

AMENDATORY SECTION (Amending WSR 99-07-021, filed 3/9/99, effective 4/9/99)

**WAC 246-290-001 Purpose and scope.** (1) The purpose of this chapter is to define basic regulatory requirements and to protect the health of consumers using public drinking water supplies.

(2) The rules of this chapter are specifically designed to ensure:

(a) Adequate design, construction, sampling, management, maintenance, and operation practices; and

(b) Provision of safe and high quality drinking water in a reliable manner and in a quantity suitable for intended use.

(3) Purveyors shall be responsible for complying with the regulatory requirements of this chapter.

(4) These rules are intended to conform with Public Law 93-523, the Federal Safe Drinking Water Act of 1974, and Public Law 99-339, the Safe Drinking Water Act Amendments of 1986, and certain provisions of Public Law 104-182, the Safe Drinking Water Act Amendments of 1996.

(5) The rules set forth are adopted under chapter 43.20 RCW. Other statutes relating to this chapter are:

(a) RCW 43.20B.020, Fees for services—Department of health and department of social and health services;

(b) Chapter 43.70 RCW, Department of health;

(c) Chapter 70.05 RCW, Local health department, boards, officers—Regulations;

(d) Chapter 70.116 RCW, Public Water System Coordination Act of 1977;

(e) Chapter 70.119 RCW, Public water supply systems—(~~Certification and regulation of~~) Operators;

(f) Chapter 70.119A RCW, Public water systems—Penalties and compliance; and

(g) Chapter 70.142 RCW, Chemical contaminants and water quality.

AMENDATORY SECTION (Amending WSR 10-20-068, filed 9/29/10, effective 11/1/10)

**WAC 246-290-002 Guidance.** (1) The department has numerous guidance documents available to help purveyors comply with state and federal rules regarding drinking water. These include documents on the following subjects:

(a) Compliance;

(b) Consumer and public education;

(c) Contaminants;

(d) Cross-connection control and backflow prevention;

(e) Emergency response and drinking water security;

(f) Engineering design and water treatment;

(g) Financial assistance and state revolving fund (SRF);

(h) General information;

(i) Groundwater protection;

(j) Growth management;

(k) Operations and maintenance;

(l) Operator certification;

- (m) Planning and financial viability;
- (n) Regulations;
- (o) Small water systems;
- (p) System approval;
- (q) Water quality monitoring and source protection;
- (r) Water system planning; and
- (s) Water use efficiency.

(2) The department's guidance documents are available (~~at minimal or no cost by contacting the office of drinking water's publication service at 360 236 3100 or 800 521 0323. Individuals can also request the documents via the internet at <http://www.doh.wa.gov/ehp/dw> or through conventional~~) online at <https://fortress.wa.gov/doh/eh/dw/publications/publications.cfm> or through U.S. mail at P.O. Box 47822, Olympia, Washington 98504-7822.

(3) Federal guidance documents are available from the Environmental Protection Agency (EPA) for a wide range of topics. These are available from the EPA Office of Ground Water and Drinking Water web site at (~~[www.epa.gov/drink.index.cfm](http://www.epa.gov/drink.index.cfm)~~) <http://water.epa.gov/drink.index.cfm>.

AMENDATORY SECTION (Amending WSR 10-20-068, filed 9/29/10, effective 11/1/10)

**WAC 246-290-010 Definitions, abbreviations, and acronyms.** The definitions in this section apply throughout this chapter unless the context clearly indicates otherwise.

- (1) **"Acute"** means posing an immediate risk to human health.
- (2) **"ADD"** means an average day demand.
- (3) **"AG"** means an air gap.

(4) **"Alternative filtration technology"** means a filtration process for substantial removal of particulates (generally > 2-log *Giardia lamblia* cysts and  $\geq$  2-log removal of *Cryptosporidium* oocysts) by other than conventional, direct, diatomaceous earth, or slow sand filtration processes.

(5) **"Analogous treatment system"** means an existing water treatment system that has unit processes and source water quality characteristics that are similar to a proposed treatment system.

(6) **"ANSI"** means the American National Standards Institute.

(7) **"Approved air gap"** means a physical separation between the free-flowing end of a potable water supply pipeline and the overflow rim of an open or nonpressurized receiving vessel.

To be an air gap approved by the department, the separation must be at least:

(a) Twice the diameter of the supply piping measured vertically from the overflow rim of the receiving vessel, and in no case be less than one inch, when unaffected by vertical surfaces (sidewalls); and

(b) Three times the diameter of the supply piping, if the horizontal distance between the supply pipe and a vertical surface (sidewall) is less than or equal to three times the diameter of the supply pipe, or if the horizontal distance between the supply pipe and intersecting vertical surfaces (sidewalls) is less than or equal to four times the diameter of the supply pipe and in no case less than one and one-half inches.

(8) **"Approved atmospheric vacuum breaker (AVB)"** means an AVB of make, model, and size that is approved by the department. AVBs that appear on the current approved backflow prevention assemblies list developed by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research or that are listed or approved by other nationally recognized testing agencies (such as IAPMO, ANSI, or UL) acceptable to the authority having jurisdiction are considered approved by the department.

(9) **"Approved backflow preventer"** means an approved air gap, an approved backflow prevention assembly, or an approved AVB. The terms "approved backflow preventer," "approved air gap," or "approved backflow prevention assembly" refer only to those approved backflow preventers relied upon by the purveyor for the protection of the public water system. The requirements of WAC 246-290-490 do not apply to backflow preventers installed for other purposes.

(10) **"Approved backflow prevention assembly"** means an RPBA, RPDA, DCVA, DCDA, PVBA, or SVBA of make, model, and size that is approved by the department. Assemblies that appear on the current approved backflow prevention assemblies list developed by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research or other entity acceptable to the department are considered approved by the department.

(11) **"As-built drawing"** means the drawing created by an engineer from the collection of the original design plans, including changes made to the design or to the system, that reflects the actual constructed condition of the water system.

(12) **"Assessment source water monitoring"** means an evaluation of groundwater sources that may be at risk for fecal contamination. Assessment source water monitoring involves the collection of source water samples at regular intervals and analysis of those samples for fecal indicators as directed by the department.

(13) **"Authority having jurisdiction"** (formerly known as local administrative authority) means the local official, board, department, or agency authorized to administer and enforce the provisions of the Uniform Plumbing Code as adopted under chapter 19.27 RCW.

(14) **"Authorized agent"** means any person who:

(a) Makes decisions regarding the operation and management of a public water system whether or not he or she is engaged in the physical operation of the system;

(b) Makes decisions whether to improve, expand, purchase, or sell the system; or

(c) Has discretion over the finances of the system.

(15) **"Authorized consumption"** means the volume of metered and unmetered water used for municipal water supply purposes by consumers, the purveyor, and others authorized to do so by the purveyor, including, but not limited to, fire fighting and training, flushing of mains and sewers, street cleaning, and watering of parks and landscapes. These volumes may be billed or unbilled.

(16) **"AVB"** means an atmospheric vacuum breaker.

(17) **"Average day demand (ADD)"** means the total quantity of water use from all sources of supply as measured or estimated over a calendar year divided by three hundred sixty-five. ADD is typically expressed as gallons per day (gpd) per equivalent residential unit (ERU).

(18) **"AWWA"** means the American Water Works Association.

(19) **"Backflow"** means the undesirable reversal of flow of water or other substances through a cross-connection into the public water system or consumer's potable water system.

(20) **"Backflow assembly tester"** means a person holding a valid BAT certificate issued under chapter 246-292 WAC.

(21) **"Backpressure"** means a pressure (caused by a pump, elevated tank or piping, boiler, or other means) on the consumer's side of the service connection that is greater than the pressure provided by the public water system and which may cause backflow.

(22) **"Backsiphonage"** means backflow due to a reduction in system pressure in the purveyor's distribution system and/or consumer's water system.

(23) **"Bag filter"** means a pressure-driven separation device that removes particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed of a nonrigid, fabric filtration media housed in a pressure vessel in which the direction of flow is from the inside of the bag to outside.

(24) **"Bank filtration"** means a water treatment process that uses a well to recover surface water that has naturally infiltrated into groundwater through a river bed or bank(s). Infiltration is typically enhanced by the hydraulic gradient imposed by a nearby pumping water supply or other well(s).

(25) **"BAT"** means a backflow assembly tester.

(26) **"Best available technology"** means the best technology, treatment techniques, or other means that EPA finds, after examination for efficacy under field conditions, are available, taking cost into consideration.

(27) **"Blended sample"** means a sample collected from two or more individual sources at a point downstream of the confluence of the individual sources and prior to the first connection.

(28) **"C"** means the residual disinfectant concentration in mg/L at a point before or at the first consumer.

(29) **"Cartridge filter"** means a pressure-driven separation device that removes particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed as rigid or semi-rigid, self-supporting filter elements housed in pressure vessels in which flow is from the outside of the cartridge to the inside.

(30) **"Category red operating permit"** means an operating permit identified under chapter 246-294 WAC. Placement in this category results in permit issuance with conditions and a determination that the system is inadequate.

(31) **"CCP"** means composite correction program.

(32) **"CCS"** means a cross-connection control specialist.

(33) **"C.F.R."** means the Code of Federal Regulations.

(34) **"Chemical contaminant treatment facility"** means a treatment facility specifically used for the purpose of removing chemical contaminants.

(35) **"Clarification"** means a treatment process that uses gravity (sedimentation) or dissolved air (flotation) to remove flocculated particles.

(36) **"Closed system"** means any water system or portion of a water system in which water is transferred to a higher pressure zone closed to the atmosphere, such as when no gravity storage is present.

(37) **"Coagulant"** means a chemical used in water treatment to destabilize particulates and accelerate the rate at which they aggregate into larger particles.

(38) **"Coagulation"** means a process using coagulant chemicals and rapid mixing to destabilize colloidal and suspended particles and agglomerate them into flocs.

(39) **"Combination fire protection system"** means a fire sprinkler system that:

(a) Is supplied only by the purveyor's water;

(b) Does not have a fire department pumper connection; and

(c) Is constructed of approved potable water piping and materials that serve both the fire sprinkler system and the consumer's potable water system.

(40) **"Combined distribution system"** means the interconnected distribution system consisting of the distribution systems of wholesale systems and of the consecutive systems that receive finished water.

(41) **"Completely treated water"** means water from a surface water source, or a groundwater source under the direct influence of surface water (GWI) source that receives filtration or disinfection treatment that fully complies with the treatment technique requirements of Part 6 of this chapter as determined by the department.

(42) **"Composite correction program (CCP)"** means a program that consists of two elements - a comprehensive performance evaluation (CPE) and comprehensive technical assistance (CTA).

(43) **"Composite sample"** means a sample in which more than one source is sampled individually by the water system and then composited by a certified laboratory by mixing equal parts of water from each source (up to five different sources) and then analyzed as a single sample.

(44) **"Comprehensive monitoring plan"** means a schedule that describes both the frequency and appropriate locations for sampling of drinking water contaminants as required by state and federal rules.

(45) **"Comprehensive performance evaluation (CPE)"** means a thorough review and analysis of a treatment plant's performance-based capabilities and associated administrative, operation and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements.

The comprehensive performance evaluation must consist of at least the following components:

(a) Assessment of plant performance;

(b) Evaluation of major unit processes;

(c) Identification and prioritization of performance limiting factors;

(d) Assessment of the applicability of comprehensive technical assistance; and

(e) Preparation of a CPE report.

(46) **"Comprehensive technical assistance (CTA)"** means the performance improvement phase that is implemented if the CPE results indicate improved performance potential. The system must identify and systematically address plant-specific factors. The CTA is a combination of using CPE results as a basis for follow-up, implementing process control priority-setting techniques, and maintaining long-term involvement to systematically train staff and administrators.

(47) **"Confirmation"** means to demonstrate the accuracy of results of a sample by analyzing another sample from the same location within a reasonable period of time, generally not to exceed two weeks. Confirmation is when analysis results fall within plus or minus thirty percent of the original sample results.

(48) **"Confluent growth"** means a continuous bacterial growth covering a portion or the entire filtration area of a membrane filter in which bacterial colonies are not discrete.

(49) **"Consecutive system"** means a public water system that receives some or all of its finished water from one or more wholesale systems. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

(50) **"Construction completion report"** means a form provided by the department and completed for each specific construction project to document:

(a) Project construction in accordance with this chapter and general standards of engineering practice;

(b) Physical capacity changes; and

(c) Satisfactory test results.

The completed form must be stamped with an engineer's seal, and signed and dated by a professional engineer.

(51) **"Consumer"** means any person receiving water from a public water system from either the meter, or the point where the service line connects with the distribution system if no meter is present. For purposes of cross-connection control, "consumer" means the owner or operator of a water system connected to a public water system through a service connection.

(52) **"Consumer's water system,"** as used in WAC 246-290-490, means any potable or industrial water system that begins at the point of delivery from the public water system and is located on the consumer's premises. The consumer's water system includes all auxiliary sources of supply, storage, treatment, and distribution facilities, piping, plumbing, and fixtures under the control of the consumer.

(53) **"Contaminant"** means a substance present in drinking water that may adversely affect the health of the consumer or the aesthetic qualities of the water.

(54) **"Contingency plan"** means that portion of the wellhead protection program section of the water system plan or small water system management program that addresses the replacement of the major well(s) or wellfield in the event of loss due to groundwater contamination.

(55) **"Continuous monitoring"** means determining water quality with automatic recording analyzers that operate without interruption twenty-four hours per day.

(56) **"Conventional filtration treatment"** means a series of processes including coagulation, flocculation, clarification, and filtration that together result in substantial particulate removal in compliance with Part 6 of this chapter.

(57) **"Corrective action plan"** means specific written actions and deadlines developed by the water system or the department that the system must follow as a result of either the identification of significant deficiencies during a sanitary survey or the determination of a fecal indicator-positive sample in source water monitoring.

(58) **"Cost-effective"** means the benefits exceed the costs.

(59) **"Council"** means the Washington state building code council under WAC 51-04-015(2).

(60) **"CPE"** means a comprehensive performance evaluation.

(61) **"Critical water supply service area (CWSSA)"** means a geographical area which is characterized by a proliferation of small, inadequate water systems, or by water supply problems which threaten the present or future water quality or reliability of service in a manner that efficient and orderly development may best be achieved through coordinated planning by the water utilities in the area.

(62) **"Cross-connection"** means any actual or potential physical connection between a public water system or the consumer's water system and any source of nonpotable liquid, solid, or gas that could contaminate the potable water supply by backflow.

(63) **"Cross-connection control program"** means the administrative and technical procedures the purveyor implements to protect the public water system from contamination via cross-connections as required in WAC 246-290-490.

(64) **"Cross-connection control specialist"** means a person holding a valid CCS certificate issued under chapter 246-292 WAC.

(65) **"Cross-connection control summary report"** means the annual report that describes the status of the purveyor's cross-connection control program.

(66) **"CT"** or **"CTcalc"** means the product of "residual disinfectant concentration" (C) and the corresponding "disinfectant contact time" (T) i.e., "C" x "T."

(67) **"CT<sub>99.9</sub>"** means the CT value required for 99.9 percent (3-log) inactivation of *Giardia lamblia* cysts.

(68) **"CTA"** means comprehensive technical assistance.

(69) **"CTreq"** means the CT value a system shall provide to achieve a specific percent inactivation of *Giardia lamblia* cysts or other pathogenic organisms of health concern as directed by the department.

(70) **"Curtailement"** means short-term, infrequent actions by a purveyor and its consumers to reduce their water use during or in anticipation of a water shortage.

(71) **"CWSSA"** means a critical water supply service area.

(72) **"DBPs"** means disinfection byproducts.

(73) **"DCDA"** means a double check detector assembly.

(74) **"DCVA"** means a double check valve assembly.

(75) **"Dead storage"** means the volume of stored water not available to all consumers at the minimum design pressure under WAC 246-290-230 (5) and (6).

(76) **"Demand forecast"** means an estimate of future water system water supply needs assuming historically normal weather conditions and calculated using numerous parameters, including population, historic water use, local land use plans, water rates and their impacts on consumption, employment, projected water use efficiency savings from implementation of a water use efficiency program, and other appropriate factors.

(77) **"Department"** means the Washington state department of health or health officer as identified in a joint plan of operation under WAC 246-290-030(1).

(78) **"Design and construction standards"** means department design guidance and other peer reviewed documents generally accepted by the engineering profession as containing fundamental criteria for design and construction of water facility projects. Design and construction standards are comprised of performance and sizing criteria and reference general construction materials and methods.

(79) **"Detectable residual disinfectant concentration"** means the value that is greater than or equal to the lowest measurable value, plus the accuracy of the instrument used to measure chlorine residual. For example, if the lowest measurable value equals 0.1 mg/L and the accuracy of the instrument used is plus or minus 0.1 mg/L, then the detectable residual disinfectant concentration is 0.2 mg/L.

(80) **"Diatomaceous earth filtration"** means a filtration process for substantial removal of particulates ( $> 2_{\log}$  *Giardia lamblia* cysts) in which:

(a) A precoat cake of graded diatomaceous earth filter media is deposited on a support membrane (septum); and

(b) Water is passed through the cake on the septum while additional filter media, known as body feed, is continuously added to the feed water to maintain the permeability of the filter cake.

((+80+)) (81) **"Direct filtration"** means a series of processes including coagulation, flocculation, and filtration (but excluding sedimentation) that together result in substantial particulate removal in compliance with Part 6 of this chapter.

((+81+)) (82) **"Direct service connection"** means a service hookup to a property that is contiguous to a water distribution main and where additional distribution mains or extensions are not needed to provide service.

((+82+)) (83) **"Disinfectant contact time (T in CT)"** means:

(a) When measuring the first or only C, the time in minutes it takes water to move from the point of disinfectant application to a point where the C is measured; and

(b) For subsequent measurements of C, the time in minutes it takes water to move from one C measurement point to the C measurement point for which the particular T is being calculated.

((+83+)) (84) **"Disinfection"** means the use of chlorine or other agent or process the department approves for killing or inactivating microbiological organisms, including pathogenic and indicator organisms.

((+84+)) (85) **"Disinfection profile"** means a summary of *Giardia lamblia* inactivation through a surface water treatment plant.

((+85+)) (86) **"Distribution coliform sample"** means a sample of water collected from a representative location in the distribution system at or after the first service and analyzed for coliform presence in compliance with this chapter.

((+86+)) (87) **"Distribution-related projects"** means distribution projects such as storage tanks, booster pump facilities, transmission mains, pipe linings, and tank coating. It does not mean source of supply (including interties) or water quality treatment projects.

((+87+)) (88) **"Distribution system"** means all piping components of a public water system that serve to convey water from transmission mains linked to source, storage and treatment facilities to the consumer excluding individual services.

((+88+)) (89) **"Domestic or other nondistribution system plumbing problem((7))"** means contamination of a system having more than one service connection with the contamination limited to the specific service connection from which the sample was taken.

((+89+)) (90) **"Dual sample set"** means a set of two samples collected at the same time and same location, with one sample analyzed for TTHM and the other sample analyzed for HAA5. Dual sample sets are collected for the purposes of conducting an IDSE under WAC 246-290-300 (6)(b)(i)(F) and determining compliance with the TTHM and HAA5 MCLs under WAC 246-290-310(4).

((+90+)) (91) **"Duplicate (verification) sample"** means a second sample collected at the same time and location as the first sample and used for verification.

((+91+)) (92) **"DVGW"** means Deutsche Vereinigung des Gas und Wasserfaches.



((+92+)) (93) **"Elected governing board"** means the elected officers with ultimate legal responsibility for operational, technical, managerial, and financial decisions for a public water system.

((+93+)) (94) **"Emergency"** means an unforeseen event that causes damage or disrupts normal operations and requires immediate action to protect public health and safety.

((+94+)) (95) **"Emergency source"** means any source that ~~((is approved by the department))~~ a purveyor intends to use for emergency purposes only~~((, is))~~ and not ((used)) use for routine or seasonal water demands~~((, is physically disconnected, and is identified in the purveyor's emergency response plan))~~.

((+95+)) (96) **"Engineering design review report"** means a form provided by the department and completed for a specific distribution-related project to document:

(a) Engineering review of a project report and/or construction documents under the submittal exception process in WAC 246-290-125(3); and

(b) Design in accordance with this chapter and general standards of engineering practice.

(c) The completed form must be stamped with engineer's seal, and signed and dated by a professional engineer.

((+96+)) (97) **"EPA"** means the U.S. Environmental Protection Agency.

((+97+)) (98) **"Equalizing storage"** means the volume of storage needed to supplement supply to consumers when the peak hourly demand exceeds the total source pumping capacity.

((+98+)) (99) **"Equivalent residential unit (ERU)"** means a system-specific unit of measure used to express the amount of water consumed by a typical full-time single family residence.

((+99+)) (100) **"ERU"** means an equivalent residential unit.

((+100+)) (101) **"Existing service area"** means a specific area within which direct service or retail service connections to customers of a public water system are currently available.

((+101+)) (102) **"Expanding public water system"** means a public water system ~~((installing additions, extensions, changes, or alterations to their existing source, transmission, storage, or distribution facilities that will enable the system to increase in size its))~~ that increases the existing service area ((and/or its)) or approved number of ~~((approved))~~ service connections. ~~((Exceptions:~~

(a) A system that connects new approved individual retail or direct service connections onto an existing distribution system within an existing service area; or

(b) A distribution system extension in an existing service area identified in a current and approved water system plan or project report.

(+102+)) (103) **"Filter profile"** means a graphical representation of individual filter performance in a direct or conventional surface water filtration plant, based on continuous turbidity measurements or total particle counts versus time for an entire filter run, from startup to backwash inclusively, that includes an assessment of filter performance while another filter is being backwashed.

((+103+)) (104) **"Filtration"** means a process for removal of particulate matter from water by passage through porous media.

((+104+)) (105) **"Financial viability"** means the capability of a water system to obtain sufficient funds to construct, operate, maintain, and manage a public water system, on a continuing basis, in full compliance with federal, state, and local requirements.

((+105+)) (106) **"Finished water"** means water introduced into a public water system's distribution system and is intended for distribution and consumption without further treatment, except as treatment necessary to maintain water quality in the distribution system (e.g., booster disinfection, addition of corrosion control chemicals).

((+106+)) (107) **"Finished water storage facility"** means a water storage structure that is integrated with a water system's distribution network to provide for variable system demands including, but not limited to, daily equalizing storage, standby storage, or fire reserves, or to provide for disinfectant contact time.

((+107+)) (108) **"Fire flow"** means the maximum rate and duration of water flow needed to suppress a fire under WAC 246-293-640 or as required under local fire protection authority standards.

((+108+)) (109) **"Fire suppression storage"** means the volume of stored water available during fire suppression activities to satisfy minimum pressure requirements per WAC 246-290-230.

((+109+)) (110) **"First consumer"** means the first service connection associated with any source (i.e., the point where water is first withdrawn for human consumption, excluding connections where water is delivered to another water system covered by these regulations).

((+110+)) (111) **"Flocculation"** means a process enhancing agglomeration and collection of colloidal and suspended particles into larger, more easily settleable or filterable particles by gentle stirring.

((+111+)) (112) **"Flowing stream"** means a course of running water flowing in a definite channel.

((+112+)) (113) **"Flow-through fire protection system"** means a fire sprinkler system that:

(a) Is supplied only by the purveyor's water;

(b) Does not have a fire department pumper connection;

(c) Is constructed of approved potable water piping and materials to which sprinkler heads are attached; and

(d) Terminates at a connection to a toilet or other plumbing fixture to prevent stagnant water.

((+113+)) (114) **"Forecasted demand characteristics"** means the factors that may affect a public water system's projected water needs.

((+114+)) (115) **"Future service area"** means a specific area a public water system plans to provide water service. This is determined by a written agreement between purveyors under WAC 246-293-250 or by the purveyor's elected governing board or governing body if not required under WAC 246-293-250.

((+115+)) (116) **"GAC"** means granular activated carbon.

((+116+)) (117) **"GAC10"** means granular activated carbon filter beds with an empty-bed contact time of ten minutes based on average daily flow and a carbon reactivation frequency of every one hundred eighty days, except that the reactivation frequency for GAC10 used as a best available technology for compliance with MCLs under WAC 246-290-310(4) shall be one hundred twenty days.

((+117+)) (118) **"GAC20"** means granular activated carbon filter beds with an empty-bed contact time of twenty minutes based on average daily flow and a carbon reactivation frequency of every two hundred forty days.

((+118+)) (119) **"Governing body"** means the individual or group of individuals with ultimate legal responsibility for operational, technical, managerial, and financial decisions for a public water system.

((+119+)) (120) **"gph"** means gallons per hour.

((+120+)) (121) **"gpm"** means gallons per minute.

((+121+)) (122) **"Grab sample"** means a water quality sample collected at a specific instant in time and analyzed as an individual sample.

((+122+)) (123) **"Groundwater system"** means all public water systems that use groundwater including:

(a) Consecutive systems receiving finished groundwater; or

(b) Surface water systems with groundwater sources except those systems that combine all sources prior to treatment.

((+123+)) (124) **"Groundwater under the direct influence of surface water (GWI)"** means any water beneath the surface of the ground that the department determines has the following characteristics:

(a) Significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens such as *Giardia lamblia* or, *Cryptosporidium*; or

(b) Significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH closely correlating to climatological or surface water conditions where natural conditions cannot prevent the introduction of surface water pathogens into the source at the system's point of withdrawal.

((+124+)) (125) **"Guideline"** means a department document assisting the purveyor in meeting a rule requirement.

((+125+)) (126) **"GWI"** means groundwater under the direct influence of surface water.

((+126+)) (127) **"GWR"** means groundwater rule.

((+127+)) (128) **"HAA5"** means haloacetic acids (five).

((+128+)) (129) **"Health officer"** means the health officer of the city, county, city-county health department or district, or an authorized representative.

((+129+)) (130) **"Heterotrophic plate count (HPC)"** means a procedure to measure a class of bacteria that use organic nutrients for growth. The density of these bacteria in drinking water is measured as colony forming units per milliliter and is referred to as the HPC.

((+130+)) (131) **"High health cross-connection hazard"** means a cross-connection involving any substance that could impair the quality of potable water and create an actual public health hazard through injury, poisoning, or spread of disease.

((+131+)) (132) **"HPC"** means heterotrophic plate count.

((+132+)) (133) **"Human consumption"** means the use of water for drinking, bathing or showering, hand washing, food preparation, cooking, or oral hygiene.

((+133+)) (134) **"Hydraulic analysis"** means the study of a water system's distribution main and storage network to determine present or future adequacy for provision of service to consumers within the established design parameters for the system under peak flow conditions, including fire flow. The analysis is used to establish any need for improvements to existing systems or to substantiate adequacy of design for distribution system components such as piping, elevated storage, booster stations or similar facilities used to pump and convey water to consumers.

((+134+)) (135) **"IAPMO"** means the International Association of Plumbing and Mechanical Officials.

((+135+)) (136) **"IDSE"** means an initial distribution system evaluation.

((+136+)) (137) **"Inactivation"** means a process which renders pathogenic microorganisms incapable of producing disease.

