

Chapter 173-200 WAC

WATER QUALITY STANDARDS FOR GROUNDWATERS OF THE STATE OF WASHINGTON

WAC

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WAC 173-200-010 Introduction. (1) This chapter implements chapter 90.48 RCW, the Water Pollution Control Act and chapter 90.54 RCW, the Water Resources Act of 1971.

(2) This chapter applies to all groundwaters of the state that occur in a saturated zone or stratum beneath the surface of land or below a surface water body.

(3) This chapter shall not apply to:

(a) Contaminant concentrations found in saturated soils where those contaminants are chemicals or nutrients that have been applied at agronomic rates for agricultural purpose if those contaminants will not cause pollution of any groundwaters below the root zone.

(b) Contaminant concentrations found in saturated soils where those contaminants are constituents that have been applied at approved rates and under approved methods of land treatment if those contaminants will not cause pollution of any groundwaters below the root zone.

(c) Clean up actions approved by the department under the Model Toxics Control Act, chapter 70.105D RCW, or approved by the United States Environmental Protection Agency under the Comprehensive Environmental Response Compensation and Liability Act, 42 U.S.C. 9601 et seq. Groundwater cleanup standards for such sites shall be developed under WAC 173-340-720.

(4) The goal of this chapter is to maintain the highest quality of the state's groundwaters and protect existing and future beneficial uses of the groundwater through the reduction or elimination of the discharge of contaminants to the state's groundwaters.

(5) To implement this goal, this chapter establishes groundwater quality standards which, together with the state's technology-based treatment requirements, provide for the protection of the environment and human health and protection of existing and future beneficial uses of groundwaters.

[Statutory Authority: RCW 90.48.035. WSR 90-22-023, § 173-200-010, filed 10/31/90, effective 12/1/90.]

WAC 173-200-020 Definitions. As used in this chapter:

(1) "Activity" means any site, area, facility, structure, vehicle, installation, or discharge which may produce pollution.

(2) "Artificial groundwater" means groundwater that has been put in place through means, such as irrigation, other than natural recharge.

(3) "Background water quality" means the concentrations of chemical, physical, biological, or radiological constituents, or other characteristics in or of groundwater at a particular point in time and upgradient of an activity that have not been affected by that activity.

(4) "Beneficial uses" means uses of waters of the state which include but are not limited to use for domestic, stock watering, industrial, commercial, agricultural, irrigation, mining, fish and wildlife maintenance and enhancement, recreation, generation of electric power and preservation of environmental and aesthetic values, and all other uses compatible with the enjoyment of the public waters of the state.

(5) "Best management practices" or "BMPs" mean schedules of activities, prohibitions of practices, maintenance of procedures, and other management practices, to prevent or reduce the pollution of groundwaters of the state. BMPs also include treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or water disposal, or drainage from raw material storage.

(6) "Carcinogen" means any substance or agent that produces or tends to produce cancer in humans. For implementation of this chapter, the term carcinogen will apply to all substances on the United States Environmental Protection Agency Integrated Risk Information System, IRIS database, of A (known human) and B1 and B2 (probable human) carcinogens for which IRIS listed an oral slope factor.

(7) "Contaminant" means any chemical, physical, biological, or radiological substance that does not occur naturally in groundwater or that occurs at concentrations greater than those in the natural levels.

(8) "Criteria" means numerical values or narrative standards that represent the maximum allowable contaminant concentrations in the groundwater.

(9) "Department" means the Washington state department of ecology.

(10) "Early warning value" means a concentration set in accordance with WAC 173-200-070 that is a percentage of a groundwater quality enforcement limit.

(11) "Enforcement limit" means the value assigned to any contaminant for the purposes of regulating that contaminant.

(12) "Groundwater" means water in a saturated zone or stratum beneath the surface of land or below a surface water body.

(13) "Human-caused pollution" means pollution resulting from human activity.

(14) "Isolated groundwater" means groundwater fully separated from other groundwaters by an impermeable layer of rock or strata.

(15) "Maximum contaminant level" or "MCL" means the maximum concentration of a contaminant in water established by the Environmental Protection Agency under the Federal Safe Drinking Water Act (42 U.S.C. 300f et seq.) and published in 40 C.F.R. 141 as presently promulgated or as subsequently amended or repromulgated.

(16) "Maximum contaminant level goal" or "MCLG" means the maximum concentration of a contaminant established by the Environmental Protection Agency under the Federal Safe Drinking Water Act (42 U.S.C. 300f et seq.) and published in 40 C.F.R. 141 as presently promulgated or subsequently amended or repromulgated, for which no known or anticipated adverse effects on human health occur including an adequate margin of safety.

