

## Chapter NR 214

**LAND DISPOSAL OF LIQUID WASTES  
DISCHARGE LIMITATIONS AND MONITORING  
REQUIREMENTS**

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**Note:** Pursuant to chapter 147, Wis. Stats. and under the procedure of section 227.027 Wis. Stats., the department of Natural Resources has promulgated interim effluent limitations which were in effect for one year. These interim effluent limitations will be periodically replaced by permanent effluent limitations.

**NR 214.01 Purpose.** The purpose of this chapter is to establish discharge limitations and monitoring requirements applicable in permits required by chapter 147, Wis. Stats. for the discharge of liquid wastes to land disposal systems and ground waters of the state.

**History:** Cr. eff. 6-10-75.

**NR 214.02 Applicability.** The discharge limitations, monitoring requirements, and other provisions of this chapter are applicable to discharges of liquid wastes to land disposal systems from publicly owned treatment works, privately owned domestic waste treatment works, and point sources identified in Wis. Adm. Code chapter NR 220 and further defined in applicable Wis. Adm. Code chapters 200-299. The provisions of this chapter are not applicable to discharges from domestic sewage systems defined as plumbing in section 145.01(1)(b), Wis. Stats., to the disposal of sludge from treatment works, to disposal of septic tank pumpage and other domestic waste regulated by chapter NR 113 Wis. Adm. Code, or to disposal of semi-liquid or wet wastes at a solid waste disposal site licensed pursuant to chapter NR 151 Wis. Adm. Code.

**History:** Cr. eff. 6-10-75.

**NR 214.03 Definitions.** The following definitions apply whenever the listed terms are used in this chapter. Definitions of other terms and meanings of abbreviations are set forth in Wis. Adm. Code chapter NR 205.

- (1) "Land disposal system" means, as appropriate;
  - (a) An absorption pond or seepage pond system,
  - (b) A ridge and furrow system,
  - (c) A spray irrigation system, and
  - (d) A septic tank and field absorption system.
- (2) "Liquid waste" means the discharge from a publicly owned municipal waste treatment works, the discharge from a privately

owned domestic waste treatment works, or the discharge of process wastewaters from any of the point sources identified in section NR 214.02. Field spreading of liquid manure and other agricultural wastes for use as fertilizer and discharges consisting only of non-contact cooling water are not included in this definition, and are therefore not subject to the provisions of this chapter. (3) "Perimeter" means the boundary of the parcel of land under one ownership or control not intersected by any surface waters of the state on which a land disposal system is located.

(4) "Hydraulic loading rate" means the average daily discharge to a land disposal system during a calendar month or other period as specified in a permit for such discharge, calculated by dividing the total discharge for such period by the number of days in the period.

(5) "Hydraulic capacity" means the maximum hydraulic loading rate without system overload observed in the last four years, or, in the absence of such observations, the design flow capacity.

(6) "Ground water monitoring" means measuring the ground water level in and the analysis of samples taken from one or more test wells or the analysis of water in soil.

**History:** Cr. eff. 6-10-75.

**NR 214.04 Compliance.** (1) Discharges of liquid wastes, and pollutants or pollutant properties contained therein, to land disposal systems from point sources subject to the provisions of this chapter shall comply with the applicable discharge limitations of this chapter by July 1, 1977.

(2) The owner or operator of a land disposal system subject to the provisions of this chapter shall monitor discharges to the system and the ground water in the area of the system as specified in the permit issued by the department for such discharge in accordance with the provisions of this chapter.

**History:** Cr. eff. 6-10-75.

**NR 214.05 Modification of discharge limitations or monitoring requirements.** The discharge limitations and monitoring requirements of this chapter may be modified by the department for a discharge subject to the provisions of this chapter if the owner or operator having the discharge can demonstrate that such limitations and requirements are more stringent than necessary to maintain adequate and satisfactory ground water quality. This demonstration may be made:

(1) By evidence submitted at a public hearing following public notice of the receipt of a complete application and tentative determination by the department to issue a permit as provided in chapter NR 3, subchapter II, Wis. Admin. Code, or

(2) By evidence presented at an adjudicatory hearing on the issued permit for such discharge as provided in chapter NR 3, subchapter III, Wis. Adm. Code.

**History:** Cr. eff. 6-10-75.

**NR 214.06 Application of discharge limitations.** The discharge limitations set forth in this chapter shall be used to establish the volume of liquid waste and the quantity or quality of pollutants or

pollutant properties which may be discharged to a land disposal system subject to the provisions of this chapter, except as:

- (1) Modified in accordance with section NR 214.05,
- (2) Superseded by more stringent discharge limitations necessary to achieve ground water quality standards or meet other legal requirements, or
- (3) Supplemented or superseded by standards or prohibitions for toxic pollutants or by additional limitations for other pollutants required to achieve water quality.

