

GROUP B PUBLIC WATER SYSTEMS

CHAPTER 246-291 WAC

Effective November 1995



The Department of Health prepared this extract from the Code Reviser's official copy.

Group B Public Water Systems

Chaper 246-291 WAC

Effective November 1995



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DOH PUB #331-071

Chapter 246-291 WAC

GROUP B PUBLIC WATER SYSTEMS

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WAC 246-291-001 Purpose and Scope.

- (1) The purpose of these rules is to define basic regulatory requirements to protect the health of consumers using Group B public drinking water supplies. These rules are specifically designed to ensure the provision of high quality drinking water in a reliable manner and in a quantity suitable for intended use.
- (2) The rules set forth are adopted under chapter 43.20 RCW and owners of Group B public water systems shall be responsible for ensuring compliance with these rules. 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; and
 - (e) Chapter 70.119A RCW, Public water systems--Penalties and compliance.
- (3) Prior to expanding a Group B public water system to a Group A public water system, the entire system shall be brought into compliance with chapter 246-290 WAC.

WAC 246-291-010 Definitions. Abbreviations:

CSE - comprehensive system evaluation;
GWI - ground water under the direct influence of surface water;
m - meter;
MCL - maximum contaminant level;
mg/L - milligrams per liter;
ml - milliliter;
mm - millimeter;
NTU - nephelometric turbidity unit;
psi - pounds per square inch;
umhos/cm - micromhos per centimeter;
VOC - volatile organic chemical;
WFI - water facilities inventory form; and
WHPA - wellhead protection area.

"Authorized agent" means any person who:

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;
Makes decisions whether to improve, expand, purchase, or sell the system; or
Has discretion over the finances of the system.

"Coliform sample" means a sample of water collected from the distribution system at or after the first service and analyzed for coliform presence in compliance with this chapter.

"**Comprehensive system evaluation (CSE)**" means a review, inspection and assessment of a public water system, including, but not limited to: source; facilities; equipment; operation and administration; maintenance; records; planning documents and schedules; and monitoring, for the purpose of ensuring that safe and adequate drinking water is provided.

"**Confirmation**" means to demonstrate the results of a sample to be precise by analyzing a repeat sample. Confirmation occurs when analysis results fall within plus or minus thirty percent of the original sample.

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

"**Cross-connection**" means a physical arrangement connecting a public water system, directly or indirectly, with anything other than another potable water system, and capable of contaminating the public water system.

"**Department**" means the Washington State Department of Health or health officer as identified in a joint plan of operation in accordance with WAC 246-291-030(1).

"**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.

"**Distribution system**" means that portion of a public water supply system which stores, transmits, pumps, and distributes water to consumers.

"**Expanding public water system**" means a public water system installing additions, extensions, changes, or alterations to their existing source, transmission, storage, or distribution facilities which will enable the system to increase in size its existing service area and/or its number of approved service connections.

"**Fire flow**" means the rate of water flow needed to fight fires under WAC 246-293-640 or adopted city, town, or county standards.

"**Generator disconnect**" means an electrical circuit arranged to allow connection of a generator to the power supply for the pumping equipment while prohibiting electrical current from flowing back into the main service line.

"**Ground water under the direct influence of surface water (GWI)**" means any water beneath the surface of the ground, which the department determines has the following characteristics:

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

Significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH closely correlating to climatological or surface water conditions.

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"Group B water system" means a public water system:

- Constructed to serve less than fifteen residential services regardless of the number of people; or
- Constructed to serve an average nonresidential population of less than twenty-five per day for sixty or more days within a calendar year; or
- Any number of people for less than sixty days within a calendar year.

"Guideline" means a department document assisting the owner in meeting a rule requirement.

"Health officer" means the health officer of the city, county, city-county health department or district, or an authorized representative.

"Hydraulic analysis" means the study of the water system network evaluating water flows within the distribution system under worst case conditions such as, peak hourly design flow plus fire flow, when required. Hydraulic analysis includes consideration of all factors affecting system energy losses.

"Maximum contaminant level (MCL)" means the maximum permissible level of a contaminant in water delivered to any public water system user.

"Maximum contaminant level violation" means a confirmed measurement above the MCL and for a duration of time, where applicable.

"Owner" means any agency, subdivision of the state, municipal corporation, firm, company, mutual or cooperative association, institution, partnership, or person or any other entity that holds as property, a public water system.

"Peak hourly design flow" means the maximum rate of water use, excluding fire flow, which can be expected to ever occur within a defined service area over a sixty minute time period.

"Potable" means water suitable for drinking by the public.

"Pressure zone" means a distribution system whereby an established minimum and maximum pressure range can be maintained without the use of ancillary control equipment (e.g. booster pumps, pressure reducing valves, etc.).

"Primary standards" means standards based on chronic, nonacute, or acute human health effects.

"Public water system" means any system, excluding a system serving only one single-family residence and a system with four or fewer connections all of which serve residences on the same farm, providing piped water for human consumption, including collection, treatment, storage, or distribution facilities used primarily in connection with such system.

"Repeat sample" means a sample collected to confirm the results of a previous analysis.

"Same farm" means a parcel of land or series of parcels which 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 water system.

"**Secondary standards**" means standards based on factors other than health effects such as taste and odor.

