

## **Chapter 12.10 CRITICAL AQUIFER RECHARGE AREAS**

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### **12.10.010 Critical aquifer recharge areas designation.**

Critical aquifer recharge areas (CARA) are those areas with a critical recharging effect on aquifers used for potable water as defined by WAC 365-190-030(2). CARA have prevailing geologic conditions associated with infiltration rates that create a high potential for contamination of ground water resources or contribute significantly to the replenishment of ground water. These areas include the following:

- (1) Wellhead Protection Areas. Wellhead protection areas may be defined by the boundaries of the 10-year time of ground water travel, or boundaries established using alternate criteria approved by the Department of Health in those settings where ground water time of travel is not a reasonable delineation criterion, in accordance with WAC 246-290-135.
- (2) Sole Source Aquifers. Sole source aquifers are areas that have been designated by the U.S. Environmental Protection Agency pursuant to the Federal Safe Drinking Water Act.
- (3) Susceptible Ground Water Management Areas. Susceptible ground water management areas are areas that have been designated as moderately or highly vulnerable or susceptible in an adopted ground water management program developed pursuant to Chapter 173-100 WAC.
- (4) Special Protection Areas. Special protection areas are those areas defined by WAC 173-200-090. (Ord. 21-05 § 2, 2005).

### **12.10.020 Aquifer recharge area susceptibility ratings.**

Aquifer recharge areas shall be rated as having high, moderate, or low susceptibility based on soil permeability, geologic matrix, infiltration, and depth to water as determined by the criteria established by the State Department of Ecology. (Ord. 21-05 § 2, 2005).

### **12.10.030 Mapping of aquifer recharge areas.**

The approximate location and extent of aquifer recharge areas are shown on the adopted critical area maps as referenced in BMC 12.08.090(4) and (5).

- (1) Aquifer recharge areas are delineated on the water system map for source locations and WAC 246-290-135 shall be used to define the radius around them as the recharge area. (Ord. 21-05 § 2, 2005).

#### **12.10.040 Activities allowed in critical aquifer recharge areas.**

In addition to those allowed activities listed in BMC 12.08.160, the following activities are allowed in critical aquifer recharge areas and do not require submission of a critical areas report:

- (1) Construction of structures and improvements, including additions, resulting in less than five percent or 2,500 square feet (whichever is greater) total site impervious surface area that do not result in a change of use or increase the use of a hazardous substance.
- (2) [Development and improvement of parks, recreation facilities, open space, or conservation areas resulting in less than five percent \(5%\) total site impervious surface area that do not increase the use of a hazardous substance.](#)
- ~~(2)~~(3) On-site domestic septic systems releasing less than 14,500 gallons of effluent per day and that are limited to a maximum density of one system per one acre. (Ord. 21-05 § 2, 2005).

#### **12.10.050 Critical areas report – Additional requirements for critical aquifer recharge areas.**

In addition to the general critical areas report requirements of BMC 12.08.210, critical areas reports for critical aquifer recharge areas must meet the requirements of this section. Critical areas reports for two or more types of critical areas must meet the report requirements for each relevant type of critical area.

- (1) Prepared by a Qualified Professional. An aquifer recharge area critical areas report shall be prepared by a qualified professional who is a hydrogeologist, geologist, or engineer, who is licensed in the state of Washington and has experience in preparing hydrogeologic assessments.
- (2) Hydrogeologic Assessment Required. For all proposed activities to be located in a critical aquifer recharge area, a critical areas report shall contain a level one hydrogeologic assessment. A level two hydrogeologic assessment shall be required for any of the following proposed activities:
  - (a) Activities that result in five percent or more impervious site area;
  - (b) Activities that divert, alter, or reduce the flow of surface or ground waters, or otherwise reduce the recharging of the aquifer;
  - (c) The use of hazardous substances, other than household chemicals used according to the directions specified on the packaging for domestic applications;
  - (d) The use of injection wells, including on-site septic systems, except those domestic septic systems releasing less than 14,500 gallons of effluent per day and that are limited to a maximum density of one system per one acre; or
  - (e) Any other activity determined by the planning director likely to have an adverse impact on ground water quality or quantity, or on the recharge of the aquifer.
- (3) Level One Hydrogeologic Assessment. A level one hydrogeologic assessment shall include the following site- and proposal-related information at a minimum:

