

## 2.3.6.5 Permitting Framework and Scope/ Permit Program Areas/ Exemptions and Waivers/Small Domestic No-Discharge Facilities

### **Applicability:**

The Department of Natural Resources has jurisdiction over lagoon-type facilities, including no-discharge systems with storage basins and land application.

No-discharge facilities with sealed basins to prevent discharge to subsurface waters and land application or other disposal to prevent discharge to surface waters are exempted from construction and operating permits if the flows are less than 3000 gpd and the facility receives only domestic wastewater (see 10 CSR 20-6.010(5)(A) and 10 CSR 20-6.015(1)(B)7 and (3)(B)6).

The department does not regulate lagoons serving single family residences (see 10 CSR 20-6.010(1)(B)5 and 10 CSR 20-6.015(3)(B)9). These are regulated by the Department of Health.

### **Content:**

As defined in 10 CSR 20-6.015(1)(B)7, a no-discharge facility is designed, constructed and operated to meet each of the following conditions:

- A. To hold or irrigate, or otherwise dispose without discharge to surface or subsurface waters of the state, all process wastes and associated storm water flows except for discharges that are caused by catastrophic or chronic storm events;
- B. Process wastes are not land applied during frozen, snow covered or saturated soil conditions; and
- C. Basins are sealed in accordance with 10 CSR 20-8 and there are no subsurface releases in violation of 10 CSR 20-7.015 or Section 577.155, RSMo.

Catastrophic and chronic storms are defined at 10 CSR 20-6.015(1)(B)2 and 3 as follows:

- Catastrophic storm – A precipitation event of twenty-four (24) hour duration or less that exceeds the twenty-five (25) year, twenty-four (24) hour storm event.
- Chronic storm event – A precipitation event with a duration of more than twenty-four (24) hours that exceeds the one-in-ten (1 in 10) year return frequency.

Examples of no-discharge facilities for domestic wastewater flows of 3000 gallons per day or less include small motels or resorts, restaurants, convenience stores, mobile home parks and campgrounds.

The owner or operator does not have to submit a written request, a construction permit application, operating permit application or other application to be declared exempt by the department. In accordance with the rule, the facility is exempt if it conforms to the regulatory definition of a no-discharge facility and has flows of 3000 gallons per day or less.

The department may require the owner or operator to submit facility design and operational information or an application for a permit to assure that the facility is not discharging to waters of the state. This authority to do so is provided to the department in the Clean Water Law in Section 644.051.5 and the No-Discharge Permit Rule at 10 CSR 20-6.015(2)(B).

The exemption provided in the rule does not mean that an owner or operator is without requirements. The facility has to be designed to hold all process wastes and associated storm

water flows. If land application is the means of disposal, an adequate amount of land with suitable soil conditions must be available. Other methods of disposal without discharge have to be feasible and practical. Evaporation is not accepted as a method of disposal, because precipitation exceeds evaporation in an average year in Missouri. The facility has to be constructed properly with appropriate capacity, slopes on berms, basin depths, sealing and so on. The facility has to be properly operated and maintained so that there is no run-off from land application, percolation to subsurface waters in excess of accepted rates, or other discharge except that allowed due to the catastrophic and chronic storm events. It is advisable for the owner or operator to retain design and construction documents and operational guidance and records in the event the department initiates action to assure that the facility is not discharging to surface or subsurface waters of the state.

Facility owners and operators voluntarily submit the information if written documentation of the exemption is desired. Additionally, an owner or operator may want a written statement of exemption from the rule for business transactions with banks, realtors, insurers, the Department of Health and Senior Services or other reasons. In the event that the owner or operator requests a written statement of exemption, or to address action initiated by the department to assure the facility does not discharge, the following information will need to be submitted by the owner or operator:

- A copy of the report of the geological evaluation conducted prior to construction of the facility, or a report of a current geological evaluation if one was not performed previously. Storage basins or lagoons are not allowed in areas where there is a high collapse potential.
- Calculations showing how the design flow and the dimensions of the storage basin and irrigation area were determined, along with as-built measurements showing the dimensions of the lagoon including the water depth and volume.
- A statement about how the storage basin is designed to meet the maximum allowable leakage rates or describe the construction methods and soils used to obtain a seal.
- Water usage data or an acceptable estimate of usage if the water is not metered; land application or other disposal amounts; and precipitation amounts. This information can be used to determine if the storage basin is leaking excessively.

The information submitted to support a request for a written statement of exemption must be complete. The department receives no fee to support review of whether a facility is exempt, and therefore must minimize review times related to these requests. If the information is not complete, the department will make a quick determination of that and inform the owner or operator that the review cannot proceed until the needed information is submitted.

Other considerations for the reviewer or inspector include the following:

- A computer spreadsheet program is available to determine if the basin is adequate for achieving no-discharge and can possibly meet the maximum allowable leakage based upon the geological evaluation. Consideration of the maximum allowable leakage is done in situations where land area is limited for irrigation. Values entered into the computer program for flow should be based on actual water usage and not design guide values. The spreadsheet program is available through the Engineering Section.
- Storage volume in the lagoon or basin is needed to store flows during frozen or saturated soil conditions. The storage volume above the 2-foot operating level should be from 60 days in southern Missouri to 120 days in northern Missouri. About 90 days of storage should be adequate for the middle two thirds of Missouri. The storage volume may be less for seasonal use facilities that are not in operation during the winter. However, seasonal use facilities should still have a storage volume sufficient to store the wintertime precipitation.

- In addition to the volume needed to store the wintertime flows, storage must be provided for the 25-year, 24- hour storm event. This event may or may not occur during the storage period. It is most likely that the catastrophic storm event will occur during the spring after irrigation has resumed but the basin has not been significantly pumped down yet.
- Additional storage must also be provided for the precipitation that normally falls on the basin surface and water that may drain off the berms into the basin. As an operating procedure, it has usually been interpreted that the wettest year in 10 precipitation during the wintertime storage period is used in the calculations although the definitions of no-discharge and chronic storm event do not necessarily say this.
- If the irrigation area is determined by proposing to irrigate 24 inches or less per year, there is no need to review any soils information. If the applicant proposes to irrigate at rates greater than 24 inches per year, then soil information may be needed to determine if the proposal is a valid no-discharge system. The total volume of water to be irrigated should include the wettest year in 10 precipitation that falls on the storage basin.
- Other means or methods to achieve no-discharge such as pumping and hauling excess water can be considered on a case by case basis. However, evaporation is not an acceptable method of disposal. Typically, these facilities would be very small, usually less than 1000 gpd and would be subject to the reviewer's consideration of the facts involved.
- Allowable percolation rates are determined by the geological evaluation. The maximum allowable percolation rate is 3500 gpd/acre (1/8 inch) when the geological evaluation indicates that the geological limitations are slight; 1700 gpd/acre (1/16 inch) when the geological limitations are moderate; and from 500 to 1000 gpd/acre when the geological limitations are severe. Because percolation rates of 500 gpd/acre or less are extremely difficult to measure, a rate up to 1000 gpd/acre may have to be allowed. Storage basins that seep at rates less than the rates provided here would be considered as being sealed in accordance with 10CSR20-8.

## Legal References:

### *Code of State Regulations:*

10 CSR 20-6.010(1)(B)5 and (5)(A)	Construction and Operating Permits (1)(B)5 General - Permit Exemptions. (5)(A) Operating Permits (OP) – Required
10 CSR 20-6.015(1)(B)7 and (3)(B)6	No Discharge Permits (1)(B)7 Definitions (3)(B)6 Exemptions - Other Exemptions