(17) "Natural groundwater quality" means groundwater quality that was present before any human-caused pollution.

(18) "Naturally nonpotable groundwater" means groundwater that is unsuitable for drinking water because of natural groundwater quality and for which current treatment methods are considered unreasonable and impractical.

(19) "Permit" means a department authorization, license, or equivalent control document issued to a facility, activity, or entity authorized to treat, store, dispose, or discharge materials or wastes. This includes, but is not limited to, state waste discharge permits issued pursuant to chapter 173-216 WAC, permits for dangerous waste management facilities issued pursuant to chapter 173-303 WAC, and permits for groundwater withdrawal issued pursuant to chapter 90.44 RCW.

(20) "Person" means any political subdivision, government agency, municipality, industry, public or private corporation, partnership, association, firm, individual, or any other entity whatsoever.

(21) "Point of compliance" means the location, set in accordance with WAC 173-200-060, where the groundwater quality enforcement limit shall not be exceeded.

(22) "Pollution" means such contamination, or other alteration of the physical, chemical or biological properties, of any waters of the state, including change in temperature, taste, color, turbidity, or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive, or other substance into any waters of the state as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish, or other aquatic life.

(23) "Practical quantification level" or "PQL" means the lowest concentration of a substance that can be reliably achieved within specific limits of precision, accuracy, representativeness, completeness, and comparability during routine laboratory operating conditions.

(24) "Root zone" means the zone that extends from the surface of the soil to the depth of the lowest root and is specific to a species of plant, group of plants, or crop.

(25) "Saturated zone" means the zone below the water table in which all interstices are filled with water.

(26) "Seasonal groundwater" means groundwater that exists for a temporary period of the year and is usually associated with a particular activity or phenomenon.

(27) "State waste discharge permit" means a permit issued in accordance with the state waste discharge permit program, chapter 173-216 WAC.

[Statutory Authority: RCW 90.48.035. WSR 90-22-023, § 173-200-020, filed 10/31/90, effective 12/1/90.]

WAC 173-200-030 Antidegradation policy. (1) The antidegradation policy of the state of Washington, is generally guided by chapter 90.48 RCW, the Water Pollution Control Act, and chapter 90.54 RCW, the Water Resources Act of 1971. The goal of this policy is to ensure the purity of the state's groundwaters and to protect the natural environment.

(2) The antidegradation policy is as follows:

(a) Existing and future beneficial uses shall be maintained and protected and degradation of groundwater quality that would interfere with or become injurious to beneficial uses shall not be allowed.

(b) Degradation shall not be allowed of high quality groundwaters constituting an outstanding national or state resource, such as waters of national and state parks and wildlife refuges, and waters of exceptional recreational or ecological significance.

(c) Whenever groundwaters are of a higher quality than the criteria assigned for said waters, the existing water quality shall be protected, and contaminants that will reduce the existing quality thereof shall not be allowed to enter such waters, except in those instances where it can be demonstrated to the department's satisfaction that:

(i) An overriding consideration of the public interest will be served; and

(ii) All contaminants proposed for entry into said groundwaters shall be provided with all known, available, and reasonable methods of prevention, control, and treatment prior to entry.

[Statutory Authority: RCW 90.48.035. WSR 90-22-023, § 173-200-030, filed 10/31/90, effective 12/1/90.]

WAC 173-200-040 Criteria. (1) Groundwaters in the state of Washington support many different beneficial uses. The purpose of these criteria is to establish maximum contaminant concentrations for the protection of a variety of beneficial uses of Washington's groundwater.

(a) Drinking water is the beneficial use generally requiring the highest quality of groundwater.

(b) Providing protection to the level of drinking water standards will protect a great variety of existing and future beneficial uses.

(c) Some groundwaters of the state support environmental systems with existing and future beneficial uses requiring more stringent protection than that provided by human health based criteria. These groundwaters and dependent uses will be protected by either or both of the following:

(i) Designation of an area and its associated groundwater as a special protection area in accordance with WAC 173-200-090.

(ii) Establishment of enforcement limits as close to the natural groundwater quality as possible for activities that may adversely affect those groundwaters in accordance with WAC 173-200-050.

(d) The use of criteria based on drinking water quality shall in no way be interpreted to mean that all groundwaters

are used for drinking water or that all groundwaters are presently suitable for drinking water.