((+137+)) (138) **"Inactivation ratio"** means the ratio obtained by dividing CTcalc by CTreq.

((+138+)) (139) **"Incompletely treated water"** means water from a surface or GWI source that receives filtration and/or disinfection treatment that does not fully comply with the treatment technique requirements of Part 6 of this chapter as determined by the department.

((+139+)) (140) **"In-line filtration"** means a series of processes, including coagulation and filtration (but excluding flocculation and sedimentation) that together result in particulate removal.

((+140+)) (141) **"In-premises protection"** means a method of protecting the health of consumers served by the consumer's potable water system, located within the property lines of the consumer's premises by the installation of an approved air gap or backflow prevention assembly at the point of hazard, which is generally a plumbing fixture.

((+141+)) (142) **"Intertie"** means an interconnection between public water systems permitting the exchange or delivery of water between those systems.

((+142+)) (143) **"kPa"** means kilo pascal (SI units of pressure).

((+143+)) (144) **"Lake or reservoir"** means a natural or man-made basin or hollow on the earth's surface in which water collects or is stored that may or may not have a current or single direction of flow.

((+144+)) (145) **"Legionella"** means a genus of bacteria containing species which cause a type of pneumonia called Legionnaires' Disease.

((+145+)) (146) **"Limited alternative to filtration"** means a process that ensures greater removal and/or inactivation efficiencies of pathogenic organisms than would be achieved by the combination of filtration and chlorine disinfection.

((+146+)) (147) **"Local plans and regulations"** means any comprehensive plan or development regulation adopted under chapter 36.70A RCW or any other applicable comprehensive plan, land use plan, or development regulation adopted by a city, town, or county for the applicable service area.

((+147+)) (148) **"Locational running annual average (LRAA)"** means the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

((+148+)) (149) **"Low cross-connection hazard"** means a cross-connection that could impair the quality of potable water to a degree that does not create a hazard to the public health, but does adversely and unreasonably affect the aesthetic qualities of potable waters for domestic use.

((+149+)) (150) **"LRAA"** means the locational running annual average.

((+150+)) (151) **"Major project"** means all construction projects subject to the State Environmental Policy Act (SEPA) under WAC 246-03-030 (3)(a) and include all surface water source development, all water system storage facilities greater than one-half million gallons, new transmission lines longer than one thousand feet and larger than eight inches in diameter located in new rights of way and major extensions to existing water distribution systems involving use of pipes greater than eight inches in diameter, that are designed to increase the existing service area by more than one square mile.

((+151+)) (152) **"Mandatory curtailment"** means curtailment required by a public water system of specified water uses and consumer classes for a specified period of time.

((+152+)) (153) **"Marginal costs"** means the costs incurred by producing the next increment of supply.

((+153+)) (154) **"Maximum contaminant level (MCL)"** means the maximum permissible level of a contaminant in water the purveyor delivers

to any public water system user, measured at the locations identified under WAC ((246-290-300)) 246-290-310, Table ((3)) 5.

((+154+)) (155) **"Maximum contaminant level violation"** means a confirmed measurement above the MCL and for a duration of time, where applicable, as outlined under WAC 246-290-310.

((+155+)) (156) **"Maximum day demand (MDD)"** means the highest actual or estimated quantity of water that is, or is expected to be, used over a twenty-four hour period, excluding unusual events or emergencies. MDD is typically expressed as gallons per day per ERU (gpd/ERU).

((+156+)) (157) **"MCL"** means the maximum contaminant level.

((+157+)) (158) **"MDD"** means the maximum day demand.

((+158+)) (159) **"Membrane filtration"** means a pressure or vacuum driven separation process in which particulate matter larger than 1 micrometer is rejected by an engineered barrier, primarily through a size-exclusion mechanism, and which has a measurable removal efficiency of a target organism that can be verified through the application of a direct integrity test. This definition includes the common membrane technologies of microfiltration, ultrafiltration, nanofiltration, and reverse osmosis.

((+159+)) (160) **"mg/L"** means milligrams per liter (1 mg/L = 1 ppm).

((+160+)) (161) **"mL"** means a milliliter.

((+161+)) (162) **"mm"** means a millimeter.

((+162+)) (163) **"Monitoring waiver"** means an action taken by the department under WAC 246-290-300 (4)(g) or ((+8+)) (7)(f) to allow a water system to reduce specific monitoring requirements based on a determination of low source vulnerability to contamination.

((+163+)) (164) **"MRDL"** means the maximum residual disinfectant level.

((+164+)) (165) **"MRDLG"** means the maximum residual disinfectant level goal.

((+165+)) (166) **"MTTP"** means maximum total trihalomethane potential.

((+166+)) (167) **"Municipal water supplier"** means an entity that supplies water for municipal water supply purposes.

((+167+)) (168) **"Municipal water supply purposes"** means a beneficial use of water:

(a) For residential purposes through fifteen or more residential service connections or for providing residential use of water for a nonresidential population that is, on average, at least twenty-five people for at least sixty days a year;

(b) For governmental or governmental proprietary purposes by a city, town, public utility((7)) district, county, sewer district, or water district; or

(c) Indirectly for the purposes in (a) or (b) of this definition through the delivery of treated or raw water to a public water system for such use.

(i) If water is beneficially used under a water right for the purposes listed in (a), (b), or (c) of this definition, any other beneficial use of water under the right generally associated with the use of water within a municipality is also for "municipal water supply purposes," including, but not limited to, beneficial use for commercial, industrial, irrigation of parks and open spaces, institutional, landscaping, fire flow, water system maintenance and repair, or related purposes.

(ii) If a governmental entity holds a water right that is for the purposes listed in (a), (b), or (c) of this definition, its use of water or its delivery of water for any other beneficial use generally associated with the use of water within a municipality is also for "municipal water supply purposes," including, but not limited to, beneficial use for commercial, industrial, irrigation of parks and open spaces, institutional, landscaping, fire flow, water system maintenance and repair, or related purposes.

((+168+)) (169) **"Nested storage"** means one component of storage is contained within the component of another.

((+169+)) (170) **"Nonacute"** means posing a possible or less than immediate risk to human health.

((+170+)) (171) **"Nonresident"** means a person having access to drinking water from a public water system(~~(, but)~~) who lives elsewhere. Examples include travelers, transients, employees, students, etc.

((+171+)) (172) **"Normal operating conditions"** means those conditions associated with the designed, day-to-day provision of potable drinking water that meets regulatory water quality standards and the routine service expectations of the system's consumers at all times, including meeting fire flow demands. Operation under conditions such as power outages, floods, or unscheduled transmission or distribution disruptions, even if considered in the system design, are considered abnormal.

((+172+)) (173) **"NSF"** means NSF International (formerly known as the National Sanitation Foundation (NSF)).

((+173+)) (174) **"NTNC"** means nontransient noncommunity.

((+174+)) (175) **"NTU"** means a nephelometric turbidity unit.

((+175+)) (176) **"ONORM"** means Österreichisches Normungsinstitut.

((+176+)) (177) **"Operational storage"** means the volume of distribution storage associated with source or booster pump normal cycling times under normal operating conditions and is additive to the equalizing and standby storage components, and to fire flow storage if this storage component exists for any given tank.

((+177+)) (178) **"PAA"** means a project approval application.

((+178+)) (179) **"pCi/L"** means picocuries per liter.

((+179+)) (180) **"Peak hourly demand (PHD)"** means the maximum rate of water use, excluding fire flow, that can be expected to occur within a defined service area over a continuous sixty minute time period. PHD is typically expressed in gallons per minute (gpm).

((+180+)) (181) **"Peak hourly flow"** means, for the purpose of CT calculations, the greatest volume of water passing through the system during any one hour in a day.

((+181+)) (182) **"Performance criteria"** means the level at which a system shall operate in order to maintain system reliability compliance, in accordance with WAC 246-290-420, and to meet consumers' reasonable expectations.

((+182+)) (183) **"Permanent residence"** means any dwelling that is, or could reasonably be expected to be, occupied on a continuous basis.

((+183+)) (184) **"Permanent source"** means a public water system supply source that is used regularly each year, and based on expected operational requirements of the system, will be used more than three consecutive months in any twelve-month period. For seasonal water systems that are in operation for less than three consecutive months per year, their sources shall also be considered to be permanent.

((+184+)) (185) **"PHD"** means peak hourly demand.

((+185+)) (186) **"Plant intake"** means the works or structures at the head of a conduit through which water is diverted from a source (e.g., river or lake) into the treatment plant.

((+186+)) (187) **"Point of disinfectant application"** means the point where the disinfectant is added, and where water downstream of that point is not subject to contamination by untreated surface water.

((+187+)) (188) **"Population served"** means the number of persons, resident and nonresident, having immediate access to drinking water from a public water system, whether or not persons have actually consumed water from that system. The number of nonresidents shall be the average number of persons having immediate access to drinking water on days access was provided during that month. In the absence of specific population data, the number of residents shall be computed by multiplying the number of active services by two and one-half.

((+188+)) (189) **"Potable"** means water suitable for drinking by the public.

((+189+)) (190) **"Potential GWI"** means a source identified by the department as possibly under the influence of surface water, and includes, but is not limited to, all wells with a screened interval fifty feet or less from the ground surface at the wellhead and located within two hundred feet of a surface water, and all Ranney wells, infiltration galleries, and springs.

((+190+)) (191) **"ppm"** means parts per million (1 ppm = 1 mg/L).

((+191+)) (192) **"Premises isolation"** means a method of protecting a public water system by installation of approved air gaps or approved backflow prevention assemblies at or near the service connection or alternative location acceptable to the purveyor to isolate the consumer's water system from the purveyor's distribution system.

((+192+)) (193) **"Presedimentation"** means a preliminary treatment process used to remove gravel, sand, and other particulate material from the source water through settling before the water enters the primary clarification and filtration processes in a treatment plant.

((+193+)) (194) **"Pressure filter"** means an enclosed vessel containing properly sized and graded granular media through which water is forced under greater than atmospheric pressure.

((+194+)) (195) **"Primary disinfection"** means a treatment process for achieving inactivation of *Giardia lamblia* cysts, viruses, or other pathogenic organisms of public health concern to comply with the treatment technique requirements of Part 6 of this chapter.

((+195+)) (196) **"Primary standards"** means standards based on chronic, nonacute, or acute human health effects.

((+196+)) (197) **"Primary turbidity standard"** means an accurately prepared formazin solution or commercially prepared polymer solution of known turbidity (prepared in accordance with "standard methods") that is used to calibrate bench model and continuous turbidimeters (instruments used to measure turbidity).

((+197+)) (198) **"Project approval application (PAA)"** means a department form documenting ownership of water system, design engineer for the project, and type of project.

((+198+)) (199) **"Protected groundwater source"** means a groundwater source the purveyor shows to the department's satisfaction as protected from potential sources of contamination on the basis of hydrogeologic data and/or satisfactory water quality history.

((+199+)) (200) **"psi"** means pounds per square inch.

((+200+)) (201) **"Public forum"** means a meeting open to the general public that allows for their participation.

((+201+)) (202) **"Public water system"** is defined and referenced under WAC 246-290-020.

((+202+)) (203) **"Purchased source"** means water a purveyor purchases from a public water system not under the control of the purveyor for distribution to the purveyor's consumers.

((+203+)) (204) **"Purveyor"** means an agency, subdivision of the state, municipal corporation, firm, company, mutual or cooperative association, institution, partnership, or person or other entity owning or operating a public water system. Purveyor also means the authorized agents of these entities.

((+204+)) (205) **"PVBA"** means a pressure vacuum breaker assembly.

((+205+)) (206) **"RAA"** means the running annual average.

((+206+)) (207) **"Reclaimed water"** means effluent derived in any part from sewage from a wastewater treatment system that has been adequately and reliably treated, so that as a result of that treatment, it is suitable for beneficial use or a controlled use that would not otherwise occur, and it is no longer considered wastewater.

((+207+)) (208) **"Record drawings"** means the drawings bearing the seal and signature of a professional engineer that reflect the modifications made to construction documents, documenting actual constructed conditions of the water system facilities.

((+208+)) (209) **"Recreational tract"** means an area that is clearly defined for each occupant, but has no permanent structures with internal plumbing, and the area has been declared in the covenants or on the recorded plat in order to be eligible for reduced design considerations.

((+209+)) (210) **"Regional public water supplier"** means a water system that provides drinking water to one, or more, other public water systems.

((+210+)) (211) **"Regularly"** means four hours or more per day for four days or more per week.

((+211+)) (212) **"Removal credit"** means the level (expressed as a percent or log) of *Giardia* and virus removal the department grants a system's filtration process.

((+212+)) (213) **"Repeat sample"** means a sample collected to confirm the results of a previous analysis.

((+213+)) (214) **"Resident"** means an individual living in a dwelling unit served by a public water system.

((+214+)) (215) **"Residual disinfectant concentration"** means the analytical level of a disinfectant, measured in milligrams per liter, that remains in water following the application (dosing) of the disinfectant after some period of contact time.

((+215+)) (216) **"Retail service area"** means the specific area defined by the municipal water supplier where the municipal water supplier has a duty to provide service to all new service connections. This area must include the municipal water supplier's existing service area and may also include areas where future water service is planned if the requirements of RCW 43.20.260 are met.

((+216+)) (217) **"RPBA"** means reduced pressure backflow assembly.

((+217+)) (218) **"RPDA"** means reduced pressure detector assembly.

((+218+)) (219) **"SAL"** means state advisory level.

((+219+)) (220) **"Same farm"** means a parcel of land or series of parcels that are connected by covenants and devoted to the production of livestock or agricultural commodities for commercial purposes and does not qualify as a **Group A** public water system.

((+220+)) (221) **"Sanitary survey"** means a review, inspection, and assessment of a public water system, by the department or department



designee, to determine the adequacy of the system and its operation for producing and distributing safe and reliable drinking water. Each survey includes, but is not limited to, an evaluation of the following components:

- (a) Source;
- (b) Treatment;
- (c) Distribution system;
- (d) Finished water storage;
- (e) Pump, pump facilities, and controls;
- (f) Monitoring, reporting, and data verification;
- (g) System management and operation; and
- (h) Operator compliance.

((+221+)) (222) **"Satellite system management agency (SMA)"** means a person or entity that is approved by the department to own or operate public water systems on a regional or county-wide basis without the necessity for a physical connection between the systems.

((+222+)) (223) **"SCA"** means a sanitary control area.

((+223+)) (224) **"SDWA"** means the Safe Drinking Water Act.

((+224+)) (225) **"Seasonal source"** means a public water system source used on a regular basis, that is not a permanent or emergency source.

((+225+)) (226) **"Secondary standards"** means standards based on factors other than health effects.

((+226+)) (227) **"SEPA"** means the State Environmental Policy Act.

((+227+)) (228) **"Service area"** means the specific area or areas a water system currently serves or plans to provide water service. This may be comprised of the existing service area, retail service area, future service area, and include areas where water is provided to other public water systems.

((+228+)) (229) **"Service connection"** means a connection to a public water system designed to provide potable water to a single family residence, or other residential or nonresidential population. When the connection provides water to a residential population without clearly defined single family residences, the following formulas shall be used in determining the number of services to be included as residential connections on the WFI form:

(a) Divide the average population served each day by two and one-half; or

(b) Using actual water use data, calculate the total ERUs represented by the service connection in accordance with department design guidance.

(c) In no case shall the calculated number of services be less than one.

((+229+)) (230) **"Severe health cross-connection hazard"** means a cross-connection which could impair the quality of potable water and create an immediate, severe public health hazard through poisoning or spread of disease by contaminants from radioactive material processing plants, nuclear reactors, or wastewater treatment plants.

((+230+)) (231) **"Simple disinfection"** means any form of disinfection that requires minimal operational control in order to maintain the disinfection at proper functional levels, and that does not pose safety concerns that would require special care, equipment, or expertise. Examples include hypochlorination, UV-light, contactor chlorination, or any other form of disinfection practice that is safe to use and easy to routinely operate and maintain.

((+231+)) (232) **"Slow sand filtration"** means a process involving passage of source water through a bed of sand at low velocity (gener-

ally less than 0.10 gpm/ft<sup>2</sup>) that results in substantial particulate removal (> 2-log *Giardia lamblia* cysts) by physical and biological mechanisms.

((+232+)) (233) "**SMA**" means a satellite system management agency.

((+233+)) (234) "**SOC**" means a synthetic organic chemical.

((+234+)) (235) "**Societal perspective**" means:

A point of view that includes a broad spectrum of public benefits, including, but not limited to:

(a) Enhanced system reliability;

(b) Savings that result from delaying, deferring, or minimizing capital costs; and

(c) Environmental benefits such as increased water in streams, improvements in aquifer recharge and other environmental factors.

((+235+)) (236) "**Source meter**" means a meter that measures total output of a water source over specific time periods.

((+236+)) (237) "**Source water**" means untreated water that is not subject to recontamination by surface runoff and:

(a) For unfiltered systems, enters the system immediately before the first point of disinfectant application; and

(b) For filtered systems, enters immediately before the first treatment unit of a water treatment facility.

((+237+)) (238) "**SPI**" means a special purpose investigation.

((+238+)) (239) "**Special purpose investigation (SPI)**" means on-site inspection of a public water system by the department or designee to address a potential public health concern, regulatory violation, or consumer complaint.

((+239+)) (240) "**Special purpose sample**" means a sample collected for reasons other than the monitoring compliance specified in this chapter.

((+240+)) (241) "**Spring**" means a source of water where an aquifer comes in contact with the ground surface.

((+241+)) (242) "**SRF**" means the state revolving fund.

((+242+)) (243) "**SSNC**" means state significant noncomplier.

((+243+)) (244) "**Standard methods**" means the book, titled *Standard Methods for the Examination of Water and Waste Water*, jointly published by the American Public Health Association, American Water Works Association (AWWA), and Water Pollution Control Federation. This book is available through public libraries or may be ordered from AWWA, 6666 West Quincy Avenue, Denver, Colorado 80235. The edition to be used is that specified by EPA for the relevant drinking water parameter in 40 C.F.R. Part 141.

((+244+)) (245) "**Standby storage**" means the volume of stored water available for use during a loss of source capacity, power, or similar short-term emergency.

((+245+)) (246) "**State advisory level (SAL)**" means a level established by the department and state board of health for a contaminant without an existing MCL. The SAL represents a level that when exceeded, indicates the need for further assessment to determine if the chemical is an actual or potential threat to human health.

((+246+)) (247) "**State board of health**" and "**board**" means the board created by RCW 43.20.030.

((+247+)) (248) "**State building code**" means the codes adopted by and referenced in chapter 19.27 RCW; the state energy code; and any other codes so designated by the Washington state legislature as adopted and amended by the council.

((+248+)) (249) **"State revolving fund (SRF)"** means the revolving loan program financed by the state and federal governments and managed by the state for the purpose of assisting water systems to meet their capital needs associated with complying with the federal Safe Drinking Water Act under chapter 246-296 WAC.

((+249+)) (250) **"State significant noncomplier (SSNC)"** means a system that is violating or has violated department rules, and the violations may create, or have created an imminent or a significant risk to human health.

The violations include, but are not limited to:

(a) Repeated violations of monitoring requirements;

(b) Failure to address an exceedance of permissible levels of regulated contaminants;

(c) Failure to comply with treatment technique standards or requirements;

(d) Failure to comply with waterworks operator certification requirements; or

(e) Failure to submit to a sanitary survey.

((+250+)) (251) **"Subpart H System"** see definition for **"surface water system."**

((+251+)) (252) **"Surface water"** means a body of water open to the atmosphere and subject to surface runoff.

((+252+)) (253) **"Surface water system"** means a public water system that uses in whole, or in part, source water from a surface supply, or GWI supply. This includes systems that operate surface water treatment facilities, and systems that purchase "completely treated water" (~~((as defined in this subsection))~~). A "surface water system" is also referred to as a "Subpart H System" in some federal regulatory language adopted by reference and the two terms are considered equivalent for the purposes of this chapter.

((+253+)) (254) **"Susceptibility assessment"** means the completed Susceptibility Assessment Survey Form developed by the department to evaluate the hydrologic setting of the water source and assess its contribution to the source's overall susceptibility to contamination from surface activities.

((+254+)) (255) **"SUVA"** means specific ultraviolet absorption.

((+255+)) (256) **"SVBA"** means spill resistant vacuum breaker assembly.

((+256+)) (257) **"SWTR"** means the surface water treatment rule.

((+257+)) (258) **"Synthetic organic chemical (SOC)"** means a manufactured carbon-based chemical.

((+258+)) (259) **"System capacity"** means the system's operational, technical, managerial, and financial capability to achieve and maintain compliance with all relevant local, state, and federal plans and regulations.

((+259+)) (260) **"System physical capacity"** means the maximum number of service connections or equivalent residential units (ERUs) that the system can serve when considering the limitation of each system component such as source, treatment, storage, transmission, or distribution, individually and in combination with each other.

((+260+)) (261) **"T"** means disinfectant contact time in minutes.

((+261+)) (262) **"Time-of-travel"** means the time required for groundwater to move through the water bearing zone from a specific point to a well.

((+262+)) (263) **"TNC"** means transient noncommunity.

((+263+)) (264) **"TNTC"** means too numerous to count.

((+264+)) (265) **"TOC"** means total organic carbon.

((+265+)) (266) **"Too numerous to count (TNTC)"** means the total number of bacterial colonies exceeds 200 on a 47-mm diameter membrane filter used for coliform detection.

((+266+)) (267) **"Tracer study"** means a field study conducted to determine the disinfectant contact time, T, provided by a water system component, such as a clearwell or storage reservoir, used for *Giardia lamblia* cyst and virus inactivation. The study involves introducing a tracer chemical at the inlet of the contact basin and measuring the resulting outlet tracer concentration as a function of time.

((+267+)) (268) **"Transmission line"** means pipes used to convey water from source, storage, or treatment facilities to points of distribution or distribution mains, and from source facilities to treatment or storage facilities. This also can include transmission mains connecting one section of distribution system to another section of distribution system as long as this transmission main is clearly defined on the plans and no service connections are allowed along the transmission main.

((+268+)) (269) **"Treatment technique requirement"** means a department-established requirement for a public water system to provide treatment, such as filtration or disinfection, as defined by specific design, operating, and monitoring requirements. A "treatment technique requirement" is established in lieu of a primary MCL when monitoring for the contaminant is not economically or technologically feasible.

((+269+)) (270) **"Triggered source water monitoring"** means collection of groundwater source samples as a result of a total coliform-positive routine sample in the distribution system under WAC 246-290-300(3).

((+270+)) (271) **"Trihalomethane (THM)"** means one of a family of organic compounds, named as derivatives of methane, where three of the four hydrogen atoms in methane are each substituted by a halogen atom in the molecular structure. THMs may occur when chlorine, a halogen, is added to water containing organic material and are generally found in water samples as disinfection byproducts.

((+271+)) (272) **"TTHM"** means total trihalomethane.

((+272+)) (273) **"Turbidity event"** means a single day or series of consecutive days, not to exceed fourteen, when one or more turbidity measurement each day exceeds 5 NTU.

((+273+)) (274) **"Two-stage lime softening"** means a process in which chemical addition and hardness precipitation occur in each of two distinct unit clarification processes in series prior to filtration.

((+274+)) (275) **"T10"** means the time it takes ten percent of the water passing through a system contact tank intended for use in the inactivation of *Giardia lamblia* cysts, viruses, and other microorganisms of public health concern, as determined from a tracer study conducted at peak hourly flow or from published engineering reports or guidance documents for similarly configured tanks.

((+275+)) (276) **"ug/L"** means micrograms per liter.

((+276+)) (277) **"UL"** means the Underwriters Laboratories, Inc.

((+277+)) (278) **"umhos/cm"** means micromhos per centimeter.

((+278+)) (279) **"Unapproved auxiliary water supply"** means a water supply (other than the purveyor's water supply) on or available to the consumer's premises that is either not approved for human consumption by the health agency having jurisdiction or is not otherwise acceptable to the purveyor.

((+279+)) (280) **"Uncovered finished water storage facility"** means a tank, reservoir, or other facility used to store water, which will

undergo no further treatment to reduce microbial pathogens except residual disinfection and is directly open to the atmosphere without a suitable water-tight roof or cover.

((+280+)) (281) **"Uniform Plumbing Code (UPC)"** means the code adopted under RCW 19.27.031(4) and implemented under chapter 51-56 WAC. This code establishes statewide minimum plumbing standards applicable within the property lines of the consumer's premises.

((+281+)) (282) **"UPC"** means the Uniform Plumbing Code.

((+282+)) (283) **"Used water"** means water which has left the control of the purveyor.

((+283+)) (284) **"UTC"** means the utilities and transportation commission.

((+284+)) (285) **"Verification"** means to demonstrate the results of a sample to be precise by analyzing a duplicate sample. Verification occurs when analysis results fall within plus or minus thirty percent of the original sample.

((+285+)) (286) **"Virus"** means a virus of fecal origin which is infectious to humans and transmitted through water.

((+286+)) (287) **"VOC"** means a volatile organic chemical.

((+287+)) (288) **"Volatile organic chemical (VOC)"** means a manufactured carbon-based chemical that vaporizes quickly at standard pressure and temperature.

((+288+)) (289) **"Voluntary curtailment"** means a curtailment of water use requested, but not required of consumers.

((+289+)) (290) **"WAC"** means the Washington Administrative Code.

((+290+)) (291) **"Waterborne disease outbreak"** means the significant occurrence of acute infectious illness, epidemiologically associated with drinking water from a public water system, as determined by the appropriate local health agency or the department.

((+291+)) (292) **"Water demand efficiency"** means minimizing water use by the public water system's consumers through purveyor sponsored activities that may include, but are not limited to distributing water saving devices, providing rebates or incentives to promote water efficient technologies or by providing water audits to homes, businesses, or landscapes.

((+292+)) (293) **"Water facilities inventory (WFI) form"** means the department form summarizing each public water system's characteristics.

((+293+)) (294) **"Water right"** means a permit, claim, or other authorization, on record with or accepted by the department of ecology, authorizing the beneficial use of water in accordance with all applicable state laws.

((+294+)) (295) **"Water right self-assessment"** means an evaluation of the legal ability of a water system to use water for existing or proposed usages in conformance with state water right laws. The assessment may be done by a water system, a purveyor, the department of ecology, or any combination thereof.

((+295+)) (296) **"Watershed"** means the region or area that:

(a) Ultimately drains into a surface water source diverted for drinking water supply; and

(b) Affects the physical, chemical, microbiological, and radiological quality of the source.

((+296+)) (297) **"Water shortage"** means a situation during which the water supplies of a system cannot meet normal water demands for the system, including peak periods.

((+297+)) (298) **"Water shortage response plan"** means a plan outlining policies and activities to be implemented to reduce water use on a short-term basis during or in anticipation of a water shortage.

((+298+)) (299) **"Water supply characteristics"** means the factors related to a public water system's source of water supply that may affect its availability and suitability to provide for both short-term and long-term needs.

