

# Department of Environmental Quality

## Chapter 340

### Division 40

#### GROUNDWATER QUALITY PROTECTION

##### [340-040-0001](#)

###### **Preface**

The Rules within this division establish the mandatory minimum groundwater quality protection requirements for federal and state agencies, cities, counties, industries, and citizens. Other federal, state, and local programs may contain additional or more stringent ground-water quality protection requirements. Unless specifically exempted by statute, groundwater quality protection requirements must meet or be equivalent to these rules. Removal and remedial actions subject to Oregon Revised Statutes (ORS) 466.540 to 466.590, 466.705 to 466.835 and 466.895 shall not be subject to the requirements of these rules.

**Statutory/Other Authority:** ORS 468 & 468B

**Statutes/Other Implemented:** ORS 468B.150 - 468B.190

###### **History:**

DEQ 27-1989, f. & cert. ef. 10-27-89, Renumbered from 340-041-0029

DEQ 13-1984, f. & ef. 7-13-84

DEQ 24-1981, f. & ef. 9-8-81

##### [340-040-0010](#)

###### **Definitions**

Terms not defined in this section have the meanings set forth in OAR 340-041-0006 unless otherwise noted. Unless otherwise required by context, as used in this division:

- (1) "Background Water Quality" means the quality of water immediately upgradient from a current or potential source of pollution that is unaffected by the source.
- (2) "Compliance Point(s)" means the point or points where groundwater quality parameters must be at or below the permit-specific concentration limits or the concentration limit variance.
- (3) "Concentration Limit" means the maximum acceptable concentration of a contaminant allowed in groundwater at a Department specified compliance point.
- (4) "Concentration Limit Variance" means a groundwater quality concentration limit which is granted by the Director or the EQC on a case-by-case basis as an alternative to a permit-specific concentration limit established under section (3) of OAR 340-040-0030.
- (5) "Contaminant" has the meaning set forth for "pollutant" as defined in OAR 340-045-0010(13), and means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewerage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged to water, and includes any pollutant or other characteristic element which may result in pollution of the waters of the State.
- (6) "Downgradient Detection Monitoring Point(s)" means the point or points at which groundwater quality is monitored to immediately determine whether a pollutant has been discharged to groundwater. The detection monitoring point is not necessarily the same as the compliance point.
- (7) "Existing Facility" means any facility or activity operating under a Department approved permit on or before the effective date of OAR 340-040-0030. Such facilities or activities shall include those facilities specifically exempted by statute from the permitting process.

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(8) "Guidance Level" means the contaminant concentration level used to evaluate the significance of a particular contaminant in groundwater. A guidance level generally indicates when the quality of groundwater may not be suitable for use as drinking water due to its aesthetic characteristics.

(9) "Natural Water Quality" means the water quality that would exist as a result of conditions unaffected by human-caused pollution.

(10) "New Facility" means a facility or activity authorized to operate under a Department approved permit for the first time after the effective date of OAR 340-040-0030. A new facility or activity includes changes in facility operation, disposal technique, or other alterations which justify new conditions to and necessitate major modifications of an existing permit.

(11) "Non-permitted Activity" means an activity which is not regulated through a Department-approved permit which could result in or has resulted in groundwater pollution. Unless specifically exempted by statute, such activities shall include but not be limited to spills, releases and past practices which either are not subject to a permit or are subject to a permit but were not permitted at the time of the release.

(12) "Nonpoint Sources" refers to diffuse or unconfined sources of pollution where contaminants can either enter into — or be conveyed by the movement of water to — public waters.

(13) "Permitted Operation" means any facility or activity which emits, discharges, or disposes of wastes or otherwise operates in accordance with specified limitations set forth in a written permit issued by the Department.

(14) "Point Source" means any confined or discrete source of pollution where contaminants can either enter into — or be conveyed by the movement of water to — public waters.

(15) "Pollution" has the meaning set forth for "pollution" as defined in the Water Pollution Control Statute ORS 468.700(3) and means such alteration of the physical, chemical or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt or odor of the waters, or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state, which will or tends to, either by itself or in connection with any other substance, create a public nuisance or which will or tends to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life or the habitat thereof.

(16) "Reference Level" means the contaminant concentration level used to evaluate the significance of a particular contaminant in groundwater. A reference level generally indicates when groundwater may not be suitable for human consumption.

(17) "Uppermost Aquifer" means the geologic formation, group of formations, or part of a formation that contains the uppermost potentiometric surface capable of yielding water to wells or springs, and may include fill material that is saturated.

(18) "Wastes" means sewage, industrial wastes, and all other liquid, gaseous, solid, radioactive, or other substances which will or may cause pollution or tend to cause pollution of any water of the state.

(19) "Waste Management Area" means any area where waste, or material that could become waste if released to the environment, is located or has been located.

**Statutory/Other Authority:** ORS 468 & 468B

**Statutes/Other Implemented:** ORS 468.005, 468B.005 & 468B.150

**History:**

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DEQ 13-1984, f. & ef. 7-13-84

DEQ 24-1981, f. & ef. 9-8-81

**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. [Note: View a PDF of the tables by clicking on the "Tables" link that follows this rule.] 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 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.

(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 area-wide on-site sewage disposal are corrected by developing and implementing area-wide 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.

[ED. NOTE: To view attachments referenced in rule text, [click here to view rule.](#)]

**Statutory/Other Authority:** 468B & ORS 468

**Statutes/Other Implemented:** ORS 468.020, 468.035, 468B.155 & 468B.165

**History:**

[DEQ 13-2019, amend filed 05/16/2019, effective 05/16/2019](#)

[DEQ 29-2018, minor correction filed 04/02/2018, effective 04/02/2018](#)

[DEQ 28-2018, minor correction filed 04/02/2018, effective 04/02/2018](#)

[DEQ 6-2018, minor correction filed 02/14/2018, effective 02/14/2018](#)

[DEQ 28-2017, minor correction filed 11/28/2017, effective 11/28/2017](#)

DEQ 16-2013, f. & cert. ef. 12-23-13

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DEQ 13-1984, f. & ef. 7-13-84

DEQ 24-1981, f. & ef. 9-8-81

**340-040-0030**

**Permitted Operations**

(1) Permits required by point sources shall specify appropriate groundwater quality protection requirements. Water Pollution Control Facility (WPCF) permits may be used in cases other than for those covered by Solid Waste Disposal Facility permits, NPDES permits, On-Site Sewage Disposal permits, or Hazardous Waste Facility permits.

(2) The Department shall review and evaluate appropriate technical information and reports submitted by permitted sources to determine the potential for adverse impacts to groundwater quality. Where the above technical information and reports indicate that there is a likely adverse groundwater quality impact, the Department shall require through the permits and rules referred to in OAR 340-040-0020(12), and other appropriate statutory and administrative authorities, the following groundwater quality protection program:

(a) Groundwater Monitoring Requirements. The permittee or permit applicant shall submit to the Department for approval a groundwater monitoring plan for the uppermost aquifer and any other potentially affected aquifers. The groundwater monitoring plan shall be capable of determining rate and direction of groundwater movement, and monitoring the groundwater quality immediately upgradient and downgradient from the waste management area. The plan shall include, but not be limited to, detailed information on the following:

(A) System Design:

(i) Well Locations;

(ii) Well Construction;

(iii) Background Monitoring Point(s);

(iv) Detection Monitoring Point(s);

(v) Water Quality Compliance Point(s).

(B) Sample Collection and Analysis:

(i) Parameters to be Sampled;

(ii) Sampling Frequency and Duration;

(iii) Sample Collection Methods;

(iv) Sample Handling and Chain of Custody;

(v) Analytical Methods;

(vi) Acceptable Minimum Reporting Levels;

(vii) Quality Assurance and Quality Control Plan.

(C) Data Analysis Procedure:

(i) Statistical Analysis Method;

(ii) Frequency of Analysis.