(2) The following criteria shall apply to all groundwaters in the state of Washington:

(a) Groundwater concentrations shall not exceed the criteria listed in Table 1, except as described in WAC 173-200-050 (3)(b).

(b) For the primary and secondary contaminants and radionuclides listed in Table 1, the criteria shall be the most stringent concentration of the following and those listed in Table 1:

(i) Maximum contaminant level goals;

(ii) Maximum contaminant levels; and

(iii) State maximum contaminant levels published in chapter 248-54 WAC as presently promulgated or subsequently amended or repromulgated.

The criteria for primary and secondary contaminants and radionuclide contaminants in Table 1 shall be amended as the federal and state rules are amended and without amendment of this chapter.

(c) For carcinogens listed in Table 1, the criteria are the concentrations that are anticipated to result in a total incremental human cancer risk of less than 1 in 1,000,000, and were estimated using the following equation and standard exposure assumptions:

$$\text{Groundwater Criteria} = \frac{\text{RISK} \times \text{BW} \times \text{LIFE} \times \text{UCF}}{\text{CPF} \times \text{DWIR} \times \text{DUR}}$$

(ug/l)

Where:

RISK = Human cancer risk level (1 in 1,000,000)

BW = Body Weight (70 kg)

LIFE = Lifetime (70 years)

UCF = Unit conversion factor (1,000 ug/mg)

CPF = Cancer potency factor as published in the IRIS database (1/mg/kg/day)

DWIR = Drinking water ingestion rate (2.0 liters/day)

DUR = Duration of exposure (30 years)

For volatile carcinogens, inhalation exposure from showering was incorporated into the criteria by doubling the drinking water ingestion rate.

(3) For contaminants for which no numeric criteria have been established, enforcement limits shall be established in accordance with WAC 173-200-050.

TABLE 1
GROUNDWATER QUALITY CRITERIA

| CONTAMINANT | | CRITERION |
|-------------|--|--|
| I. | PRIMARY AND SECONDARY CONTAMINANTS AND RADIONUCLIDES | |
| A. | PRIMARY CONTAMINANTS | |
| | Barium* | 1.0 milli-grams/ liter (mg/l) |
| | Cadmium* | 0.01 mg/l |
| | Chromium* | 0.05 mg/l |
| | Lead* | 0.05 mg/l |
| | Mercury* | 0.002 mg/l |
| | Selenium* | 0.01 mg/l |

| CONTAMINANT | CRITERION | |
|-------------------------|-----------|------|
| Silver* | 0.05 | mg/l |
| Fluoride | 4 | mg/l |
| Nitrate (as N) | 10 | mg/l |
| Endrin | 0.0002 | mg/l |
| Methoxychlor | 0.1 | mg/l |
| 1,1,1-Trichloroethane | 0.20 | mg/l |
| 2-4 D | 0.10 | mg/l |
| 2,4,5-TP Silvex | 0.01 | mg/l |
| Total Coliform Bacteria | 1/100 | ml |

B. SECONDARY CONTAMINANTS

| | | |
|------------------------|------------------------|------|
| Copper* | 1.0 | mg/l |
| Iron* | 0.30 | mg/l |
| Manganese* | 0.05 | mg/l |
| Zinc* | 5.0 | mg/l |
| Chloride | 250 | mg/l |
| Sulfate | 250 | mg/l |
| Total Dissolved Solids | 500 | mg/l |
| Foaming Agents | 0.5 | mg/l |
| pH | 6.5-8.5 | |
| Corrosivity | noncorrosive | |
| Color | 15 color units | |
| Odor | 3 threshold odor units | |

C. RADIONUCLIDES

| | | |
|-----------------------------------|--------|--------------------------|
| Gross Alpha Particle Activity | 15 | pico Curie/liter (pCi/l) |
| Gross Beta Particle Radioactivity | | pCi/l |
| Gross Beta Activity | 50 | pCi/l |
| Tritium | 20,000 | pCi/l |
| Strontium-90 | 8 | |
| Radium 226 & 228 | 5 | pCi/l |
| Radium -226 | 3 | pCi/l |