Factors include, but are not limited to:

- (a) Source location;
- (b) Name of any body of water and water resource inventory area from which water is diverted or withdrawn;
- (c) Production capacity;
- (d) The source's natural variability;
- (e) The system's water rights for the source;
- (f) Other legal demands on the source such as water rights for other uses;

(g) Conditions established to protect species listed under the Endangered Species Act in 50 C.F.R. 17.11;

(h) Instream flow restrictions established under Title 173 WAC; and

(i) Any conditions established by watershed plans approved under chapter 90.82 RCW and RCW 90.54.040(1) or salmon recovery plans under chapter 77.85 RCW.

((+299+)) (300) **"Water supply efficiency"** means increasing a public water system's transmission, storage and delivery potential through activities that may include, but are not limited to:

- (a) System-wide water audits;
- (b) Documenting authorized uses;
- (c) Conducting leak surveys; and
- (d) Repairs on:
  - (i) Meters;
  - (ii) Lines;
  - (iii) Storage facilities; and
  - (iv) Valves.

((+300+)) (301) **"Water use efficiency (WUE)"** means increasing water supply efficiency and water demand efficiency to minimize water withdrawals and water use.

((+301+)) (302) **"Water use efficiency program"** means policies and activities focusing on increasing water supply efficiency and water demand efficiency to minimize water withdrawals and water use.

((+302+)) (303) **"Well field"** means a group of wells one purveyor owns or controls that:

(a) Draw from the same aquifer or aquifers as determined by comparable inorganic chemical analysis and comparable static water level and top of the open interval elevations; and

(b) Discharge water through a common pipe and the common pipe shall allow for collection of a single sample before the first distribution system connection.

((+303+)) (304) **"Wellhead protection area (WHPA)"** means the portion of a well's, wellfield's or spring's zone of contribution defined using WHPA criteria established by the department.

((+304+)) (305) **"WFI"** means a water facilities inventory form.

((+305+)) (306) **"Wholesale system"** means a public water system that treats source water as necessary to produce finished water and then delivers some or all of that finished water to another public water system. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

~~((306))~~ (307) **"WHPA"** means a wellhead protection area.  
~~((307))~~ (308) **"WUE"** means water use efficiency.  
~~((308))~~ (309) **"Zone of contribution"** means the area surrounding a pumping well or spring that encompasses all areas or features that supply groundwater recharge to the well or spring.

AMENDATORY SECTION (Amending WSR 11-17-062, filed 8/15/11, effective 10/1/11)

**WAC 246-290-025 Adoption by reference.** The following sections and subsections of Title 40 Code of Federal Regulations (C.F.R.) Part 141 National Primary Drinking Water Regulations and Part 143 National Secondary Drinking Water Regulations revised as of July 1, 2009, ~~((and including all amendments and modifications thereto effective as of the date of adoption of this chapter))~~ are adopted by reference:

141.2 Definitions. Only those definitions listed as follows:

Action level;  
Corrosion inhibitor;  
Effective corrosion inhibitor residual;  
Enhanced coagulation;  
Enhanced softening;  
First draw sample;  
Haloacetic acids (five) (HAA5);  
~~((First draw sample))~~  
Large water system;  
Lead service line;  
Maximum residual disinfectant level (MRDL);  
Maximum residual disinfectant level goal (MRDLG);  
Medium-size water system;  
Optimal corrosion control treatment;  
Service line sample;  
Single family structure;  
Small water system;  
Specific ultraviolet absorption (SUVA); and  
Total Organic Carbon (TOC).  
~~((141.12 Maximum contaminant levels for organic chemicals))~~  
141.13 Maximum contaminant levels for turbidity.  
141.21 Coliform ~~((monitoring))~~ sampling.  
141.22 Turbidity sampling and analytical requirements.  
141.23(a) - 141.23(j), Inorganic chemical sampling.  
excluding  
(i)(2)  
141.23(m) - 141.23(o)  
141.24(a) - 141.24(d), Organic chemicals ~~((other than total trihalomethanes))~~, sampling and analytical requirements.  
141.24 (f)(1) - 141.24 (f)(15),

- 141.24 (f)(18), 141.24 (f)(19),  
 141.24 (f)(21), 141.24 (f)(22)  
 141.24 (g)(1) - 141.24 (g)(9),  
 141.24 (g)(12) - 141.24 (g)(14),  
 141.24 (h)(1) - 141.24 (h)(11),  
 141.24 (h)(14) - 141.24 (h)(17)  
 141.24 (h)(20)  
 141.25(a), 141.25 (c) - (d), Analytical methods for  
 radioactivity.  
 141.26 Monitoring frequency and compliance for  
~~((radioactivity))~~ radionuclides in community  
 water systems.  
 141.31(d) Reporting ~~((of public notices and compliance  
 certifications))~~ requirements.  
 141.33(e) Record maintenance ~~((of public notices and  
 certifications))~~.  
 141.40 Monitoring requirements for unregulated  
 contaminants.  
 141.61 Maximum contaminant levels for organic  
 contaminants.  
 141.62, Maximum contaminant levels for inorganic  
 excluding (b) ~~((chemical and physical))~~ contaminants.  
 141.64 Maximum contaminant levels ~~((and Best  
 Available Technologies (BATs)))~~ for  
 disinfection byproducts.  
 141.65(c) ~~((Best Available Technologies (BATs) for))~~  
 Maximum residual disinfectant levels.  
 141.66 Maximum contaminant levels for  
 radionuclides.  
 Control of Lead and Copper  
 141.80, General requirements.  
 excluding  
 (c)(3)(v)  
 141.81 Applicability of corrosion control treatment  
 steps to small, medium-size and large water  
 systems.  
 141.82(a) - 141.82(h) Description of corrosion control  
 treatment requirements.  
 141.83 Source water treatment requirements.  
 141.84 Lead service line replacement requirements.  
 141.85 Public education and supplemental  
 monitoring requirements.  
 141.86 (a) Monitoring requirements for lead and copper  
 - (f) in tap water.  
 141.87 Monitoring requirements for water quality  
 parameters.  
 141.88 Monitoring requirements for lead and copper  
 in source water.  
 141.89 Analytical methods ~~((for lead and copper  
 testing))~~.  
 141.90, Reporting requirements.  
 excluding  
 (a)(4)  
 141.91 Recordkeeping requirements.  
 Disinfectants and Disinfection Byproducts (D/DBP)



- 141.130 General requirements.
- 141.131 Analytical requirements.
- 141.132 Monitoring requirements.
- 141.133 Compliance requirements.
- 141.134 Reporting and recordkeeping requirements.
- 141.135 Treatment technique for control of disinfection byproduct precursors.

Subpart O - Consumer Confidence Reports

- 141.153 Contents of the reports.  
(h)(6)

Enhanced Filtration ((~~Reporting and Recordkeeping~~)) and Disinfection—Systems Serving 10,000 or More People

- 141.175(b) ((~~Individual filter reporting and follow-up action requirements for systems treating surface water with conventional, direct, or in-line filtration and serving at least 10,000 people~~)) Reporting and recordkeeping requirements.

Subpart Q - Public Notification of Drinking Water Violations

- 141.201, General public notification requirements.  
excluding  
(3)(ii) of  
Table 1
- 141.202, Tier 1 Public Notice - Form, manner, and  
excluding frequency of notice.  
(3) of Table 1
- 141.203 Tier 2 Public Notice - Form, manner, and  
frequency of notice.
- 141.204 Tier 3 Public Notice - Form, manner, and  
frequency of notice.
- 141.205 Content of the public notice.
- 141.206 Notice to new billing units or new customers.
- 141.207 Special notice of the availability of  
unregulated contaminant monitoring results.
- 141.208 Special notice for exceedances of the SMCL  
for fluoride.
- 141.211 Special notice for repeated failure to conduct monitoring of the source water for *Cryptosporidium* and for failure to determine bin classification or mean, *Cryptosporidium* ((~~monitoring failure~~)) level.

Appendix A to Subpart Q of Part 141 - NPDWR violations and other situations requiring ((PN)) public notice

Appendix B to Subpart Q of Part 141 - Standard health effects language for ((PN)) public notification

Appendix C to Subpart Q of Part 141 - List of acronyms used in ((PN)) public notification regulation

- 141.400 General requirements and applicability.
- 141.402(c) Groundwater source microbial monitoring and analytical methods.
- 141.403 Treatment technique requirements for  
(b)(3)(i) groundwater systems.  
through (iii)

Subpart T - Enhanced Filtration and Disinfection - Systems Serving Fewer Than 10,000 People

- 141.530 - Disinfection profile and benchmark.
- 141.544
- 141.563 ~~((Follow-up actions required.))~~ What follow-up action is my system required to take based on continuous turbidity monitoring?
- 141.570, ~~((Reporting requirements.))~~ What does  
excluding (c) Subpart T require that my system report to the state?
- Subpart U ~~((and V))~~ - Initial Distribution System Evaluations ~~((and Stage 2 Disinfection Byproducts Requirements))~~.
- 141.600 - Initial distribution system evaluations.
- 141.605
- Subpart V - Stage 2 Disinfection Byproducts Requirements.
- 141.620 - Stage 2 Disinfection Byproducts
- 141.629 Requirements.
- Subpart W - Enhanced Treatment for *Cryptosporidium*
- 141.700-722 Enhanced Treatment for *Cryptosporidium*
- Part 143 - National Secondary Drinking Water Regulations
- 143.1 Purpose.
- 143.2 Definitions.
- 143.3 Secondary maximum contaminant levels.
- 143.4 Monitoring.

Copies of the incorporated sections and subsections of Title 40 C.F.R. are available from the Department of Health, P.O. Box 47822, Olympia, Washington 98504-7822, or ~~((by calling the department's drinking water hotline at 800-521-0323))~~ online at: <http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/RegulationandCompliance/Rules.aspx>.

AMENDATORY SECTION (Amending WSR 99-07-021, filed 3/9/99, effective 4/9/99)

**WAC 246-290-030 General administration.** (1) The department and the health officer for each local health jurisdiction may develop a joint plan of operation. This plan shall:

- (a) List the roles and responsibilities of each agency;
- (b) Specifically designate those **Group A** systems for which the department and local health officer have primary responsibility;
- (c) Provide for an agreed-to level of public water system oversight;
- (d) Be signed by the department and the local health department or district; and
- (e) Be reviewed at least once every five years and updated as needed.

Wherever in this chapter the term "department" is used, the term "health officer" may be substituted based on the terms of this plan of operation.

(2) The department shall, upon request, review and report on the adequacy of water supply supervision to both the state and local boards of health.

(3) The local board of health may adopt rules governing **Group A** water systems within its jurisdiction for which the health officer has assumed primary responsibility. Adopted local board of health rules shall be:

(a) No less stringent than this chapter; and

(b) Revised, if necessary, within twelve months after the effective date of revised state board of health rules. During this time period, existing local rules shall remain in effect, except provisions of the revised state board of health rules that are more stringent than the local board of health rules shall apply.

(4) For those **Group A** water systems where the health officer has assumed primary responsibility, the health officer may approve project reports and construction documents in accordance with engineering criteria approved by the department and listed under Part 3 of this chapter and water system plans in accordance with planning criteria listed under WAC 246-290-100.

~~(5) ((An advisory committee shall be established to provide advice to the department on the organization, functions, service delivery methods, and funding of the drinking water program. Members shall be appointed by the department for fixed terms of no less than two years, and may be reappointed. The committee shall reflect a broad range of interests in the regulation of public water supplies, including water utilities of all sizes, local governments, business groups, special purpose districts, local health jurisdictions, other state and federal agencies, financial institutions, environmental organizations, the legislature, professional engineers engaged in water system design, and other groups substantially affected by the department's role in implementing state and federal requirements for public water systems.~~

~~(6))~~ The department may develop guidance to clarify sections of the rules as needed and make these available for distribution. ~~((Copies of the))~~ Guidance may be obtained by contacting the ~~((division))~~ office of drinking water.

~~((7))~~ (6) Fees may be charged and collected by the department as authorized in chapter 43.20B RCW and by local health ~~((agencies))~~ jurisdictions as authorized in RCW 70.05.060 to recover all or a portion of the costs incurred in administering this chapter or that are required to be paid under WAC 246-290-990.

~~((8))~~ (7) All state and local agencies involved in review, approval, surveillance, testing, and/or operation of public water systems, or issuance of permits for buildings or sewage systems shall be governed by these rules and any decisions of the department.

AMENDATORY SECTION (Amending WSR 03-08-037, filed 3/27/03, effective 4/27/03)

**WAC 246-290-060 Variances, exemptions, and waivers.** (1) General.

(a) The state board of health may grant variances, exemptions, and waivers of the requirements of this chapter according to the procedures outlined in subsection (5) of this section. See WAC 246-290-300 (4)(g) and ~~((8))~~ (7)(f) for monitoring waivers.

(b) Consideration by the board of requests for variances, exemptions, and waivers shall not be considered adjudicative proceedings as that term is defined in chapter 34.05 RCW.

(c) Statements and written material regarding the request may be presented to the board at or before the public hearing where the application will be considered. Allowing cross-examination of witnesses shall be within the discretion of the board.

(d) The board may grant a variance, exemption, or waiver if it finds:

(i) Due to compelling factors, the public water system is unable to comply with the requirements; and

(ii) The granting of the variance, exemption, or waiver will not result in an unreasonable risk to the health of consumers.

(2) Variances.

(a) MCL.

(i) The board may grant a MCL variance to a public water system that cannot meet the MCL requirements because of characteristics of the source water that is reasonably available to the system.

(ii) A MCL variance may only be granted in accordance with 40 C.F.R. 141.4.

(iii) A variance shall not be granted from the MCL for presence of total coliform under WAC 246-290-310(2).

(b) Treatment techniques.

(i) The board may grant a treatment technique variance to a public water system if the system demonstrates that the treatment technique is not necessary to protect the health of consumers because of the nature of the system's source water.

(ii) A treatment technique variance granted in accordance with 40 C.F.R. 141.4.

(iii) A variance shall not be granted from any treatment technique requirement under Part 6 of chapter 246-290 WAC.

(c) The board shall condition the granting of a variance upon a compliance schedule as described in subsection (6) of this section.

(3) Exemptions.

(a) The board may grant a MCL or treatment technique exemption to a public water system that cannot meet an MCL standard or provide the required treatment in a timely manner, or both, in accordance with 40 C.F.R. 141.4.

(b) No exemption shall be granted from:

(i) The requirement to provide a residual disinfectant concentration in the water entering the distribution system under WAC 246-290-662 or 246-290-692; or

(ii) The MCL for presence of total coliform under WAC 246-290-310(2).

(c) The board shall condition the granting of an exemption upon a compliance schedule as described in subsection (6) of this section.

(4) Waivers. The board may grant a waiver to a public water system if the system cannot meet the requirements of these regulations pertaining to any subject not covered by EPA variance and/or exemption regulations.

(5) Procedures.

(a) For variances and exemptions. The board shall consider granting a variance or exemption to a public water system in accordance with 40 C.F.R. 141.4.

(b) For waivers. The board shall consider granting a waiver upon completion of the following actions:

(i) The purveyor applies to the department in writing. The application, which may be in the form of a letter, shall clearly state the reason for the request;

(ii) The purveyor provides notice of the purveyor's application to consumers and provides proof of the notice to the department;

(iii) The department prepares a recommendation to the board; and

(iv) The board provides notice for and conducts a public hearing on the purveyor's request.

(6) Compliance schedule.

(a) The board shall condition the granting of a variance or exemption based on a compliance schedule. The compliance schedule shall include:

(i) Actions the purveyor shall undertake to comply with a MCL or treatment technique requirement within a specified time period; and

(ii) A description and time-table for implementation of interim control measures the department may require while the purveyor completes the actions required in (a)(i) of this subsection.

(b) The purveyor shall complete the required actions in the compliance schedule within the stated time frame.

(7) Extensions to variances and exemptions. ~~((a))~~ The board may extend the final date of compliance prescribed in the compliance schedule for a variance and/or exemption in accordance with 40 C.F.R. 141.4.

AMENDATORY SECTION (Amending WSR 10-20-068, filed 9/29/10, effective 11/1/10)

**WAC 246-290-100 Water system plan.** (1) The purpose of this section is to establish a uniform process for purveyors to:

(a) Demonstrate the system's operational, technical, managerial, and financial capability to achieve and maintain compliance with relevant local, state, and federal plans and regulations;

(b) Demonstrate how the system will address present and future needs in a manner consistent with other relevant plans and local, state, and federal laws, including applicable land use plans;

(c) Establish eligibility for funding under chapter 246-296 WAC.

(2) Purveyors of the following categories of community public water systems shall submit a water system plan for review and approval by the department:

(a) Systems ~~((having))~~ serving one thousand or more service ~~((s))~~ connections;

(b) Systems required to develop water system plans under the Public Water System Coordination Act of 1977 (chapter 70.116 RCW);

(c) Any system experiencing problems related to ~~((planning, operation, and/or management))~~ operational, technical, managerial, or financial capabilities as determined by the department;

(d) All new systems;

(e) Any ~~((expanding))~~ system ~~((; and))~~ proposing to:

(i) Increase the existing service area or previously approved service area; or

(ii) Install additions, extensions, or changes to existing source, storage, or transmission facilities and increase the approved number of service connections.

(f) Any system proposing to use the document submittal exception process in WAC 246-290-125; or

(g) Any system operating under or proposing to operate under an unspecified number of approved service connections.

(3) The purveyor shall work with the department to establish the relative priority and level of detail for ((a)) each element of the water system plan. ((In general,)) The ((scope)) priority and level of detail ((of the plan)) will be related to size, complexity, water supply characteristics, forecasted demand characteristics, past performance, planning history, and use of the water system. Project reports may be combined with a water system plan.

(4) ~~((In order to demonstrate system capacity, the water system plan))~~ The purveyor shall, at a minimum, address the following plan elements((, as a minimum, for a period of at least twenty years into the future)) in the water system plan:

(a) Description of the water system, including:

(i) Ownership and management, including the current names, addresses, and telephone numbers of the owners, operators, and emergency contact persons for the system;

(ii) System history and background;

(iii) Related plans, such as coordinated water system plans, abbreviated coordinated water system plans, local land use plans, groundwater management plans, and basin plans;

(iv) Service area maps, characteristics, agreements, and policies. Water systems must include their existing service area and future service area. Municipal water suppliers must define their retail service area and meet the requirements under WAC 246-290-106. Municipal water suppliers ~~((must))~~ shall identify ((where)) the service area their water rights place of use will be expanded to ~~((their service area))~~ if the requirements under WAC 246-290-107 have been met; and

(v) Satellite management, if applicable.

(b) Basic planning data, including:

(i) Current population, service connections, water use, and equivalent residential units; and

(ii) Sufficient water production and consumption data to identify trends including the following elements:

(A) Monthly and annual production totals for each source, including water purchased from another public water system;

(B) Annual usage totals for each customer class as determined by the purveyor;

(C) Annual usage totals for water supplied to other public water systems; and

(D) For systems serving one thousand or more total connections, a description of the seasonal variations in consumption patterns of each customer class defined by the purveyor.

(iii) Designated land use, zoning, ~~((future))~~ population, and water demand ~~((for a consecutive six year))~~ within the water system's service area for the plan approval period and a twenty-year planning period ((within the water system's service area)).

(c) Demand forecasts, developed under WAC 246-290-221, for ~~((a consecutive six year and))~~ the plan approval period and a twenty-year planning period. These shall show future use with and without savings expected from the system's water use efficiency program.

(d) For systems serving one thousand or more total connections, a demand forecast ~~((projecting))~~ for the plan approval period and a twenty-year planning period that projects demand if the measures deemed cost-effective per WAC 246-290-810 were implemented.

- (e) System analysis, including:
  - (i) System design standards;
  - (ii) Water quality analysis;
  - (iii) ~~((System))~~ Inventory ~~((description))~~ and analysis of water system facilities; and
  - (iv) Summary of system deficiencies.
- (f) Water resource analysis for the plan approval period and a twenty-year planning period, including:
  - (i) A water use efficiency program. Municipal water suppliers must meet the requirements in WAC 246-290-810;
  - (ii) Source of supply analysis, which includes:
    - (A) An evaluation of water supply alternatives if additional water rights will be pursued within twenty years; and
    - (B) A narrative description of the system's water supply characteristics and the foreseeable effect from current and future use on the water quantity and quality of any body of water from which its water is diverted or withdrawn based on existing data and studies;
  - (iii) A water shortage response plan as a component of the reliability and emergency response requirements under WAC 246-290-420;
  - (iv) Water right self-assessment;
  - (v) Water supply reliability analysis;
  - (vi) Interties; and
  - (vii) For systems serving one thousand or more total connections, an evaluation of opportunities for the use of reclaimed water, where they exist, as defined in RCW 90.46.010~~((+4))~~.
- (g) Source water protection program under WAC 246-290-135.
- (h) Operation and maintenance program under WAC 246-290-415 and 246-290-654(5), as applicable.
- (i) Improvement program, including a ~~((six-year))~~ capital improvement schedule that identifies all capital improvements for the plan approval period and any major projects planned within a twenty-year planning period.
- (j) Financial program, including demonstration of financial viability for the plan approval period by providing:
  - (i) A summary of past income and expenses;
  - (ii) A ~~((one-year))~~ balanced operational budget ~~((for systems serving one thousand or more connections or a six year balanced operational budget for systems serving less than one thousand connections))~~;
  - (iii) A plan for collecting the revenue necessary to maintain cash flow stability and to fund the capital improvement program and emergency improvements; and
  - (iv) An evaluation that has considered:
    - (A) The affordability of water rates; and
    - (B) The feasibility of adopting and implementing a rate structure that encourages water demand efficiency.
- (k) Other documents, such as:
  - (i) Documentation of SEPA compliance;
  - (ii) Agreements; and
  - (iii) Comments from each local government with jurisdiction and adjacent utilities.
- (5) Purveyors intending to implement the project report and construction document submittal exceptions authorized under WAC 246-290-125 must include:
  - (a) Standard construction specifications for distribution mains; and/or

(b) Design and construction standards for distribution-related projects, including:

(i) Description of project report and construction document internal review procedures, including engineering design review and construction completion reporting requirements;

(ii) Construction-related policies and requirements for external parties, including consumers and developers;

(iii) Performance and sizing criteria; and

(iv) General reference to construction materials and methods.

(6) ~~((The department, at its discretion, may require reports from purveyors identifying the progress in developing their water system plans.))~~ Purveyors shall submit reports identifying the progress in developing their water system plans if required by the department.

(7) Purveyors shall transmit water system plans to adjacent utilities and each local government with jurisdiction, to assess consistency with ongoing and adopted planning efforts.

(8) Prior to department approval of a water system plan or a water system plan update, the purveyor shall:

(a) Hold an informational meeting for the water system consumers and notify consumers in a way that is appropriate to the size of the water system; and

(b) Obtain ~~((the))~~ approval of the water system plan from the purveyor's governing body or elected governing board.

(9) ~~The department approval ((of))~~ period for a water system plan ~~((shall be in effect for six))~~ is ten years from the date of written approval unless:

~~(a) ((Major projects subject to SEPA as defined in WAC 246-03-030-3))~~ ~~(a) are proposed that are not addressed in the plan;~~

~~(b) Changes occur in the basic planning data significantly affecting system improvements identified))~~ The purveyor requests and receives a plan approval period of less than ten years; or

~~((e))~~ (b) The department requests an updated plan ~~((or plan amendment))~~.

(10) The purveyor shall update the water system plan and obtain department approval at ~~((least every six years.))~~ or before the expiration of the current plan approval if the system ((no longer)) meets any of the conditions of subsection (2) of this section((, the purveyor shall as directed by the department, either:

~~(a) Submit a water system plan amendment for review and approval with the scope to be determined by the department; or~~

~~(b) Meet the requirements under WAC 246-290-105)).~~

(11) Water system plan amendments. A purveyor may submit an amendment to its current approved water system plan for department approval at any time during the plan approval period. Department approval of a water system plan amendment does not affect the current plan approval period in accordance with subsection (9) of this section and does not satisfy the requirement of subsection (2) of this section to update the water system plan.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

**WAC 246-290-105 Small water system management program.** (1) The purpose of a small water system management program is to:



(a) Demonstrate the system's operational, technical, managerial, and financial capability to achieve and maintain compliance with all relevant local, state, and federal plans and regulations; and

(b) Establish eligibility for funding under chapter 246-296 WAC.

(2) All noncommunity systems and ~~((all))~~ community systems not required to complete a water system plan ~~((as described))~~ under WAC 246-290-100(2) shall develop and implement a small water system management program.

(3) The purveyor shall submit this program for department review and approval ~~((to the department))~~ when:

(a) A new NTNC public water system is created;

(b) An existing system has operational, technical, managerial, or financial problems, as determined by the department; or

(c) A system applies for funding under chapter 246-296 WAC.

(4) Content and detail shall be consistent with the size, complexity, past performance, and use of the public water system. General content topics shall include, but not be limited to, the following elements:

(a) System management;

(b) Annual operating permit;

(c) Water facilities inventory form;

(d) Service area and facility map. Municipal water suppliers must identify where their water rights place of use will be expanded to their service area if the requirements under WAC 246-290-107 have been met;

(e) Water right self-assessment;

(f) Description of the system's source(s) including the name and location of any body of water from which its water is diverted or withdrawn;

(g) A water use efficiency program. Municipal water suppliers must meet the requirements in WAC 246-290-810;

(h) Water production and consumption data including each of the following:

(i) Monthly and annual production for each source, including water purchased from another public water system;

(ii) Annual consumption totals for residential and nonresidential connections;

(iii) Total annual volume of water supplied to other public water systems;

(i) Average daily demand;

(j) Current population served;

(k) The forecast of average daily demand based on the system's approved number of connections that considers:

(i) Water use trends based on actual water use records; and

(ii) Applicable land use plans;

(l) An evaluation that has considered the feasibility of adopting and implementing a rate structure that encourages water demand efficiency;

(m) Source water protection program;

(n) Component inventory and assessment;

(o) List of planned system improvements;

(p) Water quality monitoring program;

(q) Operation and maintenance program under WAC 246-290-415(2) and 246-290-654(5) as applicable;

(r) Cross-connection control program;

(s) Emergency response plan; and

(t) Budget.

(5) The department may require changes be made to a small water system management program if necessary to effectively accomplish the program's purpose.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

**WAC 246-290-108 Consistency with local plans and regulations.**

Consistency with local plans and regulations applies to planning and engineering documents under WAC 246-290-106, 246-290-107, and 246-290-110.

(1) Municipal water suppliers must include a consistency review and supporting documentation in its planning or engineering document describing how it has considered consistency with local plans and regulations. This review must include elements of local plans and regulations, as they reasonably relate to water service to be provided by a municipal water supplier for any new connection, including:

- (a) Land use and zoning within the applicable service area;
- (b) ((Six-year)) Growth projections used in the demand forecast;
- (c) Utility service extension ordinances of a city or town when water service is provided by the water utility of the city or town;
- (d) Provisions of water service for new service connections; and
- (e) Other relevant elements related to water supply planning as determined by the department.

(2) Municipal water suppliers must request each local government with jurisdiction over the applicable service area to provide a consistency review.

