pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

November 14, 2014

Ms. Lisa Daniels, Director
Bureau of Safe Drinking Water
P.O. Box 8467
Harrisburg, PA 17105-8467

Re: Comments to proposed RTCR and General update to Chapter 109 with edits from the September 23, 2014 Board meeting.

Dear Ms. Daniels:

The Small Systems Technical Assistance Center (TAC) Advisory Board met on September 23, 2014 for a regularly scheduled meeting. One of the agenda items was a discussion of the comments, submitted in the Board's July 3, 2104 letter. Those comments related to the Department's pre-draft proposed changes to the safe drinking water regulations. As a result of discussions with constituent water systems, the Board discussed modifying the existing comments to better reflect stakeholder's concerns. Those concerns are outlined below, following the format of the July 3rd letter. Items that remain unchanged are listed as 1, 2, 6, 7, 8, 10, 14, 15, 17, 18, 20; they are incorporated as previously submitted. Items 3, 5, 9, 11, 12, 13, 16, and 19 were modified and approved by Committee vote. Item 4 was removed, as noted.

1. Regarding E. Coli positive results: **§109.701(a)(3)(iv), Annex A, p. 31** - the TAC Board would prefer the requirement of contacting DEP by the end of the day, as per the Federal requirement, instead of within one hour.

2. The TAC Board will tell the systems they represent that they can use the DEP 24-hour emergency number for required contact instead of calling their Sanitarian.

3. Some water systems will be negatively impacted by the restriction of only being able to use sampling locations once per month.

§109.701. Reporting and recordkeeping - Siting plan Section (pg. 31, Section a(5))

Additional comments: We agree that PWSs should have sample siting plans, yet plans need to be dynamic. PWSs need to continually update their plans. It is appropriate that a PWS have a plan but the plan may be electronic and not written in the sense that printing out a hard copy every time an update is made would be wasteful.
The proposed requirement in a siting plan that "A routine sample site location may not be used more than once in each month for samples collected..." needs to be reevaluated. This requirement is not part of the Federal RTCR and presents significant difficulties and costs for medium and large systems. PA DEP needs to provide an explanation of benefits to the public for imposing this very costly requirement. .

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The statement, "A routine sample site location may not be used more than once in each month for samples collected..." while also requiring "Check sample monitoring locations for each routine monitoring location" is counterproductive and provides disincentives for water security monitoring and for operational control of the system, especially when considering that the required chlorine residual samples are to be collected whenever total coliform samples are collected. Ideally, PWSs should have well-selected, fixed modes for baseline monitoring – especially larger or more complex systems. Using hydraulic models and other means, critical control points can be identified. This provides a sustained, combination of water security and optimized operations. This allows for the application of developing technologies such as dashboards, event detection and online sensors.

A system that must collect, for example, 100 total coliform samples every month at a minimum might actually collect 150 samples. That would translate to 150 individual sample locations preselected and maintained for reliable sampling. In addition, upstream and downstream set locations for each site (or 300 additional sampling locations) would be needed. All sampling locations need to be carefully selected and inspected to identify reliable sampling taps within the locations and to determine if accessibility would be provided. This would take a tremendous amount of effort and the benefit is not clear. This translates to a significant cost simply to have places to take samples, not counting the resources necessary for the sampling itself, including increased travel time and possible delays in getting samples to the laboratory within required hold times.

Requiring all sample locations, or even a significant portion of locations, to rotate as well as each location to have sustained, identified repeat monitoring locations would divert needed PWS resources. Multiple samples from one sample location provides more accurate statistical data. Is PA DEP DWELR system prepared to handle the enormous increase in sampling sites and will each sample location continue to have its 3 digit ID stored? Motion: Mike Sienkiewicz, 2nd Curt Steffy.

4. The Board agreed to remove previous comment 4. *The word "representative" should be replaced when referring to sampling locations.* Motion: Dan Standish; 2nd Mike Sienkiewicz.

5. Options are needed to allow for alternate check sample locations.

§ 109.301. General monitoring requirements – Monitoring requirements for coliforms, Repeat monitoring Section (pg. 13, Section 3(ii)(B))

Additional comments: The Board concurs with PA DEP in following the EPA revisions for repeat sampling requirements. The existing TCR makes it more complicated for smaller systems and is not as clear as it could be. This change helps clarify that every positive sample requires three repeat samples.