"**Sell**" means to bill separately for drinking water or to include drinking water as part of an itemized listing in a bill delivered to customers, where the amount billed is an increase over what the purveyor pays for water. The presence of centralized source or individual service meters does not affect whether the water is being sold.

"**Service**" means a connection to a public water system designed to provide potable water.

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

"**Standard methods**" means the 18th edition of 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.

"**State board of health**" and "**board**" means the board created by RCW 43.20.030.

"**Surface water**" means a body of water open to the atmosphere and subject to surface runoff.

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

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

"**Well field**" means a group of wells one system owns or controls which:

- Draw from the same aquifer or aquifers as determined by comparable inorganic chemical analysis;
- and
- Discharge water through a common pipe and the common pipe shall allow for collection of a single sample before the first distribution system connection.

WAC 246-291-020 Applicability.

- (1) The rules of this chapter shall apply to all Group B public water systems except those systems meeting all of the following conditions:
 - (a) Consists only of distribution and/or storage facilities and does not have any source or treatment facilities;
 - (b) Obtains all water from, but is not owned by, a public water system where the rules of this chapter or chapter 246-290 WAC apply;
 - (c) Does not sell water directly to any person;

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- (d) Is not a passenger-conveying carrier in interstate commerce; and
- (e) The distribution system is regulated under the Uniform Plumbing Code, chapter 51-26 WAC.

Examples of systems which shall not be exempt include, but are not limited to, water districts, public utility districts, cooperatives, mutuals and associations which serve residential short plats and subdivisions.

- (2) Group B public water systems meeting all of the conditions under subsection (1) of this section may be required by the department to comply with such provisions of this chapter as are necessary to resolve a public health concern if the department determines a public health threat exists or is suspected.

WAC 246-291-025 Bottled Water.

- (1) Any water source used for bottling, regardless of size, shall meet the minimum requirements in accordance with chapter 246-290 WAC.
- (2) In addition to the requirements imposed by the department, the processing of bottled water is regulated by the State Department of Agriculture and the United States Food and Drug Administration.

WAC 246-291-030 General Administration.

- (1) The department and the health officer for each local health jurisdiction may develop a joint plan of operation. Responsibility for administering these rules shall remain with the department of health unless there is a joint plan of operation in place. This plan shall:
 - (a) List the roles and responsibilities and specifically designate those systems for which the department and local health officer have primary responsibility;
 - (b) Provide a list of water system requirements and procedures which the local board of health may waive for systems within its jurisdiction;
 - (c) Provide for a level of water system supervision necessary to effectively achieve listed responsibilities;
 - (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 these rules the term "department" is used, the term "health officer" may be substituted based on the terms of this joint plan of operation.

- (2) The local board of health may adopt rules pursuant to RCW 70.05.060 governing public water systems for which the health officer has assumed primary responsibility. Adopted local board of health rules shall be:

- (a) No less stringent and may be more 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 which are more stringent than the local board of health rules shall apply.
- (3) For residential systems with only two services, the Department may eliminate any or all requirements of these rules.
 - (4) For any residential system, the department may eliminate all ongoing requirements of these rules, except for recordkeeping and reporting requirements under WAC 246-291-260, provided the system has been granted an initial approval or an existing system has been categorized as fully approved/adequate or provisionally approved.
 - (5) The health officer may approve design reports and water system plans which reflect good engineering practice such as those found in the department guideline titled *Group B Water System Approval*, for those public water systems where the health officer has assumed primary responsibility.
 - (6) The health officer may allow system owners to substitute results of a calculated fixed radius method and a ten year time of travel criteria instead of using the six hundred foot radius prescribed in WAC 246-291-100(2)(f) and 246-291-110(3)(f).
 - (7) The department may develop and distribute guidelines to clarify sections of the rules as needed.
 - (8) Fees may be charged by the department of health as authorized in RCW 43.20B.020 and by local health agencies as authorized in RCW 70.05.060 to recover all or a portion of the costs incurred in administering these rules.

WAC 246-291-040 Requirements for Engineers.

- (1) Owners shall ensure that all design reports are prepared by a professional engineer:
 - (a) Licensed in the state of Washington under chapter 18.43 RCW; and
 - (b) Having specific expertise regarding design, operation and maintenance of public water systems.All documents shall bear the professional engineer's seal and signature.
- (2) Until such date as regulations addressing professional engineering requirements for public water systems take effect after adoption by the state board of registration for professional engineers and land surveyors under authority of chapter 18.43 RCW, exceptions to the professional engineer requirement are:
 - (a) Minor improvements exempted from design report requirements under WAC 246-291-120(1); and

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- (b) Public water systems serving less than ten service connections consisting of a single well and pressure tank with one pressure zone and not providing treatment other than simple chlorine disinfection or having special hydraulic considerations, where the local health officer has been delegated authority to:
 - (i) Approve plans and design reports; or
 - (ii) Review plans and design reports for completeness prior to forwarding to the department of health for approval.
- (3) A "Construction Report For Public Water System Projects" shall be submitted to the department on a department approved form within sixty days of completion and before use of any approved project. The form shall:
 - (a) Be signed by a professional engineer, or in the case of projects not requiring a professional engineer as outlined in this section, the water system owner;
 - (b) State that the project is constructed and is completed in accordance with approved design reports; and
 - (c) State that, in the opinion of the engineer or the water system owner, based on information available, the installation, testing, and disinfection of the system was carried out in accordance with applicable sections of chapter 246-291 WAC and chapter 246-290 WAC.
- (4) It shall be the responsibility of the owner to ensure the requirements of this section are fulfilled before the use of any completed project.

