

DIVISION 41

WATER QUALITY STANDARDS: BENEFICIAL USES, POLICIES, AND CRITERIA FOR OREGON

340-041-0009

Bacteria

(1) Numeric Criteria: Organisms of the coliform group commonly associated with fecal sources (MPN or equivalent membrane filtration using a representative number of samples) may not exceed the criteria described in paragraphs (a) and (b) of this paragraph:

(a) Freshwaters and Estuarine Waters Other than Shellfish Growing Waters:

(A) A 30-day log mean of 126 E. coli organisms per 100 milliliters, based on a minimum of five (5) samples;

(B) No single sample may exceed 406 E. coli organisms per 100 milliliters.

(b) Marine Waters and Estuarine Shellfish Growing Waters: A fecal coliform median concentration of 14 organisms per 100 milliliters, with not more than ten percent of the samples exceeding 43 organisms per 100 ml.

(2) Raw Sewage Prohibition: No sewage may be discharged into or in any other manner be allowed to enter the waters of the State, unless such sewage has been treated in a manner approved by the Department or otherwise allowed by these rules;

(3) Animal Waste: Runoff contaminated with domesticated animal wastes must be minimized and treated to the maximum extent practicable before it is allowed to enter waters of the State;

(4) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propagation, or otherwise injurious to public health may not be allowed;

(5) Effluent Limitations for Bacteria: Except as allowed in subsection (c) of this section, upon NPDES permit renewal or issuance, or upon request for a permit modification by the permittee at an earlier date, effluent discharges to freshwaters, and estuarine waters other than shellfish growing waters may not exceed a monthly log mean of 126 E. coli organisms per 100 ml. No single sample may exceed 406 E. coli organisms per 100 ml. However, no violation will be found, for an exceedance if the permittee takes at least five consecutive re-samples at four-hour intervals beginning as soon as practicable (preferably within 28 hours) after the original sample was taken and the log mean of the five re-samples is less than or equal to 126 E. coli. The following conditions apply:

(a) If the Department finds that re-sampling within the timeframe outlined in this section would pose an undue hardship on a treatment facility, a more convenient schedule may be negotiated in the permit, provided that the permittee demonstrates that the sampling delay will result in no increase in the risk to water contact recreation in waters affected by the discharge;

(b) The [aquatic life criteria](#) ~~in-stream criterion~~ for chlorine [established in the water quality toxic substances rule under OAR 340-041-0033](#) ~~listed in Table 20~~ must be met at all times outside the assigned mixing zone;

(c) For sewage treatment plants that are authorized to use recycled water pursuant to OAR 340, division 55, and that also use a storage pond as a means to dechlorinate their effluent prior to discharge to public waters, effluent limitations for bacteria may, upon request by the permittee, be based upon appropriate total coliform limits as required by OAR 340, division 55:

(i) Class C limitations: No two consecutive samples may exceed 240 total coliform per 100 milliliters.

(ii) Class A and Class B limitations: No single sample may exceed 23 total coliform per 100 milliliters.

(iii) No violation will be found for an exceedance under this paragraph if the permittee takes at least five consecutive re-samples at four hour intervals beginning as soon as practicable (preferably within 28 hours) after the original sample(s) were taken; and in the case of Class C recycled water, the log mean of the five re-samples is less than or equal to 23 total coliform per 100 milliliters or, in the case of Class A and Class B recycled water, if the log mean of the five re-samples is less than or equal to 2.2 total coliform per 100 milliliters.

(6) Sewer Overflows in winter: Domestic waste collection and treatment facilities are prohibited from discharging raw sewage to waters of the State during the period of November 1 through May 21, except during a storm event greater than the one-in-five-year, 24-hour duration storm. However, the following exceptions apply:

(a) The Commission may on a case-by-case basis approve a bacteria control management plan to be prepared by the permittee, for a basin or specified geographic area which describes hydrologic conditions under which the numeric bacteria criteria would be waived. These plans will identify the specific hydrologic conditions, identify the public notification and education processes that will be followed to inform the public about an event and the plan, describe the

water quality assessment conducted to determine bacteria sources and loads associated with the specified hydrologic conditions, and describe the bacteria control program that is being implemented in the basin or specified geographic area for the identified sources;

(b) Facilities with separate sanitary and storm sewers existing on January 10, 1996, and which currently experience sanitary sewer overflows due to inflow and infiltration problems, must submit an acceptable plan to the Department at the first permit renewal, which describes actions that will be taken to assure compliance with the discharge prohibition by January 1, 2010. Where discharges occur to a receiving stream with sensitive beneficial uses, the Department may negotiate a more aggressive schedule for discharge elimination;

(c) On a case-by-case basis, the beginning of winter may be defined as October 15, if the permittee so requests and demonstrates to the Department's satisfaction that the risk to beneficial uses, including water contact recreation, will not be increased due to the date change.

