



ADMINISTRATIVE RULES OF MONTANA



17.30.718 CRITERIA FOR NUTRIENT REDUCTION FROM WASTEWATER TREATMENT SYSTEMS

- (1) This rule describes the information that must be submitted to obtain a department classification of a as level 1a, level 1b, or level 2, as those terms are defined in ARM 17.30.702. The nitrogen treatment level that a wastewater treatment system is granted under this rule may be used as the effluent concentration in mixing zone calculations.
- (2) A person seeking classification of a wastewater treatment system as level 1a, level 1b, or level 2 must submit the following background information to the department regarding the wastewater treatment system, in addition to any other information the department determines is necessary to verify the long-term treatment capabilities of the system:
 - (a) a description of the technology utilized by the system and the system components;
 - (b) engineering details regarding component sizes and materials specifications. Components include, but are not limited to, tanks, pumps, piping, control panels, and treatment media;
 - (c) operation and maintenance requirements;
 - (d) a description of the long-term reliability of the system components;
 - (e) a description of the installation process; and
 - (f) information verifying the reliability of the wastewater treatment system manufacturer and vendor. At a minimum, the vendor or manufacturer must either:
 - (i) have maintained an office in Montana for the past five years with a significant portion of its business related to design, construction, or installation of wastewater treatment systems; or
 - (ii) demonstrate an equivalent level of experience and reliability in Montana.
- (3) A person seeking classification of a wastewater treatment system as level 1a, level 1b, or level 2 must submit monitoring information as provided in this section. The department may require additional information (particularly for technologies not included in department Circular DEQ-4) if necessary to verify the long-term reliable treatment capabilities of the system.
 - (a) The following background information must be submitted for each system monitored:
 - (i) system address (including legal description) ;
 - (ii) system start-up date;
 - (iii) description of current and historical system use, particularly during the performance monitoring period; and

- (iv) monitoring data collected prior to and after the required performance monitoring period.
- (b) For a wastewater treatment system that uses the effluent total nitrogen concentration to determine treatment efficiency, the monitoring must be from at least six systems. For a wastewater treatment system that uses the percent total nitrogen removed from measured raw wastewater to determine treatment efficiency, the monitoring must be from at least three systems.
- (c) For each wastewater treatment system that is monitored, at least one representative sample of raw wastewater must be collected and analyzed for nitrate (as N), nitrite (as N), ammonia (as N), total kjeldahl nitrogen (TKN) (as N), biological oxygen demand (BOD), and total suspended solids (TSS). This information will be used to determine the raw wastewater strength, which must not exceed residential strength and have an average TKN or total nitrogen concentration higher than 40 mg/L. Chemical characterization of raw wastewater must be based on one of the following representative samples:
 - (i) if the septic tank or other initial tank is used only for primary treatment of the sewage, the sample should be collected from that tank;
 - (ii) if the septic tank or other initial tank is used for treatment beyond primary treatment, the sample should be collected prior to start-up of the wastewater treatment system from that tank; or
 - (iii) another department-approved location.
- (d) Each wastewater treatment system must be monitored for one year. At least one wastewater treatment system must be monitored for at least two years.
- (e) Effluent sampling frequency must be at least monthly (or equivalent frequency as approved by the department) during the winter months (November through April), and at least quarterly during the summer months (May through October). At least 50% of the monitoring data from each wastewater treatment system must be collected during the winter months. For wastewater treatment systems that use percent total nitrogen removed to determine treatment efficiency, a raw wastewater sample must be collected on the same dates as the effluent samples.
- (f) Each effluent sample must be analyzed for nitrate (as N), nitrite (as N), ammonia (as N), TKN (as N), BOD, TSS, and flow. If raw wastewater influent monitoring is conducted concurrently with effluent monitoring, each influent sample must be analyzed for TKN (as N) or total nitrogen. If the wastewater treatment system is experiencing significant infiltration and inflow, the department may require that raw wastewater influent samples be collected and analyzed during each effluent monitoring event to determine an accurate representation of the nitrogen-reducing capabilities of the system.
- (g) Monitored wastewater treatment systems must be in Montana or a location that has an average annual air temperature of 50 degrees Fahrenheit or less. The temperature must be based on the most applicable active weather station with at least a 20-year record or the most recent 30-year National Oceanic and Atmospheric Administration average annual air temperature.
- (h) The arithmetic mean of the available data will be used to determine compliance with this rule.