WAC 246-291-050 Enforcement.

- (1) When a system is out of compliance with these rules, the department may initiate appropriate enforcement actions, regardless of any prior approvals issued by the department, including, but not limited to:
 - (a) Issuance of a compliance schedule;
 - (b) Issuance of departmental orders requiring submission of water system plans, design reports, and construction report forms;
 - (c) Issuance of departmental orders requiring specific actions or ceasing unacceptable activities within a designated time period;
 - (d) Issuance of departmental orders to stop work and/or refrain from using any public water system or improvements thereto until all written approvals required by statute or rule are obtained;
 - (e) Imposition of civil penalties as authorized under chapter 70.119A RCW or local authority where applicable; and
 - (f) Legal action by the attorney general or local prosecutor.
- (2) When enforcing the MCLs under this chapter, the department shall enforce compliance with the primary MCLs as its first priority.

WAC 246-291-060 Waivers.

- (1) The state board of health or the local health officer in those counties having a joint plan of operation, may grant waivers of the requirements of this chapter, provided that procedures used are consistent with WAC 246-290-060(5)(b) and in the case where a local health officer is authorized to grant the waiver, procedures used shall be approved by the department of health as part of the joint plan of operation.
- (2) Consideration by the board or local health officer of requests for waivers shall not be considered adjudicative proceedings as that term is defined in chapter 34.05 RCW.
- (3) Statements and written material regarding the request may be presented to the board or local health officer wherein the application will be considered.
- (4) The board or local health officer may grant a waiver if it determines the water system is unable to comply with the requirements and granting of the waiver will not result in an unreasonable risk to the health of consumers. No waivers may be granted for exceedance of a primary MCL.
- (5) A waiver granted under this section shall lapse two years from the date of issuance unless the water system project has been completed or an extension is granted.

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WAC 246-291-100 Ground Water Source Approval and Protection.

- (1) The owner shall ensure that drinking water is obtained from the highest quality source feasible. Existing sources shall conform to the primary water quality standards established in this chapter. Proposed sources shall conform to the primary and secondary water quality standards established in this chapter and the well construction standards established under chapter 173-160 WAC. The owner shall be responsible for submitting evidence required by the department to determine whether a proposed ground water source is a GWI.
- (2) No new source, previously unapproved source, or modification of an existing source shall be used as a drinking water supply without department approval. A party seeking approval shall ensure compliance with WAC 246-291-140 as applicable and provide:
 - (a) A copy of the water right permit, if required, obtained from the Department of Ecology for the source, quantity, type, and place of use;
 - (b) A copy of the source site inspection approval made by the department or local health jurisdiction representative;
 - (c) Well development data establishing source capacity. Data shall include static water level, yield, amount of drawdown, recovery rate and duration of pumping. The source shall be pump tested to determine whether the well and aquifer are capable of supplying water at the rate desired and to provide information necessary to determine proper pump settings. A department guideline titled *Group B Water System Approval* is available to assist owners.
 - (d) Upgradient water uses affecting either water quality or quantity;
 - (e) A map showing the project location and vicinity including a six hundred foot radius around the well site designating the preliminary short term ground water contribution area;
 - (f) A map depicting topography, distances to well or spring from existing property lines, buildings, potential sources of contamination within the six hundred foot radius around the well, and any other natural or man-made features affecting the quality or quantity of water;
 - (g) The dimensions and location of sanitary control area;
 - (h) Copies of the recorded legal documents for the sanitary control area;
 - (i) A copy of the water well report;
 - (j) A general description of the spring and/or aquifer recharge area affecting the quantity or quality of flow. Seasonal variation shall also be included;
 - (k) Documentation of totalizing source meter installation;
 - (l) An initial analysis result of raw water quality from a certified lab, including as a minimum a bacteriological, complete inorganic chemical and physical analysis of the source water quality;
 - (m) In areas where the department determines that other contamination may be present, or at the discretion of the department, sample results for these contaminants may also be required;
 - (n) If water quality information from (l) and (m) of this subsection shows a contaminant level of concern, the department may require further action by the owner; and
 - (o) If water quality results taken from the proposed source confirm a primary MCL violation, the owner shall ensure that appropriate treatment is provided.

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- (3) The owner shall contact the department before developing or modifying a source, to identify any additional requirements the department deems necessary.
- (4) Sanitary Control Area.
 - (a) The owner shall ensure that a sanitary control area is maintained around all sources for the purpose of protecting them from existing and potential sources of contamination. A department guideline titled *Group B Water System Approval* describes activities which should be precluded within the sanitary control area and is available from the department on request.
 - (b) The minimum sanitary control area shall have a radius of one hundred feet (thirty meters) for wells, and two hundred feet (sixty meters) for springs, unless engineering justification supports a smaller area. The justification must address geological and hydrological data, well construction details and other relevant factors necessary to assure adequate sanitary control.
 - (c) The department may require a larger sanitary control area if geological and hydrological data support such a decision. It shall be the owner's responsibility to obtain the protection needed.
 - (d) No source of contamination may be constructed, stored, disposed of, or applied within the sanitary control area without the permission of the department and the system owner.
 - (e) The sanitary control area shall be owned in fee simple, or the owner shall have the right to exercise complete sanitary control of the land through other legal provisions.
 - (f) The owner shall obtain a duly recorded restrictive covenant which shall run with the land, restricting the use of said land in accordance with these rules.