- (a) Available information regarding geologic and hydrogeologic characteristics of the site including the surface location of all critical aquifer recharge areas located on-site or immediately adjacent to the site, and permeability of the unsaturated zone;
  - (b) Ground water depth, flow direction and gradient based on available information;
  - (c) Currently available data on wells and springs within 1,300 feet of the project area;
  - (d) Location of other critical areas, including surface waters, within 1,300 feet of the project area;
  - (e) Available historic water quality data for the area to be affected by the proposed activity; and
  - (f) Best management practices proposed to be utilized.
- (4) Level Two Hydrogeologic Assessment. A level two hydrogeologic assessment shall include the following site- and proposal-related information at a minimum, in addition to the requirements for a level one hydrogeologic assessment:
- (a) Historic water quality data for the area to be affected by the proposed activity compiled for at least the previous five-year period;
  - (b) Ground water monitoring plan provisions; and
  - (c) Discussion of the effects of the proposed project on the ground water quality and quantity, including:
    - (i) Predictive evaluation of ground water withdrawal effects on nearby wells and surface water features; and
    - (ii) Predictive evaluation of contaminant transport based on potential releases to ground water; and
  - (d) A spill plan that identifies equipment and/or structures that could fail, resulting in an impact. Spill plans shall include provisions for regular inspection, repair, and replacement of structures and equipment that could fail. (Ord. 21-05 § 2, 2005).

#### **12.10.060 Performance standards – General requirements.**

- (1) Activities may only be permitted in a critical aquifer recharge area if the applicant can show that the proposed activity will not cause contaminants to enter the aquifer and that the proposed activity will not adversely affect the recharging of the aquifer.
- (2) The proposed activity must comply with the water source protection requirements and recommendations of the Federal Environmental Protection Agency, State Department of Health, and the local health district.
- (3) The proposed activity must be designed and constructed in accordance with Chapters 14.04 and 14.30 BMC and the city of Buckley water comprehensive plan. (Ord. 21-05 § 2, 2005).

#### **12.10.070 Performance standards – Specific uses.**

- (1) Storage Tanks. All storage tanks proposed to be located in a critical aquifer recharge area must comply with local building code requirements and must conform to the following requirements:
  - (a) Underground Tanks. All new underground storage facilities proposed for use in the storage of hazardous substances or hazardous wastes shall be designed and constructed so as to:

- (i) Prevent releases due to corrosion or structural failure for the operational life of the tank; and
  - (ii) Be protected against corrosion, constructed of noncorrosive material, steel clad with a noncorrosive material, or designed to include a secondary containment system to prevent the release or threatened release of any stored substances; and
  - (iii) Use material in the construction or lining of the tank that is compatible with the substance to be stored.
- (b) Above-Ground Tanks. All new above-ground storage facilities proposed for use in the storage of hazardous substances or hazardous wastes shall be designed and constructed so as to:
- (i) Not allow the release of a hazardous substance to the ground, ground waters, or surface waters;
  - (ii) Have a primary containment area enclosing or underlying the tank or part thereof; and
  - (iii) A secondary containment system either built into the tank structure or a dike system built outside the tank for all tanks.
- (2) Vehicle Repair and Servicing.
- (a) Vehicle repair and servicing must be conducted over impermeable pads and within a covered structure capable of withstanding normally expected weather conditions. Chemicals used in the process of vehicle repair and servicing must be stored in a manner that protects them from weather and provides containment should leaks occur.
  - (b) No dry wells shall be allowed in critical aquifer recharge areas on sites used for vehicle repair and servicing. Dry wells existing on the site prior to facility establishment must be abandoned using techniques approved by the State Department of Ecology prior to commencement of the proposed activity.
- (3) Residential Use of Pesticides and Nutrients. Application of household pesticides, herbicides, and fertilizers shall not exceed times and rates specified on the packaging.
- (4) Spreading or Injection of Reclaimed Water. Water reuse projects for reclaimed water must be in accordance with the adopted water or sewer comprehensive plans that have been approved by the Departments of Ecology and Health.
- (a) Surface spreading must meet the ground water recharge criteria given in RCW 90.46.080 and 90.46.010(10).
  - (b) Direct injection must be in accordance with the standards developed by authority of RCW 90.46.042.
- (5) State and Federal Regulations. The uses listed below shall be conditioned as necessary to protect critical aquifer recharge areas in accordance with the applicable state and federal regulations.