(7) Sewer Overflows in summer: Domestic waste collection and treatment facilities are prohibited from discharging raw sewage to waters of the State during the period of May 22 through October 31, except during a storm event greater than the one-in-ten-year, 24-hour duration storm. The following exceptions apply:

(a) For facilities with combined sanitary and storm sewers, the Commission may on a case-by-case basis approve a bacteria control management plan such as that described in subsection (6)(a) of this rule;

(b) On a case-by-case basis, the beginning of summer may be defined as June 1 if the permittee so requests and demonstrates to the Department's satisfaction that the risk to beneficial uses, including water contact recreation, will not be increased due to the date change;

(c) For discharge sources whose permit identifies the beginning of summer as any date from May 22 through May 31: If the permittee demonstrates to the Department's satisfaction that an exceedance occurred between May 21 and June 1 because of a sewer overflow, and that no increase in risk to beneficial uses, including water contact recreation, occurred because of the exceedance, no violation may be triggered, if the storm associated with the overflow was greater than the one-in-five-year, 24-hour duration storm.

(8) Storm Sewers Systems Subject to Municipal NPDES Stormwater Permits: Best management practices must be implemented for permitted storm sewers to control bacteria to the maximum extent practicable. In addition, a collection-system evaluation must be performed prior to permit issuance or renewal so that illicit and cross connections are identified. Such connections must be removed upon identification. A collection system evaluation is not required where the Department determines that illicit and cross connections are unlikely to exist.

(9) Storm Sewers Systems Not Subject to Municipal NPDES Stormwater Permits: A collection system evaluation must be performed of non-permitted storm sewers by January 1, 2005, unless the Department determines that an evaluation is not necessary because illicit and cross connections are unlikely to exist. Illicit and cross-connections must be removed upon identification.

(10) Water Quality Limited for Bacteria: In those water bodies, or segments of water bodies identified by the Department as exceeding the relevant numeric criteria for bacteria in the basin standards and designated as water-quality limited under section 303(d) of the Clean Water Act, the requirements specified in section 11 of this rule and in OAR 340-041-0061(11) must apply.

(11) In water bodies designated by the Department as water-quality limited for bacteria, and in accordance with priorities established by the Department, development and implementation of a bacteria management plan may be required of those sources that the Department determines to be contributing to the problem. The Department may determine that a plan is not necessary for a particular stream segment or segments within a water-quality limited basin based on the contribution of the segment(s) to the problem. The bacteria management plans will identify the technologies, best management practices and/or measures and approaches to be implemented by point and nonpoint sources to limit bacterial contamination. For point sources, their National Pollutant Discharge Elimination System permit is their bacteria management plan. For nonpoint sources, the bacteria management plan will be developed by designated management agencies (DMAs) which will identify the appropriate best management practices or measures and approaches.

Stat. Auth.: ORS 468.020, 468B.030, 468B.035 & 468B.048

Stats. Implemented: ORS 468B.030, 468B.035 & 468B.048

Hist.: DEQ 17-2003, f. & cert. ef. 12-9-03; DEQ 6-2008, f. & cert. ef. 5-5-08; DEQ 10-2011, f. & cert. ef. 7-13-11