WAC 246-291-110 Surface Water and GWI Source Approval and Protection.

- (1) The owner shall ensure that drinking water is obtained from the highest quality source feasible. Existing sources shall conform to the primary water quality standards established in this chapter. Proposed sources shall conform to the primary and secondary water quality standards established in this chapter. The owner shall be responsible for submitting evidence required by the department to determine whether a proposed ground water source is a GWI.
- (2) No new source, previously unapproved source, or modification of an existing source shall be used as a drinking water supply without department approval. As of the effective date of these rules, the department shall no longer approve new or expanding surface water or GWI sources unless the department determines they meet the following conditions:
 - (a) The system is under the ownership and operation of a department of health approved Satellite Management Agency; and
 - (b) Continuous effective treatment, including filtration, disinfection and any other measures required under chapter 246-290 WAC are provided.
- (3) An owner seeking source approval shall provide the department:
 - (a) A copy of the water right permit, if required, obtained from the Department of Ecology for the source, quantity, type, and place of use;

- (b) A copy of the source site inspection approval made by the department or local health jurisdiction representative;
- (c) Upgradient water uses affecting either water quality or quantity;
- (d) A map showing the project location and vicinity;
- (e) A map depicting topography, distances to the surface water intake or GWI source 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;
- (f) For GWI sources:
 - (i) A map depicting topography, distances to well or spring from existing property lines, buildings, potential sources of contamination within the six hundred foot radius around the well, and any other natural or man-made features affecting the quality or quantity of water;
 - (ii) Copies of the recorded legal documents for the sanitary control area;
 - (iii) A copy of the water well report if applicable;
 - (iv) A general description of the recharge area affecting the quantity or quality of flow. Seasonal variation shall also be included;
 - (v) Well development data establishing source capacity. Data shall include static water level, yield, amount of drawdown, recovery rate and duration of pumping. The source shall be pump tested to determine whether the well and aquifer are capable of supplying water at the rate desired and to provide information necessary to determine proper pump settings. A department guideline titled *Group B Water System Approval* is available to assist owners.

Existing and proposed sources shall conform to the well construction standards established under chapter 173-160 WAC if applicable.

- (g) Documentation of totalizing source meter installation;
 - (h) An initial analysis result of raw water quality from a certified lab, including as a minimum, a bacteriological, and complete inorganic chemical and physical analysis of the source water quality;
 - (i) In areas where the department determines that other contamination may be present, or at the discretion of the department, sample results for these contaminants may also be required;
 - (j) If water quality information from (h) and (i) of this subsection shows a contaminant level of concern, the department may require further action by the owner; and
 - (k) If water quality results taken from the proposed source confirm a primary MCL violation, the owner shall ensure that appropriate treatment is provided which shall eliminate the public health risk to consumers served by the system.
- (4) Watershed Control Program.
- (a) Owners of new or expanding surface water or GWI sources shall ensure the development and submittal of a watershed control program to the department for review and approval. Once approved, the owner shall implement the program.
 - (b) This program shall be part of the water system plan required in WAC 246-291-140.

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- (c) The owner's watershed control program shall contain, at a minimum, the following elements:
 - (i) Watershed description and inventory, including location, hydrology, land ownership and activities which may adversely affect water quality;
 - (ii) Watershed control measures, including documentation of ownership and relevant written agreements, monitoring procedures and water quality;
 - (iii) System operation, including emergency provisions; and
 - (iv) Documentation of water quality trends.Sections in the department guideline titled *Planning Handbook* and in the *DOH SWTR Guidance Manual* address watershed control and are available to owners.
- (d) The owner shall ensure submittal of the watershed control program to the department for review and approval. Following department approval, the owner shall ensure implementation as approved.
- (e) The owner shall update the watershed control program at least every six years, or more frequently if required by the department.

WAC 246-291-120 Design Report Approval.

- (1) Design reports shall be submitted to the department for written approval prior to installation of any new water system, or water system extension or improvement with the following exceptions:
 - (a) Installation of valves, fittings, and meters;
 - (b) Repair of a system component or replacement with a similar component of the same capacity; and
 - (c) Maintenance or painting of surfaces not contacting potable water.
- (2) Design reports submitted for approval by owners of systems required to have a water system plan, will not be considered for approval unless there is a current approved water system plan and the plan adequately addresses the project.
- (3) Design reports shall include, at a minimum, the following:
 - (a) Alternatives. Verify contacts with other water system owners as applicable in accordance with WAC 246-291-140(2);
 - (b) Legal considerations. Identify legal aspects such as ownership, right-of-way, sanitary control area, and restrictive covenants;
 - (c) Engineering calculations. Describe how the project complies with the design considerations;
 - (d) Drawings. Include detailed drawings of each project component;
 - (e) Material specifications. List detailed material specifications for each project component;
 - (f) Construction specifications. List detailed construction specifications and assembly techniques for carrying out the project;
 - (g) Testing. Identify testing criteria and procedures for each applicable portion of the project;

- (h) Disinfection. Identify specific disinfection procedures which must conform with American Water Works Association standards or other standards acceptable by the department;
 - (i) Inspection. Identify provisions for inspection of the installation of each project component. See WAC 246-291-040 for construction reporting requirements; and
 - (j) Change orders. All changes except for minor field revisions must be submitted to and approved by the department in writing.
- (4) Approval of design reports shall be in effect for two years unless the department determines a need to withdraw the approval. An extension of the approval may be obtained by submitting a status report and a written schedule for completion. Extensions may be subject to additional terms and conditions imposed by the department.