(a) Municipal water suppliers shall provide each local government with jurisdiction sixty days to review the planning or engineering document unless another state statute or state regulation requires a different time frame. The municipal water supplier must provide the local government with jurisdiction an additional thirty days for review if requested.

(b) If an inconsistency is documented by the local government with jurisdiction within the time frame outlined in (a) of this subsection, the municipal water supplier must provide the inconsistency information to the department.

(c) If the local government with jurisdiction documents in writing an inconsistency exists with local plans and regulations, the municipal water supplier shall address the inconsistency. The local government with jurisdiction shall be provided sixty days to review any revisions or responses that address the inconsistency.

(3) If the local government with jurisdiction does not provide a consistency review, the municipal water supplier shall complete the consistency review as described in subsection (1) of this section. The municipal water supplier must also document:

(a) The amount of time provided to each local government with jurisdiction to review the planning and engineering documents as defined in subsection (2) of this section; and

(b) The efforts taken to request a consistency review from the local government with jurisdiction.

**WAC 246-290-125 Project report and construction document submittal exceptions.** (1) The following projects do not require project reports under WAC 246-290-110 and construction documents under WAC 246-290-120 to be submitted to the department for review and approval prior to installation:

(a) Installation of valves, fittings, ~~((and))~~ meters, ~~((including))~~ and approved backflow prevention assemblies;

(b) Installation of hydrants under WAC 246-290-230 (3) and (6);

(c) Repair of a system component or replacement with a component of a similar capacity and material in accordance with the original construction specifications of the approved design. For the purposes of replacing existing pipe, similar capacity includes one standard pipe size larger~~((+))~~; or

(d) Maintenance or painting of surfaces not contacting potable water.

(2) Purveyors may elect to not submit to the department for review and approval project reports under WAC 246-290-110 and construction documents under WAC 246-290-120 for new distribution mains if:

(a) The purveyor has on file with the department a current department-approved water system plan that includes standard construction specifications for distribution mains; and

(b) The purveyor maintains on file a completed construction completion report (department form) in accordance with WAC 246-290-120(5) and makes it available for review upon request by the department.

(3) Purveyors may elect to not submit to the department for review and approval project reports under WAC 246-290-110 and construction documents under WAC 246-290-120 for review and approval of other distribution-related projects as defined in WAC 246-290-010 providing:

(a) The purveyor has on file with the department a current department-approved water system plan, in accordance with WAC 246-290-100(5);

(b) The purveyor submits a written request with a new water system plan or an amendment to a water system plan, and updates the request with each water system plan update. The written request should specifically identify the types of projects or facilities for which the submittal exception procedure is requested;

(c) The purveyor has documented that they have employed or hired under contract the services of a professional engineer licensed in the state of Washington to review distribution-related projects not submitted to the department for review and approval. The review engineer and design engineer shall not be the same individual. The purveyor shall provide written notification to the department whenever they propose to change their designated review engineer;

(d) If the project is a new transmission main, storage tank, or booster pump station, it must be identified in the capital improvement program of the utility's water system plan. If not, either the project report must be submitted to the department for review and approval, or the water system plan must be amended;

(e) A project summary file is maintained by the purveyor for each project and made available for review upon request by the department, and includes:

(i) Descriptive project summary;

(ii) Anticipated completion schedule;

(iii) Consistency with utility's water system plan;  
(iv) Water right self-assessment, where applicable;  
(v) Change in system physical capacity;  
(vi) Copies of original design and record drawings;  
(vii) Engineering design review report (department form). The form shall:

(A) Bear the seal, date, and signature of a professional engineer licensed in the state of Washington prior to the start of construction;

(B) Provide a descriptive reference to completed project report and/or construction documents reviewed, including date of design engineer's seal and signature; and

(C) State the project report and/or construction documents have been reviewed, and the design is in accordance with department regulations and principles of standard engineering practice;

(f) The construction completion report is submitted to the department in accordance with WAC 246-290-120(5) for new storage tanks and booster pump stations, and maintained on file with the water system for all other distribution-related projects;

(g) A WFI is completed in accordance with WAC 246-290-120(6); and

(h) The purveyor meets the requirements of chapter 246-294 WAC to have a category "green" operating permit.

(4) Source of supply (including interties) and water quality treatment-related projects shall not be eligible for the submittal exception procedure.

(5) Purveyors not required to prepare a water system plan under WAC 246-290-100 shall be eligible for the submittal exception procedure if the purveyor:

(a) Has a department-approved water system plan meeting the requirements of WAC 246-290-100;

(b) Complies with all other requirements in this section; and

(c) Ensures that all work required to be prepared under the direction of a professional engineer be accomplished per WAC 246-290-040 and chapter 18.43 RCW.

AMENDATORY SECTION (Amending WSR 10-20-068, filed 9/29/10, effective 11/1/10)

**WAC 246-290-130 Source approval.** (1) Every purveyor shall obtain drinking water from the highest quality source feasible. No new source, previously unapproved source, or modification of an existing source shall be used as a public water supply without department approval. No intake or other connection shall be maintained between a public water system and a source of water not approved by the department.

(2) Before initiating source development or modification, the purveyor shall contact the department to identify submittal requirements.

(3) Any party seeking source approval shall provide the department sufficient documentation, in a project report, construction documents, or in supplemental documents, that the source:

(a) Is reasonable and feasible for the type and size of the system;

(b) May legally be used in conformance with state water rights laws;

(c) Supplies water that is physically and reliably available in the necessary quantities, as shown in:

(i) A hydrogeologic assessment of the proposed source;

(ii) A general description of the watershed, spring, and/or aquifer recharge area affecting the quantity or quality of flow, which includes seasonal variation and upstream water uses that may significantly affect the proposed source;

(iii) For groundwater and spring sources, well source development data that are available from a pump test at the maximum design rate and duration, or are available from other sources of information, that establish pump settings (depth) in the well and demonstrate adequacy of water quantity to meet design criteria while not leading to water quality problems;

(iv) For groundwater and spring sources, installation of a source meter or other equivalent device that reliably measures volume of flow into the system;

(d) Is, or is not, a GWI under WAC 246-290-640, and meets or can meet the applicable requirements for GWI sources as described in that section including treatment;

(e) Adequately provides for source protection, as shown in:

(i) For surface water and GWI sources, the watershed control program identified under WAC 246-290-135 and Part 6 of this chapter;

(ii) For wells, a preliminary department susceptibility assessment or equivalent information, and preliminary WHPA delineation and contaminant inventory, under the requirements for sanitary control and wellhead protection under WAC 246-290-135;

(f) Is designed and constructed in conformance with this chapter, and relevant requirements of chapter 173-160 WAC (department of ecology well construction standards);

(g) Meets water quality standards under WAC 246-290-310, as shown in an initial water quality analysis that includes, at a minimum, the following:

(i) Bacteriological;

(ii) Complete inorganic chemical and physical except that the MCL for arsenic under WAC 246-290-310 does not apply to TNC systems;

(iii) Complete VOC;

(iv) Radionuclides, if source approval is requested for a community system;

(v) SOC, except where waived or not required under WAC ((246-290-310)) 246-290-300; and

(vi) Any other information required by the department relevant to the circumstances of the particular source.

Sources that otherwise would not meet water quality standards may be approved if treatment is provided.

(4) The required documentation under subsection (3) of this section shall include, at a minimum:

(a) A water right self-assessment;

(b) A map showing the project location and vicinity;

(c) A map depicting topography, distances to the surface water intake, well or spring from existing property lines, buildings, potential sources of contamination, ditches, drainage patterns, and any other natural or man-made features affecting the quality or quantity of water;

(d) The dimensions, location, and legal documentation of the SCA under WAC 246-290-135;

(e) A copy of the on-site inspection form completed by the department or local health department representative;

(f) A copy of the water well report including the unique well identification tag number, depth to open interval or top of screened interval, overall depth of well from the top of the casing, vertical elevation, and location (both plat location and latitude/longitude); and

(g) Documentation of source meter installation. The purveyor may utilize other documents, such as a water system plan, susceptibility assessment, wellhead protection program, project report, or construction documents, to provide the documentation and information to the department, provided that the documents are current, and the purveyor indicates the location in the document of the relevant information.

(5) If treatment of a source is necessary to meet water quality standards, the purveyor may be required to meet the provisions of WAC 246-290-250 and Part 6 of this chapter, if applicable, prior to or as a condition of approval.

(6) An intertie must be adequately described in a written agreement between the purveyor and the supplier of the water, and otherwise meet the requirements of WAC 246-290-132.

(7) The purveyor shall not construct facilities for source development and use without prior approval of the department pursuant to the provisions of WAC 246-290-120.

(8) The purveyor may request a conditional source approval, such as one that sets limits on use or requires interim treatment, if further analysis of the quality of the source is required before final approval.

(9) For sources or supplies of water used by bottled water or ice plants to produce bottled water or ice:

(a) If the bottled water or ice plant is a Group A community water system and the plant uses the system's source for the water that is bottled or made into ice, the source and supply used for the bottled water and ice shall meet the applicable Group A requirements;

(b) If the bottled water or ice plant uses its own source for the water that is bottled or made into ice, and the plant is not a Group A community water system, the owner or operator shall obtain source approval from the department, and the source water shall meet the ongoing source water quality monitoring requirements for a Group A community system;

(c) If the bottled water or ice plant purchases the water for bottling or making ice from another source or supply, the water shall meet the minimum requirements for a Group A community water system, and the owner or operator of the plant shall ensure that the water meets the requirements;

(d) The source or supply for the water that is bottled or made into ice shall be protected from contamination prior to the bottling or ice making process; and

(e) In addition to the requirements imposed under this subsection, the processing of bottled water shall be subject to regulation by the state department of agriculture and the United States Food and Drug Administration.

## NEW SECTION

**WAC 246-290-131 Emergency sources and supplies.** (1) A purveyor with an emergency source shall provide, at a minimum, the following information in its department-approved emergency response plan:

(a) Source name, department identification number, capacity, and location;

(b) Engineering design department approval status;

(c) Routine water quality emergency source monitoring schedule, if applicable; and

(d) Procedures to activate the emergency source for the purpose of supplying the distribution system, including:

(i) Persons authorized to activate the source;

(ii) Conditions in which the emergency source will be activated;

(iii) Operational steps that will be taken before the source is activated;

(iv) Water quality sampling performed immediately before activating the source and while the emergency source is in operation; and

(v) Steps that will be taken to inform the public and the department before activating the source.

(2) A purveyor may maintain a physical connection between an emergency source and the distribution system if:

(a) The emergency source is an emergency intertie with another Group A water system, approved under WAC 246-290-132; or

(b) The emergency source is a drilled and cased well which:

(i) Is identified in the purveyor's department-approved emergency response plan in accordance with WAC 246-290-420;

(ii) Has an isolation valve between the emergency source and the distribution system that is secured in the fully closed position when not in use; and

(iii) Has the motor starter locked-out and tagged-out in the off position so that the pump is isolated from the power supply when not in use.

(3) A purveyor with an emergency source that does not meet the requirements of subsection (2) of this section shall:

(a) Physically disconnect the emergency source from the distribution system by the removal of a pipe segment or by an alternate means as determined by the department; and

(b) Receive permission from the department or health officer before physically connecting and activating the emergency source for the purpose of supplying the distribution system.

(4) Trucked water as an emergency drinking water supply.

(a) Unless otherwise directed by the department, a purveyor using trucked water shall only use water that:

(i) Originates from a Group A public water system that is in compliance with the requirements of this chapter;

(ii) Is treated with chlorine when the truck is filled by adding one-half cup of six to eight and twenty-five one hundredths of one percent regular unscented household bleach per one thousand gallons of water, or equivalent;

(iii) Has a free chlorine residual equal to or greater than 0.5 mg/L at the time of delivery; and

(iv) Is collected, transported, and delivered by tanks, pumps, pipes and other equipment that:

(A) Are contaminant-free and constructed and maintained to prevent contamination; and

(B) Have not previously been used to carry nonfood products, toxic substances, or petroleum products.

(b) Purveyors using trucked water as an emergency drinking water supply shall:

(i) Receive permission from the department, health officer, or local or state emergency management agency prior to use;

(ii) Measure the free chlorine residual of the delivered water and only accept water that has a free chlorine residual that is equal to or greater than 0.5 mg/L at the time of delivery;

(iii) Store trucked water in the delivery truck or in an approved component of the purveyor's water system; and

(iv) Maintain records of trucked water deliveries, including the hauler, water source, chlorine test results, and delivery date, time, and volume. Records must be available for review upon request by the department or health officer.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

**WAC 246-290-200 Design standards.** (1) Purveyors shall ensure that good engineering criteria and practices are used in the design and construction of all public water systems, such as those set out in:

(a) Department guidance on design for Group A public water systems;

(b) The most recent published edition of the International Building Code (IBC), the Uniform Plumbing Code (UPC), and other national model codes adopted in Washington state;

(c) The most recent published edition of *Recommended Standards for Water Works, A Committee Report of the Great Lakes - Upper Mississippi River Board of State Public Health and Environmental Managers*;

(d) Standard specifications of the American Public Works Association, the American Society of Civil Engineers, AWWA, or the American Society for Testing and Materials;

(e) Design criteria, such as contained in current college texts and professional journal articles, acceptable to the department;

(f) Chapter 173-160 WAC *Minimum Standards for Construction and Maintenance of ((Water)) Wells*;

(g) The latest edition of the PNWS-AWWA Cross-Connection Control Manual, or the University of Southern California (USC) Manual of Cross-Connection Control.

(2) In addition, purveyors of new or expanding public water systems shall consider and use, as appropriate, the following design factors:

(a) Historical water use;

(b) Community versus recreational uses of water;

(c) Local conditions and/or regulations;

(d) Community expectations;

(e) Public Water System Coordination Act considerations where appropriate;

(f) Provisions for systems and component reliability in accordance with WAC 246-290-420;

(g) Wind pressures, seismic risk, snow loads, and flooding;

(h) Other risks from potential disasters, as feasible; and



(i) Other information as required by the department.

AMENDATORY SECTION (Amending WSR 03-08-037, filed 3/27/03, effective 4/27/03)

**WAC 246-290-220 Drinking water materials and additives.** (1) All materials shall conform to the ANSI/NSF Standard 61 if in substantial contact with potable water supplies. For the purposes of this section, "substantial contact" means the elevated degree that a material in contact with water may release leachable contaminants into the water such that levels of these contaminants may be unacceptable with respect to either public health or aesthetic concerns. It should take into consideration the total material/water interface area of exposure, volume of water exposed, length of time water is in contact with the material, and level of public health risk. Examples of water system components that would be considered to be in "substantial contact" with drinking water are filter media, storage tank interiors or liners, distribution piping, membranes, exchange or adsorption media, or other similar components that would have high potential for contacting the water. Materials associated with components such as valves, pipe fittings, debris screens, gaskets, or similar appurtenances would not be considered to be in substantial contact.

(2) Materials or additives in use prior to the effective date of these regulations that have not been listed under ANSI/NSF Standard 60 or 61 may be used for their current applications until the materials are scheduled for replacement, or that stocks of existing additives are depleted and scheduled for reorder.

(3) Any treatment chemicals, with the exception of commercially retailed hypochlorite compounds such as unscented Clorox, Purex, etc., added to water intended for potable use must comply with ANSI/NSF Standard 60. The maximum application dosage recommendation for the product certified by the ANSI/NSF Standard 60 shall not be exceeded in practice.

(4) Any products used to coat, line, seal, patch water contact surfaces or that have substantial water contact within the collection, treatment, or distribution systems must comply with the appropriate ANSI/NSF Standard 60 or 61. Application of these products must comply with recommendations contained in the product certification.

(5) The department may accept continued use of, and proposals involving, certain noncertified chemicals or materials on a case-by-case basis, if all of the following criteria are met:

(a) The chemical or material has an acknowledged and demonstrable history of use in the state for drinking water applications;

(b) There exists no substantial evidence that the use of the chemical or material has caused consumers to register complaints about aesthetic issues, or health related concerns, that could be associated with leachable residues from the material; and

(c) The chemical or material has undergone testing through a protocol acceptable to the department and has been found to not contribute leachable compounds into drinking water at levels that would be of public health concern.

(6) Any pipe, pipe fittings, plumbing fittings, fixtures, solder, or flux used in the installation or repair of a public water system shall be lead-free:

(a) This prohibition shall not apply to leaded joints necessary for the repair of cast iron pipes; and

(b) Within the context of this section, lead-free shall mean:

(i) No more than ~~((eight))~~ a weighted average of twenty-five one-hundredths of one percent lead in ((pipes and pipe fittings)) accordance with 42 U.S.C. 300g-6(d)(2); and

(ii) No more than two-tenths of one percent lead in solder and flux(~~;~~ and

~~(iii) Fittings and fixtures that are in compliance with standards established in accordance with 42 U.S.C. 300g-6(e)).~~

(7) Exceptions to the lead-free requirements of subsection (6) of this section include:

(a) Pipes, pipe fittings, plumbing fittings, or fixtures, including backflow preventers, that are used exclusively for nonpotable services such as manufacturing, industrial processing, irrigation, outdoor watering, or any other uses where the water is not anticipated to be used for human consumption; or

(b) Toilets, bidets, urinals, fill valves, flushometer valves, tub fillers, fire hydrants, shower valves, service saddles, or water distribution main gate valves that are two inches in diameter or larger.

AMENDATORY SECTION (Amending WSR 11-17-062, filed 8/15/11, effective 10/1/11)

**WAC 246-290-300 Monitoring requirements.** (1) General.

(a) The monitoring requirements specified in this section are minimums. The department may require additional monitoring when:

(i) Contamination is present or suspected in the water system;

(ii) A groundwater source is determined to be a potential GWI;

(iii) The degree of source protection is not satisfactory;

(iv) Additional monitoring is needed to verify source vulnerability for a requested monitoring waiver;

(v) Under other circumstances as identified in a department order; or

(vi) Additional monitoring is needed to evaluate continuing effectiveness of a treatment process where problems with the treatment process may exist.

(b) Special purpose samples collected by the purveyor shall not count toward fulfillment of the monitoring requirements of this chapter unless the quality of data and method of sampling and analysis are acceptable to the department.

(c) The purveyor shall ensure samples required by this chapter are collected, transported, and submitted for analysis according to EPA-approved methods. The analyses shall be performed by a laboratory accredited by the state. Qualified water utility, accredited laboratory, health department personnel, and other parties approved by the department may conduct measurements for pH, temperature, residual disinfectant concentration, alkalinity, bromide, chlorite, TOC, SUVA, turbidity, calcium, conductivity, orthophosphate, and silica as required by this chapter, provided, these measurements are made according to EPA approved methods.

(d) Compliance samples required by this chapter shall be taken at locations listed in Table ((3)) 4 of this section.

(e) Purveyors failing to comply with a monitoring requirement shall notify:

(i) The department under WAC 246-290-480; and

(ii) The owner or operator of any consecutive system served and the appropriate water system users under 40 C.F.R. 141.201 and Part 7, Subpart A of this chapter.

(2) Selling and receiving water.

(a) Source monitoring. Purveyors, with the exception of those that "wheel" water to their consumers (i.e., sell water that has passed through another purchasing purveyor's distribution system), shall conduct source monitoring under this chapter for the sources under their control. The level of monitoring shall satisfy the monitoring requirements associated with the total population served by the source.

(b) Distribution system monitoring. The purveyor of a system that receives and distributes water shall perform distribution-related monitoring requirements. Monitoring shall include, but not be limited to, the following:

(i) Collect coliform samples under subsection (3) of this section;

(ii) Collect disinfection byproduct samples as required by subsection (6) of this section;

(iii) Perform the distribution system residual disinfectant concentration monitoring under subsection (6) of this section, and as required under WAC 246-290-451 or 246-290-694. Systems with fewer than one hundred connections shall measure residual disinfectant concentration at the same time and location that a routine or repeat coliform sample is collected, unless the department determines that more frequent monitoring is necessary to protect public health;

(iv) Perform lead and copper monitoring required under 40 C.F.R. 141.86, 141.87, and 141.88;

(v) Perform the distribution system monitoring under 40 C.F.R. 141.23(b) for asbestos if applicable;

(vi) Other monitoring as required by the department.

(c) Reduced monitoring for regional programs. The receiving purveyor may receive reductions in the coliform, lead and copper, disinfection byproduct (including THMs and HAA5) and distribution system disinfectant residual concentration monitoring requirements, provided the receiving system:

(i) Purchases water from a purveyor that has a department-approved regional monitoring program;

(ii) Has a written agreement with the supplying system or regional water supplier that is acceptable to the department, and which identifies the responsibilities of both the supplying and receiving system(s) with regards to monitoring, reporting and maintenance of the distribution system; and

(iii) Has at least one compliance monitoring location for disinfection byproducts, if applicable.

(d) Periodic review of regional programs. The department may periodically review the sampling records of public water systems participating in a department-approved monitoring program to determine if continued reduced monitoring is appropriate. If the department determines a change in the monitoring requirements of the receiving system is appropriate:

(i) The department shall notify the purveyor of the change in monitoring requirements; and

(ii) The purveyor shall conduct monitoring as directed by the department.

(3) Bacteriological.

(a) The purveyor shall be responsible for collection and submittal of coliform samples from representative points throughout the distribution system. Samples shall be collected after the first service and at regular time intervals each month the system provides water to consumers. Samples shall be collected that represent normal system operating conditions.

(i) Systems providing disinfection treatment shall measure the residual disinfectant concentration within the distribution system at the same time and location of routine and repeat samples.

(ii) Systems providing disinfection treatment shall assure that disinfectant residual concentrations are measured and recorded on all coliform sample report forms submitted for compliance purposes.

(b) Coliform monitoring plan.

(i) The purveyor shall prepare a written coliform monitoring plan and base routine monitoring upon the plan. The plan shall include coliform sample collection sites and a sampling schedule.

(ii) The purveyor shall:

(A) Keep the coliform monitoring plan on file with the system and make it available to the department for inspection upon request;

(B) Revise or expand the plan at any time the plan no longer ensures representative monitoring of the system, or as directed by the department; and

(C) Submit the plan to the department for review and approval when requested and as part of the water system plan required under WAC 246-290-100.

(c) Monitoring frequency. The number of required routine coliform samples is based on total population served.

(i) Purveyors of **community** systems shall collect and submit for analysis no less than the number of routine samples listed in Table ((1)) 2 during each calendar month of operation;

(ii) Unless directed otherwise by the department, purveyors of **noncommunity** systems shall collect and submit for analysis no less than the number of samples required in Table ((1)) 2, and no less than required under 40 C.F.R. 141.21. Each month's population shall be based on the average daily population and shall include all residents and nonresidents served during that month. During months when the average daily population served is less than twenty-five, routine sample collection is not required when:

(A) Using only protected groundwater sources;

(B) No coliform were detected in samples during the previous month; and

(C) One routine sample has been collected and submitted for analysis during one of the previous two months.

(iii) Purveyors of systems serving both a resident and a nonresident population shall base their minimum sampling requirement on the total of monthly populations served, both resident and nonresident as determined by the department, but no less than the minimum required in Table ((1)) 2; and

(iv) Purveyors of systems with a nonresident population lasting two weeks or less during a month shall sample as directed by the department. Sampling shall be initiated at least two weeks prior to the time service is provided to consumers.

(v) Purveyors of TNC systems shall not be required to collect routine samples in months where the population served is zero or the system has notified the department of an unscheduled closure.

(d) Invalid samples. When a routine or repeat coliform sample is determined invalid under WAC 246-290-320 (2)(d), the purveyor shall:

(i) Not include the sample in the determination of monitoring compliance; and

(ii) Take follow-up action as defined in WAC 246-290-320 (2) ((d)) (e).

(e) Assessment source water monitoring. If directed by the department, a groundwater system must conduct assessment source water monitoring which may include, but is not limited to, collection of at least one representative groundwater source sample each month the source provides groundwater to the public, for a minimum of twelve months.

(i) Sampling must be conducted as follows:

(A) Source samples must be collected at a location prior to any treatment. If the water system's configuration does not allow sampling at the source itself, the department may approve an alternative source sampling location representative of the source water quality.

(B) Source samples must be at least 100 mL in size and must be analyzed for *E. coli* using one of the analytical methods under 40 C.F.R. 141.402(c).

(ii) A groundwater system may use a triggered source water sample collected under WAC 246-290-320 (2)(g) to meet the requirements for assessment source water monitoring.

(iii) Groundwater systems with an *E. coli* positive assessment source water sample that is not invalidated under WAC 246-290-320 (2)(g)(vii), and consecutive systems receiving water from this source must:

(A) Provide Tier 1 public notice under Part 7, Subpart A of this chapter and special notification under WAC 246-290-71005 (4) and (5); and

(B) Take corrective action as required under WAC 246-290-453(1).

(iv) The purveyor of a groundwater system that fails to conduct assessment source water monitoring as directed by the department shall provide Tier 2 public notice under Part 7, Subpart A of this chapter.

(f) The purveyor using a surface water or GWI source shall collect representative source water samples for bacteriological density analysis under WAC 246-290-664 and 246-290-694 as applicable.

TABLE ((1)) 2  
MINIMUM MONTHLY ROUTINE COLIFORM  
SAMPLING REQUIREMENTS

| Population Served <sup>1</sup> |       | Minimum Number of Routine Samples/Calendar Month                                  |  |
|--------------------------------|-------|---|--|
|                                |       | When NO samples with a coliform presence were collected during the previous month | When ANY samples with a coliform presence were collected during the previous month |
| During Month                   |       |   |  |
| 1 -                            | 1,000 | 1*  | 5  |
| 1,001 -                        | 2,500 | 2*  | 5  |
| 2,501 -                        | 3,300 | 3*  | 5  |

| Population Served <sup>1</sup>   | Minimum Number of Routine Samples/Calendar Month                                  |  |
|----------------------------------|---|--|
|                                  | When NO samples with a coliform presence were collected during the previous month | When ANY samples with a coliform presence were collected during the previous month |
| During Month                     |   |  |
| 3,301 - 4,100                    | 4*  | 5  |
| 4,101 - 4,900                    | 5   | 5  |
| 4,901 - 5,800                    | 6   | 6  |
| 5,801 - 6,700                    | 7   | 7  |
| 6,701 - 7,600                    | 8   | 8  |
| 7,601 - 8,500                    | 9   | 9  |
| 8,501 - 12,900                   | 10  | 10   |
| 12,901 - 17,200                  | 15  | 15   |
| 17,201 - 21,500                  | 20  | 20   |
| 21,501 - 25,000                  | 25  | 25   |
| 25,001 - 33,000                  | 30  | 30   |
| 33,001 - 41,000                  | 40  | 40   |
| 41,001 - 50,000                  | 50  | 50   |
| 50,001 - 59,000                  | 60  | 60   |
| 59,001 - 70,000                  | 70  | 70   |
| 70,001 - 83,000                  | 80  | 80   |
| 83,001 - 96,000                  | 90  | 90   |
| 96,001 - 130,000                 | 100   | 100  |
| 130,001 - 220,000                | 120   | 120  |
| 220,001 - 320,000                | 150   | 150  |
| 320,001 - 450,000                | 180   | 180  |
| 450,001 - 600,000                | 210   | 210  |
| 600,001 - 780,000                | 240   | 240  |
| 780,001 - 970,000                | 270   | 270  |
| 970,001 - 1,230,000 <sup>3</sup> | 300   | 300  |

<sup>1</sup> Does not include the population of a consecutive system that purchases water. The sampling requirement for consecutive systems is a separate determination based upon the population of that system.

