

DEPARTMENT OF NATURAL RESOURCES

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Chapter NR 112

WELL CONSTRUCTION AND PUMP INSTALLATION

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History: Chapter NR 112 as it existed on September 30, 1975 was repealed and a new chapter NR 112 was created effective October 1, 1975.

NR 112.01 Purpose. The purpose of this chapter is to establish uniform minimum standards and methods of procuring and protecting an adequate supply of ground water safe and fit for human consumption and for the preparation of food products through adequate construction or reconstruction of wells and reservoirs, installation of pumping equipment, or other methods approved by the department, in conformity with chapters 144 and 162, Stats. This chapter shall govern the location, construction or reconstruction and maintenance of wells and reservoirs, the installation and maintenance of pumping and treatment equipment, and the supervision of well drillers and pumping equipment installers.

History: Cr. Register, June, 1975, No. 234, eff. 10-1-75; am. Register, April, 1978, No. 268, eff. 5-1-78.

NR 112.02 Applicability. The provisions of this chapter shall apply to all new and existing private water supplies, high capacity water systems, school water systems, and public water systems, community water systems serving 15 or more living units.

Note: An approval from the department is required for high capacity water systems, school water systems and sewage treatment plant water systems pursuant to chapters 144 and 162, Wis. Stats., respectively, prior to construction of any well and installation of any pump. See NR 112.26.

History: Cr. Register, June, 1975, No. 234, eff. 10-1-75; am. Register, April, 1978, No. 268, eff. 5-1-78.

NR 112.03 Definitions. For the purpose of this chapter the following terms are defined as follows:

(1) "Absorption pond" means an earth structure constructed for the purpose of slow disposal of treated sewage or other liquid wastes by soil seepage.

(2) "Adequate water supply" means a water supply which has a yield, where obtainable, and the pump capacity to provide the quantity of water which the user has stated is necessary for drinking, culinary, food processing and other purposes for which the water is intended to be used.

(3) "Animal enclosure" means a fenced yard or similar uncovered structure in which an area of 600 square feet or less is provided for each animal unit contained therein and in which animals are enclosed for any part of at least 30 separate days per year.

(4) "Animal lot" means a fenced yard or similar uncovered structure in which the concentration of livestock or poultry is such that a vegetative cover is not maintained.

(5) "Animal shelter" (paved) means a paved covered structure including but not limited to a house or barn in which animals are enclosed for at least any part of 30 separate days per year.

(6) "Animal shelter" (unpaved) means unpaved covered structures including but not limited to houses or barns in which animals are enclosed for at least any part of 30 separate days per year.

(7) "Animal unit" means an equivalent of 1,000 pounds of live animal weight.

(8) "Animal yard" means fenced in dirt or concrete area in which cattle or other livestock or poultry are enclosed and includes animal enclosures, animal lots, and animal shelters defined in NR 112.03 (3), (4) and (5) above.

(9) "Annular space" means the space between 2 concentric cylinders or circular objects, such as the space between an upper enlarged drillhole and initial protective casing pipe or between the initial protective casing pipe and an outer construction pipe or inner liner pipe or between an inner liner pipe and lower drillhole.

(10) "Approval" means the written approval of the department.

(11) "Cistern" means a covered tank in which rainwater from roof drains is stored.

(12) "Clay slurry" means a fluid mixture of native clay formation or commercial clay or clay mineral products and water prepared with only the amount of water necessary to produce fluidity.

(12m) "Community water system" means a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

(13) "Contaminant" means any matter which may render water bacteriologically or chemically impure or turbid so as to make it unfit for human consumption.

(14) "Clear water waste" means cooling water and condensate drainage from refrigeration compressors and air-conditioning equipment, waste water drainage from equipment chilling processes, foundation drainage water and other water having no impurities or where impurities are of such minimum concentration as not to be considered harmful and cooled condensate from steam heating systems or other equipment.

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seq. or a variance under one of the categories provided in this chapter may be specified.

(b) Practices attributable to municipal, industrial, commercial, domestic, agricultural, land development, or other activities shall be controlled so that waters regardless of their hydrologic and water quality classifications meet the general aesthetic and acute toxicity conditions in Wis. Adm. Code section NR 102.02 (1).

