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DIVISION B
DRINKING WATER

CHAPTER 4042
SCOPE OF DIVISION, DEFINITIONS, FORMS, PUBLIC NOTICEFICATION, PUBLIC AND EDUCATION, CONSUMER CONFIDENCE REPORTS, REPORTING, AND RECORD MAINTENANCE

**567—40.1(455B) Scope of division.**

**40.1(1)** The department conducts the public water supply program and establishes minimum standards for private water supply system construction. The public water supply program includes the following: establishing drinking water standards, including maximum contaminant levels, treatment techniques, maximum residual disinfectant levels, action levels, monitoring, viability assessment, consumer confidence reporting, public notice, public water supply system (PWS) operator certification standards, environmental drinking water laboratory certification program, a state revolving fund loan program consistent with the federal Safe Drinking Water Act (SDWA), and establishing construction standards. The construction, modification, and operation of any PWS requires a permit from the department. Certain construction permits are issued upon certification by a licensed professional engineer that a project meets standards, and in certain instances, permits are issued by local authorities. Private water supplies are regulated by local boards of health.

**40.1(2)** The chapters listed below contain the requirements and provisions for the noted portions of the public water supply program.

567—Chapter 39: proper well closure or abandonment.
567—Chapter 40: scope of division, public notice and education, consumer confidence reports, reporting, and recordkeeping requirements.
567—Chapter 41: drinking water standards and monitoring requirements.
Chapter 43: design, construction, fee, operating, and operation permit requirements.
Chapter 44: drinking water state revolving fund program.
Chapter 49: nonpublic water supply wells.
Chapter 50: water use, withdrawals, and diversions.
Chapter 53: protected water sources.
Chapter 54: water use permit restrictions and well interference compensation.
Chapter 55: aquifer storage and recovery.
Chapter 81: operator certification.
Chapter 82: water well contractor certification.
Chapter 83: laboratory certification.

**567—40.2(455B) Definitions, references, and abbreviations.** The terms, references, and abbreviations defined in this rule are applicable to this division and the chapters listed in rule 567—40.1(455B), unless otherwise specified.

**40.2(1)** Defined terms.

*"Action level"* or *"AL"* means the lead or copper concentration(s) in water that determine, in some cases, the treatment requirements that a water system is required to complete.

*"Acute health effect"* means the health effect of a contaminant that is an immediate rather than a long-term risk to health.

*"Animal confinement"* means a lot, yard, corral, or similar structure in which the concentration of livestock or poultry is such that a vegetative cover is not maintained.

*"Animal pasturage"* means a fenced area where vegetative cover is maintained and animals are enclosed.

*"Animal waste"* means animal wastes consisting of excreta, leachings, feed losses, litter, washwaters or other associated wastes.

*"Animal waste stockpiles"* means the stacking, composting or containment of animal wastes.

*"Animal waste storage basin or lagoon"* means a fully or partially excavated or diked earthen structure used for containing animal waste, including earthen side slopes or floor.

*"Animal waste storage tank"* means a completely fabricated structure, with or without a cover, either formed

in place or transported to the site, used for containing animal wastes.

*"Antisiphon device"* means a device that prevents back siphonage by means of a relief valve that automatically opens to the atmosphere, preventing the creation of subatmospheric pressure within a pipe, thereby preventing water from reversing its flow.

*"Authority"* means the Iowa finance authority (IFA) as established by Iowa Code chapter 16.

*"Backflow"* means the flow of water or other liquids, mixtures, or substances into a potable water supply's distribution system from any source other than its permitted source.

*"Backflow preventer"* is a device or means to prevent backflow into a potable water system.

*"Back siphon"* means the flowing back of used, contaminated, or polluted water from a plumbing fixture or vessel as a result of negative or subatmospheric pressure within the distribution system.

"*Best available technology"* or *"BAT"* means the best technology, treatment techniques, or other means that the state finds, after examination for efficacy under field conditions and not solely under laboratory conditions, are available after taking cost into consideration.

*"CFR"* or *"Code of Federal Regulations"* means the federal administrative rules adopted by the United States in effect as of July 1, 2024. The amendment of the date contained in this definition shall constitute the amendment of all CFR references contained in Division B unless a date of adoption is set forth in a specific rule.

*"Cistern"* means a tank that stores rainwater from roofs.

*"Clean compliance history"* means, for the purposes of 567—paragraph 41.2(1)*"e"*(4)"2," a record of no monitoring violations and no coliform treatment technique trigger exceedances or treatment technique violations under 567—subrule 41.2(1).

*"Combined filter effluent"* or *"CFE"* is generated when the effluent water from the individual filters in operation is combined into one stream. Representative samples of the combined filter effluent are monitored to determine compliance with treatment technique requirements.

*"Composite correction program"* or *"CCP"* is a systematic procedure that identifies and corrects the unique factor combinations in the areas of design, operation, maintenance and administration that limit the performance of a filtration plant. A CCP includes a comprehensive performance evaluation (CPE) and comprehensive technical assistance (CTA).

*"Comprehensive technical assistance"* or *"CTA"* is a CCP's performance improvement phase that is implemented if the CPE results indicate improved performance potential by a filtration plant, in which the system must identify and address plant-specific factors.

*"Consecutive PWS"* means an active PWS that purchases or obtains all or a portion of its water from another PWS, also called a wholesale system. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

*"Conservation easement"* means an interest in land that entitles a person to use the land possessed by another (affirmative easement), or to restrict uses of the land subject to the easement (negative easement). A conservation easement restricts the landowner to uses that are compatible with resource conservation.

*"Contiguous"* means directly adjacent along all or most of one side of a legally defined piece of property. Tracts of land involved in the same operation or water supply and separated only by roads, railroads, or bike trails are deemed contiguous tracts.

*"Corrosive water"* means a water that, due to its physical and chemical characteristics, may cause leaching or dissolving of the constituents of the transporting system in which it is contained.

*"Cross connection"* means any actual or potential connection between a potable water supply and any other source or system through which it is possible to introduce into the potable system any used water, industrial fluid, gas, or other substance other than the intended potable water with which the system is supplied.

*"CT"* means the product of the residual disinfectant concentration (C, in mg/L) determined before or at the first customer, and the corresponding disinfectant contact time (T, in minutes), C x T. If a PWS applies disinfectants at more than one point prior to the first customer, it must determine the CT for each disinfectant sequence at or before the first customer to determine the total inactivation ratio (also known as total percent inactivation). When determining the total inactivation ratio, a PWS must determine C for each disinfection sequence and the corresponding T before any subsequent disinfection application point(s). The CT is dependent upon the microorganism to be inactivated and is affected by the disinfectant type, pH, and water temperature.

*"Customers"* in consumer confidence reports are defined as billing units or service connections to which a CWS delivers water.

*"Deep well"* means a well located and constructed such that there is a continuous layer of low permeability soil or rock at least 5 feet thick located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

*"Disinfection profile"* is defined in 40 CFR §141.2. The procedure for developing a disinfection profile is contained in 567—paragraph 43.9(2)*"b"* and 567—subrule 43.10(2).

*"Drinking water state revolving fund"* or *"DWSRF"* means the department-administered fund intended to develop drinking water revolving loans to help finance drinking water infrastructure improvements, source water protection, system technical assistance, and other activities intended to encourage and facilitate PWS rule compliance and public health protection.

*"DWSRF funds"* means the combination of a particular fiscal year's federal capitalization grant appropriation plus the 20 percent state of Iowa match, and any additional funds made available through the program.

*"Eligible cost"* means the cost of all labor, material, machinery, equipment, loan initiation and loan service fees, project planning, design and construction engineering services, legal fees and expenses directly related to projects, capitalized interest during the construction of projects, and all other expansion, construction, and rehabilitation of all or part of projects included in the funding request placed on the draft intended use plan as a fundable project, subject to commission approval.

*"Emergency/standby well or connection"* means a well or a connection to another PWS that is used less than 30 calendar days per calendar year.

*"Federal cross-cutters"* means the federal laws and authorities that apply to projects funded through the DWSRF.

"*Federal fiscal year"* or *"FFY"* means the federal fiscal year starting October 1 and ending September 30.

*"First draw sample"* means a one-liter tap water sample, collected in accordance with 567—paragraph 41.4(1)*"c,"* that has been standing in plumbing pipes at least six hours and is collected without flushing the tap.

*"GAC10"* means granular activated carbon filter beds with an empty-bed contact time of ten minutes based on average daily flow and a 180-day carbon reactivation frequency, except that the reactivation frequency for GAC10 is 120 days when used as a BAT for compliance with the MCL locational running annual average for TTHMs and HAAs.

*"Health advisory"* or *"HA"* means a group of levels set by the EPA below which no harmful health effect is expected from a given contaminant in drinking water. The HAs used by the department are listed in the most current edition of the EPA's Drinking Water Regulations and Health Advisories, available at www.epa.gov/sdwa/drinking-water-health-advisories-has. The lifetime HA is the concentration of a chemical in drinking water that is not expected to cause any adverse noncarcinogenic effects over a lifetime of exposure, with a margin of safety. The long-term HA is the concentration of a chemical in drinking water that is not expected to cause any adverse noncarcinogenic effects up to approximately seven years (10 percent of an individual's lifetime of exposure), with a margin of safety.

*"Human consumption"* means water used as part of or in connection with drinking; washing; food processing; incidental to commercial food preparation, such as: water used in beverages or other food items; ice used in drinks or in salad bars; water for washing of food; water used for washing dishes, pans or utensils used in food preparation or service; water used for cleanup and washing of food preparation or service areas; or water for bathing, showering, hand washing, or oral hygiene purposes. Human consumption does not include: water for production of packaged or bulk food products regulated by other state or federal regulatory agencies, such as livestock slaughtering or bottled or canned food and beverages; cooling water; industrial or commercial wash waters used for nonfood products; irrigation water; or water used in toilets or urinals.

*"Impoundment"* means a reservoir, pond, or lake in which surface water is retained for a period of time, ranging from several months upward, created by constructing a barrier across a watercourse and used for water storage, regulation, or control.

*"Individual filter effluent"* or *"IFE"* means the effluent water from a specific filter. Representative samples of the IFE are monitored to determine compliance with TT requirements.

*"Influenced groundwater"* or *"IGW,"* also known as groundwater under the direct influence (GWUDI) of surface water, means any groundwater that is under the direct or indirect influence of surface water, as determined by the presence of (1) significant occurrence of insects or other macroorganisms, algae or large-diameter pathogens such as *Cryptosporidium* or (2) significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH that correlate to climatological or surface water conditions or other parameters as specified in 567—43.5(455B).

*"Initial compliance period"* means the first full three-year compliance period of a compliance cycle.

*"Intended use plan"* or *"IUP"* means a plan identifying the intended uses of funds available for loans in the DWSRF for each fiscal year as described in Section 1452 of the SDWA.

*"Lead free,"* when used with respect to solder and flux, refers to solders and flux containing not more than 0.2 percent lead and not more than a weighted average of 0.25 percent lead when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures in accordance with 42 U.S.C. 300-g-6. The following requirements of 40 CFR 143, Subpart B, that pertain to PWSs are adopted by reference: 40 CFR §143.10, 40 CFR §143.11, and 40 CFR §143.12(b-f).

*"Lead service line"* or *"LSL"* means a service line made of lead that connects the water main to the building inlet and any lead pigtail, gooseneck, or other fitting that is connected to such a lead line. A lead gooseneck is not considered a lead service line unless it exceeds ten feet.

*"Level 2 assessment"* is defined in 40 CFR §141.2. A Level 2 assessment is conducted by a department water supply inspector and will typically include the system operator. The department may tailor specific assessment elements with respect to a system's size and type and a distribution system's size, type and characteristics. A system must comply with any expedited actions or additional actions required by the department in the case of an *E. coli* MCL violation.

*"Maintenance"* means the replacement of equipment or materials that are necessary to maintain the operation of a PWS but do not alter capacity, water quality or treatment method, or effectiveness.

*"Nonacute health effect"* means the health effect of a contaminant which is a long-term rather than immediate risk to health.

*"Nontransient noncommunity water system"* or *"NTNC"* means a PWS, other than a CWS, that regularly serves at least 25 of the same persons four hours or more per day, for four or more days per week, for 26 or more weeks per year. Examples of NTNCs are schools, day-care centers, factories, offices and other PWSs that provide water to a fixed population of 25 or more people. In addition, other service areas, such as hotels, resorts, hospitals and restaurants, are considered as NTNCs if they regularly serve at least 25 or more of the same persons for four or more hours per day, for four or more days per week, for 26 or more weeks of the year.

*"Point-of-use treatment device"* or *"POU"* is a treatment device applied to a single tap or multiple taps that reduces contaminants in drinking water at those taps but is not intended to treat all of the water in the facility.

*"Population served"* means the total number of persons served by a PWS that provides water intended for human consumption. For municipalities that serve only the population within their incorporated boundaries, it is the last official (or officially amended) U.S. census population. For all other CWSs, it is either the actual counted population that is verifiable by the department or the population calculated by multiplying the number of service connections by an occupancy factor of 2.5 persons per service connection. For municipalities that also serve outside their incorporated boundaries, the served population must be added to the official census population as determined either by verifiable count or by the 2.5 persons per service connection occupancy factor. For NTNC and TNC systems, it is the average number of daily employees plus the average number of other persons served, such as customers or visitors during the peak month of the year, regardless of whether each person actually uses the water for human consumption. Where a system provides water to another PWS (consecutive PWS) that is required to have an operation permit, the population of the recipient PWS shall not be counted as a part of the system providing the water. CWSs and NTNCs will pay their operation permit fees based upon the population served.

*"Potable water"* means water that is suitable for human consumption. Drinking water that meets the requirements of 567—Chapters 40, 41, and 43 is considered to be potable water.

*"Privy"* means a structure used for the deposition of human body wastes.

*"Project"* includes the planning, design, construction, alteration or extension of any PWS but does not

include the maintenance of a system.

*"Project priority list"* or *"PPL"* means the list of projects in priority order that may qualify for DWSRF loan assistance contained in the IUP document prepared pursuant to 567—44.8(455B). The priority list identifies all projects eligible for funding and the points assigned to each project pursuant to 567—44.7(455B).

*"Public water supply system control"* is defined as one of the following forms of authority over a service line: authority to set standards for construction, repair, or maintenance of the service line; authority to replace, repair, or maintain the service line; or ownership of the line. Contaminants added to the water under circumstances controlled by the water consumer or user, with the exception of those contaminants resulting from the corrosion of piping and plumbing caused by water quality, are excluded from this definition.

*"Public water supply system"* or *"PWS"* means a system that provides water to the public for human consumption through pipes or other constructed conveyances, if such a system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. This includes any collection, treatment, storage, and distribution facilities under the system operator's control and used primarily in connection with such a system and any collection or pretreatment storage facilities not under such control that are used primarily in connection with such a system. The term does not include any special irrigation district. A PWS is either a community water system (CWS) or a noncommunity water system (NCWS).

*"Regional water system"* means a PWS in which the projected number of service connections, in at least 50 percent of the distribution system's length, does not average more than eight service connections per linear mile of water main.

*"Sanitary sewer pipe"* means a sewer complying with the department's standards for sewer construction.

*"Sanitary survey"* means a review and on-site inspection conducted by the department of a PWS's water source(s), facilities, equipment, operation and maintenance (O&M), and records for the purpose of evaluating the adequacy of such source(s), and facilities, equipment, and O&M for producing and distributing safe drinking water, in order to identify improvements necessary to maintain or improve drinking water quality pursuant to 567—subrule 43.1(7).

*"SDWA"* or *"Act"* means the Safe Drinking Water Act as amended (42 U.S.C. 300f et seq), unless a date of adoption is set forth in a specific rule.

*"Sedimentation"* means a water treatment process for solid particle removal from a suspension before filtration by gravity or separation.

*"Septic tank"* means a watertight structure into which wastewater is discharged for solids separation and digestion.

*"Service connections"* means the total number of active and inactive service lines originating from a water distribution main for the purpose of delivering water intended for human consumption. For municipalities, rural water districts, mobile home parks, housing developments, and similar facilities, this includes, but is not limited to, occupied and unoccupied residences and buildings, provided that there is a service line connected to the water main (or another service line), and running onto the property. For rental properties which are separate PWSs, this includes, but is not limited to, the number of rental units. Connections to a system that delivers water by a constructed conveyance other than a pipe are excluded from this definition if:

1. The water is used exclusively for purposes other than human consumption;

2. The department determines that alternative water to achieve the equivalent level of public health protection provided by the applicable national primary drinking water regulation is provided for human consumption; or

3. The department determines that the water provided for human consumption is centrally treated or treated at the entry point by the provider, a pass-through entity, or the user to achieve the equivalent level of protection provided by the applicable national primary drinking water regulations.

*"Service line sample"* means a sample of water, one liter in volume, that has been standing for at least six hours in a service line, collected in accordance with 567—paragraph 41.4(1)*"c,"* and used to determine a lead or copper concentration.

*"Shallow well"* means a well located and constructed such that there is not a continuous layer of low permeability soil or rock (or equivalent retarding mechanism acceptable to the department) at least 5 feet thick, the top of which is located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

**Commented [1]:** Added to final rules as PPL is abbreviated in Ch 90.

**Commented [2]:** "unless a specific..." - added in final rule as some rules specify specific SDWA dates.

*"Significant deficiency"* includes a defect in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the department determines to be causing, or has the potential for causing the introduction of contamination into the water delivered to consumers.

*"Significant noncompliance"* or *"SNC"* means the failure to comply with any national primary drinking water standard as adopted by the state of Iowa according to criteria established by the EPA administrator.

*"Source/entry point"* or *"SEP"* means the entry point of water into the distribution system that is representative of each source after application of all treatment and before the first service connection. This point is used for the collection of certain compliance samples. If a representative sample of all water sources cannot be obtained, as determined by the department, separate SEPs with the appropriate monitoring requirements will be assigned by the department.

*"Special irrigation district"* means an irrigation district in existence prior to May 18, 1994, that provides primarily agricultural service through a piped water system with only incidental residential or similar use where the system or the residential or similar users of the system comply with numbered paragraphs "2" and "3" in the definition of "service connections."

*"Standard specifications"* means specifications submitted to the department for use as a reference in reviewing future plans for proposed water main construction.

*"Ten States Standards"* means the "Recommended Standards for Water Works," 2022 edition, a report of the Great Lakes—Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, available on their website at www.health.state.mn.us/communities/environment/water/tenstates/standards.html.

*"Transient noncommunity water system"* or *"TNC"* is defined in 40 CFR §141.2.

*"Treatment technique"* or *"TT"* means a treatment process required to minimize the level of a contaminant in drinking water. A treatment technique is specified in cases where it is not technically or economically feasible to establish an MCL, and it is an enforceable procedure or level of technological performance which PWSs must follow to ensure control of a contaminant.

*"Uncovered finished water storage facility"* is defined in 40 CFR §141.2. Such facilities are prohibited.

*"Unregulated contaminant"* means a contaminant for which no MCL has been set, but which does have federal monitoring requirements for certain PWSs set forth in 40 CFR §141.40, and additional reporting requirements in 567—40.7(455B).

*"Viability"* means the technical, financial, and managerial ability to comply with applicable national primary drinking water standards as adopted by the state of Iowa. Viability is the ability of a system to remain in compliance insofar as the requirements of the SDWA.

*"Waterborne disease outbreak"* means the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a PWS that is deficient in treatment, as determined by the Iowa department of health and human services.

*"Water distribution system"* is defined in Iowa Code section 455B.211. The term includes any storage facilities and pumping stations.

*"Water main pipe"* means a water main complying with the department's standards for water main construction.

**40.2(2)** *Definitions in Iowa Code and the CFR.* The following terms are defined in the referenced locations.

*a.* Iowa Code section 455B.101: "commission," "department," and "director."

*b.* Iowa Code section 455B.171: "maximum contaminant level."

*c.* 40 CFR §141.2: "bag filters," "bank filtration," "cartridge filters," "coagulation," "combined distribution system" or "CDS," "community water system" or "CWS," "compliance cycle," "compliance period," "comprehensive performance evaluation" or "CPE," "confluent growth," "contaminant," "conventional filtration treatment," "corrosion inhibitor," "diatomaceous earth filtration," "direct filtration," "disinfectant," "disinfection," "dose equivalent," "effective corrosion inhibitor residual," "enhanced coagulation," "enhanced softening," "filter profile," "filtration," "finished water," "flocculation," "flowing stream," "GAC20," "gross alpha particle activity," "gross beta particle activity," "haloacetic acids" or "HAA5," "halogen," "lake" or "reservoir," "large water system," "legionella," "level 1 assessment," "locational running annual average" or "LRAA," "man-made beta particle and photon emitters," "maximum contaminant level" or "MCL," "maximum

contaminant level goal" or "MCLG," "maximum residual disinfectant level" or "MRDL," "maximum residual disinfectant level goal" or "MRDLG," "medium-size water system," "membrane filtration," "noncommunity water system" or "NCWS," "optimal corrosion control treatment," "performance evaluation sample," "picocurie" or "pCi," "plant intake," "point of disinfectant application," "point-of-entry treatment device" or "POE," "presedimentation," "rem," "repeat compliance period," "residual disinfectant concentration," "sanitary defect," "seasonal system," "single-family structure," "slow sand filtration," "small water system," "standard sample," "supplier of water," "surface water" or "SW," "SUVA," "too numerous to count," "total organic carbon" or "TOC," "total trihalomethanes" or "TTHM," "trihalomethane" or "THM," "two-stage lime softening," "virus," and "wholesale system."

**40.2(3)** *References and abbreviations.*

*a. References.* The abbreviated name of the professional associations and societies whose standards are referenced in this division and the websites where the standards, methods, or guidance documents may be obtained are listed in the following table. Unless otherwise noted in a specific rule of this division, the effective date of the specific standards, editions, or volumes is September 1, 2024.

| Abbreviated Name | Association/Society Name | Standards/Publications Website |
|---|---|---|
| ANSI | American National Standards Institute | webstore.ansi.org |
| APHA | American Public Health Association | www.apha.org |
| API | American Petroleum Institute | www.api.org/products-and-services/standards |
| ASHRAE | American Society of Heating, Refrigerating and Air-Conditioning Engineers | www.ashrae.org/technical-resources/standards-and-guidelines |
| ASME | American Society of Mechanical Engineers | www.asme.org/codes-standards |
| ASTM | Annual Book of Standards published by ASTM International | www.astm.org/products-services/standards-and-publications.html |
| AWS | American Welding Society | www.aws.org/Standards-and-Publications |
| AWWA | American Water Works Association | www.awwa.org/Publications/Standards |
| Iowa DOT | Iowa department of transportation | iowadot.gov/specifications |
| NACE | National Association of Corrosion Engineers International, part of the Association for Materials Protection and Performance (AMPP) | www.ampp.org/standards/ampp-standards/about-ampp-standards |
| NARA | National Archives and Records Administration | www.archives.gov |
| NEC | National Electrical Code, part of the National Fire Codes published by the National Fire Protection Association (NFPA) | www.nfpa.org |
| NEMI | National Environmental Methods Index | www.nemi.gov |
| NGWA | National Ground Water Association | www.ngwa.org/publications-and-news/industry-resource-library |
| NSF | National Sanitation Foundation | www.nsf.org/nsf-standards |
| NTIS | National Technical Information Service, a bureau of the U.S. Department of Commerce | www.ntis.gov |
| Standard Methods, SM, or SM Online | Standard Methods for the Examination of Water and Wastewater, published by the American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF) | https://www.standardmethods.org |
| USGS | United States Geological Survey | www.usgs.gov |
| WSC | Water Systems Council | www.watersystemscouncil.org/ resources/well-standards |

*b. Abbreviations.* In addition to the abbreviations listed in the definitions in 40.2(1), the following abbreviations are used in this division.

| Abbreviation | Meaning |
|---|---|
| ALE | action level exceedance |
| ASR | aquifer storage and recovery |
| CCR | consumer confidence report |
| CCT | corrosion control treatment |
| CDC | Centers for Disease Control and Prevention |

| | |
|---|---|
| CEU | continuing education unit |
| DBP | disinfection byproduct |
| DIT | direct integrity test |
| DOC | dissolved organic carbon |
| DRC | direct responsible charge |
| EPA | U.S. Environmental Protection Agency |
| FDA | U.S. Food and Drug Administration |
| ft | foot |
| GAC | granular activated carbon |
| GW | groundwater |
| HAA | haloacetic acids |
| HAL | health advisory level |
| HPC | heterotrophic plate count |
| ID | identification (number) |
| IDSE | initial distribution system evaluation |
| IFA | Iowa finance authority |
| IGS | Iowa geological survey |
| IOC | inorganic chemical |
| IWFDS | Iowa Wastewater Facilities Design Standards |
| L | liter |
| LRV | log removal value |
| LSLR | lead service line replacement |
| MDL | method detection limit |
| µg/L | microgram per liter |
| mg/L | milligram per liter |
| mL | milliliter |
| mm | millimeter |
| MOR | monthly operating report |
| mrem | 1/1000 of a rem |
| MRT | maximum residence time |
| MS | matrix spike |
| NRCS | Natural Resources Conservation Service (part of the U.S. Department of Agriculture) |
| NTU | nephelometric turbidity units |
| O&M | operation and maintenance |
| OCC | optimal corrosion control |
| OCCT | optimal corrosion control treatment |
| OEL | operational evaluation level |
| OWQP | optimal water quality parameter |
| OXID | oxidation |
| P/A | presence-absence |
| PAC | powdered activated carbon |
| PCB | polychlorinated biphenyl |
| pCi/L | picocuries per liter |
| PE | public education |
| PN | public notice |
| PQL | practical quantification level |
| psi | pounds per square inch |
| PTA | packed tower aeration |
| PVC | polyvinyl chloride |
| QCRV | quality control release value |
| RAA | running annual average |
| RDC | residual disinfectant concentration |
| SCH | schedule (as in schedule 40 rating) |
| SD | separation distance |

**Commented [3]:** "SD" - added in final rule as abbreviation is used in Ch 43.

| | |
|---|---|
| SDR | standard dimension ratio |
| SEP | source/entry point |
| SMP | standard monitoring plan |
| SMR | self-monitoring requirement |
| SOC | synthetic organic chemical |
| SW/IGW | surface water/influenced groundwater |
| SRF | state revolving fund (see DWSRF) |
| TRC | total residual chlorine |
| U.S.C. | United States Code |
| URTH | unacceptable risk to health |
| UV | ultraviolet |
| VOC | volatile organic chemical |
| WCP | watershed control program |

**567—40.3(17A,455B) Forms.** All forms used by the public to apply for department approvals and to report on activities related to the department's public water supply program may be obtained on the department's website at www.iowadnr.gov or upon request. Properly completed forms shall be submitted to the department as noted in the form instructions.

**40.3(1)** *Construction permit application forms.* The required public water supply construction permit application forms (also known as schedules) and other forms are listed below.

| Schedule No. | Form Name | Form Number |
|---|---|---|
| - | Water Supply Service Agreement | 542-3121 |
| 1a | General Information | 542-3178 |
| 1b | Minor Water Main Construction Permit | 542-3151 |
| 1c | Fee Calculations | 542-3179 |
| 2a | Water Mains, General | 542-3030 |
| 2b | Water Mains, Specifications | 542-3031 |
| 2c | Notification of Minor Water Main Construction | 542-3152 |
| 3a | Water System, Design Capacity Data | 542-3032 |
| 3b | Source Information | 542-3029 |
| 3c | Water Quality Data | 542-3028 |
| 4 | Site Approval | 542-3078 |
| 5a | Well Construction | 542-3027 |
| 5b | Well Appurtenances | 542-3026 |
| 5c | Well Profile | 542-3077 |
| 5d | Surface Water Supply | 542-3139 |
| 6a | Distribution Water Storage Facilities | 542-3140 |
| 7 | Schematic Flow Diagram | 542-3142 |
| 8 | Aeration | 542-3143 |
| 9 | Clarification-Sedimentation | 542-3144 |
| 10 | Suspended Solids Contact | 542-3145 |
| 11 | Ion Exchange | 542-3146 |
| 12 | Filters | 542-3147 |
| 13a | Chemical Addition | 542-3241 |
| 13b | Dry Chemical Addition | 542-3130 |
| 13c | Gas Chlorination | 542-3131 |
| 13d | Fluoridation | 542-3132 |
| 13e | Sampling and Testing | 542-3133 |
| 14 | Pumping Station | 542-3134 |
| 15 | Water Storage Facilities | 542-3135 |
| 16a | Wastewater General | 542-3136 |
| 16b | Waste Treatment Ponds | 542-3137 |
| 16c | Filtration and Mechanical | 542-3138 |
| 16d | Discharge to Sewer | 542-3103 |
| - | Notification of Completion of Construction | 542-3019 |

**40.3(2)** *Operation permit and public water supply forms.* The required public water supply sampling forms and the operation permit application and monthly operating report (MOR) forms are available from the department.

**567—40.4(17A,455B) PWS construction permit application procedures.**

**40.4(1)** *General procedures.* Applications for written department approval for any new construction or for reconstruction pursuant to 567—Chapter 43 shall consist of complete plans and specifications, an application fee, and appropriate water supply construction permit application schedules.

*a.* The department will review a construction permit application and issue a construction permit for project approval if the review shows that a project meets all construction standards, in accordance with 567—Chapter 43. Projects that do not meet all construction standards will not be approved unless a waiver pursuant to 567—paragraph 43.3(2)*"b"* is granted. A waiver may be requested when plans and specifications are submitted or after a design discrepancy is pointed out to the applicant.

