

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)	
)	R17-
PUBLIC WATER SUPPLIES:)	
PROPOSED NEW 35 ILL. ADM)	
CODE 604 AND AMENDMENTS.)	(Rulemaking- Water)
TO 35 ILL. ADM CODE PARTS 601,)	
602, 607 AND 611)	

NOTICE OF FILING

PLEASE TAKE NOTICE that I have filed today with the Illinois Pollution Control Board Illinois EPA's NOTICE OF FILING; APPEARANCE; STATEMENT OF REASONS; CERTIFICATE OF ORIGINATION; MOTION FOR ACCEPTANCE; and PROPOSED PARTS 601, 602, 604, 607 AND 611, a copy of which is herewith served upon you.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/ Joanne M. Olson
Joanne M. Olson
Assistant Counsel
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Date: August 3, 2017

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THIS FILING IS SUBMITTED ON RECYCLED PAPER

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APPEARANCE

The undersigned hereby enters her appearance as an attorney on behalf of the Illinois Environmental Protection Agency.

Respectfully submitted,

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PROTECTION AGENCY

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STATEMENT OF REASONS

NOW COMES the Illinois Environmental Protection Agency (“Illinois EPA” or “Agency”), by and through its counsel, and hereby submits this Statement of Reasons to the Illinois Pollution Control Board (“Board”) pursuant to Sections 17, 27 and 28 of the Environmental Protection Act (“Act”) (415 ILCS 5/17, 27 and 28) and 35 Ill. Adm. Code 102.202 in support of the attached proposed regulations.

I. INTRODUCTION

The Illinois EPA proposes the following changes to Subtitle F: Public Water Supplies: 1) a new Part 604; and 2) amendments to Parts 601, 602, 607 and 611. The Agency's primary focus in this rulemaking proposal is the new proposed Part 604 governing the design, operation and maintenance of community water supplies in Illinois. The Illinois EPA's proposed amendments to Parts 601, 602, 607 and 611 contain minor changes, largely the result of newly proposed requirements found in Part 604.

Pursuant to current Section 602.115, Illinois EPA has adopted rules setting forth the criteria for the design, operation and maintenance of community water supplies. These rules are found in 35 Ill. Adm. Code Part 653 and were last updated in 1985. The Recommended Standards for Water Works, 2012 Edition ("Recommended Standards") and Part 653 form the

basis for the newly proposed Part 604. The Illinois EPA believes these substantive rules governing community water supplies should be promulgated by the Board instead of the Agency. After adoption of Part 604, the Agency will repeal Part 653, Part 654, Part 651 and Section 602.115. Additionally, the proposed design, maintenance and operation rules will provide clarity and certainty to community water supplies across the state, ensuring safe and clean drinking water. The Illinois EPA recommends the Board accept this proposal for hearing.

II. REGULATORY PROPOSAL: PURPOSE AND EFFECT

The Illinois EPA proposes a new Part 604 to consolidate the state's design, maintenance and operation rules into a single Board rule. The proposed changes to Parts 601, 602, 607 and 611 are necessary to maintain consistency within Subtitle F.

A. Background

Since the formation of the Agency and Board in 1970, and until the Board's adoption of public water supply regulations, the State relied on drinking water regulations adopted by the Illinois Department of Public Health, which were last revised in 1960. These rules predate the Safe Drinking Water Act, which was enacted in 1974, and amended in 1986 and 1996. The Board first adopted regulations governing public water supplies on January 3, 1975. *In Re: Public Water Supplies*, R73-13, Opinion and Order (January 3, 1975). In adopting the public water supply rules the Board stated:

We are dealing with an area which can so easily and seriously affect the public health that it becomes even more necessary than usual to constantly critically review such regulations. Data relating to various constituents are in a fluid state, more is being learned about chemicals every day, and new hazards are uncovered each time a new pesticide or insecticide is introduced to the market place. Therefore, these regulations can be best termed an up-to-date starting point -- review will be needed from time to time as new situations and information arise.

Id. at 2.

In the Board's first public water supply rulemaking, the Board gave the Agency the authority to adopt technical policy statements, which were intended to "serve as a guide for proper construction and operation of facilities." *Id.* at 14. The Agency first adopted technical policy statements in December 1974. These were later amended in 1978, 1984 and 1985. The technical policy statements were codified into Parts 651, 652, 653 and 654. The Agency has not updated the design, maintenance and operation rules contained in these technical policy statements for 32 years.

In response to concerns about chemical contamination in water supplies, a federal safe drinking water law was introduced into the United States Congress in 1973. The Safe Drinking Water Act (SDWA) was passed in 1974, and aims to ensure that public water supplies meet national drinking water standards. Under the original SDWA, the USEPA first developed interim primary drinking water regulations in 1975, which included maximum contaminant levels (MCLs) for each contaminant presenting health risks, and then later finalized these standards following comprehensive review by the National Academy of Sciences. The Board adopted these federal standards in 1978 and 1979 in former Chapter 6, Part III. *In re: Amendments to the Public Water Supply Regulations*, R77-13.

In 1982, the Board's public water supply rules were recodified into their current form, appearing in Subtitle F of Title 35, Parts 601-607. *In Re: Proposal for Rulemaking for Chapter 6: Public Water Supply Regulation of the Illinois Pollution Control Board*, R81-6, R81-28, Final Opinion (September 2, 1982). The newly codified rules were structured as follows: introduction in Part 601; permits in Part 602; ownership and responsible personnel in Part 603; finished and raw water quality and quantity in Part 604; sampling and monitoring in Part 605; reporting and public notification in Part 606; and operation and record keeping in Part 607.

In 1988, the Environmental Protection Act was amended to add Section 17.5, which allowed the Board to adopt regulations which are identical in substance to federal regulations that implement the Safe Drinking Water Act. 1988 Ill. Legis. Serv. P.A. 85-1048 (West). When adopting these federal regulations as identical-in-substance rules, the Board created a new Part 611 which contains all the federal regulations plus any additional state requirements. *In Re: Safe Drinking Water Act Regulations*, R88-26, Final Order (August 9, 1990). The Board indicated which requirements in Part 611 were state requirements through a Board Note.

When creating Part 611, the Board had initially proposed repealing Parts 604, 605, 606 and 607 because they were largely superseded. *In Re: Safe Drinking Water Act Regulations*, R88-26, Proposal for Public Comment, (Oct 5, 1989). However, when the Board adopted Part 611, it chose to retain some sections of Parts 604, 605, 606 and 607 until the newly adopted federal standards in Part 611 were fully effective. All of Parts 604, 605 and 606 were repealed by 1993. In Part 607, Sections 607.103 and 607.104 were retained, with all other sections being repealed. Section 607.104 currently contains prohibitions on cross connection and Section 607.103 contains emergency operation (boil order requirements).

The Agency began its overhaul of the community water supply rules found in Subtitle F in 2012. Illinois EPA selected a two-phase approach, wherein the first phase included revision of the permitting rules in Part 602 and ownership and responsible personnel rules in Part 603. The Agency proposed the first phase of amendments to the Board on March 8, 2015, and the Board adopted these amendments on April 7, 2016. *In Re: Public Water Supplies: Proposed Amendments to 35 Ill. Adm. Code parts 601, 602, and 603*, R15-22. The second phase of the community water supply overhaul includes revision of the design, maintenance and operation

requirements found in Part 653, and migration of these standards into a new Part 604. Phase 2 begins with this regulatory filing.

B. Design, Operation and Maintenance Criteria: Part 604

The Agency proposes a new Part 604, which is the centerpiece of this regulatory proposal. Part 604 is intended to function as clear statement of the requirements that Agency believes community water supplies must meet to ensure safe drinking water in Illinois. Part 604 is comprehensive, covering all phases of water collection, treatment and distribution. Design, maintenance and operation standards for community water supplies are intertwined throughout Part 604, which is organized by type and stages of water treatment.

Currently, a community water supply must consult with Recommended Standards and Parts 653, 654, 607 and 611 to determine how to properly operate the supply. Part 653 still requires compliance with the Recommended Standards that were adopted in 1982. The newly revised permitting rules in Part 602 require community water supplies to follow the design criteria in the 2012 Recommended Standards. Clearly, these regulations are complicated and maybe even conflicting, and community water supplies are expected to know which rules to follow when. To remedy this problem, the Agency seeks to reduce the places where regulations for the design, maintenance and operation of community water supplies is located to largely one part—Part 604. The Agency closely evaluated existing requirements in Part 653, Part 654 and the Recommended Standards when drafting Part 604.

The Agency began the design, maintenance and operation overhaul by evaluating Parts 653 and 654. The Agency largely adopted the requirements contained therein, but removed requirements that were no longer necessary. The Agency also updated requirements. Many of the requirements in Subpart A of Part 653 were integrated into proposed Subpart A (General

Provisions) of Part 604. The requirements specific to a particular type of treatment were integrated into the subparts of 604 containing those requirements. Part 654 was largely incorporated into Subpart B (Source Development) of Part 604.

After completing its review of Parts 653 and 654, the Agency began its review of the Recommended Standards. The Recommended Standards is published by the Great Lakes—Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (GLUMRB). Members of Illinois EPA staff serve on both GLUMRB's boards and committees. In addition to Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, New York, Ohio, Ontario, Pennsylvania and Wisconsin are members of GLUMRB. In 1950, GLUMRB created a Water Supply Committee consisting of one associate from each state; a representative from the province of Ontario was added in 1978. The Water Supply Committee meets once a year for two to three days. Each state is assigned several sections of the Recommended Standards to review. It takes approximately five annual meetings before the Water Supply Committee finishes a new edition of the Recommended Standards. The proposed edition is then presented to the GLUMRB in April for approval. The current edition of the Recommended Standards was released in 2012. The next revision should be released in 2018.

The 2012 version of the Recommended Standards covers source development (Part 3), treatment (Part 4), chemical application (Part 5), pumping facilities (Part 6), finished water storage (Part 7), and Distribution (Part 8). Parts 1-2 contain requirements for plans, specifications and general design considerations. Part 9 contains requirements for waste residuals. Proposed Part 604 mainly focuses on the requirements in Parts 3-8. The Agency evaluated all the individual requirements in these parts and decided whether the Agency wanted to adopt the recommended standard as written, modify the recommended standard or decline to

adopt the recommended standard. This process of review took the Agency approximately 5 years.

Proposed Part 604 is structured differently than the Recommended Standards. The Agency developed the structure of Part 604 to reflect the course of treatment water generally takes. First, in Subpart A, the Agency included all the general requirements that can apply to any phase of treatment or drinking water production. Subpart B contains rules on source development. Before a community water supply can treat the water, it must first identify and select an adequate source of water—which can be surface water, groundwater, or groundwater under the direct influence of surface water. When selecting a source, the community water supply must consider both the water's quality and quantity. Subpart B also contains regulations for reservoirs and other surface water structures, zebra mussel control, well construction, well records and testing, and aquifers.

After selecting the source of water, the community water supply needs to ensure that the water remains safe and suitable as a source of drinking water. Subpart C is a new requirement for community water supplies that they develop a source water protection plan. The plan must contain a vision statement, source water assessment, objective and action plan. The plan must be submitted to the Agency for approval, and be reviewed and revised as necessary every five years. The concepts within and requirements for a source water protection plan are based largely on the AWWA Standard G300-07, Source Water Protection.

The next logical step in producing safe drinking water is treating the source water to ensure compliance with the drinking water standards in Part 611. The Recommended Standards grouped all treatment into a single Part 4. When drafting proposed Part 604, the Agency realized that the bulk of the requirements in the Recommended Standards are treatment processes.

Instead of condensing them all into a single subpart, the Agency broke them into individual subparts and ordered the subparts according to when a specific treatment process is usually applied. Subpart D of Part 604 contains requirements for aeration; Subpart E contains requirements for clarification; Subpart F contains requirements for filtration; Subpart G contains requirements for disinfection; Subpart H contains requirements for softening; Subpart I contains requirements for stabilization; and Subpart J contains other treatment requirements that have a recommended standard, but do not fit neatly into a different subpart.

The Agency followed the structure of the Recommended Standards by locating all the chemical application requirements into a single subpart. These requirements apply to the treatment processes that involve chemicals. The subpart has general requirements that apply across the board, and also has specific requirements for individual chemicals. Subparts L, M and N are also taken from the structure of the Recommended Standards. Pumping facilities are covered in Subpart L, storage in Subpart M and distribution in Subpart N.

The final subpart in Part 604 contains cross connection control regulations. These rules are not from the Recommended Standards, but are compilation of requirements found in Part 653 and Part 607. The cross connection requirements and program are intended to reduce the risk of unsafe substances entering community water supply distribution systems.

The purpose combining all these different design, maintenance and operation requirements into a single section is to help ensure the proper operation of community water supplies. With the adoption of Part 604, the Agency's rules will no longer be outdated. The gaps between the 1982 Recommended Standards, Part 653, Part 607 and 611 will have been filled. The Agency is now proposing a complete regulatory scheme for community water supplies. From start to finish, source to distribution, community water supplies will be guided by proposed

Part 604. Community water supplies, consultants, engineers, certified operators and the Agency will have one standing document that where the design, maintenance and operation rules can be found.

With this new structure, largely based on the Recommended Standards, the Agency will be in a better position to regularly update the community water supply rules. The Illinois EPA feels confident that it will be able to carry out the Board's original objective when it stated review of the rules would be needed from time to time. Hopefully, the Agency will "constantly critically review such regulations" and incorporate emerging technology and new treatment methods every five years as the Recommended Standards are updated.

C. Operating Permits: Part 602, Subpart C.

The Agency is proposing two changes to the community water supply operating permits. First, the Agency has developed an operating permit-by-rule program for certain construction projects. Second, the Agency is clarifying how disinfection must be demonstrated before a project can be placed into operation.