(b) Reporting Requirements. The facility permit shall specify monitoring and assessment reporting requirements;

(c) Background Monitoring Point(s) Requirements. The permittee shall monitor the background water quality of the uppermost aquifer. The background monitoring point(s) shall be located where water quality is unaffected by facility operation;

(d) Downgradient Detection Monitoring Point(s) Requirements. The permittee shall monitor the aquifer directly downgradient from the waste management area to ensure immediate detection of waste released to groundwater. This shall be known as the downgradient detection monitoring point(s);

(e) Compliance Point(s) Requirements. The Department shall specify the location at which groundwater quality parameters must be at or below the permit-specific concentration limits. Unless otherwise specified by the Department, that location will be defined by a vertical plane located along the waste management area boundary. Any monitoring point on that plane is a compliance point. The compliance point(s) may not necessarily be the same as the downgradient detection monitoring point(s).

(3) Concentration Limits. The facility permit shall specify the maximum contaminant concentration allowed at the compliance point(s). Unless otherwise established according to the variance procedure contained in section (4) of this rule, the Department shall set permit-specific concentration limits at new and existing facilities as established below:

(a) Concentration Limit at Existing Facilities: The concentration limit at existing facilities shall be established by the Department on a case-by-case basis. The concentration limit at these facilities may be established at any level between background water quality levels and the numerical groundwater quality reference levels or guidance levels as listed in Tables 1 through 3 of this division unless the background water quality is above those numerical levels. If the background water quality exceeds those numerical levels, then the concentration limit shall be established at the background level. When a contaminant of concern has no numerical level listed in Tables 1 through 3 of this division, the permit-specific concentration limit shall not exceed background water quality levels; [Note: View a PDF of the tables by clicking on the "Tables" link at the end of OAR 340-040-0020.]

(b) Concentration Limit at New Facilities: The permit-specific concentration limits at new facilities shall be established at the background water quality levels for all contaminants.

(4) Concentration Limit Variance:

(a) Upon request by the permittee, Department, or permit applicant, and after opportunity for public review and comment, a concentration limit variance may be granted as an alternative to the permit-specific concentration limits specified in section (3) of this rule provided an existing, permit-specific concentration limit has not been exceeded at a compliance point;

(b) The Director may grant such concentration limit variances for concentrations up to but not exceeding numerical groundwater quality reference levels contained in Tables 1 and 2 of this division; concentrations up to and above numerical groundwater quality guidance levels contained in Table 3 of this division; and concentrations for contaminants for which there are no reference or guidance levels in Tables 1 through 3 of this division. Concentration limit variances in excess of a numerical groundwater quality reference level listed in Tables 1 and 2 of this division may only be granted by the EQC; [Note: View a PDF of the tables by clicking on the "Tables" link at the end of OAR 340-040-0020.]

(c) The EQC or Director, as specified in subsection (4)(b) of this rule, may grant on a case-by-case determination a concentration limit variance for a pollutant provided no substantial present or potential hazard to human health or the environment is posed at that level. The party requesting the concentration limit variance shall provide all data required for consideration of the variance, and shall identify where gaps exist in the data for the required analysis. In establishing concentration limit variances, the EQC or Director shall consider the effects on groundwater quality, interconnected surface water quality, and associated effects on beneficial uses. Among others, the following factors shall be considered:

(A) The physical and chemical characteristics of the pollutant and degradation products, including the potential for migration;

(B) The hydrogeologic characteristics at the facility and the surrounding area;

(C) The quantity of groundwater and the direction of groundwater flow;

(D) The proximity and withdrawal rates of groundwater users;

(E) The current and future uses of groundwater in the area;

(F) The existing quality of the groundwater, including other sources of pollution and their cumulative impact on water quality;

(G) The potential for health risks caused by exposure to the pollutant and its degradation products;

(H) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to the pollutant and its degradation products;

(I) The persistence and permanence of potential adverse effects of the contaminant and its degradation products;

(J) The proximity and interconnections with surface water in the area;

(K) The potential effect on interconnected surface water;

(L) The potential effect of the pollutant and its degradation products on ecosystems of the area; and

(M) The comparative feasibility and cost of obtaining the permit-specific concentration limit and the concentration limit variance.

(5) Action Requirements:

(a) Resampling: If monitoring indicates a significant increase (increase or decrease for pH) in the value of a parameter monitored, the permittee shall immediately resample. If the resampling confirms the change in water quality, the permittee shall:

(A) Report the results to the Department within 10 days of receipt of the laboratory data; and

(B) Prepare and submit to the Department within 30 days a plan for developing a preliminary assessment unless another time schedule is approved by the Department.

(b) Preliminary Assessment Plan: The preliminary assessment plan must provide for an assessment of the source, extent, and potential migration of the pollution; a time schedule for the implementation of the preliminary assessment plan activities; and an evaluation of whether or not action will be necessary to remain within the concentration limit at the Department approved compliance point(s);

(c) Preventive Action: In order to prevent additional ground-water pollution from occurring, the Department shall require the utilization of all available and reasonable technology to decrease or prevent the release of additional contaminants when a significant change in water quality has occurred at a detection monitoring point.

(6) Remedial Action Requirements:

(a) If the monitoring indicates a concentration limit for a contaminant other than those listed in Table 3 of this division is violated at a compliance point, the Department shall require a remedial investigation and feasibility study be conducted by the permittee pursuant to the requirements contained in OAR 340-040-0040, and remedial action conducted pursuant to the requirements contained in OAR 340-040-0050; [Note: View a PDF of the tables by clicking on the "Tables" link at the end of OAR 340-040-0020.]

(b) If the monitoring indicates a concentration limit for a contaminant listed in Table 3 of this division is violated at a compliance point and if the permittee demonstrates to the Director's satisfaction that beneficial uses are being protected, the permittee will not be required to conduct a remedial investigation and feasibility study in accordance with OAR 340-040-0040, or to conduct remedial action pursuant to the requirements contained in OAR 340-040-0050. However, if the Director determines that beneficial uses are not being protected, the Department shall require adequate remedial investigation necessary to characterize the extent of the pollution, and shall also require appropriate remedial action to protect beneficial uses. [Note: View a PDF of the tables by clicking on the "Tables" link at the end of OAR 340-040-0020.]

[ED. NOTE: To view attachments referenced in rule text, click here to view rule.]

**Statutory/Other Authority:** ORS 468 & 468B

**Statutes/Other Implemented:** ORS 468B.050 & 468B.065

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DEQ 13-1984, f. & ef. 7-13-84

DEQ 24-1981, f. & ef. 9-8-81

**340-040-0040**

**Remedial Investigation and Feasibility Study**

(1) If, based upon the preliminary assessment or other information, the Director determines there is a substantial likelihood that remedial action will be necessary to maintain or restore groundwater quality to achieve a specified concentration limit, or to protect public health, safety, or welfare or the environment, the Director shall require a remedial investigation and/or feasibility study be performed to develop information to determine the need for and selection of a remedial action.

(2) The Department shall develop and maintain a list of all facilities currently developing remedial investigations and feasibility studies, and shall make such a list available to the public on request.

(3) The remedial investigation shall include but is not limited to characterization of pollution, characterization of the facility, and an endangerment assessment. In presenting the required information, a clear description of the data used as well as any data gaps encountered in the analysis shall be included:

(a) The characterization of the pollution as appropriate shall include but is not limited to information regarding:

- (A) Extent to which the source can be adequately identified and characterized;
- (B) Amount, form, concentration, toxicity, environmental fate and transport, and other significant characterization of present substances; and
- (C) Extent to which the substances might be reused or recycled.
- (b) The characterization of the facility as appropriate shall include but is not limited to information regarding:
  - (A) Contaminant substance mixtures present, media of occurrence, and interface zones between media;
  - (B) Hydrogeologic factors;
  - (C) Climatologic and meteorologic factors; and
  - (D) Type, location, and description of facilities, or activities that could have resulted in the pollution.
- (c) The endangerment assessment as appropriate shall include but is not limited to information regarding:
  - (A) Potential routes of exposure and concentration;
  - (B) Characterization of toxic effects;
  - (C) Populations at risk;
  - (D) Potential or actual adverse impact on:
    - (i) Biological receptors;
    - (ii) Present and future uses of the groundwater;
    - (iii) Ecosystems and natural resources; and
    - (iv) Aesthetic characteristics of the environment.
  - (E) Extent to which substances have migrated or are expected to migrate and the threat such migration might pose to public health, safety and welfare or the environment; and
  - (F) Potential for release of any substances or treatment residuals that might remain after remedial action.
- (4) The feasibility study shall include but is not limited to the development and evaluation of remedial action options:
  - (a) The development of remedial action options as appropriate shall include but is not limited to the following range of options:
    - (A) Remedial action attaining the specified concentration limit;
    - (B) Highest and best technology attaining the lowest concentration levels technically achievable if paragraph (4)(a)(A) of this rule is not technically achievable;
    - (C) Best practicable technology attaining the lowest concentration level that meets the requirements of OAR 340-040-0050(1)(b) and (2), and does not exceed a site-specific concentration level considered protective of public health, safety, and welfare and the environment;
    - (D) Other measures to supplement or substitute for cleanup technologies, including but not limited to engineering or institutional controls (e.g., environmental hazard notice, alternative drinking water supply, caps, security measures, etc.);
    - (E) Combinations of any of the above options; and
    - (F) No action option.
  - (b)(A) Remedial action options developed under subsection (4)(a) of this rule shall be evaluated under the requirements, criteria, preferences, and factors set forth in OAR 340-040-0050 and according to any other criteria determined by the Director to be relevant to selection of a remedial action under OAR 340-040-0050;
  - (B) The evaluation of remedial action options developed under subsection (4)(a) of this rule shall include an evaluation of the extent to which the option or combination of options complies with relevant state, local, and federal law, standards, and guidance.

