

BEFORE THE STATE HEALTH DIVISION
OF THE DEPARTMENT OF HUMAN RESOURCES
OF THE STATE OF OREGON

In the Matter of Rules Requiring)
Public Water Systems to Control)
Corrosion and Corrosion Byproducts) RULE

333-61-020 DEFINITIONS

As used in these rules, unless the context indicates otherwise:

- (1) "Act" means the Oregon Drinking Water Quality Act of 1981 (ORS 448.115-448.990 as amended).
- (2) "Administrator" means the Administrator of the Health Division of the Department of Human Resources or his/her designee.
- (3) "Air Gap Separation" means the physical vertical separation between the free flowing discharge end of a potable water supply pipe line and the open or non-pressure receiving vessel.
- (4) "Approval" or "approved" means approved in writing.
- (5) "Auxiliary Water Supply" means any supply of water used to augment the supply obtained from the public water system which serves the premises in question.
- (6) "AWWA" means the American Water Works Association.
- (7) "Backflow" means the flow in the direction opposite to the normal flow.
- (8) "Check Valve" means a valve which allows flow in only one direction.
- (9) "Community Water System". See Public Water System.
- (10) "Contaminant" means any physical, chemical, biological, or radiological substance or matter in water which may render the water nonpotable.
- (11) Corrosive water is water that tends to dissolve or leach metals from piping systems.
- (11) "Cross Connection" means any link or channel between the piping which carries drinking water and the piping or fixtures which carry water or other substances.
- (12) "Deep Well" means a well which penetrates through an impervious formation of extensive area, derives water from a confined aquifer beneath that impervious formation, and has a casing which extends to a depth of at least 18 feet below ground surface and is sealed at least 5 feet into the impervious formation.
- (13) "Direct Filtration" means filtration of water without pretreatment.
- (14) "Distribution System" means the network of pipes and other facilities which are used to distribute water from the source, treatment, transmission, or storage facilities to the water user.
- (15) "Division" means the Health Division of the Oregon Department of Human Resources.
- (16) "Dose Equivalent" means the product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements (ICRU).

- (17) "Double Check Valve Assembly" means an assembly of two independently acting check valves with shut-off valves on each side of the check valves and test cocks for checking the water tightness of each check valve.
- (18) "Emergency" means a condition resulting from an unusual calamity such as a flood, storm, earthquake, drought, civil disorder, volcanic eruption, an accidental spill of hazardous material, or other occurrence which disrupts water service at a public water system or endangers the quality of water produced by a public water system.
- (19) "EPA" means the U.S. Environmental Protection Agency.
- (20) "Gross Alpha Particle Activity" means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.
- (21) "Gross Beta Particle Activity" means the total radioactivity due to beta particle emission as inferred from measurements on a dry sample.
- (22) "Impounding Reservoir" means an uncovered body of water formed behind a dam across a river or stream, and in which water is stored.
- (23) "Infiltration Gallery" means a system of perforated pipe laid along the banks or under the bed of a stream or lake installed for the purpose of collecting water from the formation beneath the stream or lake.
- (24) "Man-made Beta Particle and Photon Emitters" means all radionuclides emitting beta particles and/or photons listed in Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure, NBS Handbook 69, except the daughter products of Thorium-232, Uranium-235 and Uranium-238.
- (25) "Major Additions or Modifications" means changes of considerable extent or complexity, projects involving water sources, treatment facilities, facilities for continuous disinfection, finished water storage, pumping facilities, and transmission mains, not water main extensions or replacements.
- (26) "Master Plan" means an overall plan which shows the major components of a water system as it will exist at the end of a specified design period.
- (27) "Maximum Contaminant Level (MCL)" means the maximum allowable level of a contaminant in water, which will not cause a public health hazard when the water is delivered to the users of a public water system, except in the case of turbidity where the maximum allowable level is measured at the point of entry to the distribution system. Contaminants occurring in the water resulting from circumstances controlled by the water user are excluded from this definition.
- (28) "Non-community Water System". See Public Water System.
- (29) "Pathogenic" means a specific agent (bacterium, virus or parasite) causing or capable of causing disease.
- (30) "Peak Daily Demand" means the maximum rate of water use, expressed in gallons per day, over the 24-hour period of heaviest consumption.