II. CARCINOGENS

| | | |
|-----------------------|--------|------------------------|
| Acrylamide | 0.02 | micro-grams/liter ug/l |
| Acrylonitrile | 0.07 | ug/l |
| Aldrin | 0.005 | ug/l |
| Aniline | 14 | ug/l |
| Aramite | 3 | ug/l |
| Arsenic* | 0.05 | (ug/l) |
| Azobenzene | 0.7 | ug/l |
| Benzene | 1.0 | ug/l |
| Benzidine | 0.0004 | ug/l |
| Benzo(a)pyrene | 0.008 | ug/l |
| Benzotrachloride | 0.007 | ug/l |
| Benzyl chloride | 0.5 | ug/l |
| Bis(chloroethyl)ether | 0.07 | ug/l |

| CONTAMINANT | CRITERION | | CONTAMINANT | CRITERION | |
|---|-----------|------|---|-----------|------|
| Bis(chloromethyl)ether | 0.0004 | ug/l | Hexachlorodibenzo-p-dioxin, mix | 0.00001 | ug/l |
| Bis(2-ethylhexyl) phthalate | 6.0 | ug/l | Hydrazine/Hydrazine sulfate | 0.03 | ug/l |
| Bromodichloromethane | 0.3 | ug/l | Lindane | 0.06 | ug/l |
| Bromoform | 5 | ug/l | 2 Methoxy-5-nitroaniline | 2 | ug/l |
| Carbazole | 5 | ug/l | 2 Methylaniline | 0.2 | ug/l |
| Carbon tetrachloride | 0.3 | ug/l | 2 Methylaniline hydrochloride | 0.5 | ug/l |
| Chlordane | 0.06 | ug/l | 4,4' Methylene bis(N,N'-dimethyl) aniline | 2 | ug/l |
| Chlorodibromomethane | 0.5 | ug/l | Methylene chloride (dichloromethane) | 5 | ug/l |
| Chloroform | 7.0 | ug/l | Mirex | 0.05 | ug/l |
| 4 Chloro-2-methyl aniline | 0.1 | ug/l | Nitrofurazone | 0.06 | ug/l |
| 4 Chloro-2-methyl analine hydrochloride | 0.2 | ug/l | N-Nitrosodiethanolamine | 0.03 | ug/l |
| o-Chloronitrobenzene | 3 | ug/l | N-Nitrosodiethylamine | 0.0005 | ug/l |
| p-Chloronitrobenzene | 5 | ug/l | N-Nitrosodimethylamine | 0.002 | ug/l |
| Chlorthalonil | 30 | ug/l | N-Nitrosodiphenylamine | 17 | ug/l |
| Diallate | 1 | ug/l | N-Nitroso-di-n-propylamine | 0.01 | ug/l |
| DDT (includes DDE and DDD) | 0.3 | ug/l | N-Nitrosopyrrolidine | 0.04 | ug/l |
| 1,2 Dibromoethane | 0.001 | ug/l | N-Nitroso-di-n-butylamine | 0.02 | ug/l |
| 1,4 Dichlorobenzene | 4 | ug/l | N-Nitroso-N-methylethylamine | 0.004 | ug/l |
| 3,3' Dichlorobenzidine | 0.2 | ug/l | PAH | 0.01 | ug/l |
| 1,1 Dichloroethane | 1.0 | ug/l | PBBs | 0.01 | ug/l |
| 1,2 Dichloroethane (ethylene chloride) | 0.5 | ug/l | PCBs | 0.01 | ug/l |
| 1,2 Dichloropropane | 0.6 | ug/l | o-Phenylenediamine | 0.005 | ug/l |
| 1,3 Dichloropropene | 0.2 | ug/l | Propylene oxide | 0.01 | ug/l |
| Dichlorvos | 0.3 | ug/l | 2,3,7,8-Tetrachlorodibenzo-p-dioxin | 0.0000006 | ug/l |
| Dieldrin | 0.005 | ug/l | Tetrachloroethylene (perchloroethylene) | 0.8 | ug/l |
| 3,3' Dimethoxybenzidine | 6 | ug/l | p,α,α,α-Tetrachlorotoluene | 0.004 | ug/l |
| 3,3 Dimethylbenzidine | 0.007 | | 2,4 Toluenediamine | 0.002 | ug/l |
| 1,2 Dimethylhydrazine | 60 | ug/l | o-Toluidine | 0.2 | ug/l |
| 2,4 Dinitrotoluene | 0.1 | ug/l | Toxaphene | 0.08 | ug/l |
| 2,6 Dinitrotoluene | 0.1 | ug/l | Trichloroethylene | 3 | ug/l |
| 1,4 Dioxane | 7.0 | ug/l | 2,4,6-Trichlorophenol | 4 | ug/l |
| 1,2 Diphenylhydrazine | 0.09 | ug/l | Trimethyl phosphate | 2 | ug/l |
| Direct Black 38 | 0.009 | ug/l | Vinyl chloride | 0.02 | ug/l |
| Direct Blue 6 | 0.009 | ug/l | | | |
| Direct Brown 95 | 0.009 | ug/l | | | |
| Epichlorohydrin | 8 | ug/l | | | |
| Ethyl acrylate | 2 | ug/l | | | |
| Ethylene dibromide | 0.001 | ug/l | | | |
| Ethylene thiourea | 2 | ug/l | | | |
| Folpet | 20 | ug/l | | | |
| Furazolidone | 0.02 | ug/l | | | |
| Furium | 0.002 | ug/l | | | |
| Furmecyclox | 3 | ug/l | | | |
| Heptachlor | 0.02 | ug/l | | | |
| Heptachlor Epoxide | 0.009 | ug/l | | | |
| Hexachlorobenzene | 0.05 | ug/l | | | |
| Hexachlorocyclohexane (alpha) | 0.001 | ug/l | | | |
| Hexachlorocyclohexane (technical) | 0.05 | ug/l | | | |