**Statutory/Other Authority:** ORS 468 & 468B

**Statutes/Other Implemented:** ORS 468.035

**History:**

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DEQ 13-1984, f. & ef. 7-13-84

DEQ 24-1981, f. & ef. 9-8-81

**Selection of the Remedial Action**

(1) Requirements: After opportunity for public review and comment, the Director shall select a remedial action. Such remedial action shall meet the following requirements:

(a) Be protective of present and future public health, safety, and welfare and the environment; and

(b) To the maximum extent practicable:

(A) Be cost effective;

(B) Use permanent solutions and alternative technologies or resource recovery technologies;

(C) Be implementable; and

(D) Be effective.

(2) Remedial Action Concentration Limit: The remedial action shall attain the concentration limit specified under OAR 340-040-0030(3) for permitted operations or OAR 340-040-0060(2) for non-permitted activities for the contaminant substances, unless the Director determines that the specified concentration limit does not satisfy the requirement set forth in subsection (1)(b) of this rule, in which case the Director shall select a remedial action that attains the lowest concentration level of the contaminant substances that satisfies the requirements set forth in section (1) of this rule.

(3) Other Measures to Supplement Cleanup: The Director may require other measures (e.g., institutional controls, environmental hazard notice, alternate drinking water supply, caps, security measures, etc.) to supplement cleanup of contaminant substances to the remedial action concentration limit in accordance with section (2) of this rule, where such supplementary measures are necessary to satisfy the requirements set forth in section (1) of this rule.

(4) Other Measures to Substitute for Cleanup: The Director may require other measures to substitute for cleanup of contaminant substances to the remedial action concentration limit under section (2) of this rule, provided that:

(a) The Director finds that there is no remedial action under section (2) of this rule, combined with supplementary measures under section (3) of this rule, that satisfies the requirements of section (1) of this rule;

(b) Any such substitute measures, as appropriate, include provision for long-term care and management, including monitoring and operation and maintenance, and periodic review, to determine whether a remedial action satisfying the requirements of section (1) of this rule has become available.

(5) Protection:

(a) In determining whether a remedial action assures protection of the present and future public health, safety, and welfare and the environment under subsection (1)(a) of this rule, only the concentration limit specified under OAR 340-040-0030(3) for permitted operations or OAR 340-040-0060(2) for non-permitted activities shall be presumed to be protective. This presumption may be rebutted by information showing that a higher concentration level is also protective;

(b) In determining whether a concentration level higher than the specified concentration limit is protective, the Director shall consider:

(A) The characterization of contaminant substances and the facility, and the endangerment assessment;

(B) Other relevant cleanup or health standards, criteria, or guidance;

(C) Relevant and reasonably available scientific information; and

(D) Any other information relevant to the protectiveness of a remedial action.

(c) When comparing between potential concentration levels, a concentration level lower than another shall generally be considered to be more protective and preferable. This presumption may be rebutted by information showing that a higher concentration level is also protective;

(d) Any person responsible for undertaking the remedial action who proposes that the remedial action attain a concentration level higher than the specified concentration limit on the basis of protection shall have the burden of demonstrating to the Director that such concentration level is protective.

(6) Cost-Effectiveness: In determining whether a remedial action is cost-effective under subsection (1)(b) of this rule, the Director may consider:

(a) Costs of the remedial action relative to the costs of another remedial action option, if any, that achieves the same concentration level;

(b) Extent to which the remedial action's incremental costs are proportionate to its incremental results;



- (c) Extent to which the remedial actions total costs are proportionate to its total results;
- (d) Any other criterion relevant to cost-effectiveness of the remedial action; and
- (e) Costs that may be considered include but are not limited to:
  - (A) Capital costs;
  - (B) Operation and maintenance costs;
  - (C) Costs of periodic reviews, where required;
  - (D) Net present value of capital and operation and maintenance costs; and
  - (E) Potential future remedial action costs.
- (7) Permanent Solutions and Alternative or Resource Recovery Technologies: In determining whether a remedial action uses a permanent solution and alternative or resource recovery technologies under subsection (1)(b) of this rule:
  - (a) Remedial action options that use permanent solutions shall be preferred over other remedies;
  - (b) Remedial action options in which resource recovery or alternative technology is a principal element shall be preferred over remedial action options not involving such technology;
  - (c) Subject to subsection (7)(e) of this rule, the offsite transport and secure disposition of contaminated materials without treatment may be preferred where practicable alternative treatment technologies are not available;
  - (d) Subject to subsections (7)(e) and (f) of this rule, and notwithstanding the availability of practicable alternative treatment technologies as provided in subsection (7)(c) of this rule, offsite transport and secure disposition of contaminated materials may be preferred when the disposal method would significantly expedite the cleanup or would achieve a total cleanup, especially at sites with contaminant materials of small quantity or low toxicity;
  - (e) The transport and secure disposition offsite of a hazardous waste under ORS 466.005 in a treatment, storage, or disposal facility shall meet the requirements of section 3004(c) to (g), (m), (o), (p), (u) and (v) and 3005(c) of the federal Solid Waste Disposal Act, as amended, P.L. 96-482 and P.L. 98-616;
  - (f) The transport and secure disposition of contaminated materials, other than hazardous wastes, at an offsite facility may be allowed provided that the transport and secure disposition of such contaminated materials, in the Director's determination, is adequate to protect the public health, safety, and welfare and the environment.
- (8) Implementability: In determining whether a remedial action is implementable under subsection (1)(b) of this rule, the Director may consider:
  - (a) Degree of difficulty associated with implementing the technology;
  - (b) Expected operational reliability of the technology;
  - (c) Need to coordinate with and obtain necessary approvals or permits from other agencies;
  - (d) Availability of necessary equipment and specialists;
  - (e) Available capacity and location of needed treatment, storage, and disposal services; and
  - (f) Any other criterion relevant to implementability of the remedial action.
- (9) Effectiveness of the Remedial Action: In determining whether a remedial action is effective under subsection (1)(b) of this rule, the Director shall consider the following unless immediate action is needed to protect public health, safety and welfare and the environment:
  - (a) Expected reduction in toxicity, mobility, and volume of the contaminant substances;
  - (b) Short-term risks that might be posed to community, workers, and the environment during implementation, including potential threats to human health and the environment associated with excavation, transport, and re-disposal or containment;
  - (c) Length of time until full protection is achieved;
  - (d) Magnitude of residual risks in terms of amounts and concentrations of contaminant substances remaining following implementation of a remedial action, including consideration of the persistence, toxicity, mobility, and propensity to bioaccumulate of such contaminant substances and their constituents;
  - (e) Type and degree of long-term management required, including monitoring, operation and maintenance;
  - (f) Long-term potential for exposure of human and environmental receptors to remaining contaminants;

(g) Long-term reliability of engineering and institutional controls, including long-term uncertainties associated with land disposal, treated or untreated waste, and residuals;

(h) Potential for failure of the remedial action or potential need for replacement of the remedy; and

(i) Any other criterion relevant to effectiveness of the remedial action.