WAC 246-291-130 Existing System Approval.

- (1) At the discretion of the department, owners of existing systems without approved design reports shall, as determined by the department, provide information necessary to establish the extent of the water systems compliance with this chapter.
- (2) After receipt of the required data, the department shall review the information and place the system into one of the following categories:
 - (a) Fully approved/adequate. A fully approved system has been found to be in full compliance with these regulations and may add services if designed accordingly; or
 - (b) Provisionally adequate. A provisionally adequate system complies with applicable MCL and treatment standards, fire flow requirements where applicable, and meets a twenty psi minimum pressure requirement under peak hourly design flow conditions, but may not be in compliance with other regulatory requirements. A provisionally adequate system is considered satisfactory for its existing services, but may not expand to supply additional services; or
 - (c) Inadequate. Any system not identified in (a) or (b) of this subsection. The system is considered unsatisfactory and no additional service connections can be made to an inadequate system.
- (3) After categorizing the system, the department shall notify the owner in writing of the following:
 - (a) The system's category;
 - (b) The relationship of the system's category with respect to adding service connections and potential comments on status request letters; and
 - (c) If the system is not fully approved, what additional actions the owner needs to complete before a full or provisional approval is granted.
- (4) The department is authorized to take enforcement actions in accordance with WAC 246-291-050.

WAC 246-291-140 Water System Planning Requirements.

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- (1) Water system plan.
 - (a) The water system plan shall:
 - (i) Identify present and future needs;
 - (ii) Set forth means for meeting those needs; and
 - (iii) Do so in a manner consistent with other relevant plans and local, state, and federal laws.
 - (b) Owners of the following categories of systems shall ensure the development and submittal of a water system plan for review and approval by the department:
 - (i) All systems as required by chapter 70.116 RCW the Public Water System Coordination Act of 1977 and chapter 246-293 WAC;
 - (ii) Any system experiencing problems related to planning, operation, and/or management as determined by the department and outlined in a departmental order;
 - (iii) Any proposed or expanding system; and
 - (iv) Any system which installs treatment, other than simple chlorination disinfection equipment, after the effective date of these regulations.
 - (c) A department guideline titled *Group B Water System Approval* is available from the department to assist owners in developing this plan. Design reports may be combined with a water system plan. To the extent to which they are applicable, the water system plan shall address the following elements:
 - (i) Description of system management and ownership;
 - (ii) Description of appropriate water quality monitoring and reporting requirements;
 - (iii) Service area and identification of existing and proposed major facilities;
 - (iv) Maximum number of connections the system can safely and reliably support;
 - (v) Water conservation program. Systems which are developed or expanded after the effective date of this rule shall develop a conservation program;
 - (vi) Relationship and compatibility with other plans;
 - (vii) Description of water source(s) including compliance with applicable source approval and protection under WAC 246-291-100 and 246-291-110;

- (viii) Source protection (including required protective covenants, wellhead protection and watershed control where applicable); and
 - (ix) Financial viability.
- (2) Prior to developing a new water system, the developer of the proposed system shall follow the steps listed below as applicable:
- (a) The developer shall ensure that the new system is owned or operated by a department-approved satellite management agency (SMA), or if a department-approved SMA is not available, that the proposed new system has a department-approved water system plan in accordance with WAC 246-291-140;
 - (b) Department approval of any system created after July 22, 1995, that is not owned or operated by a SMA shall be conditioned upon future management or ownership by a SMA, if such management or ownership can be made with reasonable economy and efficiency, or upon periodic review of the system's operational history to determine its ability to meet the department's financial viability and other operating requirements.
 - (c) If the proposed system is located within the boundaries of a critical water supply service area, the ability to develop an independent system shall be governed by the provisions of the Public Water System Coordination Act, chapter 70.116 RCW and chapter 246-293 WAC, and will be subject to the jurisdictional coordinated water system plan; or
 - (d) If the proposed system consists of a surface water or GWI source, ensure that the proposed system will be owned and operated by a department-approved satellite system management agency.
- (3) For systems approved after the effective date of these rules, a summary of the following shall be recorded, by the system owner, on all affected property titles as a means of providing information about the system to property owners, lending institutions, and other potentially affected parties:
- (a) Notice that the property is served by a public water system;
 - (b) The initial water system plan, planning section of the Group B Water System Guideline, or equivalent information from other documents as determined by the department;
 - (c) Notice that the system is subject to state and local rules;
 - (d) Recommendation to check with the jurisdictional regulatory authority on the current system status;
 - (e) Notice that fees may be assessed by the department for providing information on a public water system;
 - (f) Requirement for satellite management, if applicable;
 - (g) Notice of any waivers granted to the system; and
 - (h) Other information required by the department.

PART 3. DESIGN AND OPERATION

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WAC 246-291-200 Design Standards.