**Statutes, Regulations, and Guidance Pertaining to Ground Water Impacting Activities**

<b>Activity</b>	<b>Statute – Regulation – Guidance</b>
Above-ground storage tanks	WAC 173-303-640
Animal feedlots	Chapters 173-216 and 173-220 WAC
Automobile washers	Chapter 173-216 WAC; Best Management Practices for Vehicle and Equipment Discharges (WDOE WQ-R-95-56)
Below-ground storage tanks	Chapter 173-360 WAC

Chemical treatment storage and disposal facilities	WAC 173-303- <del>182082</del>
Hazardous waste generator (boat repair shops, biological research facility, dry cleaners, furniture stripping, motor vehicle service garages, photographic processing, printing and publishing shops, etc.)	Chapter 173-303 WAC
Injection wells	Federal 40 CFR Parts 144 and 146; Chapter 173-218 WAC
Junk yards and salvage yards	Chapter 173-304 WAC; Best Management Practices to Prevent Stormwater Pollution at Vehicles Recycler Facilities (WDOE 94-146)
Oil and gas drilling	WAC 332-12-450, Chapter 173-218 WAC
On-site sewage systems (large-scale)	Chapter 173-240 WAC
On-site sewage systems (< 14,500 gal/day)	Chapter 246-272 WAC; local health ordinances
Pesticide storage and use	Chapters 15.54 and 17.21 RCW
Sawmills	Chapters 173-303 and 173-304 WAC; Best Management Practices to Prevent Stormwater Pollution at Log Yards (WDOE 95-53)
Solid waste handling and recycling facilities	Chapter 173-304 WAC
Surface mining	WAC 332-18-015
Wastewater application to land surface	Chapters 173-216 and 173-200 WAC; WDOE Land Application Guidelines, Best Management Practices for Irrigated Agriculture

(Ord. 21-05 § 2, 2005).

### **12.10.080 Uses prohibited from critical aquifer recharge areas.**

The following activities and uses are prohibited in critical aquifer recharge areas:

- (1) Landfills. Landfills, including hazardous or dangerous waste, municipal solid waste, special waste, woodwaste, and inert and demolition waste landfills;
- (2) Underground Injection Wells. Class I, III, and IV wells are prohibited; Class V injection wells may be permitted subject to the following:
  - (a) The application for the Class V injection well has undergone a review and received approval from the Washington State Department of Ecology and Pierce County department of health and has gone through and received approval through the variance process identified in BMC 12.08.330;
- (3) Mining.
  - (a) Metals and hard rock mining.
  - (b) Sand and gravel mining is prohibited from critical aquifer recharge areas determined to be highly susceptible or vulnerable;
- (4) Wood Treatment Facilities. Wood treatment facilities that allow any portion of the treatment process to occur over permeable surfaces (both natural and manmade);
- (5) Storage, processing, or disposal of radioactive substances. Facilities that store, process, or dispose of radioactive substances; and

(6) Other.

- (a) Activities that would significantly reduce the recharge to aquifers currently or potentially used as a potable water source;
- (b) Activities that would significantly reduce the recharge to aquifers that are a source of significant baseflow to a regulated stream;
- (c) Activities that are not connected to an available sanitary sewer system are prohibited from critical aquifer recharge areas associated with sole source aquifers. (Ord. 21-05 § 2, 2005).

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