(10) Any person responsible for undertaking the remedial action who proposes one remedial action option over another on the basis of one or more of the elements of subsection (1)(b) of this rule shall have the burden of demonstrating to the Director that such remedial action option fulfills the requirements of subsections (1)(a) and (b) of this rule.

**Statutory/Other Authority:** ORS 468 & 468B

**Statutes/Other Implemented:** ORS 468.035

**History:**

[DEQ 31-2018, minor correction filed 04/02/2018, effective 04/02/2018](#)

DEQ 27-1989, f. & cert. ef. 10-27-89, Renumbered from 340-041-0029

DEQ 13-1984, f. & ef. 7-13-84

DEQ 24-1981, f. & ef. 9-8-81

**340-040-0060**

**Non-Permitted Activities**

Non-permitted activities shall include, but not be limited to, spills, releases and past practices from activities that are not subject to a permit and activities that are subject to a permit but were not permitted at the time of the release.

(1) Except as provided otherwise under statutory or administrative authorities, when a non-permitted activity could result in or has resulted in the pollution of groundwater the Department may require the liable person to:

(a) Conduct a remedial investigation and feasibility study pursuant to OAR 340-040-0040;

(b) Implement remedial action pursuant to OAR 340-040-0050.

(2) In conducting the remedial investigation and feasibility study, and selecting the remedial action under the requirements contained in OAR 340-040-0040 and 340-040-0050, the concentration limits will be established at background water quality levels.

(3) Clean-up levels for non-permitted activities will be established by the procedures contained in OAR 340-040-0040 and 340-040-0050 which include evaluations of practicability as contained in OAR 340-040-0050(1)(b).

**Statutory/Other Authority:** ORS 468 & 468B

**Statutes/Other Implemented:** ORS 468.035 & 468B.155

**History:**

DEQ 27-1989, f. & cert. ef. 10-27-89, Renumbered from 340-041-0029

DEQ 13-1984, f. & ef. 7-13-84

DEQ 24-1981, f. & ef. 9-8-81

**340-040-0070**

**On-Site Sewage Disposal: Area Wide Management**

(1) In areas where groundwater is being degraded as a result of on-site sewage disposal practices and an area wide solution is necessary, the Department may propose a rule for adoption by the EQC and incorporation into the appropriate basin section of the State Water Quality Management Plan (OAR 340 division 41) which will:

(a) Recite the findings describing the problem and the aquifer impacted;

(b) Define the area where corrective action is required;

(c) Describe the problem correction and preventative measures to be ordered;

(d) Establish the schedule for required major increments of progress;

(e) Identify conditions under which new, modified, or repaired, on-site sewage disposal systems may be installed in the interim while the area correction program is being implemented and is on schedule;

(f) Identify the conditions under which enforcement measures will be pursued if adequate progress to implement the corrective actions is not made. These measures may include but are not limited to measures authorized in ORS 454.235(2), 454.685, 454.645, and 454.317;

(g) Identify all known affected local governing bodies which the Department will notify by certified mail of the final rule adoption; and

(h) Accomplish any other objectives declared to be necessary by the EQC.

(2) The Department shall notify all known impacted or potentially affected local units of government of the opportunity to comment on the proposed rule at a scheduled public hearing and of their right to request a contested case hearing pursuant to ORS Chapter 183 prior to the EQC's final order adopting the rule.

**Statutory/Other Authority:** ORS 468

**Statutes/Other Implemented:** ORS 468B.020 & 468B.155

**History:**

DEQ 27-1989, f. & cert. ef. 10-27-89, Renumbered from 340-041-0029

DEQ 13-1984, f. & ef. 7-13-84

DEQ 24-1981, f. & ef. 9-8-81

### **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. [Note: View a PDF of the tables by clicking on the "Tables" link at the end of OAR 340-040-0020.]

(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. [Note: View a PDF of the tables by clicking on the "Tables" link at the end of OAR 340-040-0020.]

(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. [Note: View a PDF of the tables by clicking on the "Tables" link at the end of OAR 340-040-0020.]

(5) For pollutant parameters for which numerical groundwater 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. [Note: View a PDF of the tables by clicking on the "Tables" link at the end of OAR 340-040-0020.]

**Statutory/Other Authority:** ORS 468 & 468B

**Statutes/Other Implemented:** ORS 468.020, 468.035, 468B.155 & 468B.165

**History:**

[DEQ 30-2017, minor correction filed 11/28/2017, effective 11/28/2017](#)

DEQ 16-2013, f. & cert. ef. 12-23-13

DEQ 27-1989, f. & cert. ef. 10-27-89, Renumbered from 340-041-0029

DEQ 13-1984, f. & ef. 7-13-84

DEQ 24-1981, f. & ef. 9-8-81

### **340-040-0090**

#### **Interim Standards for Maximum Measurable Levels of Contaminants in Groundwater to be Used in the Designation of a Groundwater Management Area**

Interim standards are contained in Tables 4A, 5, and 6 of this division for maximum measurable levels (MMLs) of contaminants in groundwater to be used in the designation of a groundwater management area. Permanent standards for MMLs are found in Table 4B. The permanent or interim levels shall be used in all actions conducted by the Department where the use of maximum measurable levels for contaminants in groundwater is required.

Table 4A

INTERIM STANDARDS FOR MAXIMUM MEASURABLE LEVELS OF CONTAMINANTS IN GROUNDWATER :1, 2, 3

Inorganic Contaminants – Interim Standard (mg/L)

Arsenic – 0.05

Barium – 1.0

Cadmium – 0.010

Chromium – 0.05

Fluoride – 4.0

Lead – 0.05

Mercury – 0.002

Selenium – 0.01

Silver – 0.05

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

2The source of all standards listed is 40 CFR Part 141.

3MMLs are used to trigger designation of a groundwater management area when concentrations are detected on an area-wide basis which exceed 70 percent of the nitrate MML or 50 percent of other MMLs.

Table 4B

PERMANENT STANDARDS FOR MAXIMUM MEASURABLE LEVELS<sup>1,2,3</sup> OF CONTAMINANTS IN GROUNDWATER<sup>1,2,3</sup>  
(Continued): 1, 2, 3

Inorganic Contaminants – Standard (mg/L)

Nitrate-N – 10

(Nitrate expressed as Nitrogen)

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

2The source of all standards listed is 40 CFR Part 141.

3MMLs are used to trigger designation of a groundwater management area when concentrations are detected on an areawide basis which exceed 70 percent of the nitrate MML or 50 percent of other MMLs.

Table 5

INTERIM STANDARDS FOR MAXIMUM MEASURABLE LEVELS<sup>1,2,3</sup> OF CONTAMINANTS IN GROUNDWATER<sup>1,2,3</sup>  
(Continued): 1, 2, 3

Organic Contaminants – Interim Standard (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 – 0.20

Trichloroethylene – 0.005

Total Trihalomethanes – 0.10

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

Vinyl Chloride – 0.002

2,4-D – 0.10

Endrin – 0.0002

Lindane — 0.004

Methoxychlor — 0.10

Toxaphene — 0.005

2,4,5-TP Silvex — 0.01

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

2The source of all standards listed is 40 CFR Part 141.

3MMLs are used to trigger designation of a groundwater management area when concentrations are detected on an area-wide basis which exceed 70 percent of the nitrate MML or 50 percent of other MMLs.

Table 6

INTERIM STANDARDS FOR MAXIMUM MEASURABLE LEVELS OF CONTAMINANTS IN GROUNDWATER: 1, 3

Radioactive Substances, Microbiological and Turbidity

Contaminants — Interim Standard

Turbidity — 1 T U

Coliform Bacteria — < 1/100 ml

Radioactive Substances

Gross Alpha<sup>2</sup> — 15 pCi/1

Combined Radium — 5 pCi/1

226 and 228

Gross Beta — 50 pCi/1

I - 131 — 3 pCi/1

Sr - 90 — 8 pCi/1

Tritium — 20,000 pCi/1

1The source of all standards listed is 40 CFR Part 141.

2Including Radium 225 but excluding Radon and Uranium.

3MMLs are used to trigger designation of a groundwater management area when concentrations are detected on an area-wide basis which exceed 70 percent of the nitrate MML or 50 percent of other MMLs.