*b.* The department may review project plans and specifications and provide comments or recommendations to the applicant. Departmental comments and recommendations are advisory, except when departmental review determines that a facility does not comply with department-approved plans or specifications or the construction standards, pursuant to the criteria for project design certification. The system owner must correct any deficiencies in a timely manner, as set forth by the department.

**40.4(2)** *Site survey.* For public water sources and for below-ground level finished water storage facilities, a site survey and approval must be made by the department. The manner and procedures for applying for and processing a site survey are the same as in 40.4(1), except that the following information must be submitted by the applicant's engineer.

*a.* A preliminary engineering report or cover letter containing a brief description of the proposed source or storage facility and assurance that the project is in conformance with the long-range planning of the area.

*b.* Completed Schedules 1a and 4.

*c.* A detailed map showing all potential sources of contamination (567—Chapter 43, Table A, contains more information) within:

(1) 1,000 feet of a proposed well location, with a scale no smaller than one inch = 200 feet;

(2) 200 feet of a proposed below-ground level finished water storage facility;

(3) 2,500 feet from a proposed surface water source, with a scale no smaller than one inch = 660 feet;

(4) 2,500 feet from an impoundment (within the drainage area), with a scale no smaller than 1=one inch = 660 feet; or

(5) Six miles upstream of a proposed river intake.

**40.4(3)** *Modifications of an approved construction project.* Persons seeking to modify a water supply construction project after receiving a construction permit from the department shall submit the appropriate fee and either an addendum to plans and specifications, a change order, or revised plans and specifications at least 30 days prior to the planned modification. The department shall review the submitted material within 30 days of submission and shall issue a supplemental permit if the proposed modifications meet department standards.

**40.4(4)** *Certification of project design.* A permit shall be issued for the construction, installation, or modification of a PWS or for a water supply distribution system extension if a qualified, licensed professional engineer certifies that the plans and specifications comply with federal and state laws and regulations or that a waiver to standards has been granted by the department.

**567—40.542.1(455B) Public noticefication (PN).**

**40.5(1)42.1(1)** *Applicability.* Each owner or operator of a public water supply system (PWS) must give notice for all violations of public drinking water rules and for other situations, as listed in this subrule. The term "violations" includes violations of, or failure to comply with, the maximum contaminant level (MCL), maximum residual disinfection level (MRDL), treatment technique (TT), monitoring requirements, and testing procedures in 567—Chapters 40, 41, and through 43. The term "other situations" includes all situations determined by the department to require a PNpublic notice, including the violations and situations listed in 40.5(2), 40.5(3), and 40.5(4),such as a waterborne disease outbreak or other waterborne emergency; exceedance of the nitrate MCL

**Commented [4]:** Heading of new 40.5 was changed as the term "public notice" is used in the subrule and paragraph headings, and the term "notice" is used in rest of the rule.

**Commented [CC[5]:** "including the violations..." - replaced the text listing the violations with citations of the appropriate rule sections.

**Commented [6]:** waterborne disease - see 40.5(2)"a"(8).

~~by noncommunity systems where granted permission by the department under 567—paragraph 41.3(1)"a";~~ ~~exceedance of fluoride level over 2.0 mg/L;~~ ~~availability of unregulated contaminant monitoring data in accordance with CFR Title 40, Part 141.40;~~ ~~failure to meet the terms of a compliance schedule;~~ ~~exceedance of a health advisory as determined by the department;~~ ~~failure to comply with the public notification requirements, public education requirements, or consumer confidence report requirements;~~ ~~failure to meet the terms of an administrative or court order;~~ ~~failure to meet the data and other reporting requirements;~~ ~~failure to retain a certified operator in accordance with 567—subrule 43.1(5);~~ and any other situation where the department determines that PN~~public notification~~ is needed. PN~~ublic notification~~ is not required for ammonia monitoring conducted pursuant to 567—subrule 41.11(2).

*a. ~~Types of public notice~~PN tiers.* PN~~ublic notice~~ requirements are divided into three tiers~~,~~ to ~~take into~~ account for the seriousness of a~~the~~ violation or situation and of any potential adverse health effects that may be involved. The PN~~public notice~~ requirements for each violation or situation are determined by the tier to which it is assigned.

(1) Tier 1 PN~~public notice~~ is required for all drinking water violations and situations with significant potential to have serious adverse effects on human health as a result of short-term exposure.

(2) Tier 2 PN~~public notice~~ is required for all other drinking water violations and situations with potential to have serious adverse effects on human health.

(3) Tier 3 PN~~public notice~~ is required for all other drinking water violations and situations not included in Tier 1 or Tier 2.

*b. General PN requirements~~Notification~~.* Each PWS~~public water system~~ must provide PN~~public notice~~ to persons served by the ~~water~~ system, in accordance with this rule. A copy of the notice must also be sent to the department, in accordance with ~~the requirements under paragraph~~ 40.8(1)*"c."* ~~42.4(1)"c."~~

(1) Consecutive systems. PWSs~~Public water systems~~ that sell or otherwise provide drinking water to other PWS~~public water systems~~ (i.e., to consecutive systems) are required to provide~~give~~ PN~~public notice~~ to the owner or operator of the consecutive system. The consecutive system is responsible for providing PN~~public notice~~ to the persons it serves~~,~~ and must meet the appropriate t~~T~~ier requirements for the violation.

(2) ~~Systems with multiple p~~Physically or hydraulically isolated distribution systems. If a ~~public water system~~PWS has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, the department may allow the system to limit distribution of the PN~~public notice~~ only to persons served by that portion of the system that~~which~~ is out of compliance. Department ~~P~~permission ~~by the department~~ to limit distribution of the notice must be granted in writing.

**40.5(2)~~42.1(2)~~** *Tier 1 PN~~public notice~~ requirements.*

*a. ~~Violations and situations which require~~ Tier 1 PN~~notice~~ when required.* The following ~~types of~~ violations or situations require Tier 1 PN ~~public notice~~:

(1) Violation of the ~~MCL for~~ *E. coli MCL*, as specified in 567—paragraph 41.2(1)*"a."*

~~(2) Rescinded IAB 4/11/18, effective 5/16/18.~~

(2~~3~~) Violation of either the ~~MCL for~~ nitrate or nitrite MCL, as defined in 567—subparagraph 41.3(1)*"b"*(1).

(3~~4~~) Failure by the ~~water~~ system to collect a confirmation sample within 24 hours of its~~the system's~~ receipt of the first sample result showing a ~~n exceedance of the~~ nitrate or nitrite MCL exceedance, when directed by the department, as specified in 567—paragraph 41.3(1)*"c"*(7)"2."

(4~~5~~) Exceedance of the nitrate MCL by NCWSs~~noncommunity water systems~~, where permitted to exceed the MCL by the department under 567—paragraph 41.3(1)*"a,"* as required in~~under~~ 40.5(7)~~42.1(7)~~*"c."*

(5~~6~~) Violation of the ~~MRDL for~~ chlorine dioxide MRDL when one or more samples, taken in the distribution system on the day following an MRDL exceedance ~~of the MRDL~~ in the sample collected at the entrance to the distribution system, exceeds the MRDL, as defined in 567—paragraph 43.6(1)*"b."*

(6~~7~~) Failure by the ~~water~~ system to collect the required chlorine dioxide samples in the distribution system on the day following an MRDL exceedance ~~of the MRDL~~ in the sample collected at the entrance to the distribution system.

(7~~8~~) Violation of the TT~~treatment technique~~ requirement by a surface water (SW) or influenced groundwater (IGW) PWS~~public water system~~ resulting from an ~~single~~ exceedance of the maximum allowable turbidity limit, as specified in 567—Chapter 43~~rule 567—43.5(455B), 567—43.9(455B), or 567—43.10(455B)~~, where the

**Commented [7]:** nitrate MCL exceedance - see 40.5(2)"a"(4).

**Commented [8]:** fluoride exceedance - see 40.5(4)"a"(3).

**Commented [9]:** unregulated contaminant mon. - see 40.5(4)"a"(2).

**Commented [10]:** compliance schedule - see 40.5(3)"a"(3).

**Commented [11]:** health advisory - see 40.5(3)"a"(4).

**Commented [12]:** public notice - see 40.5(4)"a"(5).

**Commented [13]:** admin. order - see 40.5(3)"a"(3).

**Commented [14]:** reporting - see 40.5(4)"a"(4).

**Commented [15]:** cert operator - see 40.5(4)"a"(6).

department determines, after consultation with the system, that a Tier 1 PNnotice is required, or where the department consultation with the department does not take place within 24 hours after the system learns of the violation.

(89) Occurrence of a waterborne disease outbreak, as defined in rule 567—40.2(455B), or other waterborne emergency, such as a failure or significant interruption in key water treatment processes, a natural disaster disruptingthat disrupts the water supply or distribution system, or a chemical spill or unexpected loading of possible pathogens into the source water that significantly increases the potential for drinking water contamination.

(910) Other violations or situations with significant potential to have serious adverse effects on human health as a result of short-term exposure, as determined by the department either in its rules or on a case-by-case basis.

(101) Detection of *E. coli*, enterococci, or coliphage in source water samples, as specified in 567—paragraphs 41.7(3)*"a"* and 41.7(3)*"b."*

*b. Timing of Tier 1 PNpublic notice timing.* PWSsPublic water systems must:

(1) Provide a PNpublic notice as soon as practical but no later than 24 hours after the system learnings of the violation;

(2) Initiate consultation with the department as soon as practical, but no later than 24 hours after the system learnings of the violation or situation, to determine additional PNpublic notice requirements. For consultation with department staff after normal business hours, usethe system should contact the department via the department's Environmental Emergency Reporting Hotline, telephone number (515,)725,-8694; and

(3) Comply with any additional PNpublic notification requirements, including any repeat notices or direction on the duration of the posted notices, that are established as a result of the department consultation with the department. AdditionalSuch requirements may include the timing, form, manner, frequency, and content of repeat PNsnotices (if any) and other actions designed to reach all persons served.

(4) All NTNCs must notify the parent or legal guardian of each child under 18 years of age and of any nursing home resident of the Tier 1 violation as soon as possible and within 72 hours, including the information required in the PNpublic notice content in under subrule 42.1(5)40.5(5).

*c. Form and manner of Tier 1 PNpublic notice form and manner.* PWSsPublic water systems must provide the PNnotice within 24 hours in a form and manner reasonably calculated to reach all persons served. The form and manner used by the public water system must fit the specific situation, and must be designed to reach residential, transient, and nontransient users of the water system. In order tTo reach all persons served, water systems shallare to use, at a minimum, one or more of the following forms of delivery. The department may require that multiple forms of deliverynotification be used in a specific situations.

(1) Appropriate broadcast media, such as radio or television;

(2) Posting of the PNnotice in conspicuous locations throughout the area served by the water system;

(3) Hand delivery of the PNnotice to persons served by the water system; or

(4) Another delivery method approved in writing by the department.

**40.5(3)42.1(3)** *Tier 2 PNpublic notice requirements.*

*a. Violations and situations which require Tier 2 PNnotice when required.* The following types of violations or situations require Tier 2 PNpublic notice:

(1) All violations of the MCL, MRDL, and TTtreatment technique requirements, except where a Tier 1 PNnotice is required under subrule 42.1(2)40.5(2);

(2) Violations of the monitoring and testing procedure requirements, where the department determines that a Tier 2 rather than a Tier 3 PNpublic notice is required, taking into accounting for potential health impacts and persistence of the violation;

(3) Failure to comply with the requirements of any compliance schedule prescribed in an operation permit, administrative order, or court order pursuant to 567—subrule 43.2(45);

(4) Failure to comply with an HA health advisory as determined by the department; and

(5) Failure to take corrective action or failure to maintain at least 4-log virus treatment of viruses (using inactivation, removal, or a department-approved combination of 4-log virus inactivation and removal) before or at the first customer under 567—paragraph 41.7(4)*"a."*

*b. Timing of Tier 2 PNpublic notice timing.* PWSsPublic water systems must:

**Commented [16]:** Not needed; the requirements are described in the 2nd sentence of this paragraph (3), "Additional requirements may include..."

(1) Provide the initial PN~~public notice~~ as soon as practical~~,~~ but no later than 30 days after ~~the system~~ learning~~s~~ of a~~the~~ violation. If ~~the~~ PN~~public notice~~ is posted, it~~the notice~~ must remain in place for as long as the violation or situation persists~~,~~ but in no case for less than seven~~7~~ days, even if the violation or situation is resolved. The department may allow additional time for the initial notice of up to three months from the date the system learns of the violation; however, such an extension must be made in writing on a case-by-case basis ~~and be made in writing by the department~~.

(2) ~~The public water system must r~~Repeat the PN~~notice~~ every three months as long as the violation or situation persists~~,~~ unless the department determines that ~~appropriate~~ circumstances warrant a different repeat frequency. ~~If the department determines~~ A determination that a repeat PN~~notice~~ frequency of longer than every three months is allowed~~, that decision~~ must be made in writing ~~by the department and must be~~ on a case-by-case basis. ~~In no circumstance may t~~The repeat PN~~notice be given less~~ frequency~~tly~~ may not be less than once per year. Repeat PNs~~notices~~ for an *E. coli* MCL violation ~~a coliform bacteria MCL~~, a TT~~treatment technique~~ violation under 567—paragraphs 41.2(1)*"a"* or ~~41.2(1)~~*"i,"* or a turbidity TT~~treatment technique~~ violation under ~~rule~~ 567—43.9(455B) or 567—43.10(455B) must be made every three months or more frequently.

(3) A PWS~~public water system~~ using SW~~surface water~~ or IGW~~influenced groundwater~~ with a ~~treatment technique~~TT violation resulting from a single exceedance of the maximum allowable turbidity limit, pursuant to 567—43.9(455B) or 567—43.10(455B), must consult with the department as soon as practical, but no later than 24 hours after ~~the public water system~~ learning~~s~~ of the violation, to determine whether a Tier 1 or Tier 2 ~~public notice~~PN is required to protect public health. For consultation ~~with department staff~~ after normal business hours, use~~the system should contact the department via~~ the department's Environmental Emergency Reporting Hotline, ~~telephone number~~ ~~(~~515~~,)~~725~~.~~-8694. If the consultation does not occur within the 24-hour period, the PWS~~public water system~~ must distribute a Tier 1 PN ~~notice of the violation~~ within the next 24 hours, or no later than 48 hours after ~~the system~~ learning~~s~~ of the violation, following the requirements of ~~paragraphs 42.1~~40.5(2)*"b"* and ~~42.1(2)~~*"c."*

*c. ~~Form and manner of~~ Tier 2 PN~~public notice~~ form and manner.* PWSs~~Public water systems~~ must provide the initial PN~~public notice~~ and any repeat ~~notice~~PN~~s~~ in a form and manner that is reasonably calculated to reach persons served in the required time period. The PN form and manner ~~of the public notice~~ may vary based on the specific situation and type of PWS~~public water system~~, but the PN~~it~~ must ~~at a minimum~~ meet the ~~following~~ requirements of this paragraph unless directed otherwise in writing by the department.~~:~~

*d.~~(1)~~ Tier 2 PN-CWS PN methods.* CWSs~~Community water systems~~ must provide PN~~notice~~ by the following methods~~, unless directed otherwise in writing by the department~~:

(1)~~.~~ Mail or other direct delivery to each customer receiving a bill and to other service connections receiving~~to which~~ water from~~is delivered by~~ the PWS~~public water system~~; and

(2)~~.~~ Any other method reasonably calculated to reach other persons regularly served by the system~~,~~ if they would not normally be reached by mail or direct delivery. Such persons may include those who do not pay water bills or do not have service connection addresses, such as ~~house~~ renters, ~~apartment dwellers, university~~ students, nursing home residents~~patients~~, or prison inmates. Other methods may include:

1. ~~•~~Publication in a local newspaper;
2. ~~•~~Delivery of multiple copies for distribution by customers that provide their drinking water to others, such as apartment building owners or large private employers;
3. ~~•~~Posting in public places served by the system or on the i~~I~~nternet; or
4. ~~•~~Delivery ~~of the notice~~ to community organizations.

*e. ~~(2)~~Tier 2 PN-NCWS PN methods.* NCWSs~~Noncommunity water systems~~ (TNCs or~~and~~ NTNCs) must provide PN~~notice~~ by the following methods~~, unless directed otherwise in writing by the department~~:

(1)~~.~~ Posting ~~the~~ PN~~notice~~ in conspicuous locations throughout the distribution system frequented by persons served by the system, or by mail or direct delivery to each customer and service connection (where known); and

(2)~~.~~ Any other method reasonably calculated to reach other persons served ~~by the system~~ who would not normally be reached by posting, mail, or direct delivery. Such persons may include those ~~served~~ who may not see a posted PN~~notice~~ because it~~the posted notice~~ is not in a location they routinely visit. Other methods may include:

1. ~~•~~Publication in a local newspaper or newsletter distribution to customers;

**Commented [17]:** Unnecessary; see sentence in "b" above.

**Commented [18]:** Restated.

**Commented [CC[19]:** Old 41.2(1)"l" was changed to 41.2(1)"i".

**Commented [20]:** Remove duplicative text from below and placed it here.

**Commented [21]:** New 40.5(3)"d" - renumbered & added new header in order to remove later bullets.

**Commented [22]:** "unless directed…" - moved to the end of "c".

**Commented [23]:** Simplified.

**Commented [24]:** New 40.5(3)"e" - renumbered & added new header in order to remove later bullets.

**Commented [25]:** Moved to the end of "c".

2. Use of ~~electronic mail (~~email~~)~~ to notify employees or students; or

3. Delivery of multiple copies in central locations, such as community centers.

(3)~~.~~ In addition to the previous requirements, ~~in 42.1(3)"c"(2)"1" and "2,"~~ NTNCs~~nontransient noncommunity public water systems~~ that serve children under 18 years of age~~,~~ (such as child care facilities, schools, and hospitals)~~,~~ or nursing home residents~~,~~ (including elder care facilities)~~,~~ must~~shall~~ provide ~~the~~ PN~~public notice~~ in writing to the parent or legal guardian of each person within the department-specified time period ~~specified by the department~~. The ~~content of the public notice~~PN content must meet the requirements of ~~subrule 42.1(5)~~40.5(5).

**40.5(4)~~42.1(4)~~** *Tier 3 PN~~public notice~~ requirements.*

*a. ~~Violations and situations which require~~ Tier 3 PN~~notice~~ when required.* The following ~~types of~~ violations or situations require Tier 3 PN~~public notice~~:

(1) Monitoring violations ~~under~~ or a failure to comply with a department-required testing procedure~~ 567—Chapters 41, 42, and 43~~, except where a Tier 1 PN~~notice~~ is required under this rule~~subrule 42.1(2)~~ or where the department determines that a Tier 2 PN~~notice~~ is required;

~~(2) Failure to comply with a testing procedure established in 567—Chapters 41, 42, and 43, except where a Tier 1 notice is required under subrule 42.1(2) or where the department determines that a Tier 2 notice is required;~~

(2~~3~~) Availability of unregulated contaminant monitoring results, as required of certain PWSs~~public water supply systems~~ by 40 CFR ~~Title 40, Part~~ §141.40, in accordance with ~~as required under paragraph 42.1~~40.5(7)*"a"*;

(3~~4~~) Exceedance of the fluoride level of 2.0 mg/L and not exceeding the MCL of 4.0 mg/L, in accordance with ~~as required under paragraph 42.1~~40.5(7)*"b"*;

(4~~5~~) Failure to report required data or analytical results ~~required under 567—Chapters 41, 42, and 43~~ to the department;

(5~~6~~) Failure to meet the requirements of this chapter for PN~~public notification~~, PE~~public education~~, or the development and distribution of the Consumer Confidence Report (CCR);

(6~~7~~) Failure to retain a certified operator in accordance with 567—subrule 43.1(5), where ~~and~~ the department determines that PN~~public notification~~ is required;

(7~~8~~) Failure to maintain department-required records ~~required under 567—Chapters 41, 42, and 43~~; and

(8~~9~~) Any other situation where the department determines PN~~public notification~~ is needed.

*b. ~~Timing of~~ Tier 3 PN~~public notice~~ timing.*

(1) Initial PN~~notice~~.

1. For violations or situations listed in ~~subparagraphs 42.1~~40.5(4)*"a"*(1), ~~(2),~~ 40.5(4)"a"(4~~5~~), or~~and~~ 40.5(4)"a"(5~~6~~), PWSs~~public water systems~~ must provide the initial PN~~public notice~~ within 12 months after ~~the public water system~~ learning~~s~~ of the violation or situation. If the violation pertains to a contaminant that could have acute health effects as determined by the department, such as coliform bacteria, nitrate, nitrite, or turbidity, the initial ~~public~~ notice must be provided within three~~3~~ months. If the PN~~public notice~~ is posted, it~~the notice~~ must remain in place for as long as the violation or other situation persists, but in no case less than seven days, even if the violation or situation is resolved.

2. For availability of unregulated contaminant monitoring results pursuant to ~~subparagraph 42.1~~40.5(4)*"a"*(2~~3~~), the system must provide the initial PN~~public notice~~ within 12 months of receiving the ~~unregulated contaminant monitoring~~ results.

3. For ~~subparagraphs 42.1~~40.5(4)*"a"*(3~~4~~) or, 40.5(4)"a"(6~~7~~), or~~and~~ 40.5(4)"a"(7~~8~~), the ~~timing of the~~ initial PN~~notice~~ timing is at the department's discretion ~~of the department~~, but the notice must be made within 12 months of the violation or situation.

(2) Repeat PN~~notice~~.

1. For violations or situations listed in ~~subparagraphs 42.1~~40.5(4)*"a"*(1), ~~(2),~~ 40.5(4)"a"(3~~4~~), 40.5(4)"a"(4~~5~~), or~~and~~ 40.5(4)"a"(5~~6~~), PWSs~~public water systems~~ must repeat the PN~~public notice~~ every 12 months in which the violation or situation persists. If the violation pertains to a contaminant that could have acute health effects, such as coliform bacteria, nitrate, nitrite, or turbidity, the system must repeat the PN~~public notice~~ every three~~3~~ months in which the violation or situation persists. If the PN~~public notice~~ is posted, it~~the notice~~ must remain in place for as long as the violation or other situation persists, but in no case less than seven

**Commented [26]:** Moved from old (2) below so (1) and (2) could be combined.

**Commented [27]:** Old 42.1(4)"a"(2) - Combined with (1) (new 40.5(4)"a"(1)).

**Commented [28]:** This needs to be "or", because the PWS does not have to meet all of those violations at the same time to provide the notice, which is what "and" implies.

**Commented [29]:** Repetitive.

days, even if the violation or situation is resolved.

2. For availability of unregulated contaminant monitoring results pursuant to ~~subparagraph 42.1~~40.5(4)*"a"*(~~2~~3), the system is not required to repeat the PN~~public notice~~, once the initial PN~~public notice~~ requirement has been met.

3. For ~~subparagraphs 42.1~~40.5(4)*"a"*(~~3~~4), 40.5(4)"a"(~~6~~7), or~~and~~ 40.5(4)"a"(~~7~~8), the requirement for and timing of the repeat PN~~notice~~ is at the department's discretion~~, of the department and,~~ ~~i~~ If required, the repeat PN~~notice~~ must be made within 12 months of the initial PN~~notice~~.

*c. Tier 3 PN-~~F~~form and manner ~~of Tier 3 public notice~~.* PWSs~~Public water systems~~ must provide the initial PN~~notice~~ and any repeat ~~notice~~PN~~s~~ in a form and manner that is reasonably calculated to reach persons served in the required time period. The PN form and manner ~~of the public notice~~ may vary based on the specific situation and type of ~~water~~ system, but it must ~~at a minimum~~ meet the ~~following~~ requirements of this paragraph unless directed otherwise in writing by the department.~~:~~

*d.* ~~(1)~~*Tier 3 PN-CWS PN methods.* ~~Community water systems. Unless directed otherwise in writing by the department,~~ CWSs~~community water systems~~ must provide PN~~notice~~ by:

(1)~~.~~ Mail or other direct delivery to each customer receiving a bill and to other service connections ~~to which~~receiving water from~~is delivered by~~ the PWS~~public water system~~; and

(2)~~.~~ Any other method reasonably calculated to reach other persons regularly served by the system~~,~~ if they would not normally be reached by mail or direct delivery ~~notice~~. Such persons may include those who do not pay water bills or do not have service connection addresses, such as ~~house~~ renters~~, apartment dwellers, university~~ students, nursing home residents~~patients~~, or prison inmates. Other methods may include:

1. ~~•~~Publication in a local newspaper;
2. ~~•~~Delivery of multiple copies for distribution by customers that provide their drinking water to others, such as apartment building owners or large private employers;
3. ~~•~~Posting in public places or on the ~~I~~internet; or
4. ~~•~~Delivery ~~of the notice~~ to community organizations.

(3)~~.~~ Use of the ~~Consumer Confidence Report~~CCR for initial and repeat PNs~~notices~~. For CWSs~~community water systems~~, the ~~Consumer Confidence Report (~~CCR~~)~~ required under 567—40.7~~42.3~~(455B) may be used as a vehicle for ~~the~~ initial and repeat Tier 3 PNs~~public notice and all required repeat notices~~, as long as:

1. ~~•~~The CCR is provided to persons served within the time frames under~~specified in 42.1~~ 40.5(4)*"b"*;
2. ~~•~~The Tier 3 PN~~notice contained~~ in the CCR follows the content requirements under ~~42.1~~40.5(5); and
3. ~~•~~The CCR is distributed following the delivery requirements under ~~42.1~~40.5(4)*"c"*(1) and 40.5(4)*"c"*(2).

*e.* ~~(2)~~*Tier 3 PN-NCWS PN methods.* ~~Noncommunity systems (TNC and NTNC). Unless directed otherwise in writing by the department,~~ NCWSs (TNCs and NTNCs)~~noncommunity water systems~~ must provide PN~~notice~~ by:

(1)~~.~~ Posting ~~the~~ PN~~notice~~ in conspicuous locations throughout the distribution system frequented by persons served by the system~~,~~ or by mail or direct delivery to each customer and service connection (where known); and

(2)~~.~~ Any other method reasonably calculated to reach other persons served ~~by the system,~~ if they would not normally be reached by the posted, mailed, or delivered notice. Such persons may include those who may not see a posted PN~~notice~~ because it~~the notice~~ is not in a location they routinely visit. Other methods may include:

1. ~~•~~Publication in a local newspaper or newsletter distributed to employees;
2. ~~•~~Use of ~~electronic mail (~~email~~)~~ to notify employees or students; or
3. ~~•~~Delivery of multiple copies in central locations, such as community centers.

**40.5(5)~~42.1(5)~~** ~~*C~~PN *content ~~of the public notice~~.*

*a. Required ~~public notice~~ elements.* Each PN~~public notice~~ must contain~~include~~ the following ~~elements~~:

(1) A description of the violation or situation, including the contaminant(s) of concern and, as applicable, the contaminant level(s);

(2) When the violation or situation occurred;

(3) Any potential adverse health effects from the violation or situation, including the standard language ~~in under subparagraph 42.1~~40.5(5)*"c"*(1) or 40.5(5)"c"(2), where~~whichever is~~ applicable;

(4) The population at risk, including subpopulations particularly vulnerable if exposed to the contaminant in their drinking water;

**Commented [30]:** "unless directed…" - removed duplicative text from below and placed it here for simplicity.

**Commented [31]:** New 40.5(4)"d" - renumbered & added new header in order to remove later bullets.

**Commented [32]:** Moved to the end of "c".

**Commented [33]:** New 40.5(4)"e" - renumbered & added new header in order to remove later bullets.

**Commented [34]:** Moved to the end of "c".

(5) Whether alternative water supplies or bottled water should be used~~,~~ or require a boil-water order;
(6) What actions consumers should take, including when they should seek medical help, if known;
(7) What the system is doing to correct the violation or situation;
(8) When the ~~water~~ system expects to return to compliance or resolve the situation;
(9) The name, business address, and telephone number of the PWS~~water system~~ owner, operator, or designee ~~of the public water system~~ as a source of additional information concerning the PN~~notice~~; and
(10) A statement to encourage the PN~~notice~~ recipient to distribute the ~~public~~ notice to other persons served, using the standard language under ~~subparagraph 42.1~~40.5(5)*"c"*(3), where applicable.

*b. Appearance and presentation ~~of the public notice~~.*

(1) Each PN~~public notice~~ must:
1. Be displayed in a conspicuous way when printed or posted;
2. Not contain overly technical language or very small print;
3. Not be formatted in a way that defeats the purpose of the notice; and
4. Not contain language that nullifies the purpose of the notice.

(2) Each PN~~public notice~~ must comply with multilingual requirements, as follows:

1. For PWSs~~public water systems~~ serving a large proportion of non-English speaking consumers, as determined by the department, a PN~~the public notice~~ must contain information about its importance in the appropriate language(s) ~~about the importance of the notice. Alternately, the public notice must~~ or contain a telephone number or address where persons served may contact the ~~water~~ system to obtain a translated copy of the notice or to request assistance in the appropriate language.

