MS. FAUVER: Non-transient non-community, my recommendation is to take a sample in April. Start monthly sampling in April. We should have -- we should have information out to you to verify that or not before then, but --

UNIDENTIFIED SPEAKER: It looks like it's going to happen.

MS. FAUVER: It's the legislative season, so who knows what they're going to do. I would recommend you take a sample. If it stays quarterly, that would help your first quarter.

UNIDENTIFIED SPEAKER: (DEQ employee consulting with Ms. Fauver.)

MS. FAUVER: Sorry. Sorry.

UNIDENTIFIED SPEAKER: First sample of the year, second quarter.

MS. FAUVER: Yes, second-quarter sampling. Thank you guys all for attending. Appreciate your comments.

(The matter concluded at 2:23 p.m.)

* * *

CERTIFICATE

STATE OF UTAH)
: ss.
COUNTY OF SALT LAKE)

THIS IS TO CERTIFY that the foregoing transcript was taken down stenographically by me, ROSSANN J. MORGAN, Registered Professional Reporter, Certified Shorthand Reporter in and for the State of Utah.

That the proceedings, or requested portions, were reported by me in Stenotype and thereafter caused by me to be transcribed into typewriting, and that a full, true and correct transcription of said testimony so taken and transcribed to the best of my ability from the recordings given me is set forth in the foregoing pages.

I further certify that I am not of kin or otherwise associated with any of the parties to said cause of action, and that I am not interested in the event thereof.

WITNESS MY HAND at Salt Lake City, Utah.

ROSSANN J. MORGAN, CSR, RPR

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Written Comments

Revised Total Coliform Rule

Written Comments

Christopher Bramhall, Kirton Mconkie law firm for LDS Church (transient non-community & non-transient non-community)

> The LDS Church does not object to seasonal systems going to monthly sampling. The Division has not justified going to monthly sampling with health based data, instead they have used cost and administrative convenience.

Jeff Rasmussen, Division of Parks and Recreation (transient non-community & non-transient non-community)

> The change will substantially increase the cost for collection and processing bacteriological water samples and add to the already overwhelmed operations staff. Will add almost $19,000 for fiscal year 2016/2017.

David Bell, Bell Brothers Oil Company (transient non-community year round)

> System has tested for over 20 years without failing a sampling test. Test data and experience does not support increased water scrutiny and associated costs.

John Spencer, Simplot Phosphates LLC (non-transient non-community year round)

> Costs of the changes don't justify the slightly minimized risk of early detection. Some sites are very remote; costs will be 3 times as much. For over 10 years system has never had a positive TC sample.

John Quick, Soapstone Summer Homes (transient non-community seasonal system)

> Consideration should be extended for small systems so they aren't put under such a physical and monetary burden. Quarterly sampling has been and should be adequate for safe drinking water.

Paul Tervort, Loafer Water Users Association (transient non-community seasonal system)

> System is closed 4 months a year; worried about having to use a snowmobile to get samples during the winter months when their system is closed. Monthly sampling for system serving less than 200 people is too often and expensive.

Neutral/Positive:

Negative:

Christopher Bramhall, LDS Church (multiple system types and operating periods)

Jeff Rasmussen, Division of Parks and Recreation (multiple system types and operating periods)

David Bell, Bell Brothers Oil Company (transient non-community year round)

John Spencer, Simplot Phosphates LLC (non-transient non-community year round)

John Quick, Soapstone Summer Homes (transient non-community seasonal system)

Paul Tervort, Loafer Water Users Association (transient non-community seasonal system)

KIRTON | McCONKIE

February 16, 2016

Division of Drinking Water
Attn: Jennifer Yee
P.O. Box 144830
Salt Lake City, Utah 84114-4830

Re: Comments on Proposed Total Coliform Rule Changes affecting Utah Administrative Code Sections R309-100, R309-105, R309-110, R309-200, R309-210, R309-211, R309-215, R309-220 and R309-225

To Whom It May Concern:

This firm represents The Church of Jesus Christ of Latter-day Saints (the "Church"), in connection with the Church's review of certain changes being proposed by the Utah Division of Drinking Water (the "Division") to the above-referenced sections of the Utah Administrative Code (the "Code"). Some of these changes are required as the result of the United States Environmental Protection Agency ("EPA") Revised Total Coliform Rule ("RTCR"), finalized on February 12, 2013. Certain Church employees, and the undersigned, attended a public hearing on this matter on January 20, 2016, and made oral comments at that time. These written comments are submitted to clarify and supplement the Church's oral comments made at the hearing.