- (31) "Permit" means official permission granted by the Division for a public water system which exceeds maximum contaminant levels to delay, because of economic or other compelling factors, the installation of water treatment facilities which are necessary to produce water which does not exceed maximum contaminant levels.
- (32) "Person" includes any individual, corporation, association, firm, partnership, or joint stock company and includes any receiver, special master, trustee, assignee, or other similar representative thereof.
- (33) "Picocurie (pCi)" means that quantity of radioactive material producing 2.22 nuclear transformations per minute.
- (34) "Potable Water". See Safe Drinking Water.
- (35) "Public Health Hazard" means a condition, device or practice which is conducive to the introduction of waterborne disease organisms, or harmful chemical, physical, or radioactive substances into a public water system, and which presents an unreasonable risk to health.
- (36) "Public Water System" means a system for the provision to the public of piped water for human consumption, if such system has more than 3 service connections used by year-round residents, or regularly serves 10 or more year-round residents, or supplies water to a public or commercial establishment which operates a total of at least 60 days per year, and which is patronized by 10 or more customers or visitors per day or is a facility licensed by the Division. A public water system is either a "community water system" or a "non-community water system".
- (a) "Community water system" means a public water system which has 15 or more service connections used by year-round residents, or which regularly serves 25 or more year-round residents;
- (b) "Non-community water system" means a public water system that is not a community water system.
- (37) "Reduced Pressure Principle Backflow Prevention Device (R.P. Device)" means a device for preventing backflow which has two check valves, a differential relief valve located between two check valves, two shut-off valves, one on the upstream side and the other on the downstream side of the check valves, and four test cocks for checking the watertightness of the check valves and the operation of the relief valve.
- (38) "Rem" means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A "millirem (mrem)" is 1/1000 of a rem.
- (39) "Safe Drinking Water" means water which has sufficiently low concentrations of microbiological, inorganic chemical, organic chemical, radiological or physical substances so that individuals drinking such water at normal levels of consumption, will not be exposed to disease organisms or other substances which may produce harmful physiological effects.
- (40) "Sanitary Survey" means an on-site review of the water source, watershed, facilities, equipment, operation and maintenance of a public water system for the purpose of evaluating the capability of the water system to produce and distribute safe drinking water.

- (41) "Secondary Contaminant" means those contaminants which, at the levels generally found in drinking water, do not present an unreasonable risk to health, but do:
- (a) Have adverse effects on the taste, odor and color of water; and/or
 - (b) Produce undesirable staining of plumbing fixtures; and/or
 - (c) Interfere with treatment processes applied by water suppliers.
- (42) "Service Connection" means the piping connection by means of which water is conveyed from a distribution main of a public water system to a customer's premises. For a community water system, the portion of the service connection which conveys water from the distribution main to the customer's property line, or to the service meter where provided, is owned by and is under the jurisdiction of the water supplier.
- (43) "Shallow Well" means a well which derives water from an unconfined aquifer above which there is no impervious formation.
- (44) "Spring" means a naturally occurring discharge of water appearing at the ground surface as flowing water.
- (45) "These Rules" means the Oregon Administrative Rules encompassed by OAR 333-61-005 through 333-61-095.
- (46) "Turbidity" means a measure of the cloudiness of water caused by suspended particles. The units of measure for turbidity are nephelometric turbidity units (NTU).
- (47) "Variance" means official permission granted by the Division for public water systems to exceed maximum contaminant levels because the quality of the raw water is such that the best treatment techniques available are not capable of treating the water so that it does not exceed maximum contaminant levels, and there is no unreasonable risk to health.
- (48) "Waiver" means official permission from the Division for a public water system to deviate from the construction standards set forth in these rules.
- (49) "Water Supplier" means a person, group of persons, municipality, district, corporation or other entity which operates a public water system.
- (50) "Water Source" means any lake, stream, spring, well, impoundment or other source of water from which water is obtained for a public water system. In some cases, a public water system can be the source of supply for one or more other public water systems.
- (51) "Water System" means a system for the provision of piped water for human consumption.
- (52) "Well" means an artificial opening or artificially altered natural opening, however made, by which ground water is sought or through which ground water flows under natural pressure, or is artificially withdrawn or injected, provided that this definition shall not include a natural spring, or wells drilled for the purpose of exploration or production of oil or gas.
- (Publications: The publication(s) referred to or incorporated by reference in this rule are available from the office of the Health Division.)