In Section 602.310, the Agency proposes a new testing procedure to verify disinfection. The current requirement is for no bacterial growth allowed. The only acceptable testing methods are the membrane filter technique and the presumptive test, fermentation tube method. Many certified laboratories in Illinois no longer are approved for either of these methods. As part of the Safe Drinking Water Act's Revised Total Coliform Rule for routine monitoring, there are several other approved methods that are based upon the presence or absence of total coliforms. This has become the standard in all other states for testing new construction. The absence of total coliforms is the requirement for new construction verification in the American Water Works Association Standards – AWWA C651, C652, C653 and C654 that are incorporated by reference

in Part 601. Also, AWWA C651 does not have a single sample exception, similar to what is in the current requirement. The proposed changes to Section 602.310 will allow for additional testing methods and consistency with AWWA Standards requirements, while still providing verification of satisfactory bacterial quality for new construction.

In Section 602.325, the agency proposes a new operating permit-by-rule program for certain construction projects. Under the Act, every community water supply construction project is required to obtain both a construction permit and an operating permit. The operating permit is required prior to the use of the new source, treatment equipment, pump, storage tank or water main. The proposed change to the regulations will allow community water supplies to obtain a permit-by-rule operating permit for water mains and treatment equipment that do not require disinfection. This change affects approximately 80 percent of the 1200 operating permits issued on average on an annual basis. Community water supplies will be able to place projects into service as soon as the certification form is completed and mailed to the Illinois EPA. This will allow water service connections to new water main to be made sooner and end disruptions due to construction activities

D. Secondary Changes to Subtitle F

The requirements the Agency adds to proposed Part 604, based on existing requirements in Part 653 and the Recommended Standards, results in other smaller changes throughout Subtitle F. The Agency will propose to repeal Part 651, 653 and 654 upon the adoption of a new Part 604. Additionally, the Agency now proposes changes to Parts 601, 602, 607 and 611 that are the result of adding new proposed Part 604.

One of the main changes in the structure of Subtitle F is where the requirements for Special Exemption Permits (SEP) are found. Currently, SEPs are only used when the Agency

exercises its discretion regarding requirements found in Part 611. When the Board first adopted SEPs in 1988, it stated:

MASTER PERMIT

40 CFR 141 includes in excess of 55 “unless otherwise specified by the State” provisions. In the proposal the Board provided that the Agency was to specify most of these “by permit condition”. The Agency objected that, in PWSs, it does not issue a “master permit”, but rather issues construction permits for each project. The “operating permit” in 35 Ill. Adm. Code 602.102 is used only to assure that a project has been completed in accordance with the construction permit. (PC 5 and 14) Because there is no “master permit”, there would not generally be an outstanding permit on application to form a procedural context for these decisions. Pursuant to the suggestion in the Agency’s post-adoption comment, the Board has added Section 611.110, which, as is discussed below, provides for a “special exception permit” as a vehicle by which the Agency makes these decisions.

In Re Safe Drinking Water Act Regulations, R88-26, Final Order p 14, (August 9, 1990). The Agency has been successfully using SEPs to exercise its discretion on a case by case basis when specifically allowed in Part 611.

As noted above, proposed Part 604 is largely based on the Recommended Standards. Similar to the federal Safe Drinking Water regulations, the Recommended Standards use the phrase "approved by the reviewing authority" approximately 30 times. When drafting Part 604, the Agency evaluated whether the approval was necessarily a case-by-case determination or whether the Agency could set a general standard applicable to all community water supplies. In instances when a case-by-case analysis would result in different requirements for different community water supplies, the Agency’s proposal likewise utilizes the SEP as vehicle by which the Agency can make these decisions.

In proposed Section 604.145, Exceptions for Community Water Supplies, states that in approving alternative design, maintenance and operation requirements, the Agency shall issue either a construction permit, operating permit or special exemption permit. To indicate when the

case-by-case analysis in proposed Section 604.145 may be utilized, the Agency used the phrase "unless otherwise approved" throughout Part 604, in 21 different sections.¹

The regulations creating SEPs are found in Part 611. With the use of SEPs in proposed Part 604, the Agency believes the SEPs regulations must be moved out of Part 611 and into the general permitting requirements found in Part 602. Therefore, the Agency proposes adding a new subsection for SEPs into Part 602. Additionally, Part 611 contains numerous references to SEPs, issued pursuant to Section 611.110. Because SEPs will no longer be issued pursuant to that particular section, the Agency proposes amendments to all the cross references.

The second major change to the structure of Part 611 is moving some "additional state requirements" out of Part 611 and into either Part 601 or Part 604. When adopting Part 611, the Board noted that the USEPA's Safe Drinking Water Act rules largely superseded the existing community water supply rules found then in Parts 604 through 607. The Board kept the "more stringent and additional, consistent state rules" and moved those requirements into the body of the federal text contained in Part 611. *Id.* at 6. For the additional state requirements that are topically covered by proposed Part 604 or Part 601, the Agency proposes to delete these requirements. These include requirements found in Sections 611.115, 611.121(b), 611.240, 611.271, 611.272, 611.297, 611.491, 611.381, and 611.833. *See* Section III of this Statement of Reasons for a section by section analysis of the changes.

A third change to the structure of Subtitle F resulting from the newly proposed Part 604 is the complete repeal of Part 607. The Agency proposes the repeal of Part 607 because rules contained in this part are duplicated in both existing Part 653 and proposed Part 604. To leave the current regulatory structure in place, one would have to look at two different sections in two

¹ See Sections 604.105, 604.150, 604.205, 604.240, 604.250, 604.420, 604.520, 604.605, 604.610, 604.700, 604.715, 604.805, 604.1000, 604.1005, 604.1105, 604.1115, 604.1220, 604.1335, 604.1410, 604.1420, and 604.1440.

different parts that were promulgated by two different agencies. Consolidating these rules into sections within proposed Part 604 promotes regulatory clarity. Currently, only two sections remain in Part 607. Section 607.103 contains provisions for emergency operations, and Section 607.104 contains provisions for cross connections. The Agency proposes to move these requirements to Part 604; emergency operations requirements can now be found in proposed Section 604.135 and cross connection requirements can now be found in Subpart O of proposed Part 604.

Finally, the Agency is proposing changes to Part 601 as a result of the newly proposed Part 604. Part 601 includes the definitions and incorporations by reference; new and amended definitions resulting from the proposed addition of Part 604 are begin added to Part 601. Part 604 also includes numerous standards that must be incorporated by reference in Section 611.115. The Agency is also proposing that the narrative standard for finished water found in Section 611.121(b) be moved to join the other narrative standard for finished water that is currently found in Section 601.101. The Agency additionally proposes adding the recommended finished water contaminant concentrations currently found in Section 654.103. After the completion of this rulemaking, the Agency will repeal Part 654.

III. REGULATORY PROPOSAL: LANGUAGE

The following is a section-by-section summary of the Illinois EPA's proposal.

PART 604 -- SUBPART A: GENERAL PROVISIONS

In Subpart A, the Agency gathers many of the general requirements and puts them in a single place to increase the user's ability to find the pertinent regulations. The requirements in this Part are mainly based on the Recommended Standards and the Agency's Technical Policy Statements found in Part 653. After adoption of Part 604, the Agency will repeal Part 653.

Section 604.100 Purpose

This section states the purpose of Part 604. The Agency drafted Part 604 to modernize existing regulations found in Agency rules (Parts 651 to 654) while incorporating the latest industry standards found in the Recommended Standards for Water Works. Part 604 provides the technical design standard in an orderly fashion, beginning with the source selection, then the water treatment process, to storage and then finally to distribution.

Section 604.105 General Requirements

The Agency included general requirements in a single section at the beginning of Subpart A. These requirements apply at all times for all community water supplies, regardless of the type of treatment or the stage of water production. They include capacity, treatment requirements, products and chemicals that can be used in all community water supplies.

Subsection (a) requires that each community water supply must be designed to produce at least 20% greater than the maximum average daily demand. This ensures the community water supply has adequate capacity. Maximum average daily demand is defined in Section 601.105. The requirement to produce 20% greater than the maximum average daily demand allows the community water supply time to perform routine operations and maintenance including filter backwashing. This accounts for differences in customer demand based on seasonal fluctuations, which is typically higher in the summer.

Subsection (b) and (c) mandates that community water supplies design their treatment and distribution systems so that the water meets Safe Drinking Water Act's primary drinking water standards found in Part 611. The Agency included other criteria because new technology may be developed in the future which is capable of producing safe water.

In subsections (d) and (e) the Agency specifies when a community water supply must provide at least two treatment units that are the same: (1) treatment installed to comply with any microbial requirements in 35 Ill. Adm. Code Part 611; (2) treatment unit installed to comply with the maximum contaminant level for nitrite or nitrate in 35 Ill. Adm. Code 611.301; and (3) treatment unit installed to comply with Section 17.10 of the Act regarding the removal of carcinogenic volatile organic compounds. Subsection (e) provides that duplicate units are not necessary if maximum daily demand is met and the water complies with Part 611. The Agency included this exception because community water supplies who are able to purchase wholesale water from another community water supply do not need to provide duplicate units.

Subsections (f) and (g) ensure that chemicals and products that come into contact with potable water are safe. These are the industry standards.

Section 604.110 Location

In this section, the Agency requires that community water supplies be located in the best available location. The Agency consulted Section 2.4 of the Recommended Standards and Section 653.101 when drafting this Section.

Section 604.115 Usage

This section states that the rate of usage shall be based on the community water supplies records, and where records are not available, allows an estimation of rate of usage of a community water supply. In this section, the Agency re-wrote Sections 653.104 and 653.105, simplifying the calculations from a three-step calculation to a one step calculation. The new calculation, however, has the same result.

Section 604.120 Piping Identification

The Agency requires in proposed Section 604.120 that all piping be identified clearly by legends and color coding. This requirement is currently found in Section 653.120(a). The Agency also recommends that community water supplies adopt the piping color scheme in subsection (b), which is adopted from Section 2.14 of the Recommended Standards.

Section 604.125 Automatic Equipment

In this Section, the Agency states that automatic equipment shutdown will be allowed when restart procedures are manual. Additionally, under this Section, automatic start up is not allowed for plants other than those treating groundwater that only have one unit processes not exposed to contamination. This section ensures the safety of the potable water by prohibiting automatic start up in situations where the water being treated has a higher susceptibility to contamination. The Agency consulted Section 653.112 when drafting this section.

Section 604.130 Operational Testing Equipment

In this Section, the Agency states what monitoring and test equipment must be provided. The type of equipment, as set forth in this section, depends on the type of treatment being provided. The Agency also specifies that the sampling taps must be smooth nosed. The Agency consulted Sections 2.8 and 2.10 of the Recommended Standards and Section 653.501 when drafting this Section.

Section 604.135 Repair Work and Emergency Operation

In proposed subsection (a), the Agency requires that the community water supply be protected from contamination when any part of the system is out of service. This proposed requirement is currently found in Section 653.301. Proposed 604.135(b) contains the

requirements for disinfection following repair currently found in Section 653.302 and Section 611.272.

Under proposed subsection (c), the Agency specifies when a boil order must be issued, and the requirements of the boil order notification. In drafting subsection (c), the Agency updated the requirements currently found in Section 607.103 and 653.303, and combined them into a single section. The Agency intends to repeal both Section 607.103 and 653.303 after the proposed regulations are adopted.

In proposed subsection (d), the Agency proposes requiring that all community water supplies adopt an emergency operations plan. Under the Safe Drinking Water Act, the Agency is required to show it can “implement an adequate plan for the provision of safe drinking water under emergency circumstances including earthquakes, floods, hurricanes, and other natural disasters” 42 U.S.C. 300g-2(a)(5). The Agency believes that each community water supply must be able to demonstrate how it intends to operate in emergency situations to ensure compliance with the Safe Drinking Water Act. Most, if not all, community water supplies in Illinois have already written emergency operations plans.

Section 604.140 Nitrification Action Plan

In this section, the Agency requires community water supplies distributing water without a free chlorine residual to create a nitrification action plan. A community water supply may experience a chlorine residual loss in the distribution system based upon a number of factors such as temperature, water age or free ammonia. This may lead to water quality problems such as nitrification or the detection of bacteria. There is also a potential maximum contaminant level for nitrite that may be exceeded in such a situation. Control of bacteria, including legionella,

may become difficult without adequate chlorine residual in buildings such as hospitals, nursing homes, and hotels.

Section 604.145 Exceptions for Community Water Supplies

Under the Agency's current design regulations in Section 653.203 contain an exception for the replacement of certain components required by Part 653 when the community water supply was otherwise in compliance with Parts 611 and 653, and the components were permitted at the time of installation or no permit was required. The Agency believes such an exception is necessary for Part 604 because there are numerous design requirements that have changed over time that may have been in compliance when initially installed. The exception in Section 604.145(a) allows community water supplies flexibility until future renovations or construction projects are necessary at which time, all the standards in Part 604 must be met.

In proposed subsection (b), the Agency allows for alternate design standards than those found in Part 604. When drafting Part 604, the Agency encountered numerous situations when it was impossible to consider all plausible design, maintenance or operational options. Section 604.145(b) allows a community water supply to present an alternative treatment for consideration. The alternative must be shown to be just as effective as the requirement in Part 604. In every section in Part 604 the Agency believes Section 604.145(b) could be used, it expressly references the subsection.

Section 604.150 Protection of Community Water Supply Structures

In this section, the Agency seeks to update the table currently found in Section 653.118(c)(3) by including a column for soils with higher permeability than clay or loam. Currently, Section 653.118(c)(3) provides that the distances for clay or loam may be doubled when the soils are more pervious. The Agency, in proposed Section 604.150 included in the

chart the required distances doubled for soils with higher permeability when the sources of contamination are one of the following: cesspools, leaching sewage disposal pits, privies, septic tanks and subsurface septic tanks effluent disposal tile. The Agency chose not to double the separation distances for sewers lines because this source of a contamination does not pose as large of a risk for potential contamination as cesspools, leaching sewage disposal pits, privies, septic tanks. The Agency chose not to double the separation distances for washwater sumps of reinforced concrete, floodwaters, or above ground fuel storage tanks because the type of soil does not impact the necessary separation distances.

This proposed section also specifies that wells must meet the setback requirements in the Act, and fuel storage tanks located at community water supplies must be located above ground and have secondary containment.