2. In cases where the department has not determined what constitutes a large proportion of non-English speaking consumers for a PWS, ~~the public water system~~ a PN must contain~~include in a the public notice~~ the same information as in ~~42.1~~40.5(5)*"b"*(2)"1~~.~~" above, where appropriate, to reach a large proportion of non-English speaking persons served by the ~~water~~ system.

*c. Standard language ~~requirements~~.* PWSs~~Public water systems~~ must~~are required to~~ include the following statements~~standard language~~ in ~~their public notice~~PNs:

(1) ~~Standard language about h~~Health effects for MCL~~violations~~, MRDL~~violations~~, or TT~~treatment technique~~ violations. ~~Public water systems must include in e~~Each PN~~public notice~~ must include the health effects language ~~about health effects specified~~ in Appendix B to 40 CFR Part 141, Subpart Q~~Appendix A~~ for the specific contaminant, disinfectant residual, or TT~~treatment technique~~ that incurred the violation.

(2) ~~Standard language for m~~Monitoring and testing procedure violations. Each PN~~Public water systems~~ must include the following statement~~language in their notice~~, including the bracketed language necessary to complete the notice, for all monitoring and testing procedure violations:

"We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During [compliance period], we [use either the phrase "did not monitor or test" or "did not complete all monitoring or testing," whichever is more applicable] for [contaminant(s)], and therefore cannot be sure of the quality of your drinking water during that time."

(3) ~~Standard l~~Language to encourage ~~the distribution of the public notice~~PN distribution to all persons served. ~~Public water systems~~Each PN must include ~~in their notice~~ the following statement~~language~~, where applicable:

"Please share this information with all the other people who drink this water, especially those who may not have received this notice directly, such as people in apartments, nursing homes, schools, and businesses. You can do this by posting this notice in a public place or distributing copies by hand or mail."

**40.5(6)~~42.1(6)~~** *~~Notice~~PN for~~to~~ new billing units or new customers.*

*a. Community water systems (CWSs).* CWSs~~Community water systems~~ must give a copy of the most recent PN~~public notice~~ for any continuing violation or other ongoing situations requiring ~~a public notice~~PN to all new billing units or new customers prior to or at the time service begins.

*b. Noncommunity water systems (NCWSs).* NCWSs (TNCs and NTNCs)~~Noncommunity water systems~~ must continuously post the PN~~public notice~~ in conspicuous locations in order to inform new consumers of any continuing violation or other situation requiring ~~a~~ PN~~public notice~~ for as long as the violation or other situation

**Commented [35]:** The first sentence of this paragraph ("c") says that PWS are required to include the language below; there is no need to restate that "PWS must include..."

**Commented [36]:** Repetitive.

**Commented [37]:** Repetitive.

persists.

40.5(7)~~42.1(7)~~ *Special PNs~~notices~~.*

*a. Availability of unregulated contaminant monitoring results.*

(1) Applicability. The owner or operator of a CWS~~community water system~~ or NTNC~~nontransient noncommunity water system~~ required to monitor under the federal unregulated contaminant monitoring rule must notify persons served by the system of the availability of such sample~~the~~ results ~~of such sampling~~ no later than 12 months after the monitoring results are known.

(2) Form and manner ~~of notice~~. The ~~form and manner of the public~~ special PN~~notice~~ must follow the Tier 3 PN requirements ~~for a Tier 3 public notice prescribed~~ in ~~paragraph 42.1~~40.5(4)*"c"* and ~~The notice~~ must ~~also~~ identify a person and provide the telephone number to contact for information on the monitoring results.

*b. Fluoride level between 2.0 and 4.0 mg/L at CWSs~~community~~ or NTNCs~~nontransient noncommunity water systems~~.*

(1) Applicability. CWSs~~Community~~ and NTNCs~~nontransient noncommunity water systems~~ that exceed the fluoride level of 2.0 mg/L as determined by the last single sample taken in accordance with 567—paragraph 41.3(1)*"c"* but do not exceed the MCL of 4.0 mg/L~~,~~ must provide the special ~~public notice~~PN in accordance with this paragraph ~~subparagraph 42.1(7)"b"(5)~~ to persons served. If the NTNC~~nontransient noncommunity public water system~~ is a school or child care facility serving~~that serves~~ children under nine years of age, the ~~public water~~ system shall provide the PN~~public notice~~ in writing to the legal guardians of each child within the department-specified time period ~~specified by the department~~.

(2) Initial PN~~notice~~. A fluoride ~~Public notice~~PN must be provided as soon as practical but no later than three months from the day the ~~water~~ system learns of the exceedance. A copy of the notice must also be sent to all new billing units and new customers at the time service begins and to the Public Health Dental Director, Iowa Department of Health and Human Services~~Public Health~~, Lucas State Office Building, Des Moines, Iowa 50319-0075.

(3) Repeat PN~~notice~~. The PWS~~public water system~~ must repeat the fluoride PN~~notice~~ at least every three months for as long as the fluoride level exceeds 2.0 mg/L. If the PN~~public notice~~ is posted, it~~the notice~~ must remain in place for as long as the fluoride level exceeds 2.0 mg/L~~,~~ but in no case less than seven days (even if the exceedance is eliminated). The department may require the repeat PN~~notice~~ to be conducted more frequently.

(4) Form and manner ~~of notice~~. The form and manner of the fluoride PN~~public notice~~, including repeat PNs~~notices~~, must follow the Tier 3 PN requirements ~~for a Tier 3 public notice~~ in ~~paragraph 42.1~~40.5(4)*"c."*

(5) Mandatory language. ~~The~~ A fluoride PN~~notice~~ must contain the following language, including the bracketed language necessary to complete the notice:

"This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/L) of fluoride may develop cosmetic discoloration of their permanent teeth, called dental fluorosis. The drinking water provided by your public water system [PWS name] has a fluoride concentration of [analytical result] mg/L."

"Dental fluorosis, in its moderate or severe forms, may result in a brown staining and pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water."

"Drinking water containing more than 4.0 mg/L of fluoride (the U.S. Environmental Protection Agency's drinking water standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4.0 mg/L of fluoride, but we are required to notify you when we discover that the fluoride levels in your drinking water exceed 2.0 mg/L because of this cosmetic dental problem."

"For more information, please call [PWS contact ~~name of the~~ person ~~designated as the water system contact~~] of [PWS name ~~of public water system~~] at [telephone number]. Some home water treatment units are also available to remove fluoride from drinking water. In Iowa, home water treatment units are regulated under 641—Chapter 14, and~~with~~ the water treatment unit registration program is administered by the Health & Safety

**Commented [38]:** Repetitive.

Division of the Iowa Department of Inspections, Appeals, and Licensing~~Health and Human Servdepartment of public health's environmental health division~~. In addition, you may call the National Sanitation Foundation (NSF) International~~.~~ at 1-877-867-3435."

*c. Nitrate level between 10 and 20 mg/L for NCWS~~noncommunity water systems~~, where allowed by the department.* NCWSs granted permission by the department under 567—paragraph 41.3(1)"a" to exceed the nitrate MCL must:

(1) ~~Applicability. The owner or operator of a noncommunity water system granted permission by the department under 567—paragraph 41.3(1)"a" to exceed the nitrate MCL must p~~Provide PN~~notice~~ to persons served according to the Tier 1 PN requirements under ~~for a Tier 1 notice under paragraphs 42.1~~40.5(2)*"a"* and *"b."*

(2) ~~Form and manner of notice. Noncommunity water systems granted permission by the department to exceed the nitrate MCL under 567—paragraph 41.3(1)"a" must p~~Provide continuous posting of the fact that nitrate levels exceed 10 mg/L and the potential health effects of exposure, according to the Tier 1 PN delivery requirements under ~~for Tier 1 notice delivery under paragraph 42.1~~40.5(2)*"c"* and the content requirements under ~~subrule 42.1~~40.5(5).

*d. Repeated failure to conduct source water monitoring ~~of the source water~~ for Cryptosporidium.*

(1) Applicability. The owner or operator of any PWS~~public water system~~ that is required to monitor source water under rule 567—43.11(455B) must notify persons served by the ~~water~~ system that required monitoring has not been completed ~~as specified~~ no later than 30 days after the system has failed to collect samples in any three months of monitoring, as specified in 567—paragraph 43.11(3)*"a."* This special~~e~~ PN~~notice~~ must be repeated as specified in ~~42.1~~40.5(3).

(2) Form and manner ~~of notice~~. ~~The form and manner of t~~This~~e~~ special PN~~notice~~ must follow the Tier 2 PN ~~public notice~~ requirements in ~~42.1~~40.5(3) and be presented as required in ~~42.1~~40.5(5)*"b."*

(3) Mandatory language. This~~e~~ special PN~~notice~~ must contain the following language, including the language necessary to fill in the brackets.

"We are required to monitor the source of your drinking water for *Cryptosporidium*. Results of the monitoring are to be used to determine whether water treatment at the [treatment plant name] is sufficient to adequately remove *Cryptosporidium* from your drinking water. We are required to complete this monitoring and make this determination by [required bin determination date]. We ["did not monitor or test" or "did not complete all monitoring or testing"] on schedule and, therefore, we may not be able to determine by the required date what treatment modifications, if any, must be made to ensure adequate *Cryptosporidium* removal. Missing this deadline may, in turn, jeopardize our ability to have the required treatment modifications, if any, completed by the required deadline of [date]. For more information, please call [PWS contact person~~name of water system contact~~] of [PWS name ~~of water system~~] at [telephone number]."

(4) Each special PN~~notice~~ must ~~also~~ include a description of what the system is doing to correct the violation and when the system expects to return to compliance or resolve the situation.

*e. Failure to determine bin classification or mean Cryptosporidium level.*

(1) Applicability. The owner or operator of a PWS~~public water system~~ that is required to determine a bin classification under 567—subrule 43.11(5) must notify persons served by the ~~water~~ system that the required determination has not been made ~~as required~~ no later than 30 days after the system has failed to report the determination, as specified in 567—paragraph 43.11(5)*"c."* This special~~e~~ PN~~notice~~ must be repeated as specified in ~~42.1~~40.5(3). This~~e~~ PN~~notice~~ is not required if the system is in compliance with a department-approved schedule to address the violation.

(2) Form and manner ~~of notice~~. ~~The form and manner of t~~This~~e~~ special PN~~notice~~ must follow the Tier 2 PN ~~public notice~~ requirements in ~~42.1~~40.5(3) and be presented as required in ~~42.1~~40.5(5)*"b."*

(3) Mandatory language. This~~e~~ special PN~~notice~~ must contain the following language, including the language necessary to fill in the brackets.

"We are required to monitor the source of your drinking water for *Cryptosporidium* in order to determine by [date] whether water treatment at the [treatment plant name] is sufficient to adequately remove *Cryptosporidium* from your drinking water. We have not made this determination by the required date. Our failure to do this may jeopardize our ability to have the required treatment modifications, if any, completed by the required deadline

**Commented [CC[39]:** "NCWS granted…" - moved from beginning of (1) and (2) below.

**Commented [40]:** "Applicability." - added to first sentence of this paragraph (see above).

**Commented [41]:** "Form and manner…" - added to first sentence of this paragraph (see above).

**Commented [42]:** Repetitive.

**Commented [43]:** Repetitive.

of [date]. For more information, please call [PWS~~name of water system~~ contact person] of [PWS name ~~of water system~~] at [telephone number]."

(4) Each special PN~~notice~~ must ~~also~~ include a description of what the system is doing to correct the violation and when the system expects to return to compliance or resolve the situation.

**40.5(8)~~42.1(8)~~** ~~*Notice*~~ *PN by department on behalf of a PWS~~the public water system~~.* The department may provide PN~~give the public notice~~ on behalf of a PWS~~the~~ owner or operator ~~of a the public water system~~ in compliance~~if the department complies~~ with ~~the public notification requirements of~~ this rule. However, the PWS owner or operator ~~of the public water system~~ remains responsible for ensuring the ~~public notification~~PN requirements of this rule are met.

**40.5(9)~~42.1(9)~~** *Small water system - operation permit PN requirements ~~in the operation permit compliance schedule~~.* When the department determines that a small PWS~~public water supply system~~ cannot promptly comply with one or more MCLs~~maximum contaminant levels~~ pursuant to 567—Chapter 41, and that there is no immediate, unreasonable health risk to ~~the health of~~ persons served by the system, an operation permit will be drafted with~~that may include~~ interim contaminant levels or a compliance schedule. The department may require the ~~permit~~ applicant ~~may be required by the department~~ to present the reasons the small water system cannot come into immediate compliance. Prior to issuance of a final permit with a compliance schedule, notice and opportunity for public participation must be given in accordance with this subrule. The PN~~notice~~ shall be circulated in a manner designed to inform interested and potentially interested persons of any proposed interim contaminant level or compliance schedule.

**Commented [44]:** New 40.5(9) - was 42.1(9). This implements 40 CFR Part 142 Subpart K. Added "small water system" in all the subrule headings for clarity.

**Commented [45]:** Clarification.

*a. Small water system-PN preparation ~~of notice~~.* A~~The public notice~~ PN shall be prepared by the department and circulated by the applicant within its geographical area through publication in a local newspaper with general circulation or through mail or direct delivery to the system's customers. The PN~~public notice~~ shall be mailed by the department to any person upon request.

*b. Small water system-p~~P~~ublic comment period.* The department shall provide a period of at least 30 days following the PN date ~~of the public notice~~ during which time interested persons may submit their written views on the tentative determinations with respect to the operation permit. All written comments submitted during the 30-day comment period shall be retained by the department and considered in the formulation of the department's final determination with respect to the operation permit. The department may extend the comment period.

*c. Small water system-PN c~~C~~ontent ~~of notice~~.* A~~The content of the public notice~~ PN of a proposed operation permit shall contain~~include~~ at least the following:

(1) The name, address, website, and telephone number of the department.

(2) The name and address of the applicant.

(3) A statement of the department's tentative determination to issue the operation permit.

(4) A brief description of each applicant's ~~water supply~~ operations that~~which~~ necessitate the proposed permit conditions.

(5) A brief description of the procedures for the formulation of final determinations, including the 30-day comment period required by ~~42.1~~40.5(9)*"b."*

(6) The right to request a public hearing pursuant to ~~42.1~~40.5(9)*"d"* and any other means by which interested persons may influence or comment upon those determinations.

(7) The website location where~~address and telephone number of places at which~~ interested persons may obtain further information, request a copy of the proposed operation permit prepared pursuant to this subrule ~~42.1(9)~~, and inspect and copy the application forms and related documents.

*d. Small water system - p~~P~~ublic hearings ~~on proposed operation permits~~.* The applicant or any interested agency, person or group of persons may request or petition for a public hearing with respect to a proposed operation permit~~the proposed action~~.

(1) Any such request or petition shall:

1. ~~e~~Clearly state the issues ~~and topics~~ to be addressed at a~~the~~ hearing;~~.~~

2. ~~Any such request or petition for public hearing must b~~Be filed with the department within the 30-day period prescribed in ~~42.1~~40.5(9)*"b"*; and

3. ~~shall i~~Indicate the interest of the party filing the petition or~~such~~ request and the reasons why a hearing is

warranted.

(2) The department shall hold an informal and noncontested case hearing if there is a significant public interest in holding a hearing, ~~(~~including the filing of requests or petitions for a~~such~~ hearing~~) in holding such a hearing~~. Frivolous or insubstantial hearing requests may be denied by the department. Instances of doubt should be resolved in favor of holding a~~the~~ hearing.

(3) Any hearing held pursuant to this subrule shall be held in the geographical area of the system, or other appropriate area, at the department's discretion ~~of the department~~.

(4) The department may, as appropriate, consider related groups of permit applications at a~~the~~ hearing.

*e. Small water system-P*N*ublic notice for of public hearings. PN of any hearing held pursuant to this subrule shall:*

(1) ~~Public notice of any hearing held pursuant to 42.1(9) shall b~~Be circulated at least as widely as the notice under ~~42.1~~40.5(9)*"a"* at least 30 days in advance of the hearing.

(2) ~~The contents of the public notice of any hearing held pursuant to 42.1(9) shall~~ Contain~~include~~ at least the following:

1. The name, address, website, and telephone number of the department;
2. The name and address of each applicant whose application will be considered at the hearing;
3. A brief reference to the ~~public notice~~ previously issued PN, including identification number and date of issuance;
4. ~~Information regarding t~~The time and location for the hearing;
5. The purpose of the hearing;
6. A concise statement of the issues raised by the person requesting the hearing;
7. The website location~~address and telephone number of the premises~~ where interested persons may obtain further information, request a copy of the draft operation permit or modification prepared pursuant to this subrule~~42.1(9)~~, and inspect and copy the application forms and related documents; and
8. A brief description of the nature of the hearing, including the rules and procedures to be followed.

*f. Small water system-operation permit ~~D~~decision ~~by the department~~.* The department shall issue or deny an~~the~~ operation permit within 30 days after ~~the termination of~~ a~~the~~ public hearing held pursuant to this subrule~~42.1(9)~~, or, if no public hearing is held, within 30 days after the end~~termination~~ of the period for requesting a hearing.

~~[**ARC 9915B**, IAB 12/14/11, effective 1/18/12; **ARC 3735C**, IAB 4/11/18, effective 5/16/18]~~

**567—~~42.2~~40.6(455B) Lead consumer notice and public education (PE) for lead action level exceedance (ALE).** ~~All CWSs and NTNCs systems must comply with the lead consumer notice in accordance with 42.2(1). A CWS or NTNC system that exceeds the lead action level based on tap water samples collected in accordance with 567—paragraph 41.4(1)"c" must comply with the public education requirements in accordance with 42.2(2).~~

**40.6(1)~~42.2(1)~~** *Lead consumer notice.* ~~All CWS and NTNC systems must provide a consumer notice of lead tap water monitoring results to persons served at the sites (taps) that are tested as listed in 567—42.2(455B). Any system exceeding the lead action level shall also implement the public education requirements of 42.2(2).~~

*a. Reporting ~~requirement~~.* All CWSs and NTNCs ~~systems~~ must provide a consumer notice of the individual lead tap water monitoring results ~~from lead tap water monitoring carried out under the~~ required~~ments~~ by~~of~~ 567—paragraph 41.4(1)*"c"* to the persons served at the tested sites (taps)~~by the water system at the specific sampling site from which the sample was taken (e.g., the occupants of the residence where the tap was tested)~~. Any system with a lead ALE shall also implement the PE requirements of 40.6(2).

*b. ~~Timing of n~~Consumer noti~~cefication~~ timing.* A ~~water~~ system must provide the ~~consumer~~ notice as soon as practical, but no later than 30 days after the system learns of the tap monitoring results.

*c. ~~C~~Consumer notice content ~~of notice~~.* A~~The~~ consumer notice must contain~~include~~ the following:

(1) Results of the lead tap water monitoring for the tested tap ~~that was tested~~,
(2) An explanation of the health effects of lead,
(3) A list of steps consumers can take to reduce exposure to lead in drinking water,
(4) PWS ~~C~~contact information ~~for the water utility~~, and
(5) The lead MCLG~~maximum contaminant level goal~~ of 0 mg/L, ~~and~~ the 90th percentile lead AL~~action level~~

**Commented [46]:** "PN of any hearing..." struck repeated text in (1) & (2) below and added it here.

**Commented [47]:** "Public notice of..." - moved up to "e".

**Commented [48]:** "The contents of..." - moved up to "e".

**Commented [49]:** This is a restatement of the requirements in "a" and "b" of this subrule; it's not necessary.

**Commented [CC[50]:** 1st sentence of 42.1(1) and 1st sentence of "a" had same requirements, so they've been combined into "a". The 2nd sentence of 42.2(1) ("Any system exceeding") is now the 2nd sentence of "a". The text "As listed in 42.2" is an unnecessary self-reference.

**Commented [CC[51]:** 1st sentence of 42.1(1) and 1st sentence of "a" had same requirements, so they've been combined into "a". The 2nd sentence of 42.2(1) ("Any system exceeding") is now the 2nd sentence of "a". The text "As listed in 42.2" is an unnecessary self-reference.

of 0.015 mg/L, and the definitions for these two terms from ~~rule~~ 567—40.2(455B).

*d. ~~Delivery of n~~Consumer notice delivery.* The ~~consumer~~ notice must be provided to persons served at the tested tap ~~that was tested,~~ either by mail or by another department-approved method ~~approved by the department~~. For example, upon department approval ~~by the department~~, an NTNC ~~system~~ could post ~~the~~ results on a bulletin board in the facility ~~to allow users to review the information~~. ~~The s~~Systems must provide the notice to customers at sample taps tested, including consumers who do not receive water bills.

*e. Inclusion of copper results.* ~~The s~~Systems may also include ~~results of~~ copper testing results in the consumer notice, along with the 90th percentile copper ALE~~action level~~ of 1.3 mg/L, copper MCLG of 1.3 mg/L, and copper health effects language.

**40.6(2)~~42.2(2)~~** *Lead PE~~public education~~ for lead ALE~~action level exceedance~~.* ~~A water s~~Systems with a~~that exceeds the~~ lead ALE~~action level~~ based on tap water samples collected in accordance with 567—paragraph 41.4(1)*"c"* shall prepare and deliver ~~the~~ PE~~public education~~ materials ~~contained in 42.2(2)"a" in accordance with 42.2(2)"b." Water systems that exceed the lead action level must~~and sample the tap water of any customer who requests it in accordance with this subrule. ~~42.2(2)"c."~~

*a. Content of ~~written public education~~ materials.* ~~CWS and NTNC s~~Systems must include the following statements~~elements~~ in written PE~~printed~~ materials ~~(e.g., brochures and pamphlets)~~ in the same order as listed in this paragraph. ~~In addition, L~~language in ~~42.2(2)"a"~~ 40.6(2)*"a"*(1), 40.6(2)*"a"*(2), and 40.6(2)*"a"*(5~~6~~) must be included ~~in the materials~~ exactly as written, except for the bracketed text ~~in brackets in these paragraphs~~ for which the ~~water~~ system must substitute system-specific information. Any additional information presented by a ~~water~~ system must be consistent with this paragraph~~the information in 42.2(2)"a"~~ and be in plain language that can be understood by the general public. ~~Water s~~Systems must submit all ~~written public education~~PE materials to the department prior to delivery. The department may require a~~the~~ system to obtain approval of the content of ~~written public education~~PE materials prior to delivery. PE materials must:

(1) Include t~~T~~he following statements~~information must be included~~ exactly as written.

"IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER. [Insert system name ~~of water system~~] found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water."

~~(2) The following information must be included exactly as written.~~

"Health effects of lead. Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development."

(2~~3~~) Discuss~~Sources of~~ lead and sources of lead, as follows: ~~The printed materials must:~~

1. Explain what lead is.
2. Explain possible sources of lead in drinking water, ~~and~~ explain how lead enters drinking water, and include information on home/building plumbing materials and service lines that may contain lead.
3. Discuss other important sources of lead exposure in addition to drinking water (e.g., paint).

(3~~4~~) Discuss ~~the~~ steps the consumers can take to reduce their exposure to lead in drinking water, as follows:

1. Encourage running the water to flush out the lead.
2. Explain concerns with using hot water from the tap and specifically caution against the use of hot water for preparing baby formula.
3. Explain that boiling the water does not reduce lead levels.
4. Discuss other options consumers can take to reduce exposure to lead in drinking water, such as alternative sources or water treatment ~~of water~~.
5. Suggest that parents have their child's blood tested for lead.

(4~~5~~) ~~The printed materials must e~~Explain why there are elevated levels of lead in the system's drinking water (if known) and what the ~~water~~ system is doing to reduce the lead levels in homes/buildings in this area.

**Commented [52]:** "To allow… - unnecessary; the purpose is known.

**Commented [53]:** "shall prepare…" - removed self-references and combined the sentences.

**Commented [54]:** "PE materials must:" - added "must" here and removed it from (2) - (6) below.

**Commented [55]:** Moved "must" statement to the end of "a" above.

**Commented [56]:** Combined (1) and (2) as they are both statements to be included.

**Commented [57]:** Moved "must" statement to the end of "a" above.

**Commented [58]:** "Discuss lead…" - matches the phrasing in (3).

**Commented [59]:** Moved "must" statement to the end of "a" above.

**Commented [60]:** Moved "must" statement to the end of "a" above.

(56) Include ~~T~~the following statement~~information must be included~~ exactly as written.

"For more information, call us at [insert your telephone number] or visit our website at [insert your website link here]. For more information on reducing lead exposure around your home/building and the health effects of lead, visit EPA's website at www.epa.gov/lead or contact your health care provider."

(67) ~~Community water systems must also i~~Include the following if the system is a CWS ~~elements~~:

1. Tell consumers how to get their water tested.
2. Discuss lead in plumbing components and the difference between low lead and lead free.

*b. ~~Delivery of public education materials~~Outreach to non-English speaking consumers.* ~~(1) Outreach to non-English speaking consumers.~~ For PWSs~~public water systems~~ serving a large proportion of non-English speaking consumers, as determined by the department, the PE~~public education~~ materials must contain information about the importance of PE in the appropriate language(s) ~~regarding the importance of the notice~~ or contain a telephone number or address where persons served may contact the ~~water~~ system to obtain a translated copy of the ~~public education~~PE materials or to request assistance in the appropriate language.

*c. ~~(2)Delivery of PEpublic education materials delivery by~~ CWS.* A CWS that exceeds the lead AL~~action level~~ on the basis of tap water samples collected in accordance with 567—paragraph 41.4(1)*"c"* ~~and that is not already conducting public education tasks under 42.2(2)~~ must conduct the following PE~~public education~~ tasks within 60 days of the date of notification of the AL~~action level exceedance~~. All PE materials must meet the content requirements of 40.6(2)*"a"*.

(1) ~~.~~ Deliver PE~~printed~~ materials ~~meeting the content requirements of 42.2(2)"a"~~ to all bill-paying customers.

(2) ~~.~~ Contact customers who are most at risk by delivering PE~~education~~ materials ~~that meet the content requirements of 42.2(2)"a"~~ to local public health agencies, even if they are not located within the ~~water~~ system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or the CWS~~'s~~ users. ~~The water s~~Systems must contact the local public health agencies directly by phone or in person. The local public health agencies may provide a specific list of additional community-based organizations serving target populations, which may include organizations outside the system's service area ~~of the water system~~. If such lists are provided, systems must deliver PE~~education~~ materials ~~that meet the content requirement of 42.2(2)"a"~~ to all organizations on the provided lists.

(3) ~~.~~ Contact customers who are most at risk by delivering PE materials ~~that meet the content requirements of 42.2(2)"a"~~ to the following organizations that are located within the ~~water~~ system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or the CWSs~~community public water supply system's~~ users:

1. ~~•~~Public and private schools or school boards;
2. ~~•~~Women, Infants, and Children (WIC) and Head Start programs;
3. ~~•~~Public and private hospitals and medical clinics;
4. ~~•~~Pediatricians;
5. ~~•~~Family planning clinics; and
6. ~~•~~Local welfare agencies.

(4) ~~.~~ Make a good-faith effort to locate the following organizations within the service area and ~~to~~ deliver PE~~to them~~ materials, ~~that meet the content requirements of 42.2(2)"a,"~~ along with an informational notice encouraging~~that encourages~~ distribution to all potentially affected customers or users. This~~e good-faith~~ effort to contact at-risk customers may include requesting a ~~specific~~ contact list of these organizations from the local public health agencies, even if the agencies are not located within the ~~water~~ system's service area:

1. ~~•~~Licensed child care centers;
2. ~~•~~Public and private preschools;
3. ~~•~~Obstetricians, gynecologists, doulas, and midwives.

(5) ~~.~~ No less often than quarterly, provide information with~~on or in~~ each water bill as long as the system exceeds the lead AL~~action level for lead~~. The ~~message on the~~ water bill must include the following statement exactly as written, except for the text in brackets for which the ~~water~~ system must substitute system-specific information:

"[I~~i~~nsert system name ~~of water system~~] found high levels of lead in drinking water in some homes. Lead can

**Commented [61]:** Moved "must" statement to the end of "a" above.

**Commented [62]:** Moved "must" statement to the end of "a" above.

**Commented [63]:** New 40.6(2)"c" - renumbered in order to remove later bullets.

**Commented [CC[64]:** Adding this so "that meet the content requirements of 42.2(2)"a" can be struck from subparagraphs (1) through (4) and (6).

**Commented [65]:** Added to (2) above.

**Commented [66]:** Added to (2) above.

**Commented [67]:** Added to (2) above.

**Commented [68]:** Added to (2) above.

**Commented [69]:** Added to (2) above.

cause serious health problems. For more information, please call [insert system telephone number ~~of water system~~] or visit [insert system ~~your~~ website link here]."

The message or delivery mechanisms can be modified in consultation with the department; specifically, the department may allow a separate mailing of ~~public education~~PE materials to customers if the ~~water~~ system cannot place the information on water bills.

(6) ~~.~~ Post PE material ~~meeting the content requirements of 42.2(2)"a"~~ on the ~~water~~ system's website if the system serves a population greater than 100,000.

(7) ~~.~~ Submit a press release to newspaper, television, and radio stations.

(8) ~~.~~ In addition to ~~including~~ those items previously listed, systems must implement at least three activities from one or more of the following categories. The educational content and appropriate ~~selection of these~~ activities must be determined in consultation with the department.

1. ~~•~~Public service announcement;
2. ~~•~~Paid advertisement;
3. ~~•~~Public area information displays;
4. ~~•~~Emails to customers;
5. ~~•~~Public meetings;
6. ~~•~~Household deliveries;
7. ~~•~~Targeted individual customer contact;
8. ~~•~~Direct material distribution to all multifamily homes and institutions; and
9. ~~•~~Other department-approved methods ~~approved by the department~~.