(1) Water suppliers for community water systems are responsible for providing water that is not corrosive to the extent that metals from piping materials, solders, fillers, or brazing materials can be dissolved and leached into the water at levels that could cause a public health hazard.

(2) Corrosion Determination:

(a) Analysis conducted to determine the Langelier Index shall be performed in conformance with the methods prescribed in 40 CFR Subpart E, Section 141.42, Special Monitoring for Corrosivity Characteristics, of the U.S. Environmental Protection Agency Interim Primary Drinking Water Regulations, as amended August 27, 1980;

(b) Any community water system found to have a Langelier Index of less than minus 2.0 shall be classified as having potentially corrosive water and shall conduct additional quarterly analyses for metals in drinking water for a period of twelve months to determine water corrosivity. The testing method used for metals analysis shall be the EPA Water Supply Guidance No. 73, specifically:

1. Guidance for Selection of Appropriate Sample Sites,
2. Guidance for Collection of Samples for Analysis;

(c) Reports of analysis results shall be submitted to the Division by the 10th of the month following the month in which the sample was collected. All sampling under this part must be completed on or before December 31, 1985;

(d) A list of sample sites shall be submitted to the Division for approval prior to any metals testing. This list shall be submitted before November 1, 1984.

(e) Water systems agreeing to provide corrosion control methods in accordance with a schedule approved by the Division are not required to do the metals testing specified in (b) of this section.

(f) All new or proposed public water systems or water systems changing or modifying their source of water shall submit the results of the analysis for the Langelier Index to the Division before the water system is put into service and if less than -2.0 (minus 2.0) procedures outlined in (b), (c), and (d) of this section shall be completed within one year.

(3) Interpretation of metals sampling:

(a) The Division shall interpret the results of metals samples, as conducted in paragraph (2) of this section. Water shall be classified corrosive when meeting the following characteristics:

(A) If lead concentrations in (8 hour minimum) standing water sample or service line sample exceeds 0.025 milligrams/l more than the water main sample concentrations; or

(B) If cadmium concentrations in (8 hour minimum) standing water sample or service line sample exceeds 0.005 milligrams/l more than the water main sample concentrations; or

(C) If iron, copper, or zinc concentrations in the (8 hour minimum) standing water sample or service line sample exceeds a 30 percent increase above the water main sample concentration.

(b) If a public water system has corrosive water as determined under (a) of this section, the water supplier shall:

(A) Follow the public notification procedures prescribed by these rules (333-61-040), and;

(B) Provide corrosion control measures acceptable to the Division and adequate to render the water non-corrosive as defined in Section (3)(a).

(C) If the measures as identified in (B) above are not provided, the water supplier must apply for a permit from the Division as provided for in 333-61-045 (4)(6)(7) & (8) and carry out the following:

(i) Public notification at least quarterly to all the users that the water is corrosive and is not in compliance with state drinking water regulations.

(ii) Notify all users that the water services must be flushed adequately until standing water in the service lines has been wasted.

(iii) Identify and remove all lead service pipes and connections.

(iv) Solders containing more than 0.20 percent lead shall be prohibited for use in making up joints and fittings in any private or public potable water supply system or any individual water user's plumbing.

(v) Submit a schedule to the Division for implementation of corrosion control measures set forth in (b)(B) of this section.