Section 604.155 Electrical Controls and Standby Power

In proposed Section 604.155, the Agency proposes requiring that all electrical controls shall be located above grade in areas not subject to flooding. Community water supplies must provide standby power to meet the average daily rate of usage. The Agency consulted Sections 2.5 and 2.6 of the Recommended Standards.

Section 604.160 Safety

The Agency proposes requiring community water supplies to maintain a chemical safety plan if they have chemical applications. Additionally, for the safety of the operator, the Agency proposes requiring the community water supply personnel have periodic safety training for the use and maintenance of chemicals. The Agency's current safety regulations are found in Sections 653.601 and 653.701. Proposed Section 604.160 is drafted generally to apply to all chemicals, and combines the requirements of these existing sections.

Section 604.165 Operating Report

Currently, in the Board's and Agency's regulations, operating reports and record requirements are found in numerous sections: Section 653.605: Chlorination Operating Records, Section 653.704: Fluoride Operating Records, and Section 611.831: Monthly Operating Report. The Agency is combining the requirements in all of these sections into one section—proposed Section 604.165. The Agency clarifies that the reporting requirement will be contained in a construction, operating or special exception permit. A set of operating records must be kept for each place where treatment occurs to ensure proper treatment. All records and reports must be signed by the Responsible Operator in Charge, and submitted to the Agency within 30 days following the last day of the month.

Section 604.170 Security

Within the Recommended Standards, references to necessary security are scattered throughout; they can be found in the “Policy Statement on Infrastructure Security for Public Water Supplies,” Section 4.7.5.5, Section 5.4.1, Section 6.1.1, Section 6.2.7, Section 7.0.4, Section 7.0.7, Section 7.0.9 and Section 8.9.1. The Agency proposes to combine and generalize these security requirements into one section. Proposed Section 604.170(a) requires each community water supply to be protected from vandalism and entrance by animals or unauthorized persons. Additionally, a community water supply must provide fencing, locks on access manholes, or other necessary precautions to prevent trespassing, vandalism, and sabotage.

PART 604 -- SUBPART B: SOURCE DEVELOPMENT

Under the Agency's current rules, raw and finished water quality and quantity regulations are found in Part 654. In Subpart B, the Agency updated the current regulations in Part 654 and added additional requirements for raw and finished water quality and quantity found in the

Recommended Standards. The Agency also proposes to include requirements for well construction, well pumps, discharging piping, and well testing and records in this subpart.

Section 604.200 General Requirements

In proposed section 604.200, the Agency sets forth general requirements for all sources of raw water. Subsection (a) requires the raw water be taken from the best available source. This requirement is currently found in Section 611.231, but in Section 611.231, this requirement applies only when determining whether to require filtration. This was added to Part 611 as an additional state requirement. This requirement should apply universally, and not just when determining whether to require filtration. Therefore, the Agency proposes to repeal the requirement in Section 611.231, and move it to a generally applicable section in Part 604 on source development. Subsections (b), (c), (d) and (e)(1) are based on the Recommended Standards Section 3.0, Section 3.1, Section 3.2, Section 3.1.3(a) respectively. Subsection (b) requires the source of water to be adequate and have satisfactory microbiological, physical, chemical and radiological qualities after treatment. Subsection (e) is based on Section 654.101 of the Agency's current rules and prohibits use of source of water that will not meet the requirements in Part 611 after treatment.

Section 604.205 Surface Water Quantity

The Agency plans to replace Section 654.201 with proposed Section 604.205. With this proposed section, the Agency intends to ensure that an adequate source of surface water is available under all conditions including drought conditions. The Agency consulted Section 3.1. of the Recommended Standards when drafting this section. The Recommended Standards requires each community water supply to provide a reasonable surplus for anticipated growth. To incorporate this requirement into Part 604, the Agency proposes a 20% surplus, unless otherwise

approved by the Agency. The Agency chose 20% because in Section 602.107, community water supplies will be placed on critical review if records indicate the supply exceeds 80% of the quantity requirements.

Section 604.210 Surface Water Quality

In proposed Section 604.210, the Agency sets forth the minimum treatment required for surface water and groundwater under the direct influence of surface water. Currently, this requirement is found in Section 654.101(d). The Agency updates Section 654.101(d) in proposed Section 604.210(a) and adds the treatment requirements for groundwater under the direct influence of surface water in Section 604.210(b). The level of treatment for groundwater under the direct influence of surface water is less because the groundwater generally does not require turbidity removal. A definition of “conventional filtration treatment” as the term is used in Section 604.210(a) is found in Section 611.101.

Section 604.215 Surface Water Structures

In this proposed section, the Agency sets forth the required design of intake structures, raw water pumping stations and side channel raw water storage reservoirs. The Agency consulted Section 3.1.4 of the Recommended Standards when drafting this section.

Section 604.220 Zebra Mussel Control

In this proposed section, the Agency sets forth the requirements that must be followed when a community water supply uses chemical treatment for zebra mussel control. Currently, the Agency’s and Board’s rules do not have any requirements for the control of zebra mussels. The Agency consulted Section 3.1.5 of the Recommended Standards when drafting this section.

Section 604.225 Reservoirs

In this proposed section, the Agency sets forth the requirements for the site preparation necessary during the construction of a reservoir. Currently, the Agency's and Board's rules do not have any requirements on this matter. The Agency consulted Section 3.1.6 of the Recommended Standards when drafting this section.

Section 604.230 Groundwater Quantity

The Agency incorporates the existing standards in Section 654.202(a) and (b) into proposed Section 604.230(a) and (b).² For subsection (b), the Agency updated the terminology by changing "average daily demand" to "maximum day demand". This change provides increased protection for the community water supply by requiring a higher water production rate is provided. In subsection (c), the Agency is prohibiting single well systems for new community water supplies. The Agency is requiring a second well be installed when single well systems undergoes a substantial modification (i.e. the fixed capital cost of the new components constructed within a 2-year period exceed 50% of the fixed capital cost of a comparably entirely new system). The failure of a well at a one well system puts the community water supply at risk of running out of water. A second well, or backup well, provides reliability of service. Of the 1740 community water supplies in Illinois, only 240 have just a single well. The Agency consulted Section 3.2.3 of the Recommended Standards when drafting this subsection (d).

Section 604.235 Groundwater Quality

The Agency proposes in Section 604.235(a) that community water supplies using only groundwater sample each well on a monthly basis to ensure that the wells are bacteriologically safe. The Agency also sets a procedure if the sample result is total coliform positive. This

² Similar requirements are found in Section 3.2.1 of the Recommended Standards.

sampling requirement is primarily in response to USEPA's Groundwater Rule, 71 Fed. Reg. 65574 (November 8, 2006).

In subsection (b), the Agency proposes to update the treatment requirements for groundwater found in Section 654.102(a). The Agency considered Section 611.822(c)(3) when proposing the requirement that 4-log inactivation of viruses be achieved for groundwater sources subject to bacteriological contamination.

The Agency receives many questions about the type of sampling required following maintenance and repairs. Therefore, the Agency proposes subsection (c) that requires the well to be tested for coliform bacterial prior to being placed back into service.

Section 604.240 General Well Construction

In proposed Section 604.240, the Agency has included, with modifications, the general well construction provisions found in the Recommended Standards, Section 3.2.4. This proposed section includes requirements on well casing materials, packers, screens, grouting, upper terminal well construction, development, capping and well abandonment. The Agency proposes that all well casing be made of steel because it is more reliable and a longer lasting material than PVC. Additionally, steel casing help reduce contamination to the well. The Agency also proposed that the minimum depth of grouting shall be 10 feet based on the Agency's current rules in Section 653.103(c). The 10 foot depth of grout will minimize the potential for migration of contaminants from the surface into the well. The Agency also proposes that bentonite and clay seal for grouting is not permitted because these materials will dry out and fail.

The Agency also adds Sections 604.240(i)(3)(E), (F) and (G), which are not found in the Recommended Standards. The Agency proposes that the grout shall be allowed to overflow the annular opening until the proposer density or percent solids have been achieved. By allowing the

grout to overflow from the annular opening samples can be taken and analyzed to verify that the proper density or percent solids have been achieved. Additionally, the Agency requires that standby grouting equipment be on site; in the event of a pump failure back up equipment can be utilized to make sure the grout is placed continuously to establish a proper seal. Finally, the Agency adds a requirement that the conductor pipe be completely withdrawn from the well prior to flushing excess grout or be disconnected from the grout shoe or street elbow prior to flushing. This process insures that flushed grout which can be diluted with the water used in the flushing process does not end up in the annular space of the well.

The Agency also proposes in subsection (k)(3) that wells located in the flood plain have a six-inch concrete envelope completely surrounding the regular casing and extending at least 10 feet below original ground surface. This is based on requirement found in Section 653.118 Table A.

Section 604.245 Well Testing and Records

In this proposed Section, the Agency includes what testing and records must be kept for wells used by community water supplies. The Agency consulted Section 3.2.5 of the Recommended Standards when drafting this section. Each well must be tested for plumbness and alignment. The Agency proposes requiring the community water supply to determine the specific capacity of each well prior to being placed into service. The Agency also proposes requiring a pump test for each well before placement of the permanent pump. This proposed section also includes a list of the data that must be submitted to the Agency before the Agency will issue an operating permit. The information required consists of well specific empirical data which is used to determine the characteristics of the well and the aquifer the well is utilizing. This data is used to determine the quantity of water the well can safely produce without

endangering the pump equipment or the aquifer. The aquifer properties determined through these procedures may be used for determining the lateral area of influence and mapping the well recharge area. Lateral area of influence data is used to establish maximum set back zones pursuant to Section 14.3 of the Act. Establishing a maximum set back zone prohibits the placement of potential primary sources of contamination within 1000 feet of a community water supply well.

Section 604.250 Aquifer Types and Construction Methods

The Agency consulted Section 3.2.6 of the Recommended Standards when drafting this section. The Agency includes requirements for sand or gravel wells, gravel pack materials, radial water collector and fractured or highly permeable bedrock aquifers.

Section 604.255 Well pumps, Discharge Piping and Appurtenances

The Agency proposes requirements for line shaft pumps, submersible pumps, discharge piping, pitless well units, casing vents and equipment to measure water levels in proposed Section 604.255. The Agency consulted Section 3.2.7 of the Recommended Standards when drafting this section.

PART 604 -- SUBPART C: SOURCE WATER PROTECTION

Subpart C introduces a new requirement for community water supplies. Under this subpart, each community water supply must develop a source water protection plan. The Recommended Standards also requires the preparation of a source water protection plan in Section 3.1. The Agency is currently carrying out a source water assessment program as required by the SDWA where it must delineate the boundaries of the assessment areas and identify contaminants that may be present. The Agency has completed a source water

assessment for each community water supply in the state that can be used to help satisfy the requirements of this subpart.

Section 604.300 Purpose

The purpose of this subpart is to protect source water quality and quantity.

Section 604.305 Source Water Protection Plan Requirement and Contents

The Agency proposes that source water protection plans have the following content: a vision statement, a source water assessment, stated objectives, and an action plan.

Section 604.310 Vision Statement

Proposed Section 604.310 sets forth what each community water supply must include in their vision statement. A statement of the community water supply's policy and commitment to protection source water must be included, as well as an explanation of the community water supplies resources and barriers to protect source water. The community water supply must also include the names of the individuals who developed the vision statement.

Section 604.315 Source Water Assessment

The Agency proposes requiring community water supplies to include a source water assessment in their source water protection plan. This assessment must delineate all sources of water for the community water supply, state the importance of each source of water, list supplies that obtain water from the community water supply, report the quality of source water and finished water, identify potential sources of contamination, analyze the source water's susceptibility to contamination, and explain the community water supplies efforts to protect the water source. A community water supply may use assessments performed by the Agency to satisfy the requirements of this part, or ask the Agency for technical assistance.

Section 604.320 Source Water Protection Plan Objectives

Each community water supply's source water protection plan must include a statement of objectives. The objectives can include completing the source water protection plan or any of the requirements of this subpart.

Section 604.325 Action Plan

The community water supply must identify what actions are necessary to achieve the objectives stated in proposed Section 604.320.

Section 604.330 Submission

The Agency proposes that each community water supply be required to submit its source water protection plan to the Agency. New community water supplies must submit their plans with their construction permit application. Existing community water supplies have between 3-5 years to submit their plans to the Agency, depending on their size. When a new source of water is being added to an existing community water supply, the source water protection plan must be submitted with the construction permit application to add the new source of water.

Section 604.335 Agency Approval

In this proposed section, the Agency has 45 days to approve or deny the source water protection plan. If the Agency fails to take action within 45 days, the community water supply may deem the plan approved.

Section 604.340 Evaluation and Revision

The source water protection plan must be reviewed and revised if necessary every five years.

PART 604 -- SUBPART D: AERATION

Aeration is used for the removal of contaminants, such as regulated volatile organic compounds, to assist in iron and manganese removal, or to remove dissolved gases from the water, such as carbon dioxide or hydrogen sulfide. In this subpart the Agency sets forth requirements for different types of aeration, including forced or induced draft aeration, spray aeration, pressure aeration, and packed tower aeration.

Section 604.400 General Requirements for Aeration

In proposed Section 604.400, the Agency sets forth general requirements for aeration. The Agency proposes to require 24 mesh screens to protect from the entrance of contamination. Additionally, bypasses are required when a single aeration unit is installed. Finally, the Agency proposes requiring the community water supply evaluate the stability of water after aeration. The Agency consulted Section 4.7.7, Section 4.7.2(d), Section 4.7.9 and Section 4.7.10 of the Recommended Standards when drafting this section.

Section 604.405 Forced or Induced Draft Aeration

Proposed Section 604.405 contains the requirements in Section 4.7.2 of the Recommended Standards for forced or induced draft aeration. The Agency chose to exclude Section 4.7.2(1) which requires the continuous disinfection feed after aeration. The Agency left this subsection out because disinfection requirements are covered under proposed Subpart G.