*metals are measured as total metals

[Statutory Authority: RCW 90.48.035. WSR 90-22-023, § 173-200-040, filed 10/31/90, effective 12/1/90.]

WAC 173-200-050 Enforcement limit. (1) An enforcement limit is a value assigned to any contaminant for the purposes of regulating that contaminant to protect existing groundwater quality and to prevent groundwater pollution.

(2) Enforcement limits shall be defined on a case-by-case basis and shall be met at the point of compliance as defined in WAC 173-200-060. When the point of compliance is established at or in close proximity to the property boundary, enforcement limits shall be established sufficiently below criteria to provide an adequate margin of safety to ensure pollution does not extend beyond the property boundary.

(3) All enforcement limits shall, at a minimum, be based on all known, available, and reasonable methods of prevention, control, and treatment.

(a) The department shall consider all of the following in establishing enforcement limits:

- (i) The antidegradation policy;
- (ii) Establishment of an enforcement limit as near the natural groundwater quality as practical;
- (iii) Overall protection of human health and the environment;
- (iv) Whether the potentially affected area has been designated as a special protection area;
- (v) Protection of existing and future beneficial uses;
- (vi) Effects of the presence of multiple chemicals, multiple exposure pathways in accordance with subsection (5) of this section, and toxicity of individual contaminants;
- (vii) Federal, state, tribal, and local land use plans, policies, or ordinances including wellhead protection programs;
- (viii) Pollution of other media such as soils or surface waters; and
- (ix) Any other considerations the department deems pertinent to achieve the objectives of this chapter.

(b) Where a criterion is established for a given contaminant, the enforcement limit shall not exceed the criterion except as follows:

(i) When the natural groundwater quality for a contaminant exceeds the criterion, the enforcement limit for that contaminant shall be equal to the natural level.

(ii) When the background groundwater quality exceeds a criterion, the enforcement limit at the point of compliance shall not exceed the background groundwater quality for that criterion. Enforcement limits based on elevated background groundwater quality shall in no way be construed to allow continued pollution of the receiving groundwater.

(iii) When a criterion is less than the practical quantification level, the enforcement limit shall be established in an alternate location to provide a realistic estimate that the criterion shall not be exceeded in the groundwater. Evaluation for such enforcement limits shall be performed in accordance with WAC 173-200-080(5).

(iv) When naturally nonpotable groundwater exceeds a secondary contaminant criterion, an enforcement limit for a secondary contaminant may exceed a criterion when it can be demonstrated to the department's satisfaction that:

- (A) The environment is protected;
- (B) Human health is protected in consultation with the Washington state department of health;
- (C) Existing and future beneficial uses are not harmed; and

(D) All known, available, and reasonable methods of prevention, control, and treatment will not result in concentrations less than the secondary contaminant criteria.

(v) Enforcement limits may exceed criteria in isolated artificial or seasonal groundwaters when all of the following conditions exist:

(A) The isolated artificial or seasonal groundwaters are of insufficient quantity for use as a drinking water source;

(B) Established enforcement limits will not cause harm to existing and future beneficial uses including support of seasonal wetlands;

(C) Accumulation of contaminants will not cause adverse acute or chronic effects to human health as determined in consultation with the Washington state department of health;

(D) Accumulation of contaminants will not cause adverse acute or chronic effects to the environment.

