

**Water Resources Department
Chapter 690
Division 8**

STATUTORY GROUNDWATER TERMS

690-008-0001

Definition and Policy Statements

A number of terms are used in the statutes, ORS 537.505–537.795, prescribing the management of groundwater in Oregon. These rules define terms to qualify and clarify the statutes. In all statutes and rules employed in the management of groundwater by the Water Resources Department and Commission, the following definitions shall apply, unless the context requires otherwise:

(1) “Annual High Water Level” means the highest elevation (shallowest depth) static groundwater level that exists in a groundwater reservoir or part thereof in a year.

(2) “Aquifer” means a geologic formation, group of formations, or part of a formation that contains saturated and permeable material capable of transmitting water in sufficient quantity to supply wells or springs and that contains water that is similar throughout or varies gradually with location with respect to characteristics such as potentiometric head, chemistry, and temperature.

(3) “Critical Groundwater Area Boundary” means a line established in a critical groundwater area order on a map that surrounds an area in which one or more of the statutory criteria for critical area declaration are met and which is located either:

(a) Physically by coincidence with natural features such as groundwater reservoir boundaries, hydrologic barriers, or recharge or discharge boundaries; or

(b) Administratively by surrounding an affected area when that area does not coincide with an area bounded by natural features.

(4) “Customary Quantity” means the rate or annual amount of appropriation or diversion of water ordinarily used by an appropriator within the terms of that appropriator’s water right.

(5) “Declined Excessively” means any cumulative lowering of the Annual High Water Levels in a groundwater reservoir or a part thereof which:

(a) Precludes, or could preclude, the perpetual use of the reservoir; or

(b) Exceeds the Economic Pumping Level; or

(c) Constitutes a decline determined to substantially interfere with a surface water source as defined in OAR 690-008-0001(10).

(d) Constitutes a lowering of the Annual High Water Level within a groundwater reservoir, or part thereof, greater than 50 feet below the highest known static water level; or

(e) Results in groundwater pollution; or

(f) Constitutes a lowering of the Annual High Water Level greater than 15% of the greatest known saturated thickness of the groundwater reservoir. The saturated thickness shall be calculated using pre-development water levels and the bottom of the groundwater reservoir, or the Economic Pumping Level, whichever is shallower.

(6) "Economic Pumping Level" means the level below land surface at which the per-acre cost of pumping equals 70 percent of the net increase in annual per-acre value derived by irrigating. (The value is to be calculated on a five year running average of the per-acre value of the three, if there are that many, prevalent irrigated crops in the region minus the five year running average of the per-acre value of the three, if there are that many, prevalent regional non-irrigated crops.)

(7) "Excessively Declining Water Levels" (Note: "Excessively" as used in ORS 537.730(1)(a) is taken to modify both "are declining" and "have declined") means any ongoing lowering of the Annual High Water Level in a groundwater reservoir or part thereof which:

(a) Precludes, or could preclude, the perpetual use of the reservoir; or

(b) Represents an average downward trend of three or more feet per year for at least 10 years; or

(c) Represents, over a five year period, an average annual lowering of the water level by 1% or more of the initial saturated thickness as determined by observation or investigation in the affected area; or

(d) Results in water quality deterioration.

(8) "Overdrawn" or "Overdrawing" means the total authorized groundwater use from a groundwater reservoir, or part thereof, has a combined annual volume that exceeds the average annual recharge to that groundwater reservoir.

(9) "Reasonably Stable Groundwater Levels" means:

(a) The Annual High Water Levels as measured at one or more representative wells in a groundwater reservoir or part thereof:

(A) indicate no decline or an average rate of decline of less than 0.6 feet per year over any immediately preceding averaging period with duration between 5 and 20 years. Four Annual High Water Levels are required to calculate the rate of change, and at least one of these must have been measured between 5 and 20 years before the year under evaluation. If either of these conditions is not met, then data are insufficient to perform this test, and the Department will presume that water levels are not reasonably stable; and

(B) have not declined, or have declined by less than 25 feet, compared with a reference level. The reference level shall be the highest known water level unless Annual High Water Levels have been

measurably increased by anthropogenically-enhanced recharge, in which case the Department may set a different reference level using best available information.

(b) Water level data must be available in the year under evaluation to perform the tests in (a). However, in the absence of current data, a finding of reasonable stability may be presumed to persist for a maximum of 5 years beyond the most recent Annual High Water Level.

(c) If groundwater has not yet been extracted or authorized for extraction from the groundwater reservoir, then water levels may be presumed to be reasonably stable.

(d) The limits in part (a) of this definition may be superseded by limits defined in a basin program rule adopted pursuant to the Commission's authority in ORS 536.300 and 536.310.

(e) This definition does not apply to Critical Groundwater Areas designated under OAR 690-0010.

(10) "Substantial interference", "substantially interfere", "undue interference", or "unduly interfere" means the spreading of the cone of depression of a well to intersect a surface water source or another well, or the reduction of the groundwater levels as a result of pumping or otherwise extracting groundwater from an aquifer, which contributes to:

(a) Depletion of a surface water source with which the groundwater use has the Potential for Substantial Interference (OAR 690-009-0020(4)) and that:

(A) is already over-appropriated during any period of the year and is the source for a surface water right having a priority date senior to the priority date(s) of the groundwater appropriation(s); or

(B) is administratively or statutorily withdrawn with an effective date senior to the priority date(s) of the groundwater appropriation(s); or

(C) is restrictively classified with an effective date senior to the priority date(s) of the groundwater appropriation(s); or

(D) is the source for one or more existing surface water rights that have been regulated off due to insufficient supply to satisfy senior surface water rights and that have priority dates senior to the priority date(s) of the contributive groundwater appropriation(s) or is subject to a rotation agreement to address limited surface water supplies among surface water rights that have priority dates senior to the priority date(s) of the groundwater appropriation(s); or

(E) has a minimum perennial streamflow or instream water right that is unmet during any period of the year and has an effective date or priority date that is senior to the priority date(s) of the groundwater appropriation(s).

(b) The groundwater level being drawn down to the Economic Pumping Level of the senior appropriator(s); or

(c) One or more of the senior groundwater appropriators being unable to obtain either the permitted or the customary quantity of groundwater, whichever is less, from a reasonably efficient well that fully penetrates the aquifer where the aquifer is relatively uniformly permeable. However, in aquifers where flow is predominantly through fractures, full penetration may not be required as a condition of substantial or undue interference.

(11) “Substantial Thermal Alteration” means any change in water temperature of a groundwater reservoir, or a part thereof, which:

(a) Precludes, or could preclude, the perpetual heating or cooling use of the groundwater reservoir; or

(b) Constitutes a change in the mean annual temperature within a groundwater reservoir, or part thereof, greater than 25 percent of the highest recorded naturally occurring Celsius (C) temperature.

(12) “Substantial Thermal Interference” means the spreading of the radius of thermal impact of a low-temperature geothermal production well or low-temperature geothermal injection well to intersect a surface water source or another well, or the reduction of temperature or heat flow as a result of pumping or injection, which contributes to change in groundwater or surface water temperature to an extent that one or more senior appropriators of the low-temperature resource are unable to use water for the purpose(s) designated in the associated water right.

(13) “Wasteful Use (of groundwater)” means any artificial discharge or withdrawal of groundwater from an aquifer that is not put to a beneficial use described in a permit or water right, including leakage from one aquifer to another aquifer within a well bore.

Statutory/Other Authority: ORS 537

History:

WRD 18-1990, f. & cert. ef. 12-14-90

WRD 21-1988, f. & cert. ef. 12-14-88