At the outset, the Church wishes to express its full support of the efforts of the Division to protect public health and safety through monitoring the quality of the drinking water supply. The health and safety of those who visit Church properties is of the highest importance to the Church. The Church is committed to operating safe water systems, and to strictly adhering to monitoring and other requirements designed to protect the safety of those systems. The Church views itself a partner with the Division in this effort. As was stated at the hearing, and as will be repeated in this letter, the Church supports many of the Code changes proposed by the Division. Our concern is limited to only one aspect of the proposed change, and is based on our assessment that the change has little to do with public health, and is proposed mainly as an administrative convenience for the Division, contrary to express State law.

BACKGROUND

The Church and its affiliated entities operate a number of culinary drinking water systems at various Church properties throughout the state where publicly owned and operated culinary water systems are not available. Because these systems serve at least 25 individuals daily at least 60 days out of the year, they are classified under the Code as "public water systems," and are subject to water quality sampling requirements. The Church properties served by these "public water systems" fall into two categories. The first category consists of seasonal systems that operate for only a portion of each year. Most of the Church's recreation properties and camps fall into this category. The other category consists of systems that operate year-round. Properties in this category include meetinghouses, a few camps, and other facilities. The Church operates 43 seasonal systems, all of which are camps and recreational properties, except for one seasonal meetinghouse. The Church operates 34 year-round systems, of which 26 are meetinghouses and eight are year-round camps and other facilities.

CURRENT SAMPLING REQUIREMENTS

Currently, both seasonal and year-round systems operated by the Church are required to be sampled once per calendar quarter. The Church has contracted with a private laboratory service to help the Church perform all of its required water sampling in the United States and Canada. The lab has the required sampling schedule, and sends the sampling kits at the beginning of the sampling period to the Church employees that manage the sites, knows as Facilities Managers. The Facilities Manager, his mechanic, or someone he manages, takes the sample, puts it in the cooler provided with blue ice, and ships it back to the lab, where the analysis is required to begin within 30 hours after taking the sample. The staff at Church headquarters tracks completion of the sampling, and the number of positive tests. Church staff sends out reminders near the end of the sampling period if sampling has not been completed, and makes sure that any required follow-up samples are taken within the required time period.

PROPOSED CHANGE IN SAMPLING FREQUENCY

Seasonal Systems.

Under the new EPA RTCR, seasonal systems must now be monitored monthly, instead of quarterly, and the State of Utah is required to change the Code accordingly. The EPA cites public health concerns as the reason for this new requirement:

> "The advisory committee recognized that seasonal systems have unique characteristics that make them susceptible to contamination. As their name implies, seasonal systems are not operated year-round. The depressurizing and dewatering of the water system, as often occurs with the temporary shutdown of the system, present opportunities for contamination to enter or spread through the distribution system. For example, loss of pressure after a system's shutdown can lead to intrusion of contaminants. Even a system that remains pressurized may be subject to water quality degradation due to stagnant

water or loss of disinfectant residual. Microbial growth prior to start-up can result in biofilm formation, which can lead to the accumulation of contaminants. These systems are also more susceptible to contamination due to changes in the conditions of the source water (such as variable contaminant loading due to increased septic tank or septic field use), the seasonal nature of the demand, and the stress that the system experiences."

The Church does not disagree with this assessment. In the Church's experience, almost all of the total coliform positive test results from water samples taken at its Utah facilities in recent years have come from seasonal systems. In 2013, there were three positives out of a total of 147 samples. In 2014, there were three positives out of a total of 147 samples. In 2015, there were two positives out of a total of 136 samples. All but one of these positives were associated with seasonal systems, and all were associated with camps.