(vi) In rare circumstances the department may allow an enforcement limit to exceed a criterion for an activity for a period not to exceed five years without reconsideration of the evidence presented in subitems (A), (B), and (C) of this subdivision, and if all of the following conditions are met:

(A) The permit holder or responsible person demonstrates to the department's satisfaction that an enforcement limit that exceeds a criterion is necessary to provide greater benefit to the environment as a whole and to protect other media such as air, surface water, soil, or sediments;

(B) The activity has been demonstrated to be in the overriding public interest of human health and the environment;

(C) The department selects, from a variety of control technologies available for reducing and eliminating contamination from each potentially affected media, the technologies that minimize impacts to all affected media; and

(D) The action has been approved by the director of the department or his/her designee.

(4) Where a criterion is not established for a contaminant, the enforcement limit in groundwater shall not exceed the practical quantification level except:

(a) Where there is evidence that a lower concentration would better protect human health and the environment (based on published health advisories, risk assessments, and other available information), the department shall establish a more stringent enforcement limit;

(b) If clear and convincing evidence can be provided to the department that an alternative concentration will provide protection to human health and the environment, the department may establish an enforcement limit higher than the practical quantification level.

Protection of human health shall be determined in consultation with the Washington state department of health.

(5) For multiple contaminants and multiple routes of exposure, enforcement limits shall be addressed as follows:

(a) Estimated doses of individual contaminants from one or more routes of exposure are assumed to be additive unless evidence is available to suggest otherwise.

(b) Adverse effects of multiple contaminants with similar types of toxic responses are assumed to be additive unless evidence is available to suggest otherwise.

(c) Human cancer risks associated with multiple carcinogens are assumed to be additive unless evidence is available to suggest otherwise and shall not exceed a total incremental human cancer risk of 1 in 1,000,000.

(6) The enforcement limit for a specific activity may be established through, but not limited to the following mechanisms: A state administrative rule, a state waste discharge permit, other department permit, or administrative order.

(7) The groundwater quality at the point of compliance for an activity may temporarily exceed an enforcement limit while the activity is under an enforceable schedule of compliance.

[Statutory Authority: RCW 90.48.035. WSR 90-22-023, § 173-200-050, filed 10/31/90, effective 12/1/90.]

WAC 173-200-060 Point of compliance. (1) The point of compliance is the location where the enforcement limit, set in accordance with WAC 173-200-050, shall be measured and shall not be exceeded.

(a) The department shall establish the point of compliance for an activity. The point of compliance shall be established in the groundwater as near the source as technically, hydrogeologically, and geographically feasible.

(b) Compliance with the enforcement limits shall be maintained throughout the site from the uppermost level of the saturated zone extending vertically to the lowest depth that could potentially be affected by an activity.

(2) An alternative point of compliance, established at a location some distance from the source up to but not exceeding the property boundary, may be approved by the department as follows:

(a) An alternative point of compliance may be approved in the following situations:

(i) When all known, available, and reasonable methods of prevention, control, and treatment result in an exceedance of the criteria at the point of compliance.

(ii) When a point of compliance is defined in another state administrative rule including, but not limited to, Minimum functional standards for solid waste handling (chapter 173-304 WAC), Dangerous waste regulations (chapter 173-303 WAC), and Uranium and/or thorium mill operation and stabilization of mill tailing piles (chapter 402-52 WAC).

(b) In determining an alternative point of compliance, the department shall consider, at a minimum, the following factors:

(i) Effectiveness of all known, available, and reasonable methods of prevention, control, and treatment;

(ii) The contaminant volume, type, mobility, and characteristics;

(iii) Design and life span of the activity;

(iv) Existing and anticipated land and groundwater uses; and

(v) Remedial options if an enforcement level is exceeded at the point of compliance.

(3) The department recognizes that evaluation of the impact of an activity at the designated point of compliance may be impractical, and the department may allow evaluation of that activity at some other point, in accordance with WAC 173-200-100 and 173-200-080(5).

[Statutory Authority: RCW 90.48.035. WSR 90-22-023, § 173-200-060, filed 10/31/90, effective 12/1/90.]

WAC 173-200-070 Early warning value. (1) The purpose of an early warning value is to provide early detection of increasing contaminant concentrations that may approach or exceed enforcement limits.

(2) Whenever an enforcement limit is established above background groundwater quality, an early warning value may be established, as appropriate.

(3) An early warning value shall be required when an alternative point of compliance is established unless technical constraints would prohibit establishment of an early warning value.

(4) An early warning value shall be established as a percentage of the enforcement limit upon consideration by the

department of factors including, but not limited to, the following:

(a) The enforcement limit relative to background groundwater quality;

(b) The availability, reliability, and reasonableness of analytical methods;

(c) The chemical, physical, and biological characteristics of the contaminants;

(d) The reliability of all known, available, and reasonable methods of prevention, control, and treatment;

(e) The anticipated increases in contaminant levels at the point of compliance; and

(f) The potential harm to existing and future beneficial uses.