However, the Board strongly recommends that PA DEP follow the EPA's revision by allowing larger PWSs to develop better repeat sampling plans than the 5 upstream/ downstream requirement. Actually, since this 5 upstream/downstream rule never had any demonstrated scientific background, by not allowing a PWS to use a better, technically valid approach makes the proposed change less stringent. A PWS that can select, in real time, the

most valid upstream and downstream sample location is better able to meet the intent of the rule. It has been demonstrated by hydraulic modeling that what was on one day an upstream sample location may be a downstream location on another day, or may be unrelated. The distribution system is not static, it is dynamic. Allowing a PWS to determine, in real time, the most likely upstream and downstream sample locations for repeat sampling improves the chances of identifying ongoing contamination and likely causes. Motion: Curt Steffy, 2nd Chip Bilger.

6. Identifying specific addresses for check samples is unworkable for some water systems.

7. The word "available" should remain in the regulation language regarding check sample locations, **§ 109.701(a)(5), Annex A, p. 31.**

8. The regulations should include examples of situations when DEP would require a water system to do an assessment.

9. DEP should provide written notification *to the PWS* within 30 days of receiving a complete/adequate assessment from a water system. The Department should consider alternative methods of delivery for both submission of assessments and receipt. Motion: Tom Essig, 2nd Mike Sienkiewicz.

10. The "5 days to repair monitoring and reporting equipment for turbidity or disinfection" requirement is often not possible. The regulations should also use "working days" instead of just days.

11. Systems should have automatic shutdown capability.

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§ 109.602. Acceptable design (pg. 27, Section h)

Additional comments: Section (h) requires that Alarm and Shutdown Capabilities based on individual filter effluents & combined filter effluent turbidity, entry point disinfectant residual and clearwell levels be set at a trigger no less stringent than the required trigger level to maintain the applicable MCLs, MRDLs and treatment techniques. Inclusion of the Clearwell Level in the required list of alarm and shutdown parameters is confusing since maintaining an operating elevation target is not directly related to MCLs, MRDLs or treatment technique. Motion: Mike Sienkiewicz, 2nd Dan Standish.

12. A water system that is manned while in operation does not need automatic shutdown capability.

§ 109.703. Facilities operations (pg. 34, 35 Section c)

Additional comments: Testing of Alarm and Shutdown Capabilities are required at least quarterly and the results are documented in the operator's log. While quarterly testing of

filter turbidity and disinfection residual alarms are achievable, quarterly demonstration of the shutdown capability of a plant will be costly and disruptive. The Board suggests changing the frequency to ANNUAL for shutdown testing. Documentation of the shutdown demonstration should be kept with files routinely examined by PA DEP during sanitary inspections and/or Filter Performance Evaluations. The Department should allow for simulation of shutdown to test but avoid the disruption of an actual shutdown. Motion: Curt Steffy, 2nd Mike Sienkiewicz

13. DEP should provide additional cost information on alarm and automatic shutdown systems as well as on providing auxiliary power.

§ 109.708. System service and auxiliary power -- System service, Auxiliary power, and Alternate provisions Sections (pg. 38, Sections (a)(b)(c))

Additional comments:

1. The proposed revision has nothing to do with the RTRC, is not part of the Federal RTRC or its overall intent.
2. This revision can be better defined in Emergency Response Plans for each facility and such Plans can be reviewed during routine inspections and sanitary surveys.
3. This proposed revision has far reaching economic impact associated with implementation that will greatly impact system owners and system customers.
4. PA DEP should defer to the statement in 109.708 (c) Alternate Provisions. This would allow systems the ability to prove that the system can insure a continuous and safe supply of drinking water whenever the power is interrupted, without a secondary source of supply. Motion: Curt Steffy, 2nd Tom Essig; nay vote by Lisa Daniels (water systems have not taken the requirements of §109.4 seriously).

14. The proposed language related to filter bed evaluation programs needs to be clarified, § **109.703(b)(6).**

15. DEP should provide written notification within 30 days of receiving required disinfection profiles.

16. Maintaining 0.3/1.0 chlorine residual levels in the distribution system will be difficult for some water systems.

§ 109.202. State MCLs, MRDLs and treatment technique requirements (pg. 4, Section (c)(1)(ii)(B))

Additional comments: The PA DEP proposes increasing the entry point minimum chlorine residual to 0.50 mg/L free chlorine and 1.00 mg/L total chlorine. Failure to maintain this for more than 4 hours would result in Tier 1 PN (immediate notification of all customers who could receive the water involved, along with warnings about the potential health risks and

possible precautions such as boiling water). This makes any exceedence quite serious; associated with real acute public health risk. No information was presented to support a need for this change in regulations. This proposal is not part of the Federal RTCR, is more stringent than the Federal Surface Water Treatment Rule. Additionally, the Entry Point Chlorine Residual requirement conflicts with the permitted Ground Water Rule Entry Point Chlorine Residuals. It is redundant to have the distribution system minimum and entry point minimum both increased; one drives the other. Typically, a minimum distribution system residual would drive the entry point residual whereas treatment CT requirements would drive a minimum chlorine residual in the finished water.