Even though this rule change will affect 43 seasonal Church sites, the Church supports the change. The rule change affecting these systems has a logical basis, and is grounded in a legitimate concern for public health.

Year-Round Systems.

The EPA RTCR does not require an increase in the frequency of sampling on systems that operate on a year-round basis. Under the RTCR, year-round systems can continue monitoring on a quarterly basis. Presumably, this is because those systems are not subject to annual depressurization, dewatering, stagnant water and loss of disinfectant residual, and the resulting potential for microbial growth and biofilm formation, all cited by the EPA as justification for increased sampling on seasonal systems. Nevertheless, the Division is recommending to the Drinking Water Board (the "Board") that monthly monitoring be required on all systems, both seasonal and year-round. The Church believes that moving beyond the requirements of the EPA RTCR is unwarranted at this time.

BASIS FOR CONCERN

Limitation on Rulemaking Authority.

Under applicable Utah law, the rulemaking authority of the Board is expressly limited as follows:

> Rulemaking authority and procedure.
>
> (1) Except as provided in Subsection (2), *no rule which the board makes for the purpose of the state administering a program under the federal Safe Drinking Water Act may be more stringent than the corresponding federal regulations* which address the same circumstances. In making the rules, the board may incorporate by reference corresponding federal regulations.

> (2) The board may make rules more stringent than corresponding federal regulations for the purpose described in Subsection (1), only if it makes a written finding after public comment and hearing, and based on evidence in the record, that the corresponding federal regulation is not adequate to protect public health and the environment of the state. Those findings shall be accompanied by an opinion referring to and evaluating the public health and environmental information and studies contained in the record which form the basis for the board's conclusion. (Emphasis added.)
>
> Section 19-4-105, Utah Code.

By imposing monthly sampling where the EPA only requires quarterly sampling, the proposed rule is more stringent than the corresponding federal rule. By law, this is allowed "*only if [the board] makes a written finding . . . based on evidence in the record, that the corresponding federal regulation is not adequate to protect public health . . . .*" Furthermore, "*[t]hose findings shall be accompanied by an opinion referring to and evaluating the public health and environmental information and studies contained in the record which form the basis for the board's conclusion.*"

As far as we have been able to discern, the Division has attempted to justify its expansion of the EPA rule not on the basis of public health, but on the basis of cost and administrative convenience. Minutes from the Board's November 13, 2014 meeting contain the Division's recommendations for increased monitoring. A copy of these recommendations is attached as Exhibit A. The Division criticizes the EPA's rule allowing continued quarterly sampling of year-round systems in a single short paragraph:

> "Systems initially eligible for quarterly monitoring, who have violations must be changed to a monthly frequency until conditions are met and reported allowing them back to a quarterly frequency. This creates a yo-yo effect on monitoring frequencies and confusion on what frequency a system has to sample at. **The Division does not have the resources for tracking and adjusting the schedules in this manner."** (Emphasis in the original.)

The "systems initially eligible for quarterly monitoring" referenced in the first line are year-round systems. Under the EPA RTCR, those systems are allowed to sample quarterly until they are determined by testing or other means to be at high risk, at which point they must sample monthly. After the problem is cleared up, they may revert to quarterly sampling. That sounds pretty simple. Yet, the Division asserts that it is "confusing," and that the Division does not have the resources to comply. Confusion and resources. These are the only two justifications for the Division's proposal. Public health is not mentioned. The Division's concern about cost is highlighted in bold type. However, financial burden on the Division does *not* justify imposing a more stringent rule on the private sector.

Even if cost were a justifiable consideration (which it is not), the Division does not build a strong case that the EPA version of the rule will be financially burdensome.

1. No Cost Estimate. The Division has not attempted to quantify just what additional resources would be required for it to administer the EPA version of the rule. No data has been provided. No analysis is attempted. There is no effort to compare alleged cost increases with potential offsetting cost decreases. The Division simply asserts there will be *some* cost in administering the EPA rule, and that those costs are too high.