~~For systems that are required to conduct monitoring annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or if the department has established an alternate monitoring period, the last day of that period.~~

*d.*~~(3)~~ *Continuing and special population PE~~public education~~ by~~at~~ a CWS.*

(1) As long as a CWS exceeds the AL~~action level~~, it must repeat the following activities ~~pursuant to 42.2(2)"b"(2) as follows~~:

1. ~~A CWS shall r~~Repeat the tasks ~~contained~~ in 40.6(2)*"c"*~~42.2(2)"b"(2)"~~(1),~~"~~ 40.6(2)"c"~~"~~(2),~~"~~ and 40.6(2)"c"(~~"~~8)~~"~~ every 12 months.
2. ~~A CWS shall r~~Repeat the tasks ~~contained~~ in 40.6(2)*"c"*(5)~~42.2(2)"b"(2)"5"~~ with each billing cycle.
3. A CWS serving a population greater than 100,000 shall post and retain PE materials on a publicly accessible website pursuant to 40.6(2)*"c"*(6).~~42.2(2)"b"(2)"6."~~
4. ~~A CWS shall r~~Repeat the task in 40.6(2)*"c"*(7)~~42.2(2)"b"(2)"7"~~ twice every 12 months on a schedule agreed upon with the department. The department can allow activities in 40.6(2)*"c"*~~42.2(2)"b"(2)~~ to extend beyond the 60-day requirement ~~if needed for implementation purposes~~ on a case-by-case basis; however, this extension must be approved in writing by the department in advance of the 60-day deadline, and the system must already have initiated PE~~public education~~ activities prior to the end of the 60-day deadline.

(2) A CWS meeting either of the following criteria may apply to the department in writing for reduced PE and community notice requirements:

1. The CWS is a facility, such as a prison or hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing POU treatment devices; or
2. The CWS provides water as part of the cost of services provided and does not separately charge for water consumption.

If the department approves the request in writing, the CWS is not required to include the language in 40.6(2)*"a"*(6) and must deliver the PE materials in accordance with 40.6(2)*"e."* in lieu of 40.6(2)*"c"* and *"d."*

(3) A CWS serving 3,300 or fewer people may limit certain aspects of its PE programs as follows:

1. The system must implement at least one of the activities in 40.6(2)*"c"*(8).
2. The system may limit the distribution of the PE materials in 40.6(2)*"c"*(2) and 40.6(2)"c"(3) to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children.
3. The department may waive the requirements of 40.6(2)*"c"*(7) for the system provided it distributes notices to every household served.

**Commented [70]:** "For systems..." - statement is not needed here.

**Commented [71]:** New 40.6(2)"d" - was 42.2(2)"b"(3), renumbered and combined with old 42.2(2)"b"(7) & (8) so all other CWS PE text is in one place.

**Commented [72]:** 'pursuant to…" - citations are listed below; no need to repeat the citation here.

**Commented [73]:** "A CWS shall…" - repeats the beginning statement in (3); unnecessary.

**Commented [74]:** "if needed…" - unnecessary.

**Commented [75]:** New 40.6(2)"d"(2) - moved from old 42.2(2)"b"(7) so all other CWS PE text is in one place.

**Commented [76]:** New 40.6(2)"d"(3) - moved from old 42.2(2)"b"(8) so all other CWS PE text is in one place.

*e.* ~~(4)~~ *Delivery of and continuing PE~~public education at~~ by an NTNC ~~system~~.*

(1) PE delivery by an NTNC. Within 60 days of the date of notification of the AL~~action level exceedance~~, an NTNC ~~system~~ shall deliver the specified PE~~public education~~ materials ~~specified~~ as follows:

1. Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the system; and
2. Distribute informational pamphlets or brochures on lead in drinking water to each person served by the NTNC~~nontransient noncommunity water system~~. The department may allow the system to utilize electronic transmission in lieu of or combined with printed materials as long as at least the same coverage is achieved. If the system serves children 18 years of age and under, such as a school or child care facility, the ~~public education~~PE materials~~notice~~ must be provided to the parents or legal guardians of the children.

~~For systems that are required to conduct monitoring annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs or, if the department has established an alternate monitoring period, the last day of that period.~~

(2~~5~~) Continuing PE~~public education~~ by~~at~~ an NTNC ~~system~~. An NTNC ~~system~~ shall repeat the tasks ~~contained~~ in 40.2(2)*"e"*(1)~~42.2(2)*"b"*(4)~~ at least once during each calendar year in which the system exceeds the lead AL ~~action level~~. The department can allow activities in 40.2(2)*"e"*(1)~~42.2(2)*"b"*(4)~~ to extend beyond the 60-day requirement ~~if needed for implementation purposes~~ on a case-by-case basis; however, this extension must be approved in writing by the department in advance of the 60-day deadline, and the system must already have initiated PE~~public education~~ activities prior to the end of the 60-day deadline.

*f.* ~~(6)~~*Discontinuation of PE~~public education~~ activities*. A CWS or NTNC ~~system~~ may discontinue delivery of PE~~public education~~ materials if it~~the system~~ has met the lead AL~~action level~~ during the most recent six-month monitoring period conducted pursuant to 567—paragraph 41.4(1)*"c."* Such systems shall recommence PE~~public education~~ in accordance with this subrule~~42.2(2)~~ if it~~the system~~ subsequently exceeds the lead AL~~action level~~ during any monitoring period.

~~(7) Special population CWS allowance. A CWS that meets the following criteria may apply to the department in writing for reduced public education and notification requirements:~~

~~1. The CWS is a facility, such as a prison or hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point-of-use treatment devices; and~~

~~2. The CWS provides water as part of the cost of services provided and does not separately charge for water consumption.~~

~~If the department approves the request in writing, the CWS is not required to include the language in 42.2(2)*"a"*(7) and must deliver the public education in accordance with 42.2(2)*"b"*(4) and (5), in lieu of 42.2(2)*"b"*(2) and (3).~~

~~(8) CWSs serving 3,300 or fewer people. A CWS serving 3,300 or fewer people may limit certain aspects of its public education programs as follows:~~

~~1. The system must implement at least one of the activities listed in 42.2(2)*"b"*(2)"8."~~

~~2. The system may limit the distribution of the public education materials in 42.2(2)*"b"*(2)"2" and "3" to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children.~~

~~3. The department may waive the requirements of 42.2(2)*"b"*(2)"7" for the system provided the system distributes notices to every household served by the system.~~

*g~~e~~. Supplemental monitoring and notification of results.* A ~~water~~ system that fails to meet the lead AL~~action level~~ on the basis of tap samples collected in accordance with 567—paragraph 41.4(1)*"c"* shall offer to sample the tap water of any customer who requests it. The system is not required to pay for collecting or analyzing the sample, nor is the system itself required to collect and analyze the sample.

~~[**ARC 3735C**, IAB 4/11/18, effective 5/16/18]~~

**567—40.7~~42.3~~(455B) Consumer confidence reports (CCRs).**

**40.7(1)~~42.3(1)~~** *Applicability and purpose.* This rule applies to all CWSs~~community public water supply systems. The purpose of this rule is to establish~~ and establishes the ~~minimum~~ requirements for the content of annual CCRs~~reports~~ that CWSs~~community water systems~~ must deliver to their customers. These CCRs~~reports~~ must contain information on the quality of the water delivered by the systems and characterize the risks (if any)

**Commented [77]:** New 40.6(2)"e" - was old 42.2(2)"b"(4); renumbered and combined with old 42.2(2)"b"(5) so all NTNC PE text is in one place.

**Commented [78]:** "For systems…" - this statement is not needed here.

**Commented [79]:** New 40.6(2)"e"(2) - was old 42.2(2)"b"(5); renumbered and combined with old 42.2(2)"b"(4) so all NTNC PE text is in one place.

**Commented [80]:** Old 42.2(2)"b"(7) - moved to new 40.6(2)"d"(2) so all other CWS PE text is in one place.

**Commented [81]:** Old 42.2(2)"b"(8) - moved to new 40.6(2)"d"(3) so all other CWS PE text is in one place.

from exposure to contaminants in the drinking water in an accurate and understandable manner. The department may assign PNpublic notification requirements and assess administrative penalties to any CWScommunity public water supply system thatwhich fails to fulfill the requirements of this rule.

**40.7(2)42.3(2)** CCR*Reporting delivery frequency.*

*a. Existing CWScommunity water systems.* Existing CWScommunity water systems must deliver CCRsthe first report by October 19, 1999; the second report by July 1, 2000; and subsequent reports annually by July 1 thereafter.

*b. New CWScommunity water systems.* New CWScommunity water systems must deliver their first CCRreport by July 1 of the year after their first full calendar year in operation, and annually thereafter.

*c. A CWS that which sells water to another CWS.* A CWS community water system that sells water to another CWScommunity water system must deliver the applicable information required in subrule 42.3(3)40.3(7) to the buyer (or consecutive) system:

(1) No later than April 19, 1999, for the 1998 report; by April 1, 2000, for the 1999 report; and aAnnually by April 1 thereafter, or

(2) On a date mutually agreed upon by the seller and the purchaser, and specifically included in a contract between the parties.

When a consecutive system sells water to another CWScommunity water system, the seller must provide all applicable information in 40.3(7)42.3(3) to the CWS buying the water from them.

**40.7(3)42.3(3)** *CCR content source water identification and definitions. of the reports.* Each annual CCRconsumer confidence report must contain the following information, at a minimum:

*a. Source water identification.* A CCRThe report must identify the source(s) of water delivered by the CWScommunity public water supply system, including the following:

(1) Type of water (e.g., SWsurface water, groundwater (GW), GWgroundwater purchased from another PWSpublic water supply).

(2) Commonly used name of the aquifer, reservoir, or river (if any) and location of the body (or bodies) of water.

(3) The availability of a source water assessment and the means to obtain it. If an source water assessment has been completed, , notify consumers of the availability of this information and the means to obtain it. In addition, sSystems are encouraged to highlight in the report significant sources of contamination in the source water area if they have readily available information is available. Where a system has received a source water assessment from the department, the CCRreport must include a brief summary of the system's susceptibility to potential sources of contamination, using language provided by the department or its designee, or written by the owner or operator.

*b. Definitions.* Each CCRreport using any of the following terms must include the applicable definitions of MCL, MCLG, MRDL, and MRDLG from 40 CFR §141.153.

(1) "Maximum Contaminant Level Goal (MCLG)" means the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

(2) "Maximum Contaminant Level (MCL)" means the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

(3) "Maximum Residual Disinfectant Level Goal (MRDLG)" means the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

(4) "Maximum Residual Disinfectant Level (MRDL)" means the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

(5)(1) A CCRreport thatwhich contains data on a contaminant for which EPA has set a TTtreatment technique or an ALaction level must include the applicablecone or both of the following definitions from 40 CFR §141.153, as applicable:

1. "Treatment technique (TT)" means a required process intended to reduce the level of a contaminant in drinking water.

2. "Action level (AL)" means the concentration of a contaminant which, if exceeded, triggers treatment or

**Commented [CC[82]:** Dates are obsolete.

**Commented [CC[83]:** "The availability…" – reworded.

**Commented [84]:** Replaced all of the definitions with a citation of the CFR.

~~other requirements which a water system must follow.~~

(2~~6~~) A CCR~~report~~ that contains information regarding a Level 1 or Level 2 assessment required under 567—subrule 41.2(1) must include the applicable assessment~~applicable~~ definitions from 40 CFR §141.153.~~:~~

~~1. "Level 1 Assessment" is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.~~

~~2. "Level 2 Assessment" is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred or why total coliform bacteria have been found in our water system on multiple occasions.~~

**40.7(4)**~~c~~ *CCR content-i~~I~~nformation on detected contaminants.* This subrule~~paragraph~~ specifies the ~~requirements for~~ information required~~to be included~~ in each CCR~~report~~ for contaminants subject to mandatory monitoring ~~(except *Cryptosporidium*, which is listed in 42.3(3)"c"(2))~~ as follows: regulated contaminants subject to an MCL, AL~~action level~~, MRDL, or TT~~treatment technique (regulated contaminants)~~; contaminants for which monitoring is required by either 40 CFR §~~Title 40, Part~~ 141.40 (unregulated contaminants), 567—subrule 41.9~~11~~(1) (sodium~~—monitoring~~), or~~and~~ 567—41.1~~5~~(455B) (other contaminants); and, except as provided under 40.7(6)*"a,"* contaminants with department-required monitoring that are detected in the finished water (disinfection byproducts (DBPs) or microbial contaminants), and *Cryptosporidium*. ~~for which monitoring is required by 567—Chapters 40 to 43, except as provided under 42.3(3)"c"(1), and which are detected in the finished water. The a~~Ammonia monitoring conducted pursuant to 567—subrule 41.9~~11~~(2) is not subject to this paragraph. For the purposes of this subrule, "detected" means at or above the levels prescribed as~~by the~~ follow~~sing~~: inorganic contaminants in 567—subparagraph 41.3(1)*"b~~e~~"*(1); ~~volatile organic contaminants~~ VOCs and~~in 567—paragraph 41.5(1)"b";~~ ~~synthetic organic contaminants~~ SOCs in 567—paragraph 41.5(1)*"b"*; radionuclide contaminants in 567—paragraph 41.8(1)*"c"*; DBPs~~disinfection byproducts~~ in 567—paragraph ~~83.6(7)~~41.6(1)*"b~~e~~"*(1~~6~~)~~"3"~~; and other contaminants with HAs~~health advisory levels~~, as assigned by the department.

*a.*(1) Contaminant~~The~~ data~~ relating to these contaminants~~ must be displayed in one or more tables~~ or in several adjacent tables~~. Any additional monitoring results that~~which~~ a CWS~~community water system~~ chooses to include in its CCR~~report~~ must be displayed separately.

(1)~~.~~ Contaminant~~The~~ data must be derived from data collected to comply with departmental monitoring and analytical requirements~~ during calendar year 1998 for the first report and subsequent calendar years thereafter~~. Where a system is allowed to monitor for contaminants less often than once a year, the CCR table(s) must include the results~~, and date of~~ the most recent sampling date, and a brief statement indicating that the data ~~presented~~ in the CCR~~report~~ are from the most recent testing done in accordance with the regulations. No data older than five years need be included.

(2)~~.~~ For detected regulated contaminants~~, which are~~ listed in Appendix A to 40 CFR Part 141, Subpart O, ~~Appendix C~~, the table(s) must contain:

1. ~~•~~The contaminant MCL~~ for that contaminant~~, expressed as a number equal to or greater than 1.0 (as provided in Appendix A of 40 CFR Part 141, to Subpart O,~~Appendix C~~);
2. ~~•~~The contaminant MCLG~~ for that contaminant~~, expressed in the same units as the MCL;
3. ~~•~~If there is no MCL for a detected contaminant, the table(s) must indicate that there is a TT~~ treatment technique~~, or specify the AL~~action level,~~ applicable to that contaminant, and the CCR~~report~~ must include the definition for TT~~treatment technique~~ or AL~~action level~~, as appropriate~~, specified in 42.3(3)"b"(4)~~.

(3)~~.~~ For contaminants subject to an MCL, except turbidity and *E.coli*~~total coliforms~~, the table(s) must contain the highest contaminant level used to determine compliance with a primary drinking water standard and the range of detected levels, expressed in the same units as the MCL, as follows:

1. ~~•~~When MCL compliance~~ with the MCL~~ is determined annually or less frequently: the highest detected level at any sampling point and the range of detected levels~~ expressed in the same units as the MCL (such as inorganic compounds)~~.
2. ~~•~~When MCL compliance ~~with the MCL~~ is determined by calculating a running annual average (RAA) of all samples taken at a sampling point: the highest average of any of the sampling points and the range of all sampling points~~ expressed in the same units as the MCL, (such as organic compounds and radionuclides).~~ For TTHM and HAA5 MCLs, systems must include the highest locational running annual average (LRAA) for

**Commented [85]:** New 40.7(4) - was old 42.3(3)"c".

**Commented [86]:** Moved to end of sentence; crypto is now in this subrule.

**Commented [87]:** Deleted "expressed in the same units as the MCL" from the bullets below and placed the language here.

**Commented [88]:** Examples are not necessary.

TTHM and HAA5 and the range of individual sample results for all monitoring locations ~~expressed in the same units as the MCL~~. If more than one location exceeds the TTHM or HAA5 MCL, the system must include the LRAAs ~~locational running annual averages~~ for all locations that exceed the MCL.

3. ~~•~~When MCL compliance ~~with an MCL~~ is determined on a systemwide basis by calculating an RAA~~running annual average~~ of all samples at all sampling points: the average and range of detection ~~expressed in the same units as the MCL.Note:~~ When rounding of results to determine MCL compliance ~~with the MCL~~ is allowed by the regulations, rounding should be done prior to multiplying the results by the factor ~~listed~~ in Appendix A of 40 CFR Part 141, Subpart O~~Appendix C~~.

(4)~~.~~ For turbidity: ~~When it is reported pursuant to 567—43.5(455B), 567—43.9(455B), or 567—43.10(455B): t~~The highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in 567—43.5(455B), 567—43.9(455B), or 567—43.10(455B) for the filtration technology being used, when turbidity is being reported pursuant to the cited rules. The CCR ~~report~~ should include an explanation of the reasons for measuring turbidity.

(5)~~.~~ For lead and copper: the 90th percentile value of the most recent round of sampling and the number of sampling sites exceeding the AL~~action level~~.

~~6. Rescinded IAB 4/11/18, effective 5/16/18~~

(6)~~7.~~ For *E. coli* analytical results under 567—subrule 41.2(1), the total number of positive samples.

(7)~~8.~~ The likely source(s) of detected contaminants to the best of the owner's or operator's knowledge. If s~~S~~pecific ~~information regarding~~ contaminant information~~s~~ is ~~may be available~~ in sanitary surveys or~~and~~ source water assessments, it~~and~~ should be used ~~when available to the owner or operator~~. If the owner or operator lacks specific information on the likely contaminant source, the CCR~~report~~ must include one or more of the typical ~~sources for that~~ contaminant sources ~~listed in~~(from Appendix A of 40 CFR Part 141, Subpart O)~~Appendix C, that~~~~which~~ are most applicable to the system.

(8)~~9.~~ If a CWS~~community water system~~ distributes water to its customers from multiple hydraulically independent distribution systems that are fed by different raw water sources, the CCR should identify each separate distribution system and the table(s) should contain a separate column for each service area~~, and the report should identify each separate distribution system~~. Alternatively, systems may produce separate CCRs ~~reports~~ tailored to include data for each service area.

**Commented [CC[89]:** "CCR should…" – reworded.

(9)~~10.~~ The table(s) must clearly identify any data indicating MCL, MRDL, or TT violations, and the CCR~~report~~ must contain a clear and readily understandable explanation of the violation, including:

1. ~~•~~The length of the violation;~~,~~
2. ~~•~~The potential adverse health effects;~~,~~
3. ~~•~~Actions taken by the system to address the violation;~~,~~ and
4. ~~•~~The relevant language from Appendix A of 40 CFR Part 141, Subpart O~~Appendix C to~~ describ~~e~~inge the potential health effects.

(10)~~11.~~ For detected unregulated contaminants for which monitoring is required, except *Cryptosporidium*, the table(s) must contain the average and range at which the contaminant was detected. The CCR~~report~~ may include a brief explanation of the reasons for monitoring for unregulated contaminants.

(11)~~12.~~ CWSs~~Community public water supply systems~~ may list the most recent results of the special sodium monitoring requirement, according to 567—subrule 41.11(1), in the CCR~~annual report,~~ instead of providing a separate PN~~public notification~~.

(12)~~13.~~ If a contaminant that~~which~~ does not have an MCL, MRDL, TT, or AL is detected in the water, the PWS must contact the department for the specific health effects language, health advisory level (HAL), and contamination sources.

*b.*(2) If monitoring indicates that *Cryptosporidium* may be present in the source water or the finished water, or that radon may be present in the finished water, the CCR~~report~~ must include:

(1)~~.~~ A summary of the *Cryptosporidium* monitoring results;

(2)~~.~~ The radon monitoring results; and

(3)~~.~~ An explanation of the results' significance ~~of the results~~.

*c.*(3) If a~~the~~ system has performed additional monitoring that~~which~~ indicates the presence of other contaminants in the finished water, it~~the system~~ must report any results that~~which~~ may indicate a health concern.

To determine if results may indicate a health concern, a~~the~~ CWS~~community public water supply~~ can inquire about~~determine if there is~~ a current or proposed MCL~~maximum contaminant level~~, MRDL~~maximum residual disinfectant level~~, TT~~treatment technique~~, AL~~action level~~, or HA~~health advisory~~ by contacting the department or by calling the N~~a~~tional Safe Drinking Water Hotline (~~(~~800~~.)~~426~~.~~4791). The department considers the detection of a contaminant above a proposed MCL or HAL~~health advisory~~ to indicate possible health concerns. For such contaminants, the CCR~~report~~ should include:

(1)~~.~~ The monitoring results ~~of the monitoring~~; and

(2)~~.~~ An explanation of the results' significance~~, of the results~~ noting the existence of an HA~~health advisory~~ or a proposed regulation.

*d.*~~(4)~~ If a~~the~~ system was required to comply with the federal Information Collection Rule pursuant to ~~the Code of Federal Regulations Title~~ 40 CFR Part 141, it must include the results of monitoring in compliance with 40 CFR Part 141~~Sections 141.142 and 141.143~~. These results need only be included for five years from the date of the sample or until any of the detected contaminants become regulated and subject to routine monitoring requirements, whichever comes first.

**40.7(5)**~~*d.*~~ *CCR content-~~C~~compliance with 567—Chapters ~~40, 41, 42, and~~ 43*. In addition to the requirements of ~~paragraph~~ 40.7(4)*"a"*(8)~~,42.3(3)"e"(1)"9,"~~ the CCR~~report~~ must note any violation of a requirement listed below that occurred during the year covered by the report ~~of a requirement listed below~~ and include a clear and readily understandable explanation of the violation, any potential adverse health effects, and the steps the system has taken to correct the violation. ~~N~~The system must note any violation of the following ~~requirements~~:

*a.*~~(1)~~ Monitoring and reporting of compliance data pursuant to 567—Chapters 41 and 43, ~~which~~ including~~s~~ any contaminant with a MCL~~maximum contaminant level~~, TT~~treatment technique~~, AL~~action level~~, or HA~~health advisory~~;

*b.*~~(2)~~ The following TTs~~Treatment techniques~~:

(1)~~.~~ Filtration and disinfection prescribed by 567—43.5(455B). For systems that~~which~~ have failed to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes that~~which~~ constitutes a violation, the CCR~~report~~ must include the following statement~~language~~ with~~as part of~~ the explanation of potential adverse health effects:

"Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches."

(2)~~.~~ Lead and copper control requirements. For systems that~~which~~ fail to take one or more actions prescribed by 567—Chapters 41 and ~~to~~ 43 pertaining to lead and copper, the CCR~~report~~ must include the relevant~~applicable~~ language from~~of~~ Appendix A of 40 CFR Part 141, Subpart O~~Appendix C to this chapter for lead or copper, or both~~.

(3)~~.~~ Acrylamide and epichlorohydrin control technologies~~, prescribed by 567—subparagraph 41.5(1)"b"(3). For s~~Systems in~~which~~ violation~~e~~ ~~the requirements~~ of 567—subparagraph 41.5(1)*"b"*(3)~~, the report~~ must include the relevant language from Appendix A of 40 CFR Part 141, Subpart O~~, Appendix C to this chapter~~ in their CCR.

*c.*~~(3)~~ Record-keeping of compliance data pursuant to 567—Chapters ~~40~~41 and ~~to~~ 43;

*d.*~~(4)~~ Special monitoring requirements; and

*e.*~~(5)~~ Violation of ~~the terms of~~ an operation permit compliance schedule, ~~or an~~ administrative order, or judicial order.

**40.7(6)**~~*e.*~~ *CCR content-~~O~~operation permit or administrative order with a compliance schedule*~~, which extends the time period in which compliance must be achieved~~. If a system has been issued a compliance schedule with an extension for compliance, the CCR~~report~~ must contain:

*a.*~~(1)~~ An explanation of the reasons for the extension;

*b.*~~(2)~~ The date on which the extension was issued;

*c.*~~(3)~~ A brief status report on the steps the system is taking to install treatment, find alternative sources of water, or otherwise comply with the ~~terms of the~~ compliance schedule; and

*d.*~~(4)~~ A notice of any opportunity for public input in the review or renewal of the compliance schedule.

**40.7(7)**~~*f.*~~ *CCR content-~~M~~mandatory CCR~~report~~ language explaining~~for explanation of~~ contaminant occurrence.* ~~The~~ CCRs~~reports~~ must contain a brief explanation regarding contaminants that~~which~~ may reasonably be expected to be found in drinking water, including bottled water. This explanation may include the

**Commented [CC[90]:** Removing outdated citations.

**Commented [91]:** New 40.7(5) - was old 42.3(3)"d".

**Commented [92]:** redundant

**Commented [93]:** New 40.7(6) - was old 42.3(3)"e".

**Commented [94]:** "which extends..." - overly wordy.

**Commented [95]:** New 40.7(7) - was old 42.3(3)"f".

statements in~~language of the following subparagraphs~~ 40.7(7)*"a"*(~~1~~) ~~to~~through 40.7(7)*"c"*(~~3~~). ~~Subp~~Paragraph 40.7(7)*"d"*(~~4~~) is provided as a minimal alternative to ~~subparagraphs~~ 40.7(7)*"a"*(1) ~~to~~through 40.7(7)*"c"*(~~3~~). Systems may also develop their own comparable language. A CCR~~The report also~~ must include the language of 40.7(8).~~42.3(3)"g."~~

*a.*(~~1~~) "The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material, and can pick up substances resulting from the presence of animals or from human activity."

*b.*(~~2~~) "Contaminants that may be present in source water include:"

(1) ~~-~~ "Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife."

(2) ~~-~~ "Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming."

(3) ~~-~~ "Pesticides and herbicides, which may come from a variety of sources such as agriculture, storm water runoff, and residential uses."

(4) ~~-~~ "Organic chemical contaminants, including synthetic and volatile organics, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems."

(5) ~~-~~ "Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities."

*c.*(~~3~~) "In order to ensure that tap water is safe to drink, the department prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The U~~nited~~ S~~tates~~ Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health."

*d.*(~~4~~) "Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the N~~a~~tional Safe Drinking Water Hotline ((800)426-4791)."

**40.7(8)**~~c~~ *Required additional health information.*

*a.*(~~1~~) *All systems.*

(1) All CCR~~report~~s must prominently display the following statement~~language~~:

"Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the national Safe Drinking Water Hotline ((800)426-4791)."

(2) Systems may write their own educational statements for arsenic in 40.7(8)*"b"*(1), nitrates in paragraph 40.7(8)*"c,"* and lead in 40.7(8)*"d"* but only in consultation with the department.

*b. Arsenic.*

(1~~2~~) ~~Arsenic levels greater than 0.005 mg/L.~~ A CWS~~system~~ that~~which~~ detects arsenic at levels above 0.005 mg/L and less than or equal to 0.010 mg/L~~:~~ ~~● M~~ must include in its CCR~~report~~ a short information statement about arsenic, using language such as:

"While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems."

~~● May write its own educational statement, but only in consultation with the department.~~

(2) ~~-~~ A CWS~~community water system~~ that detects arsenic above 0.010 mg/L and less than or equal to 0.05

**Commented [96]:** New 40.7(8) - was old 42.3(3)"g".

**Commented [97]:** Added new 40.7(8)"a"(2) and struck the duplicated text below.

**Commented [98]:** New 40.7(8)"b" - added new header for arsenic health info; was old 42.3(3)"g"(2).

**Commented [99]:** Moved to new 40.7(8)"a"(2) above.

mg/L must include in its CCR the arsenic health effects language in Appendix A of 40 CFR Part 141, Subpart Oprescribed by Appendix C to this chapter.

*c. Nitrates.* (3) Nitrate levels greater than half the MCL (5.0 mg/L).

(1) A system thatwhich detects nitrate at levels above 5.0 mg/L (half the MCL), but below the MCL:

1. Mmust include in its CCR a short informational statement about the impacts of nitrate on children, using language such as:

"Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider."

2. May write its own education statement, but only in consultation with the department.

(24) Nitrite levels greater than half the MCL (0.50 mg/L). A system thatwhich detects nitrite at levels above 0.50 mg/L (half the MCL), but below the MCL:

1. Mmust include in its CCR a short informational statement about the impacts of nitrite on children, using language such as:

"Nitrite in drinking water at levels above 1 ppm is a health risk for infants of less than six months of age. High nitrite levels in drinking water can cause blue baby syndrome. If you are caring for an infant you should ask advice from your health care provider."

2. May write its own education statement, but only in consultation with the department.

*d. Lead.* (5) Lead information statement for all CWS. Every report must include the following lead specific information.:

1. All systems must include in their CCR aA short informational statement about lead in drinking water and the effects it has on children, using language such as:. The statement must include the following information:

"If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from material and components associated with service lines and home plumbing. [Iinsert name of system] is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the National Safe Drinking Water Hotline (800)426-4791 or at www.epa.gov/safewater/lead."