When it comes to setting a minimum residual at the entry point for chloramine, it is possible for a water treatment plant operating with an entry point chloramine residual to have excess CT within the facility, accounting for 5 to 10 log removal of *Giardia*, and, if the ammonia feed at the end of the treatment process was underfed, to experience dechlorination, leading to a lower total chlorine residual at the entry point to the distribution system. Having this occur for more than 4 hours would not, in itself, threaten public health where CT remains the focal point for disinfection of the drinking water. PA DEP should remain focused on the process of disinfection within the treatment plant and not on the variability of the chlorine residual leaving the facility. If PA DEP wishes to be notified of a lower residual leaving the facility, such as less than 1.00 mg/L, we would be amenable to that notification. The notification should lead to a discussion between the PWS and the PA DEP to identify the cause for the low chlorine residual, the steps and timeframe for the residual to return to normal, and any follow up activity, such as distribution system chlorine residual monitoring. Having a total chlorine residual in the plant effluent drop to less than 1.00 mg/L as chloramine does not constitute a threat, in itself, to public health and should not require public notification.

Additionally, the proposed 1.00 mg/L as total chlorine for systems using chloramine is five times higher than the level of 0.2 mg/L required nationally by EPA. Many water utilities are continuously working to achieve a careful balance of providing adequate disinfection while minimizing disinfection by-products. The unintended consequences of the proposed minimum chlorine and chloramine levels on the DBP levels in finished water needs to be fully considered and studied in greater detail in order to determine the impact of regulating a much higher minimum chloramine residual at entry points.

PA DEP needs to carefully evaluate this proposal and re-evaluate the chlorine residual data used in assessing this proposal, since as currently reported, such data comprises "average" residual for all distribution system samples in a month as Running Annual Averages. How were actual minimum chlorine residuals in water distribution systems represented and considered in the PA DEP assessment?

Finally, this proposal could require PWSs to install additional booster chlorination and chloramination systems in distribution systems at substantial cost to PWSs which would eventually be passed on to customers. This proposal could also result in a substantial increased permitting burden to PA DEP. PWSs may also anticipate increased customer complaints since customers would not find excessive chlorine residuals palatable.

Customer response may include relying on in-home filtration (POU/POE) units potentially exposing customers to bacteria due to chlorine removal by the home filtration treatment. Higher chlorine residuals could also contribute to increased corrosion and discolored water complaints.

109.710. Disinfectant residual in the distribution system (pg. 39, Section a)

Additional Comments: PA DEP proposes to raise the minimum disinfectant residual in the distribution system to 0.30 mg/L free chlorine and 1.00 mg/L total chlorine.
Water Research Foundation studies and PWS experience has shown that a 0.5 mg/L chloramine residual supports optimal water quality maintenance as a minimum; maintaining this minimum simultaneously ensures that most upstream locations receive higher levels. There are multiple strategies to boost low chlorine residuals, from altering pressure boundaries, rehabbing pipe, flushing, increasing turnover, downsizing pipe, etc.
The proposed requirement for minimum disinfection concentration in every sample negates the Partnership for Safe Water Distribution System Optimization Program (DSOP) and hinders utilities' efforts to use best available industry practices to improve operations. There would be no benefit to participating in the DSOP if this proposed change to regulation was adopted.
Finally, the most common taste-and-odor complaint for PWSs is due to potable water's chlorine odor. Higher residuals will reduce customer acceptance and result in more customers turning to in home filtration (POU/POE) systems that, in turn, remove any chlorine residual and promote microbial regrowth.
A proposed minimum disinfectant residual for chloramine in the distribution system of above 1.00 mg/L 100% of the time is 50 times more stringent than a current requirement for detectable residual (0.02 mg/L) and is in contradiction with EPA's requirements to maintain a minimum residual 95% of the time while using HPC counts to better gauge public health implications relating to reduced levels of disinfection residuals. This proposal requires careful consideration of unintended consequences. For many systems, an attempt to maintain this level of chloramine in the distribution system will result in certain violations of disinfection byproduct MCLs and the disinfectant residual MRDL, a push to extremely expensive advanced treatment options which a system's customer base cannot afford, and the possibility of needing booster stations in residential areas throughout the system, which creates significant security risks and increases the complexity of distribution system operations.