**Statutory/Other Authority:** ORS 468B.165

**Statutes/Other Implemented:** ORS 468B.165

**History:**

[DEQ 32-2018, minor correction filed 04/02/2018, effective 04/02/2018](#)

DEQ 4-1996, F. & cert. ef. 3-7-96

DEQ 38-1990, f. & cert. ef. 9-17-90

DEQ 26-1989(Temp), f. & cert. ef. 10-27-89

**340-040-0100**

**Method and Criteria for Establishment of Maximum Measurable Levels of Contaminants in Groundwater: Statement of Purpose**

(1) The rules within this division establish the methods and criteria the Environmental Quality Commission shall apply to adopt maximum measurable levels (MMLs) of contaminants in groundwater, resulting from actual or suspected nonpoint sources or activities. These MMLs will be used to designate groundwater management areas.

(2) The maximum measurable levels of contaminants adopted by the Commission using these rules are protective of public health and the environment and existing and future beneficial uses of the groundwater which the natural groundwater quality allows.

(3) The maximum measurable levels established by these rules are not designed to be used as drinking water standards or as clean-up standards for remedial actions, but to initiate the process of designating groundwater management areas where necessary to preserve groundwater quality.

**Statutory/Other Authority:** ORS 183.335(7), 468.015, 468B & 536.137

**Statutes/Other Implemented:** ORS 468.020 & 468.035

**History:**

DEQ 1-1991, f. & cert. ef. 2-11-91

**340-040-0105**

**Method and Criteria for Establishment of Maximum Measurable Levels of Contaminants in Groundwater: Definitions**

Unless otherwise defined in OAR 340-041-0006 or 340-040-0010, the following terms used in this division shall mean:

- (1) "Carcinogen": A compound which the United States Environmental Protection Agency has classified as Group A or Group B under the carcinogenic classification procedures described in 51 Fed. Reg. 33992.
- (2) "Confirmed or Confirmation": A second laboratory quantitatively detects the presence of the contaminant or substance of concern in groundwater by an established sampling, preservation, and analytical technique in a laboratory using established quality assurance and quality control procedures, such as indicated in 40 CFR 136 or the Standard Methods for Examination of Water and Waste Water (Latest Edition).
- (3) "Contaminant": Any chemical, ion, radionuclide, synthetic organic compound, microorganism, waste or other substance that does not occur naturally in groundwater or that occurs naturally but at a lower concentration. ORS 468.691.
- (4) "Detect, Detectable, Detection or Detected": To measure a contaminant by an established sampling, preservation, and analytical technique in a laboratory using established quality assurance and quality control procedures, such as indicated in 40 CFR 136 or the Standard Methods for Examination of Water and Waste Water (Latest Edition).
- (5) "Environment": The aggregate of things or conditions affecting the existence, reproduction, growth and development of living organisms, plus the living organisms themselves. The concept shall be interpreted broadly to mean "all aspects of an ecosystem, other than humans."
- (6) "Federal Standard": A maximum contaminant level, a national primary drinking water regulation or an interim drinking water regulation adopted by the Administrator of the United States Environmental Protection Agency ("EPA") pursuant to the federal Safe Drinking Water Act. ORS 536.137.
- (7) "Maximum Measurable Level": The maximum allowable concentration of a contaminant or substance of concern that is established by the Commission in accord with these rules, to be used by the Department to initiate the process of designating "Groundwater Management Areas" within the state of Oregon where necessary to preserve groundwater quality. ORS 468.691.
- (8) "Protect Public Health and the Environment": To keep humans and the environment from unreasonable present or future exposure to adverse risk, effect or harm, excluding economic concerns.
- (9) "Substance of Concern": A contaminant confirmed in groundwater in Oregon as a result of actual or suspected nonpoint source activities.

[Publications: Publications referenced are available from the agency.]

**Statutory/Other Authority:** ORS 183.335(7), 468.015, 468B & 536.137

**Statutes/Other Implemented:** ORS 468.005, 468B.005 & 468B.150

**History:**

[DEQ 33-2018, minor correction filed 04/02/2018, effective 04/02/2018](#)

DEQ 1-1991, f. & cert. ef. 2-11-91

**340-040-0108**

**Method and Criteria for Establishment of Maximum Measurable Levels of Contaminants in Groundwater: General Policies**

Groundwater is a critical natural resource providing domestic, industrial and agricultural water supply; base flow for rivers, lakes, streams and wetlands; and other beneficial uses. Therefore, the following policy is established.

- (1) Program Priorities: Groundwater quality shall be protected throughout the state of Oregon. However, the Commission shall concentrate its groundwater quality protection implementation efforts in areas where the practices and activities related to the use of one or more substances of concern have the greatest potential for degrading groundwater quality and where potential groundwater quality pollution would have the greatest adverse impact on beneficial uses.
- (2) Beneficial Uses: Groundwater shall be protected for both existing and future beneficial uses so that the State may continue to utilize the resource for whatever beneficial uses the natural water quality allows. High quality groundwater shall be maintained for present and future uses.

- (3) Scientific Evidence: The Commission shall set a maximum measurable level for a contaminant or substance of concern only when there is sufficient scientific evidence to show that the contaminant or substance of concern may cause adverse effects to public health or the environment.
- (4) Naturally Occurring Contaminants: For contaminants that naturally occur in groundwater in concentrations above the maximum measurable level, the Commission shall consider the natural background level to be the equivalent of the maximum measurable level for that groundwater source.
- (5) Public Health: The Department shall, for the purposes of establishing maximum measurable levels and developing environmental and health advisories, consult with the Oregon Health Division regarding human health concerns.
- (6) Wildlife: A preliminary assessment by EPA indicates that aquatic criteria are not in all cases protective of wildlife (e.g., include mercury, selenium, polychlorinated biphenyls, DDT and possibly chlorinated alkanes, benzene, phenols as well as metals in general). However, for contaminants or substances of concern, the Department may rely on the limited information available in EPA's Water Quality Criteria for protection of aquatic and wildlife species as their foundation for recommendations to the Commission, unless scientifically valid evidence shows this to be inadequate.
- (7) The Commission recognizes, however, that studies of aquatic and wildlife species are extremely limited. This reduces confidence in the Commission's ability to ensure that maximum measurable levels of contaminants will be protective of those groups in the environment.
- (8) Methods Flow Chart: A flow chart, Appendix 1, graphically describes the methods to be used in establishing maximum measurable levels, which may, as appropriate, be used to interpret these rules.
- (9) Public Support via Education: Public support of the groundwater protection program is essential to its long-term success, and voluntary compliance will likely lead to the least cost program. Therefore, the Commission is encouraged to conduct ongoing public education and demonstration programs designed to inform the public concerning:
- (a) Various contaminants;
  - (b) The various elements of the groundwater protection program; and
  - (c) How the public can participate in protecting Oregon's groundwater resource.
- (10) Other Rules and Statutes Unchanged: Nothing stated in these rules is intended to change or be changed by OAR 340-040-0001 to 340-040-0080 (General Groundwater Protection); OAR 340, division 108 (Spills and Other Incidents); OAR 340, division 150 (Underground Storage Tank Rules); OAR 340, division 122 (Environmental Clean-up Rules); or OAR 690, division 10 (Appropriation and Use of Groundwater).
- (11) While economics, detection technology and feasibility are excluded from consideration in establishing an MML, these factors may be considered in determining appropriate remedial responses.

[NOTE: View a PDF of appendices by clicking on "Tables" link below.]

[ED. NOTE: To view attachments referenced in rule text, click here to view rule.]

**Statutory/Other Authority:** ORS 183.335(7), 468.015, 468B & 536.137

**Statutes/Other Implemented:** ORS 468B.155

**History:**

[DEQ 13-2019](#), amend filed 05/16/2019, effective 05/16/2019

DEQ 1-1991, f. & cert. ef. 2-11-91

### **340-040-0110**

**Method and Criteria for Establishment of Maximum Measurable Levels of Contaminants in Groundwater: Substances Regulated Under These Rules**

- (1) The Department shall, pursuant to the procedures adopted in accord with OAR 340-040-0125, et seq., propose to the Commission that it adopt a maximum measurable level for each substance of concern.
- (2) The Department may, pursuant to the procedures adopted in accord with OAR 340-040-0125, et seq., propose to the Commission that it adopt a maximum measurable level for any contaminant that:
- (a) Is used or has the potential for use in Oregon; and
  - (b) Has the potential to enter groundwater at least partially from one or more nonpoint sources; and
  - (c) May adversely affect public health or the environment.