2. A system may write its own educational statement, but only in consultation with the department.

*e. Total trihalomethanes (TTHMSs).* (6) Total trihalomethane (TTHM) levels above 0.080 mg/L but less than the MCL. Community water systemsA CWS that detects TTHMs above 0.080 mg/L, but below the MCL in 567—subrule 41.65(1)*"b"*(1), as an annual average, monitored and calculated under the provisions of 567—paragraph 41.65(1)*"ed,"* must include in its CCR the health effects language for total trihalomethanes listed in Appendix A to 40 CFR Part 141, Subpart OAppendix C.

**40.7(9)***4. Additional mandatory CCRreport requirements.*

*a.*(1) The CCRreport must include the telephone number of the owner, operator, or designee of the CWScommunity water system as a source of additional information concerning the report.

*b.*(2) In communities with a large proportion of non-English speaking residents, as determined by the department, the CCRreport must contain information regarding the importance of the CCR in the appropriate language(s)regarding the importance of the report or contain a telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.

*c.*(3) The CCRreport must include information (e.g., time and place of regularly scheduled board meetings) about opportunities for public participation in decisions that may affect the quality of the water.

*d.*(4) The sSystems may include such additional information as they deem necessary for the PE,public education consistent with, and not detracting from, the purpose of the CCRreport.

*e.*(5) Systems required to comply with 567—41.7(455B), the GWgroundwater rule (567—41.7(455B)), must include the following in the CCR, when applicable:

(1) Any GWgroundwater system that receives notice from the department of a significant deficiency must

**Commented [100]:** New 40.7(8)"c" - added new header for nitrate health info; was old 42.3(3)"g"(3).

**Commented [101]:** Redundant.

**Commented [102]:** Old 42.3(3)"g"(3)"2" - moved to new 40.7(8)"a"(2).

**Commented [103]:** "Nitrite levels..." - redundant.

**Commented [104]:** Old 42.3(3)"g"(4)"2" - moved to new 40.7(8)"a"(2).

**Commented [105]:** New 40.7(8)"d" - added new header for lead health info; was old 42.3(3)"g"(5).

**Commented [106]:** "All systems must…" - revised to match text in the rest of this subrule.

**Commented [107]:** Old 42.3(3)"g"(5)"2" - moved to new 40.7(8)"a"(2).

**Commented [108]:** New 40.7(8)"e" - added new header for TTHM health info; was old 42.3(3)"g"(6).

inform its customers of any significant deficiency that is uncorrected at the time of the next CCR~~report~~. The system must continue to inform the public annually until the department determines that particular ~~significant~~ deficiency is corrected. Each CCR ~~report~~ must include the following ~~elements~~:

1. ~~•~~The nature of the particular significant deficiency and the date the ~~significant~~ deficiency was identified by the department; and

2. ~~•~~For each significant deficiency, the department-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed.

~~Only i~~If directed by the department, a system with one or more significant deficiencies that have been corrected before the next CCR~~report is issued~~ must inform its customers of the ~~significant~~ deficiencies~~y~~, how the deficiencies~~y~~ were~~was~~ corrected, and the date(s) of correction.

(2) ~~-~~ Any GW~~groundwater~~ system that receives notice from the department or laboratory of a fecal indicator-positive GW~~groundwater~~ source sample that is not invalidated ~~by the department~~ under 567—paragraph 41.7(3)*"d"* must inform its customers of such a~~any fecal indicator-positive groundwater source~~ sample in the next CCR~~report~~. The system must continue to inform the public annually until the department determines that the fecal contamination in the GW~~groundwater~~ source is addressed under 567—paragraph 41.7(4)*"a."* Each ~~report~~CCR must include the following ~~elements~~:

1. ~~•~~The ~~source of the~~ fecal contamination source (if ~~the source is~~ known) and the dates of the fecal indicator-positive GW ~~groundwater~~ source samples;

2. ~~•~~Whether the fecal contamination in the GW~~groundwater~~ source has been addressed under 567—paragraph 41.7(4)*"a"* and the date of such action;

3. ~~•~~For each fecal contamination in the GW~~groundwater~~ source that has not been addressed under 567—paragraph 41.7(4)*"a,"* the department-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed; and

4. ~~•I~~~~f the system receives notice of a fecal indicator-positive groundwater source sample that is not invalidated by the department under 567—paragraph 41.7(3)"d,"~~ tThe potential health effects, using the "Fecal coliform or *E. coli*" or "Fecal Indicators (enterococci or coliphage)" health effects language in ~~of~~ Appendix A to 40 CFR Part 141, Subpart O~~Appendix C in Chapter 42~~.

*f.*~~(6)~~ Pursuant to 567—subrule 41.2(1), any system required to conduct~~comply with~~ a~~the~~ Level 1 ~~assessment requirement~~ or ~~a~~ Level 2 assessment ~~requirement~~ that is not due to an *E. coli* MCL violation must include in the CCR~~report~~ the statements~~text~~ below in ~~42.3(3)"h"(6)"4"~~40.7(9)*"f"*(1)", through ~~to~~ "40.7(9)*"f"*(3)", as appropriate, filling in the blanks accordingly and including the appropriate statements in 40.7(9)*"f"*(4)~~text found in the bulleted paragraphs of 42.3(3)"h"(6)"4" if appropriate.~~

(1) ~~-~~ "Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that the potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments."

(2) "During the past year, we were required to conduct [insert number of required Level 1 assessments] Level 1 assessment(s). [I~~i~~nsert number of completed Level 1 assessments] Level 1 assessment(s) were completed. In addition, we were required to take [insert number of required corrective actions] corrective actions, and we completed [insert number of completed corrective actions] of these actions."

(3) ~~-~~ "During the past year, [insert number of required Level 2 assessments] Level 2 assessments were required to be completed for our water system. [I~~i~~nsert number of completed Level 2 assessments] Level 2 assessment(s) were completed. In addition, we were required to take [insert number of required corrective actions] corrective actions, and we completed [insert number of completed corrective actions] of these actions."

(4) ~~-~~ Any system that has failed to complete all the required assessments or correct all identified sanitary defects is in violation of the TT~~treatment technique~~ requirement and must also include one or both of the following statements in its CCR, as appropriate:

1. ~~•~~"During the past year, we failed to conduct all of the required assessment(s)."

2. ~~•~~"During the past year, we failed to correct all identified defects that were found during the assessment."

*g.*~~(7)~~ Pursuant to 567—subrule 41.2(1), any system required to conduct a Level 2 assessment due to an *E.*

**Commented [109]:** "by the department" - redundant.

**Commented [110]:** "If the system…" - redundant; already in 2. above.

*coli* MCL violation must include ~~in the report~~ the statements~~text~~ in 40.7(9)*"g"*(1) and 40.7(9)*"g"*(2)~~42.3(3)*"h"*(7)"1" and "2"~~ in its CCR as appropriate, filling in the blanks accordingly and including the appropriate text ~~found~~ in 40.7(9)*"g"*(3). ~~the bulleted paragraphs of 42.3(3)*"h"*(7)"3" if appropriate.~~

(1) ~~-~~ "*E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We found *E. coli* bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments."

(2) ~~-~~ "We were required to complete a Level 2 assessment because we found *E. coli* bacteria in our water system. In addition, we were required to take [insert number of required corrective actions] corrective actions, and we completed [insert number of completed corrective actions] of these actions."

(3) ~~-~~ Any system that has failed to complete the required assessment or correct all identified sanitary defects is in violation of the TT~~treatment technique~~ requirement and must also include one or both of the following statements in its CCR, as appropriate:

1. ~~•~~"We failed to conduct the required assessment."
2. ~~•~~"We failed to correct all sanitary defects that were identified during the assessment that we conducted."

*h.*~~(8)~~ Pursuant to 567—subrule 41.2(1), if a system detects *E. coli* and has violated the *E. coli* MCL, in addition to completing the CCR table(s) as required in 40.7(4),~~42.3(3)*"c,"*~~ the system must include in its CCR one or more of the following statements to describe any noncompliance, as applicable:

(1) ~~-~~ "We had an *E. coli*-positive repeat sample following a total coliform-positive routine sample."
(2) ~~-~~ "We had a total coliform-positive repeat sample following an *E. coli*-positive routine sample."
(3) ~~-~~ "We failed to take all required repeat samples following an *E. coli*-positive routine sample."
(4) ~~-~~ "We failed to test for *E. coli* when any repeat sample tested positive for total coliform."

*i.*~~(9)~~ Pursuant to 567—subrule 41.2(1), if a system detects *E. coli* and has not violated the *E. coli* MCL, in addition to completing the CCR table(s) as required in 40.7(4),~~42.3(3)*"c,"*~~ the system may include in its CCR a statement that explains that although the system has detected *E. coli*, the system is not in violation of the *E. coli* MCL.

**40.7(10)**~~**42.3(4)**~~ *CCR~~Report~~ delivery.*

*a. Required CCR~~report~~ recipients.* Each CWS~~community water system~~ must mail or otherwise directly deliver one copy of the CCR~~report~~ to each customer.

(1) ~~The~~ S~~s~~ystems must make a good-faith effort to reach consumers who do not get water bills, using department-recommended means ~~recommended by the department~~. An adequate good-faith effort will be tailored to the consumers who are served by the system but are not bill-paying customers~~, such as renters or workers~~. A good-faith effort ~~to reach consumers~~ would include a mix of methods appropriate to the particular system~~, such as:~~ Reports could be:

1. Posted~~ing the reports~~ on the i~~I~~nternet;
2. Mailed~~ing~~ to postal patrons in metropolitan areas;
3. Advertised~~ing~~ ~~the availability of the report~~ in the news media;
4. Published~~eation~~ in a local newspaper;
5. Posted~~ing~~ in public places ~~such as cafeterias or lunchrooms of public buildings~~;
6. Delivered~~y of multiple copies~~ for distribution by single-billed customers such as apartment buildings or large private employers;
7. Delivered~~y~~ to community organizations.

(2) No later than the date the system is required to distribute the CCR~~report~~ to its customers, each CWS~~community water system~~ must provide ~~mail a copy of~~ the CCR ~~report~~ to the department, followed within three months by a certification that the CCR~~report~~ has been distributed to customers, and that it~~the information~~ is correct and consistent with the previously submitted compliance monitoring data ~~previously submitted to the department~~.

(3) No later than the date the system is required to distribute the CCR~~report~~ to its customers, each

CWS~~community water system~~ must deliver the report to any other agency or clearinghouse identified by the department, such as the Iowa department of health and human services~~department of public health~~ or county board of health.

*b. CCR a~~4~~vailability ~~of report~~.* Each CWS~~community water system~~ must make its CCR~~report~~ available to the public upon request. Each CWS~~community water system~~ serving 100,000 or more persons must post its current year's CCR~~report~~ to a publicly accessible website ~~on the Internet~~.

*c. ~~Waiver from CCR~~ mailing requirements~~waiver~~ for systems serving ~~fewer than 10,000~~ or fewer in population ~~persons~~.* All CWSs~~community public water supply systems~~ serving~~with~~ fewer than 10,000 persons ~~served~~ will qualify for~~be granted~~ a mailing ~~the~~ waiver, except for those systems which have ~~the following~~: one or more exceedances of a MCL~~maximum contaminant level~~, TT~~treatment technique~~, AL~~action level~~, or HA~~health advisory~~; an administrative order; a court order; significant noncompliance with monitoring or reporting requirements; or an extended compliance schedule ~~contained~~ in an~~the~~ operation permit. Even if~~though~~ a PWS~~public water supply system has~~ qualifies for ~~been granted~~ a mailing waiver, ~~subparagraphs 42.3(4)"a"(2) and (3)~~ and ~~paragraph~~ 40.7(10)*"a"* and *"b"*~~42.3(4)"b"~~ still apply to all CWSs~~community public water supply systems~~. A mailing waiver is not allowed for the CCR~~report~~ covering the year during which one of the previously listed exceptions occurred. Systems qualifying for a~~which use the~~ mailing waiver must:

(1) Publish their CCR~~reports~~ in one or more local newspapers serving the area where~~in which~~ the system is located;

(2) Inform ~~the~~ customers that their CCR~~reports~~ will not be mailed, either in the newspapers in which the CCR is~~reports are~~ published or by other department-approved means ~~approved by the department~~; and

(3) Make their CCR~~reports~~ available to the public upon request.

*d. ~~Waiver from CCR~~ mailing requirements waiver for systems serving 500 or fewer in population.* All CWSs~~community public water supply systems~~ serving 500 or fewer persons will qualify for a~~be granted the~~ mailing waiver, except for those systems that~~which~~ have ~~the following:~~ one or more exceedances of an MCL~~maximum contaminant level~~, TT~~treatment technique~~, AL~~action level~~, or HA~~health advisory~~; an administrative order; a court order; significant noncompliance with monitoring or reporting requirements; or an extended compliance schedule ~~contained~~ in an~~the~~ operation permit. Systems serving 500 or fewer persons that~~which~~ qualify for ~~use~~ the waiver may forego the requirements of ~~subparagraphs 42.3(4)~~40.7(10)*"c"*(1) and 40.7(10)*"c"*(2) if they provide notice at least once per year to their customers that the CCR is available upon request, by mail, door-to-door delivery, or by posting ~~that the report is available upon request~~, in conspicuous places within the service area ~~served by the system~~ acceptable to the department. A mailing waiver is not allowed for the CCR~~report~~ covering the year during which one of the previously listed exceptions occurred. Even if~~though~~ a PWS serving 500 or fewer persons~~public water supply system has~~ qualifies for~~been granted~~ a mailing waiver, ~~subparagraphs~~ 40.10*"a"*(2) and 40.10*"a"*(3), and paragraph 40.10*"b"*~~42.3(4)"a"(2) and (3) and paragraph 42.3(4)"b"~~ still apply~~. to all community public water supply systems.~~

~~[**ARC 9915B**, IAB 12/14/11, effective 1/18/12; **ARC 3735C**, IAB 4/11/18, effective 5/16/18]~~

**567—40.8~~42.4~~(455B) Reporting.**

**40.8(1)~~42.4(1)~~** *Reporting requirements other than for lead and copper.*

*a.* When required by the department, a PWS~~the supplier of water~~ shall report to the department within ten days following a test, measurement, or analysis required ~~to be made~~ by this chapter and 567—Chapters ~~40~~ 41 and ~~to~~ 43, the results of that test, measurement, or analysis in the form and manner prescribed by the department. This shall include reporting of all positive detects within the same specific analytical method.

*b.* Except where a different reporting period is specified in this rule or 567—Chapters 41 and 43, a PWS~~the supplier of water~~ shall report to the department within 48 hours after any failure to comply with the monitoring requirements ~~set forth~~ in 567—Chapters 41 and 43. The PWS~~supplier of water~~ shall also notify the department within 48 hours of failure to comply with any primary drinking water regulations.

*c.* The PWS~~public water supply system~~, within ten days of completion of each initial and repeat PNs~~public notification~~ required in~~pursuant to~~ 567—40.5~~42.1~~(455B), ~~for the initial public notice and any repeat notices,~~ shall submit to the department a certification that it has fully complied with the PN~~public notification~~ rules. The ~~public water system must include with this~~ certification must include a representative copy of each type of notice distributed, published, posted, or made available to the persons served by the system or to the media.

**Commented [111]:** "serving 10,000…" changed to match wording in "d".

**Commented [112]:** Moved from later in the sentence.

*d.* ~~Groundwater rule.~~ Additional reporting requirements for the GW~~groundwater~~ rule are listed in 567—paragraph 41.7(6)*"a."*

*e.* ~~Coliform rule.~~ Additional reporting requirements for the coliform rule are listed in 567—paragraph 41.2(1)*"n."*

**40.8(2)**~~42.4(2)~~ *Lead and copper reporting requirements.* All PWSs~~water systems~~ shall report all of the following ~~information~~ to the department ~~in accordance with this subrule~~.

*a. Reporting ~~requirements~~ for tap water monitoring ~~for lead and copper~~ and ~~for~~ water quality parameter (WQP) monitoring.*

(1) Except as provided ~~in~~ below in ~~42.4(2)~~40.8(2)*"a"*(1)"6~~8~~," a ~~water~~ system shall report the information specified below for all tap water samples specified in 567—paragraph 41.4(1)*"c"* and ~~for~~ all WQP~~water quality parameter~~ samples specified in 567—paragraph 41.4(1)*"d"* within the first ten days following the end of each applicable monitoring period specified in 567—41.4(455B) ~~(i.e., every six months, annually, or every three years)~~. For monitoring periods with a duration of less than six months, the end of the monitoring period is the last date samples can be collected during that period~~, as specified in 567—paragraphs 41.4(1)"c" and 41.4(1)"d."~~

1. The results of all tap samples for lead and copper, including the location of each site and the site selection criteria ~~under which the site was selected for the system's sampling pool~~;
2. Documentation for each tap water lead or copper sample for which the ~~water~~ system requests invalidation pursuant to 567—paragraph 41.4(1)*"c"*(6)"2";
~~3. Rescinded IAB 1/7/04, effective 2/11/04;~~
3~~4~~. The 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period (calculated in accordance with 567—subparagraph 41.4(1)*"b"*(3));
4~~5~~. With the exception of initial tap sampling conducted pursuant to 567—paragraph 41.4(1)*"c"*(4)"1," the system shall designate any site that~~which~~ was not sampled during previous monitoring periods~~,~~ and include an explanation of why sampling sites have changed;
5~~6~~. ~~The results of all tap~~ For samples ~~for pH and, where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica~~ collected under 567—subparagraphs 41.4(1)*"d"*(2) through 41.4(1)"d"(5)~~,~~, tap sample results for pH; where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica; and
~~7. The results of all~~SEP sample results~~s collected at the entry point(s) to the distribution system~~ for applicable WQPs; and~~water quality parameters under 567—subparagraphs 41.4(1)"a"(2) and (5); and~~
6~~8~~. ~~A water system shall report t~~The results of all WQP~~water quality parameter~~ samples collected under 567—subparagraphs 41.4(1)*"d"*(3) through 41.4(1)*"d"*(6) during each six-month monitoring period ~~specified~~ in 567—subparagraph 41.4(1)*"d"*(4) within the first ten days following the end of the monitoring period~~,~~ unless the department has specified a more frequent reporting requirement.

(2) Certain systems that do not have enough taps that can provide first-draw samples and that have met the six-hour stand time criteria, such as an NTNC with ~~that has~~ 24-hour operation or a CWS meeting~~that meets~~ the criteria of 40.6(2)*"d"*(2)~~42.2(2)"b"(7)~~, must either:

1. If~~In the case where~~ the department has not approved the non-first-draw sample sites, provide written documentation to the department identifying stand times and locations for enough non-first-draw samples to make up its sampling pool under 567—paragraph 41.4(1)*"c"*(2)"5" by July 1, 2003; or
2. If the department has already approved the non-first-draw sample sites ~~selected by the system~~, identify each site that did not meet the six-hour minimum stand time and the length of stand time for that particular substitute sample (collected pursuant to 567—paragraph 41.4(1)*"c"*(2)"5.") Certain systems already include this information in writing with the lead and copper tap sample results required by~~to be submitted pursuant to~~ 567—paragraph 41.4(1)*"d"*(1)"1."

(3) At a time specified by the department or, if no specific time is specified,~~designated by the department,~~ then as early as possible prior to the addition of a new source or any long-term change in water treatment, a ~~water~~ system subject to this subparagraph ~~that has optimized corrosion control under 567—subparagraph 43.7(1)"b"(3), a water system is subject to reduced monitoring pursuant to 567—paragraph 41.4(1)"c"(4)"4,"~~

**Commented [113]:** Unnecessary.

**Commented [114]:** "in accordance…" - not needed.

**Commented [115]:** "i.e., every six…" – unnecessary.

**Commented [116]:** "as specified…" – redundant.

**Commented [CC[117]:** Combined old 6 & 7, as they both refer to samples collected under 41.4(1)"d"(2) to (5).

**Commented [118]:** All sentences in (3) now list new source addition, then long-term change. Removed unnecessary examples.

~~or a water system is subject to a monitoring waiver pursuant to 567—subparagraph 41.4(1)"c"(7),~~ shall send written documentation to the department describing the ~~change or~~ addition or change. The department must review and approve the addition ~~of a new source~~ or ~~long-term~~ change ~~in treatment~~ before it is implemented by the ~~water~~ system.

1. Systems subject to this subparagraph are those that have optimized corrosion control under 567—subparagraph 43.7(1)*"b"*(3), are subject to reduced monitoring pursuant to 567—paragraph 41.4(1)*"c"*(4)"4," or are subject to a monitoring waiver pursuant to 567—subparagraph 41.4(1)*"c"*(7).

2. Examples of long-term treatment changes include the addition of a new treatment process or modification of an existing ~~treatment~~ process. ~~Examples of modifications include the switching of secondary disinfectants, switching of coagulants (e.g., alum to ferric chloride), and switching of corrosion inhibitor products (e.g., orthophosphate to blended phosphate).~~ Long-term changes can include dose changes to existing chemicals but~~if the system is planning long-term changes to its finished water pH or residual inhibitor concentration. Long-term treatment changes~~ do~~would~~ not include chemical dose fluctuations associated with daily water quality changes.

3. Examples of modifications include the switching of secondary disinfectants, coagulants, or corrosion inhibitor products. In those instances where prior department approval of a new source addition or long-term~~the~~ treatment change ~~or new source~~ is not required, ~~water~~ systems are encouraged to provide ~~the~~ notification to the department beforehand to minimize the risk that the ~~treatment change or~~ new source addition or treatment change will adversely affect optimal corrosion control (OCC).

(4) Any small system applying for or subject to a monitoring waiver under 567—subparagraph 41.4(1)*"c"*(7), ~~or subject to a waiver granted pursuant to 567—paragraph 41.4(1)"c"(7)"3,"~~ shall provide the following information to the department in writing by the specified deadline:

1. By the start of the first applicable monitoring period in 567—subparagraph 41.4(1)*"c"*(4), any small ~~water~~ system applying for a monitoring waiver shall provide ~~the~~ documentation ~~required to~~ demonstrating~~e~~ that it meets the waiver criteria of 567—paragraphs 41.4(1)*"c"*(7)"1" and "2."

2. No later than nine years after the monitoring previously conducted pursuant to 567—paragraph 41.4(1)*"c"*(7)"2" or ~~567—paragraph~~ 41.4(1)*"c"*(7)"4," first bulleted paragraph, each small system desiring to maintain its monitoring waiver shall provide the information required by 567—paragraph 41.4(1)*"c"*(7)"4," first and second bulleted paragraphs.

3. No later than 60 days after the system becomes aware that it is no longer free of lead-~~containing~~ or copper-containing materials, as appropriate, each small system with a monitoring waiver shall provide written notification ~~to the department~~, setting forth the circumstances resulting in the lead-~~containing~~ or copper-containing materials being introduced into the system and what corrective action, if any, the system plans to remove these materials.

(5) Each GW~~groundwater~~ system that limits WQP~~water quality parameter~~ monitoring to a subset of entry points under 567—paragraph 41.4(1)*"d"*(3)"3" shall provide, by the commencement of such monitoring, written correspondence to the department that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

*b. Source water monitoring reporting ~~requirements~~.*

(1) ~~A water s~~Systems shall report the sampling results for all source water samples collected ~~in accordance with 567—paragraph 41.4(1)"e"~~ within the first ten days following the end of each source water monitoring period ~~(i.e., annually, per compliance period or per compliance cycle) specified~~ in accordance with 567—paragraph 41.4(1)*"e."*

(2) With the exception of the first round of source water sampling conducted pursuant to 567—subparagraph 41.4(1)*"e"*(2), the system shall specify any site that~~which~~ was not sampled during previous monitoring periods~~,~~ and include an explanation of why the sampling point has changed.

*c. Corrosion control treatment (CCT) reporting ~~requirements~~.* By the applicable dates in~~under~~ 567—subrule 43.7(1), systems shall report the following ~~information~~:

(1) For systems demonstrating that they have already optimized corrosion control, information required in 567—subparagraph 43.7(1)*"b"*(2) or 43.7(1)*"b"*(3).

(2) For systems required to optimize corrosion control, their recommendation regarding optimal corrosion control treatment (OCCT) under 567—paragraph 43.7(2)*"a."*

**Commented [119]:** "Examples of…" - moved to after the 2nd long-term treatment sentence (new #3 below).

**Commented [120]:** Added "or subject to" earlier in the sentence to replace this text.

**Commented [121]:** The rule says to provide info to the dept. in subparagraph (4) (which is the header for 3.)

**Commented [122]:** Matches citation at end of the paragraph; it's only needed once.

(3) For systems required to evaluate the effectiveness of CCTs~~corrosion control treatments~~ under 567—paragraph 43.7(2)*"c,"* the information required by that paragraph.

(4) For systems required to install OCC~~optimal corrosion control~~ designated by the department under 567—paragraph 43.7(2)*"d,"* a letter certifying that the system has completed installing that treatment.

*d. Source water treatment reporting ~~requirements~~.* By the applicable dates in 567—~~sub~~paragraph 43.7(3)*"~~b~~a"*~~(1)~~, systems shall provide the following ~~information~~ to the department:

(1) If required under 567—subparagraph 43.7(3)*"b"*(1), their recommendation regarding source water treatment; and

(2) For systems required to install source water treatment under 567—subparagraph 43.7(3)*"b"*(1), a letter certifying that the system has completed installing the designated treatment ~~designated by this department~~ within 24 months of~~after~~ the department designation~~ed the treatment~~.

*e. Lead service line replacement (LSLR) reporting ~~requirements~~.* Systems shall report the following ~~information~~ to the department to demonstrate compliance with ~~the requirements of~~ 567—subrule 43.7(4):

(1) No later than 12 months after the end of a monitoring period in which a system exceeds the lead AL~~action level~~ when~~in~~ sampling pursuant~~referred~~ to ~~in~~ 567—paragraph 43.7(4)*"a,"* the system must submit ~~to the department~~ written documentation of the material evaluation pursuant to 567—subparagraph 41.4(1)*"c"*(1), identify the initial number of lead service lines (LSLs) in its distribution system at the time it~~the system~~ exceeds the lead AL~~action level~~, and provide ~~the department with the system's~~its schedule for replacing annually at least 7 percent of the initial number of LSLs~~lead service lines~~ in its distribution system.

(2) No later than 12 months after the end of a monitoring period in which a system exceeds the lead AL ~~action level~~ when~~in~~ sampling pursuant~~referred~~ to ~~in~~ 567—paragraph 43.7(4)*"a,"* and every 12 months thereafter, the system shall demonstrate in writing that it~~the system~~ has either:

1. Replaced in the previous 12 months at least 7 percent of the initial LSLs~~lead service lines~~ (or a greater number of lines specified by the department under 567—paragraph 43.7(4)*"e"* in its distribution system), or

2. Conducted sampling that~~which~~ demonstrates that the lead concentration in all service line samples from individual line(s), taken pursuant to 567—paragraph 41.4(1)*"c"*(2)"3," is less than or equal to 0.015 mg/L. In such cases, the total number of lines replaced plus~~and~~ those lines meeting~~which meet~~ the criteria in 567—paragraph 43.7(4)*"c"* shall either equal at least 7 percent of the initial number of lead lines identified under 40.8(2)*"e"*(1) above ~~42.4(2)"e"(1)~~ or equal the percentage specified by the department under 567—paragraph 43.7(4)*"e."* An LSL~~lead service line~~ meeting the criteria of 567—paragraph 43.7(4)*"c"* may only be used to comply with the 7-percent criteria for a specific year, and may not be used again to calculate compliance with the 7-percent criteria in future years.

(3) The annual letter submitted ~~to the department~~ under 40.8(2)*"e"*(2) above~~42.4(2)"e"(2)~~ shall contain the following ~~information~~:

1. The number of LSLs~~lead service lines~~ scheduled to be replaced during the previous year of the system's replacement schedule;

2. The number and location of each LSL~~lead service line~~ replaced during the previous year of the system's replacement schedule; and

3. If measured, the water lead concentration and location of each LSL~~lead service line~~ sampled, the sampling method, and the sampling date ~~of sampling~~.

(4) Any system that~~which~~ collects LSL~~lead service line~~ samples following partial LSL~~lead service line~~ replacement required by 567—subrule 43.7(4) shall report the results ~~to the department~~ within the first ten days of the month following the month in which the system receives the laboratory results~~,~~ or as specified by the department. Systems shall also submit~~report~~ any additional requested information ~~as specified by the department, and~~ in a time and manner prescribed by the department~~,~~ to verify that all partial LSL~~lead service line~~ replacement activities have taken place.

*f. P~~E~~ublic education program reporting ~~requirements~~.*

(1) Any ~~water~~ system ~~that is~~ subject to the PE~~public education~~ requirements in 40.6(2)~~42.2(2)~~ shall, within ten days after the end of each period in which the system is required to perform PE~~,public education in accordance with 42.2(2)"b,"~~ send written documentation to the department containing~~that contains~~:

1. A demonstration that the system has delivered the PE~~public education~~ materials that meet the content

**Commented [123]:** "the department" - added to replace repetitive text in subparagraphs below.

**Commented [124]:** Moved to 1st sentence of paragraph "e."

**Commented [125]:** Moved to 1st sentence of paragraph "e."

**Commented [126]:** Moved to paragraph "e."

**Commented [127]:** Moved to paragraph "e."

**Commented [128]:** Redundant; references the same subrule as the first part of the sentence.

and delivery requirements in 40.6(2); ~~42.2(2)*"a"* and the delivery requirements in 42.2(2)*"b"*;~~ and

2. A list of all the newspapers, radio stations, television stations, facilities, and organizations to which the system delivered PE~~public education~~ materials during the PE period ~~in which the system was required to perform public education tasks~~.