DIVISION 40

GROUNDWATER QUALITY PROTECTION

340-040-0020

General Policies

- (1) Groundwater is a critical natural resource providing domestic, industrial, and agricultural water supply; and other legitimate beneficial uses; and also providing base flow for rivers, lakes, streams, and wetlands.
- (2) Groundwater, once polluted, is difficult and sometimes impossible to clean up. Therefore, the EQC shall employ an anti-degradation policy to emphasize the prevention of groundwater pollution, and to control waste discharges to groundwater so that the highest possible water quality is maintained.
- (3) All groundwaters of the state shall be protected from pollution that could impair existing or potential beneficial uses for which the natural water quality of the groundwater is adequate. Among the recognized beneficial uses of groundwater, domestic water supply is recognized as being the use that would usually require the highest level of water quality. Existing high quality groundwaters which exceed those levels necessary to support recognized and legitimate beneficial uses shall be maintained except as provided for in these rules.
- (4) Numerical groundwater quality reference levels and guidance levels are listed in **Tables 1 through 3** of this Division. These levels have been obtained from the Safe Drinking Water Act, and indicate when groundwater may not be suitable for human consumption or when the aesthetic quality of groundwater may be impaired. They will be used by the Department and the public to evaluate the significance of a particular contaminant concentration, and will trigger necessary regulatory action. These levels should not be construed as acceptable groundwater quality goals because it is the policy of the EQC ~~(OAR 340-041-0026(1)(a))~~ to maintain and preserve the highest possible water quality.
- (5) For pollutant parameters for which numerical groundwater quality reference levels or guidance levels have not been established, or for evaluating adverse impacts on beneficial uses other than human consumption, the Department shall make use of the most current and scientifically valid information available in determining at what levels pollutants may affect present or potential beneficial uses. Such information shall include, but not be limited to, values set forth in OAR [340-041-0033](#) ~~Chapter 340, Division 41, Table 20~~.
- (6) The Department shall develop, implement and conduct a comprehensive groundwater quality protection program. The program shall contain strategies and methods for problem prevention, problem abatement and the control of both point and nonpoint sources of groundwater pollution. The Department shall seek the assistance of federal, state, and local governments in implementing the program.
- (7) In order to assure maximum reasonable protection of public health, the public shall be informed that groundwater, and most particularly local flow systems or water table aquifers, may not be suitable for human consumption due either to natural or human-caused pollution problems, and shall not be assumed to be safe for domestic use unless quality testing demonstrates a safe supply. The Department shall work cooperatively with the Water Resources Department and the Health Division in identifying areas where groundwater pollution may affect beneficial uses.
- (8) It is the policy of the EQC that groundwater quality be protected throughout the state. The Department will concentrate its groundwater quality protection implementation efforts in areas where practices and activities have the greatest potential for degrading groundwater quality, and where potential groundwater quality pollution would have the greatest adverse impact on beneficial uses.
- (9) The Department, as lead agency for groundwater quality protection, shall work cooperatively with the Water Resources Department, the lead agency for groundwater quantity management, to characterize the physical and chemical characteristics of the aquifers of the state. The Department will seek the assistance and cooperation of the Water Resources Department to design an ambient monitoring program adequate to determine representative groundwater quality for significant groundwater flow systems. The Department shall assist and cooperate with the Water Resources Department in its groundwater studies. The Department shall also seek the advice, assistance, and cooperation of local, state, and federal agencies to identify and resolve ground-water quality problems.
- (10) It is the intent of the EQC to see that groundwater problems associated with areawide on-site sewage disposal are corrected by developing and implementing areawide abatement plans. In order to accomplish this, all available and appropriate statutory and administrative authorities will be utilized, including but not limited to: permits, special permit conditions, penalties, fines, EQC orders, compliance schedules, moratoriums, Department orders, and geographic area rules (OAR 340-071-0400). It is recognized, however, that in some cases the identification, evaluation and

implementation of abatement measures may take time and that continued degradation may occur while the plan is being developed and implemented. The EQC may allow short-term continued degradation only if the beneficial uses, public health, and groundwater resources are not significantly affected, and only if the approved abatement plan is being implemented on a schedule approved by the Department.

(11) In order to minimize groundwater quality degradation potentially resulting from point source activities, point sources shall employ the highest and best practicable methods to prevent the movement of pollutants to groundwater. Among other factors, available technologies for treatment and waste reduction, cost effectiveness, site characteristics, pollutant toxicity and persistence, and state and federal regulations shall be considered in arriving at a case-by-case determination of highest and best practicable methods that protect public health and the environment.

(12) In regulating point source activities that could result in the disposal of wastes onto or into the ground in a manner which allows potential movement of pollutants to groundwater, the Department shall utilize all available and appropriate statutory and administrative authorities, including but not limited to: permits, fines, EQC orders, compliance schedules, moratoriums, Department orders, and geographic area rules. Groundwater quality protection requirements shall be implemented through the Department's Water Pollution Control Program, Solid Waste Disposal Program, On-Site Sewage Disposal System Construction Program, Hazardous Waste Facility (RCRA) Program, Underground Injection Control Program, Emergency Spill Response Program, or other programs, whichever is appropriate.