- (1) Water system owners shall ensure that good engineering practices are used in the design of all public water systems. Information on what is good engineering practice is available from the department in the guideline titled *Group B Water System Approval*.
- (2) In addition, owners of new or expanding public water systems shall ensure the following factors are addressed:
 - (a) Local conditions, plans and/or regulations;
 - (b) Public Water System Coordination Act considerations where appropriate; and
 - (c) Other requirements as determined by the department.
- (3) Any pipe, pipe fittings, solder, or flux used in the installation or repair of a public water system shall be lead-free. Within the context of this section, lead-free shall mean having no more than eight percent lead in pipes and pipe fittings, and no more than two-tenths of one percent lead in solder and flux. This prohibition shall not apply to leaded joints necessary for the repair of cast iron pipes.

WAC 246-291-210 Distribution Systems.

- (1) All distribution reservoirs shall have suitable watertight roofs or covers preventing entry by birds, animals, insects, and dust and shall include appropriate provisions to safeguard against trespass, vandalism, and sabotage. All new distribution reservoirs shall be able to be drained by gravity to daylight.
- (2) The owner shall ensure that the distribution system is sized and evaluated using a hydraulic analysis acceptable to the department.
- (3) Systems designed to provide fire hydrants shall have a minimum distribution main size of six inches (150 mm).
- (4) New water systems or additions to existing systems shall provide a design quantity of water at a positive pressure of at least thirty psi throughout the system under peak hourly design flow conditions measured at any customer's water meter or at the property line if no meter exists.
- (5) If fire flow is to be provided, the distribution system shall be designed to provide the required fire flow at a pressure of at least twenty psi throughout the system during peak hourly design flow conditions.
- (6) Booster pumps needed for individual services shall be subject to review and approval by the department. Installation shall be made under the supervision of the owner to ensure cross-connection control requirements are met. Installation of booster pumps which are an integral part of the system design shall be inspected and certified by the engineer.

WAC 246-291-220 Disinfection of Facilities. No portion of a public water system containing

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potable water shall be put into service, nor, if service has been terminated, shall service resume, until the facility has been effectively disinfected. The procedure used for disinfection shall conform to the American Water Works Association standards or other standards acceptable to the department. 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.

WAC 246-291-230 Treatment Design and Operations.

- (1) Finished water quality from existing and proposed sources of supply shall conform to the minimum water quality standards established in this chapter.
- (2) Predesign studies shall be required for proposed surface water and GWI treatment and may be required for ground water treatment. The goal of the predesign study shall be to establish the most acceptable method to produce satisfactory finished water quality.
- (3) Treatment of ground water sources shall be as determined by the department.
- (4) The minimum level of treatment for new or expanding surface water and GWI sources approved after the effective date of these regulations shall be coagulation, flocculation, filtration, and disinfection unless otherwise approved by the department.
- (5) The minimum level of treatment for existing nonexpanding surface water and GWI sources approved prior to the effective date of these regulations shall be filtration and disinfection.
- (6) Disinfection methods, other than chlorination, i.e., ozonation or ultraviolet radiation, may be approved by the department with appropriate engineering justification.
- (7) The owner shall ensure that the system is operated in accordance with good operations procedures such as those listed in the department guideline titled *Group B Water System Approval*.
- (8) The owner shall ensure that no bypass is established or maintained to divert water around any feature of a treatment process, except by written approval from the department.

WAC 246-291-240 Reliability.

- (1) All public water systems shall provide an adequate quantity and quality of water in a reliable manner.
 - (a) In determining whether a proposed public water system or an expansion or modification of an existing system is capable of providing an adequate quantity of water, the department shall consider the immediate as well as the reasonably anticipated future needs of the system's consumers.

- (b) In determining whether an existing public water system is providing an adequate quantity of water, the department shall consider the needs of the system's existing consumers exclusively, unless, in the department's discretion, consideration of the needs of potential consumers is in the public interest.
- (2) The owner shall ensure the system is constructed, operated, and maintained to protect against failures. New and expanding systems shall be equipped with a generator disconnect. Security measures shall be employed to assure the water source, water treatment processes, water storage facilities, and the distribution system are under the strict control of the owner.
- (3) Where fire flow is required, a positive pressure shall be maintained throughout the system under fire flow conditions.
- (4) Water pressure at the customer's service meter or property line if a meter is not used, shall be maintained at the approved design pressure under peak hourly design flow conditions.
- (5) No intake or other connection shall be maintained between a public water system and a source of water not approved by the department.
- (6) Owners shall provide the department with the current names, addresses, and telephone numbers of the owners, operators, and emergency contact persons for the system, including any changes to this information. The owner shall ensure that customer concerns and service complaints are responded to in a timely manner.

WAC 246-291-250 Continuity of Service.

- (1) No owner shall transfer system ownership without providing written notice to the department and all customers. Notification shall include a time schedule for transferring responsibilities, identification of the new owner, and under what authority the new ownership will operate. If the system is a corporation, identification of the registered agent shall also be provided.
- (2) The system transferring ownership shall ensure all health-related standards are met during transfer and shall inform and train the new owner regarding operation of the system.
- (3) No owner shall end utility operations without providing written notice to all customers and the department at least one year prior to termination of service.
- (4) Nothing in these rules shall prohibit an owner from terminating service to a specific customer if the customer fails to pay normal fees for service in a timely manner or if the customer allows or installs an unauthorized service connection to the system.
- (5) Where this section may be in conflict with existing state statutes, the more stringent statute shall prevail.