<sup>2</sup> Noncommunity systems using only protected groundwater sources and serving less than 25 individuals, may collect and submit for analysis, one sample every three months.

<sup>3</sup> Systems serving populations larger than 1,230,000 shall contact the department for the minimum number of samples required per month.

\* In addition to the provisions of subsection (1)(a) of this section, if a system of this size cannot show evidence of having been subject to a sanitary survey on file with the department, or has been determined to be at risk to bacteriological concerns following a survey, the minimum number of samples required per month may be increased by the department after additional consideration of factors such as monitoring history, compliance record, operational problems, and water quality concerns for the system.

#### (4) Inorganic chemical and physical.

(a) A complete inorganic chemical and physical analysis shall consist of the primary and secondary chemical and physical substances.

(i) Primary chemical and physical substances are antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate (as N), nitrite (as N), selenium, sodium, thallium, and for unfiltered surface water, turbidity. (Except that the MCL for arsenic under WAC 246-290-310 does not apply to TNC systems.)

(ii) Secondary chemical and physical substances are chloride, color, hardness, iron, manganese, specific conductivity, silver, sulfate, total dissolved solids\*, and zinc.

\* Required only when specific conductivity exceeds seven hundred micromhos/centimeter.

(b) Purveyors shall monitor for all primary and secondary chemical and physical substances identified in Table ((4)) 5 and Table ((5)) 6. Samples shall be collected in accordance with the monitoring requirements referenced in 40 C.F.R. 141.23 introductory text, 141.23(a) through 141.23(j), (~~excluding (i)(2),~~) and 40 C.F.R. 143.4, except for composite samples for systems serving less than three thousand three hundred one persons. For these systems, compositing among different systems may be allowed if the systems are owned or operated by a department-approved satellite management agency.

(c) Samples required by this subsection shall be taken at designated locations under 40 C.F.R. 141.23(a) through 141.23(j), (~~excluding (i)(2),~~) and 40 C.F.R. 143.4, and Table ((3)) 4 herein.

(i) Wellfield samples shall be allowed from department designated wellfields; and

(ii) Under 40 C.F.R. 141.23 ((~~a~~)) (c)(3), alternate sampling locations may be used if approved by the department. The process for determining these alternate sites is described in department guidance. Purveyors of community and NTNC systems may ask the department to approve an alternate sampling location for multiple sources within a single system that are blended prior to entry to the distribution system. Alternate sampling plans shall address the following:

- (A) Source vulnerability;
- (B) Individual source characteristics;
- (C) Previous water quality information;
- (D) Status of monitoring waiver applications; and
- (E) Other information deemed necessary by the department.

(d) Composite samples:

(i) Under 40 C.F.R. 141.23 (a)(4), purveyors may ask the certified lab to composite samples representing as many as five individual samples from within one system. Sampling procedures and protocols are outlined in department guidance; and

(ii) For systems serving a population of less than three thousand three hundred one, the department may approve composite sampling between systems when those systems are part of an approved satellite management agency.

(e) When the purveyor provides treatment for one or more inorganic chemical or physical contaminants, the department may require the purveyor to sample before and after treatment. The department shall notify the purveyor if and when this additional source sampling is required.

(f) Inorganic monitoring plans.

(i) Purveyors of community and NTNC systems shall prepare an inorganic chemical monitoring plan and base routine monitoring on the plan.

(ii) The purveyor shall:

(A) Keep the monitoring plan on file with the system and make it available to the department for inspection upon request;

(B) Revise or expand the plan at any time the plan no longer reflects the monitoring requirements, procedures or sampling locations, or as directed by the department; and

(C) Submit the plan to the department for review and approval when requested and as part of the water system plan required under WAC 246-290-100.

(g) Monitoring waivers.

(i) Purveyors may request in writing, a monitoring waiver from the department for any nonnitrate/nitrite inorganic chemical and physical monitoring requirements identified in this chapter.

(ii) Purveyors requesting a monitoring waiver shall comply with applicable subsections of 40 C.F.R. 141.23 (b)(3), and 141.23 (c)(3).

(iii) Purveyors shall update and resubmit requests for waiver renewals as applicable during each compliance cycle or period or more frequently as directed by the department.

(iv) Failure to provide complete and accurate information in the waiver application shall be grounds for denial of the monitoring waiver.

(h) The department may require the purveyor to repeat sample for confirmation of results.

(i) Purveyors with emergency and seasonal sources shall monitor those sources when they are in use.

(5) Lead and copper. Monitoring for lead and copper shall be conducted in accordance with 40 C.F.R. 141.86 (a) - (f), 141.87, and 141.88. All systems that have fewer than five drinking water taps used for human consumption shall collect at least one sample from each tap and then collect additional samples from those taps on different days during the monitoring period to meet the required number of samples as described in 40 C.F.R. 141.86(c).

(6) Disinfection byproducts (DBP), disinfectant residuals, and disinfection byproduct precursors (DBPP). Purveyors of community and NTNC systems providing water treated with chemical disinfectants and TNC systems using chlorine dioxide shall monitor as follows:

(a) General requirements.

(i) Systems shall collect samples during normal operating conditions.

(ii) All monitoring shall be conducted in accordance with the analytical requirements in 40 C.F.R. 141.131.

(iii) Systems may consider multiple wells drawing from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required, with department approval in accordance with department guidance.

(iv) Systems required to monitor under this subsection shall prepare and implement a monitoring plan in accordance with 40 C.F.R. 141.132(f) or 40 C.F.R. 141.622, as applicable.

(A) Community and NTNC surface water and GWI systems that deliver water that has been treated with a disinfectant other than ultraviolet light and serve more than three thousand three hundred people shall submit a monitoring plan to the department.

(B) The department may require submittal of a monitoring plan from systems not specified in subsection (6)(a)(iv)(A) of this section, and may require revision of any monitoring plan.

(C) Failure to monitor for TTHM, HAA5, or bromate will be treated as a violation for the entire period covered by the annual average where compliance is based on a running annual average of monthly or quarterly samples or averages.

(D) Failure to monitor for chlorine and chloramine residuals will be treated as a violation for the entire period covered by the annual average where compliance is based on a running annual average of



monthly or quarterly samples or averages and the systems' failure to monitor makes it impossible to determine compliance with the MRDLs.

(b) Disinfection byproducts - **Community** and **NTNC** systems only.

(i) TTHMs and HAA5.

(A) Systems shall monitor for TTHM and HAA5 in accordance with 40 C.F.R. 141.132 (b)(1)(i) until the dates set in Table ((2)) 3. On and after the dates set in Table ((2)) 3, the systems shall monitor in accordance with 40 C.F.R. 141.620, 141.621, and 141.622.

Table ((2)) 3

| Population Served | Routine Monitoring Start Date <sup>1</sup>                   |
|-------------------|--|
| 100,000 or more   | April 1, 2012  |
| 50,000 - 99,999   | October 1, 2012  |
| 10,000 - 49,999   | October 1, 2013  |
| Less than 10,000  | October 1, 2013 <sup>2</sup><br>October 1, 2014 <sup>3</sup> |

<sup>1</sup> Systems that have nonemergency interties with other systems must comply with the dates associated with the largest system in their combined distribution system.

<sup>2</sup> Surface water and GWI systems that did not have to do *Cryptosporidium* monitoring under 40 C.F.R. 141.701 (a)(4).

<sup>3</sup> Surface water and GWI systems that also did *Cryptosporidium* monitoring under 40 C.F.R. 141.701 (a)(4).

(B) With department approval, systems may reduce monitoring in accordance with 40 C.F.R. 141.132 (b)(1)(ii) and (iii), or 40 C.F.R. 141.623, as applicable.

(C) Systems on department-approved reduced monitoring schedules may be required to return to routine monitoring, or initiate increased monitoring in accordance with 40 C.F.R. 141.132 (b)(1)(iv), 40 C.F.R. 141.625, or 40 C.F.R. 141.627, as applicable.

(D) The department may return systems on increased monitoring to routine monitoring if, after one year, annual average results for TTHMs and HAA5 are less than or equal to 0.060 mg/L and 0.045 mg/L, respectively, or monitoring results are consistently below the MCLs indicating that increased monitoring is no longer necessary. After the dates set in Table ((2)) 3, systems must meet requirements of 40 C.F.R. 141.628 and 40 C.F.R. 141.625(c) to return to routine monitoring.

(E) After the dates set in Table ((2)) 3, systems must calculate operational evaluation levels each calendar quarter and take action, as needed, in accordance with 40 C.F.R. 141.626.

(F) NTNC systems serving ten thousand or more people and community systems must comply with the provisions of 40 C.F.R. Subpart U - Initial Distribution System Evaluations at:

|                   |   |
|-------------------|---|
| 40 C.F.R. 141.600 | General requirements.                                     |
| 40 C.F.R. 141.601 | Standard monitoring.                                      |
| 40 C.F.R. 141.602 | System specific studies.                                  |
| 40 C.F.R. 141.603 | 40/30 certification.                                      |
| 40 C.F.R. 141.604 | Very small system waivers.                                |
| 40 C.F.R. 141.605 | Subpart V compliance monitoring location recommendations. |

(ii) Chlorite - Only systems that use **chlorine dioxide**.

(A) Systems using chlorine dioxide shall conduct daily and monthly monitoring in accordance with 40 C.F.R. 141.132 (b)(2)(i) and addi-

tional chlorite monitoring in accordance with 40 C.F.R. 141.132 (b)(2)(ii).

(B) With department approval, monthly monitoring may be reduced in accordance with 40 C.F.R. 141.132 (b)(2)(iii)(B). Daily monitoring at entry to distribution required by 40 C.F.R. 141.132 (b)(2)(i)(A) may not be reduced.

(iii) Bromate - Only systems that use **ozone**.

(A) Systems using ozone for disinfection or oxidation must conduct bromate monitoring in accordance with 40 C.F.R. 141.132 (b)(3)(i).

(B) With department approval, monthly bromate monitoring may be reduced to once per quarter in accordance with 40 C.F.R. 141.132 (b)(3)(ii)(B).

(c) Disinfectant residuals.

(i) Chlorine and chloramines. Systems that deliver water continuously treated with chlorine or chloramines, including consecutive systems, shall monitor and record the residual disinfectant level in the distribution system under WAC 246-290-300 (2)(b), 246-290-451(7), 246-290-664(6), or 246-290-694(8), but in no case less than as required by 40 C.F.R. 141.74 (b)(6), 40 C.F.R. 141.74 (c)(3), 40 C.F.R. 141.132(c), or 40 C.F.R. 141.624.

(ii) Chlorine dioxide. Community, NTNC, or TNC systems that use chlorine dioxide shall monitor in accordance with 40 C.F.R. 141.132 (c)(2) and record results.

(d) Disinfection byproducts precursors.

Community and NTNC surface water or GWI systems that use conventional filtration with sedimentation as defined in WAC 246-290-660(3) shall monitor under 40 C.F.R. 141.132(d), and meet the requirements of 40 C.F.R. 141.135.

(7) Organic chemicals.

(a) Purveyors of community and NTNC water systems shall comply with monitoring requirements under 40 C.F.R. 141.24 (a) - (d), 141.24 (f)(1) - (f)(15), 141.24 (f)(18) - (19), 141.24 (f)(21), 141.24 (g)(1) - (9), 141.24 (g)(12) - (14), 141.24 (h)(1) - (11), and 141.24 (h)(14) - (17).

(b) Sampling locations shall be as defined in 40 C.F.R. 141.24(f), 141.24(g), and 141.24(h).

(i) Wellfield samples shall be allowed from department designated wellfields; and

(ii) Under 40 C.F.R. 141.24 (f)(3) and 141.24 (h)(3), alternate sampling locations may be allowed if approved by the department. These alternate locations are described in department guidance. Purveyors may ask the department to approve an alternate sampling location for multiple sources within a single system that are blended prior to entry to the distribution system. The alternate sampling location shall consider the following:

(A) Source vulnerability;

(B) An updated organic monitoring plan showing location of all sources with current and proposed sampling locations;

(C) Individual source characteristics;

(D) Previous water quality information;

(E) Status of monitoring waiver applications; and

(F) Other information deemed necessary by the department.

(c) Composite samples:

(i) Purveyors may ask the certified lab to composite samples representing as many as five individual samples from within one system. Sampling procedures and protocols are outlined in department guidance;

(ii) For systems serving a population of less than three thousand three hundred one, the department may approve composite sampling between systems when those systems are part of an approved satellite management agency.

(d) The department may require the purveyor to sample both before and after treatment for one or more organic contaminants. The department shall notify the purveyor if and when this additional source sampling is required.

(e) Organic chemical monitoring plans.

(i) Purveyors of community and NTNC systems shall prepare an organic chemical monitoring plan and base routine monitoring on the plan.

(ii) The purveyor shall:

(A) Keep the monitoring plan on file with the system and make it available to the department for inspection upon request;

(B) Revise or expand the plan at any time the plan no longer reflects the monitoring requirements, procedures or sampling locations, or as directed by the department; and

(C) Submit the plan to the department for review and approval when requested and as part of the water system plan required under WAC 246-290-100.

(f) Monitoring waivers.

(i) Purveyors may request in writing, a monitoring waiver from the department for any organic monitoring requirement except those relating to unregulated VOCs;

(ii) Purveyors requesting a monitoring waiver shall comply with 40 C.F.R. 141.24 (f)(7), 141.24 (f)(10), 141.24 (h)(6), and 141.24 (h)(7);

(iii) Purveyors shall update and resubmit requests for waiver renewals as directed by the department; and

(iv) Failure to provide complete and accurate information in the waiver application shall be grounds for denial of the monitoring waiver.

(g) Purveyors with emergency and seasonal sources shall monitor those sources under the applicable requirements of this section when they are actively providing water to consumers.

(8) Radionuclides. Monitoring for radionuclides shall be conducted under 40 C.F.R. 141.26.

(9) *Cryptosporidium* and *E. coli* source monitoring. Purveyors with surface water or GWI sources shall monitor the sources in accordance with 40 C.F.R. 141.701 and 702.

(10) Other substances.

On the basis of public health concerns, the department may require the purveyor to monitor for additional substances.

TABLE ((3)) 4  
MONITORING LOCATION

| Sample Type  | Sample Location  |
|--|--|
| Asbestos   | One sample from distribution system or if required by department, from the source. |
| Bacteriological  | From representative points throughout distribution system.                         |
| <i>Cryptosporidium</i> and <i>E. coli</i> (Source Water) - WAC 246-290-630(16) | Under 40 C.F.R. 141.703.   |

| Sample Type  | Sample Location  |
|--|--|
| Complete Inorganic Chemical & Physical                               | From a point representative of the source, after treatment, and prior to entry to the distribution system.                                   |
| Lead/Copper  | From the distribution system at targeted sample tap locations.   |
| Nitrate/Nitrite  | From a point representative of the source, after treatment, and prior to entry to the distribution system.                                   |
| Disinfection Byproducts - TTHMs and HAA5 - WAC 246-290-300(6)        | Under 40 C.F.R. 141.132 (b)(1) (Subpart L of the C.F.R.).  |
| Disinfection Byproducts - TTHMs and HAA5 - WAC 246-290-300(6)        | Under 40 C.F.R. 141.600 - 629 (IDSE and LRAA in Subparts U and V of the C.F.R.).   |
| Disinfection Byproducts - Chlorite (Systems adding chlorine dioxide) | Under 40 C.F.R. 141.132 (b)(2).  |
| Disinfection Byproducts - Bromate (Systems adding ozone)             | Under 40 C.F.R. 141.132 (b)(3).  |
| Disinfectant Residuals - Chlorine and Chloramines                    | Under 40 C.F.R. 141.132 (c)(1).  |
| Disinfectant Residuals - Chlorine dioxide                            | Under 40 C.F.R. 141.132 (c)(2).  |
| Disinfection Precursors - Total Organic Carbon (TOC)                 | Under 40 C.F.R. 141.132(d).  |
| Disinfection Precursors - Bromide (Systems using ozone)              | From the source before treatment.  |
| Radionuclides  | From a point representative of the source, after treatment and prior to entry to distribution system.  |
| Organic Chemicals (VOCs & SOCs)                                      | From a point representative of the source, after treatment and prior to entry to distribution system.  |
| Other Substances (unregulated chemicals)                             | From a point representative of the source, after treatment, and prior to entry to the distribution system, or as directed by the department. |

AMENDATORY SECTION (Amending WSR 09-21-045, filed 10/13/09, effective 1/4/10)

**WAC 246-290-310 Maximum contaminant levels (MCLs) and maximum residual disinfectant levels (MRDLs).** (1) General.

(a) The purveyor shall be responsible for complying with the standards of water quality identified in this section. If a substance exceeds its MCL or its maximum residual disinfectant level (MRDL), the purveyor shall take follow-up action under WAC 246-290-320.

(b) When enforcing the standards described under this section, the department shall enforce compliance with the primary standards as its first priority.

(2) Bacteriological.

(a) MCLs under this subsection shall be considered primary standards.

(b) If coliform presence is detected in any sample, the purveyor shall take follow-up action under WAC 246-290-320(2).

(c) Acute MCL. An acute MCL for coliform bacteria occurs when there is:

(i) Fecal coliform presence in a repeat sample;

(ii) *E. coli* presence in a repeat sample; or

(iii) Coliform presence in any repeat samples collected as a follow-up to a sample with fecal coliform or *E. coli* presence.

Note: For the purposes of the public notification requirements in Part 7, Subpart A of this chapter, an acute MCL is a violation that requires Tier 1 public notification.

(d) Nonacute MCL. A nonacute MCL for coliform bacteria occurs when:

(i) Systems taking less than forty routine samples during the month have more than one sample with coliform presence; or

(ii) Systems taking forty or more routine samples during the month have more than 5.0 percent with coliform presence.

(e) MCL compliance. The purveyor shall determine compliance with the coliform MCL for each month the system provides drinking water to the public. In determining MCL compliance, the purveyor shall:

(i) Include:

(A) Routine samples; and

(B) Repeat samples.

(ii) Not include:

(A) Samples invalidated under WAC 246-290-320 (2)(d); and

(B) Special purpose samples.

(3) Inorganic chemical and physical.

(a) The primary and secondary MCLs are listed in Table ((4)) 5 and ((5)) 6:

TABLE ((4)) 5  
INORGANIC CHEMICAL CHARACTERISTICS

| Substance                 | Primary<br>MCLs (mg/L)                                |
|---------------------------|---|
| Antimony (Sb)             | 0.006   |
| Arsenic (As)              | 0.010*  |
| Asbestos                  | 7 million fibers/liter<br>(longer than 10<br>microns) |
| Barium (Ba)               | 2.0   |
| Beryllium (Be)            | 0.004   |
| Cadmium (Cd)              | 0.005   |
| Chromium (Cr)             | 0.1   |
| Copper (Cu)               | **  |
| Cyanide (HCN)             | 0.2   |
| Fluoride (F)              | 4.0   |
| Lead (Pb)                 | **  |
| Mercury (Hg)              | 0.002   |
| <del>((Nickel (Ni))</del> | <del>0.1))</del>                                      |
| Nitrate (as N)            | 10.0  |

| Substance                  | Primary<br>MCLs (mg/L) |
|----------------------------|------------------------|
| Nitrite (as N)             | 1.0                    |
| Selenium (Se)              | 0.05                   |
| Sodium (Na)                | **                     |
| Thallium (Tl)              | 0.002                  |
| Substance                  | Secondary MCLs (mg/L)  |
| Chloride (Cl)              | 250.0                  |
| Fluoride (F)               | 2.0                    |
| Iron (Fe)                  | 0.3                    |
| Manganese (Mn)             | 0.05                   |
| Silver (Ag)                | 0.1                    |
| Sulfate (SO <sub>4</sub> ) | 250.0                  |
| Zinc (Zn)                  | 5.0                    |

Note\* Does not apply to TNC systems.

Note\*\* Although the state board of health has not established MCLs for copper, lead, and sodium, there is sufficient public health significance connected with copper, lead, and sodium levels to require inclusion in inorganic chemical and physical source monitoring. For lead and copper, the EPA has established distribution system related levels at which a system is required to consider corrosion control. These levels, called "action levels," are 0.015 mg/L for lead and 1.3 mg/L for copper and are applied to the highest concentration in ten percent of all samples collected from the distribution system. The EPA has also established a recommended level of twenty mg/L for sodium as a level of concern for those consumers that may be restricted for daily sodium intake in their diets.

TABLE ((5)) 6  
PHYSICAL CHARACTERISTICS

| Substance                    | Secondary MCLs |
|------------------------------|----------------|
| Color                        | 15 Color Units |
| Specific Conductivity        | 700 umhos/cm   |
| Total Dissolved Solids (TDS) | 500 mg/L       |

(b) Compliance with the MCLs, except for nitrate and nitrite, in this subsection is determined by a running annual average at each sampling point. The system will not be considered in violation of the MCL until it has completed one year of quarterly sampling and at least one sampling point is in violation of the MCL. If one sampling point is in violation of the MCL, the system is in violation of the MCL.

(i) If any sample will cause the running annual average to exceed the MCL at any sampling point, the system is out of compliance with the MCL immediately.

(ii) If a system fails to collect the required number of samples, compliance will be based on the total number of samples collected.

(iii) If a sample result is less than the detection limit, zero will be used to calculate the running annual average.

(c) Compliance with the MCLs for nitrate and nitrite is determined based on one sample if the levels of these contaminants are below the MCLs as determined under Table ((4)) 5 of this section. If the levels of nitrate or nitrite exceed the MCLs in the initial sample, a confirmation sample is required under 40 C.F.R. 141.23 (f)(2), and compliance shall be determined based on the average of the initial and confirmation samples.

(4) Disinfection byproducts.

(a) The department shall consider standards under this subsection as primary standards. The MCLs in this subsection apply to monitoring required by WAC 246-290-300(6) and 40 C.F.R. 141.620 - 629.

(b) The MCLs for disinfection byproducts are as follows:

| Disinfection Byproduct         | MCL (mg/L) |
|--------------------------------|------------|
| Total Trihalomethanes (TTHMs)  | 0.080      |
| Haloacetic acids (five) (HAA5) | 0.060      |
| Bromate                        | 0.010      |
| Chlorite                       | 1.0        |

(c) Whether a system has exceeded the disinfection byproduct MCLs shall be determined in accordance with 40 C.F.R. 141.133. Beginning on the dates specified for compliance in 40 C.F.R. 141.620(c), compliance with the TTHMs and HAA5 MCLs shall be based on the LRAAs as required by 40 C.F.R. 141.64 (b)(2) and 40 C.F.R. 141.620(d). Compliance with the Bromate and Chlorite MCL will continue to be determined in accordance with 40 C.F.R. 141.133.

(5) Disinfectant residuals.

(a) The department shall consider standards under this subsection as primary standards. The MRDLs in this subsection apply to monitoring required by WAC 246-290-300(6).

(b) The MRDL for disinfectants is as follows:

| Disinfectant Residual | MRDL (mg/L)                |
|-----------------------|----------------------------|
| Chlorine              | 4.0 (as Cl <sub>2</sub> )  |
| Chloramines           | 4.0 (as Cl <sub>2</sub> )  |
| Chlorine Dioxide      | 0.8 (as ClO <sub>2</sub> ) |

(c) Whether a system has exceeded MRDLs shall be determined in accordance with 40 C.F.R. 141.133.

(6) Radionuclides.

(a) The department shall consider standards under this subsection as primary standards.

(b) The MCLs for radium-226 and radium-228, gross alpha particle activity, beta particle and photon radioactivity, and uranium shall be as listed in 40 C.F.R. 141.66.

(7) Organic chemicals.

(a) The department shall consider standards under this subsection as primary standards.

(b) VOCs.

(i) The MCLs for VOCs shall be as listed in 40 C.F.R. 141.61(a).

(ii) The department shall determine compliance with this subsection based on compliance with 40 C.F.R. 141.24(f).

(c) SOCs.

(i) MCLs for SOCs shall be as listed in 40 C.F.R. 141.61(c).

(ii) The department shall determine compliance with this subsection based on compliance with 40 C.F.R. 141.24(h).

(8) Other chemicals.

(a) The state board of health shall determine maximum contaminant levels for any additional substances.

(b) Purveyors may be directed by the department to comply with state advisory levels (SALs) for contaminants that do not have a MCL established in chapter 246-290 WAC. SALs shall be:

(i) MCLs that have been promulgated by the EPA, but which have not yet been adopted by the state board of health; or

(ii) State board of health adopted levels for substances recommended by the department and not having an EPA established MCL. A listing of these may be found in the department document titled *Procedures and References for the Determination of State Advisory Levels for Drinking Water Contaminants* dated June 1996, that has been approved by the state board of health and is available.

AMENDATORY SECTION (Amending WSR 10-20-068, filed 9/29/10, effective 11/1/10)

**WAC 246-290-415 Operations and maintenance.** (1) The purveyor shall ensure that the system is operated in accordance with the operations and maintenance program as established in the approved water system plan required under WAC 246-290-100 or the small water system management program under WAC 246-290-105.

(2) The operations and maintenance program shall include the following elements as applicable:

(a) Water system management and personnel;

(b) Operator certification;

(c) Comprehensive monitoring plan for all contaminants under WAC 246-290-300;

(d) Emergency response program;

(e) Cross-connection control program; and

(f) Maintenance of service reliability in accordance with WAC 246-290-420.

(3) The purveyor shall ensure that the system is operated in accordance with good operations procedures such as those available in texts, handbooks, and manuals available from the following sources:

(a) American Water Works Association (AWWA)((, ~~6666 West Quiney Avenue, Denver, Colorado 80235~~));

(b) American Society of Civil Engineers (ASCE)((, ~~345 East 47th Street, New York, New York 10017-2398~~));

(c) Ontario Ministry of the Environment((, ~~135 St. Clair Avenue West, Toronto, Ontario M4V1B5, Canada~~));

(d) The Chlorine Institute((, ~~2001 "L" Street NW, Washington, D.C. 20036~~));

(e) California State University((, ~~600 "J" Street, Sacramento, California 95819~~));

(f) Health Research Inc.((, ~~Health Education Services Division, P.O. Box 7126, Albany, New York 12224~~)); and

(g) Any other standards acceptable to the department.

(4) The purveyor shall not establish or maintain a bypass to divert water around any feature of a treatment process, except by written approval from the department.

(5) The purveyor shall take preventive or corrective action as directed by the department when results of an inspection conducted by the department indicate conditions which are currently or may become a detriment to system operation.

(6) The purveyor of a system using surface water or GWI shall meet operational requirements specified in Part 6 of this chapter.

(7) The purveyor shall have a certified operator if required under chapter 70.119 RCW and chapter 246-292 WAC.