(2) Unless required by the department, a system that previously ~~has~~ submitted the information required by 40.8~~42.4~~(2)*"f"*(1)"2" need not resubmit the same information, provided there have been no changes in the distribution list and the system certifies that the PE~~public education~~ materials were distributed to the same list previously submitted. This~~e~~ certification is due within ten days after the end of each period in which the system is required to perform PE~~public education~~.

(3) No later than three months following the end of the monitoring period, each system must mail a sample copy of the consumer notice~~fication~~ of tap results to the department along with a certification that the notice~~fication~~ has been distributed in a manner consistent with 40.6(1). ~~the requirements of 42.2(1).~~

*g. ~~Reporting of a~~Additional monitoring data reporting.* A system that~~which~~ collects sampling data in addition to that required by 567—Chapters 41 and 43 shall report the results to the department within the first ten days following the end of the applicable monitoring period under 567—paragraphs 41.4(1)*"c," "d,"* and *"e"* during which the samples are collected.

**40.8(3)** ~~**42.4(3)**~~ *PWS o~~O~~peration and maintenance ~~for PWS~~.*

*a. Required operation records ~~of operation~~.*

(1) ~~Applicability.~~ Monthly operation records (MORs) ~~of operation~~ shall be completed by all PWSs~~public water supplies,~~ on forms provided by the department or on similar forms~~,~~ unless a PWS ~~public water supply~~ meets all of the following conditions:

1. Supplies an annual average of not more than 25,000 gpd or serves no more than an average of 250 individuals daily;

2. Is a CWS~~community public water supply~~ and does not provide any type of treatment, or is a NCWS~~noncommunity system~~ (NTNC or~~and~~ TNC~~)~~ that~~which~~ has only a cation-exchange softening or iron/manganese removal treatment unit, and meets the requirements of ~~42.4(3)~~40.8(3)*"a"*(~~42~~)"7";

3. Does not utilize either a SW~~surface water~~ or an IGW, ~~groundwater under the direct influence of surface water~~ either in whole or in part, as a water source;

4. Does not use a TT~~treatment technique~~ such as blending to achieve compliance with an MCL~~maximum contaminant level~~, TT~~treatment technique~~, AL~~action level~~, or HA~~health advisory~~.

(2) MORs~~The reports~~ shall be completed as described in ~~42.4(3)*"a"*~~ *~~40.8(3)"a"~~*(~~42~~), submitted to the department within ten days after the end of each month the system serves water to the public, and maintained at the facility for department inspection ~~by the department~~ for a period of five years. For CWSs and NTNCs, ~~PWSs,~~ the MOR~~monthly operation report~~ must be signed by the certified operator in charge. For TNCs ~~PWSs~~, the MOR~~monthly operation report~~, if required by the department, must be signed by the owner or the owner's designee.

(3) In addition to the requirements of this paragraph, ~~A~~all PWSs~~public water supplies~~ using a SW~~surface water~~ or IGW~~influenced groundwater~~ source must also comply with the applicable record-keeping requirements in 567—Chapter 43.~~567—43.5(455B), 567—43.9(455B), 567—43.10(455B), and 567—43.11(455B).~~

(~~42~~) ~~Contents.~~ MORs~~Monthly operation reports~~ shall be completed as follows. Daily monitoring is seven days a week unless otherwise specified by the department.~~:~~

1. Pumpage or flow. NCWS~~Noncommunity supplies~~ shall measure and record the total water used each week. ~~It is recommended that a d~~Daily measurement and recording is recommended. ~~be made.~~ CWS~~Community supplies~~ shall measure and record the total~~daily~~ water used each day. ~~Reporting of p~~Pumpage or flow reporting may be required in an operation permit where needed to verify MCL compliance.

2. General t~~T~~reatment effectiveness. Where treatment is practiced, the intended effect of the treatment shall be measured and recorded at locations and by methods which best indicate effectiveness of the treatment process. ~~These measurements shall be made~~ at a frequency specified in~~pursuant to~~ Appendix A~~B~~ of this chapter. ~~Daily monitoring is seven days a week unless otherwise specified by the department.~~

3. ~~Treatment effectiveness for a p~~Primary standard treatment effectiveness. Where the raw water quality does not meet the requirements of 567—Chapters 41 and 43 and treatment is practiced to comply~~for the purpose~~

**Commented [CC[129]:** New 40.8(3)"a"(2) - existing text; was end of old 42.4(3)"a"(1).

**Commented [CC[130]:** New 40.8(3)"a"(3) - existing text; was end of old 42.4(3)"a"(1).

**Commented [131]:** "Daily monitoring…" - moved duplicated text from numbered subparagraphs below to here.

**Commented [132]:** Moved to beginning of the subparagraph.

~~of complying~~ with an MCL~~maximum contaminant level~~, AL~~action level~~, TT, or HA,~~health advisory, or treatment technique criteria, daily measurement of~~ the primary standard constituent or an appropriate department-designated indicator constituent ~~designated by the department~~ shall be measured and recorded daily. ~~The department will require r~~Reporting of these results will be required in the operation permit to verify MCL compliance.

4. ~~Treatment effectiveness for a s~~Secondary standard treatment effectiveness. Where treatment is practiced to achieve~~for the purpose of achieving~~ the recommended level of any constituent designated in the federal secondary standards, measurements shall be conducted~~measured~~ and recorded at a frequency specified in Appendix ~~B~~A of this chapter. ~~Daily monitoring is seven days a week unless otherwise specified by the department.~~

5. Chemical application. Chemicals, such as fluoride, iodine, bromine, and chlorine, that~~which~~ are potentially toxic in excessive concentration~~,~~ shall be measured and recorded daily. Recording shall include the amount of chemical applied each day. Where the PWS~~supplier of water~~ is attempting to maintain a residual of the chemical throughout the system~~, such as chlorine~~, the residual in the system shall be measured and recorded daily. The quantity of all other chemicals applied shall be measured and recorded at least once each week.

6. Static ~~water levels~~ and pumping water levels must be measured and recorded once per month for all GW~~groundwater~~ sources. More or less frequent measurements may be approved by the department where historical data justifies it.

7. NCWS~~Noncommunity systems (NTNC and TNC)~~ are exempt from the self-monitoring requirements for cation-exchange softening and iron/manganese removal if the treatment unit:

- Is a commercially available "off-the-shelf" unit designed for home use;
- Is self-contained, requiring only a piping connection for installation;
- Operates throughout a range of 35 to 80 psi; and
- Has not been installed to~~for the purpose of~~ remove~~ing~~ a contaminant that~~which~~ has an MCL~~maximum contaminant level~~, TT~~treatment technique~~, AL~~action level~~, or HA~~health advisory~~.

*b. Chemical quality and application.* Any ~~drinking water system~~ chemical ~~which is~~ added to raw, partially treated, or finished water must be suitable for the intended use in a potable water system. ~~Effective on October 1, 2000, t~~The chemical must be certified by an ~~American National Standards Institute (~~ANSI~~)~~ accredited third party for conformance with the ~~American National Standards Institute/National Sanitation Foundation (~~ANSI/NSF~~)~~ Standard 60, if such certification exists for the particular product, unless certified chemicals are not reasonably available for use, in accordance with department guidelines ~~provided by the department~~. If the chemical is not certified for conformance with ~~to meet~~ the ANSI/NSF Standard 60 or no certification is available, the person seeking to supply or use the chemical must prove to the department's satisfaction ~~of the department~~ that the chemical is not toxic or otherwise a potential hazard in a potable PWS~~public water supply system~~.

~~The~~ PWS~~supplier of water~~ shall keep a record of all chemicals used. This record should include a clear identification of the chemical by brand or generic name and the dosage rate. When chemical treatment is applied with the intent of obtaining an in-system residual, the residuals will be monitored regularly. When chemical treatment is applied and in-system residuals are not expected, the ~~effectiveness of the~~ treatment effectiveness will be monitored through an appropriate indicative parameter.

(1) Continuous disinfection.

1. When required. Continuous disinfection must be provided at all PWS~~public water supply systems~~, except for ~~the following: groundwater~~ GW supplies that either have no treatment facilities or have only fluoride, sodium hydroxide, or soda ash addition~~; and that~~ meet the bacterial standards ~~as provided~~ in 567—subrule 41.2(1); and do not show other actual or potential hazardous contamination by microorganisms. For an NCWS~~noncommunity system~~ that only uses a cation-exchange softening unit meeting~~that meets~~ the requirements of 40.8(3)*"a"*(4)"7"~~42.3(4)"a"(7)~~, ~~the~~this requirement ~~for continuous disinfection~~ is based ~~up~~on both the system's history of ~~both~~ coliform bacteria detection and its compliance with the coliform bacteria monitoring requirements ~~as provided~~ in 567—subrule 41.2(1).

2. Method. Chlorine is the preferred disinfecting agent. Chlorination may be accomplished with liquid chlorine, calcium or sodium hypochlorites, or chlorine dioxide. Other disinfecting agents will be considered, provided a residual can be maintained in the distribution system, reliable application equipment is available, and

**Commented [133]:** Matches wording in other subparagraphs in paragraph (2).

**Commented [134]:** Moved to beginning of the subparagraph.

**Commented [135]:** "drinking water system" - redundant.

**Commented [136]:** ANSI and NSF are in the new references table in 40.2(3)"a".

**Commented [137]:** There is no current 42.3(4)"a"(7).

residual testing procedures ~~for a residual~~ are recognized in the Standard Methods ~~for the Analysis of Water and Wastewater~~.

3. Chlorine residual. A minimum free available chlorine residual of 0.3 mg/L or a minimum total available chlorine residual of 1.5 mg/L must be continuously maintained throughout the ~~water~~ distribution system, except for those points in the distribution system that terminate as dead ends or areas that represent very low use when compared to usage throughout the rest of the distribution system, as determined by the department. All systems using water to which chlorine has been added must monitor daily in the distribution system to ensure the minimum disinfectant residual concentration is met, including both wholesale systems and consecutive systems.

4. Measurement. Chlorine may be measured by a test kit or an online analyzer meeting the specifications in 40.8(3)*"b"*(1)"5" and "6."

5. Test kit. A test kit capable of measuring free and combined chlorine residuals in increments no greater than 0.1 mg/L in the range below 0.5 mg/L, ~~and~~ in increments no greater than 0.2 mg/L in the range from 0.5 mg/L to 1.0 mg/L, and in increments no greater than 0.3 mg/L in the range from 1.0 mg/L to 2.0 mg/L must be provided at all chlorination facilities. The test kit must use an analysis method ~~of analysis that is~~ recognized in the Standard Methods ~~for the Examination of Water and Wastewater~~.

6. Online analyzer. Free and total chlorine may be measured continuously by adapting a specified chlorine residual method for use with a continuous monitoring instrument provided the chemistry, accuracy, and precision remain the same. Continuous monitoring instruments must be verified with a grab sample measurement at least every seven days. The analyzer concentration must be within plus or minus 0.1 mg/L or plus or minus 15 percent (whichever is larger) of the grab sample measurement. If the verification is not within this range, immediate actions must be taken to resolve the issue and another verification must be conducted.

7~~5~~. Leak detection, control, and operator protection. A bottle of at least 56 percent ammonium hydroxide must be provided at all gas chlorination installations for leak detection. Leak repair kits must be available where ton chlorine cylinders are used.

8~~6~~. Other disinfectant residuals. If an alternative disinfecting agent is approved by the~~this~~ department, the residual levels and ~~type of~~ test kit type ~~used~~ will be assigned by the department in accordance with and based upon the analytical methods ~~contained~~ in the Standard Methods ~~for the Examination of Water and Wastewater~~.

(2) Phosphate compounds.

1. When phosphate compounds are ~~to be~~ added to any PWS~~public water supply system~~ that uses~~which includes~~ iron or manganese removal or ion-exchange softening, the~~such~~ compounds must be applied after the iron or manganese removal or ion-exchange softening treatment units~~,~~ unless the department~~director~~ has ~~received and~~ approved an engineering report demonstrating the suitability for addition prior to these units in accordance with ~~the provisions of~~ 567—subrule 43.3(2). The department may require the discontinuance of phosphate addition where it interferes with other treatment processes or~~,~~ system~~the~~ operation ~~of the water system~~ or if there is a significant increase in microorganism populations associated with phosphate application.

2. The total phosphate concentration in ~~the~~ finished water must not exceed 10 mg/L as $PO_4$.

3. Chlorine shall be applied to the phosphate solution in sufficient quantity to give an initial concentration of 10 mg/L in the phosphate solution. A chlorine residual must be maintained in the phosphate solution at all times.

4. Test kits capable of measuring polyphosphate and orthophosphate in a range from 0.0 to 10.0 mg/L in increments no greater than 0.1 mg/L must be provided.

5. Continuous application or injection of phosphate compounds directly into a well is prohibited.

(3) Fluorosilicic acid. Where fluorosilicic acid ($H_2SiF_6$, also called hydrofluosilicic acid) is added to a PWS~~public water supply the operator shall be equipped with~~ a fluoride test kit with a minimum range of from 0.0 to 2.0 mg/L in increments no greater than 0.1 mg/L must be provided. Distilled water and standard fluoride solutions of 0.2 mg/L and 1.0 mg/L must be provided.

**Commented [138]:** Matches the language on providing test kits in the subparagraphs above.

*c. Reporting and record-keeping requirements for systems using surface water (SW) and groundwater under the direct influence of surface water (IGW).* In addition to the monitoring requirements in~~required by 42.4(3)~~40.8(3)*"a"* and *"b~~,~~"* above, a PWS~~public water system~~ that uses a SW~~surface water~~ ~~source~~ or ~~a~~ IGW ~~groundwater~~ source ~~under the direct influence of surface water~~ must report monthly to the department the information specified in this subrule ~~beginning June 29, 1993, or~~ when filtration is installed~~, whichever is later~~.

(1) Turbidity measurements ~~as~~ required by 567—subrule 43.5(3) must be reported within ten days after the end of each month the system serves water to the public. The following ~~I~~information ~~that~~ must be reported~~, includes:~~

1. The total number of filtered water turbidity measurements taken during the month.
2. The number and percentage of filtered water turbidity measurements taken during the month that~~which~~ are less than or equal to the turbidity limits ~~specified~~ in 567—paragraphs 43.5(3)*"b"* through *"e"* for the filtration technology being used.
3. The date and value of any turbidity measurements taken during the month which exceed 1~~5~~ NTU. If at any time the turbidity exceeds 1~~5~~ NTU, the system must inform the department as soon as possible, but no later than 24 hours after the exceedance is known, in accordance with the PN~~public notification~~ requirements in 40.5(2)~~42.1(2)~~. This ~~requirement~~ is in addition to the monthly reporting requirement, pursuant to 567—43.5(455B).

(2) The d~~D~~isinfection information ~~specified~~ in 567—subrule 43.5(2) and ~~paragraph 42.4(3)~~40.8(3)*"b"* above must be reported ~~to the department~~ within ten days after the end of each month the system serves water to the public. The following ~~I~~information ~~that~~ must be reported~~. includes:~~

1. For each day, the lowest measurement of residual disinfectant concentration in mg/L in water entering the distribution system.
2. The date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.3 mg/L free residual chlorine or 1.5 mg/L total residual chlorine (TRC) and when the department was notified of the occurrence. If at any time the residual falls below 0.3 mg/L free residual chlorine or 1.5 mg/L ~~total residual chlorine~~ TRC in the water entering the distribution system, the system must notify the department as soon as possible~~,~~ but no later than by the end of the next business day. The system also must notify the department by the end of the next business day whether or not the residual was restored to at least 0.3 mg/L free residual chlorine or 1.5 mg/L TRC ~~total residual chlorine~~ within four hours. This ~~requirement~~ is in addition to the monthly reporting requirement in~~, pursuant to~~ 567—43.5(455B).
3. The information on the samples taken in the distribution system in conjunction with the total coliform monitoring ~~listed~~ in 567—paragraph 43.5(2)*"d"* and pursuant to 567—subparagraph 41.2(1)*"c"*(7).

(3) ~~Total inactivation ratio.~~ The total inactivation ratio must be calculated each day the treatment plant is in operation, pursuant to 567—paragraph 43.5(2)*"a,"* and reported on the MOR~~monthly operation report~~. If the total inactivation ratio is below 1.0, the system must notify the department within 24 hours.

*d. Reporting and record-keeping requirements for DBPs~~disinfection byproducts~~, disinfectants, and DBP~~disinfection byproduct~~ precursors.*

(1) General ~~requirements~~.

1. In addition to the monitoring requirements in~~required by 42.4(3)~~ 40.8(3)*"a"* and *"b,"* above, a CWS or NTNC ~~public water system~~ that adds a chemical disinfectant to the water in any part of the ~~drinking water~~ treatment process or that~~which~~ provides water containing~~that contains~~ a chemical disinfectant must report monthly to the department the information specified in the tables in this paragraph by the dates ~~listed~~ in 567—subparagraphs 41.6(1)*"a"*(2~~3~~) and 43.6(1)*"a"*(3). A TNC ~~public water system which~~that adds chlorine dioxide as a disinfectant or oxidant must report monthly to the department the information specified in this paragraph ~~by the dates listed~~ in accordance with 567—paragraph 43.6(1)*"a"*(3)"3."
2. Systems required to sample quarterly or more frequently must report to the department within ten days after the end of each quarter in which samples were collected, notwithstanding the PN~~public notification~~ provisions of 567—40.5~~42.1~~(455B). Systems required to sample less frequently than quarterly must report to the department within ten days after the end of each monitoring period in which samples were collected.

(2) DBPs~~Disinfection byproducts. Systems must report the information specified in the following table:~~

**DBPs~~Disinfection Byproducts~~ Reporting Table**

| **If you are a system monitoring for...** | **You must report the following...** |
|---|---|
| ~~System monitoring for~~ TTHMs and HAA5 under ~~the requirements of~~ 567—subparagraph 41.6(1)*"c"*(4) on a quarterly or more frequent basis | 1. ~~The n~~Number of samples taken during the last quarter.<br>2. ~~The l~~Location, date, and result of each sample taken during the last quarter.<br>3. ~~The a~~Arithmetic average of all samples taken in the last quarter.<br>4. ~~The a~~Annual arithmetic average of the quarterly arithmetic averages for the last |

**Commented [139]:** Corresponds to the change in CFE rules.

**Commented [140]:** "information specified…" - this text is the reporting requirement, the text "systems must report the information specified in the following table" is not needed in (2), (3), and (4) below.

**Commented [141]:** Not needed; see "d"(1)"1" above.

| | |
|---|---|
| | four quarters.*<br>5. Whether the MCL was exceeded.<br>6. Under Stage 2, any OELsoperational evaluation levels that were exceeded during the quarter, including the location and date and the calculated TTHM and HAA5 levels. |
| System monitoring for TTHMs and HAA5 under the requirements of 567—subparagraph 41.6(1)*"c"*(4) less frequently than quarterly, but at least annually | 1. The nNumber of samples taken during the last year.<br>2. The lLocation, date, and result of each sample taken during the last monitoring period.<br>3. The aArithmetic average of all samples taken over the last year.*<br>4. Whether the MCL was exceeded. |
| System monitoring for TTHMs and HAA5 under the requirements of 567—subparagraph 41.6(1)*"c"*(4) less frequently than annually | 1. The lLocation, date, and result of the last sample taken.<br>2. Whether the MCL was exceeded. |
| System monitoring for cChlorite under the requirements of 567—subparagraph 41.6(1)*"c"*(3) | 1. The nNumber of samples taken each month for the last 3three months.<br>2. The lLocation, date, and result of each sample taken during the last quarter.<br>3. For each month in the reporting period, the arithmetic average of all samples taken in each three sample sets taken in the month.<br>4. Whether the MCL was exceeded, and in which month it was exceeded. |
| System monitoring for bBromate under the requirements of 567—subparagraph 41.6(1)*"c"*(2) | 1. The nNumber of samples taken during the last quarter.<br>2. The lLocation, date, and result of each sample taken during the last quarter.<br>3. The aArithmetic average of the monthly arithmetic averages of all samples taken in the last year.<br>4. Whether the MCL was exceeded. |

*The calculation of the RAArunning annual average will transition from a system-wide RAA calculation under Stage 1 to an locational running annual average (LRAA) under Stage 2. The transition will commence according to the system schedule listed in 567—paragraph 41.6(1)*"b."* Beginning at the end of the fourth calendar quarter that follows the compliance date, and at the end of each subsequent quarter, the system must report the arithmetic average of quarterly results for the last four quarters of each monitoring location. If the calculated LRAA based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters, the system must report this information to the department no later than the due date of the next compliance report.

(3) Disinfectants. The reporting in the following table is iIn addition to the requirements in 567—subparagraph 41.2(1)*"c"*(7). systems must report the information specified in the following table:

**Commented [142]:** Not needed; see "d"(1)"1" above.

**Disinfectants Reporting Table**

| If you are a system monitoring for... | You must report the following... |
|---|---|
| System monitoring for cChlorine or chloramines under the requirements of 567—paragraph 43.6(1)*"c"*(12)"2" | 1. The nNumber of samples taken during each month of the last quarter.<br>2. The mMonthly arithmetic average of all samples taken in each month for the last 12 months.<br>3. The aArithmetic average of all monthly averages for the last 12 months.<br>4. Whether the MRDL was exceeded. |
| System monitoring for cChlorine dioxide under the requirements of 567—paragraph 43.6(1)*"c"*(13)"3" | 1. The dDates, results, and locations of samples taken during the last quarter.<br>2. Whether the MRDL was exceeded.<br>3. Whether the MRDL was exceeded in any two consecutive daily samples and whether the resulting violation was acute or nonacute. |

(4) DBPisinfection byproduct precursors and enhanced coagulation or enhanced softening. Systems must report the information specified in the following table:

**Commented [143]:** Not needed; see "d"(1)"1" above.

**DBPisinfection Byproduct Precursors and Enhanced Coagulation or Enhanced Softening Reporting Table**

| If you are a ... | You must report the following... |
|---|---|
| System monitoring TOC monthly or quarterly for TOC under the requirements of 567—subparagraph 43.6(21)*"be"*(12) and required to | 1. The nNumber of paired (source water and treated water, prior to continuous disinfection) samples taken during the last quarter.<br>2. The lLocation, date, and result of each paired sample and associated alkalinity taken during the last quarter. |

| | |
|---|---|
| meet the enhanced coagulation or enhanced softening requirements in 567—subparagraph 43.6(3)*"b"*(2) or 43.6(3)*"b"*(3) | 3. For each month in the reporting period that paired samples were taken, ~~the~~ arithmetic average of the percent reduction of TOC for each paired sample, and the required TOC percent removal.<br>4. Calculations for determining compliance with ~~the~~ TOC percent removal requirements, ~~as provided~~ in 567—subparagraph 43.6(3)*"c"*(1).<br>5. Whether the system is in compliance with ~~the~~ enhanced coagulation or enhanced softening percent removal requirements in 567—paragraph 43.6(3)*"b"* for the last four quarters. |
| System monitoring TOC monthly or quarterly ~~for TOC under the requirements of~~ 567—subparagraph 43.6(2~~1~~)*"b~~c~~"*(1~~2~~) and meeting one or more of the alternative compliance criteria in 567—subparagraph 43.6(3)*"a"*(2) or 43.6(3)*"a"*(3) | 1. ~~The a~~Alternative compliance criterion that the system is using.<br>2. ~~The n~~Number of paired samples taken during the last quarter.<br>3. ~~The l~~Location, date, and result of each paired sample and associated alkalinity taken during the last quarter.<br>4. ~~The~~ RAA~~running annual arithmetic average~~ based on monthly averages (or quarterly samples) of source water TOC for systems meeting a criterion in 567—paragraphs 43.6(3)*"a"*(2)"1" or "3" or of treated water TOC for systems meeting the criterion in 567—paragraph 43.6(3)*"a"*(2)"2."<br>5. ~~The~~ RAA~~running annual arithmetic average~~ based on monthly averages (or quarterly samples) of source water SUVA for systems meeting the criterion in 567—paragraph 43.6(3)*"a"*(2)"5" or of treated water SUVA for systems meeting the criterion in 567—paragraph 43.6(3)*"a"*(2)"6."<br>6. ~~The~~ RAA~~running annual average~~ of source water alkalinity for systems meeting the criterion in 567—paragraph 43.6(3)*"a"*(2)"3" and of treated water alkalinity for systems meeting the criterion in 567—paragraph 43.6(3)*"a"*(3)"1."<br>7. ~~The~~ RAA~~running annual average~~ for both TTHM and HAA5 for systems meeting the criterion in 567—paragraphs 43.6(3)*"a"*(2)"3" or "4."<br>8. ~~The~~ RAA~~running annual average~~ for the amount of magnesium hardness removal (as $CaCO_3$, in mg/L) for systems meeting the criterion in 567—paragraph 43.6(3)*"a"*(3)"2."<br>9. Whether the system is in compliance with the particular alternative compliance criterion in 567—subparagraph 43.6(3)*"a"*(2) or 43.6(3)*"a"*(3). |
| SW/IGW system on reduced monitoring for TTHM/HAA5 under ~~the requirements of~~ 567—paragraph 41.6(3)*"d"* | For each treatment plant that treats surface or IGW source water, report the following:<br>1. ~~The n~~Number of source water TOC samples taken each month during the last quarter.<br>2. ~~The d~~Date and result of each sample taken during the last quarter.<br>3. ~~The q~~Quarterly average of monthly samples taken during the last quarter or the ~~result of the~~ quarterly sample result.<br>4. ~~The running annual average (~~RAA~~)~~ of quarterly averages from the past four quarters.<br>5. Whether the TOC RAA exceeded 4.0 mg/L. |

~~[**ARC 9915B**, IAB 12/14/11, effective 1/18/12; **ARC 3735C**, IAB 4/11/18, effective 5/16/18]~~

**567—40.9~~42.5~~(455B) Record maintenance.** Any PWS owner or operator shall retain the applicable records specified in this rule on its premises or at a convenient location near its premises.

**40.9(1) ~~42.5(1)~~** *~~Record maintenance requirements.~~* ~~Any owner or operator of a public water system subject to the provisions of this rule shall retain on its premises, or at a convenient location near its premises, the following records:~~

**Commented [144]:** "Any owner..." moved to rule catchphrase.

~~*a. Analytical records.*~~

*a.*~~(1)~~ *Basic information.* Actual laboratory reports shall be kept, or data may be transferred to tabular summaries, provided that the following information is included:

(1)~~.~~ Sampling ~~The~~ date, place, and time ~~of sampling~~ and the name of the person who collected the sample;

(2)~~.~~ Sample i~~I~~dentification, indicating ~~of the sample as to~~ whether it was a routine distribution system sample, check sample, raw or process water sample, or other special purpose sample;

(3)~~.~~ ~~Date of a~~Analysis date;

(4)~~.~~ Laboratory and person responsible for performing analysis;

(5)~~.~~ ~~The a~~Analytical technique or method used; and

(6)~~.~~ ~~The results of the a~~Analysis results.

*b.*~~(2)~~ *Record retention for specific analytes.*

(1) Microbiological and turbidity. Records of microbiological ~~analyses~~ and turbidity analyses made pursuant to 567—Chapters 41 and 43 shall be kept for not less than five years.

(2) ~~Chemical: r~~Radionuclides, inorganic compounds, and organic compounds. Records of chemical analyses made pursuant to 567—Chapter 41 shall be kept for not less than ten years. Additional lead and copper requirements are listed in 40.9(2)~~42.5(1)"b."~~

**40.9(2)** ~~*b. Lead and copper record keeping requirements.*~~ A system subject to ~~the requirements of~~ 40.8(2)~~42.4(2)~~ shall retain ~~on its premises~~ original records of all data and analyses, reports, surveys, PE~~public education~~, letters, evaluations, and schedules~~,~~ and any other information required by 567—41.4(455B) and 567—Chapter 43. ~~Each water system shall retain the records required by this subrule~~These records shall be kept for not less than 12 years~~for 12 years~~.

**40.9(3)** ~~*c.*~~ *Records of action ~~(violation correction)~~.* Records of action taken by a~~the~~ system to correct violations of primary drinking water regulations (including administrative orders) shall be kept for not less than five years after the last action taken with respect to the particular violation involved.

**40.9(4)** ~~*d. Reports and correspondence relating to s*~~*Sanitary surveys.* Copies of any written reports, summaries, or communications relating to any sanitary surveys of a~~the~~ system ~~conducted by the system itself, by a private consultant, or by any local, state or federal agency,~~ shall be kept for ~~a period of~~ not less than ten years after survey completion ~~of the sanitary survey involved~~.

**40.9(5)** ~~*e.*~~ *Operation or construction permits.* Records concerning an operation or a construction permit issued pursuant to 567—Chapter 43 ~~to the system~~ shall be kept for a period ending not less than ten years after a~~the~~ system achieves compliance with an~~the~~ MCL~~maximum contaminant level~~, TT~~treatment technique~~, AL~~action level~~, or HA~~health advisory,~~ or after a~~the~~ system ~~in question~~ completes the associated construction project.