**Statutory/Other Authority:** ORS 183.335(7), 468.015 & 536.137

**Statutes/Other Implemented:** ORS 468B.155, 468B.165, 468B.166 & 468B.168

**History:**

DEQ 1-1991, f. & cert. ef. 2-11-91

**340-040-0120**

**Method and Criteria for Establishment of Maximum Measurable Levels of Contaminants in Groundwater: Notice of Intent to Propose Contaminants for Adoption of a Maximum Measurable Level**

(1) Notwithstanding any other requirement established by law, the Department shall also notify the public of its intent to consider adoption of a maximum measurable level for a contaminant or substance of concern by mailing, first class, postage prepaid, a single page notice to those interested parties who have previously filed written requests to the Department that they be placed on the Department's mailing list for groundwater issues. The Department will have complied with section (1) of this rule when it mails the notice to its current interested parties mailing list. It shall be the responsibility of the interested parties to maintain their status on that mailing list.

(2) The notice shall identify the contaminant under consideration and the current federal standard for that contaminant, if any, and shall state the last date by which interested parties may submit to the Department relevant information regarding that contaminant, which date shall not be less than forty-five (45) days after the date of mailing the notice.

(3) The Department may consider submitted information but need not specifically acknowledge, respond to or address this information in development of its initial proposed maximum measurable levels.

**Statutory/Other Authority:** ORS 183.335(7), 468.015, 468B & 536.137

**Statutes/Other Implemented:** ORS 468B.155, 468B.165, 468B.166 & 468B.167

**History:**

DEQ 1-1991, f. & cert. ef. 2-11-91

**340-040-0125**

**Method and Criteria for Establishment of Maximum Measurable Levels of Contaminants in Groundwater: Methods to Establish Maximum Measurable Levels**

(1) If a federal standard has been promulgated for any substance of concern (OAR 340-040-0110(1)) or any contaminant (OAR 340-040-0110(2)), the Department shall review and propose only that federal standard to the Commission for adoption as the maximum measurable level, unless at least one of subsections (a), (b), and (c) of this section is determined:

(a) The Department determines that valid scientific evidence establishes that the federal standard is not protective of public health as defined in OAR 340-040-0105(8). To so determine, the Department must declare that at least one of the following applies:

(A) For substances of concern or contaminants which are carcinogens, the federal standard represents a risk greater than one additional cancer in one million humans;

(B) For all substances of concern or contaminants, the federal standard has not considered relevant scientific evidence that demonstrate the federal standard does not protect public health.

(b) The Department determines that valid scientific evidence establishes that groundwater contaminated to the level of that federal standard is not protective of the affected environment;

(c) The Department determines that valid scientific evidence establishes that the federal standard is not protective of existing and future beneficial uses of the natural groundwater in Oregon.

(2) In the event that the Department proposes to reject the federal standard for one or more of the reasons described in section (1) of this rule, the Department shall state the reason(s) in its proposal and shall propose a maximum measurable level which takes into account the following factors:

(a) Public Health Factors:

(A) For substances of concern or contaminants that are carcinogens, the scientifically valid evidence which supports a conclusion that the Department's proposed maximum measurable level poses a risk level to public health that is less than or equal to one additional cancer in a million humans;

(B) Concentration levels of the substance of concern or contaminant that are considered protective of human health, as a result of evaluation by a federal agency or a recognized scientific advisory group. The Department shall evaluate the available data, conclusions, or recommendations reached in the following sources of data by said agencies or advisory groups and determine whether a value can be identified as protective of human health. Once a value is identified as protective of human health, the Department will propose that value to the Environmental Quality Commission as the proposed MML. The Department will consider data sources in the following priority order:

(i) An EPA proposed maximum contaminant level (MCL) or maximum contaminant level goal (MCLG);



(ii) An EPA federal health advisory;

(iii) Assistance from the EPA relative to a federal health advisory or a maximum contaminant level;

(iv) Recommendations from EPA's Science Advisory Board, the National Academy of Science, the International Agency for Research on Cancer, the European Economic Commission, EPA's Cancer Assessment Group, the Carcinogenic Assessment Verification Endeavor Working Group, the National Toxicology Program, other states that follow EPA-like procedures, and other recognized scientific advisory groups.

(C) Risk to public health is greater than the risk to the environment.

(b) Environmental Factors:

(A) Scientifically valid evidence that a contaminant or substance of concern in concentrations less than the federal maximum contaminant level (MCL) will cause adverse effects to the environment;

(B) Concentration levels of the substance of concern or contaminant that are considered protective of the environment, as a result of evaluation by a federal agency or a recognized scientific advisory group. The Department shall evaluate and incorporate in its proposal the data and recommendations of EPA's Quality Criteria for Water (1986), or subsequent update of this publication, unless EPA's "National Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses," or other valid scientific evidence demonstrates that EPA's Quality Criteria for Water (1986), is not protective of the environment.

(3) In the event there is no federal standard for a substance of concern or contaminant to be regulated under OAR 340-040-0110 and valid scientific evidence exists to support the development of a maximum measurable level for that substance of concern or contaminant, the Department shall propose a maximum measurable level. If the Department proposes a maximum measurable level under this condition, the Department shall consider the public health factors and the environmental factors set forth in section (2) of this rule.

(4) In the event no federal standard exists for a substance of concern or contaminant to be regulated under OAR 340-040-0110 and there are insufficient scientifically valid data available to the Department to establish that the public health factors and the environmental factors set forth in section (2) of this rule can be met:

(a) The Department shall request assistance from the EPA to:

(A) Set a federal standard when valid scientific evidence warrants; or

(B) Initiate research on the federal level to determine if scientific evidence will support establishment of a federal standard; or

(C) Establish a criterion as defined in Section 304 of the Clean Water Act (33 USCA Section 1314(a)) which is protective of the environment.

(b) The Department shall cause to be published a Health and Environmental Advisory as outlined in OAR 340-040-0130, for the contaminant.

[NOTE: Publications referenced and not attached to this rule are available from the agency.]

[NOTE: View a PDF of EPA Guidelines by clicking on "Tables" link below.]

[ED. NOTE: To view attachments referenced in rule text, click here to view rule.]

**Statutory/Other Authority:** ORS 183.335(7), 468.015, 468B & 536.137

**Statutes/Other Implemented:** ORS 468B.155, 468B.165, 468B.166 & 468B.167

**History:**

[DEQ 13-2019, amend filed 05/16/2019, effective 05/16/2019](#)

DEQ 1-1991, f. & cert. ef. 2-11-91

### **340-040-0130**

#### **Method and Criteria for Establishment of Maximum Measurable Levels of Contaminants in Groundwater: Human Health and Environmental Advisories**

(1) The Department shall provide Human Health and Environmental Advisories for each substance of concern and contaminant to be regulated under OAR 340-040-0110. This advisory shall generally follow a standardized format, and shall include, but not be limited to the following information, if known, for the substance of concern or contaminant:

(a) The common and technical name; CAS number; chemical identity; and synonyms;

(b) How it is released to the environment; how it occurs naturally; and its fate in the environment, with particular reference to groundwater quality;

(c) The occurrence, or potential for occurrence in groundwater in Oregon;

- (d) Means of human exposure; fate of the chemical in humans and the human health effects;
  - (e) The environmental effects, including both aquatic and terrestrial organisms;
  - (f) The maximum measurable level established, if any, and the basis for its establishment;
  - (g) How to obtain testing;
  - (h) Brief summary of how to initiate the process of establishing a groundwater area of concern, or groundwater management area;
  - (i) Other information, including but not limited to, reference to the Department's staff report upon which the maximum measurable level was proposed; means of treating contaminated water; and reference to various agencies with information relating to groundwater quality.
- (2) A draft of each Human Health and Environmental Advisory shall be submitted with the DEQ staff report when the proposed maximum measurable level is authorized for public hearing.
- (3) The public shall be allowed to comment on the advisory in the public hearing process. The Department will modify the draft advisory, if appropriate, to reflect the public comments.