(8) The purveyor shall at all times employ reasonable security measures to assure the raw water intake facilities, water treatment processes, water storage facilities, and the distribution system are protected from possible damage or compromise by unauthorized persons, animals, vegetation, or similar intruding agents. Such measures include elements such as locks on hatches, fencing of facilities, screening of reservoir vents or openings, and other recommendations as may be found in the current edition of the *Recommended Standards for Water Works, A Committee Report of the Great Lakes - Upper Mississippi River Board of State Public Health and Environmental Managers*.

(9) All purveyors utilizing groundwater wells shall monitor well levels from ground level to the static water level on a seasonal basis, including low demand and high demand periods, to document the continuing availability of the source to meet projected, long-term demands. Purveyors shall maintain this data and provide it to the department upon request.

(10) All operation and maintenance practices shall conform to Part 5 of this chapter.

AMENDATORY SECTION (Amending WSR 10-20-068, filed 9/29/10, effective 11/1/10)

**WAC 246-290-451 Disinfection of drinking water.** (1) No portion of a public water system containing potable water shall be put into service, nor shall service be resumed until the facility has been effectively disinfected.

(a) In cases of new construction, drinking water shall not be furnished to the consumer until satisfactory bacteriological samples have been analyzed by a laboratory certified by the state; ~~((and))~~

(b) In cases of existing water mains, when the integrity of the main is lost resulting in a significant loss of pressure that places the main at risk to cross-connection contamination, the purveyor shall use standard industry practices ~~((such as flushing, disinfection, and/or bacteriological sampling))~~ to ensure adequate and safe water quality prior to the return of the line to service~~((+))~~, including one or more of the following:

(i) Flushing;

(ii) Disinfection;

(iii) Bacteriological sampling.

(c) If a cross-connection is confirmed, the purveyor shall satisfy the reporting requirements as described under WAC 246-290-490(8).

(2) The procedure used for disinfection shall conform to standards published by the American Water Works Association, or other industry standards acceptable to the department.

(3) The purveyor of a system using surface water or GWI shall meet disinfection requirements specified in Part 6 of this chapter.

(4) If the department determines that any of the following conditions apply, the purveyor ((of a system using groundwater)) shall provide continuous disinfection of the source and meet the requirements under subsection (6) of this section ((if required by the department to disinfect for any of the following reasons)):

(a) ~~((Determination that the))~~ A groundwater source is in hydraulic connection to surface water under WAC 246-290-640(4);

(b) A history of unsatisfactory groundwater source total coliform sampling results; ~~((or))~~

(c) A ~~((microbiological))~~ microbial contaminant threat within ~~((the))~~ a groundwater source sanitary control area as defined in WAC 246-290-135;

(d) A microbial contaminant threat due to inadequate well construction, aquifer characteristics, or land-use practices; or

(e) Desalination of a seawater water source by reverse osmosis.

(5) If the department determines that any of the following conditions apply, the purveyor ~~((of a groundwater system that is required to disinfect as a result of becoming a SSNC due to repeated total coliform MCL or major repeat violations))~~ shall provide continuous disinfection and meet the requirements under subsection (7) of this section:

(a) Repeated coliform MCL violations;

(b) Repeated coliform major monitoring violations; or

(c) Repeated facility failures that threaten to degrade water quality in the distribution system.

(6) If disinfection is required under subsection (4) of this section, the following requirements must be met:

(a) Provide a minimum contact time at or before the first customer of:

(i) Thirty minutes if 0.2 mg/L free chlorine residual is maintained;

(ii) Ten minutes if 0.6 mg/L free chlorine residual is maintained; or

(iii) Any combination of free chlorine residual concentration (C), measured in mg/L and contact time (T), measured in minutes, that result in a CT product ( $C \times T$ ) of greater than or equal to six ~~((+ and))~~.

~~((b))~~ ~~((Maintain a detectable residual disinfectant concentration in all active parts of the distribution system, measured as total chlorine, free chlorine, combined chlorine, or chlorine dioxide.~~

~~((c))~~ The department may require the purveyor to provide longer contact times, higher chlorine residuals, or additional treatment to protect the health of consumers served by the water system.

~~((d))~~ (c) To demonstrate the required level of treatment is maintained, the purveyor shall:

(i) Monitor the residual disinfectant concentration at the point of entry to the distribution system, or at a department-approved location, at least once ~~((every Monday through Friday (except holidays))~~ per day, five days per week that water is supplied;

(ii) ~~((Calculate the daily CT value at or before the first customer))~~ Identify the number of days each month that the treatment process failed to meet the disinfection treatment requirements in this subsection; and

(iii) Submit monthly ~~((groundwater))~~ water treatment reports to the department using a department-approved form by the tenth day of the following month.

(d) In addition to the monitoring requirements in this subsection, the purveyor shall measure free chlorine residual at the same time and location of routine and repeat coliform sample collection.

(e) All analyses required in this subsection shall be conducted in accordance with an EPA ~~((standard))~~ approved method ~~((s))~~.

(f) The ~~((purveyor))~~ department may ~~((be required))~~ require the purveyor to monitor the residual disinfectant concentration each cal-

endar day water is supplied to the distribution system if the department considers treatment operation ~~((is))~~ unreliable.

(g) The department may require the use of continuous residual analyzers and recorders to assure adequate monitoring of residual concentrations.

~~(7) ((If disinfection is required under subsection (5) of this section, or))~~ A purveyor that adds a chemical disinfectant ((is added to a groundwater source for any other reason, the following requirements must be met:)) to the distribution system on a continuous basis shall meet the requirements of this subsection, unless the purveyor adds a chemical disinfectant for purposes other than continuous disinfection of the distribution system and has identified the treatment purposes, procedures and monitoring requirements in a treatment design approved under WAC 246-290-110 and 246-290-120.

(a) Monitor residual disinfectant concentration at:

~~(i) Representative points throughout the distribution system ((once each day, excluding weekends and holidays, and at))~~ at least five days per week, unless upon written request, the department approves less frequent monitoring; and

~~(ii) The same time and location of routine and repeat coliform sample collection. ((Frequency of disinfection residual monitoring may be reduced upon written request to the department if it can be shown that disinfection residuals can be maintained on a reliable basis without the provision of daily monitoring.))~~

(b) Maintain a detectable residual disinfectant concentration in all active parts of the distribution system ~~((, measured as total chlorine, free chlorine, combined chlorine, or chlorine dioxide. Water in the distribution system with an HPC level less than or equal to 500 organisms/mL is considered to have a detectable residual disinfectant concentration))~~.

~~(c) ((The department may require the purveyor to provide higher chlorine residuals, or additional treatment to protect the health of consumers served by the water system.))~~ Submit monthly water treatment reports to the department using a department-approved form by the tenth day of the following month.

(d) All analyses required in this subsection shall be conducted in accordance with an EPA ((standard)) approved method((s)).

(e) The department may require the use of continuous residual analyzers and recorders to assure adequate monitoring of residual concentrations.

(f) The department may require the purveyor to provide higher disinfectant residuals, or additional treatment to protect the health of consumers served by the water system.

(8) Violations.

(a) Failure to provide treatment that meets the applicable requirements of subsection (6) or (7) of this section in two or more calendar days per month is a treatment technique violation;

(b) Failure to perform monitoring that meets the applicable requirements of subsection (6) or (7) of this section is a monitoring violation; or

(c) Failure to submit a monthly water treatment plant report to the department using a department-approved form by the tenth day of the following month in accordance with the requirements of subsection (6) or (7) of this section is a reporting violation.

(9) Purveyors that add a chemical disinfectant to a source or the distribution system for any reason shall, in addition to any other applicable monitoring requirements of this section, measure residual

disinfectant concentrations in samples collected at the same time and location that routine or repeat coliform samples are collected, unless the department determines that more frequent monitoring is necessary to protect public health.

AMENDATORY SECTION (Amending WSR 10-20-068, filed 9/29/10, effective 11/1/10)

**WAC 246-290-453** (~~((Treatment techniques for groundwater systems.))~~) Corrective action under the GWR. (1) Groundwater systems with significant deficiencies identified under WAC 246-290-416, or source fecal contamination as determined under WAC 246-290-320 (2)(g)(v)(C) or 246-290-300 (3)(e), or as directed by the department under WAC 246-290-320 (2)(g)(v)(B) must:

(a) Take one or more of the following corrective actions:

(i) Correct all significant deficiencies;

(ii) Provide an alternate source of water;

(iii) Eliminate the source of contamination; or

(iv) Provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a department-approved combination of 4-log virus inactivation and removal) before or at the first customer for the groundwater source.

(b) Consult with the department regarding appropriate corrective action within thirty days unless otherwise directed by the department to implement a specific corrective action.

(c) Complete corrective action as directed by the department or be in compliance with an approved corrective action plan within one hundred twenty days (or earlier if directed by the department) of receiving written notice from the department of a significant deficiency or source fecal contamination under this subsection. Any modifications of a corrective action plan must be approved by the department.

(2) When treatment is installed to provide at least 4-log treatment of viruses under subsection (1)(a)(iv) of this section, compliance monitoring must be conducted and reported as follows:

(a) For chemical disinfection, conduct compliance monitoring under 40 C.F.R. 141.403 (b)(3)(i).

(i) For groundwater systems serving greater than three thousand three hundred people, conduct compliance monitoring under 40 C.F.R. 141.403 (b)(3)(i)(A).

(ii) For groundwater systems serving three thousand three hundred or fewer people, conduct compliance monitoring under 40 C.F.R. 141.403 (b)(3)(i)(B).

(b) For membrane filtration, conduct compliance monitoring under 40 C.F.R. 141.403 (b)(3)(ii).

(c) For alternative treatment, conduct compliance monitoring under 40 C.F.R. 141.403 (b)(3)(iii).

(d) For new sources, conduct compliance monitoring under 40 C.F.R. 141.403 (b)(2)(i) and (ii).

(e) Submit monthly groundwater treatment plant reports to the department using a department-approved form by the tenth day of the following month in accordance with 40 C.F.R. 141.31.

(3) A groundwater system may discontinue 4-log treatment of viruses installed under subsection (1)(a)(iv) of this section or WAC 246-290-451(4) if the department determines and documents in writing

that 4-log treatment of viruses is no longer necessary for that groundwater source. A system that discontinues 4-log treatment of viruses is subject to the triggered source water monitoring requirements under WAC 246-290-320 (2)(g).

(4) Failure to meet the compliance monitoring requirements under subsection (2) of this section is a monitoring violation and requires Tier 3 public notification under Part 7, Subpart A of this chapter.

(5) Failure to submit a monthly water treatment plant report to the department using a department-approved form by the tenth day of the following month is a reporting violation.

(6) Failure to provide 4-log treatment of viruses under subsection (1)(a)(iv) of this section is a treatment technique violation if the failure is not corrected within four hours of the time the purveyor determines that at least 4-log treatment of viruses is not maintained and requires Tier 2 public notification under Part 7, Subpart A of this chapter.

~~((+6+))~~ (7) Failure to complete corrective action as directed by the department or be in compliance with an approved corrective action plan within one hundred twenty days (or earlier if directed by the department) of receiving notice from the department of a significant deficiency or an *E. coli* positive groundwater sample that is not invalidated under WAC 246-290-320 (2)(g)(vii) is a treatment technique violation and requires Tier 2 public notification under Part 7, Subpart A of this chapter.

AMENDATORY SECTION (Amending WSR 10-20-068, filed 9/29/10, effective 11/1/10)

**WAC 246-290-630 General requirements.** (1) The purveyor shall ensure that treatment is provided for surface and GWI sources consistent with the treatment technique requirements specified in Part 6 of chapter 246-290 WAC.

(2) The purveyor shall install and properly operate water treatment processes to ensure at least:

(a) 99.9 percent (3-log) removal and/or inactivation of *Giardia lamblia* cysts;

(b) 99.99 percent (4-log) removal and/or inactivation of viruses; and

(c) 99 percent (2-log) removal of *Cryptosporidium* oocysts if required to filter.

(3) The purveyor shall ensure that the requirements of subsection (2) of this section are met between a point where the source water is not subject to contamination by untreated surface water and a point at or before the first consumer.

(4) The department may require higher levels of removal and/or inactivation of *Giardia lamblia* cysts, *Cryptosporidium* oocysts, and viruses than specified in subsection (2) of this section if deemed necessary to protect the health of consumers served by the system.

(5) The purveyor shall ensure that personnel operating a system subject to Part 6 of chapter 246-290 WAC meet the requirements under chapter 70.119 RCW and chapter 246-292 WAC.

(6) The purveyor of a **Group A community** system serving water from a surface or GWI source to the public before January 1, 1991, shall

comply with applicable minimum treatment requirements. The purveyor shall meet either:

(a) The filtration and disinfection requirements under WAC 246-290-660 and 246-290-662 respectively;

(b) The criteria to remain unfiltered under WAC 246-290-690 and the disinfection requirements under WAC 246-290-692; or

(c) The criteria to provide a limited alternative to filtration under WAC 246-290-691 and the disinfection requirements under WAC 246-290-692.

(7) The purveyor of a **Group A noncommunity** system serving water from a surface or GWI source, shall meet either:

(a) The filtration and disinfection requirements under WAC 246-290-660 and 246-290-662, respectively; or

(b) The criteria to provide a limited alternative to filtration under WAC 246-290-691 and the disinfection requirements under WAC 246-290-692.

(8) The purveyor of a **Group A** system first serving water from a surface or GWI source to the public after December 31, 1990, shall meet either:

(a) The filtration and disinfection requirements under WAC 246-290-660 and 246-290-662, respectively; or

(b) The criteria to provide a limited alternative to filtration under WAC 246-290-691 and the disinfection requirements under WAC 246-290-692.

(9) The purveyor of a system required to install filtration may choose to provide a limited alternative to filtration or abandon the surface or GWI source as a permanent or seasonal source and develop an alternate, department-approved source. Purveyors that develop alternate groundwater sources or purchase water from a department-approved public water system using a groundwater source shall no longer be subject to Part 6 of chapter 246-290 WAC, once the alternate source is approved by the department and is on line.

(10) A purveyor that chooses to provide a limited alternative to filtration shall submit an application to the department that contains the information necessary to determine whether the source can meet the criteria.

(11) If a limited alternative to filtration is provided, then the purveyor shall install and properly operate treatment processes to ensure greater removal and/or inactivation efficiencies of *Giardia lamblia* cysts, viruses, or other pathogenic organisms of public health concern (including *Cryptosporidium* oocysts) than would be achieved by the combination of filtration and chlorine disinfection.

(12) Systems that were required to develop a disinfection profile under 40 C.F.R. 141.172 shall provide that profile and a calculated disinfection benchmark, as described in 40 C.F.R. 141.172 (c)(2) and (3), along with other project information specified in WAC 246-290-110, when proposing any change to the disinfection treatment system. The proposal for change shall include an analysis of how the proposed change will affect the current level of disinfection. The profile must also be available for inspection during routine sanitary surveys conducted under WAC 246-290-416.

(13) Community and nontransient noncommunity systems serving less than ten thousand persons must meet the disinfection profiling and benchmarking provisions required under 40 C.F.R. 141.530 through 141.544.

(14) Systems required to develop a disinfection profile under 40 C.F.R. 141.530 shall provide that profile and a calculated disinfection

tion benchmark, as described in 40 C.F.R. 141.543 along with other project information specified in WAC 246-290-110, when proposing any change to the disinfection treatment system. The proposal for change shall include an analysis of how the proposed change will affect the current level of disinfection. The profile must also be available for inspection during routine sanitary surveys conducted under WAC 246-290-416.

(15) A system using conventional, direct, or in-line filtration that must arrange for the conduct of a CPE, under 40 C.F.R. 141.175 (b)(4) or 40 C.F.R. 141.563, may be required to arrange for CTA. The department will determine the need for CTA on a case-by-case basis.

(16) Water systems subject to the requirements of Part 6 of this chapter must also comply with the enhanced treatment requirements for *Cryptosporidium* under 40 C.F.R. Subpart W. The requirements are in addition to the requirements of Part 6 of this chapter and include:

- (a) General requirements under 40 C.F.R. 141.700;
- (b) Source monitoring requirements under 40 C.F.R. 141.701-707;
- (c) Disinfection profiling and benchmarking requirements under 40 C.F.R. 141.708-709;
- (d) Treatment technique requirements under 40 C.F.R. 141.710-714;
- (e) Requirements for microbial toolbox components under 40 C.F.R. 141.715-720; and
- (f) Reporting and recordkeeping requirements under 40 C.F.R. 141.721-722.

(17) Water systems using UV reactors to obtain treatment credit for *Cryptosporidium* (~~(removal)~~) inactivation must:

- (a) Validate the reactors using the validation testing procedures specified under 40 C.F.R. 141.720 (d)(2); or
- (b) Validate the reactor under Austrian ONORM Standards or German DVGW Standards.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

**WAC 246-290-638 Analytical requirements.** (1) The purveyor shall ensure that only qualified persons conduct measurements for pH, temperature, turbidity, and residual disinfectant concentrations. In this section, qualified (~~shall~~) means:

- (a) A person certified under chapter 246-292 WAC;
- (b) An analyst, with experience conducting these measurements, from the state public health laboratory or another laboratory certified by the department; (~~or~~)
- (c) A state or local health (~~agency~~) jurisdiction professional experienced in conducting these measurements; or
- (d) For the purpose of monitoring distribution system residual disinfectant concentration only, designated water system personnel under the direct supervision of a waterworks operator certified under chapter 246-292 WAC.

(2) The purveyor shall ensure that measurements for temperature, turbidity, pH, and residual disinfectant concentration are made in accordance with "standard methods," or other EPA approved methods.

(3) The purveyor shall ensure that samples for coliform and HPC analysis are:

(a) Collected and transported in accordance with department-approved methods; and

(b) Submitted to the state public health laboratory or another laboratory certified by the department to conduct the analyses.

(4) Turbidity monitoring.

(a) The purveyor shall equip the system's water treatment facility laboratory with a:

(i) Bench model turbidimeter; and

(ii) Continuous turbidimeter and recorder if required under WAC 246-290-664 or 246-290-694.

(b) The purveyor shall ensure that bench model and continuous turbidimeters are:

(i) Designed to meet the criteria in "standard methods," EPA Method 180.1, Hach FilterTrak Method 10133, or Great Lakes Instruments Method 2; and

(ii) Properly operated, calibrated, and maintained at all times in accordance with the manufacturer's recommendations.

(c) The purveyor shall validate continuous turbidity measurements for accuracy as follows:

(i) Calibrate turbidity equipment based upon a primary standard in the expected range of measurements; and

(ii) Verify continuous turbidimeter performance on a weekly basis, not on consecutive days, with grab sample measurements made using a properly calibrated bench model turbidimeter.

(d) When continuous turbidity monitoring equipment fails, the purveyor shall measure turbidity on grab samples collected at least every four hours from the combined filter effluent and individual filters while the system serves water to the public and the equipment is being repaired or replaced. The purveyor shall have continuous monitoring equipment online within five working days of failure.

(5) Purveyors shall verify instruments used for continuous monitoring of free and total chlorine residual at least every five days with a grab sample measurement or with a protocol approved by the department as required under 40 C.F.R. 141.74(a)(2).

(6) Purveyors monitoring for *Cryptosporidium* or *E. coli* as required under 40 C.F.R. 141.701 shall collect samples and have them analyzed under 40 C.F.R. 141.704 and 141.705.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

**WAC 246-290-654 Treatment criteria for filtered systems.** (1) The purveyor shall operate filters so that maximum flow rates do not exceed those specified in Table 10. The purveyor may operate filters at higher flow rates, if the purveyor demonstrates to the department's satisfaction that filtration at the higher rate consistently achieves at least 99 percent (2-log) removal of *Giardia lamblia* cysts and 99 percent (2-log) removal of *Cryptosporidium* oocysts and meets the turbidity performance requirements of Table 11.

**Table 10**  
**FILTRATION OPERATION CRITERIA**



| FILTRATION TECHNOLOGY/<br>MEDIA                     | MAXIMUM<br>FILTRATION RATE<br>(gpm/ft <sup>2</sup> ) |
|---|--|
| Conventional, Direct and In-Line                    |  |
| Gravity Filters with Single Media                   | 3  |
| Gravity Filters with Deep Bed, Dual or Mixed Media  | 6  |
| Pressure Filters with Single Media                  | 2  |
| Pressure Filters with Deep Bed, Dual or Mixed Media | 3  |
| Slow Sand   | 0.1  |
| Diatomaceous Earth                                  | 1.0  |

(2) The purveyor using conventional, direct or in-line filtration shall ensure that effective coagulation is in use at all times the water treatment facility produces water served to the public.

(3) The purveyor using conventional, direct, or in-line filtration shall demonstrate treatment effectiveness for *Giardia lamblia* cyst and *Cryptosporidium* oocyst removal by one of the following methods:

(a) Turbidity reduction method.

(i) The purveyor shall make source and filtered water turbidity measurements in accordance with WAC 246-290-664 (2) and (3) respectively.

(ii) The purveyor shall achieve:

(A) The turbidity performance requirements specified in WAC 246-290-660(1) and at least an eighty percent reduction in source turbidity based on an average of the daily turbidity reductions measured in a calendar month; or

(B) An average daily filtered water turbidity less than or equal to 0.1 NTU.

(b) Particle counting method. The purveyor shall:

(i) Use a particle counting protocol acceptable to the department; and

(ii) Demonstrate at a frequency acceptable to the department at least the following log reduction of particles in the size range of five to fifteen microns (*Giardia lamblia* cyst-sized particles) and three to five microns (*Cryptosporidium* oocyst-sized particles), as applicable:

(A) 2.5-log reduction in *Giardia lamblia* cyst-sized particles and a 2-log reduction in *Cryptosporidium* particles for systems using conventional filtration; or

(B) 2.0 log reduction for systems using direct or in-line filtration.

(c) Microscopic particulate analysis method. The purveyor shall:

(i) Use a protocol acceptable to the department; and

(ii) Demonstrate at a frequency acceptable to the department at least the following log reduction of *Giardia lamblia* cysts and *Cryptosporidium* oocysts or *Giardia lamblia* cyst and *Cryptosporidium* oocyst surrogate indicators as applicable:

(A) 2.5-log reduction in *Giardia lamblia* cysts or surrogates and a 2-log reduction in *Cryptosporidium* oocyst or surrogates for systems using conventional filtration; and

(B) 2.0 log reduction for systems using direct or in-line filtration.

(d) Other methods acceptable to the department.

(4) The purveyor shall ensure continuous disinfection of all water delivered to the public and shall:

(a) Maintain an adequate supply of disinfection chemicals and keep back-up system components and spare parts on hand;

(b) Develop, maintain, and post at the water treatment facility a plan detailing:

(i) How water delivered to the public will be continuously and adequately disinfected; and

(ii) The elements of an emergency notification plan to be implemented whenever the residual disinfectant concentration at entry to distribution falls below 0.2 mg/L for more than one hour.

(c) Implement the plan during an emergency affecting disinfection.

(5) Operations program.

(a) For each water treatment facility treating a surface or GWI source, the purveyor shall develop an operations program and make it available to the department for review upon request.

(b) The program shall be submitted to the department as an addendum to the purveyor's water system plan (WAC 246-290-100) or small water system management program (WAC 246-290-105).

(c) The program shall detail how the purveyor will produce optimal filtered water quality at all times the water treatment facility produces water to be served to the public.

(d) The purveyor shall operate the water treatment facility in accordance with the operations program.

(e) The operations program shall include, but not be limited to, a description of:

(i) For conventional, direct or in-line filtration, procedures used to determine and maintain optimized coagulation as demonstrated by meeting the requirements of WAC 246-290-654(3);

(ii) Procedures used to determine chemical dose rates;

(iii) How and when each unit process is operated;

(iv) Unit process equipment maintenance program;

(v) Treatment plant performance monitoring program;

(vi) Laboratory procedures;

(vii) Records;

(viii) Reliability features; and

(ix) Response plans for water treatment facility emergencies, including disinfection failure and watershed emergencies.

(f) The purveyor shall ensure the operations program is:

(i) Readily available at the water treatment facility for use by operators and for department inspection;

(ii) Consistent with department guidelines for operations procedures such as those described in department guidance on surface water treatment and water system planning; and

(iii) Updated as needed to reflect current water treatment facility operations.

(6) Pressure filters. Purveyors using pressure filters shall:

(a) Inspect and evaluate the filters, at least every six months, for conditions that would reduce their effectiveness in removing *Giardia lamblia* cysts;

(b) Maintain, and make available for department review, a written record of pressure filter inspections; and

(c) Be prepared to conduct filter inspections in the presence of a department representative, if requested.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

**WAC 246-290-660 Filtration.** (1) Turbidity performance requirements.

(a) The purveyor shall ensure that the turbidity level of representative filtered water samples:

(i) Complies with the performance standards in Table 11;

(ii) Never exceeds 5.0 NTU for any system using slow sand, diatomaceous earth;

(iii) Never exceeds 1.0 NTU for any system using conventional, direct, or in-line filtration; and

(iv) Never exceeds the maximum allowable turbidity determined by the department on a case-by-case basis for any system using an alternative filtration technology approved under WAC 246-290-676 (2)(b).

**Table 11**  
**TURBIDITY PERFORMANCE STANDARDS**

| Filtration Technology            | Filtered water turbidity (in NTUs) shall be less than or equal to this value in at least 95% of the measurements made each calendar month |
|----------------------------------|---|
| Conventional, Direct and In-line | 0.30  |
| Slow Sand                        | 1.0   |
| Diatomaceous Earth               | 1.0   |
| Alternative Technology           | As determined by the department through case-by-case approval of technology, under WAC 246-290-676 (2)(b).                                |

(b) The department may allow the turbidity of filtered water from a system using slow sand filtration to exceed 1.0 NTU, but never 5.0 NTU, if the system demonstrates to the department's satisfaction that the higher turbidity level will not endanger the health of consumers served by the system. As a condition of being allowed to produce filtered water with a turbidity exceeding 1.0 NTU, the purveyor may be required to monitor one or more parameters in addition to the parameters specified under WAC 246-290-664. The department shall notify the purveyor of the type and frequency of monitoring to be conducted.

(2) *Giardia lamblia*, *Cryptosporidium*, and virus removal credit.

(a) The department shall notify the purveyor of the removal credit granted for the system's filtration process. The department shall specify removal credit for:

(i) Existing filtration facilities based on periodic evaluations of performance and operation; and

(ii) New or modified filtration facilities based on results of pilot plant studies or full scale operation.

(b) Conventional, direct, and in-line filtration.

(i) The removal credit the department may grant to a system using conventional, direct, or in-line filtration and demonstrating effective treatment is as follows:

Percent Removal Credit (log)

| Filtration Technology | <i>Giardia</i> |     | Virus   |     | <i>Cryptosporidium</i> |     |
|-----------------------|----------------|-----|---------|-----|------------------------|-----|
|                       | Percent        | log | Percent | log | Percent                | log |
| Conventional          | 99.7           | 2.5 | 99      | 2.0 | 99                     | 2.0 |
| Direct and in-line    | 99             | 2.0 | 90      | 1.0 | 99                     | 2.0 |

(ii) A system using conventional, direct, or in-line filtration shall be considered to provide effective treatment, if the purveyor demonstrates to the satisfaction of the department that the system meets the:

(A) Turbidity performance requirements under subsection (1) of this section; and

(B) Operations requirements of WAC 246-290-654.