Section 604.410 Spray Aeration

Proposed Section 604.410 contains the requirements in Section 4.7.3 of the Recommended Standards for spray aeration. The Agency chose to exclude Section 4.7.3(e) which requires the continuous disinfection feed after aeration. The Agency left this subsection out because disinfection requirements are covered under proposed Subpart G.

Section 604.415 Pressure Aeration

Proposed Section 604.410 contains the requirements in Section 4.7.4 of the Recommended Standards for pressure aeration.

Section 604.420 Packed Tower Aeration

Packed tower aeration is used for the removal of volatile organic chemical, trihalomethanes, carbon dioxide, and radon. This section specifies packed tower aeration may be used for compounds with a Henry's Constant greater than 100, and a pilot study is required unless performance data from community water supply with a similar chemical concentration is available. For compounds with a Henry's Constant between 10 and 100, a pilot study and approval by the Agency is required before packed tower aeration may be used. For compounds with a Henry's Constant less than 10 packed tower aeration may not be used. The remaining requirements of this proposed section are based on Section 4.7.5 of the Recommended Standards.

Section 604.425 Other Methods of Aeration

The Agency recognizes that there may be other methods of aeration to meet treatment needs. In proposed Section 604.425, the Agency lists alternative methods, and specifies that treatment process using other methods of aeration must be approved by the Agency. The Agency consulted Section 4.7.6 of the Recommended Standards when drafting this section.

PART 604 -- SUBPART E: CLARIFICATION

Clarification is a treatment process to reduce or remove turbidity (suspended matter) from the water prior to filtration. Removal of turbidity is required because the suspended matter can contain pathogens. Coagulation, flocculation, and sedimentation are the necessary components of clarification. In conventional clarification, these three treatment steps occur in individual basins. In a solids contact unit, the clarification process is combined into a single unit. The Agency

provides design, maintenance and operation standards for both types of clarification processes in Subpart E.

Section 604.500 General Clarification Requirements

In this proposed section, the Agency requires that clarification be provided in community water supplies treating surface water. A minimum of two units must be provided in these systems, and each clarifier provided must be capable of meeting the plant design capacity. This allows for the continuous operation of the plant while maintenance and repair of a clarification unit is necessary.

The Illinois EPA proposes requiring community water supplies treating groundwater under the direct influence of surface water to have a minimum of two clarification units if clarification is provided. The Agency also recommends that community water supplies that treat groundwater have two clarification units. Clarification is not generally required for community water supplies that treat groundwater only. Ground water plants that use lime softening treatment are required to have clarification.

The design of the clarification process must have manual start up following shut down to ensure that all components of the treatment process are operating properly upon start up. If the system is not properly operated after start up, partially treated water could be pumped to the distribution system. The Agency considered Section 4.2, 4.2.2(d), 4.2.3(g), 4.2.4(e) and 4.2.5.2(b) and (c) of the Recommended Standards when drafting this section.

Section 604.505 Coagulation

Coagulation is a process where the community water supply introduces chemicals that make the solids in the water bind together creating larger particles which is more easily removed by settling or filtration. The community water supply must select the coagulant that is best

suited for the treatment of its particular type of water. For plants treating surface water, a primary coagulant (alum, or iron based) is required at all times. The coagulants must be adequately mixed. Mixing is generally done mechanically or under certain conditions, with a static mixer. The Agency consulted Section 4.2.2 of the Recommended Standards when drafting this section.

Section 604.510 Flocculation

Following coagulation, the flocculation treatment process encourages the particles to stick together through gentle stirring by hydraulic or mechanical means. The Agency consulted Section 4.2.3 of the Recommended Standards when drafting the basing design, detention, equipment, superstructure, and piping requirements found in this section.

Section 604.515 Sedimentation

After the flocculation process, the water flows into a large basin with an inlet and outlet that allows for a minimum of four hours of settling time. The particles settle out by gravity. The Agency's proposed design criteria for the sedimentation basin and sludge collection and removal is based on Section 4.2.4 of the Recommended Standards.

Section 604.520 Solids Contact Unit

The use of a solids contact unit has become the most common clarification process. In a solids contact unit, the water treatment occurs in a single basin, where the chemical coagulant is added before water enters the solid contacts unit. Lime can also be added into the solids contact unit to aid in coagulation or for lime softening. As the water flows from the bottom to the top of the solids contact unit, the solid materials in the water accumulates in a sludge blanket, with the clarified water exiting the unit at the top. To maintain an optimal sludge blanket, it is necessary to periodically remove sludge from the bottom of the unit. For the solid contact units that use

helical flow instead of mechanical mixing, the Agency decreased the necessary detention period. Operators and engineers have reported that claricones work better at higher loading rates and shorter detention times. The weir loading rates are higher than for solids contact units due to the reverse flow path keeping particles out of the effluent. The upflow rates are the same for claricones and other solid contact designs. The Agency's proposed design criteria for a solids contact unit is based on Section 4.2.5 of the Recommended Standards.

Section 604.525 Tube or Plate Settlers

Tube or plate settlers promote sedimentation and can be used in either a sedimentation basin or a solids contact unit. The Agency's proposed design criteria for a tube or plate settlers is based on Section 4.2.6 of the Recommended Standards.

Section 604.530 Other High Rate Clarification Processes

In this section, the Agency allows a community water supply to demonstrate that other high rate clarification processes will satisfactorily clarify the water. The Agency proposes to include this section because there may be future advancements in the clarification treatment processes or new technology and methods may emerge that provide equivalent treatment.

PART 604 -- SUBPART F: FILTRATION

Filtration is required for all community water supplies treating surface water or groundwater under the direct influence of surface water. Filtration is also provided for any community water supply removing iron or manganese, regardless of the source of the water. In Subpart F, the Agency proposes design, operation, and maintenance requirements for rapid rate gravity filtration, rapid rate pressure filtration, deep bed rapid rate gravity filtration, and biologically active filtration. This proposal is largely based on requirements found in the Section 4.3 of the Recommended Standards.

Section 604.600 Filtration

In Section 604.600, the Agency sets out the acceptable types of filtration: (1) rapid rate gravity filters, (2) rapid rate pressure filters; (3) deep bed rapid rate gravity filters; and (4) biologically active filters. Other types of filtration are allowed, but may require a pilot study.

Section 604.605 Rapid Rate Gravity Filters

In proposed Section 604.605, the Agency sets forth design, maintenance and operation requirements for rapid rate gravity filters. The Agency's proposal is based on Section 4.3.1 of the Recommended Standards. Rapid rate gravity filters are open to the atmosphere, with prefiltered water entering the filter at the top, and filtered water leaving the filter at the bottom. The filter consists of multiple layers of sand and gravel, and the water travels through them by gravity. The Agency also incorporated the filtration rates found in Section 653.116(b) into Section 604.605(b).

Section 604.610 Rapid Rate Pressure Filters

Rapid rate pressure filters are normally used for iron and manganese removal. The Agency proposes design, operation and maintenance requirements in proposed Section 604.610. The Illinois EPA's proposal is based on Section 4.3.2 of the Recommended Standards. In addition to the requirements found in the Recommended Standards, the Agency proposes that a minimum of two filters units be provided so that the filter can be taken out of service for maintenance without negatively impacting the finished water quality.

Section 604.615 Deep Bed Rapid Rate Gravity Filters

In proposed Section 604.615, the Agency proposes allowing the use of deep bed rapid rate gravity filters if the community water supply completes a pilot study demonstrating

satisfactory filtration. The filter design shall also comply with proposed Section 604.605, Rapid Rate Gravity Filters.

Section 604.620 Biologically Active Filtration

In proposed Section 604.620, the Agency proposes allowing the use of biologically active filtration if the community water supply completes a pilot study demonstrating satisfactory filtration. The filter design shall also comply with proposed Section 604.605, Rapid Rate Gravity Filters.

PART 604 -- SUBPART G: DISINFECTION

This subpart primarily sets forth requirements for disinfection of source water to ensure the source water is bacteriologically safe. Unless otherwise approved by the Agency, chlorination with a contact time of 60 minutes is required for all water that must be disinfected. Other methods of disinfection include chloramines, chlorine dioxide, ozone, and ultraviolet light.

This subpart also includes requirements for continuous chlorination that applies to all community waters supplies, except for those that are exempt under the Act or otherwise meet the residual requirements. Requirements for chlorination equipment, points of application, contact time, inactivation of pathogens, residual chlorine, continuous chlorine analyzers and chlorinator piping are also included in this subpart.

Section 604.700 Disinfection Requirement

In proposed subsection (a), the Agency sets forth the general disinfection requirement. Disinfection is required for all surface waters, groundwater under the direct influence of surface water, groundwater obtained from unconfined fractured bedrock, groundwater with total coliform presence, and groundwater treated in basins open to atmosphere. These sources of water have questionable sanitary quality. The Illinois EPA's proposal is based on Section 4.4 of

the Recommended Standards and SDWA requirements. This disinfection must be in addition to continuous chlorination because disinfection can be achieved by means other than chlorination (ozone, ultra-violate, chlorine dioxide, and chloramines). When those other means are used, continuous chlorination must still be performed.

In subsection (d), the Agency proposes to include the notification requirement found in the Recommended Standards, Section 4.4.8.4, which provides that the community water supply must notify the public when it changes disinfection practices.

Section 604.705 Chlorination Equipment

In this section, the Agency has included its current regulations on chlorination equipment in found in Section 653.601(b). The Agency did not include 653.601(b)(1) in this subsection because the chlorine residual requirement is found in Section 604.725.

Section 604.710 Points of Application

The Agency proposes requiring that the community water supply be capable of adding disinfectant into or prior to any aeration, settling or filtration unless the process involves biological filtration. Multiple application points are required for operational flexibility. Typically, disinfection ahead of aeration would not be utilized unless additional oxidation of iron or manganese was needed or when the aerator is bypassed for maintenance. For treatment process with biological filtration, the disinfectant must be added after the biological treatment because the disinfectant will kill all the microorganisms in the biological filtration.

Section 604.715 Contact Time

In proposed Section 604.715, the Agency proposes a minimum chlorine contact time of 60 minutes for surface water, groundwater under the direct influence of surface water, groundwater treated in basins open to the atmosphere, and groundwater obtained from

unconfined, fractured bedrock. The baffling factor must be greater than or equal to 0.3 to prevent short circuiting. The Agency modeled proposed Section 604.715 on the existing regulations found in Section 653.603.

Section 604.720 Inactivation of Pathogens

In this proposed section, the Agency proposes requiring 0.5 log inactivation of giardia lamblia cysts and 2-log inactivation of viruses for plants treating surface water or groundwater under the direct influence of surface water. The Board's current rules, in Section 611.220, require 3-log giardia lamblia removal or inactivation and 4-log virus removal or inactivation, but does not specify the minimum inactivation required to achieve the 3-log and 4-log requirements. According to Section 4.4.2 of the Guidance Manual for Compliance with Filtration and Disinfection Requirements for Public Water Supplies Using Surface Water Sources (March 1991), the inactivation portion of the log removal is recommended to be the minimum stated in proposed Section 604.720.

For plants treating groundwater obtained from fractured bedrock, groundwater with a total coliform presence and groundwater treated in basins open to the atmosphere, 4-log virus inactivation and a second method of inactivation is required in addition to continuous chlorination.

Section 604.725 Residual Chlorine

The Agency's current residual chlorine requirement is found in Section 653.604, and this section requires a minimum free chlorine residual of 0.2 mg/l or a minimum combined residual of 0.5 mg/l be maintained in all active parts of the distribution system. In proposed Section 604.725, the Agency proposes to increase the minimum free chlorine residual to 0.5 mg/l and the minimum combined residual to 1.0 mg/l. The Agency believes the increased residual chlorine

will provide necessary protection for public health. The 0.2 mg/l is the detection limit of many of the testing devices, and therefore 0.5 mg/l add a degree of certainty the residual actually exists. The Agency believes the increase will better control emerging contaminants of concern like naegleria fowleri and legionella. Proposed subsection (b) requires a community water supply to test the water on the distribution system at representative locations to make sure the residual chlorine requirement is being met. Proposed subsection (c) prohibits mixing water sources with free chlorine and combined chlorine residuals. When these waters mix, the chlorine residual can fluctuate, causing the residual to drop below the required levels. This can ultimately lead to water quality issues and customer complaints.

Section 604.730 Continuous Chlorine Analyzers

The Agency proposes requiring continuous chlorine analyzers for community water supplies that rely on chlorination for disinfection. The equipment must allow for automatic shutdown of the treatment facility if the required chlorine residuals are not met. This will prevent potentially unsafe water from being distributed to the public. The Agency based proposed Section 604.730 on the Section 4.4.4(e) of the Recommended Standards and Section 611.533.

Section 604.735 Chlorinator Piping

The Agency includes requirements for the piping from the chlorinator to the chlorine application point in proposed Section 604.735. These requirements are not currently in the Agency's or Board's rules, and are based on Section 4.4.5 of the Recommended Standards. The piping must be designed to prevent contamination and backflow or back siphonage between multiple points of chlorine application.

PART 604 -- SUBPART H: SOFTENING

The Board's and Agency's current regulations do not contain requirements for softening. The two methods of softening covered by proposed Subpart H are lime or Lime Soda Process and Cation Exchange Process. Softening water reduces the hardness of water, which reduces scale on appliances or fixtures and improves laundering or bathing by reduced soap consumption. This treatment provides aesthetic improvements to the water, and potentially removes some contaminants.

Section 604.800 Lime or Lime-soda Process

The proposed lime or lime-soda process requirements are based on the Section 4.5.1 of the Recommended Standards with little variation.

Section 604.805 Cation Exchange Process

The proposed cation exchange process requirements are based on the Section 4.5.2 of the Recommended Standards with little variation.

PART 604 -- SUBPART I: STABILIZATION

Aggressive water can lead to corrosion of distribution pipes and water fixtures. Leaching of lead service line or customer fixtures can occur if the water is aggressive. Water that is not stable or aggressive can result in to deposits in water mains and plumbing. These deposits can reduce flow in pipes and water fixtures. This subpart sets forth the acceptable corrosion control treatment techniques. The Board's and Agency's current regulations do not contain requirements for stabilization.