Table 1

NUMERICAL GROUNDWATER QUALITY REFERENCE LEVELS: 1

Inorganic Contaminants -- Reference Level (mg/L)

Arsenic -- 0.05

Barium -- 1.0

Cadmium -- 0.01

Chromium -- 0.05

Fluoride -- 4.0

Lead -- 0.05

Mercury -- 0.002

Nitrate-N -- 10.0

Selenium -- 0.01

Silver -- 0.05

1All reference levels are for total (unfiltered) concentrations unless otherwise specified by the Department.

Table 2

NUMERICAL GROUNDWATER QUALITY REFERENCE LEVELS (Continued): 1

Organic Contaminants -- Reference Level (mg/L)

Benzene -- 0.005

Carbon Tetrachloride -- 0.005

p-Dichlorobenzene -- 0.075

1,2-Dichloroethane -- 0.005

1,1-Dichloroethylene -- 0.007

1,1,1-Trichloroethane -- 0.200

Trichloroethylene -- 0.005

Total Trihalomethanes -- 0.100

(the sum of concentrations bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform))

Vinyl Chloride -- 0.002

2,4-D -- 0.100

Endrin -- 0.0002

Lindane -- 0.004

Methoxychlor -- 0.100

Toxaphene -- 0.005

2,4,5-TP Silvex -- 0.010

1All reference levels are for total (unfiltered) concentrations unless otherwise specified by the Department.

Table 3

NUMERICAL GROUNDWATER QUALITY GUIDANCE LEVELS: 1**Miscellaneous Contaminants -- Guidance Level (mg/L) 2**

Chloride -- 250

Color -- 15 Color Units

Copper -- 1.0

Foaming agents -- 0.5

Iron -- 0.3

Manganese -- 0.05

Odor -- 3 Threshold odor number

pH -- 6.5-8.5

Sulfate -- 250

Total dissolved solids -- 500

Zinc -- 5.0

¹All guidance levels except total dissolved solids and are for total (unfiltered) concentrations unless otherwise specified by the Department.

²Unless otherwise specified, except pH.

Stat. Auth.: [ORS 468](#) & [ORS 468B](#)

Stats. Implemented: [ORS 468.020](#), [ORS 468.035](#), [ORS 468B.155](#) & [ORS 468B.165](#)

Hist.: DEQ 24-1981, f. & ef. 9-8-81; DEQ 13-1984, f. & ef. 7-13-84; DEQ 27-1989, f. & cert. ef. 10-27-89; Renumbered from 340-041-0029; DEQ 4-1996, f. & cert. ef. 3-7-96

340-040-0080

Numerical Groundwater Quality Reference Levels and Guidance Levels

(1) The numerical groundwater quality reference levels and guidance levels contained in **Tables 1 through 3** of this Division are to be considered by the Department and the public in weighing the significance of a particular chemical concentration, and in determining the level of remedial action necessary to restore contaminated groundwater for human consumption. They are not to be construed as acceptable groundwater quality management goals. They are to be used by the Director and the EQC in establishing permit-specific and remedial action concentration limits according to the requirements of OAR 340-040-0030 through 340-040-0060.

(2) The Department shall periodically review information as it becomes available for establishing new numerical groundwater quality reference levels and guidance levels, and to ensure consistency with other statutorily mandated standards.

(3) Human consumption is recognized as the highest and best use of groundwater, and the use which usually requires the highest level of water quality. The numerical groundwater quality reference levels listed in **Tables 1 and 2** of this Division reflect the suitability of groundwater for human consumption.

(4) The numerical groundwater quality guidance levels listed in **Table 3** of this Division are for contaminants which do not adversely impact human health at the given concentrations. At considerably higher concentrations, human health implications may exist. These guidance levels are for contaminants that primarily affect the aesthetic qualities relating to the public acceptance of drinking water. The aesthetic degradation of groundwater may impair its beneficial use.

(5) For pollutant parameters for which numerical ground-water quality reference levels or guidance levels have not been established and listed in **Tables 1 through 3**, or for evaluating adverse impacts on beneficial uses other than human consumption, the Department shall make use of the most current and scientifically valid information available in determining at what levels pollutants may affect present or potential beneficial uses. Such information shall include, but not be limited to, values set forth in OAR [340-041-0033](#) ~~Chapter 340, Division 41, Table 20.~~

Stat. Auth.: [ORS 468](#) & [ORS 468B](#)

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