(iii) The department shall not grant removal credit to a system using conventional, direct, or in-line filtration that:

(A) Fails to meet the minimum turbidity performance requirements under subsection (1) of this section; or

(B) Fails to meet the operating requirements under WAC 246-290-654.

(c) Slow sand filtration.

The department may grant a system using slow sand filtration 99 percent (2\_log) *Giardia lamblia* cyst and *Cryptosporidium* oocyst removal credit and 99 percent (2\_log) virus removal credit, if the system meets the department design requirements under WAC 246-290-676 and meets the minimum turbidity performance requirements in subsection (1) of this section.

(d) Diatomaceous earth filtration.

The department may grant a system using diatomaceous earth filtration 99 percent (2\_log) *Giardia lamblia* cyst and *Cryptosporidium* oocyst removal credit and 90 percent (1 log) virus removal credit, if the system meets the department design requirements under WAC 246-290-676 and meets the minimum turbidity performance requirements in subsection (1) of this section.

(e) Alternative filtration technology.

The department shall grant, on a case-by-case basis, *Giardia lamblia* cyst, *Cryptosporidium* oocyst, and virus removal credit for systems using alternative filtration technology based on results of product testing acceptable to the department.

(f) The purveyor granted no *Giardia lamblia* cyst removal credit and no *Cryptosporidium* oocyst removal credit shall:

(i) Provide treatment under WAC 246-290-662 (2)(d); and

(ii) Within ninety days of department notification regarding removal credit, submit an action plan to the department for review and approval. The plan shall:

(A) Detail how the purveyor plans to comply with the turbidity performance requirements in subsection (1) of this section and operating requirements of WAC 246-290-654; and

(B) Identify the proposed schedule for implementation.

(iii) Be considered in violation of the treatment technique specified in WAC 246-290-632 (2)(a)(i) and shall take follow-up action specified in WAC 246-290-634.

(g) Higher level removal credit.

(i) The department may grant a higher level of *Giardia lamblia*, *Cryptosporidium*, and virus removal credit than listed under (b) through (e) of this subsection, if the purveyor demonstrates to the department's satisfaction that the higher level can be consistently achieved.

(ii) As a condition of maintaining the maximum removal credit, purveyors may be required to periodically monitor one or more parameters not routinely monitored under WAC 246-290-664. The department shall notify the purveyor of the type and frequency of monitoring to be conducted.

(3) Disinfection by-product precursor removal requirements.

(a) Conventional systems using sedimentation shall meet the treatment technique requirements for control of disinfection by-product precursors specified in 40 C.F.R. 141.135.

(i) Applicability of this requirement shall be determined in accordance with 40 C.F.R. 141.135(a).

(ii) Enhanced coagulation and enhanced softening shall be provided in accordance with 40 C.F.R. 141.135(b), if applicable.

(iii) Compliance with the treatment technique requirements for control of disinfection by-product precursors shall be determined in accordance with 40 C.F.R. 141.135(c).

(b) For the purposes of compliance with (a) of this subsection, sedimentation shall be considered applicable when:

(i) Surface overflow rates and other design parameters are in conformance with traditionally accepted industry standards and textbook values, such as those prescribed in nationally accepted standards, including the most recent version of the *Recommended Standards for Water Works, A Committee Report of the Great Lakes - Upper Mississippi River Board of State Public Health and Environmental Managers*; and

(ii) The system has received pathogen removal credit for the sedimentation basin.

(4) Filter backwash recycling requirements.

(a) By no later than December 8, 2003, purveyors using conventional, direct, or in-line filtration must **report** to the department, in writing, whether they recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes within the treatment plant. ((+i)) Purveyors that **do** recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes must also report the following information:

((+A)) (i) A plant schematic showing the origin of all flows that are recycled (including, but not limited to, spent filter backwash water, thickener supernatant, and liquids from dewatering processes), the hydraulic conveyance (i.e., pipe, open channel) used to transport them, and the location where they are reintroduced back into the treatment plant.

((+B)) (ii) Typical recycle flow in gallons per minute (gpm), the highest observed plant flow experienced in the previous year (gpm), design flow for the treatment plant (gpm), and the approved operating capacity for the plant.

(b) By no later than June 8, 2004, purveyors using conventional, direct, or in-line filtration that recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes within the treatment plant shall:

(i) Return the recycled flow prior to, or concurrent with the location where primary coagulant is introduced into the flow stream.

(ii) By no later than June 8, 2006, complete any capital improvements (physical modifications requiring engineering planning, design, and construction) necessary to meet the requirements of (b)(i) of this subsection.

(iii) On a case-by-case basis, the department may approve an alternate location for the return of recycle flows.

**WAC 246-290-662 Disinfection for filtered systems.** (1) General requirements.

(a) The purveyor shall provide continuous disinfection to ensure that filtration and disinfection together achieve, at all times the system serves water to the public, at least the following:

(i) 99.9 percent (3\_log) inactivation and removal of *Giardia lamblia* cysts; and

(ii) 99.99 percent (4\_log) inactivation and/or removal of viruses.

(b) Where sources receive sewage discharges and/or agricultural runoff, purveyors may be required to provide greater levels of removal and inactivation of *Giardia lamblia* cysts and viruses to protect the health of consumers served by the system.

(c) Regardless of the removal credit granted for filtration, purveyors shall, at a minimum, provide continuous disinfection to achieve at least 68 percent (0.5\_log) inactivation of *Giardia lamblia* cysts and 99 percent (2\_log) inactivation of viruses.

(2) Establishing the level of inactivation.

(a) The department shall establish the level of disinfection (log inactivation) to be provided by the purveyor.

(b) The required level of inactivation shall be based on source quality and expected levels of *Giardia lamblia* cyst and virus removal achieved by the system's filtration process.

(c) Based on periodic reviews, the department may adjust, as necessary, the level of disinfection the purveyor shall provide to protect the health of consumers served by the system.

(d) Systems granted no *Giardia lamblia* cyst removal credit and no *Cryptosporidium* oocyst removal credit shall:

(i) Unless directed otherwise by the department, provide interim disinfection to:

(A) Ensure compliance with the monthly coliform MCL under WAC 246-290-310;

(B) Achieve at least 99.9 percent (3\_log) inactivation of *Giardia lamblia* cysts; and

(C) Maintain a detectable residual disinfectant concentration, or an HPC level less than 500 organisms/ml, within the distribution system in accordance with subsection (6) of this section.

(ii) Comply with the interim disinfection requirements until the system can demonstrate to the department's satisfaction that it complies with the operating requirements and turbidity performance requirements under WAC 246-290-654 and 246-290-660(1), respectively.

(3) Determining the level of inactivation.

(a) Unless the department has approved a reduced CT monitoring schedule for the system, each day the system serves water to the public, the purveyor, using procedures and CT values acceptable to the department such as those presented in department guidance of surface water treatment, shall determine:

(i) CTcalc values using the system's treatment parameters and calculate the total inactivation ratio achieved by disinfection; and

(ii) Whether the system's disinfection process is achieving the minimum levels of inactivation of *Giardia lamblia* cysts and viruses required by the department.

(b) The department may allow a purveyor to determine the level of inactivation using lower CT values than those specified in (a) of this subsection, provided the purveyor demonstrates to the department's satisfaction that the required levels of inactivation of *Giardia lamblia* cysts and viruses can be achieved.

(4) Determining compliance with the required level of inactivation.

(a) A purveyor shall be considered in compliance with the inactivation requirement when a total inactivation ratio equal to or greater than 1.0 is achieved.

(b) Failure to provide the required level of inactivation on more than one day in any calendar month shall be considered a treatment technique violation.

(5) Residual disinfectant concentration entering the distribution system.

(a) The purveyor shall ensure that all water entering the distribution system contains a residual disinfectant concentration, measured as free or combined chlorine, of at least 0.2 mg/L at all times the system serves water to the public; and

(b) Failure to provide a 0.2 mg/L residual at entry to distribution for more than four hours on any day shall be considered a treatment technique violation.

(6) Residual disinfectant concentration within the distribution system.

(a) The purveyor shall ensure that the residual disinfectant concentration in the distribution system, measured as total chlorine, free chlorine, combined chlorine, or chlorine dioxide, is detectable in at least ninety-five percent of the samples taken each calendar month.

(b) Water in the distribution system with an HPC less than or equal to 500 organisms/ml is considered to have a detectable residual disinfectant concentration for the purposes of compliance with WAC 246-290-662 (6)(a).

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

**WAC 246-290-676 Filtration technology and design criteria.** (1) General.

(a) The purveyor proposing to construct new water treatment facilities or to make additions to existing water treatment facilities for surface and GWI sources shall ensure that the facilities comply with the treatment, design, and reliability requirements of Part 6 of chapter 246-290 WAC.

(b) The purveyor shall submit an engineering report to the department describing how the treatment facilities will be designed to comply with the requirements specified in Subparts A, B, and C of Part 6 of chapter 246-290 WAC.

(2) Filtration technology.

(a) The purveyor shall select a filtration technology acceptable to the department using criteria such as those outlined in department guidance on surface water treatment. The following filtration technologies are considered acceptable:

(i) Conventional;

- (ii) Direct;
- (iii) Diatomaceous earth; and
- (iv) Slow sand.

(b) In addition to the technologies specified in subsection (2)(a) of this section, alternative filtration technologies may be acceptable, if the purveyor demonstrates to the department's satisfaction all of the following:

(i) Through acceptable third party testing, that system components do not leach or otherwise add substances to the finished water that would violate drinking water standards, or otherwise pose a threat to public health;

(ii) The technology's effectiveness in achieving at least 99 percent (2<sub>log</sub>) removal of *Giardia lamblia* cysts or cyst surrogate particles, and at least 99 percent (2<sub>log</sub>) removal of *Cryptosporidium* oocysts or oocyst surrogate particles. The purveyor shall further demonstrate the technology's removal capability through research conducted:

(A) By a party acceptable to the department; and

(B) In accordance with protocol and standards acceptable to the department.

(iii) Through on-site pilot plant studies or other means, that the filtration technology:

(A) In combination with disinfection treatment consistently achieves 99.9 percent (3<sub>log</sub>) removal and inactivation of *Giardia lamblia* cysts and 99.99 percent (4<sub>log</sub>) removal and inactivation of viruses; and

(B) Meets the applicable turbidity performance requirements as determined by the department for the specific treatment process being considered, but in no case to exceed 1.0 NTU for the finished water.

(3) Pilot studies.

(a) The purveyor shall ensure pilot studies are conducted for all proposed filtration facilities, except where waived based on engineering justification acceptable to the department.

(b) The purveyor shall obtain department approval for the pilot study plan before the pilot filter is constructed and before the pilot study is undertaken.

(c) The pilot study plan shall identify at a minimum:

(i) Pilot filter design;

(ii) Water quality and operational parameters to be monitored;

(iii) Type of data to be collected, frequency of data collection, and length of pilot study; and

(iv) Pilot plant operator qualifications.

(d) The purveyor shall ensure that the pilot study is:

(i) Conducted to simulate proposed full-scale design conditions;

(ii) Conducted over a time period that will demonstrate the effectiveness and reliability of the proposed treatment system during changes in seasonal and climatic conditions; and

(iii) Designed and operated in accordance with good engineering practices and that ANSI/NSF standards 60 and 61 are considered.

(e) When the pilot study is complete, the purveyor shall submit a project report to the department for approval under WAC 246-290-110.

(4) Design criteria.

(a) The purveyor shall ensure that water treatment facilities for surface and GWI sources are designed and constructed in accordance with good engineering practices documented in references such as those identified in WAC 246-290-200.

(b) Filtration facilities.



(i) The purveyor shall ensure that all new filtration facilities and improvements to any existing filtration facilities (excluding disinfection) are designed to achieve at least 99 percent (2-log) removal of *Giardia lamblia* cysts, and 99 percent (2-log) removal of *Cryptosporidium* oocysts; and

(ii) The purveyor shall ensure that all new filtration facilities contain provisions for filtering to waste with appropriate measures for backflow prevention.

(c) The purveyor shall ensure that disinfection systems for new filtration facilities or improvements to existing disinfection facilities are designed to meet the requirements of WAC 246-290-662.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

**WAC 246-290-692 Disinfection for unfiltered systems.** (1) General requirements.

(a) The purveyor without a limited alternative to filtration shall:

(i) Provide continuous disinfection treatment to ensure at least 99.9 percent (3-log) inactivation of *Giardia lamblia* cysts and 99.99 percent (4-log) inactivation of viruses at all times the system serves water to the public.

(ii) Failure to provide the required inactivation level on more than one day in any calendar month shall be considered a treatment technique violation.

(b) The purveyor with a limited alternative to filtration shall meet the treatment requirements in WAC 246-290-630(11) at all times the system serves water to the public.

(c) The purveyor may be required to provide greater levels of inactivation of *Giardia lamblia* cysts, other pathogenic microorganisms of public health concern, and viruses to protect the health of consumers.

(2) Determining the level of inactivation.

(a) Each day the system without a limited alternative to filtration serves water to the public, the purveyor, using procedures and CT<sub>99.9</sub> values specified in 40 C.F.R. 141.74, Vol. 54, No. 124, (published June 29, 1989), shall determine:

(i) CT values using the system's treatment parameters and calculate the total inactivation ratio achieved by disinfection; and

(ii) Whether the system's disinfection treatment process is achieving the minimum levels of inactivation of *Giardia lamblia* cysts and viruses required by the department. For purposes of determining compliance with the inactivation requirements specified in subsection (1) of this section, no credit shall be granted for disinfection applied to a source water with a turbidity greater than 5.0 NTU.

(b) Each day the system with a limited alternative to filtration serves water to the public, the purveyor, using appropriate guidance, shall determine:

(i) CT values using the system's treatment parameters and calculate the total inactivation ratio achieved by disinfection; and

(ii) Whether the system's treatment process is achieving the minimum levels of inactivation of *Giardia lamblia* cysts, viruses, or oth-

er pathogenic organisms of health concern including *Cryptosporidium* oocysts that would be greater than what would be expected from the combination of filtration plus chlorine disinfection.

(c) The purveyor shall be considered in compliance with the daily inactivation requirement when a total inactivation ratio equal to or greater than 1.0 is achieved.

(d) The purveyor of a system using a disinfectant or combination of disinfectants may use CT values lower than those specified in (a) of this subsection, if the purveyor demonstrates to the department's satisfaction that the required levels of inactivation of *Giardia lamblia* cysts, viruses, and, if providing a limited alternative to filtration, any other pathogenic organisms of public health concern including *Cryptosporidium* oocysts, can be achieved using the lower CT values.

(e) The purveyor of a system using preformed chloramines or adding ammonia to the water before chlorine shall demonstrate to the department's satisfaction that the system achieves at least 99.99 percent (4-log) inactivation of viruses.

(3) The purveyor using either unfiltered or "limited alternative to filtration" treated sources shall ensure that disinfection facilities provide either:

(a) Redundant components, including an auxiliary power supply with automatic start up and alarm, to ensure continuous disinfection. Redundancy shall ensure that both the minimum inactivation requirements and the requirement for a 0.2 mg/L residual disinfectant concentration at entry to the distribution system are met at all times water is delivered to the distribution system; or

(b) Automatic shutoff of delivery of water to the distribution system when the residual disinfectant concentration in the water is less than 0.2 mg/L. Automatic shutoff shall be allowed only in systems where the purveyor demonstrates to the department's satisfaction that automatic shutoff will not endanger health or interfere with fire protection.

(4) Disinfectant residual entering the distribution system.

(a) The purveyor shall ensure that water entering the distribution system contains a residual disinfectant concentration, measured as free or combined chlorine, of at least 0.2 mg/L at all times the system serves water to the public; and

(b) Failure to provide a 0.2 mg/L residual at entry to distribution for more than four hours on any day shall be considered a treatment technique violation.

(5) Disinfectant residuals within the distribution system.

(a) The purveyor shall ensure that the residual disinfectant concentration in the distribution system, measured as total chlorine, free chlorine, combined chlorine, or chlorine dioxide, is detectable in at least ninety-five percent of the samples taken each calendar month.

(b) The purveyor of a system that purchases completely treated surface or GWI water as determined by the department shall comply with the requirements specified in (a) of this subsection.

(c) Water in the distribution system with an HPC level less than or equal to 500 organisms/ml is considered to have a detectable residual disinfectant concentration.

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

**WAC 246-290-71001 Public notification.** (1) The purveyor shall notify the water system users and the owner or operator of any consecutive water system served in accordance with 40 C.F.R. 141.201 through 208. Notice is to be provided when the system violates a National Primary Drinking Water Regulation and when any of the situations listed in Table 1 of 40 C.F.R. 141.201 occur, except for (a)(3)(ii). Public notifications for violations and other situations are categorized into the following Tiers:

- (a) Tier 1 as described in Table 1 of 40 C.F.R. 141.202(a);
- (b) Tier 2 as described in Table 1 of 40 C.F.R. 141.203(a); or
- (c) Tier 3 as described in Table 1 of 40 C.F.R. 141.204(a).

(2) The purveyor shall initiate consultation with the department as soon as possible, but no later than twenty-four hours after they learn their system has a Tier 1 violation or situation in order to determine if additional public notice is required. The purveyor shall comply with any additional public notification requirements established as a result of the consultation.

(3) The purveyor shall notify the water system users when the system:

- (a) Is issued a department order;
- (b) Fails to comply with a department order; or
- (c) Is issued a category red operating permit.

AMENDATORY SECTION (Amending WSR 09-21-045, filed 10/13/09, effective 1/4/10)

**WAC 246-290-72001 Purpose and applicability of the consumer confidence report requirements.** WAC 246-290-72001 through 246-290-72012 establishes minimum requirements for the content of annual reports that community water systems must deliver to their customers. WAC 246-290-72013 establishes additional requirements for the content of annual reports that community water systems using groundwater must deliver to their customers. These reports must contain information on the quality of the water delivered by the systems and characterize the risks (if any) from exposure to contaminants detected in the drinking water in an accurate and understandable manner.

(1) This section applies only to community water systems.

(2) For the purpose of WAC 246-290-72001 through ~~((246-290-72012))~~ 246-290-72013:

(a) "Customers" means billing units or service connections to which water is delivered by a community water system.

(b) "Detected" means at or above the levels prescribed by WAC 246-290-300(4) for inorganic contaminants, at or above the levels prescribed by WAC 246-290-300(7) for organic contaminants, at or above the levels prescribed by 40 C.F.R. 141.131 (b)(2)(iv) for disinfection byproducts, and at or above the levels prescribed by 40 C.F.R. 141.25(c) for radioactive contaminants.

**WAC 246-290-72005 Report contents—Information on detected contaminants.** (1) This section specifies the requirements for information to be included in each report for contaminants subject to mandatory monitoring. It applies to:

(a) Contaminants subject to an MCL, action level, maximum residual disinfectant level or treatment technique (regulated contaminants);

(b) Detected unregulated contaminants for which monitoring is required under WAC 246-290-300(10) and 40 C.F.R. 140.40; and

(c) Disinfection byproducts for which monitoring is required by WAC 246-290-300(6) and 40 C.F.R. 141.142 or microbial contaminants for which monitoring is required by WAC 246-290-300(3) and 40 C.F.R. 141.143, except as provided under WAC 246-290-72006(1), and which are detected in the finished water.

(2) The data relating to these contaminants must be displayed in one table or in several adjacent tables. Any additional monitoring results which a community water system chooses to include in its report must be displayed separately.

(3) The data must be derived from data collected to comply with EPA and state monitoring and analytical requirements during the previous calendar year except that:

(a) Where a system is allowed to monitor for regulated contaminants less than once a year, the table(s) must include the date and results of the most recent sampling and the report must include a brief statement indicating that the data presented in the report are from the most recent testing done in accordance with the regulations. No data older than five years need be included.

(b) Results of monitoring in compliance with 40 C.F.R. 141.142 and 40 C.F.R. 141.143 need only be included for five years from the date of last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements, whichever comes first.

(4) For detected regulated contaminants listed in WAC 246-290-72012, the table(s) must contain:

(a) The MCL for that contaminant expressed as a number equal to or greater than 1.0 (as provided in WAC 246-290-72012);

(b) The MCLG for that contaminant expressed in the same units as the MCL;

(c) If there is no MCL for a detected contaminant, the table must indicate that there is a treatment technique, or specify the action level, applicable to that contaminant, and the report must include the definitions for treatment technique and/or action level, as appropriate, specified in WAC 246-290-72004;

(d) For contaminants subject to an MCL, except turbidity and total coliforms, the highest contaminant level used to determine compliance with a National Primary Drinking Water Regulation and the range of ~~((detected levels))~~ results, as follows:

(i) When compliance with the MCL is determined annually or less frequently: The highest detected level at any sampling point and the range of ~~((detected levels))~~ results expressed in the same units as the MCL.

(ii) When compliance with the MCL is determined by calculating a running annual average 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. For the TTHM and HAA5 MCLs determined on the basis of the LRAA, systems must include the highest LRAA for 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 LRAA for all locations that exceed the MCL.

(iii) When compliance with the MCL is determined on a system-wide basis by calculating a running annual average of all samples at all sampling points: The average and range of detection expressed in the same units as the MCL. The system is required to include individual sample results for the IDSE conducted under WAC 246-290-300 (6)(b)(i)(F) when determining the range of TTHM and HAA5 results to be reported in the annual consumer confidence report for the calendar year that the IDSE samples were taken.

(iv) Note to WAC 246-290-72005 (4)(d): When rounding of results to determine compliance with the MCL is allowed by the regulations, rounding should be done prior to multiplying the results by the factor listed in WAC 246-290-72012;

(e) For turbidity.

(i) When it is reported under chapter 246-290 WAC Part 6, Subpart C: The highest average monthly value.

(ii) When it is reported under the requirements of chapter 246-290 WAC Part 6, Subpart D: The highest monthly value. The report should include an explanation of the reasons for measuring turbidity.

(iii) When it is reported under chapter 246-290 WAC Part 6, Subpart B: The highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in chapter 246-290 WAC Part 6, Subpart B for the filtration technology being used. The report should include an explanation of the reasons for measuring turbidity;

(f) For lead and copper: The 90th percentile value of the most recent round of sampling and the number of sampling sites exceeding the action level;

(g) For total coliform:

(i) The highest monthly number of positive samples for systems collecting fewer than 40 samples per month; or

(ii) The highest monthly percentage of positive samples for systems collecting at least 40 samples per month;

(h) For fecal coliform: The total number of positive samples; and

(i) The likely source(s) of detected contaminants to the best of the purveyor's knowledge. Specific information regarding contaminants may be available in sanitary surveys and source water assessments, and should be used when available to the purveyor. If the purveyor lacks specific information on the likely source, the report must include one or more of the typical sources for that contaminant listed in WAC 246-290-72012 which are most applicable to the system.

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

(6) The table(s) must clearly identify any data indicating violations of MCLs, MRDLs, or treatment techniques and the report must contain a clear and readily understandable explanation of the violation

including: The length of the violation, the potential adverse health effects, and actions taken by the system to address the violation. To describe the potential health effects, the system must use the relevant language of WAC 246-290-72012.

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

AMENDATORY SECTION (Amending WSR 08-03-061, filed 1/14/08, effective 2/14/08)

**WAC 246-290-72007 Report contents—Compliance with National Primary Drinking Water Regulations.** In addition to the requirements of WAC 246-290-72005(6), the report must note any violation 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.

(1) Monitoring and reporting of compliance data;

(2) Filtration and disinfection prescribed by chapter 246-290 WAC, Part 6. For systems which have failed to install adequate filtration or disinfection equipment or processes, or have had a failure of the equipment or processes which constitutes a violation, the report must include the following language 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.

(3) Lead and copper control requirements prescribed by WAC 246-290-025, specifically 40 C.F.R. 141.80 through 141.91: For systems which fail to take one or more actions prescribed by WAC 246-290-025, specifically 40 C.F.R. 141.80 through 141.84, the report must include the applicable language of WAC 246-290-72012 for lead, copper, or both.

(4) Treatment techniques for Acrylamide and Epichlorohydrin prescribed by WAC 246-290-480 (2)(k). For systems which violate the requirements of WAC 246-290-480 (2)(k), the report must include the relevant language from WAC 246-290-72012.

(5) Recordkeeping of compliance data.

(6) Special monitoring requirements prescribed under WAC 246-290-310(3); and

(7) Violation of the terms of a variance, an exemption, or an administrative or judicial order.