Section 604.900 General Stabilization Requirements

In proposed subsection (a), the Agency lays out the required information to evaluate the stability of the water. These include alkalinity, calcium carbonate hardness, pH, sulfate, calcium,

total dissolved solids, oxidation reduction potential; conductivity; orthophosphate, chloride, iron, and manganese. The data from these parameters is used in variety of formulas to calculate the stability of the water.

If the water is found to be unstable, proposed subsection (b) sets forth the types of treatment that can be used. These include: carbon dioxide addition; acid addition; phosphate addition; split treatment; alkali chemical; carbon dioxide reduced by aeration; calcium hydroxide; sodium silicate; and sodium bicarbonate.

Section 604.905 Carbon Dioxide Addition

Proposed Section 604.905 is based on the carbon dioxide addition requirements found in Section 4.9.1 of the Recommended Standards.

Section 604.910 Phosphates

Proposed Section 604.910 incorporates phosphates requirements found in Section 4.9.3(b) of the Recommended Standards.

Section 604.915 Split Treatment

Proposed Section 604.910 incorporates split treatment requirements found in Section 4.9.4 of the Recommended Standards.

PART 604 -- SUBPART J: OTHER TREATMENT

This subpart includes miscellaneous treatments techniques that do not squarely fit within the previous subparts. Presedimentation and anion exchange are less common treatment techniques. Iron and manganese and taste and odor control treatment techniques are not necessary to meet national primary drinking water standards, but are often used to improve the aesthetic quality of the drinking water. Powder activated carbon can be used to improve taste and odor or to remove pesticides through adsorption.

Section 604.1000 Presedimentation

In proposed Section 604.1000, the Agency sets forth the requirements for Presedimentation. In the past presedimentation was fairly common, but as technology has changed, presedimentation is not used as frequently. The Agency does not propose to require presedimentation, but if presedimentation is done, the design standards in proposed Section 604.1000 must be followed. This section incorporates the presedimentation requirements found in Section 4.2.1 of the Recommended Standards.

Section 604.1005 Anion Exchange

The Agency proposes design, maintenance and operation requirements for anion exchange in proposed Section 604.1005. Currently neither the Board nor the Agency has regulations for this type of treatment. The proposed requirements are based on the Section 4.6 of the Recommended Standards with little variation.

Section 604.1010 Iron and Manganese Control

Under the Board's current rules in Part 611, treatment for iron and manganese is required to meet a state maximum contaminant level (MCL). The Agency restates in proposed subsection (a) that treatment is required to meet this old MCL. The treatment techniques included in subsection (b) and (c) provide for the removal of iron and manganese. Subsection (d) and (e) provide for the sequestration of iron and manganese. The Agency based the requirements for iron and manganese control on Section 4.8 of the Recommended Standards.

Section 604.1015 Taste and Odor Control

Under the Board's current rules in Section 611.121(b)(1), drinking water "must contain no impurity that could reasonably be expected to cause offense to the sense of sight, taste, or smell." Proposed subsection (a) of Section 604.1015 provides that treatment for taste and odor is

required when the produced water would otherwise cause such an offense. Subsection (b) contains a nonexclusive list of the acceptable methods of taste and odor control treatment as follows: chlorination, chlorine dioxide, powdered activated carbon, granular activated carbon, copper sulfate or other copper compounds, aeration, potassium permanganate, ozonation or ultra violet with hydrogen peroxide.

Section 604.1020 Powdered Activated Carbon

Neither the Board nor the Agency has current regulations on the design, maintenance and operation of powdered activated carbon. It can be used for taste and odor control and organics removal. The Agency based this proposed subsection on Section 4.10.4 of the Recommended Standards, but decided to make it its own section because it can be used for more than taste and odor control.

PART 604 -- SUBPART K: CHEMICAL APPLICATION

In this Subpart, the Agency proposes general chemical application requirements that apply to all chemicals in Sections 604.1100-604.1110. In the remaining sections within this subpart, the Agency sets forth requirements for specific chemicals or types of chemicals such as acids and caustics.

Section 604.1100 General Chemical Application Requirements

In proposed Section 604.1100, the Agency sets forth the design, maintenance and operating criteria for chemical addition. Subsections are based on Section 5.0.1, Section 5.0.2, and Section 5.0.3 of the Recommended Standard. Subsections (d), (f) and (g) are based on the Agency's current rules found in Section 653.202. In subsection (e), the Agency proposes prohibiting the use of storage containers to hold more than one chemical. A community water supply must not rinse out a storage container and store a different chemical in the container. The

two chemicals could be incompatible and when mixed, hazardous to the community water supply personnel.

Section 604.1105 Feed Equipment and Chemical Storage

In proposed subsection (a) of Section 604.1105, the Agency sets forth the solution feed equipment requirements currently found in Section 653.601(e)(2). In subsection (b), the Agency based the requirements for feeder redundancy on Section 5.1.1 of the Recommended Standards, except the Agency added a requirement that each chemical feeder and day tank be identified with their content to prevent mixing of chemicals. Subsection (c) is modeled after Section 5.1.2 of the Recommended Standards, except for subsection (c)(1)(B). The Agency added this subsection, which requires the well or service pump to be electrically interconnected to the chemical feeder, to ensure that the chemicals are injected only during the times the well or service pump is operating and the chemicals are injected proportional to the flow. The Recommended Standards included a similar requirement for fluoride, and the Agency felt the requirement should apply to all chemical feeders.

Subsection (d) contains requirements for dry chemical feeders, and is based on Section 5.1.3 of the Recommended Standards. Subsection (e) contains requirements for positive displacement solution pumps, and is based on Section 5.1.4 of the Recommended Standards. Subsection (f) contains requirements for liquid chemical feeders, and is based on Section 5.1.5 of the Recommended Standards. Subsection (g) contains requirements for cross connection control, and the Agency consulted Section 5.1.6 of the Recommended Standards when drafting this section. Subsection (h) contains requirements for positive displacement solution pumps, and is based on Section 5.1.7 of the Recommended Standards. Subsection (i) contains requirements for

make-up water lines, and the Agency consulted Section 5.1.8 of the Recommended Standards when drafting this section.

Subsections (j), (k) and (l) pertain to the storage of chemicals. Subsection (j) has the general storage requirements. The Agency consulted Section 5.1.9 of the Recommended Standard in drafting this section. The Agency added subsection (j)(3), (j)(5) and (j)(7), which prohibits the storage of chemicals in confined spaces, requires feed equipment and storage chemicals to be stored inside a building, and requires secondary containment. These are all safety requirements to prevent injury or contamination to the environment if there is an accidental release. For subsection (k), the Agency sets forth requirements for bulk liquid storage tanks based on Section 5.1.10 of the Recommended Standards. The Agency elected to exclude subsurface storage for bulk liquid storage tanks. Subsection (l) provides requirements for day tanks, and is based on Section 5.1.11 of the Recommended Standards. The Agency added language clarifying that a community water supply must avoid short, large diameter tanks which can be difficult to accurately measure the amount of chemical fed per day.

Subsection (m) contains requirements for feed lines, and is based on Section 5.1.12 of the Recommended Standards. In subsection (n), the Agency simplified Section 5.1.13 of the Recommended Standards to require the proper transfer of dry chemicals to minimize dust. Subsection (o) contains requirements for housing, and the Agency consulted Section 5.1.14 of the Recommended Standards when drafting this section.

Section 604.1110 Protective Equipment

In proposed Section 604.1110, the Agency requires the community water supply to provide personal safety equipment for its operational staff consistent with the safety plan

developed pursuant to proposed Section 604.160. A deluge shower and eyewashing device is required when strong acids and alkalis are used.

Section 604.1115 Chlorine Gas

In proposed Section 604.1115, the Agency proposes specific requirements for chlorine gas. The Agency consulted Section 5.4.1 of the Recommended Standards when drafting this section. Proposed subsection (g) requires continuous chlorine leak detection equipment, and is based on Section 5.3.3 of the Recommended Standards.

Section 604.1120 Acids and Caustics

The Agency proposes requirements for the use of acid and caustic chemicals in proposed Section 604.1120. Subsection (a) and (b) are based on the Section 5.4.2 of the Recommended Standards. Subsection (c) is based on Section 5.1.10(g) of the Recommended Standards.

Section 604.1125 Chlorine Dioxide

This section sets forth requirements for using chlorine dioxide. The requirements are based on Section 4.4.8 of the Recommended Standards.

Section 604.1130 Sodium Chlorite

In proposed Section 604.1130, the Agency lays out the storage and handling of sodium chlorite, which is mainly used for chlorine dioxide generation. The improper handling of sodium chlorite can lead to fire or explosion. The requirements are based on Section 5.4.3 of the Recommended Standards.

Section 604.1135 Sodium Hypochlorite

In proposed Section 604.1135, the Agency includes requirements for storage of sodium hypochlorite to prevent the natural decomposition process. Keeping it out of the sun and in a cool location will help minimize the decomposition of sodium hypochlorite. The Agency also

proposes requiring venting a bulk tank containing sodium hypochlorite out of the building for the safety of operating personnel. The requirements are based on Section 5.4.4(a)(2) of the Recommended Standards.

Section 604.1140 Ammonia

This section sets forth requirements for using ammonia for chloramine formation. The form of ammonia can be either ammonium sulfate, aqua ammonia, or anhydrous ammonia. The Agency proposes storage and handling requirements based on Section 5.4.5 of the Recommended Standards.

Section 604.1145 Potassium Permanganate

Potassium Permanganate is used for oxidation of chemicals within water to form a precipitate. In proposed Section 604.1145, the Agency recommends that heated water be used for dissolving potassium permanganate, and requires that mechanical mixers be used. These requirements are taken from Section 5.4.6 of the Recommended Standards.

Section 604.1150 Fluoride

The Agency includes requirements for fluoride in proposed Section 604.1150. In the Board's rules found in 611.125, the Board requires community water supplies that add fluoride to maintain the fluoride concentration at 0.7 mg/L. Therefore, the Agency proposes that the fluoride equipment has the capacity to maintain the fluoride content of the finished water at 0.7 mg/l. This requirement is based on the existing requirement in Section 653.701(b), but has been updated to reflect the new concentration standard.

Proposed subsection (b) includes requirements from both Section 653.701(d) and Section 5.4.7(b)(1) of the Recommended Standards. Proposed subsection (c) includes requirements found in Section 5.4.7(b)(5), (6), (8) and (11) of the Recommended Standards. The requirements

for secondary controls are based on Section 5.4.7(c) of the Recommended Standards. In proposed subsection (e), the Agency updates the sampling requirement currently found in Section 653.703.

PART 604 -- SUBPART L: PUMPING FACILITIES

This subpart contains requirements for both raw water and finished water pumping stations. The Agency has rules for booster pumping stations in Section 653.107, but does not have rules setting forth requirements for pumping facilities in general. Therefore, the Agency based this proposal on Part 6 of the Recommended Standards. The location requirements in proposed Section 604.110 and security requirements in proposed Section 604.170 are applicable to pumping facilities.

Section 604.1200 General

In proposed Section 604.1200, the Agency requires that the design of all pumping facilities maintain the sanitary quality of the pumped water. The location and security requirements found in proposed Subpart A help ensure that the sanitary quality of the water is maintained. The requirement in proposed Section 604.1200 is taken from Section 6.0 of the Recommended Standards.

Section 604.1205 Pumping Stations

The Agency proposes requirements for pumping stations in proposed Section 604.1205. In proposed subsection (a), the Agency requires that the pumping station must not be in a confined space, and must have adequate room for the installation of parts and safe servicing of all equipment. Portions of the pumping station may be located below ground, but the pumping station must not be in a confined space. The requirements in proposed subsection (a) are based on the Section 6.2.0 of the Recommended Standards. Proposed subsection (b) contains

requirements for suction wells, and proposed subsection (c) contains requirements for equipment servicing. These subsections are based on Sections 6.2.1 and 6.2.2 of the Recommended Standards, respectively. In proposed subsection (d), the Agency requires that the pumping facility be adequately heated for safe and efficient operation of the equipment. In proposed subsection (e), the Agency includes the ventilation requirements for pumping facilities found in Section 6.2.5 of the Recommended Standards. The dehumidification requirements found in proposed subsection (f) are based on Section 6.2.6 of the Recommended Standards.

Section 604.1210 Pumps

In proposed Section 604.1210, the Agency proposes requiring two pumping units for all pump stations; this is based on Section 6.3 of the Recommended Standard. If one pump is out of service, the remaining pump or pumps must be capable of meeting the maximum daily demand. Additionally, the pumps must have spare parts and tools to facilitate timely repairs when one pump is out of service. In subsection (d), the Agency proposes requirements for suction lifts, which is based on Section 6.3.1 and 6.3.2 of the Recommended Standards. The Agency also proposes requiring automatic shutoff for pumps taking suction from ground storage to prevent the pump from breaking suction should the ground storage become empty.

Section 604.1215 Booster Pumps

The Agency requires that booster pumps meet separation distances in proposed Section 604.150. This requirement is currently found in Section 653.107(a). The Agency incorporates the rest of Section 653.107 into proposed Section 604.1215. The automatic control equipment requirement in proposed subsection (c) is found in Section 653.107(b). The pressure requirements in proposed subsection (f) and (g) is found in Section 653.107(c) and (d).

From the Recommended Standards, Section 6.4, the Agency adopted the requirement that each booster station have at least two pumps, with the capacities such that the demand can be satisfied with the largest pump out of service. The Agency also included a requirement that booster pumps have the ability to be bypassed, and that automatic equipment must be equipped to prevent wide fluctuations in water pressure.

Section 604.1220 Automatic and Remote Controlled Stations

This proposed section sets forth requirements pumping stations with automatic and remote controls. The requirements are based on Section 6.5 of the Recommended Standards.