**History:** Cr. eff. 6-10-75.

**NR 214.07 Discharge limitations.** Discharge of liquid wastes to land disposal systems shall be in accordance with the limitations of this section and sections NR 214.08 and 214.11.

(1) No discharge shall exceed the maximum hydraulic loading rate specified in the permit for such discharge. In determining the hydraulic loading rate for a system the department will consider the design capacity, past operating performance, site conditions including soil and geological characteristics, the concentration and characteristics of pollutants in the discharge, and other relevant information on the system.

(2) In addition to meeting the limitations of sub (1), there shall be no discharge of private domestic waste or municipal waste to an absorption pond system, ridge and furrow system, or spray irrigation system except after treatment in a secondary sewage treatment system approved by the department.

(3) In addition to meeting the limitations of subs(1) and (2), discharges to absorption pond systems shall be retained, along with precipitation which falls within the area of the system, within the perimeter of the system.

(4) In addition to meeting the requirements of subs(1) and (2), discharges to spray irrigation systems shall be such that:

(a) During irrigation all of the discharge and any precipitation falling or flowing onto the irrigation field shall be confined within the perimeter of the system,

(b) The discharge is alternately distributed to individual sections of the system in a manner that allows sufficient resting periods to maintain the absorptive capacity of the soil,

(c) The volume of the discharge is limited to prevent ponding except for temporary conditions following precipitation events, and

(d) The discharge is free of material that will interfere with the operation of the spray nozzles or orifices.

(5) In addition to meeting the requirements of subs (1) and (2), discharges to a ridge and furrow system shall be such that:

(a) The discharge along with any precipitation that falls within the area of the system is retained within the perimeter of the system,

(b) The discharge is alternately distributed to individual sections of the system in a manner that allows sufficient resting periods to maintain the absorptive capacity of the soil, and

(c) The volume of the discharge is limited to prevent inundation of the ridges except for temporary conditions following precipitation events.

(6) In addition to meeting the limitations of sub (1), the volume of discharges to septic tank and field absorption systems shall be limited to prevent flow to or ponding on the ground surface.

**History:** Cr. eff. 6-10-75.

**NR 214.08 Requirements for disinfection.** The department may require disinfection of discharges to a land disposal system from domestic and municipal waste treatment works, from the meat (and poultry) category of point sources, or other point sources which may be a source of infectious disease. This requirement will depend on the type of system, the location of the system and the type of prior treatment.

**History:** Cr. eff. 6-10-75.

**NR 214.09 Discharge monitoring requirements.** (1) The following discharge monitoring requirements apply to discharges to land disposal systems from privately owned domestic waste treatment facilities and publicly owned municipal waste treatment facilities.

(a) Discharges from aerated lagoon facilities to an intermediate storage pond or directly to a land disposal system shall, as a minimum, be monitored daily for pH and weekly for BOD<sub>5</sub>, suspended solids, and fecal coliform bacteria using grab samples.

(b) Discharges from stabilization pond facilities which are operated as a flow through system shall, as a minimum, be monitored weekly for pH, twice monthly for BOD<sub>5</sub>, and suspended solids, and twice quarterly for fecal coliform bacteria using grab samples.

(c) Discharges from stabilization pond facilities which are operated on a fill and draw basis shall, as a minimum, be monitored daily for total daily flow, weekly for pH, twice monthly for BOD<sub>5</sub>, and suspended solids, and twice quarterly for fecal coliform bacteria using grab samples taken during periods of discharge.

(d) Discharges to an intermediate storage pond or directly to a land disposal system from waste treatment facilities subject to the provisions of this section, other than from aerated lagoons and stabilization ponds, shall be monitored in accordance with Wis. Adm. Code sections NR 210.11 (1) and (2).

(e) Discharges from intermediate storage ponds receiving discharges from treatment facilities described in subs (a) and (d) above shall be monitored daily for total daily flow during discharge periods.

(f) Influent to all treatment facilities subject to the provisions of this section including any flow bypassing such facilities, shall be monitored continuously for flow. The influent shall also be monitored for BOD<sub>5</sub> and suspended solids at the frequency and using the type of sampling set forth in sub (a), (b), (c), or (d) above as appropriate to the type of treatment facility receiving the influent.

(2) Discharges to land disposal systems other than the discharges described in sub (1) above shall be monitored for total daily flow as follows:

(a) Monthly for systems with an hydraulic capacity of less than 20,000 gallons per day;

(b) Weekly for systems with an hydraulic capacity of more than 20,000 but less than 100,000 gallons per day; and

(c) Daily for systems with an hydraulic capacity of 100,000 or more gallons per day.