2. No "Yo-yo Effect". The Division referred to the "yo-yo effect" created when a site must increase its sampling rate after a positive test, and then revert to the normal rate when the problem is corrected. The Division intimates that this will be a frequent event, and, when multiplied across many sampling sites, would create a confusing mix of ever-changing sampling frequencies for different sites that would be difficult to administer and would burden the Division's budget and resources. Instead, we think in reality the "yo-yo effect" will almost never happen. That's because positive total coliform tests at year-round sites almost never happen. Of the Church's 34 sites that will be subject to this rule change, there has been only one single positive test since 2012, out of 430 samples. The problem at that site was corrected, and since then there have been no further positive tests. The Church continues to test this year-round system on a monthly basis, and will continue to do so for as long as is required by the Division. As demonstrated by actual experience with these systems, it is only the isolated case, once every few years, that will trigger a change in sampling rate. Surely, this is not so confusing and burdensome that the Division can't cope with it.

Perhaps the Church's single positive sample record is an aberration, and year-round sites operated by other private parties test positive with a higher frequency. Perhaps the Division has evidence showing that positive tests at these sites are trending up, not down. If so, this evidence should be presented by the Division and form the basis for its required analysis and written opinion.

3. Monthly Monitoring More Costly to State. At the public hearing, the Division attempted to support its conclusion by arguing that monthly sampling is cheaper for the Division than the quarterly sampling allowed by the EPA. Again, while cost is *not* a permitted factor to consider, we think the figures provided at the hearing do not support, and actually contradict, the Division's position. The Division stated that, for reasons not entirely clear, quarterly sampling creates the possibility for up to 22 violations per sample. By comparison, monthly sampling creates the possibility for only 12 violations per sample. Therefore, according to the Division, monthly sampling will actually reduce the administrative cost to the Division of issuing and following up on violations.

However, the math does not support this conclusion. Under quarterly sampling, the highest number of violations a water system could generate in a year would be 88 (22 violations per sample, x 4 samples per year = 88). The same site, if sampled monthly, could generate up to

144 violations (12 violations per sample, x 12 samples per year = 144.) This represents an *increase* of 56 possible violations for the site, or 64%.

Perhaps we misunderstood the Division's presentation of this data. However, it is counterintuitive that increasing sampling by three-fold will reduce the administrative cost to the Division. The Division must do a better job of making this case.

In the end, however, a case based on cost is insufficient.

SUMMARY

State law prohibits the rule change proposed by the Division, unless the federal rule is inadequate to protect public health. This law is based on sound public policy. Unless there is a public health imperative, the Division should not impose a burden on the private sector more onerous than that already imposed by the federal government. This is not merely a guideline, but a legal limitation on the Board's authority. When the Board feels strongly that the public health is not being protected, its decision to impose stricter standards must be supported by evidence in the record, by an evaluation and analysis of public health information and studies, and by a written opinion. The stricter standard cannot be justified on the grounds of cost to the Division, administrative convenience, or any other factor other than public health.

In this case, the Division has failed to meet this high bar. Its only express justification for the stricter monitoring standard is the avoidance of costs it may incur under the EPA rule. We argue that those cited costs (i) will very rarely be incurred, and (ii) if incurred, will be very small. To the contrary, the Division's alternative will almost certainly increase costs to the Division associated with increased sampling.

We would recommend that the Division adopt the proposed EPA rule and allow year-round water systems in the State of Utah to continue to be tested on a quarterly basis. If, going forward, evidence is compiled that demonstrates this sampling frequency adversely affects public health at these locations, the sampling rate can be revisited. At this time, however, we do not believe sufficient data exists to justify the change, under state law.

Thank you for your consideration of our thoughts on this important matter. We would be happy to supplement these comments with supporting materials at your request.