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WAC 246-291-260 Recordkeeping and reporting.

- (1) The owner shall ensure that the following records of operation and water quality analyses are kept on file:
 - (a) Records of bacteriological and turbidity analyses shall be kept for five years. Records of chemical analyses shall be kept for as long as the system is in operation. Other records of operation and analyses required by the department shall be kept for three years. All records shall bear the signature of the owner of the water system or his or her representative.
 - (b) Records of action taken by the system to correct violations of primary drinking water regulations and copies of public notifications shall be kept for three years after the last action taken with respect to the particular violation involved.
 - (c) Copies of any written reports, summaries, or communications, relating to comprehensive system evaluations (CSEs) conducted by system personnel, by a consultant or by any local, state, or federal agency, shall be kept for ten years after completion of the CSE involved.
 - (d) Where applicable, records of operation and analyses shall include the following:
 - (i) Daily chlorine residual;
 - (ii) Water treatment plant performance including, but not limited to:
 - (A) Type of chemicals used and quantity,
 - (B) Amount of water treated, and
 - (C) Results of analyses.
 - (iii) Daily turbidity;
 - (iv) Monthly water use readings from totalizing source meters; and
 - (v) Other information as specified by the department.
- (2) Reporting.
 - (a) The owner shall ensure that reports required by this chapter, are submitted to the department when requested by the department or as otherwise required by this section, including tests, measurements, and analytic reports.
 - (b) Water facilities inventory and report form (WFI).
 - (i) Owners shall ensure the submittal of an updated WFI to the department every three years or as requested; and
 - (ii) The owner shall also ensure the submittal of an updated WFI to the department within thirty days of any change in name, number of connections, ownership, or responsibility for management of the water system.
 - (c) Bacteriological.
 - (i) The owner shall ensure that the department is notified of the presence of:
 - (A) Coliform in a sample, within ten days of notification by the laboratory; and
 - (B) Fecal coliform or E. coli in a sample, by the end of the business day in which the owner is notified by the laboratory or as soon as possible.

- (ii) When a coliform MCL violation occurs, the owner shall ensure that the following notifications are made:
 - (A) Notification of the department before the end of the next business day when a coliform MCL is determined; and
 - (B) Notification of the water system users in accordance with WAC 246-291-360.
- (d) Water use data shall be reported upon request of the department.

WAC 246-291-270 Cross-Connection Control.

- (1) Owners have the responsibility to protect public water systems from contamination due to cross-connections.
- (2) Cross-connections which can be eliminated shall be eliminated. The owner shall work cooperatively with local authorities to eliminate or control potential cross-connections in a manner acceptable to the department.
- (3) When an existing cross-connection poses a potential health or system hazard, the owner shall shut off water service to the premises until the cross-connection has been eliminated or controlled by the installation of a proper backflow prevention assembly.
- (4) Backflow prevention devices shall be approved by the department and tested in a manner prescribed by the department in WAC 246-290-490.

PART 4. WATER QUALITY

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WAC 246-291-300 General Monitoring Requirements.

- (1) The department may require additional monitoring when it determines contamination is present or suspected in the water system or when it determines the source may be vulnerable to contamination.
- (2) Special purpose samples shall not count toward fulfillment of the monitoring requirements of this chapter.
- (3) The owner shall ensure samples required by this chapter are collected, transported, and submitted for analysis according to department-approved methods. The analyses shall be performed by the state public health laboratory or another laboratory certified by the department. Qualified water utility, certified laboratory, or department personnel may conduct measurements for pH, temperature, residual disinfectant concentration and turbidity as required by this chapter, provided, these measurements are made in accordance with *Standard Methods*.
- (4) When one Group B water system sells water to another public water system and the cumulative number of services or population served meet the definition of a group A system, the owner of the selling system shall ensure that source monitoring is conducted in accordance with the minimum requirements for Group A community systems found in chapter 246-290 WAC.

WAC 246-291-310 General Follow-up.

- (1) If a water quality sample exceeds any MCLs listed in this chapter, the owner shall ensure notification of the department and take follow-up action as described in this chapter.
- (2) When a primary MCL violation occurs, the owner shall ensure that the following actions are taken:
 - (a) Notification of the department in accordance with WAC 246-291-260;
 - (b) Notification of the consumers served by the system in accordance with WAC 246-291-360;
 - (c) Determination of the cause of the contamination; and
 - (d) Other action as directed by the department.
- (3) When a secondary MCL violation occurs, the owner shall ensure that the department is notified and that action is taken as directed by the department.
- (4) The department shall determine the follow-up action when a substance not included in this chapter is detected.

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WAC 246-291-320 Bacteriological.

- (1) Owners shall ensure the collection and submittal of a sample for coliform analysis at least once every twelve months from the furthest end of the distribution system or as directed by the department.
- (2) When coliform bacteria are present in any sample the owner shall ensure that:
 - (a) The sample is analyzed for fecal coliform or E. coli;
 - (b) The department is notified in accordance with WAC 246-291-260; and
 - (c) Further action is taken as directed by the department.
- (3) MCLs.
 - (a) MCLs under this subsection shall be considered primary standards.
 - (b) An MCL violation for coliform bacteria occurs when a routine and repeat sample have coliform presence.
 - (c) In determining MCL compliance, the owner shall:
 - (i) Include:
 - (A) Routine samples; and
 - (B) Repeat samples.
 - (ii) Not include:
 - (A) Invalidated samples; and
 - (B) Special purpose samples.