(3) **VARIANCE CATEGORIES.** (a) Surface waters not supporting a balanced aquatic community (intermediate aquatic life):

1. **Applicability.** This category of variance may be applied to either the continuous or noncontinuous stream hydrologic classification.

2. **Surface water criteria.** The following water quality criteria shall be met in all surface waters included in this variance category:

a. Dissolved oxygen shall not be less than 1 mg/l.

b. To protect the public health, bacteriological qualities specified in Wis. Adm. Code section NR 102.02 (4) shall be maintained.

c. Disinfectant sufficient to protect the public health is permitted.

d. Chlorine, when used as an effluent disinfectant, shall not be greater than 0.50 mg/l at any point in the receiving water.

e. Ammonia nitrogen (as N) at all points in the receiving water shall not be greater than 3 mg/l during warm temperature conditions nor greater than 6 mg/l during cold temperatures to minimize the zone of toxicity and to reduce dissolved oxygen depletion caused by oxidation of the ammonia.

f. The pH shall be within the range of 6.0 to 9.0.

g. Other substances shall be controlled in accordance with Wis. Adm. Code section NR 102.02 (1).

3. **Effluent criteria.** a. The effluent limitations determined necessary to meet the surface water criteria listed above are enumerated in table 1.

Parameter	Table 1			
	Monthly Average (mg/l)	Daily Maximum (mg/l)	Weekly Average (mg/l)	Other (mg/l)
BOD ₅	15	30	-	-
Total Suspended Solids	20	30	-	-
NH ₃ -N (May-October)	-	-	3	-
NH ₃ -N (November-April)	-	-	6	-
Dissolved Oxygen	-	-	-	4 (minimum)
Total Residual Chlorine	-	-	-	0.50 (maximum)

b. Unless otherwise specified in table 1 above, effluent limitations for sewage treatment works shall be as adopted in Wis. Adm. Code chapter NR 210.

c. In addition to the effluent limitations enumerated in table 1 above, effluent limitations for these and any other substance necessary to protect assigned uses shall be met.

(b) Marginal surface waters: 1. Applicability. This variance category may be applied to the continuous or noncontinuous stream hydrologic classification, except that it shall be applied to all surface waters classified as effluent channel, wetland or diffuse surface water.

2. Surface water criteria. The following surface water quality criteria shall be met in all surface waters included in this variance category:

a. Dissolved oxygen shall not be less than 2 mg/l.

b. To protect the public health, bacteriological qualities specified in Wis. Adm. Code section NR 102.02 (4) shall be maintained.

c. Disinfectant sufficient to protect the public health is permitted. Chlorine, when used as an effluent disinfectant, shall not be greater than 0.50 mg/l at any point in the receiving water.

d. The pH shall be within the range of 6.0 to 9.0.

e. Other substances shall be controlled in accordance with Wis. Adm. Code section NR 102.02 (1).

3. Effluent criteria. a. The effluent limitations determined necessary to meet the surface water criteria listed above are enumerated in table 2.

Parameter	Monthly Average (mg/l)	Weekly Average (mg/l)	Other (mg/l)
BOD,	20	30	-
Total Suspended Solids	20	30	-
Dissolved Oxygen	-	-	4 (minimum)
Total Residual Chlorine	-	-	0.50 (maximum)

b. Unless otherwise specified in table 2 above, effluent limitations for sewage treatment works shall be as adopted in Wis. Adm. Code chapter NR 210.

c. In addition to the effluent limitations enumerated in table 2 above, effluent limitations for these and any other substance necessary to protect assigned uses shall be met.

(4) OTHER CLASSIFICATIONS AND EFFLUENT CRITERIA. (a) *Surface waters significant to the environmental integrity of the state or region.* Under all hydrologic categories, the department reserves the right to require other effluent limitations, including allocation of wasteloads for organic material, toxicants and chlorine residuals if it is determined that the specified surface water is important to the overall environmental integrity of the area. In waters identified as trout streams, located in scientific areas or wild and scenic areas, providing endangered species habitat or of high recreational potential, effluent criteria will be evaluated on a case-by-case basis.

(b) *Surface waters classified for fish and aquatic life.* 1. Streams. Where flowing streams or rivers are specified to achieve fish and aquatic life criteria, wasteload allocation for organic material, toxicants and