**Statutory/Other Authority:** ORS 183.335(7), 468.015, 468B & 536.137

**Statutes/Other Implemented:** ORS 468B.155, 468B.165, 468B.166 & 468B.167

**History:**

DEQ 1-1991, f. & cert. ef. 2-11-91

### 340-040-0135

**Method and Criteria for Establishment of Maximum Measurable Levels of Contaminants in Groundwater:  
Modification to the Maximum Measurable Level**

- (1) The Department shall follow its established schedule for periodic review of all of its rules to determine that all current maximum measurable levels duly adopted by the Commission remain appropriate.
- (2) If a maximum measurable level is based on a federal standard and that standard is duly modified by the authorized federal agency, the Department shall reevaluate the Commission's adopted maximum measurable level in conjunction with the Department's tri-annual review of water quality standards or before, if the Department considers it necessary to do so. The Department may, after that re-evaluation, either propose to take no action or propose a change to the maximum measurable level, pursuant to these rules.
- (3) The Department may, at any time pertinent scientifically valid information becomes available, propose a change to a maximum measurable level or propose a new maximum measurable level for any substance of concern or contaminant pursuant to the procedures set forth in these rules.
- (4) The Department may, at any time pertinent scientifically valid information on degradates or metabolites of a parent compound, or interactions thereof, becomes available, propose a change to an existing maximum measurable level or propose a new maximum measurable level for any substance of concern or contaminant pursuant to the procedures set forth in these rules.

**Statutory/Other Authority:** ORS 183.335(7), 468.015, 468B & 536.137

**Statutes/Other Implemented:** ORS 468B.155, 468B.165, 468B.166 & 468B.167

**History:**

DEQ 1-1991, f. & cert. ef. 2-11-91

### 340-040-0140

**Wellhead Protection: Statement of Purpose**

- (1) Meet Federal Requirements — The intent of these rules is to fulfill the Federal requirements under the Safe Drinking Water Act for the establishment of a state Wellhead Protection Program.
- (2) Protect Public Water Systems — The purpose of a Wellhead Protection Plan is to protect the groundwater relied upon by a public water system from contamination. This is accomplished by reducing the risk of contamination to the groundwater from potential contaminant sources.
- (3) Establish Voluntary Wellhead Protection Program — Local jurisdictions and/or public water systems may voluntarily develop a Wellhead Protection Plan, but are not required, by these rules, to do so.
- (4) Procedures for State Approval — These rules establish a process to enable the Department to certify a local Wellhead Protection Plan, if it is submitted for certification, and to establish the process for a Responsible Management Authority, if they choose, to seek certification from the Department for a locally developed Wellhead Protection Plan.

**Statutory/Other Authority:** ORS 468 & 468B

**Statutes/Other Implemented:** ORS 468 & 468B

**History:**

DEQ 1-1996, f. & cert. ef. 1-18-96

**340-040-0150**

**Wellhead Protection: Definitions**

(1) "Contingency Plan" means a document setting out an organized, planned, and coordinated course of action to be followed in the event of a loss of capacity to supply water to the distribution system or in case of a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

(2) "Department" means the Department of Environmental Quality.

(3) "Delineation" means the determination of the extent, orientation, and boundaries of a wellhead protection area using factors such as geology, aquifer characteristics, well pumping rates, and time of travel.

(4) "Element" means one of seven components considered by the U.S. Environmental Protection Agency as the minimum required components in any state wellhead protection program:

(a) Specification of duties;

(b) Delineation of the wellhead protection area;

(c) Inventory of potential contaminant sources;

(d) Specification of management approaches;

(e) Development of contingency plans;

(f) Addressing new (future) wells and springs; and

(g) Ensuring public participation.

(5) "Governmental Entity" means any local, state, Indian tribe, or federal organization or agency which may own or manage lands or activities within a Wellhead Protection Area.

(6) "Plan" means Wellhead Protection Plan.

(7) "Potential Contaminant Source" means any activity which has the potential to release contaminants to the groundwater.

(8) "Public Water System" means a system supplying water for human consumption that has four or more service connections or supplies water to a public or commercial establishment which operates a total of at least 60 days per year, and which is used by ten or more individuals per day.

(9) "Responsible Management Authority" means the Public Water System whose water supply is being protected and any governmental entity with management, rule or ordinance making authority to implement wellhead protection management strategies within a Wellhead Protection Area. Responsible Management Authorities are responsible for implementation of the Wellhead Protection Plan; includes cities, counties, special districts, Indian tribes, state/federal government entities as well as Public Water Systems.

(10) "Signatory" means any Responsible Management Authority in the Wellhead Protection Area who signs the Wellhead Protection Plan. Signing the Plan indicates the Responsible Management Authority will implement the actions outlined for their jurisdiction in the Plan.

(11) "Stakeholder(s)" means person(s) and/or governmental entity(ies) who could or will be affected by activities or requirements that may be required within a local wellhead protection area.

(12) "Team" means the local Wellhead Protection Team, which includes representatives from the Responsible Management Authorities and various interests and stakeholders potentially affected by the Wellhead Protection Plan.

(13) "Wellhead Protection Area" means the surface and subsurface area surrounding a water well, spring or wellfield, supplying a public water system, through which contaminants are reasonably likely to move toward and reach that water well, spring, or wellfield.

(14) "Wellhead Protection Plan" refers to a Department certified plan which identifies the actions to be taken at the local level to protect a specific defined Wellhead Protection Area. The Plan is developed by the local Responsible Management Authority(ies) and/or team and includes a written description of each element, public participation efforts, and an implementation schedule.

**Statutory/Other Authority:** ORS 468 & 468B  
**Statutes/Other Implemented:** ORS 468 & 468B

**History:**

[DEQ 34-2018, minor correction filed 04/02/2018, effective 04/02/2018](#)

DEQ 1-1996, f. & cert. ef. 1-18-96

**340-040-0160**

**Wellhead Protection: General Policies**

- (1) It is the policy of the state to promote the protection of the quality of the groundwater resource from contamination by encouraging public water systems and/or governmental entities to voluntarily develop local Wellhead Protection Plans to protect the groundwater resources which a Public Water System relies upon for its drinking water.
- (2) A certified Wellhead Protection Plan will be recognized as meeting the Wellhead Protection requirements under the Federal Safe Drinking Water Act (1986), Section 1428 (42 USC 300F to 300J-26).
- (3) The Department will coordinate and work cooperatively with the Health Division, Department of Agriculture, Water Resources Department, Department of Land Conservation and Development, and other governmental entities to promote the voluntary development of Wellhead Protection Plans.
- (4) Other state rules may apply and may or may not pertain to the delineated Wellhead Protection Area, including but not limited to the rules of those agencies listed in section (3) of this rule.
- (5) The Department will, within available resources, provide information and technical assistance to local Wellhead Protection Teams and other interested parties in the development of their Wellhead Protection Plans.
- (6) All Responsible Management Authorities who have jurisdiction within a Wellhead Protection Area are encouraged to work together to develop a Plan to manage those activities that may have the potential to contaminate groundwater within that Wellhead Protection Area.
- (7) Implementation of a Wellhead Protection Plan shall rely upon existing enforcement capabilities of the Responsible Management Authorities within the delineated Wellhead Protection Area. Nothing in these rules will modify or change existing authorities or requirements put in place through other statutes or rules.
- (8) The Department shall maintain guidance material to assist Responsible Management Authorities and Wellhead Protection Teams in the development of a state certifiable Wellhead Protection Plan. This material is intended solely to provide information and assistance in identifying strategies for developing a Wellhead Protection Plan. The guidance material provides examples of how a protection plan could be developed to meet the requirements of these rules to gain Department certification as a Wellhead Protection Plan. It does not contain mandatory standards or other legal requirements nor does it include binding statements or interpretations of law or agency policy.

[NOTE: Publications referenced are available from the agency.]