WAC 246-291-330 Inorganic Chemical and Physical.

- (1) Monitoring.
 - (a) A complete inorganic chemical and physical analysis shall consist of the primary and secondary chemical and physical standards.
 - (i) Primary chemical and physical standards are antimony, arsenic, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate (as N), nitrite (as N), selenium, sodium, thallium, and turbidity.
 - (ii) Secondary chemical and physical standards are chloride, color, hardness, iron, manganese, silver, specific conductivity, sulfate*, total dissolved solids*, and zinc.
- *Required only when specific conductivity exceeds seven hundred micromhos/centimeter.
- (b) Samples taken for inorganic chemical analyses shall be collected at the source before treatment.
 - (c) Owners shall ensure submittal of at least one initial complete analysis from each source;
 - (d) After the initial complete analysis, owners shall ensure submittal to the department of results of

- at least one nitrate sample analyzed from each source or well field every thirty-six months; and
- (e) When treatment is provided for one or more inorganic chemical or physical contaminants, samples shall be taken for the specific contaminant or contaminants before and after treatment. The department shall determine the frequency of sampling.
- (2) Follow-up. When an initial analysis of a substance exceeds the MCL, the owner shall ensure that at least one additional sample is immediately taken from the same sampling point and analyzed for any substance which exceeded the MCL. If the average of the samples exceeds the MCL, a violation is confirmed.
- (3) MCLs. The primary and secondary MCLs are listed in Tables 1 and 2:

Table 1
INORGANIC CHEMICAL CHARACTERISTICS

Substance	Primary MCLs (mg/L)
Antimony	0.006
Arsenic	0.05
Barium	2.0
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Cyanide	0.2
Fluoride	4.0
Mercury	0.002
Nickel	0.1
Nitrate (as N)	10.0
Nitrite (as N)	1.0
Selenium	0.05
Sodium	*
Thallium	0.002
Substance	Secondary MCLs (mg/L)
Chloride	250.0
Fluoride	2.0
Iron	0.3
Manganese	0.05
Silver	0.1
Sulfate	250.0
Zinc	5.0

* Note: Although the State Board of Health has not established an MCL for sodium, there is enough public health significance connected with sodium levels to require inclusion in inorganic chemical and physical monitoring.

**Table 2
PHYSICAL CHARACTERISTICS**

Substance	Primary MCL
Turbidity	1.0 NTU
Substance	Secondary MCLs
Color	15 Color Units
Hardness	None established
Specific Conductivity	700 umhos/cm
Total Dissolved Solids (TDS)	500 mg/L

WAC 246-291-340 Turbidity.

- (1) The department shall determine monitoring requirements on a case-by-case basis. New surface water and GWI sources shall comply with applicable turbidity monitoring requirements in accordance with Part 6 of Chapter 246-290 WAC.
- (2) MCLs.
 - (a) The department shall consider standards under this subsection primary standards.
 - (b) The MCLs for turbidity are:
 - (i) 1.0 NTU, based on a monthly average of the maximum daily turbidity, where the maximum daily turbidity is defined as the average of the:
 - (A) Highest two hourly readings over a twenty-four hour period when continuous monitoring is used; or
 - (B) Daily grab samples taken within one hour when daily monitoring is used.
The department may increase the MCL to 5.0 NTUs if the owner can show the source is within a controlled watershed and the source meets the requirements under WAC 246-291-110.
 - (ii) 5.0 NTUs based on an average of the maximum daily turbidity for two consecutive days.

WAC 246-291-350 Other Substances.

- (1) In areas known or suspected of being contaminated with other substances of public health concern, the department may require that an owner submit water samples to test for the suspected contamination at a frequency determined by the department.
- (2) The department may require repeat samples for confirmation of results.

- (3) Any substance confirmed in a water system that does not have an MCL listed in this chapter shall be subject to the MCLs, state advisory levels (SALs) and other provisions found in chapter 246-290 WAC.

WAC 246-291-360 Public Notification.

- (1) Responsibility. Within fourteen days of the violation, the owner shall ensure that water system users are notified when the system has a violation of a primary MCL.
- (2) Content. Notices shall provide:
 - (a) A clear, concise, and simple explanation of the violation;
 - (b) Discussion of potential adverse health effects and any segments of the population that may be at higher risk;
 - (c) A list of steps the owner has taken or is planning to take to remedy the situation;
 - (d) A list of steps the consumer should take, including advice on seeking an alternative water supply if necessary;
 - (e) The owner's and manager's names and phone numbers; and
 - (f) When appropriate, notices shall be multilingual.The owner may provide additional information to further explain the situation.
- (3) Distribution. Owners shall ensure that a written notice is distributed to all water system users within fourteen days of a violation unless otherwise directed by the department.
- (4) When circumstances dictate the owner give a broader or more immediate notice to protect public health, the department may require notification by whatever means necessary.
- (5) When a system is granted a waiver for reduction of water quality standards, the owner shall ensure that customers are notified. The owner shall provide a notice annually and send a copy to the department.

WAC 246-291-370 Severability. If any provision of this chapter or its application to any person or circumstances is held invalid, the remainder of this chapter, or the application of the provision to other persons or circumstances, shall not be affected.