**History:** Cr. eff. 6-10-75.

**NR 214.10 Ground water monitoring.**

(1) Ground water in the area of a land disposal system shall be monitored in accordance with this section at locations specified in the WPDES permit.

(2) Unless such monitoring is required at a lower hydraulic capacity in accordance with section NR 214.11 (1) (d) or (2) (c), ground water monitoring shall be required in the area of land disposal systems having hydraulic capacities equal to or more than:

(a) 100,000 gallons per day for systems receiving discharges of domestic or municipal waste;

(b) 340,000 gallons per day for systems receiving discharges from the canned and preserved fruit and vegetable category of point sources;

(c) 80,000 gallons per day for systems receiving discharges from the dairy products processing category of point sources; and

(d) 100,000 gallons per day for systems receiving discharges from the meat (and poultry) products category of point sources.

(3) Where monitoring is required, the ground water shall be monitored monthly for the first three months after the monitoring system is installed and semi-annually thereafter, except that the department may modify the semi-annual requirement to an annual requirement for land disposal systems receiving discharges for a period of not more than four months annually.

(4) The department may require monitoring for any or all of the following parameters: ground water elevation, organic nitrogen, ammonia nitrogen, nitrite and nitrate nitrogen, chlorides, sulfates, dissolved solids, alkalinity, hardness, and pH.

**History:** Cr. eff. 6-10-75.

**NR 214.11 Additional requirements.** (1) For land disposal systems which receive discharges from any point sources containing substances or concentrations of substances not normally associated with domestic waste or wastewaters from the canned and preserved fruit and vegetable, dairy products processing, or meat (and poultry) products categories of point sources, the department may:

(a) Impose limitations on the quantity and/or concentration of substances discharged to such systems;

(b) Require monitoring at more frequent intervals and/or for parameters in addition to those set forth in section NR 214.09;

(c) Require monitoring ground water at more frequent intervals and/or for parameters in addition to those set forth in sections NR 214.10(2) and (3); and

(d) Require monitoring ground water for land disposal systems having a lower hydraulic capacity than specified in section NR 214.10(1).

(2) For a land disposal system which is located on a site where soil, geologic or other conditions may result in more rapid than normal seepage to ground water and/or increase the possibility of ground water contamination, the department may require;

(a) Further treatment beyond secondary treatment for domestic and municipal wastes prior to discharge to the system;

(b) Pretreatment prior to discharge to the system of liquid wastes from categories and classes of point sources other than those identified in sub (a) above and, for the purpose of evaluating such pretreatment, require monitoring

1. Of the volume of flow before and/or after such pretreatment, and

2. Of the concentration of critical parameters in such flow before and after pretreatment, and

(c) Ground water monitoring for a system having an hydraulic capacity less than set forth in section NR 214.10(1).

**History:** Cr. eff. 6-10-75.

**NR 214.12 Sampling and analytical methods.** Unless otherwise specified in the permit for a land disposal system, the following apply:

(1) The procedures for measuring flow and taking samples of discharges shall be those set forth in chapter NR 218, Wis. Adm. Code; and

(2) The methods of analysis for substances contained in discharges shall be those set forth in chapter NR 219, Wis. Adm. Code except that for monitoring ground water the alternate methods set forth in the following table may be used for the parameters listed in the table. The references of the table are the same as those incorporated by reference in chapter 219, Wis. Adm. Code.

## DEPARTMENT OF NATURAL RESOURCES

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Parameter and Units	Method	Reference		
		SM <sup>1</sup>	ASTM <sup>2</sup>	EPA <sup>3</sup>
Alkalinity as CaCO <sub>3</sub> (mg Ca CO <sub>3</sub> )	Titration, Electronic Manual or Automated Methyl Orange	52	143	6
Flouride (mg/l)	Distillation SPADNS Ion Specific Electrode	171	191	72
Surfactants (MBAS) (mg/l)	Methylene Blue Colorimetric	339	619	131
Iron Total (mg/l)	Colorimetric	187		
Nitrate + Nitrite (mg/l)	Cadmium Reduction Automated			175
pH (s.u.)	Glass Electrode	276	248	230
Methane (mg/l)	Combustible-Gass Volumetric	217 220		
Silica (mg/l)	Colorimetric	303	80	273

<sup>1</sup>*Standard Methods for the Examination of Water and Wastewater*, 13th Edition, 1971

<sup>2</sup>*American Society for Testing and Material, Annual Book of Standards, Part 23, Water; Atmospheric Analysis*, 1972

<sup>3</sup>*Methods for Chemical Analysis of Water and Wastes*, 1971

**History:** Cr. eff. 6-10-75.