Groundwater Rule Impacts: PA DEP operation permits currently held by various water purveyors require less than the proposed levels. In some instances with long detention times which promote contact time, disinfectant residual levels are specified at 0.4 mg/l or less at the groundwater entry point. Water suppliers control disinfectant dosages to meet the virus inactivation requirement and also to minimize chlorine complaints from customers. The various activities conducted by PA DEP and water suppliers to meet virus inactivation requirements in groundwater should be kept as is without an arbitrary increase that has no scientific background for increasing public health protection. Motion: Chip Bilger, 2nd Curt Steffy; nay vote by Lisa Daniels.

17. TAC Board members recommend that DEP provide discussion in the preamble regarding disinfection residual levels and a water system's ability to meet the disinfection requirements.

18. DEP should consider the cumulative costs of the regulation package.

19. DEP should define "significant land use change" in reference to source protection.

§ 109.302. Special monitoring requirements (pg. 20 Section h)

Additional comments: The requirements language is too vague. In large watersheds, a "significant change in land use" occurs constantly and "potential" sources of contamination are everywhere. The PWSs Source Water Protection Plan is the place this should be addressed by the PWS.

§109.713. Source water protection program

Additional comments: One of the challenges of water suppliers is to actually have the watershed users commit to the annual steering committee meeting. PA DEP should consider adding a special condition to each water user's permit for any activity in the watershed zone a mandatory requirement to attend the annual meetings. An annual reporting requirement to the PA DEP verifying participation in at least the annual meeting should also be added.

We recommend that PA DEP take a very active role in watershed management and protection. PA DEP is the agency that issues permits for ground disturbances, locating waste handling facilities, issuing water allocation permits, granting NPDES permits, and issuance of permits for the Oil and Gas industry. Water suppliers cannot police their watershed areas entirely. PA DEP must recognize these source water zones and prohibit activities in those areas in order to protect the source quality and quantity needed for potable water.

Adequate protection of PWSs source water supplies relies on an active, adequate source water protection plan that is utilized by all stakeholders. In some circumstances, water suppliers can potentially use a source not routinely used. This would directly conflict with the PA DEP guidance being presented under the "Use It Or Lose It" program. To maintain emergency, backup, or non-routine source of supply, water suppliers would need to treat them as though they are permanent sources, which requires full compliance with water quality testing and all requirements under the SDWA. Guidance on activation of emergency, backup, or reserve sources is needed from PA DEP. These plans and sources must be identified and approved by PA DEP for use in such cases, and once notifications are made, to allow immediate transition to the alternate water when the situation is warranted.

Contingency planning should be considered by PA DEP when issuing permits for activities within protection zones. For example, an Oil and Gas permit for Marcellus well drilling has potential to impact the source water if an accident occurs. This could be catastrophic to a PWS employing that single raw water source. PA DEP should require a plan from the Oil and Gas permit holder on how water service would not be interrupted if a water source is contaminated. This would include identification of sources in the area capable of providing potable water directly to customers. Currently, using this example, a driller would need to replace the water supply if it was found guilty of polluting that source. This could take many years in the court system to reach a final decision on the guilty party. What happens in the hours after the spill/accident occurs that causes that source not to be available is not adequately defined. This can be handled by the permitting process and special conditions imposed on that permit.

§ 109.713. Source water protection program (pg. 41, Section b)

Additional comments: PA DEP needs to provide clarification regarding the annual source water protection planning status updates. This appears to be redundant with the Watershed Control Plan Annual Status Report a PWS already submits to the PA DEP in compliance with the LT2ESWTR, and no waivers or exemptions are noted.
PA DEP must require new dischargers in the watershed protection area to bear responsibility for source water protection. Public water suppliers cannot control changes to significant land use in the protection zones entirely. Nor should water customers bear the cost of monitoring source water due to the presence of new contaminants. Industries and land use operators requesting permitting from the DEP should be given special conditions in their permits to work with downstream water purveyors to identify the types of chemicals which can be released, the hazard, testing methods for the contaminant in water solutions, and any adverse health affect information for the public, either dermal or ingestion. Should contaminants be released from PA DEP permitted sites, the cost of monitoring the treatment process (effluent water) and any adjustments to treatment chemical (types, amounts, residuals disposal) should be borne by the discharger causing the event. Motion: Chip Bilger, 2nd Dan Standish. Julie Kollar added a comment that the Department should consider SWPA during permitting.