(5) It shall not be considered a violation of these rules when contaminants are detected in concentrations exceeding an early warning value, but not exceeding an enforcement limit, unless there is failure to notify the department or respond as required in accordance with subsection (6) of this section.

(6) The following procedures apply when a contaminant is detected at a point of compliance or an alternative point of compliance and an early warning value is attained or exceeded.

(a) The permit holder or responsible person shall notify the department, in writing, within ten calendar days from detection of the early warning value, that the early warning value has been attained or exceeded. The notification shall contain, at a minimum, the following information:

(i) The concentrations of contaminants that attained or exceeded early warning values;

(ii) Concentrations of other contaminants monitored;

(iii) The location(s) and date(s) sampled; and

(iv) Concentrations of contaminants determined during previous sampling events.

(b) When notification is received, the department may require the permit holder or responsible person to perform one or more of the following:

(i) Take no action.

(ii) Resample to verify results.

(iii) Increase monitoring or modify the monitoring plan or evaluation procedures.

(iv) Develop and implement a trend analysis to determine the likelihood of exceeding the enforcement limit.

(v) Prepare and submit a report documenting the changes in groundwater quality and discuss and propose alternative methods of operation that will reduce impacts to groundwater.

(vi) Take such actions as the department deems necessary, if the department determines that there is a likelihood of exceeding an enforcement limit at the point of compliance.

[Statutory Authority: RCW 90.48.035. WSR 90-22-023, § 173-200-070, filed 10/31/90, effective 12/1/90.]

WAC 173-200-080 Evaluation. (1) The purpose of this section is to establish minimum requirements for evaluating the impacts of an activity on the groundwater quality to determine compliance with this chapter.

(2) If the department determines a potential to pollute the groundwater exists, the department shall request a permit holder or responsible person to prepare and submit for

departmental approval a groundwater quality evaluation program for its activity. Each evaluation program shall be based on soil and hydrogeologic characteristics and be capable of assessing impacts on groundwater at the point of compliance.

(3) A groundwater evaluation program approved by the department may include, but not be limited to, any of the following:

- (a) Groundwater monitoring for a specific activity;
- (b) Groundwater monitoring at selected sites for a group of activities;

- (c) Monitoring of the vadose zone;
- (d) Evaluation and monitoring of effluent quality;
- (e) Evaluation within a treatment process;
- (f) Evaluation of management practices.

(4) In the evaluation program the permit holder or responsible person shall include information on the following:

- (a) The chemical, physical, and biological characteristics of the contaminants;
- (b) The availability and adequacy of analytical methods;
- (c) The complexity and capability of assessing the hydrogeologic system;
- (d) The reliability of all known, available, and reasonable methods of prevention, control, and treatment;
- (e) The location of the point or points of compliance or alternative point of compliance; and
- (f) Such other information that the department deems necessary to achieve the objectives of this chapter.

(5) When it is impractical to evaluate the impact of an activity at the designated point of compliance, for example when a criterion is less than the practical quantification limit, evaluation shall be designed and performed at an alternate location to provide a realistic estimate of conditions in the groundwater at a point of compliance.

(6) These evaluation requirements pertain to activities that are not already covered by state regulation which have specific monitoring requirements such as chapter 173-303 WAC, Dangerous waste regulations, chapter 173-304 WAC, Minimum functional standards for solid waste handling, and chapter 402-52 WAC, Uranium and/or thorium mill operation and stabilization of mill tailing piles.

(7) For those activities for which the department has not issued permits and that have the potential to pollute the groundwater, evaluation shall be conducted according to the following:

(a) Evaluation procedures shall be included in department guidelines, policies, and best management practices to ensure that an adequate determination of compliance with this chapter can be made;

(b) For those activities regulated by other agencies but not regulated by department rule, the department will pursue evaluation of the activity through a memorandum of understanding with the regulating agency.

[Statutory Authority: RCW 90.48.035. WSR 90-22-023, § 173-200-080, filed 10/31/90, effective 12/1/90.]

WAC 173-200-090 Special protection areas. (1) The purpose of a special protection area is to identify and designate groundwaters that require special consideration or increased protection because of one or more unique characteristics.

(10/31/90)

(2) The unique characteristics of a special protection area shall be considered by the department when regulating activities, developing regulations, guidelines, and policies, and when prioritizing department resources for groundwater quality protection programs.