Section 604.1225 Appurtenances

The Agency includes requirements for appurtenances for pumping facilities in this section. In proposed subsection (a), the Agency includes the requirements for valves found in Section 6.6.1 of the Recommended Standards. In proposed subsection (b), the Agency includes requirements for piping based on Section 6.6.2 of the Recommended Standards. In proposed subsection (c), the Agency based the requirements for gauges and meters on Section 6.2.3 of the Recommended Standards. In proposed subsection (d), the requirements for water seals are based on Section 6.6.4 of the Recommended Standards. Proposed subsection (e) sets for the required controls, and is based on based on Section 6.6.5 of the Recommended Standards. In proposed subsection (f), lubrication requirements are set forth based on Section 6.6.7 and Section 6.6.8 of the Recommended Standards

PART 604 -- SUBPART M: STORAGE

Storage is a necessary component for each community water supply to maintain water pressure and allows the community water supply to meet water demand when the demand exceeds the pumping capacity of the facility during peak use hours. Storage also provides the

community water supply an opportunity to maintain a safe supply of water while performing maintenance on its facilities. Without adequate storage, a community water supply may not be able to provide fire protection. This subpart includes the Agency's proposed requirements for all types storage: ground, elevated, and hydropneumatic.

Section 604.1300 General Storage Requirements

In proposed Section 604.1300, the Agency proposes general storage requirements applicable, unless otherwise noted, to all types of storage. A community water supply must have sufficient capacity to meet domestic and fire flow (when provided) demands. Excess storage capacity can cause deterioration of the finished water quality and must be avoided. When storing finished water, the structure must be designed to turn over water to avoid stagnation. Community water supplies should consider including an active mixing system for this purpose. Additionally, the discharge pipes must be located so that sediment does not flow into the distribution system.

Storage structures cannot be made out of wood, concrete block or other porous materials. All storage structures must be capable of being drained without the loss of distribution system pressure. Water storage structures shall be above the groundwater table, and at least 50% of the water depth within the storage structure shall be above grade. For storage structures below ground, the minimum distances from sources of contamination listed in Section 604.150(a) shall be met. Ideally, the storage structure would be completely above ground. The storage tank must be located to prevent surface water from standing or pooling within 50 feet of the structure. When exposed to the elements, the storage structures shall be designed to prevent freezing.

Section 604.1305 Overflow

In proposed Section 604.1305, the Agency requires all finished water storage structures to have an overflow. This proposed section includes specific requirements for ground level storage and elevated tanks. When drafting this section, the Agency consulted Section 7.0.7 of the Recommended Standards.

Section 604.1310 Access to Water Storage Structures

The requirements for accessing the water storage structure for cleaning and maintenance are found in proposed Section 604.1310. Manholes must be provided for storage tank access. Individual requirements are included for access to ground level storage and elevated tanks. This section is based on Section 7.0.8 of the Recommended Standards.

Section 604.1315 Vents

Proposed Section 604.1315 includes requirements for vents. All finished water storage tanks must have vents. Without proper venting, the tank roof could collapse when water is exiting from the vessel. This section is based on Section 7.0.9 of the Recommended Standards.

Section 604.1320 Level Controls

Requirements for the controls that community water supplies must provide for storage tanks are found in proposed Section 604.1320. Without controls, a community water supply will have a difficult time tracking the water level in the storage tank. The requirements in this proposed section are based on Section 7.3.3 of the Recommended Standards.

Section 604.1325 Roof and Sidewalls

The Agency included requirements for the roof and sidewalls of storage structures in proposed Section 604.1325. The Agency consulted Section 7.0.10 and 7.0.3 of the Recommended Standards when drafting this section.

Section 604.1330 Painting and Cathodic Protection

In proposed section 604.1330, the Agency requires proper protection of metal surfaces by painting or other protective method, or by cathodic protection or both. This protective coating will help maintain the structural integrity of the tank. The requirements in this proposed section are based on Section 7.0.17 of the Recommended Standards.

Section 604.1335 Treatment Plant Storage

In proposed Section 604.1335, the Agency includes requirements for clearwells and treatment plant storage. This section includes requirements for when the clearwell is used to provide disinfectant contact time and size requirements for plants operated intermittently. All other treatment plant storage basins containing treated water must be designed as a finished water storage structure. The Agency also includes requirements for sizing of filter washwater tanks. These requirements are based on Section 7.1 of the Recommended Standards.

Section 604.1340 Elevated Storage

The minimum storage capacity for elevated storage must be the average daily demand, or must be based on an engineering study of the distribution system. The volume and height of the tank must be sized to maintain the pressure requirements in proposed Section 604.1415(a). The Agency also includes a requirement for protective bars within the tank's riser openings when the riser pipes are greater than eight inches in diameter. The Agency consulted Section 653.108(c) of its current rules and Section 7.0.12(b) of the Recommended Standards when drafting this section.

Section 604.1345 Hydropneumatic Storage

Hydropneumatic storage is used for small water systems with less than 150 service connections. When hydropneumatic storage is the only storage provided, fire protection is not

permissible. The size of the hydropneumatic storage tank shall equal or exceed 80 gallons per service connection. Since the volume of the hydropneumatic storage is small, the community water supply must have ability to deliver water at a higher rate. The requirements in this proposed section are based on Section 653.109 of its current rules and Section 7.0.17 of the Recommended Standards.

Section 604.1350 Combination Pressure Tanks and Ground Storage

In this proposed section, the Agency includes the requirements currently found in Section 653.110. While it is not common for a community water supply to have both hydropneumatic storage and ground storage, some small water systems may pursue this alternative to help maintain pressure or increase their storage.

PART 604 -- SUBPART N: DISTRIBUTION

The distribution system is the part of the community water supply that transfers water from treatment facility to customers for use. The distribution system consists of water mains, hydrants, valves and water service lines. Pursuant to Section 601.102, the community water supply ends at each service connection. Therefore, water service lines are not regulated by the Agency or Board, and are not covered by this Part. The materials used in water main construction, and the separation of water mains and sewer lines are covered in this Subpart because they are essential in maintaining the sanitary quality of water in the distribution system.

Section 604.1400 General Distribution System Requirements

In proposed Section 604.1400, the Agency sets forth the general distribution system requirements. First, the system must be designed to maintain finished water quality. Second, the community water supply must keep records of the nature and frequency of water main breaks.

Finally, the system must be designed to meet the existing water use demands. The Agency consulted Section 653.117 of its current rules and Section 8.0 of the Recommended Standards.

Section 604.1405 Installation of Water Mains

Before installing a new water main or changing the size of a replacement water main, the community water supply must obtain a permit from the Agency under Part 602. In proposed Section 604.1405, the Agency includes requirements for bedding, cover, blocking, pressure and leakage testing, disinfection and external corrosion. This Section is based on Section 8.7 of the Recommended Standards.

Section 604.1410 Materials

All materials in the distribution system conform to the standards incorporated by reference in Section 601.115. For plastic pipes, the Agency updated Section 653.111 of its current rules, and included them in proposed subsection (b). In subsection (c), the Agency sets forth requirements to protect the consumer from organic compound contamination, which can leach through plastic water mains. The Agency consulted Section 8.1 of the Recommended Standard and Section 653.119(e) of the Agency's current rules when drafting this Section.

Section 604.1415 System Design

In proposed Section 604.1415, the Agency sets forth requirements for system pressure, sizing of water mains and minimization of dead ends within the distribution system. The minimum pressure requirement is 20 psi. The normal working pressure shall be 35 psi for all mains except transmission mains. When the pressure is above 100 psi, the community water supply is required to install a pressure reducing device on the water main or the individual service line. The pressure requirements contained in this section are based on Section 653.106(b) of the Agency's current rules and Section 8.2.1 of the Recommended Standards.

The size of the main is determined based on the number of customers connected to the pipe, whether the main is a dead end, and whether fire flow is provided. A properly sized water main should be able to maintain the minimum pressure requirements under all conditions. For fire protection, the water main must be at least six inches. For water mains not providing fire protection, the minimum size is four inches in diameter, except 3 inch diameter water mains are allowed in rural areas where the customers are widely spaced. In drafting this proposed subsection, the Agency consulted Section 653.117(d) of its current rules and Section 8.2.2 of the Recommended Standards.

Finally, the Agency includes a subsection (c) that requires dead ends to be minimized. Dead ends tend to have poorer water quality. Therefore, if a distribution system has a dead end, the dead end must be equipped with a means for flushing. This subsection is based on Section 8.2.4 of the Recommended Standards.

Section 604.1420 Valves

Valves are required on the distribution system for repairs, maintenance and flushing. For commercial districts, the valves must be spaced at 500 foot intervals. For non-commercial districts, the valves must be spaced out by not more than two blocks or 1200 feet. The Agency includes an exception for those situations where customers are widely spaced. The Agency consulted Section 8.3 of the Recommended Standards when drafting this section.

Section 604.1425 Hydrants

In proposed Section 604.1425, the Agency sets forth requirements for hydrants. A fire hydrant may be connected to a water main sized for fire protection. All other water mains must have a flushing hydrant. The Agency also proposes that all community water supplies must have systematic flushing program to maintain finished water quality. All hydrants must be capable of

being drained to prevent breakage or damage from freezing. Proposed subsection (d) contains the requirements for hydrant draining. This section is based on Section 8.4 of the Recommended Standards.

Section 604.1430 Air Relief Valves

To minimize reduction in water flow in water mains from the accumulation of air (air lock), community water supplies must install air relief valves at high points where air can be dissipated or relieved. These would be more common in hilly areas, at the top of the hills. The Agency consulted Section 8.5 of the Recommended Standards when drafting this section.

Section 604.1435 Valve, Meter and Blow Off Chambers

Chambers, pits or manholes containing valves, meters and blow off chambers can accumulate water – groundwater or runoff from the surface. To reduce the potential of contamination of the water in the water main or water line, the Agency proposes requiring that drainage or other means to remove standing water must be installed. Chambers, pits or manholes cannot directly be connected to a storm drain or sanitary sewer. This proposed section is based on Section 8.6 of the Recommended Standards.

Section 604.1440 Sanitary Separation for Finished Water Mains

Separation between water mains and sewer lines are necessary to eliminate or reduce the likelihood of contaminated water from entering the distribution system. The Agency currently has rules requiring 10 feet horizontal and 18 inches vertical separation in Section 653.119. The Agency proposes these same requirements in proposed Section 604.1140. The Agency proposes a new alternative when it is not possible to meet the separation requirements: the sewer can have structural lining. Force sewer mains, which are under pressure, must meet the 10 feet horizontal and 18 inch vertical separation without exceptions. The Agency consulted Section 8.8.5 of the

Recommended Standards when drafting this section, in particular the requirements for force sewer mains.

Section 604.1445 Sanitary Separation for Raw Water Mains

Currently, the Agency interprets Section 653.119 to apply to both raw water lines and distribution system water lines. In proposed Section 604.1445, the Agency proposes to clearly require separation for raw water mains. If the raw water source is a well, the sanitary separation from a raw water main must be the same as for distribution water mains, and includes separation from the drains, storm sewers, sanitary sewers, and combined sewers. If the raw water source is a surface water, the sanitary separation must be maintained between a sanitary sewer and combined sewer. The Agency does not include storm water sewers when the raw water main is from surface water because the surface water contains storm water runoff.

Section 604.1450 Surface Water Crossings

Water mains must sometimes cross surface waters, such as streams, rivers, or lakes. The water main can cross above or below the water. When the water main crosses above, it must be adequately supported and anchored, and protected from freezing and other damage. When the water main crosses below water, the water main must be located a minimum of five feet below the stream or river bottom, or lake bed. The Agency also proposes additional requirements for instances when the water crossing is greater than 15 feet, which is based on Section 8.9 of the Recommended Standards.

Section 604.1455 Water Service Line

In proposed Section 604.1455, the Agency clarifies the difference between a water service line and a water main, based on the definition of a water main and water service line found in Section 601.105. A pipe that serves multiple properties is a water main. Within the

definition of water main found in Section 601.105, the Board has incorporated the concept of "accessibility". If a pipe that only serves a single property is accessible to more than one property, dwelling, or rental unit, it is considered a water main by definition. Therefore, a water service line, is by definition, any pipe that serves or is accessible to not more than one property, dwelling or rental unit. The Board, however, does not define what is "accessibility" means. The Agency has interpreted accessible to mean whether another person can access the pipe. The Agency determines another person has access to the pipe if the pipe traverses across the other person's property. Therefore, proposed subsection (c) provides: "a pipe is accessible when it crosses the property boundary of another landowner to reach the property, dwelling or rental unit being served." This proposed section is necessary to provide certainty for the regulated community because whether a pipe is a water main or service line is a reoccurring issue primarily facing many rural community water supplies.

Section 604.1460 Water Loading Stations

Water loading stations, which provide an opportunity for members of the public to purchase large amounts of water, can present opportunities for contamination of the finished water. Additionally, transfer of contamination from one user to the next is possible because the same filling equipment will be used by both. Therefore, the Agency is proposing protective measures be taken, including an air gap or other agency approved cross connection control device. The hoses or piping system must not touch the ground and must prevent potential contamination from being transferred between hauling vessels. This proposed section is based on Section 8.13 of the Recommended Standards.

PART 604 -- SUBPART O: CROSS CONNECTIONS

This Subpart contains prohibitions for certain types of cross connections and requirements for cross connection control devices that may be used in a community water supply. Additionally, this Subpart provides that community water supplies must conduct cross connection control surveys and have devices inspected annually by an approved cross control device inspector.

Section 604.1500 Cross Connections

A cross connection occurs when there is a physical connection between two otherwise separate piping systems where flow from one system to the other is possible. In proposed Section 604.1500, the Agency prohibits the following cross connections: (1) between the community water supply and any drain or sewer; (2) whereby an unsafe substance may enter the community water supply; or (3) between any portion of the community water supply's distribution system, and any other water supply that is not a community water supply. The Agency proposes repealing Section 607.104, and incorporates those requirements into proposed Section 604.1500 and 604.1505.