**40.9(6)** ~~*f. PNublic notification.*~~ Records of PNs~~public notification~~, including the CCR~~Consumer Confidence Report~~, PN~~public notification~~ examples, and PN~~public notice~~ certifications, shall~~must~~ be kept for not less than~~at least~~ five years.

**40.9(7)** ~~*g.*~~ *Self-monitoring ~~requirement records~~.* MORs ~~The monthly records of operation~~ must be completed as described in 40.8(3)*"a"*(4)~~42.4(3)"a"(2) and maintained at the facility for department inspection by the department for a period of at least five years.~~ MORs and a~~A~~ll data generated at the facility to comply with the self-monitoring requirements must be ~~retained for a period of at least five years, and must be~~ maintained at the facility for department inspection ~~by the department~~ for not less than five years. The data shall be in a form that allows easy retrieval and interpretation. Examples of data that must be retained include~~,~~ but are not limited to~~,~~ recorder charts, logbooks, bench sheets, SCADA records, and electronic files.

**40.9(8)** ~~*h.*~~ *Monitoring plans.* Copies of monitoring plans developed pursuant to this chapter and 567—Chapters 41~~, 42,~~ and 43 shall be kept for the same period of time as the records of analyses taken under the plans are required to be kept~~,~~ unless otherwise specified.

**40.9(9)** ~~*i. GW roundwater rule.*~~ Additional record-keeping requirements for the GW~~groundwater~~ rule are listed in 567—paragraph 41.7(6)*"b."*

**40.9(10)** ~~*j.*~~ *Level 1 and 2 assessment forms and corrective action.* The~~se~~ record-keeping requirements in this subrule pertain to the coliform bacteria sampling requirements in 567—subrule 41.2(1).

*a.*~~(1) The s~~Systems must maintain any assessment form, regardless of who conducts the assessment, and documentation of corrective actions completed as a result of an~~those~~ assessment~~s,~~ or other available summary documentation of the sanitary defects and corrective actions taken under 567—paragraph 41.2(1)*"m."* ~~for department review.~~ These~~is~~ records shall be maintained at the facility for department inspection~~must be maintained by the system~~ for ~~a period~~ not less than five years after completion of the assessment or corrective action.

*b.*~~(2) The s~~Systems must maintain a record of any repeat sample taken that meets department criteria for an extension of the 24-hour period for collecting repeat samples in accordance with~~as provided for under~~ 567—paragraph 41.2(1)*"j."*

~~**42.5(2)** Reserved.~~

~~[**ARC 9915B**, IAB 12/14/11, effective 1/18/12; **ARC 3735C**, IAB 4/11/18, effective 5/16/18]~~

These rules are intended to implement Iowa Code sections 455B.171 through 455B.188 and 455B.190 through 455B.192.

**Commented [145]:** New 40.9(2) - was 42.5(1)"b".

**Commented [146]:** Redundant; repeat of 42.5(1).

**Commented [147]:** Matches wording in the rest of this subrule.

**Commented [148]:** New 40.9(3) - was 42.5(1)"c".

**Commented [149]:** New 40.9(4) - was 42.5(1)"d".

**Commented [150]:** This is everyone; replaced by "any" earlier in the sentence.

**Commented [151]:** New 40.9(5) - was 42.5(1)"e".

**Commented [152]:** New 40.9(6) - was 42.5(1)"f".

**Commented [153]:** New 40.9(7) - was 42.5(1)"g".

**Commented [154]:** Combined with following sentence.

**Commented [155]:** Matches previous sentence.

**Commented [156]:** Matches previous sentence.

**Commented [157]:** New 40.9(8) - was 42.5(1)"h".

**Commented [158]:** New 40.9(9) - was 42.5(1)"i".

**Commented [159]:** New 40.9(10) - was 42.5(1)"j".

**Commented [160]:** Matches wording in the rest of this subrule.

## APPENDIX A:
## STANDARD HEALTH EFFECTS LANGUAGE FOR PUBLIC NOTIFICATION

**Commented [161]:** Strike Appendix A, it is Appendix B to Subpart Q of 40 CFR Part 141 (reference has been added in the appropriate places in the rules.

| Contaminant | Standard Health Effects Language |
|---|---|
| **Microbiological Contaminants** | |
| Coliform assessment and/or corrective action violations, under 567—subrule 41.2(1) | Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that are found. [THE SYSTEM MUST INCLUDE THE FOLLOWING APPLICABLE SENTENCES]<br>• We failed to conduct the required assessment.<br>• We failed to correct all identified sanitary defects that were found during the assessment(s). |
| *E. coli* | *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. |
| *E. coli* assessment and/or corrective action violations, under 567—subrule 41.2(1) | *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We violated the standard for *E. coli*, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct a detailed assessment to identify problems and to correct any problems that are found. [THE SYSTEM MUST INCLUDE THE FOLLOWING APPLICABLE SENTENCES]<br>• We failed to conduct the required assessment.<br>• We failed to correct all identified sanitary defects that were found during the assessment(s). |
| Seasonal system treatment technique violation | • When this violation includes the failure to monitor for total coliforms or *E. coli* prior to serving water to the public, the mandatory language for monitoring violation in 42.1(5)"*c*"(2) must be used.<br>• When this violation includes failure to complete other actions, the appropriate elements found in 42.1(5)"*c*" to describe the violation must be used. |
| Fecal indicators for the groundwater rule (*E. coli*, enterococci, and coliphage) | Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems. |
| **Groundwater Treatment Technique Requirements** | |
| Groundwater rule treatment technique violations | Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches. |
| **Surface Water Treatment Technique Requirements** | |
| Turbidity | Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, protozoa, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches, and can lead to death. |
| Surface water/IGW system treatment technique requirements: CT ratio; residual disinfectant; log removal/inactivation of *Giardia*, viruses, and *Cryptosporidium*; or filter backwash recycling | Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, protozoa, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches, and can lead to death. |
| **Inorganic Chemical Contaminants** | |
| Antimony | Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar. |
| Arsenic | Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer. |
| Asbestos | Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps. |
| Barium | Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure. |
| Beryllium | Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions. |
| Cadmium | Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage. |
| Chromium, total | Some people who drink water containing chromium well in excess of the MCL over many years could experience allergic dermatitis. |
| Copper | Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor. |
| Cyanide | Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid. |
| Fluoride | Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water above 2.0 mg/L may cause mottling of children's teeth, usually in children less than nine years of age. Mottling, also known as dental fluorosis, may include brown staining and pitting of the teeth, and occurs only in developing teeth before they erupt from the gums. |
| Lead | Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. |
| Mercury, inorganic | Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage. |
| Nitrate | Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome. |
| Nitrite | Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome. |
| Total Nitrate and Nitrite | Infants below the age of six months who drink water containing nitrate and nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome. |
| Selenium | Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience loss of hair or fingernails, numbness in fingers or toes, or problems with their circulation. |
| Thallium | Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver. |
| **Synthetic Organic Chemical Contaminants** | |
| 2,4-D | Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, |

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| Contaminant | Standard Health Effects Language |
|---|---|
| | liver, or adrenal glands. |
| 2,4,5-TP (Silvex) | Some people who drink water containing Silvex in excess of the MCL over many years could experience liver problems. |
| Alachlor | Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer. |
| Atrazine | Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or have reproductive difficulties. |
| Benzo(a)pyrene (PAHs) | Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer. |
| Carbofuran | Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems. |
| Chlordane | Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer. |
| Dalapon | Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes. |
| Di(2-ethylhexyl)adipate | Some people who drink water containing di(2-ethylhexyl)adipate well in excess of the MCL over many years could experience toxic effects such as weight loss, liver enlargement, or possible reproductive difficulties. |
| Di(2-ethylhexyl)-phthalate | Some people who drink water containing di(2-ethylhexyl)phthalate well in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer. |
| Dibromochloropropane (DBCP) | Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer. |
| Dinoseb | Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties. |
| Dioxin (2,3,7,8-TCDD) | Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer. |
| Diquat | Some people who drink water containing diquat in excess of the MCL over many years could get cataracts. |
| Endothall | Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines. |
| Endrin | Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems. |
| Ethylene dibromide | Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer. |
| Glyphosate | Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties. |
| Heptachlor | Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer. |
| Heptachlor epoxide | Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer. |
| Hexachlorobenzene | Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer. |
| Hexachloro-cyclopentadiene | Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach. |
| Lindane | Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver. |
| Methoxychlor | Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties. |
| Oxamyl (Vydate) | Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects. |
| Pentachlorophenol | Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer. |
| Picloram | Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver. |
| Polychlorinated byphenyls (PCBs) | Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer. |
| Simazine | Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood. |
| Toxaphene | Some people who drink water containing toxaphene in excess of the MCL over many years could experience problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer. |
| **Volatile Organic Chemical Contaminants (VOCs)** | |
| Benzene | Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer. |
| Carbon tetrachloride | Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer. |
| Chlorobenzene (monochlorobenzene) | Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys. |
| o-Dichlorobenzene | Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory system. |
| p-Dichlorobenzene | Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood. |
| 1,2-Dichloroethane | Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer. |
| 1,1-Dichloroethylene | Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver. |
| cis-1,2-Dichloroethylene | Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver. |
| trans-1,2-Dichloroethylene | Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver. |
| Dichloromethane | Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer. |
| 1,2-Dichloropropane | Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer. |
| Ethylbenzene | Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys. |
| Styrene | Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system. |
| Tetrachloroethylene | Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer. |
| Toluene | Some people who drink water containing toluene in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver. |
| 1,2,4-Trichlorobenzene | Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands. |
| 1,1,1-Trichloroethane | Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system. |
| 1,1,2-Trichloroethane | Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or |

| ~~Contaminant~~ | ~~Standard Health Effects Language~~ |
|---|---|
| | ~~immune system.~~ |
| ~~Trichloroethylene~~ | ~~Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.~~ |
| ~~Vinyl chloride~~ | ~~Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.~~ |
| ~~Xylene (total)~~ | ~~Some people who drink water containing total xylene in excess of the MCL over many years could experience damage to their nervous system.~~ |
| ~~**Radionuclide Contaminants**~~ | |
| ~~Alpha emitters~~ | ~~Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.~~ |
| ~~Beta/photon emitters~~ | ~~Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.~~ |
| ~~Combined radium (226 & 228)~~ | ~~Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.~~ |
| ~~Uranium~~ | ~~Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.~~ |
| ~~**Disinfection Byproducts**~~ | |
| ~~Bromate~~ | ~~Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.~~ |
| ~~Chlorite~~ | ~~Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.~~ |
| ~~Haloacetic Acids (HAA)~~ | ~~Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.~~ |
| ~~Total Trihalomethanes (TTHMs)~~ | ~~Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.~~ |
| ~~**Residual Disinfectants**~~ | |
| ~~Chloramines~~ | ~~Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.~~ |
| ~~Chlorine~~ | ~~Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.~~ |
| ~~Chlorine dioxide – acute (one or more distribution samples exceed the MRDL)~~ | ~~Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. The chlorine dioxide violations reported today include exceedances of the standard within the distribution system which delivers water to consumers. Violations of the chlorine dioxide standard within the distribution system may harm human health based on short-term exposures. Certain groups, including fetuses, infants, and young children, may be especially susceptible to nervous system effects from excessive chlorine dioxide exposure.~~ |
| ~~Chlorine dioxide – non-acute (two consecutive daily samples taken at the source entry point to the distribution system are above the MRDL)~~ | ~~Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. The chlorine dioxide violations reported today are the result of exceedances at the treatment facility only, not within the distribution system which delivers water to consumers. Continued compliance with chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to consumers.~~ |
| ~~**Disinfection Byproduct Precursors**~~ | |
| ~~Total Organic Carbon (TOC)~~ | ~~Total organic carbon has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes and haloacetic acids. Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver, or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.~~ |
| ~~**Other Treatment Techniques**~~ | |
| ~~Acrylamide~~ | ~~Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.~~ |
| ~~Epichlorohydrin~~ | ~~Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.~~ |

~~[**ARC 3735C**, IAB 4/11/18, effective 5/16/18]~~

## APPENDIX AB: MINIMUM SELF-MONITORING REQUIREMENTS (SMRs)

I. Minimum Self-Monitoring Requirements (SMRs) for TNCs (excluding SWsurface water or IGWinfluenced groundwater PWSs).

~~Notes:~~

(1) ~~•~~The ~~self-monitoring requirements~~SMRs only apply to those systems~~supplies~~ meeting the ~~required operation records applicability~~monthly operation report (MOR) criteria in 40.8(3)*"a"*(1), 40.8(3)*"a"*(2), and 40.8(3)*"a"*(3).~~42.4(3)"a"(1).~~

(2) ~~•~~TNCs are exempt from the SMRs~~self-monitoring requirements~~ for point-of-use (POU) treatment devices~~,~~ unless the device is used to remove a contaminant that~~which~~ has an MCL,~~maximum contaminant level or~~ TT~~treatment technique~~, or HA, in which case additional SMRs will be assigned by the department.

(3) ~~•~~Daily monitoring for TNCs applies only when the facility is in operation.

(4) ~~•~~Additional or more frequent monitoring requirements may be assigned by the department in the operation permit.

(5) ~~•~~Additional SMRs are required if treatment is used to remove a regulated contaminant or a contaminant that has an MCL, TT, or HA. See Section II for ~~the requirements under~~ the SMRs for specific treatment types.

~~General Requirements~~ All TNCs* that~~which~~ meet the MOR~~required operation records applicability~~ criteria in 40.8(3)*"a"*(1), 40.8(3)*"a"*(2), and 40.8(3)*"a"*(3)~~42.4(3)"a"(1)~~ must measure the following parameters, as~~where~~ applicable~~Additional SMRs are required if treatment is used to remove a contaminant which has a~~

**Commented [162]:** Existing language from last sentence of General requirements below; combined here.

~~maximum contaminant level or treatment technique. See Section II for the requirements under the specific treatment type~~.

Commented [163]: Combined with last bullet above.

| Parameter | ~~PWS Type:~~ Sample Site | ~~TNC*~~ Frequency |
|---|---|---|
| GENERAL REQUIREMENTS | | |
| Pumpage (Flow) | raw: | 1/week |
| | finished~~final~~: | 1/week |
| Disinfectant Residual*** | finished~~final~~: | 1/day |
| | distribution system**: | 1/day |
| Disinfectant, quantity used | day tank/scale: | 1/day |
| Static Water and Pumping Water Levels (Drawdown)**** | each active well: | 1/month |
| ION EXCHANGE OR REVERSE OSMOSIS FOR NITRATE REMOVAL | | |
| Nitrate | finished: | 1/day |
| UV LIGHT | | |
| Lamp Status (On/Off) | each lamp: | 1/day |

*TNCs must measure and record the total water used each week, but daily measurements are recommended, and may be required by the department for~~in~~ specific PWSs.

**Conduct this m~~M~~onitoring ~~is to be conducted~~ at representative points in the distribution system that~~which~~ adequately demonstrate compliance with 40.8(3)*"b"*(1)~~42.4(3)*"b"*(1)~~.

***The department may reduce the required sample site locations for a system with a minimal distribution system and only hydropneumatic tank storage.

****More or less frequent measurements may be approved by the department where justified by historical data.

II. Minimum SMRs~~Self-Monitoring Requirements~~ for CWS, NTNC, and SW/IGW~~/SW~~ TNC.

~~Notes:~~

(1) ~~●~~The ~~self-monitoring requirements (~~SMRs~~)~~ only apply to those systems~~supplies~~ meeting the MOR~~required operation records applicability~~ criteria in 40.8(3)*"a"*(1), 40.8(3)*"a"*(2), and 40.8(3)*"a"*(3)~~42.4(3)*"a"*(1)~~.

(2) ~~●~~NTNCs are exempt from the SMRs~~self-monitoring requirements~~ for POU~~point-of-use~~ treatment devices~~,~~ unless the device is used to remove a contaminant that~~which~~ has an MCL~~maximum contaminant level~~, TT~~treatment technique~~, AL~~action level~~, or HA~~health advisory;~~, in which case, additional SMRs will be assigned by the department.

(3) ~~●~~Daily monitoring for NTNCs applies only when the facility is in operation.

(4) ~~●~~These are the minimum SMRs~~self-monitoring requirements~~. Additional or more frequent monitoring requirements may be assigned ~~by the department~~ in an~~the~~ operation permit.

A. General Requirements. All PWSs ~~which~~ meeting the MOR~~required operation records applicability~~ criteria in 40.8(3)*"a"*(1), 40.8(3)*"a"*(2), and 40.8(3)*"a"*(3)~~42.4(3)*"a"*(1)~~ must measure the following parameters, as~~where~~ applicable. TNCs that provide treatment other than a cation exchange softening unit or iron/manganese removal treatment unit must meet the requirements in the CWS column.

| Parameter | PWS Type: Sample Site | NTNC* & SW/IGW~~/SW~~ TNC Frequency | CWS |
|---|---|---|---|
| Pumpage (Flow) | raw: | 1/week | 1/day |
| | ~~bypass:~~ | ~~1/week~~ | ~~1/day~~ |
| | finished~~final~~: | 1/week | 1/day |
| Consecutive systems (flow) | all master meters: | 1/day | |
| Static Water and Pumping Water Levels (Drawdown)** | each active well: | 1/month~~1/month~~ | |

*NTNCs must measure and record the total water used each week, but daily measurements are recommended, and may be required by the department for~~in~~ specific PWSs.

**If requested by the system, the department may allow an alternate frequency for systems with pressure tanks or controls that operate the well to ensure constant pump discharge pressure.

B. Chemical Addition. All PWSs that~~which~~ apply chemicals in the treatment process must monitor the following parameters~~,~~ for the applicable processes.~~:~~

| Parameter | Pumpage or Flow: Sample Site | <0.1 MGD | 0.1-0.5 MGD | >0.5 MGD |
|---|---|---|---|---|
| | | Frequency | | |
| DISINFECTION | | | | |
| Disinfectant Residual** | finished~~final~~: | 1/day~~1/day~~ | 1/day | 1/day |
| | distribution system*: | 1/day~~1/day~~ | 1/day | 1/day |
| Calculated MRDL (monthly average) | distribution system: | 1/month | | |
| Calculated MRDL (RAA) | distribution system: | 1/calendar quarter | | |
| Disinfectant, quantity used | day tank/scale: | 1/day~~1/day~~ | 1/day | 1/day |
| FLUORIDATION | | | | |
| Fluoride | raw: | 1/quarter | 1/month~~1/month~~ | |
| | finished~~final~~: | 1/day~~1/day~~ | 1/day | 1/day |
| Fluoride, quantity used | day tank/scale: | 1/day~~1/day~~ | 1/day | 1/day |
| pH ADJUSTMENT | | | | |
| pH | finished~~final~~: | 1/week | 2/week | 1/day |
| Caustic Soda, quantity used | day tank/scale: | 1/week~~1/week~~ | 1/week | 1/week |
| PHOSPHATE ADDITION | | | | |
| Phosphate, as $PO_4$ | finished~~final~~: | 1/week | 2/week | 1/day |
| Phosphate, quantity used | day tank/scale: | 1/week~~1/week~~ | 1/week | 1/week |
| AMMONIA ADDITION | | | | |
| Chemical, quantity used | day tank/scale: | 1/day | | |
| Total residual chlorine (TRC) | finished: | 1/day | | |
| | distribution system: | 1/day | | |
| Monochloramine | finished: | 1/day | | |
| | distribution system: | 1/day | | |
| Free ammonia | finished: | 1/day | | |
| | distribution system: | 1/day | | |
| OTHER CHEMICALS | | | | |
| Chemical | finished~~final~~: | 1/week | 2/week | 1/day |
| Chemical, quantity used | day tank/scale: | 1/week~~1/week~~ | 1/week | 1/week |

*Conduct this m~~M~~onitoring ~~is to be conducted~~ at representative points in the distribution system that~~which~~ adequately demonstrate compliance with 40.8(3)*"b"*(1)~~42.4(3)"b"(1)~~.

**The department may reduce the required sample site~~s locations~~ for a system with a minimal distribution system~~;~~ only hydropneumatic tank storage~~;~~ or~~and~~, if it is a CWS, it serves fewer~~less~~ than 100 persons.

C. Iron or Manganese Removal. All CWS, NTNC, and publicly owned TNC systems with iron or manganese removal equipment must monitor for the following parameters. This monitoring is not required if the removal equipment is purchased "off the shelf," is self-contained (requiring only a piping connection for installation), and operates throughout a range of 35 to 80 psi. Any chemicals applied during the treatment process must be measured under section II.B of this appendix. Systems with manganese removal must conduct the manganese monitoring. If a system utilizes the treatment only for iron removal, manganese self-monitoring is not required. ~~Nonmunicipalities, except rural water systems, benefited water districts, and publicly owned PWSs, are exempt from monitoring of iron/manganese removal equipment unless the treatment is or was installed to remove a contaminant which has a maximum contaminant level, treatment technique, action level, or health advisory. Any chemicals which are applied during the treatment process must be measured under section "B. Chemical Addition" of this table.~~

| Parameter | Pumpage or Flow: Sample Site | <0.1 MGD | 0.1-0.5 MGD | >0.5 MGD |
|---|---|---|---|---|
| | | Frequency | | |
| Iron | raw: | 1/quarter | 1/month~~1/month~~ | |
| | finished~~final~~: | 1/week | 2/week | 1/day |
| Manganese* | raw: | 1/quarter | 1/month~~1/month~~ | |
| | finished~~final~~: | ~~1/week~~2/week~~1/week~~1/day | | |
| IRON/MANGANESE REMOVAL EQUIPMENT INSTALLED FOR ARSENIC REMOVAL | | | | |
| Iron | raw: | 1/month | | |

| | | |
|---|---|---|
| | finished: | 1/day |

*A system may be allowed to conduct manganese self-monitoring 1/week if it meets all of the following criteria: an average annual pumpage of less than 0.1 MGD, raw water manganese less than 0.3 mg/L, and agrees to conduct quarterly PN.

D. Lime Softening of GW (excluding IGW) and pH Adjustment for Iron and Manganese Removal, by precipitation and coagulation processes utilizing lime, soda ash, or other chemical additions. Testing is only required if a specific chemical is added.

| Parameter | Pumpage or Flow: Sample Site | <0.1 MGD | 0.1-0.5 MGD | >0.5 MGD |
|---|---|---|---|---|
| | | Frequency | | |
| Alkalinity | raw: | 1/quarter | 1/month~~1/month~~ | |
| | finished~~final~~: | ~~1/week~~2/week~~1/week~~1/day | | |
| Hardness as CaCO3 | raw: | 1/quarter | 1/month | |
| | finished: | 1/day | | |
| Iron | raw: | 1/quarter | 1/month~~1/month~~ | |
| | finished~~final~~: | 1/week | 2/week | 1/day |
| Manganese | raw: | 1/quarter | 1/month~~1/month~~ | |
| | finished~~final~~: | ~~1/week~~2/week~~1/week~~1/day | | |
| pH | raw: | 1/week~~1/week~~1/week~~1/week~~ | | |
| | finished~~final~~: | ~~1/week~~2/week~~1/week~~1/day | | |
| Temperature | raw: | 1/week | | |

E. Cation Exchange (Zeolite) Softening. All CWS, NTNC, and publicly owned TNC systems with ion exchange softening equipment must monitor for the following parameters. This monitoring is not required if the ion exchange softening equipment is purchased "off the shelf," is self-contained (needing only a piping connection for installation), and operates throughout a range of 35 to 80 psi. Any chemicals applied during the treatment process must be measured under section II.B of this appendix.~~Nonmunicipalities, except for rural water systems and benefited water districts, are exempt from the monitoring of water quality parameters associated with ion exchange softening unless the treatment is or was installed to remove a contaminant which has an maximum contaminant level, treatment technique, action level, or health advisory.~~ An annual sodium sample of the finished~~final~~ water is required by 567—paragraph 41.9(1)*"f"* ~~of~~for all CWSs~~community systems~~ that use cation exchange softening, and the sodium monitoring in this table will ~~also~~ meet that~~e special sodium monitoring~~ requirement. ~~of 567—paragraph 41.11(1)"f."~~

| Parameter | Pumpage or Flow: Sample Site | <0.1 MGD | 0.1-0.5 MGD | >0.5 MGD |
|---|---|---|---|---|
| | | Frequency | | |
| Hardness as $CaCO_3$ | raw: | 1/quarter | 1/month~~1/month~~ | |
| | finished~~final~~: | 1/week | 2/week | 1/day |
| pH | finished~~final~~: | 1/week | 2/week | 1/day |
| Sodium* | finished~~final~~: | 1/year~~1/year~~1/year | | |
| Bypass, in flow or percent bypassed | bypass: | 1/day | | |
| ION EXCHANGE FOR RADIONUCLIDE REMOVAL | | | | |
| Hardness as CaCO3 | raw: | 1/month | | |
| | finished: | 1/day | | |

~~*The annual sodium sample required in 567—paragraph 41.11(1)"f" will satisfy this requirement.~~

F. ~~Direct~~ Filtration and Disinfection Requirements for~~of~~ SWs~~surface Waters~~ or IGWs.~~Influenced Groundwaters~~

| Parameter | Pumpage or Flow: Sample Site | All Frequency |
|---|---|---|
| CT Ratio* | finished~~final~~: | 1/day |
| Calculated V Value | distribution system: | 1/month |
| Calculated MRDL (monthly average) | distribution system: | 1/month |

| | | |
|---|---|---|
| Calculated MRDL (RAA) | distribution system: | 1/calendar quarter |
| Disinfectant Residual** | finished~~source/entry point~~: | continuous |
| | distribution system**: | 1/day~~daily~~ |
| Disinfectant, quantity used | day tank/scale: | 1/day |
| pH | finished~~final~~: | 1/day |
| Temperature | raw: | 1/day |
| | finished: | 1/day |
| Turbidity | IFE: | At least every 15 minutes |
| | raw and CFE: ~~final:~~ | ~~see~~ 567—subrules 43.5(3) and 43.5(4), ~~and~~ 567—43.9(455B) and 567—43.10(455B) ~~for the~~ contain specific requirements; continuous turbidity monitoring may be substituted for grab sample monitoring if the continuous process is validated using a department-approved turbidity protocol. |
| Turbidity, 95th percentile calculation | CFE: | Monthly, per 567—paragraph 43.5(3)*"b"* |
| Continuous turbidity monitoring instrument*** | Each turbidimeter: | Each turbidimeter must be verified with a grab sample measurement at least once per week. |

*Determine the total inactivation ratio ($CT_{calc}/CT_{required}$) before the first customer during peak hourly flow each day the treatment plant is in operation; 567—paragraph 43.5(2)*"a" contains more information.*

**Conduct this m~~M~~onitoring ~~is to be conducted~~ to demonstrate compliance with ~~paragraph~~ 40.8(3)*"b,"* ~~42.4(3)"b,"~~ 567—subrules 43.5(2) and 43.5(4), and 567—43.6(455B).

***The calibration of each turbidimeter used for compliance must be verified to demonstrate IFE compliance with 567—paragraphs 43.9(4)*"a"* and 43.10(5)*"a"* and CFE compliance with 567—subparagraph 43.5(4)*"b"*(1) and 43.9(3) and 43.10(4).

G. Clarification or Lime Softening of SW~~urface Waters~~ or IGW.~~Influenced Groundwaters~~

| **Parameter** | **Pumpage or Flow:** | **All** |
|---|---|---|
| | **Sample Site** | **Frequency** |
| Alkalinity | raw: | 1/day |
| | raw: | SW/IGW systems; 1/month at same time raw TOC sample is collected |
| | finished~~final~~: | 1/day |
| Carbon dioxide ($CO_2$), quantity used | tank/scale/feeder: | 1/week |
| Caustic Soda, quantity used | day tank/scale: | 1/week |
| CT Ratio* | finished~~final~~: | 1/day |
| Disinfectant Residual** | finished~~source/entry point~~: | continuous |
| | distribution system**: | 1/day~~daily~~ |
| Disinfectant, quantity used | day tank/scale: | 1/day |
| Continuous disinfectant monitoring instrument | location of instrument: | The calibration of instruments used for continuous disinfectant monitoring must be verified with a grab sample measurement at least every 7 days |
| Hardness as $CaCO_3$ | raw: | 1/day |
| | finished~~final~~: | 1/day |
| Lime, quantity used | day tank/scale/feeder: | 1/week |
| ~~Odor~~ | ~~raw:~~ | ~~1/week~~ |
| | ~~final:~~ | ~~1/day~~ |
| pH | raw: | 1/day |
| | finished~~final~~: | 1/day |
| Temperature | raw: | 1/day |
| | finished: | 1/day |
| TOC | raw: | 1/month at same time the CFE sample is taken |
| | CFE: | 1/month at same time the raw sample is taken |
| | Source water alkalinity: | 1/month at same time the raw sample is taken |
| Turbidity | raw and CFE:~~final:~~ | ~~see~~ 567—subrules 43.5(3) and 43.5(4), ~~and~~ 567—43.9(455B), and 567—43.10(455B) ~~for the~~ contain specific requirements. |
| | IFE: | At least every 15 minutes |

*Determine the total inactivation ratio ($CTcalc/CT_{required}$) before the first customer during peak hourly flow each day the treatment plant is in operation; 567—paragraph 43.5(2)*"a"* contains more information.

**Conduct this mMonitoring is to be conducted to demonstrate compliance with paragraph 40.8(3)*"b"*,42.4(3)*"b,"* 567—subrules 43.5(2) and 43.5(4), and 567—43.6(455B). Systems serving 3,300 or fewer persons may take grab samples in lieu of providing continuous monitoring at the frequencies in 567—subparagraph 43.5(4)*"b"*(2).