AMENDATORY SECTION (Amending WSR 10-20-068, filed 9/29/10, effective 11/1/10)

**WAC 246-290-72012 Regulated contaminants.**

| Contaminant (units)                 | traditional<br>MCL in mg/L   | to convert<br>for CCR,<br>multiply by | MCL in<br>CCR units  | MCLG | Major Sources<br>in<br>Drinking Water | Health Effects Language   |
|-------------------------------------|--|---------------------------------------|--|------|---------------------------------------|---|
| <b>Microbiological Contaminants</b> |  |                                       |  |      |                                       |   |
| Total Coliform Bacteria             | MCL: (systems that collect $\geq 40$ samples/ month) more than 5% of monthly samples are positive; (systems that collect $< 40$ samples/ month) 2 or more positive samples per monthly sampling period | -                                     | MCL: (systems that collect $\geq 40$ samples/ month) more than 5% of monthly samples are positive; (systems that collect $< 40$ samples/ month) 2 or more positive samples per monthly sampling period | 0    | 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, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.   |
| Fecal coliform and <i>E. coli</i>   | 0  | -                                     | 0  | 0    | Human and animal fecal waste          | Fecal coliforms and <i>E. coli</i> are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term 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.                                    |
| Fecal indicators ( <i>E. coli</i> ) | 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.   |
| 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 by-products. These by-products include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these by-products 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. |

| Contaminant (units)                                      | traditional<br>MCL in mg/L | to convert<br>for CCR,<br>multiply by | MCL in<br>CCR units | MCLG     | Major Sources<br>in<br>Drinking Water  | Health Effects Language  |
|--|----------------------------|---------------------------------------|---------------------|----------|--|--|
| 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, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches. |
| <i>Giardia lamblia</i> Viruses<br><i>Cryptosporidium</i> | TT                         | -                                     | TT                  | N/A      | Human and animal fecal waste   | 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.   |
| Heterotrophic plate count (HPC) bacteria                 | TT                         | -                                     | TT                  | N/A      | HPC measures a range of bacteria that are naturally present in the environment | 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.   |
| Legionella   | TT                         | -                                     | TT                  | N/A      | Found naturally in water; multiplies in heating systems                        | 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.   |
| <b>Radioactive Contaminants</b>                          |                            |                                       |                     |          |  |  |
| Beta/photon emitters (mrem/yr)                           | 4 mrem/yr                  | -                                     | 4                   | N/A<br>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.   |
| Alpha emitters (pCi/l)                                   | 15 pCi/l                   | -                                     | 15                  | N/A<br>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.   |
| Combined radium (pCi/l)                                  | 5 pCi/l                    | -                                     | 5                   | N/A<br>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 (pCi/l)  | 30 micro g/l               | -                                     | 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.  |
| <b>Inorganic Contaminants</b>                            |                            |                                       |                     |          |  |  |



| Contaminant (units)                   | traditional<br>MCL in mg/L    | to convert<br>for CCR,<br>multiply by | MCL in<br>CCR units    | MCLG                | Major Sources<br>in<br>Drinking Water   | Health Effects Language   |
|---------------------------------------|-------------------------------|---------------------------------------|------------------------|---------------------|---|---|
| Antimony (ppb)                        | .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)<br>(*Effective 1/23/06) | ((.05)) <u>0.010</u><br>0.010 | 1000<br>1000                          | ((50)) <u>10</u><br>10 | ((N/A))<br>0<br>0)) | 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.   |
| 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)                       | .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.  |
| Cadmium (ppb)                         | .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.   |
| Chromium (ppb)                        | .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. |

| Contaminant (units)       | traditional<br>MCL in mg/L | to convert<br>for CCR,<br>multiply by | MCL in<br>CCR units | MCLG | Major Sources<br>in<br>Drinking Water   | Health Effects Language  |
|---------------------------|----------------------------|---------------------------------------|---------------------|------|---|--|
| Cyanide (ppb)             | .2                         | 1000                                  | 200                 | 200  | Discharge from steel/metal factories;<br>Discharge from 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                          | -                                     | 4                   | 4    | Erosion of natural deposits;<br>Water additive which promotes strong teeth;<br>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 or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums. |
| Lead (ppb)                | AL = .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) | .002                       | 1000                                  | 2                   | 2    | Erosion of natural deposits;<br>Discharge from refineries and factories; Runoff from landfills;<br>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 (ppm)             | 10                         | -                                     | 10                  | 10   | Runoff from fertilizer use;<br>Leaching from septic tanks, sewage; Erosion of natural deposits                                  | 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 (ppm)             | 1                          | -                                     | 1                   | 1    | Runoff from fertilizer use;<br>Leaching from septic tanks, 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)            | .05                        | 1000                                  | 50                  | 50   | Discharge from petroleum and metal refineries;<br>Erosion of natural deposits;<br>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.  |

| Contaminant (units)   | traditional<br>MCL in mg/L | to convert<br>for CCR,<br>multiply by | MCL in<br>CCR units | MCLG | Major Sources<br>in<br>Drinking Water   | Health Effects Language  |
|---|----------------------------|---------------------------------------|---------------------|------|---|--|
| Thallium (ppb)  | .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, changes in their blood, or problems with their kidneys, intestines, or liver.                               |
| <b>Synthetic Organic Contaminants including Pesticides and Herbicides</b> |                            |                                       |                     |      |   |  |
| 2,4-D (ppb)   | .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)  | .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)  | .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)  | .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] (nanograms/l)  | .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)  | .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)   | .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.                        |

| Contaminant (units)              | traditional<br>MCL in mg/L | to convert<br>for CCR,<br>multiply by | MCL in<br>CCR units | MCLG | Major Sources<br>in<br>Drinking Water   | Health Effects Language   |
|----------------------------------|----------------------------|---------------------------------------|---------------------|------|---|---|
| Dalapon (ppb)                    | .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)   | .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 or reproductive difficulties.   |
| Di(2-ethylhexyl) phthalate (ppb) | .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 (ppt)       | .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)                    | .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)                     | .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)      | .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)                  | .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)                     | .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.   |

| Contaminant (units)             | traditional<br>MCL in mg/L | to convert<br>for CCR,<br>multiply by | MCL in<br>CCR units | MCLG | Major Sources<br>in<br>Drinking Water   | Health Effects Language   |
|---------------------------------|----------------------------|---------------------------------------|---------------------|------|---|---|
| Ethylene dibromide (ppt)        | .00005                     | 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)                | .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.   |
| Heptachlor (ppt)                | .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)        | .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)         | .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. |
| Hexachlorocyclopentadiene (ppb) | .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)                   | .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)              | .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)           | .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.  |

| Contaminant (units)                    | traditional<br>MCL in mg/L | to convert<br>for CCR,<br>multiply by | MCL in<br>CCR units | MCLG          | Major Sources<br>in<br>Drinking Water                                      | Health Effects Language   |
|--|----------------------------|---------------------------------------|---------------------|---------------|--|---|
| PCBs [Polychlorinated biphenyls] (ppt) | .0005                      | 1,000,000                             | 500                 | 0             | Runoff from landfills;<br>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)                | .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)                         | .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)                         | .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)                        | .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.  |
| <b>Volatile Organic Contaminants</b>   |                            |                                       |                     |               |  |   |
| Benzene (ppb)                          | .005                       | 1000                                  | 5                   | 0             | Discharge from factories;<br>Leaching from gas 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.   |
| Bromate (ppb)                          | .010                       | 1000                                  | 10                  | 0             | By-product 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.   |
| Carbon tetrachloride (ppb)             | .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.   |
| Chloramines (ppm)                      | MRDL = 4                   | -                                     | MRDL = 4            | MRDL<br>G = 4 | Water additive used to control microbes                                    | Some people who use drinking 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.     |

| Contaminant (units)               | traditional<br>MCL in mg/L | to convert<br>for CCR,<br>multiply by | MCL in<br>CCR units | MCLG            | Major Sources<br>in<br>Drinking Water                                   | Health Effects Language   |
|-----------------------------------|----------------------------|---------------------------------------|---------------------|-----------------|---|---|
| Chlorine (ppm)                    | MRDL = 4                   | -                                     | MRDL = 4            | MRDL<br>G = 4   | Water additive<br>used to control<br>microbes                           | Some people who use<br>drinking water containing<br>chlorine well in excess of<br>the MRDL could<br>experience irritating effects<br>to their eyes and nose.<br>Some people who drink<br>water containing chlorine<br>well in excess of the<br>MRDL could experience<br>stomach discomfort.   |
| Chlorite (ppm)                    | 1                          | -                                     | 1                   | 0.8             | By-product of<br>drinking water<br>disinfection                         | Some infants and young<br>children who drink water<br>containing chlorite in<br>excess of the MCL could<br>experience nervous system<br>effects. Similar effects may<br>occur in fetuses of<br>pregnant mothers who<br>drink water containing<br>chlorite in excess of the<br>MCL. Some people may<br>experience anemia.                      |
| Chlorine dioxide (ppb)            | MRDL = .8                  | 1000                                  | MRDL<br>= 800       | MRDL<br>G = 800 | Water additive<br>used to control<br>microbes                           | Some infants and young<br>children who drink water<br>containing chlorine dioxide<br>in excess of the MRDL<br>could experience nervous<br>system effects. Similar<br>effects may occur in<br>fetuses of pregnant<br>mothers who drink water<br>containing chlorine dioxide<br>in excess of the MRDL.<br>Some people may<br>experience anemia. |
| Chlorobenzene (ppb)               | .1                         | 1000                                  | 100                 | 100             | Discharge from<br>chemical and<br>agricultural<br>chemical<br>factories | Some people who drink<br>water containing<br>chlorobenzene in excess of<br>the MCL over many years<br>could experience problems<br>with their liver or kidneys.   |
| o-Dichlorobenzene (ppb)           | .6                         | 1000                                  | 600                 | 600             | Discharge from<br>industrial<br>chemical<br>factories                   | Some people who drink<br>water containing o-<br>dichlorobenzene well in<br>excess of the MCL over<br>many years could<br>experience problems with<br>their liver, kidneys, or<br>circulatory systems.   |
| p-Dichlorobenzene (ppb)           | .075                       | 1000                                  | 75                  | 75              | Discharge from<br>industrial<br>chemical<br>factories                   | Some people who drink<br>water containing p-<br>dichlorobenzene in excess<br>of the MCL over many<br>years could experience<br>anemia, damage to their<br>liver, kidneys, or spleen, or<br>changes in their blood.  |
| 1,2-Dichloroethane (ppb)          | .005                       | 1000                                  | 5                   | 0               | Discharge from<br>industrial<br>chemical<br>factories                   | Some people who drink<br>water containing 1,2-<br>dichloroethane in excess of<br>the MCL over many years<br>may have an increased risk<br>of getting cancer.  |
| 1,1-Dichloroethylene<br>(ppb)     | .007                       | 1000                                  | 7                   | 7               | Discharge from<br>industrial<br>chemical<br>factories                   | Some people who drink<br>water containing 1,1-<br>dichloroethylene in excess<br>of the MCL over many<br>years could experience<br>problems with their liver.  |
| cis-1,2-Dichloroethylene<br>(ppb) | .07                        | 1000                                  | 70                  | 70              | Discharge from<br>industrial<br>chemical<br>factories                   | Some people who drink<br>water containing cis-1,2-<br>dichloroethylene in excess<br>of the MCL over many<br>years could experience<br>problems with their liver.  |

| Contaminant (units)              | traditional<br>MCL in mg/L | to convert<br>for CCR,<br>multiply by | MCL in<br>CCR units | MCLG | Major Sources<br>in<br>Drinking Water                                | Health Effects Language   |
|----------------------------------|----------------------------|---------------------------------------|---------------------|------|--|---|
| trans-1,2-Dichloroethylene (ppb) | .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)            | .005                       | 1000                                  | 5                   | 0    | Discharge from pharmaceutical and 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)        | .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.   |
| Ethylbenzene (ppb)               | .7                         | 1000                                  | 700                 | 700  | Discharge from petroleum refineries                                  | Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.                                    |
| Haloacetic Acids (HAA) (ppb)     | .060                       | 1000                                  | 60                  | n/a  | By-product 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.  |
| Styrene (ppb)                    | .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)        | .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)     | .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)      | .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)      | .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 systems.                |



| Contaminant (units)  | traditional<br>MCL in mg/L | to convert<br>for CCR,<br>multiply by | MCL in<br>CCR units | MCLG | Major Sources<br>in<br>Drinking Water  | Health Effects Language   |
|--|----------------------------|---------------------------------------|---------------------|------|--|---|
| Trichloroethylene (ppb)  | .005                       | 1000                                  | 5                   | 0    | Discharge from<br>metal degreasing<br>sites and other<br>factories                   | Some people who drink<br>water containing<br>trichloroethylene in excess<br>of the MCL over many<br>years could experience<br>problems with their liver<br>and may have an increased<br>risk of getting cancer.   |
| TTHMs [Total<br>trihalomethanes] (ppb)   | .080                       | 1000                                  | 80                  | N/A  | By-product of<br>drinking water<br>disinfection                                      | Some people who drink<br>water containing<br>trihalomethanes in excess<br>of the MCL over many<br>years may experience<br>problems with their liver,<br>kidneys, or central nervous<br>systems, and may have an<br>increased risk of getting<br>cancer. |
| Toluene (ppm)  | 1                          | -                                     | 1                   | 1    | Discharge from<br>petroleum<br>factories   | Some people who drink<br>water containing toluene<br>well in excess of the MCL<br>over many years could<br>have problems with their<br>nervous system, kidneys,<br>or liver.  |
| Vinyl Chloride (ppb)   | .002                       | 1000                                  | 2                   | 0    | Leaching from<br>PVC piping;<br>Discharge from<br>plastics factories                 | Some people who drink<br>water containing vinyl<br>chloride in excess of the<br>MCL over many years may<br>have an increased risk of<br>getting cancer.   |
| Xylenes (ppm)  | 10                         | -                                     | 10                  | 10   | Discharge from<br>petroleum<br>factories;<br>Discharge from<br>chemical<br>factories | Some people who drink<br>water containing xylenes in<br>excess of the MCL over<br>many years could<br>experience damage to their<br>nervous system.   |
| <b>Treatment Technique Violations</b>  |                            |                                       |                     |      |  |   |
| Groundwater rule TT<br>violations  | TT                         | -                                     | TT                  | N/A  | -  | Inadequately treated or<br>inadequately protected<br>water may contain disease-<br>causing organisms. These<br>organisms can cause<br>symptoms such as diarrhea,<br>nausea, cramps, and<br>associated headaches.  |
| <b>Key</b><br><b>AL</b> = Action Level<br><b>MCL</b> = Maximum Contaminant Level<br><b>MCLG</b> = Maximum Contaminant Level Goal<br><b>MFL</b> = million fibers per liter<br><b>MRDL</b> = Maximum Residual Disinfectant Level<br><b>MRDLG</b> = Maximum Residual Disinfectant Level Goal<br><b>mrem/year</b> = millirems per year (a measure of radiation absorbed by the body)<br><b>N/A</b> = Not Applicable<br><b>NTU</b> = Nephelometric Turbidity Units (a measure of water clarity)<br><b>pCi/l</b> = picocuries per liter (a measure of radioactivity)<br><b>ppm</b> = parts per million, or milligrams per liter (mg/l)<br><b>ppb</b> = parts per billion, or micrograms per liter (( <del>μ</del> g/l)) ( <u>μ g/l</u> )<br><b>ppt</b> = parts per trillion, or nanograms per liter<br><b>ppq</b> = parts per quadrillion, or picograms per liter<br><b>TT</b> = Treatment Technique |                            |                                       |                     |      |  |   |

**WAC 246-290-810 Water use efficiency program.** (1) Water system plans and small water system management programs submitted for approval for the first year after the effective date of this rule, must describe the municipal water supplier's existing water use efficiency program. The municipal water supplier must continue existing levels of water use efficiency.

(2) Subsections (3) and (4) of this section apply to:

(a) Water system plans submitted to the department for approval under WAC 246-290-100 one year after the effective date of this rule.

(b) Small water system management programs developed and implemented or submitted to the department for approval one year after the effective date of this rule.

(3) Municipal water suppliers shall develop and implement a water use efficiency program which includes sufficient cost-effective water use efficiency measures to meet the water use efficiency goals developed under WAC 246-290-830.

(4) Municipal water suppliers shall complete the following items in the water use efficiency program:

(a) Describe the current water use efficiency program;

(b) For systems serving one thousand or more total connections, estimate the amount of water saved through implementation of the water use efficiency program over the last six years;

(c) Describe the chosen water use efficiency goals and document the goals were established in accordance with WAC 246-290-830;

(d) Evaluate water use efficiency measures to determine if they are cost-effective as follows:

(i) Evaluate or implement, at a minimum, the number of water use efficiency measures specified in Table ((4)) 13 based on the system's total number of connections.

(ii) Evaluate or implement water use efficiency measures from the following categories of measures if they are applicable: Indoor residential, outdoor, and industrial/commercial/institutional.

(iii) For systems serving less than one thousand total connections, describe the evaluation process used to select water use efficiency measures.

(iv) For systems serving one thousand or more total connections, include the following criteria when evaluating water use efficiency measures:

(A) Quantitatively evaluate water use efficiency measures to determine if they are cost-effective from the system's perspective including the marginal costs of producing water.

(B) Address whether the water use efficiency measures are cost-effective if the costs are shared with other entities.

(C) Quantitatively or qualitatively evaluate water use efficiency measures to determine if they are cost-effective from the societal perspective.

Table ((4)) 13

| Number of connections         | Less than 500 | 500-999 | 1,000-2,499 | 2,500-9,999 | 10,000-49,999 | 50,000 or more |
|-------------------------------|---------------|---------|-------------|-------------|---------------|----------------|
| Water use efficiency measures | 1             | 4       | 5           | 6           | 9             | 12             |

(e) Describe all water use efficiency measures to be implemented within the next six years including a schedule and a budget that demonstrates how the water use efficiency measures will be funded;

(f) Describe how consumers will be educated on water use efficiency practices;

(g) Estimate projected water savings from selected water use efficiency measures;

(h) Describe how the water use efficiency program will be evaluated for effectiveness;

(i) Evaluate water distribution system leakage as follows:

(i) Include distribution system leakage totals in accordance with WAC 246-290-820 for the past six years.

(ii) If necessary, include a copy of the water loss control action plan in accordance with WAC 246-290-820(4).

(iii) If all or portions of transmission lines are excluded when determining distribution system leakage, estimate the amount of leakage from the excluded portion of the transmission mains and describe how it is maintained to minimize leakage.

AMENDATORY SECTION (Amending WSR 12-05-079, filed 2/16/12, effective 3/18/12)

**WAC 246-290-990 Water system evaluation and project review and approval fees.** (1) The fees for the review and approval of water system plans, project reports, construction documents, existing systems, and related evaluations required under chapters 246-290, 246-291, 246-293, 246-294, and 246-295 WAC are:

(a) Water system plans required under WAC 246-290-100, 246-290-105, 246-291-140, 246-293-220, and 246-293-230.

| Project Type                        | Group A |                  |                        |                        |                               |                               |
|-------------------------------------|---------|------------------|------------------------|------------------------|-------------------------------|-------------------------------|
|                                     | Group B | <100<br>Services | 100 to 500<br>Services | 501 to 999<br>Services | 1,000 to<br>9,999<br>Services | 10,000<br>or more<br>Services |
| Water system plan (New and Updated) | \$138   | \$491            | \$1,206                | \$2,280                | \$3,705                       | \$5,484                       |
| Minor water system plan alteration  | \$31    | \$115            | \$293                  | \$565                  | \$919                         | \$1,349                       |

(b) Satellite management agency (SMA) plans for Group A and Group B water systems required under WAC 246-295-040.

| Project Type                                  | Total Active or Approved Services  |                        |                        |                               |                               |
|---|--|------------------------|------------------------|-------------------------------|-------------------------------|
|   | <100<br>Services   | 100 to 500<br>Services | 501 to 999<br>Services | 1,000 to<br>9,999<br>Services | 10,000<br>or more<br>Services |
| SMA plan for ownership (New and Updated)      | \$491  | \$1,206                | \$2,280                | \$3,705                       | \$5,484                       |
| SMA approval amendment                        | \$102 per hour or appropriate fee from category above, whichever is less |                        |                        |                               |                               |
| SMA plan for operation only (New and Updated) | \$1,206  | \$1,206                | \$1,206                | \$1,206                       | \$1,206                       |

Note: SMAs owning water systems and submitting planning documents to the department for review shall be charged only the SMA fee.

(c) New plan elements required under WAC 246-290-100, 246-290-105, 246-290-125, 246-290-132, 246-290-135, 246-290-691, and 246-291-140 including:

(i) Water use efficiency; and

(ii) Wellhead protection, shall be reviewed separately by the department and the fee assessed shall reflect the time spent for this review and shall be calculated based on one hundred two dollars per hour. After the initial submittal, updated information shall be re-

viewed as part of the updated water system plan and the review fee shall be included in the applicable updated plan review fee listed under (a) or (b) of this subsection.

(d) Project reports required under WAC 246-290-110 and design reports required under WAC 246-291-120.

| Project Type   | Group B | Group A          |                        |                        |                               |                               |
|--|---------|------------------|------------------------|------------------------|-------------------------------|-------------------------------|
|  |         | <100<br>Services | 100 to 500<br>Services | 501 to 999<br>Services | 1,000 to<br>9,999<br>Services | 10,000<br>or more<br>Services |
| All types of filtration or other complex treatment processes   | \$348   | \$710            | \$1,103                | \$1,598                | \$2,204                       | \$2,922                       |
| Chemical addition only, ((such as ion exchange,)) hypochlorination, or fluoridation  | \$102   | \$205            | \$348                  | \$525                  | \$743                         | \$994                         |
| Complete water system (an additional fee shall be assessed for review of treatment facility, if any)   | \$205   | \$491            | \$778                  | \$1,137                | \$1,564                       | \$2,061                       |
| System modifications requiring a detailed evaluation to determine whether the system, as modified, will comply with regulations (an additional fee shall be assessed for review of treatment facility, if any) | \$138   | \$348            | \$565                  | \$851                  | \$1,206                       | \$1,626                       |

Note: In accordance with WAC 246-290-125, project reports are not required for minor projects that are described in sufficient detail in an approved water system plan, and have been reviewed as part of the process for approving the water system plan.

(e) Special reports or plans required under WAC 246-290-230, 246-290-235, 246-290-250, 246-290-470, 246-290-636, 246-290-640, 246-290-654, 246-290-676((, 246-291-230)) including:

(i) Corrosion control recommendation report;

(ii) Corrosion control study;

(iii) Plan to cover uncovered reservoirs;

(iv) Predesign study;

(v) Uncovered reservoir plan of operation;

(vi) Tracer study plan;

(vii) Surface water or GWI treatment facility operations plan;

(viii) Filtration pilot study; or

(ix) GWI determination reports, shall be reviewed by the department and the fee assessed shall reflect the time spent for this review and shall be calculated based on one hundred two dollars per hour.

(f) Construction documents required under WAC 246-290-120 and design reports required under WAC 246-291-120.

| Project Type  | Group B | Group A          |                        |                        |                               |                               |
|---|---------|------------------|------------------------|------------------------|-------------------------------|-------------------------------|
|   |         | <100<br>Services | 100 to 500<br>Services | 501 to 999<br>Services | 1,000 to<br>9,999<br>Services | 10,000<br>or more<br>Services |
| All types of filtration or other complex treatment processes  | \$348   | \$710            | \$1,103                | \$1,598                | \$2,204                       | \$2,922                       |
| Chemical addition only, ((such as ion exchange,)) hypochlorination, or fluoridation   | \$102   | \$205            | \$348                  | \$525                  | \$743                         | \$994                         |
| Complete new water system except treatment (an additional fee shall be assessed for review of treatment facility, if any)   | \$281   | \$633            | \$919                  | \$1,279                | \$1,709                       | \$2,204                       |
| New source only (an additional fee shall be assessed for review of treatment facility, if any)  | \$205   | \$382            | \$525                  | \$710                  | \$919                         | \$1,172                       |
| One or more of the following submitted as a package and not requiring a detailed evaluation as determined by the department: Water line installation, booster pump station, modifications to source pumping, piping-valving, controls or storage reservoir (an additional fee shall be assessed for review of treatment facility, if any) | \$138   | \$241            | \$382                  | \$565                  | \$778                         | \$1,027                       |

| Project Type   | Group B | Group A          |                        |                        |                               |                               |
|--|---------|------------------|------------------------|------------------------|-------------------------------|-------------------------------|
|  |         | <100<br>Services | 100 to 500<br>Services | 501 to 999<br>Services | 1,000 to<br>9,999<br>Services | 10,000<br>or more<br>Services |
| Documents submitted for projects such as water line installation, booster pump stations, modifications to source pumping, piping/valving, controls or storage reservoirs as determined by the department where such projects:<br><br>Comply with design standards established by the department;<br><br>Are prepared by a professional engineer in accordance with WAC 246-290-040; and<br><br>Do not require a detailed evaluation by the department. | \$64    | \$118            | \$198                  | \$281                  | \$389                         | \$512                         |

(g) Existing system approval required under WAC 246-290-140 ((and 246-291-130)). For the purpose of this subsection the department shall determine whether a system is expanding or nonexpanding.

| Project Type  | ((Group B)) | Group A          |                        |                        |                               |                               |
|---|-------------|------------------|------------------------|------------------------|-------------------------------|-------------------------------|
|   |             | <100<br>Services | 100 to 500<br>Services | 501 to 999<br>Services | 1,000 to<br>9,999<br>Services | 10,000<br>or more<br>Services |
| NONEXPANDING system not requiring a detailed evaluation by the department           | (((\$268))  | \$539            | \$811                  | \$1,083                | \$1,355                       | \$1,626                       |
| NONEXPANDING system requiring a detailed evaluation as determined by the department | (((\$404))  | \$811            | \$1,229                | \$1,626                | \$2,034                       | \$2,441                       |
| EXPANDING system not requiring a detailed evaluation by the department              | (((\$539))  | \$1,083          | \$1,626                | \$2,169                | \$2,714                       | \$3,256                       |
| EXPANDING system requiring a detailed evaluation as determined by the department    | (((\$676))  | \$1,355          | \$2,034                | \$2,714                | \$3,391                       | \$4,072                       |

(h) Other evaluations and approvals. As applicable, these fees will be charged in addition to the basic fees assessed under (a) through (h) of this subsection.

| Project Type  | Group B          | Group A          |                        |                        |                               |                               |
|---|------------------|------------------|------------------------|------------------------|-------------------------------|-------------------------------|
|   |                  | <100<br>Services | 100 to 500<br>Services | 501 to 999<br>Services | 1,000 to<br>9,999<br>Services | 10,000<br>or more<br>Services |
| Well-site evaluation and approval including the site inspection and hydrogeologic information review.   | \$205            | \$309            | \$363                  | \$451                  | \$565                         | \$710                         |
| Regulatory monitoring plan <sup>1</sup>   | No plan required | \$198            | \$268                  | \$337                  | \$404                         | \$471                         |
| Unfiltered system annual comprehensive report   | Not applicable   | \$404            | \$676                  | \$947                  | \$1,218                       | \$1,489                       |
| <sup>1</sup> A comprehensive document containing coliform, inorganic chemical and organic chemical monitoring plans in accordance with WAC 246-290-300. |                  |                  |                        |                        |                               |                               |
| Water system compliance report  | \$115            | \$115            | \$115                  | \$115                  | \$115                         | \$115                         |

(2) To determine the appropriate fee for a noncommunity system, calculate the service equivalent by taking the average population served each day of operation and dividing by twenty-five for a transient noncommunity (TNC) system and two and one-half for nontransient noncommunity (NTNC) system. Use the number of service equivalents to find out what Group A size category to look under and submit the appropriate fee. (All noncommunity systems are Group A systems as described in WAC 246-290-020.)

(3) Additional review and approval fees may be assessed as follows:

(a) The basic fee covers an evaluation, or the review of an initial submittal and one resubmittal if required. If additional resub-

mittals are required, an additional twenty-five percent of the original fee will be assessed for each additional resubmittal. For water system plan and SMA plan preparation the basic fee also covers a pre-planning conference;

(b) Fees for department project approval based on local technical review will be determined on a case-by-case basis as outlined in the applicable memorandum of understanding between the department and the respective local agency;

(c) Fees may be assessed for services which the department determines are not described under subsection (1) of this section. If assessed, the fees will be calculated based on a rate of one hundred two dollars per hour.

Examples of these services include, but are not limited to:

(i) Collection of water quality samples requested by purveyor;

(ii) Review of alternate technologies requested by purveyor, manufacturer or authorized representative;

(iii) Sanitary surveys, including the time spent as part of the annual on-site inspections for systems under WAC 246-290-690(3) that is in addition to the time necessary to assess watershed control and disinfection treatment;

(iv) Well field designations; or

(v) Transfers of ownership under WAC 246-290-035 or 246-294-060.

(d) Additional fees assessed by the department shall be billed to the purveyor using an itemized invoice.

~~(4) ((If the legislature revises the water system operating permit fee under RCW 70.119A.110 to incorporate into it one or more fees for service currently assessed separately under this section, and the purveyor has paid that consolidated fee, the department shall not assess or collect a separate fee under this section for any such service.~~

~~(5)) All fees required under this section except as noted in subsection (3) of this section, shall be submitted prior to the department's approval. ((Payment of fees shall be in the form of a check or money order made payable to: The Department of Health, P.O. Box 1099, Olympia, Washington 98507-1099.)) Payment of a fee shall not guarantee approval of the submitted document or evaluation request.~~

~~((6))~~ (5) Purveyors unable to determine the appropriate fee payment to submit should contact the department.