KIRTON MCCONKIE

Christopher E. Bramhall

Authorization to Initiate Rule Revisions for adoption of the Revised Total Coliform Rule

RULE REVISIONS OF *R309-100, R309-105, R309-110, R309-200, R309-210, R309-211, R309-215, R309-220, R309-225*

This packet contains the necessary changes to R309-100, R309-105, R309-110, R309-200, R309-210, R309-211, R309-215, R309-220, and R309-225 to adopt the Revised Total Coliform Rule.

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Drinking Water

Cost Estimates:

Along with the final rule language, EPA presented the estimated increase in annual cost nationwide with the new requirements. They estimate nationwide there will be an increase of $14,000,000 with the basic requirements and with an implementation plan of monthly monitoring it would be $30,000,000 nationwide. Utah is a 1% State, as such the increase projected from the national estimate for **Utah would be, $140,000 and $300,000**, respectively. The costs are estimated to be incurred 90% by public water systems and 10% by the state primacy program. It is important to note this cost estimate also includes the cost of fixing sanitary defects (significant deficiencies) found in the system infra-structure.

The only difference between the final rule language and the alternate (monthly sampling for everyone) is whether to require monthly samples for all non-transient and transient non-community systems.

Stringency: Division staff propose the Drinking Water Board adopt the RTCR option to require monthly monitoring for all public water systems for each month of operation based on the population served.

Discussion:

RTCR requirements:

Like the 1989 federal TCR, allows for reduced monitoring frequencies for community systems to quarterly and non-community systems to annual. The Drinking Water Board rejected the reduced options in the 1989 TCR.

All seasonal systems (72% 347 of 479 of Utah transient non-community systems), under both options, must sample monthly as a default unless the Division conducts an evaluation as to when it is most vulnerable to contamination and assigns the quarterly sample to be taken within that window of time. **The Division does not have the**

resources to evaluate the most vulnerable time nor track that level of specificity in monitoring.

Systems initially eligible for quarterly monitoring, who have violations must be changed to a monthly frequency until conditions are met and reported allowing them back to a quarterly frequency. This creates a yo-yo effect on monitoring frequencies and confusion on what frequency a system has to sample at. **The Division does not have the resources for tracking and adjusting the schedules in this manner.**

The current requirement for additional samples the next month has been eliminated for systems who sample monthly. **We can eliminate tracking of these samples if all systems are on a monthly schedule.**

The last 3 waterborne disease outbreaks have occurred at non-community systems (scout and girls camps). These systems are currently sampling quarterly.

Staff Recommendation:

1. The Staff recommends the Drinking Water Board authorize staff to proceed with adopting rules and an implementation strategy to require total coliform samples for all public water systems with the sample number based on the population served and the frequency based on each month of operation.

2. The Staff recommends the Drinking Water Board authorizes staff to proceed with the filing for substantive changes to R309-100, R309-105, R309-110, R309-200, R309-210, R309-211, R309-215, R309-220, and R309-225 with the Division of Administrative Rules for rule adoption.

GARY R. HERBERT
Governor
SPENCER J. COX
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES
MICHAEL R. STYLER
Executive Director
Division of Parks and Recreation
FRED HAYES
Division Director

February 9, 2016

Jennifer Yee
Division of Drinking Water, DEQ
195 North 1950 West
Salt Lake City, UT 84116

Subject: Utah Division of Parks and Recreation Comments on the Division of Drinking Water's Proposed Rule Changes.

Dear Ms. Lee:

The Utah Division of Parks and Recreation (The Division) appreciates the opportunity to comment on the Utah Division of Drinking Water (DDW) and the Drinking Water Board's proposed changes to R309-105, R309-110, R309-200, R309-210, R309-211, R309-215, R309-220, and R309-225 as published in the Utah State Bulletin, January 15, 2016, Vol. 2016, No. 2. The Division has the following comments and concerns.