(3) The characteristics to guide designation of a special protection area shall include, but not be limited to, the following:

(a) Groundwaters that support a beneficial use or an ecological system requiring more stringent criteria than drinking water standards;

(b) Groundwaters, including, but not limited to, recharge areas and wellhead protection areas, that are vulnerable to pollution because of hydrogeologic characteristics; and

(c) Sole source aquifer status by federal designation.

(4) Special protection areas may be proposed for designation at any time by the department upon its own initiative or at the request of a federal agency, another state agency, an Indian tribe, or local government.

(a) The requestor of designation shall provide sufficient information for the department to determine if the proposed designation is in the best interest of the public. This information shall include, but not be limited to:

- (i) A rationale for the proposed designation;
- (ii) Supporting data for the proposed designation;
- (iii) A description of the proposed area including geographic and hydrologic boundaries;
- (iv) Documentation of coordination with affected state and local agencies, tribes, and water user groups; and
- (v) Such other information as the department deems necessary.

(b) In coordination with the department, the initiator of the request for designation shall hold at least one public meeting and take written comment for the purpose of receiving comments from the public, affected local, state and federal agencies, tribes, and other persons. Documentation of the public review process and comments received shall be submitted to the department.

(c) The department shall review the request for designation, provide written notification to all affected local, state and federal governments, and tribes, and hold at least one public hearing within the county or counties containing the proposed special protection area.

(5) The department shall designate said groundwaters as a special protection area if the department determines:

(a) The special protection area contains one or more of the characteristics described in subsection (2) of this section; and

(b) Such a designation is in the public interest.

[Statutory Authority: RCW 90.48.035. WSR 90-22-023, § 173-200-090, filed 10/31/90, effective 12/1/90.]

WAC 173-200-100 Implementation and enforcement. (1) The requirements of this chapter shall be met for all groundwaters to meet the requirements of this chapter at all places and at all times.

(2) No person shall engage in any activity that violates or causes the violation of this chapter.

(3) This chapter shall be enforced through all legal, equitable, and other methods available to the department including, but not limited to: Issuance of state waste discharge per-

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mits, other departmental permits, regulatory orders, court actions, review and approval of plans and specifications, evaluation of compliance with all known, available, and reasonable methods of prevention, control, and treatment of a waste prior to discharge, and pursuit of memoranda of understanding between the department and other regulatory agencies.

(4) Permits issued or reissued by the department shall be conditioned in such a manner as to authorize only activities that will not cause violations of this chapter.

(a) Any applicant for any departmental permit shall evaluate the potential impact of its proposed activity on the groundwater quality.

(b) For reissued permits, the permit holder shall evaluate the impacts of its activities on groundwater quality, and, if necessary to achieve compliance with groundwater quality enforcement limits, determine a department approved schedule of compliance.

(5) For permit holders in compliance with the terms and conditions of a department permit and whose activity violates this chapter, the department is electing, from among the enforcement mechanisms available to it for the enforcement of WAC 173-200-040 and 173-200-050, to precede any civil or criminal penalty with a compliance order or permit modification.

(6) The department shall pursue memoranda of understanding with other state agencies to develop policies and rules that will require all known, available, and reasonable methods of prevention, control, and treatment to achieve compliance with this chapter. Departmental orders, memoranda of understanding, and best management practices shall be modified by the department whenever an activity authorized by such orders or BMPs or pursuant to such memoranda of understanding violates this chapter.

(7) The department shall pursue memoranda of understanding with other state agencies, federal agencies, and tribal authorities to coordinate groundwater management activities.

(8) For persons whose activity violates this chapter but is in compliance with best management practices adopted by rule in chapter 248-96 WAC, WAC 173-304-300(4), RCW 15.58.150 (2)(c), WAC 16-228-180(1), or 16-228-185, the department is electing, from among the enforcement mechanisms available to it for the enforcement of WAC 173-200-040 and 173-200-050, to precede any civil or criminal penalty with a compliance order.

(9) When a distinction cannot be made among groundwater, surface water, or sediments the applicable standard shall depend on which beneficial use is or could be adversely affected. If beneficial uses of more than one resource are affected, the most restrictive standard shall apply.

(10) The department shall give due consideration to the precision and accuracy of sampling and analytical methods used when determining compliance with this chapter.

(11) The analytical testing methods for determining compliance with this chapter shall be approved in writing by the department prior to the performance of analyses.

[Statutory Authority: RCW 90.48.035. WSR 90-22-023, § 173-200-100, filed 10/31/90, effective 12/1/90.]