**Statutory/Other Authority:** ORS 468 & 468B  
**Statutes/Other Implemented:** ORS 468 & 468B

**History:**

[DEQ 13-2019, amend filed 05/16/2019, effective 05/16/2019](#)

DEQ 1-1996, f. & cert. ef. 1-18-96

**340-040-0170**

**Wellhead Protection: Required Elements of A Wellhead Protection Plan**

A Wellhead Protection Plan shall contain and address the following seven elements:

(1) Specification of Duties:

- (a) The Plan shall identify all the Responsible Management Authorities within a Wellhead Protection Area. The jurisdictional boundaries of each Responsible Management Authority shall be shown on a map;
- (b) For each Responsible Management Authority identified, the expectations, their respective responsibilities, and the duties they will perform with regards to implementing the Plan must be identified;
- (c) The Plan shall either:
  - (A) Have all Responsible Management Authorities in the Wellhead Protection Area sign the Wellhead Protection Plan indicating that they will implement the actions outlined for their jurisdiction in the Plan; or
  - (B) Describe the procedure used to notify and attempt to involve those Responsible Management Authorities not willing to sign the Plan.

(2) Delineation of Wellhead Protection Areas: Delineation of Wellhead Protection Areas shall occur as described under Health Division's rules under OAR 333-061-0057(1)(i).

(3) Inventory of Potential Contaminant Sources: After delineation of the Wellhead Protection Area, an inventory identifying the potential sources of contamination within the Wellhead Protection Area shall be completed. The inventory shall be designed to identify:

(a) Past practices which may have resulted in a potential threat to the groundwater;

(b) Those potential sources of contamination presently existing; and

(c) Those potential sources which may exist in the future.

(4) Management of Potential Sources of Contamination:

(a) For those potential sources of contamination identified under the inventory element of paragraphs (1)(A)(B)(C) of this rule, the Plan shall identify the management action to be employed to reduce the risk of contamination to the groundwater from those source(s) and justification for the proposed management actions and level of protection provided;

(b) The Plan must identify the process used to address unanticipated potential sources of contamination that may locate within the Wellhead Protection Area, how the source will be evaluated for acceptability within the area, and how the management actions identified in the Plan for reducing the risk of contamination will be implemented;

(c) Any management plans that directly regulate farming practices for the purpose of protecting water quality on agricultural lands within a Wellhead Protection Area shall be developed and implemented by the Oregon Department of Agriculture in accordance with Oregon Department of Agriculture authorities.

(5) Contingency Plan: Development of contingency plans for Wellhead Protection Areas shall be in accordance with Health Division rules under OAR 333-061-0057(3);

(6) Siting of New Public Water System Wells or Springs: Siting of new public water system wells or springs shall be in accordance with Health Division rules under OAR 333-061-0057(2);

(7) Public Participation: A description of the public participation efforts shall be included in the Plan, including:

(a) Documentation that property owners and residents within the Wellhead Protection Area were notified of the development of a Wellhead Protection Plan. Notification at a minimum shall include publication of the intent to develop a Wellhead Protection Plan in a local newspaper, and a description of the process for developing and participating in the development of the Wellhead Protection Plan;

(b) Formation of a Team to develop the Plan. The Team can either be a new group formed for the specific purpose of developing a Plan or it can be an existing group that is assigned the additional duty of developing a Plan;

(c) Description of steps taken to provide opportunity for various interests within the affected area to participate;

(d) Documentation that all local public hearing procedures were followed in developing and adopting the Plan.

**Statutory/Other Authority:** ORS 468 & 468B

**Statutes/Other Implemented:** ORS 468 & 468B

**History:**

DEQ 1-1996, f. & cert. ef. 1-18-96

#### **340-040-0180**

##### **Wellhead Protection: Certification Procedure**

(1) For a Wellhead Protection Plan to be certified by the Department, the Plan must meet requirements specified in OAR 340-040-0170.

(2) The Department shall act as the contact point for development and approval of Wellhead Protection Plans. The Department shall coordinate with other governmental entities so that the Plan is consistent with the requirements of those governmental entities before Department certification of the Plan is granted.

(3) The Health Division shall be responsible for certifying the delineation, and reviewing contingency plans and the new wells elements of the Plan as provided for under OAR 333-061-0020 through 333-061-0065. The Department shall accept the Health Division's recommendations and certification.

(4) After consultation with the Department of Agriculture on agricultural issues, the Department of Land Conservation and Development on land use issues, the Health Division, and other governmental entities as appropriate, the Department shall be responsible for reviewing the remaining elements and giving the overall certification for each local Wellhead Protection Plan if each element is found to be adequately addressed.

(5) Within 60 days of the receipt of a request for certification of a Wellhead Protection Plan, the Department will send a written acknowledgment of receipt of the request and an estimated date for Department review and certification of the Plan.

(6) After certification of the plan, the Department will provide a written certification of completion to all signatories to the Plan.

**Statutory/Other Authority:** ORS 468 & 468B

**Statutes/Other Implemented:** ORS 468 & 468B

**History:**

DEQ 1-1996, f. & cert. ef. 1-18-96

### **340-040-0190**

#### **Wellhead Protection: Update Procedure**

(1) A Wellhead Protection Plan must be recertified every five years from the date of prior Department certification.

(2) Recertification of the present Plan can take place if all the following conditions apply:

(a) No conditions that could potentially modify the boundaries of the Wellhead Protection Area have occurred;

(b) An updated inventory is completed and submitted which shows that no new potential sources of contamination have moved into the Wellhead Protection Area which are not addressed in the existing Plan;

(c) The management practices outlined in the existing Plan are still appropriate and being implemented;

(d) The existing contingency element in the Plan is still relevant; and

(e) All signatories to the existing Plan agree to recertify the Plan by signing the recertification request letter.

(3) If a certified Plan cannot meet the conditions under section (2) of this rule, then a revised Wellhead Protection Plan must be resubmitted for certification. A revised plan shall require:

(a) Form a Team to develop the Plan. The Team can either be a new group formed for the specific purpose of developing a Plan or it can be an existing group that is assigned the additional duty of developing a Plan;

(b) Identify the elements under OAR 340-040-0170 where the Plan is no longer adequate or relevant;

(c) Modify the Plan in those areas identified in subsection (b) of this section to meet conditions outlined in OAR 340-040-0170 and 340-040-0180;

(d) Perform and submit a new potential source inventory; and

(e) Submit to the Department for review and certification per OAR 340-040-0180.

**Statutory/Other Authority:** ORS 468 & 468B

**Statutes/Other Implemented:** ORS 468 & 468B

**History:**

DEQ 1-1996, f. & cert. ef. 1-18-96

### **340-040-0200**

#### **Wellhead Protection: Decertification Procedure**

(1) If the signatories to a Wellhead Protection Plan do not recertify or submit for recertification their previously certified Wellhead Protection Plan, then the Plan is automatically decertified until such time as the signatories of the Plan recertify the Plan through the update procedure per OAR 340-040-0190.

(2) Any Responsible Management Authority that is a signatory to a certified Plan shall have the ability to withdraw from participation in a Wellhead Protection Plan and the certification process. The Department shall review the plan to determine if the plan is still certifiable without the participation of the withdrawing Responsible Management Authority.

(3) A plan can also be decertified by the Department if it comes to the Department's attention that a signatory to a plan is not or has not adhered to and implemented the certified Plan.

(4) To decertify a Wellhead Protection Plan, the Department will send a certified letter to all signatories to the Plan detailing the reason(s) why the Department believes the certified Plan is or was not being followed or is no longer valid and the Department's intent to decertify the Plan:

(a) The signatories to the Plan will have 30 days to respond as to why their Plan should not be decertified;

(b) The Department will review the signatories response and make a determination as to whether the Plan is still certifiable;

(c) The Department will then send a copy of its decision to all signatories of the Plan.

(5) The Department will afford the remaining signatories the opportunity to maintain the certification, provided withdrawal by a Responsible Management Authority does not render the Plan uncertifiable, by notifying the Department and all other Responsible Management Authorities within the Wellhead Protection Area that they will continue to implement the plan as certified in their respective jurisdictions.

**Statutory/Other Authority:** ORS 468 & 468B

**Statutes/Other Implemented:** ORS 468 & 468B

**History:**

DEQ 1-1996, f. & cert. ef. 1-18-96

### **340-040-0210**

#### **Wellhead Protection: Appeal Procedure**

Final Department decisions regarding certification, recertification, or decertification are not subject to contested case hearing rights but are reviewable under ORS 183.484.

**Statutory/Other Authority:** ORS 468 & 468B

**Statutes/Other Implemented:** ORS 468 & 468B

**History:**

DEQ 1-1996, f. & cert. ef. 1-18-96

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