Section 604.1505 Cross Connection Control Program

In proposed Section 604.1505, the Agency combines the existing requirements in Section 607.104(e) and Section 653.801. Proposed subsection (a) sets for the requirement that each community water supply have a cross connection control program designed to educate and inform water customers on how to prevent contaminants from entering the distribution system. This requirement is currently found in Section 607.104(e). In proposed subsection (b), the Agency incorporates the requirements for a cross connection control program currently found in Section 653.801.

The Agency proposes requiring each community water supply to conduct a cross connection control survey at least every three years, and to evaluate the risk of an unsafe cross connection with each new service connection. Community water supplies are required to maintain an inventory based on the cross connection control survey performed.

Section 604.1510 Cross Connection Control Device Inspectors

In subsection (a) of proposed Section 604.1510, the Agency incorporates the existing requirement found in Section 653.802(c)—namely that each cross connection control device must be inspected annually by an approved cross connection control device inspector. The record keeping requirements in subsection (a) are currently existing requirements found in Sections 653.802(e).

In subsection (b) of proposed Section 604.1510, the Agency incorporates and updates the requirements for obtaining cross connection control device inspector approval from the Agency's current rules found in Section 653.802(d). To obtain approval, one must be a licensed plumber, attend a training course offered by the Environmental Resource Training Center on cross connection control devices, and pass a written and performance test.

In subsection (c) of proposed Section 604.1510, the Agency incorporates the exception for community water supply facilities found in current Section 653.802(f). A community water supply must test their cross connection control devices in treatment plants, well houses or booster stations at least annually, but the inspector does not need to be an approved cross connection control device inspector. Instead, a certified operator who has attended a training course offered by the Environmental Resource Training Center on cross connection control devices, and passes a written and performance test, may conduct the inspections.

Section 604.1515 Agency Approved Connection Control Measures

In this proposed section, the Agency sets forth the types of cross connection control devices that may be used within the community water supply. It does not cover devices that are or may be used within plumbing of a private residence, commercial or industrial facility. The types of devices and where they may be used are set forth in subsections (b)-(e), and are based on Section 653.803 of the Agency's current regulations.

PART 602—PERMITS

Section 602.102 Community Water Supply Permits

The Agency proposes to add subsection (e), which specifies that a community water supply may seek a special exemption permit under Subpart F of Part 602.

Section 602.105 Standards for Issuance

The Agency proposes to repeal Section 602.115, and therefore proposes related amendments to Section 602.105(a)(2)(A) to change the cross reference to Section 602.115 to Part 604. The Agency also adds language to Section 602.105(a)(3) providing it authority to require a pilot study.

Section 602.106 Restricted Status

The Agency corrects a cross reference error in subsection (a)(2).

Section 602.115 Design, Operation, and Maintenance Criteria

In light of proposed Part 604, which is a Board rule governing design, operation and maintenance, the Agency proposes to repeal Part 602.115 as no longer necessary. The Agency will repeal its design, operation and maintenance rules in Part 653 if the Board adopts Part 604.

Section 602.200 Construction Permit Requirement

In Section 602.200(c)(5), the Agency proposes replacement pumps, feeders, controls, filter media, softener resins, pipes and appurtenances installed without a construction permit must have the same specification as the equipment replaced. In subsection (b)(5), the Agency proposes to clarify that a construction permit is required when rehabilitating a water main using cured-in-place pipe.

Section 602.210 Construction Permit Applications

The Agency corrects a cross reference error in subsection (d).

Section 602.220 Alterations

The Agency proposes two amendments to this section. First, when requesting an alternation to a construction permit granted by the Agency, the request must document all of the changes from the plans and specifications approved in the construction permit. Changes not identified will not be considered when granting requests for alterations. Second, the Agency specifies that it will not grant an alteration for the addition of water main after construction has begun, except water main necessary due to a change in the construction point or to a change in route or alignment. For all other water main alterations, a new construction permit application must be submitted to the Agency.

Section 602.245 Source Construction Applications

The Agency proposes requiring additional information is submitted for the construction or modification of a new well, surface water intake or transmission main used to transport water purchased from another community water supply in Section 604.245(a). First the community water supplies must submit existing and proposed finished water quality for the parameters

listed. Second, they must recommend the necessary treatment to reduce corrosion in household plumbing.

Large community water supplies are required to obtain approval for corrosion control treatment for control of lead and copper concentrations in plumbing pursuant to Section 611.351(b)(3)(C) prior to making a source or treatment change. In a November 3, 2015 memorandum, USEPA recommended States also approve corrosion control treatment for source and treatment changes for small and medium systems prior to the change. The change to this section accomplish this recommendation. The parameters listed in this section are listed in the USEPA Desktop Worksheet and/or the RTW Model for evaluating corrosion control treatment.

The Agency also proposes in this Section to require that clean-up sites within 2,500 feet of proposed wells be identified, and to require that flood levels be specified for intake sites subject to flooding. The Agency also updates the cross reference from Section 653.118 to Section 604.150.

Section 602.250 Treatment Construction Applications

In this section, the Agency updates the cross reference from Section 653.118 to Section 604.150. Additionally, the Agency requires community water supplies to add information necessary for the Agency to evaluate stability and corrosion control in newly proposed subsection (h). See explanation of Section 604.245(a) above.

Section 602.255 Storage Construction Applications

The Agency proposes to update the cross reference from Section 653.118 to Section 604.150.

Section 602.260 Water Main Construction Applications

The Agency proposes to update the cross reference from Section 653.118 to Section 604.150.

Section 602.300 Operating Permit Requirement

In this section, the Agency proposes changes to make clear that a community water supply can obtain either an operating permit through the traditional application process, or through a permit-by-rule. If the construction project is a water main extension or a project that does not require disinfection, the community water supply may place the project into operation once it submits the permit-by-rule certification required by proposed Section 602.325.

Section 602.305 Operating Permit Applications

The Agency proposes additional data be submitted when the operating permit is sought for the operation of a well. These additional requirements are based on requirements for well testing and records in proposed Section 604.245.

Section 602.310 Projects Requiring Disinfection

The Agency proposes changes to this section to ensure consistency with proposed Section 604.135(b)(4). All wells, water storage tanks, water treatment plants and water mains must be disinfected in accordance with AWWA standards. The Agency also removes the requirement that community water supplies use the membrane filter technique or presumptive test, fermentation tube method. Community water supply now may use any approved method under the Safe Drinking Water Act to show the absence of total coliforms. With the Illinois EPA's proposed changes, disinfection will be verified when two consecutive water samples taken at least 24 hours apart show the absence of coliform bacteria and the presence of a chlorine residual when required by proposed Section 604.725. The Agency proposes to remove alternative

process (one sample indicates no bacterial growth) of verifying disinfection for water main construction projects at existing community water supplies.

Section 602.325 Operating Permit-by-Rule

In this new section, the Agency proposes a new permit-by-rule operating permit for watermain extension projects or projects not requiring disinfection. If a community water supply fulfills the requirements of this proposed section, it will have a permit-by-rule, satisfying the permit requirements in Section 18(a)(3) of the Act. A community water supply cannot obtain an operating permit-by-rule if the underlying construction project is to connect two or more community water supplies. Also, the Agency may, when issuing a construction permit, notify an otherwise eligible community water supply that it may not obtain a permit-by-rule because it has failed to submit information to the Agency that is required by Board or Agency rule. When a construction project contains multiple components not all of which are eligible for a permit-by-rule, a community water supply may bifurcate the operating permit process and obtain a permit-by-rule for the eligible portions and a regular permit for the non-eligible portions.

To obtain a permit by rule, the community water supply must submit a certification to the Agency that contains the name, address, identification number, project name, construction permit number, and identification of type of construction project. If the project is only partially completed, the community water supply must submit the information specified in Section 602.320 (partial operating permits). The community water supply must attest to compliance with all disinfection requirements contained in Section 602.310, and must submit the sample results verifying disinfection.

Once the community water supply submits the certification specified in proposed Section 602.325, the community water supply may immediately begin operation.

Section 602.600 Special Exception Permits

The Agency proposes to move the requirements for special exemption permits out of Part 611 and add them to the existing permit requirements in Part 602. SEP requirements are found in a new subpart, but only require a single section. The contents of proposed Section 602.600 are the same as found in Section 611.110, but the Agency added that a SEP may be granted for Agency determinations made pursuant to Part 604. Because the Agency was expanding SEPs beyond just Part 611, the Agency believed the SEP requirements should be moved to the general permitting rules in Part 602.

PART 611 -- PRIMARY DRINKING WATER STANDARDS

Section 611.101 Definitions

In this section, the Agency is removing the cross reference to Section 611.110 in the definition of SEP and replacing it with a cross reference to Section 602.200. As a part of this regulatory overhaul, the Agency is moving special exception permits to Part 602.

Section 611.107 Agency Inspection of PWS Facilities

The Agency proposes to repeal this section because it is a recitation of Section 4(c) and 4(d) of the Act. Furthermore, inspection rights are covered by Section 602.108. This is an additional state requirement.

Section 611.110 Special Exception Permits

The Agency is proposing the language contained in Section 611.110 (a)-(d) into Section 602.600. Therefore, the Agency seeks to repeal them here.

Section 611.115 Source Water Quantity

The Agency proposes to repeal this section because the requirements for source water quantity are covered in proposed Section 604.205 and Section 604.230.

Section 611.121 Maximum Contaminant Levels and Finished Water Quality

Section 611.121(b) should be deleted because the Agency is proposing to move these requirements to Section 601.101(b).

Section 611.231 Source Water Quality Conditions

The Agency proposes to delete the requirement found in subsection (c) because the Agency has moved it to proposed Section 604.200(a).

Section 611.240 Disinfection

The Agency proposes to replace Section 611.240(g) with Section 604.700(c). The continuous chlorination requirement for all community water supplies fits better in Part 604:Subpart G: Disinfection. The current location of Part 611:Subpart B is the location of the original Surface Water Treatment Rule requirements.

Section 611.271 Protection during Repair Work

The Agency proposes to delete this section because the requirements for protection during repair are being proposed in Section 604.135(a).

Section 611.272 Disinfection Following Repair

The Agency proposes to delete this section because the requirements for disinfection following repair are being proposed in Section 604.135(b).

Section 611.297 Corrosion Control

This section is being repealed because it is not necessary. Corrosion control treatment requirements are discussed in detail in Subpart G of Part 611. There is no need to have a reference also in this section.

Section 611.491 Laboratory Testing Equipment

The Agency proposes to repeal this section because the laboratory testing equipment requirements are being proposed in Section 604.130.

Section 611.831 Monthly Operating Report

The Agency proposes to repeal this section because the monthly operating report requirements are being proposed in Section 604.165.

Section 611.833 Cross Connection Reporting

The Agency proposes to delete this section because the cross connection rules are being proposed in Subpart O of Part 604.

SEP Cross References

As a part of this regulatory overhaul, the Agency is moving special exception permits to Part 602. The Agency is removing the cross reference to Section 611.110 the following Sections: 611.101, 611.161, 611.202, 611.240, 611.241, 611.250, 611.251, 611.261, 611.280, 611.290, 611.300, 611.350, 611.351, 611.352, 611.353, 611.354, 611.355, 611.356, 611.358, 611.359, 611.360, 611.381, 611.480, 611.500, 611.521, 611.531, 611.532, 611.533, 611.602, 611.603, 611.604, 611.605, 611.612, 611.646, 611.648, 611.731, 611.732, 611.733, 611.800, 611.801, 611.802, 611.803, 611.804, 611.840, 611.885, 611.901, 611.902, 611.903, 611.904, 611.920, 611.922, 611.924, 611.953, 611.955, 611.970, 611.971, 611.972, 611.973, 611.979, 611.1001, 611.1002, 611.1003, 611.1004, 611.1007, 611.1008, 611.1009, 611.1011, 611.1013, 611.1016, 611.1017, 611.1018, 611.1019, 611.1020, 611.1021, 611.1053, 611.1054, 611.1055, 611.1056, 611.1057, 611.1058, 611.1059, 611.Appendix G, and 611.Table C.

PART 601

Section 601.101 General Requirements

The Agency proposes to incorporate the narrative finished water quality requirements currently found in Section 611.121(b) into Section 601.101(b)(1) and (2). Additionally, the Agency anticipates repealing 654.403, and therefore, the Agency proposes moving the recommended finished water contaminant concentration requirements in Section 654.203 into Section 601.101(b)(3).

Section 601.105 Definitions

The Agency's proposed new and amended definitions include the following definitions currently found in Part 651: air gap, atmospheric vacuum breaker, DPD method, effective external linkage, interconnection, and satellite supply. The Agency also proposes the following definitions from Part 611: conventional filtration treatment, CT or CT_{calc}, and SEP. Finally, the Agency proposes amendments to the following existing definitions in Part 601: maximum average daily demand and cross connection.

Section 601.115 Incorporations by Reference

The Agency adds incorporations by reference for standards used in new Part 604. See Section VII Supporting Documents of the Statement of Reasons.

PART 607

Section 607.103 Emergency Operation

The requirements found in Section 607.103 (emergency operations) overlaps with existing regulations in Section 653.303 (Emergency Operation). The Agency proposes to move the emergency operation requirements in Section 607.103 and Section 653.303 into proposed Section 604.135, and repealing Section 607.103. In particular, the requirement to issue a boil

order for microbiological contamination found in Section 607.103(a) is being moved to proposed Section 604.135(c)(1), which requires the community water supply to issue a boil order until corrective action is taken. The requirements to issue a boil order when the distribution pressure drops below 20 psi contained in Section 607.103(b) is being moved without substantive changes to proposed Section 604.135(c)(3)(C). The required notification provisions in Section 607.103(c) have been simplified and relocated to proposed Section 604.135(c)(2)(B) and (c)(2)(C).

Section 607.104 Cross Connections

Section 607.104, contains rules governing cross connections. The Agency also has rules covering cross connections found in Part 653.Subpart H (Sections 653.801 through 653.805). Under the Agency's proposal, Section 607.104 and Part 653. Subpart H are being combined into one regulation and located in Part 604.Subpart O. The requirements currently found in Section 607.104 are proposed in Section 604.1500 and Section 604.1505(a).