20. The TAC Board recommends a 90 day comment period on the proposed regulations.

Additional General comments:

1. The Board strongly recommends that PA DEP separate the Revised Total Coliform Rule (RTCR) regulatory change package from the General Updates to Chapter 109. The RTCR is in and of itself a complex rule change that should be solely presented for comments by the water industry and all interested parties. Similarly, the proposed updates to Chapter 109 should be separated for comment in order to allow a more thorough review by PA DEP and Public Water Systems (PWSs) for RTCR changes which will impact other regulatory requirements incorporated in Chapter 109.
2. The Board recommends that the PA DEP incorporate the revisions to the Total Coliform Rule by reference. The USEPA, along with national experts, stakeholders and States, spent more than two years reviewing the TCR, the latest science, best practices, and real experience. The revisions were carefully developed and all agreed that they move Public Water System (PWS) practice and regulatory oversight in a strong and positive direction.
3. Larger PWSs are developing better practices and tools for monitoring and maintaining water quality. Issues associated with smaller system capabilities and PA DEP limitations should not become a disincentive to larger systems. For example, online sensors, hydraulic models, event detection and customer complaint surveillance for water security are providing real benefits for routine system operations. There is a need to ensure dual benefits are realized in order to sustain these valuable programs. PWSs will not be able to sustain two, separate, extensive surveillance-and-response and regulatory monitoring programs. The advances made by larger systems produce advances for smaller systems.

4. The drinking water industry, being proactive and public health conscious, has established "The Partnership for Safe Water for Distribution System Optimization". The Partnership is designed to optimize for multiple distribution system water quality issues such as DBP minimization, nitrification control, and intrusion management. Changes to chlorine residual monitoring, maintenance and reporting should not result in PWSs abandoning the Partnership Program. The progress made, for example, through the Partnership Program for control of Cryptosporidium (such as improved filtration practices and on-line instrumentation) has been quite significant. The same will happen for Distribution System Optimization if similarly supported.

5. The Board agrees with the PA DEP in discontinuing the use of the term "fecal coliform" as it is now well known (including in Standard Methods for the Examination of Water and Wastewater) to be technically in error. The lab test measures "thermotolerant coliform" bacteria which may or may not come from a fecal source.

6. There are Public Notification and CCR requirements that must be adequately reviewed for subsequent or simultaneous changes in order to accommodate the revisions to the TCR. It is not clear as to whether the PA DEP has gone through these other requirements for associated changes.

7. The likelihood of early detection of acute water contamination with 100 mL grab samples for coliform bacteria or chlorine residual in larger systems is extremely low. Rotating sample collection to different sampling points throughout the month will not increase the likelihood of early detection of acute water quality contamination. For this reason, a good water system focuses on practices or processes, such as storage facility operations and monitoring, new main installation inspection, backflow protection, controlled valve operations, etc. These practices serve to strengthen the revised Total Coliform Rule by identifying pathways for contamination. The development of a Contamination Warning System has shown that critical points can be identified for distribution system monitoring to protect downstream water users. These points serve as baseline monitoring locations from which event detection systems alert system operators to changes 24 hours a day, 7 days a week. These approaches to developing smarter distribution systems should not be ignored by the regulatory process, but should be encouraged and recognized for providing a stronger foundation in the protection of public health.

8. Building managers, school facility managers, hospital and dialysis managers, etc. should be educated to do chlorine residual testing of incoming water and water in their plumbing. Hazard Analysis and Critical Control Points encourages this. This would be the most effective and efficient way to identify areas where chlorine residual could be a concern in building plumbing systems, which will vary based on construction practices, valving, time of year, water usage, etc. When building plumbing managers have concerns or questions, they should contact their PWS to develop a collaborative approach to addressing the issues. The PWS alone cannot control what happens in building plumbing.

9. The term "check sample" should be changed to "repeat sample". This was carefully discussed during the EPA's FACA for the revisions to the TCR. There is no way to verify or discount an original positive sample by taking another grab sample at another time. The follow-up sample is not a "check" on the initial positive. The follow-up sample repeats the sampling process in order to determine if an active pathway for contamination could still be in place. This error appears throughout the document, such as on pages 13 (under ii) and 14 (under iv.A and D) and under 109.409 on page 22 and elsewhere. Motion: Chip Bilger, 2nd Dan Standish, opposed: Lisa Daniels, Julie Kollar, Christine Maloni Hoover.

Thank you for the opportunity to comment.

Sincerely,

Serena A. DiMagno
Chairperson