The Division currently operates 25 transient, non-community public water systems. These systems are located throughout the state and are operated for the recreational benefit of our visitors. The Division considers the proper operation and maintenance of our water and sanitation systems to be a top priority. All but one of our systems currently collects and tests bacteriologic water samples quarterly. The rule changes proposed by DDW will increase sampling on 18 of our year-round systems from quarterly to monthly. This change will substantially increase our costs in the collection and processing of bacteriological water samples, as well as, add to the workload of an already overwhelmed operations staff. It is our understanding the Environmental Protection Agency (EPA) Revised Total Coliform Rule (RTCR) does not require monthly sampling of transient, non-community systems with a population less than one thousand. Under EPA's revised rule, systems that meet these criteria may continue to sample quarterly. It is the Division preference that DDW continue to allow our water systems to remain on a quarterly sampling period. The Division is committed to ensuring that our water remains safe and would like to work with DDW to find a solution that would allow a continuation of the quarterly tracking of our water systems. We would be happy to monitor water sampling compliance within our agency and report any required information to DDW if that would help.

Implementing monthly sampling on our systems will significantly impact sampling costs and reduce employee productivity for 18 park systems. Monthly sampling will more than double the amount of time park staff will spend on water sampling. The Division would understand this increase if our systems were deemed non-complaint and unsafe for the public, but to our knowledge, we have a good safety and sampling record with DDW. The proposed change will amount to a 200 percent increase for the Division in sampling costs, staff time, and transportation costs. This equates to an increased division-wide cost of almost $19,000 for fiscal year 2016/2017. This

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is a significant cost increase for our agency. It is our opinion that we can continue to collect quarterly samples and still maintain safe and clean water systems for our visitors.

Due to our concerns outlined above and with the recognition of the existing flexibility allowed by the EPA's RTCR; the Division recommends DDW allow our transient, non-community water systems to continue to collect quarterly bacteriological samples. For questions or further clarification of our comments, please contact Jeff Rasmussen, Deputy Director of Operations, at phone: (801) 870-7138 or e-mail jeffrasmussen@utah.gov.

Sincerely,

Jeff Rasmussen
Deputy Director

cc: Patti Fauver, Division of Drinking Water

Bell Brothers Oil Company, Inc.

P.O. Box 238 ● Coalville, UT. 84017-0238 ● (435) 336-4411 ● Fax: (435) 336-4414

February 12, 2016

Division of Drinking Water
Attn: Jennifer Yee
PO Box 144830
Salt Lake City, Ut. 84114-4830

RE: Total Coliform Rule Change and Public Hearing

To Whom It May Concern:

The frequency of testing for Coliform should not be uniformly increased. We have a public water system that has been tested for over 20 years by Summit County. I am not aware of the system ever failing any sampling tests.

I am also not aware of a person ever being negatively impacted by water quality from our water system. Our test data and experience does not support increased water scrutiny and associated costs.

Sincerely,

David Bell
Owner

Silver Creek Junction #22074
Transient non-community - year round

February 15, 2016

Division of Drinking Water
Attn: Jennifer Yee
PO Box 144830
SLC, UT 84114-4830

RE: Comments on Total Coliform Rule Change

Dear Jennifer Yee:

I wanted to thank you for this opportunity to share my comments on the Revised Total Coliform Rule. While in principle I agree with the purpose behind the changes, that this may help in the early identification of problems with a water system. But this revised rule is overly onerous for non-transient non-community water systems. The costs of the changes do not justify the slightly minimized risk of early detection.

Some of our sites are very remote, so under the rule changes we have the expense of sending qualified sampling personnel, vehicles and fuel to these locations monthly versus quarterly, plus our costs will now be 3 times what they were for the analytics.

Is there any way to get some kind of a waiver based on historic results for the small non-transient non-community water systems? For 10+ years we've never had a positive total coliform. It would be nice to reward those systems that take public health seriously by granting them a quarterly waiver.