IV. TECHNICAL FEASIBILITY AND ECONOMIC REASONABLENESS

Section 27(a) of the Act requires the Board to consider the technical feasibility and economic reasonableness of all substantive rulemakings. The proposed regulations do not require the installation of any particular technology, but instead seeks to update and move the State's design, maintenance and operation rule for community water supplies into one new Part 604, and update the remaining portions of Subtitle F to accommodate the creation of this new part. Because the proposed regulation does not require the installation of any particular drinking water treatment technology, it is difficult to quantify the economic costs associated with compliance. The Illinois EPA believes the proposed rulemaking will lower the previous compliance costs, as it believes these proposed amendments consolidate the design, maintenance

and operation requirements in one Part, making compliance easier. The proposed rules will provide more clarity. This will provide an economic benefit to both the regulated community and the people of the State of Illinois. The Illinois EPA believes the proposed rules are technically feasible and economically reasonable.

By in large, the changes proposed to the regulations reflect best practices already being employed by community water supplies in Illinois and across the United States. The proposal will add clarity and provides proven technical means to ensure that Illinois water consumers obtain drinking water that is adequate in quantity and safe in quality. Most of these design, operation and maintenance practices are currently employed, and these rules will not result in an adverse economic impact to the citizens of Illinois.

V. AFFECTED FACILITIES AND OUTREACH

The Illinois EPA regulates 1,744 community water supplies. These water supplies utilize groundwater and surface water sources of potable water. Approximately, 1,006 community water supplies use groundwater sources, and 98 use surface water sources or groundwater sources under the direct influence of surface water. Seven community water supplies use both ground and surface water sources, and 652 community water supplies purchase water from other community water supplies. A total of 11,966,511 persons are served by these systems in Illinois. Water delivery can vary greatly. A very small community water system such as Stratford West Apartments near Macomb, Illinois produces on average 2,500 gallons per day. The City Chicago is capable of delivering over two billion gallons of water per day and routinely produces on average 510 MGD.

The Illinois EPA anticipates that all community water supplies in the State of Illinois will be affected by these proposed rules. The Agency believes the impact will be positive. The

Agency is hopeful that these proposed amendments will provide the regulated community with a concise, yet thorough, set of regulations governing the design, maintenance and operation of community water supplies.

The Illinois EPA conducted outreach on these proposed rules before proposing them to the Board. The Agency first circulated the draft rules in the Fall of 2016. The Agency accepted comments and made revisions to the outreach draft. The draft rules were circulated to nongovernmental organizations, community water supplies, other government agencies, and multiple engineering consultants and firms. The nongovernmental organizations include: Illinois Society of Professional Engineers, Illinois Rural Water Association, Illinois Section American Water Works Association, and Illinois Potable Water Supply Operators Association. Community water supplies include Aqua American, American Water, Otter Lake Water Commission, City Water Light and Power and Crystal Lake. The Agency also circulated the draft rules to Southern Illinois University Edwardsville, and Illinois Department of Public Health.

VI. SYNOPSIS OF TESTIMONY

The Illinois EPA anticipates four witnesses will prefile testimony before the Board's hearings on this proposal, and four witnesses will be present at the Board's hearing to answer any questions that the Board or the public may have. The witnesses include current and retired Agency employees within the Division of Public Water Supplies (DPWS). They are (1) David McMillan, Division Manager, (2) Rick Cobb, Deputy Division Manager; and (3) David Cook, Acting Manager Permit Section; and (4) Steve Johnson, retired but formerly Regional Manager for the Champaign DPWS office.

David McMillan has a Bachelor of Science Degree in Geological Sciences from Bradley University, and is an Illinois licensed professional geologist. He has worked in the Division of Public Water Supplies at Illinois EPA for 31 years, and has been the manager of the Division since December of 2010. In 1985, Mr. McMillan began his career in the Peoria Regional office as a member of the Groundwater Section. He advanced into a Unit Manager position in 1992 and moved to the Central Office in Springfield. In 2004, he became the interim Manager of the Field Operations Section, a position that later became permanent. In Mr. McMillan's current position, he leads a collaborative program of four sections staffed by environmental engineers, geologists and specialists. The Permit, Compliance Assurance, Groundwater and Field Operations Sections ensure the safety of the Illinois' drinking water supplies. Together the staff of the Division of Public Water Supplies oversees allocation of resources to conduct inspections, evaluates source water protection programs, issues permits and ensures the safety and compliance of community water systems. The Illinois EPA anticipates that Mr. McMillan will testify regarding policy considerations underlying the proposed rules, the general design, maintenance and operation requirements, distribution, cross connection controls and special exemption permits.

Rick Cobb has a Bachelor of Science in Geology from Illinois State University, and is an Illinois licensed professional geologist. He has worked in the Division of Public Water Supplies at Illinois EPA for 32 years, has been the manager of the Groundwater Section since 1991, and has been the Deputy Division Manager since 2002. During this time, he has worked on the development, implementation and enforcement of groundwater laws and regulations in Illinois. Illinois EPA anticipates that Mr. Cobb will testify regarding policy considerations underlying the proposed rules, including groundwater well construction and source water protection plans.

David Cook has a Bachelor of Science in Mechanical Engineering from the University of Illinois, and is an Illinois licensed professional engineer. He has worked in the Division of Public Water Supplies at Illinois EPA for 27 years, has been the manager of the Springfield Regional Office since 2002, and has been the acting manager of the Permit Section since 2012. During this time he has worked on the development, implementation and enforcement of drinking water regulations in Illinois. Illinois EPA anticipates that Mr. Cook will provide testimony on the Agency's policy considerations underlying the proposed rules, including surface water source development, clarification, filtration, disinfection, stabilization, and chemical application.

Steve Johnson has a Bachelor of Science Degree in Civil Engineering from the University of Missouri-Rolla, and is an Illinois licensed professional engineer. In 2016, he retired from the Illinois EPA after 37 years of service. Previously, he had worked in the Champaign Regional Office of the Division of Public Water Supplies since January of 1980, and was the manager of the Champaign Regional Office between May of 2012 and December 2016. Illinois EPA anticipates that Mr. Johnson will testify regarding policy considerations underlying the proposed rules, including aeration, softening, other treatment techniques, pumping facilities and storage.

VII. SUPPORTING DOCUMENTS

A. Documents Relied Upon

The Illinois Administrative Procedure Act provides that all proposed rulemakings must include:

a descriptive title or other description of any published study or research report used in developing the rule, the identity of the person who performed such study, and a description of where the public may obtain a copy of any such study or research report. If the study was performed by an agency or by a person or entity that contracted with the agency for the performance of the study, the agency shall also make copies of the

underlying data available to members of the public upon request if the data are not protected from disclosure under the Freedom of Information Act.

5 ILCS 100/5-40(b)(3.5). The Board’s procedural rules require the same information to be included with any rulemaking proposal filed with the Board in 35 Ill. Adm. Code 102.202(e). The Agency did not consult with a published study or research report when developing this proposal. The Agency did consult USEPA guidance manual: "Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Supplies Using Surface Water Sources. This guidance manual may be obtained from USEPA. The Agency did not perform any new studies, nor did the Agency contract with any outside entities to perform any studies for the development of this rulemaking proposal. Because no studies were conducted, there is no underlying data meeting the requirements of 5 ILCS 100/5-40(b)(3.5).

B. Incorporations by Reference and Attachments

This section of the Statement of Reasons provides a list of documents the Agency proposes to incorporate by reference. Section 102.202(d) requires the Agency to submit “[a]ny material to be incorporated by reference within the proposed rule pursuant to section 5-75 of the IAPA [5 ILCS 100/5-75].” The Agency proposes incorporating the following documents by reference:

Documents Incorporated By Reference
ASTM. American Society for Testing and Materials, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, (610) 832-9500.
ASTM C 76 -16 Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe, approved November 1, 2016.
ASTM C361 -16 Standard Specification for Reinforced Concrete Low-Head Pressure Pipe, approved September 1, 2016.
ASTM C443 -12 Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets, approved September 1, 2012.

ASTM D 1784-11, Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds, approved May 1, 2011.
ASTM D 1785-15 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120, approved August 1, 2015.
ASTM D 2464 - 15 Standard Specification for Threaded Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80, approved March 1, 2015.
ASTM D 2466 -15 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40, approved March 1, 2015.
ASTM D 2467-15 Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80 approved March 1, 2015.
ASTM D 2564 -12 Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems, approved August 1, 2012.
ASTM D 3139 -11 Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals, February 1, 2011.
ASTM F 437 -15 Standard Specification for Threaded Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80, approved March 1, 2015.
ASTM F 438- 15 Standard Specification for Socket-Type Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule, 40 approved March 1, 2015.
ASTM F 439 - 13 Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80, approved August 2013.
ASTM F 441/F 441M – 15 Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80, approved August 1, 2015.
ASTM F 442/F 442M -13 Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe (SDR–PR), approved June 1, 2013.
ASTM F 477 -14 Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe, approved September 15, 2014.
ASTM F 493-14 Standard Specification for Solvent Cements for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe and Fittings, approved November 1, 2014.
ASTM F 1216- 16 Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube, approved August 1, 2016.

ASME. American Society of Mechanical Engineers, Two Park Avenue, New York NY 10016, (800) 843-2763, www.asme.org
ASME BPVC-VIII-1-2015, Boiler & Pressure Vessel Code (BPVC), Section VIII— Rules for Construction of Pressure Vessels, Division 1: Rules for Construction and Pressure Vessels, 2015.
AWWA. American Water Works Association et al., 6666 West Quincy Ave., Denver, CO 80235 (303-794-7711)
AWWA C907-12 Injection-Molded Polyvinyl Chloride (PVC) Pressure Fittings, 4 In. Through 12 In. (100 mm Through 300 mm), for Water, Wastewater, and Reclaimed Water Service, effective March 1, 2012.
AWWA C909 -09 Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe, 4 In. through 24 In. (100 mm through 600 mm) for Water, Wastewater, and Reclaimed Water Service, effective March 1, 2010.
The Chlorine Institute, 1300 Wilson Boulevard, Suite 525, Arlington VA, 22209, (703) 894-4140, pubs@CL2.com .
Pamphlet 6: Piping Systems for Dry Chlorine, Edition 16, March 2013.
NSF. National Sanitation Foundation International, 3475 Plymouth Road, PO Box 130140, Ann Arbor, Michigan 48113-0140 (734-769-8010).
NSF/ANSI 14 -2012 Plastics Piping System Components and Related Materials, March 2013.
NSF/ANSI 372-2011 Drinking Water System Components—Lead Content, July 2013
USEPA, NSCEP. United States Environmental Protection Agency, National Service Center for Environmental Publications, P.O. Box 42419, Cincinnati, OH 45242-0419 (accessible on-line and available by download from http://www.epa.gov/nscep/)
Disinfection Profiling and Benchmarking Guidance Manual, August 1999, EPA 815-R-99-013

Under the Board's procedural rules, the Agency may not file copyrighted material electronically through the Clerk's Office On Line ("COOL"). 35 Ill. Adm. Code 101.302(h)(4). Instead, the Agency must either 1) file a paper original and the copyright owner's authorization for the board to make 2 copies, or 2) a license or other document that allows the Board to access

the document electronically and potentially print three copies. Id. The Agency elects to submit one original paper copy and a letter from the copyright holder that Board may make two copies of the original.

VIII. CONCLUSION

WHEREFORE, the Illinois EPA asks the Board to accept this Statement of Reasons and proceed to hearings on the above-captioned rulemaking proposal.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

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THIS FILING IS SUBMITTED ON RECYCLED PAPER

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)	
)	R17-
PUBLIC WATER SUPPLIES:)	
PROPOSED NEW 35 ILL. ADM)	
CODE 604 AND AMENDMENTS.)	(Rulemaking- Water)
TO 35 ILL. ADM CODE PARTS 601,)	
602, 607 AND 611)	

CERTIFICATION OF ORIGINATION

NOW COMES the ILLINOIS ENVIRONMENTAL PROTECTION AGENCY ("Illinois EPA"), by one of its attorneys, and pursuant to 35 Ill. Adm. Code 102.202(i), the Illinois EPA certifies that the regulatory proposal in the above captioned matter amends the most recent version of Parts 601, 602, 603, 607 and 611 of the Illinois Pollution Control Board's regulations, as published on the Board's website.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/ Joanne M. Olson
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IN THE MATTER OF:)	
)	R17-
PUBLIC WATER SUPPLIES:)	
PROPOSED NEW 35 ILL. ADM)	
CODE 604 AND AMENDMENTS.)	(Rulemaking- Water)
TO 35 ILL. ADM CODE PARTS 601,)	
602, 607 AND 611)	

MOTION FOR ACCEPTANCE

NOW COMES the Illinois Environmental Protection Agency ("Illinois EPA"), by and through its attorneys, and pursuant to 35 Ill. Adm. Code 102.106, 102.200, and 102.202, moves that the Illinois Pollution Control Board accept for hearing the Illinois EPA's proposal for a new 35 Ill. Adm. Code Part 604 and amendments to 35 Ill. Adm. Code Parts 601, 602, 607 and 611. This regulatory proposal includes (1) Notice of Filing; (2) Appearance; (3) Statement of Reasons; (4) Certification of Origination; and (5) Proposed Regulations.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/ Joanne M. Olson
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THIS FILING IS SUBMITTED ON RECYCLED PAPER

CERTIFICATE OF SERVICE

Joanne M. Olson, Assistant Counsel for the Illinois EPA, herein certifies that she has served a copy of the foregoing NOTICE OF FILING; APPEARANCE; STATEMENT OF REASONS; CERTIFICATE OF ORIGINATION; MOTION FOR ACCEPTANCE; and PROPOSED PARTS 601, 602, 604, 607 AND 611 upon persons listed on the Service List by mailing, unless otherwise noted on the Service List, a true copy thereof in an envelope duly addressed bearing proper first class postage and deposited in the United States mail at Springfield, Illinois on August 3, 2017.

/s/Joanne M. Olson
Joanne M. Olson

SERVICE LIST

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Illinois Department of Natural Resources
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Springfield IL 62702-1271

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