~~H. Lime Softening of Groundwaters (excluding IGW).~~

| ~~Parameter~~ | ~~Pumpage or Flow: Sample Site~~ | ~~<0.1 MGD Frequency~~ | ~~>0.1 MGD Frequency~~ |
|---|---|---|---|
| ~~Alkalinity~~ | ~~raw:~~<br>~~final:~~ | ~~1/quarter~~<br>~~1/day~~ | ~~1/month~~<br>~~1/day~~ |
| ~~Hardness as $CaCO_3$~~ | ~~raw:~~<br>~~final:~~ | ~~1/quarter~~<br>~~1/day~~ | ~~1/month~~<br>~~1/day~~ |
| ~~pH~~ | ~~raw:~~<br>~~final:~~ | ~~1/week~~<br>~~1/day~~ | ~~1/week~~<br>~~1/day~~ |
| ~~Temperature~~ | ~~raw:~~ | ~~1/week~~ | ~~1/week~~ |

~~I~~H. Reverse Osmosis, Nanofiltration, or Electrodialysis.

| **Parameter** | **Pumpage or Flow: Sample Site** | **<0.1 MGD Frequency** | **>0.1 MGD Frequency** |
|---|---|---|---|
| Alkalinity | raw: | 1/quarter | 1/month |
| | finished~~final~~: | 1/day~~1/day~~ | |
| Antiscalant, quantity used | day tank/scale: | 1/week | |
| Bypass flow or percent bypassed | bypass: | 1/day | |
| Cleaning chemical, quantity used | day tank/scale | 1/week | |
| Hardness as $CaCO_3$ | raw: | 1/quarter | 1/month |
| | finished~~final~~: | 1/day~~1/day~~ | |
| Iron | raw: | 1/day~~1/day~~ | |
| Manganese | raw: | 1/day~~1/day~~ | |
| pH | raw: | 1/week~~1/week~~ | |
| | finished~~final~~: | 1/day~~1/day~~ | |
| Total Dissolved Solids | raw: | 1/month~~1/month~~ | |

~~J~~I. Anion Exchange (i.e., Nitrate Reduction).

| **Parameter** | **Pumpage or Flow: Sample Site** | **<0.1 MGD Frequency** | **>0.1 MGD** |
|---|---|---|---|
| Bypass flow or percent bypassed | bypass: | 1/day | |
| Nitrate | raw: | 1/day~~1/day~~ | |
| | finished~~final~~: | 1/day~~1/day~~ | |
| Source water | Document which sources were in use during each month and when well or source rotation occurs | | |
| Sulfate* | raw: | 1/week~~1/week~~ | |
| | finished~~final~~: | 1/week~~1/week~~ | |

*If required by the department.

~~K~~J. Activated Carbon or Air-Stripping for TTHM, VOC, or SOC Removal (GAC or PAC).

| **Parameter** | **Pumpage or Flow: Sample Site** | **<0.1 MGD Frequency** | **>0.1 MGD** |
|---|---|---|---|
| ~~Total Organic Carbon (~~TOC~~)~~ | finished~~final~~: | 1/quarter | 1/month |

~~L. Air Stripping for TTHM, VOC, or SOC Removal.~~

**Commented [164]:** Combined with previous table (new J).

| ~~Parameter~~ | ~~Pumpage or Flow: Sample Site~~ | ~~<0.1 MGD Frequency~~ | ~~>0.1 MGD Frequency~~ |
|---|---|---|---|
| ~~Total Organic Carbon (TOC)~~ | ~~final:~~ | ~~1/quarter~~ | ~~1/month~~ |

~~M~~K. Lead and Copper: Corrosion Control and ~~Water Quality Parameters~~ WQPs. The specific SMRs for corrosion control and WQPs~~water quality parameters~~ are listed in 567—paragraph 41.4(1)*"d"* and 567—subrules 43.7~~8~~(1) and 43.7~~8~~(2).

~~N. Consecutive PWSs Supplied by a Surface Water or IGW PWS~~

| ~~Parameter~~ | ~~Pumpage or Flow:~~<br>~~Sample Site~~ | ~~All~~<br>~~Frequency~~ |
|---|---|---|
| ~~Disinfectant Residual~~ | ~~source/entry point:~~<br>~~distribution system*:~~ | ~~1/day~~<br>~~1/day~~ |
| ~~Disinfectant, quantity used (if applicable)~~ | ~~day tank/scale:~~ | ~~1/day~~ |
| ~~Pumpage or Flow~~ | ~~master meter:~~ | ~~1/day~~ |

~~*Monitoring is to be conducted at representative points in the distribution system.~~

L. Hydrous Manganese Oxide (HMO) Filtration and Manganese Co-precipitation for Radium Removal.

| Parameter | Pumpage or Flow:<br>Sample Site | All<br>Frequency |
|---|---|---|
| Chemical additive, quantity used | day tank/scale: | 1/day |
| Manganese | raw: | 1/month |
| | finished: | 1/day |
| Pumpage or Flow | raw | 1/day |
| Bypass flow, percent bypass, or blend | bypass/blend: | 1/day |

M. Acrylamide and Epichlorohydrin Addition.

| Parameter | Pumpage or Flow:<br>Sample Site | All<br>Frequency |
|---|---|---|
| Chemical additive, third-party or manufacturer's certification* | Combination of dose and monomer level: | Annually |

*Levels must not exceed values specified in 567—subparagraph 41.5(1)*"b"*(3).

N. Source Blending for Contaminant Control. Specific SMRs for source water blending to achieve compliance with an MCL, TT, AL, or HA will be specified in an operation permit on a case-by-case basis, in accordance with 40.8(3)*"a"*(4).

O. 4-log Treatment of Viruses for GW Systems. Operation permits will include operational requirements for the approved 4-log virus treatment in accordance with 567—paragraph 41.7(4)*"b."* All GW systems that provide at least 4-log virus treatment must measure the following parameters, where applicable.

| Parameter | Population served:<br>Sample Site | 25 - 3,300<br>Frequency | >3,300 |
|---|---|---|---|
| Chemical disinfectant* | finished: | 1/day** | continuously |
| Contact tank level | level: | 1/day | |
| Peak flow rate | flow meter: | continuously | |
| pH | finished: | 1/day | |
| Temperature*** | finished: | 1/day | |

*Monitor residual disinfectant concentration using the analytical methods in 567—subparagraph 43.5(4)*"a"*(5) at a department-approved location. Record the concentration each day that water is served to the public.

**GW systems must collect a daily grab sample during the hour of peak flow or at another department-specified time.

***Daily temperature monitoring is assigned initially for one year so that the lowest temperature can be determined and assigned for subsequent compliance monitoring.

P. Biological Treatment Process for Ammonia Removal. Operation permits may include additional

mandatory operational requirements for the treatment process.

| Parameter | Pumpage or Flow: Sample Site | All Frequency |
|---|---|---|
| Ammonia, as N** | finished*: | 1/week |
| | distribution system*: | 1/week |
| Dissolved oxygen (DO) | contactor inlet: | 1/day |
| | contactor outlet: | 1/day |
| Nitrite, as N** | finished*: | 1/day |
| | distribution system*: | 1/day |

*One sample from the finished water must be collected monthly, split for analysis, and analyzed by a certified laboratory and the system.

**The department may reduce the required sampling frequency once nitrification is achieved in the biological filter or contactor and the system is consistently using free available chlorine for disinfection.

Q. Membrane Filtration (including micro and ultra filtration).

| Parameter | Pumpage or Flow: Sample Site | All Frequency |
|---|---|---|
| Antiscalant, quantity used | day tank/scale: | 1/week |
| Cleaning chemical, quantity used | day tank/scale: | 1/week |
| Direct integrity test (DIT)* | each membrane unit: | 1/day* |
| Indirect integrity test** | each membrane unit: | continuous** |
| Log removal value (LRV)* | each membrane unit: | 1/day* |
| Upper control limit*** | each membrane unit: | If the DIT result exceeds the control limit, the system must remove the membrane from service |
| Continuous turbidity monitoring equipment**** | | Each turbidimeter used for compliance must be verified with a grab sample measurement at least once per week |

*Conduct DITs on each membrane unit at a frequency of not less than once each day that the membrane unit is in operation and to verify repairs.

**Unless the department approves an alternative parameter, continuous indirect integrity monitoring must include continuous filtrate turbidity monitoring conducted at a frequency of no less than once every 15 minutes on each membrane unit.

***Systems must establish a control limit within the DIT sensitivity limits in order to demonstrate compliance with 567—paragraphs 43.11(12)*"b"*(3)"4" and "5."

****The calibration of each turbidimeter used for compliance must be verified to demonstrate compliance with 567—paragraphs 43.9(4)*"a"* and 43.10(5)*"a."*

R. CWS and NTNC Systems Using Ozone Treatment. CWS and NTNC systems that use ozone in their treatment process must comply with the bromide requirements of subrule 567—43.6(2).

| Parameter | Pumpage or Flow: Sample Site | All Frequency |
|---|---|---|
| Bromate | finished: | 1/month* |

*The department may allow systems required to analyze for bromate to reduce bromate monitoring from monthly to once per quarter if a system demonstrates that the average source water bromide concentration is less than 0.05 mg/L based on representative monthly measurements for one year. Systems must continue bromide monitoring to remain on reduced bromate monitoring.

S. Ultraviolet Light (UV). All CWS and NTNC systems must comply with these requirements.

| Parameter | Pumpage or Flow: Sample Site | All Frequency |
|---|---|---|
| Alarm during off-specification conditions | each reactor: | 1/5 minutes |
| UV intensity | each lamp: | 1/day |
| UVT | each lamp: | 1/day |
| Ratio of minimum UV dose calculated and recorded every 4 hours to the required UV dose, OR calculate and record the log inactivation every four hours | each reactor: | 1/day |

| | | |
|---|---|---|
| Lamp status | each lamp: | 1/4 hours** |
| Individual UV reactor flow | each reactor: | 1/4 hours |
| | max UV flow: | daily |
| | total UV flow: | daily total |
| Total volume of off-specification water | each reactor: | 1/day |
| | all reactors: | monthly total |
| Percent of off-specification water produced | all reactors: | monthly total |
| Perform UVT analyzer check protocol | - | 1/week |
| Perform UV sensor verification* | each sensor: | 1/month |

*Reference sensor(s) must be calibrated at least once per year at a qualified facility against a traceable standard. Calibration records must be maintained for inspection during sanitary surveys. If the reference sensor is found to be out of calibration, the calibration frequency should be increased.

**Systems serving fewer than 500 persons may record lamp status 1/day.

T. Chlorine Dioxide. All CWS, NTNC and TNC systems must comply with these requirements. In the event of an acute or nonacute violation, systems must also comply with 567—paragraph 43.6(1)*"e."*

| **Parameter** | **Pumpage or Flow: Sample Site** | **All Frequency** |
|---|---|---|
| Chlorine dioxide | finished: | 1/day |
| Chlorite | finished: | 1/day |

U. Copper Ion Generator.

| **Parameter** | **Pumpage or Flow: Sample Site** | **All Frequency** |
|---|---|---|
| Copper residual | finished: | 1/week |
| | injection stream: | 1/week |

~~APPENDIX C~~

~~REGULATED CONTAMINANTS TABLE FOR CONSUMER CONFIDENCE REPORT~~

**Commented [165]:** Strike Appendix C, it is Appendix A to Subpart O of 40 CFR Part 141 (reference has been added in the appropriate places in the rule).

| ~~Key~~ | |
|---|---|
| ~~AL~~ | ~~Action Level~~ |
| ~~MCL~~ | ~~Maximum Contaminant Level~~ |
| ~~MCLG~~ | ~~Maximum Contaminant Level Goal~~ |
| ~~MFL~~ | ~~million fibers per liter~~ |
| ~~MRDL~~ | ~~Maximum Residual Disinfectant Level~~ |
| ~~MRDLG~~ | ~~Maximum Residual Disinfectant Level Goal~~ |
| ~~mrem/year~~ | ~~millirems per year (a measure of radiation absorbed by the body)~~ |
| ~~n/a~~ | ~~not applicable~~ |
| ~~NTU~~ | ~~nephelometric turbidity units (a measure of water clarity)~~ |
| ~~pCi/L~~ | ~~picocuries per liter (a measure of radioactivity)~~ |
| ~~ppb~~ | ~~parts per billion, or micrograms per liter (µg/L)~~ |
| ~~ppm~~ | ~~parts per million, or milligrams per liter (mg/L)~~ |
| ~~ppq~~ | ~~parts per quadrillion, or picograms per liter (pg/L)~~ |
| ~~ppt~~ | ~~parts per trillion, or nanograms per liter (ng/L)~~ |
| ~~TT~~ | ~~Treatment Technique~~ |

| ~~Contaminant (CCR units)~~ | ~~MCL, in mg/L~~ | ~~To convert for CCR, multiply by~~ | ~~MCL in CCR units~~ | ~~MCLG in CCR units~~ | ~~Major sources in drinking water~~ | ~~Health effects language~~ |
|---|---|---|---|---|---|---|
| ~~Microbiological Contaminants~~ | | | | | | |
| ~~Total coliform bacteria~~ | ~~TT~~ | ~~-~~ | ~~TT~~ | ~~n/a~~ | ~~Naturally present in the environment~~ | ~~Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system.~~ |
| ~~*E. coli*~~ | ~~Routine and repeat samples are total~~ | ~~-~~ | ~~Routine and repeat samples are total~~ | ~~0~~ | ~~Human and animal fecal waste~~ | ~~*E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea,~~ |

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| Contaminant (CCR units) | MCL, in mg/L | To convert for CCR, multiply by | MCL in CCR units | MCLG in CCR units | Major sources in drinking water | Health effects language |
|---|---|---|---|---|---|---|
| | coliform-positive and either is *E. coli*-positive, or system fails to take repeat samples following *E. coli*-positive routine sample, or system fails to analyze total coliform-positive repeat sample for *E. coli* | | coliform-positive and either is *E. coli*-positive, or system fails to take repeat samples following *E. coli*-positive routine sample, or system fails to analyze total coliform-positive repeat sample for *E. coli* | | | cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. |
| Fecal indicators (enterococci or coliphage) | TT | - | TT | n/a | Human and animal fecal waste | Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems. |
| **Disinfection Byproduct Precursor Removal Requirements for Surface & Influenced Groundwater Systems** | | | | | | |
| Total organic carbon (ppm) | TT | - | TT | n/a | Naturally present in the environment | Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver, or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer. |
| **Surface Water & Influenced Groundwater System Treatment Requirements** | | | | | | |
| Turbidity (NTU) | TT | - | TT | n/a | Soil runoff | Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, protozoa, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches, and can lead to death. |
| Surface water/IGW system treatment technique requirements: CT ratio; residual disinfectant; log removal/ inactivation of *Giardia*, viruses, and *Cryptosporidium*; or filter backwash receveling | TT | - | TT | n/a | Soil runoff | Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, protozoa, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches, and can lead to death. |
| **Radionuclide Contaminants** | | | | | | |
| Gross alpha emitters (pCi/L) | 15 pCi/L | - | 15 | 0 | Erosion of natural deposits | Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer. |
| Beta/photon emitters (mrem/yr) | 4 mrem/yr | - | 4 | 0 | Decay of natural and man-made deposits | Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer. |
| Radium, combined 226 and 228 (pCi/L) | 5 pCi/L | - | 5 | 0 | Erosion of natural deposits | Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer. |
| Uranium (µg/L) | 30 µg/L (footnote 2) | - | 30 | 0 | Erosion of natural deposits | Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity. |
| **Inorganic Contaminants** | | | | | | |
| Antimony (ppb) | 0.006 | 1000 | 6 | 6 | Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder | Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar. |
| Arsenic (ppb)[3] | 0.010[3] | 1000 | 10[3] | 0[3] | Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes | Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer. |

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| Contaminant (CCR units) | MCL, in mg/L | To convert for CCR, multiply by | MCL in CCR units | MCLG in CCR units | Major sources in drinking water | Health effects language |
|---|---|---|---|---|---|---|
| Asbestos (MFL) | 7 MFL | - | 7 | 7 | Decay of asbestos cement water mains; erosion of natural deposits | Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps. |
| Barium (ppm) | 2 | - | 2 | 2 | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits | Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure. |
| Beryllium (ppb) | 0.004 | 1000 | 4 | 4 | Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries | Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions. |
| Bromate (ppb) | 0.010 | 1000 | 10 | 0 | Byproduct of drinking water disinfection | Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer. |
| Cadmium (ppb) | 0.005 | 1000 | 5 | 5 | Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints | Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage. |
| Chloramines (ppm) | MRDL = 4.0 | - | MRDL = 4.0 | MRDLG = 4.0 | Water additive used to control microbes | Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia. |
| Chlorine (ppm) | MRDL = 4.0 | - | MRDL = 4.0 | MRDLG = 4.0 | Water additive used to control microbes | Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort. |
| Chlorine dioxide (ppb) | MRDL = 0.8 | 1000 | MRDL = 800 | MRDLG = 800 | Water additive used to control microbes | Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. |
| Chlorite (ppm) | 1.0 | - | 1.0 | 0.8 | Byproduct of drinking water disinfection | Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia. |
| Chromium (ppb) | 0.1 | 1000 | 100 | 100 | Discharge from steel and pulp mills; erosion of natural deposits | Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis. |
| Copper (ppm) | AL = 1.3 | - | AL = 1.3 | 1.3 | Corrosion of household plumbing systems; erosion of natural deposits | Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor. |
| Cyanide (ppb) | 0.2 | 1000 | 200 | 200 | Discharge from steel, metal, plastic, and fertilizer factories | Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid. |
| Fluoride (ppm) | 4.0 | - | 4.0 | 4.0 | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories | Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL (2.0 ppm) or more may cause mottling of children's teeth, usually in children less than nine years of age. Mottling, also known as dental fluorosis, may include brown staining or pitting of the teeth, and occurs only in the developing teeth before they erupt from the gums. |
| Lead (ppb) | AL = 0.015 | 1000 | AL = 15 | 0 | Corrosion of household plumbing systems; erosion of natural deposits | Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. |
| Mercury, inorganic (ppb) | 0.002 | 1000 | 2 | 2 | Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland | Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage. |
| Nitrate, as N (ppm) | 10 | - | 10 | 10 | Runoff from fertilizer use; leaching from septic tanks or sewage; erosion of | Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and |

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| Contaminant (CCR units) | MCL, in mg/L | To convert for CCR, multiply by | MCL in CCR units | MCLG in CCR units | Major sources in drinking water | Health effects language |
|---|---|---|---|---|---|---|
| | | | | | natural deposits | blue baby syndrome. |
| Nitrite, as N (ppm) | 1.0 | - | 1.0 | 1.0 | Conversion of ammonia; runoff from fertilizer use; leaching from septic tanks or sewage; erosion of natural deposits | Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome. |
| Selenium (ppb) | 0.05 | 1000 | 50 | 50 | Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines | Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation. |
| Thallium (ppb) | 0.002 | 1000 | 2 | 0.5 | Leaching from ore-processing sites; discharge from electronics, glass, and drug factories | Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, change in their blood, or problems with their kidneys, intestines, or liver. |
| **Synthetic Organic Contaminants** | | | | | | |
| 2,4-D (ppb) | 0.07 | 1000 | 70 | 70 | Runoff from herbicide used on row crops | Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands. |
| 2,4,5-TP Silvex (ppb) | 0.05 | 1000 | 50 | 50 | Residue of banned herbicide | Some people who drink water containing Silvex in excess of the MCL over many years could experience liver problems. |
| Acrylamide | TT | - | TT | 0 | Added to water during sewage/ wastewater treatment | Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer. |
| Alachlor (ppb) | 0.002 | 1000 | 2 | 0 | Runoff from herbicide used on row crops | Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer. |
| Atrazine (ppb) | 0.003 | 1000 | 3 | 3 | Runoff from herbicide used on row crops | Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties. |
| Benzo(a)pyrene, PAH (ppt) | 0.0002 | 1,000,000 | 200 | 0 | Leaching from linings of water storage tanks and distribution lines | Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer. |
| Carbofuran (ppb) | 0.04 | 1000 | 40 | 40 | Leaching of soil fumigant used on rice and alfalfa | Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems. |
| Chlordane (ppb) | 0.002 | 1000 | 2 | 0 | Residue of banned termiticide | Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer. |
| Dalapon (ppb) | 0.2 | 1000 | 200 | 200 | Runoff from herbicide used on rights of way | Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes. |
| Di(2-ethylhexyl) adipate (ppb) | 0.4 | 1000 | 400 | 400 | Discharge from chemical factories | Some people who drink water containing di(2-ethylhexyl)adipate well in excess of the MCL over many years could experience toxic effects such as weight loss, liver enlargement, or possible reproductive difficulties. |
| Di(2-ethylhexyl) phthalate (ppb) | 0.006 | 1000 | 6 | 0 | Discharge from rubber and chemical factories | Some people who drink water containing di(2-ethylhexyl)phthalate well in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer. |
| Dibromochloropropane [DBCP] (ppt) | 0.0002 | 1,000,000 | 200 | 0 | Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards | Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive problems and may have an increased risk of getting cancer. |
| Dinoseb (ppb) | 0.007 | 1000 | 7 | 7 | Runoff from herbicide used on soybeans and vegetables | Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties. |
| Diquat (ppb) | 0.02 | 1000 | 20 | 20 | Runoff from herbicide use | Some people who drink water containing diquat in excess of the MCL over many years could get cataracts. |
| Dioxin [2,3,7,8-TCDD] (ppq) | 0.00000003 | 1,000,000,000 | 30 | 0 | Emissions from waste incineration and other combustion; discharge from chemical factories | Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer. |
| Endothall (ppb) | 0.1 | 1000 | 100 | 100 | Runoff from herbicide use | Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines. |
| Endrin (ppb) | 0.002 | 1000 | 2 | 2 | Residue of banned insecticide | Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems. |
| Epichlorohydrin | TT | - | TT | 0 | Discharge from industrial chemical factories; an impurity of some water treatment chemicals | Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer. |

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|---|---|---|---|---|---|---|
| Ethylene dibromide (ppt) | 0.0005 | 1,000,000 | 50 | 0 | Discharge from petroleum refineries | Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system or kidneys, and may have an increased risk of getting cancer. |
| Glyphosate (ppb) | 0.7 | 1000 | 700 | 700 | Runoff from herbicide use | Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties. |
| Haloacetic Acids (HAA) (ppb) | 0.060 | 1000 | 60 | (footnote 4) | Byproduct of drinking water disinfection | Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer. |
| Heptachlor (ppt) | 0.0004 | 1,000,000 | 400 | 0 | Residue of banned pesticide | Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer. |
| Heptachlor epoxide (ppt) | 0.0002 | 1,000,000 | 200 | 0 | Breakdown of heptachlor | Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer. |
| Hexachlorobenzene (ppb) | 0.001 | 1000 | 1 | 0 | Discharge from metal refineries and agricultural chemical factories | Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer. |
| Hexachlorocyclo-pentadiene (ppb) | 0.05 | 1000 | 50 | 50 | Discharge from chemical factories | Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach. |
| Lindane (ppt) | 0.0002 | 1,000,000 | 200 | 200 | Runoff/leaching from insecticide used on cattle, lumber, gardens | Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver. |
| Methoxychlor (ppb) | 0.04 | 1000 | 40 | 40 | Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock | Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties. |
| Oxamyl [Vydate] (ppb) | 0.2 | 1000 | 200 | 200 | Runoff/leaching from insecticide used on apples, potatoes, and tomatoes | Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects. |
| PCBs [polychlorinated byphenyls] (ppt) | 0.0005 | 1,000,000 | 500 | 0 | Runoff from landfills; discharge of waste chemicals | Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer. |
| Pentachlorophenol (ppb) | 0.001 | 1000 | 1 | 0 | Discharge from wood preserving factories | Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer. |
| Picloram (ppb) | 0.5 | 1000 | 500 | 500 | Herbicide runoff | Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver. |
| Simazine (ppb) | 0.004 | 1000 | 4 | 4 | Herbicide runoff | Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood. |
| Toxaphene (ppb) | 0.003 | 1000 | 3 | 0 | Runoff/ leaching from insecticide used on cotton and cattle | Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer. |
| Volatile Organic Contaminants | | | | | | |
| Benzene (ppb) | 0.005 | 1000 | 5 | 0 | Discharge from factories; leaching from gasoline storage tanks and landfills | Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer. |
| Carbon tetrachloride (ppb) | 0.005 | 1000 | 5 | 0 | Discharge from chemical plants and other industrial activities | Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer. |
| Chlorobenzene (ppb) | 0.1 | 1000 | 100 | 100 | Discharge from chemical and agricultural chemical factories | Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys. |
| o-Dichlorobenzene (ppb) | 0.6 | 1000 | 600 | 600 | Discharge from industrial chemical factories | Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory system. |
| p-Dichlorobenzene (ppb) | 0.075 | 1000 | 75 | 75 | Discharge from industrial chemical factories | Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood. |
| 1,2-Dichloroethane (ppb) | 0.005 | 1000 | 5 | 0 | Discharge from industrial chemical factories | Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer. |
| 1,1-Dichloroethylene (ppb) | 0.007 | 1000 | 7 | 7 | Discharge from industrial chemical factories | Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems |

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| Contaminant (CCR units) | MCL, in mg/L | To convert for CCR, multiply by | MCL in CCR units | MCLG in CCR units | Major sources in drinking water | Health effects language |
|---|---|---|---|---|---|---|
| | | | | | | with their liver. |
| Cis-1,2-Dichloroethylene (ppb) | 0.07 | 1000 | 70 | 70 | Discharge from industrial chemical factories | Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver. |
| Trans-1,2-Dichloroethylene (ppb) | 0.1 | 1000 | 100 | 100 | Discharge from industrial chemical factories | Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver. |
| Dichloromethane (ppb) | 0.005 | 1000 | 5 | 0 | Discharge from industrial chemical factories | Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer. |
| 1,2-Dichloropropane (ppb) | 0.005 | 1000 | 5 | 0 | Discharge from industrial chemical factories | Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer. |
| Ethyl benzene (ppb) | 0.7 | 1000 | 700 | 700 | Discharge from petroleum refineries; leaching from gasoline storage tanks and landfills | Some people who drink water containing ethyl benzene well in excess of the MCL over many years could experience problems with their liver or kidneys. |
| Styrene (ppb) | 0.1 | 1000 | 100 | 100 | Discharge from rubber and plastic factories; leaching from landfills | Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system. |
| Tetrachloroethylene (ppb) | 0.005 | 1000 | 5 | 0 | Discharge from factories and dry cleaners | Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer. |
| 1,2,4-Trichlorobenzene (ppb) | 0.07 | 1000 | 70 | 70 | Discharge from textile-finishing factories | Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands. |
| 1,1,1-Trichloroethane (ppb) | 0.2 | 1000 | 200 | 200 | Discharge from metal degreasing sites and other factories | Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system. |
| 1,1,2-Trichloroethane (ppb) | 0.005 | 1000 | 5 | 3 | Discharge from industrial chemical factories | Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune system. |
| Trichloroethylene (ppb) | 0.005 | 1000 | 5 | 0 | Discharge from metal degreasing sites and other factories | Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer. |
| Total trihalomethanes (TTHM) (ppb) | 0.080 | 1000 | 80 | (footnote 4) | Byproduct of drinking water disinfection | Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer. |
| Toluene (ppm) | 1 | - | 1 | 1 | Discharge from petroleum factories; leaching from gasoline storage tanks and landfills | Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver. |
| Vinyl chloride (ppb) | 0.002 | 1000 | 2 | 0 | Leaching from PVC piping; discharge from plastics factories | Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer. |
| Xylenes (ppm) | 10 | - | 10 | 10 | Discharge from petroleum factories; discharge from chemical factories; leaching from gasoline storage tanks and landfills | Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system. |

[1]MCL (for systems that collect >40 samples per month): 5% of monthly samples are positive. MCL (for systems that collect <40 samples per month): 1 positive monthly sample.

[2]Uranium MCL is effective on December 8, 2003. Until then, there is no MCL.

[3]Beginning on January 23, 2006, the arsenic MCL is 0.010 mg/L and the MCLG is 0. Until then, the MCL is 0.05 mg/L, and there is no MCLG.

[4]The MCLGs for total trihalomethanes and haloacetic acids:

| Disinfection Byproduct | MCLG, mg/L | MCLG in CCR units |
|---|---|---|
| Bromodichloromethane | 0 | 0 |
| Bromoform | 0 | 0 |
| Chloroform | 0.07 | 70 |
| Dibromochloromethane | 0.06 | 60 |
| Dichloroacetic acid | 0 | 0 |
| Monochloroacetic acid | 0.07 | 70 |
| Trichloroacetic acid | 0.02 | 20 |

[**ARC 9915B**, IAB 12/14/11, effective 1/18/12; **ARC 3735C**, IAB 12/14/11, effective 5/16/18]

APPENDIX D:
REGULATED CONTAMINANTS TABLES FOR CONSUMER CONFIDENCE REPORTS
Rescinded IAB 1/7/04, effective 2/11/04
APPENDIX E:

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~~HEALTH EFFECTS LANGUAGE FOR CONSUMER CONFIDENCE REPORTS~~
~~Rescinded IAB 1/7/04, effective 2/11/04~~
~~APPENDIX F:~~
~~HEALTH EFFECTS LANGUAGE FOR FLUORIDE LEVELS BETWEEN 2 AND 4 MG/L~~
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