Sincerely,

John B. Spencer
Environmental Manager
Simplot Phosphates LLC
9401 N. Hwy 191
Vernal, UT 84078
Ph (435) 781-3348
Cell (435) 621-2629
John.Spencer@Simplot.com

24039 nontransient non-community - year round
24024 non-transient non-community - year round

SOAPSTONE SUMMER HOMES

February 15, 2016

DIVISION OF DRINKING WATER
PO BOX 144830
SALT LAKE CITY, UTAH 84114-4830
Attn: JENNIFER YEE

Dear Jennifer Yee:

Subject: Total Coliform Rule Change

My comments are directed at the sampling requirements for PWS serving 1000 population or less. Our water system is a seasonal NCWS that requires a monthly monitoring program. There are provisions in the rule to allow for a reduced monitoring schedule to once a quarter under some outlined criteria. However the staff of the Division of Drinking Water is unwilling to consider this reduction for this type of small system. I am requesting that that policy be reconsidered and allowed as outlined under the new rule.

Consideration should be extended for small systems so they are not put under such a physical and monetary burden. Quarterly monitoring as in the past, should still provide for adequate safety of the drinking water system.

The Soapstone system consists of 41 cabin sites with only a portion occupied at the same time (primarily on weekends). The system is more equivalent to a population 75 yet we are under the same requirements of a system with a population of 1000. Last year it cost us $105 for the two quarterly tests and $535 for the test required by your office. If the monthly tests are required it will require 6 tests or three times what we spent last year. The $10 per test that is claimed in an article in the paper does not exist. I understand that we may be able to have the test run at a county lab for much less but so far I have not been able to get anyone to commit to be able to run the tests (too busy) or to give me a potential cost.

I appreciate this opportunity to comment and would appreciate any consideration that you can provide in this situation.

Sincerely,

John Quick P.E.
Soapstone summer homes water chairman

Division of Drinking Water
Attn: Jennifer Yee
P.O. Box 144830
Salt Lake City, Utah 84114-4830

Feb. 1, 2016

Re: Loafer Water Users Assn.
ID: 25073

Dear Ms. Yee,

We strongly oppose the proposed "Requirements for Small Systems on Monthly Monitoring."

We are listed as a low susceptible risk on your 17 page list of 453 "Transient Non-Community Drinking Water Systems in Utah."

We have 24 seasonal homes in Loafer Canyon, which are annexed to Elk Ridge City as the Loafer Recreation Association, a Non-Profit Association registered in the State of Utah. We receive no services from Elk Ridge City, except, Police & Fire Protection and building inspection. The Loafer Water Users Association, also a non-profit water company supplies water only to the Loafer Recreation Association members. Members must own interests in both non-profit associations in equal amounts to receive service from either Association. The entry gate to the site is locked, with no-trespassing signs and Bear Warning signs. The seasonal cabins are 3/4 mile up the canyon from the entry gate. There are no others who use the water.

The seasonal home water pipes, water heaters and toilets are drained at the end of the Deer Hunt which is the last of October each year. The P-traps, toilets and other drains are filled with anti-freeze to prevent them from freezing and breaking. They are not utilized again for four (4) months until after April 1st of each year. There is no natural gas to the area and it is too expensive to heat the homes all winter to prevent freezing when no one is present. In fact electrical service is often knocked out by snow and falling trees in the winter, so electrical heaters and heat tape is of no value to prevent freezing in the winter.

The snow is not plowed on the City and County road for 1 mile to our gate and another 3/4 miles to the seasonal homes in the winter due to freezing damage to the asphalt. The only access in the winter is by snowmobile, skies or snow shoes.

The snow gets 4 to 7 feet in depth at the seasonal homes and nearly 8 feet deep covering over the weir box, which is one of our designated sampling sites. The other sampling sites are surrounded by deep snow. Our regular samplers are older citizens who are physically unable to gather and dig out the weir box to take samples.

Monthly sampling for <u>low</u> susceptibility systems serving less than 200 people is too often and expensive. We also believe it is unnecessary to take samples in the winter when sites are so inaccessible and there is no one present to use the water. If people do go there on snowmobiles they can carry water to drink in water bottles. We believe there are many of the 453 other Transient Non-Community water companies in Utah who have similar winter conditions as ours.

We recommend the monthly monitoring requirements consider these hardships and allow for non-sampling seasonally when drinking water is not being used.

Sincerely yours,

for/ Ronald G Cole, Director
Paul Tervort, President, Loafer Waters Association

Transient non-community - Seasona