- (i) All water analyses, except for temperature, must be conducted according to an EPA-approved method by an independent laboratory. Temperature measurements must be conducted on-site.
 - (j) The department may waive specific requirements in this rule if the monitoring data are substantially equivalent to those requirements.
 - (k) All influent and effluent data collected from all installed systems that meet the climate requirements in (3)(g) and analysis requirements in (3)(i) must be submitted to the department as part of an application for approval as level 1a, level 1b, or level 2 wastewater treatment system.
- (4) The data from a wastewater treatment system that is tested under the NSF International/American National Standards Institute 245, 2022 version (NSF/ANSI 245) certification, or testing by an independent third party following the NSF/ANSI 245 2022 protocols, may be used to demonstrate compliance with the requirements in (3), except that NSF/ANSI 245, or independent third party testing following the NSF/ANSI 245 2022 protocols, data may only be used to replace one-third of the systems required in (3)(b). The NSF/ANSI 245 report (or equivalent report from independent third party) and all monitoring data collected during the testing must be submitted to the department and evaluated by the department as part of its review.
- (5) In response to a request for classification of a wastewater treatment system as level 1a, level 1b, or level 2, the department may, after evaluating the wastewater treatment system under the criteria in this rule:
- (a) approve the request;
 - (b) approve the request with modifications or conditions;
 - (c) deny the request; or
 - (d) deny the request pending submittal of additional information.
- (6) If a wastewater treatment system that is classified as level 1a, level 1b, or level 2 is modified, and the modification may have negative effects on the total amount of nitrogen reduction, the department may require that the wastewater treatment system be re-evaluated under the criteria in this rule.
- (7) If subsequent data indicate that a wastewater treatment system classified under this rule is not reliable or cannot meet required nutrient reductions, the department may rescind the classification.
- (8) All wastewater treatment systems classified as a level 1a, level 1b, or level 2 must have an operation and maintenance (O&M) contract in perpetuity for each system installed. The O&M contract will be required in the subdivision approval, or as a deed restriction if a subdivision plat approval is not required for the property. O&M must be conducted by the system manufacturer, an approved vendor, or other qualified personnel. The wastewater treatment system vendor or manufacturer must offer an O&M plan that meets the requirements of this section and the requirements in Department Circular DEQ-4. At a minimum, the O&M contract must include:
- (a) an on-site inspection of all the major components of the wastewater treatment system. Inspection items must include verifying proper operation of the visual/audible alarm system required in (9) and determining whether any water treatment devices have been added, modified, or removed from the water system that discharges to the wastewater treatment

system. The initial start-up/installation and each subsequent inspection must include any necessary adjustments to provide adequate oxygen concentrations to the system to account for the systems elevation. Inspections must be made according to the following schedules:

- (i) for a wastewater treatment system with a design flow less than 5,000 gpd that does not require an MPDES or MGWPCS permit, the inspection schedule is semi-annually for the first two years after use of the system begins and annually thereafter;
 - (ii) for a suspended growth wastewater treatment system with a design flow less than 5,000 gpd that does not require an MPDES or MGWPCS permit, the inspection schedule is quarterly for the first two years after use of the system begins and semi-annually thereafter; and
 - (iii) for a wastewater treatment system with a design flow of 5,000 gpd or larger that does not require an MPDES or MGWPCS permit, the inspection schedule is monthly for the first two years after use of the system begins and quarterly thereafter;
- (b) annual effluent sampling and analysis for nitrate (as N), nitrite (as N), ammonia (as N), TKN (as N), specific conductance, carbonaceous biochemical oxygen demand (CBOD), field pH, and field temperature. Effluent sampling must be conducted after all treatment is complete, but before discharge to the absorption system. All monitoring data, including the identification of the wastewater treatment system manufacturer, must be submitted to the department if requested by the department to verify the total nitrogen reduction is adequate for the approved treatment level.
- (9) All wastewater treatment systems classified as level 1a, level 1b, or level 2 must have the following features:
- (a) a visual and/or audible alarm warning that indicates if a hydraulic malfunction is occurring in any portion of the treatment system prior to the absorption system; and
 - (b) a physical barrier that prevents the discharge of wastewater to the absorption system if a hydraulic malfunction is occurring in any portion of the treatment system prior to the absorption system.
- (10) All level 1a, level 1b, or level 2, regardless of approval date under this rule, must comply with the requirements in (8).
- (11) An approval as level 1a, level 1b, or level 2 under this rule does not constitute approval under Department Circulars DEQ-2 (2018) or DEQ-4 (2023) and does not constitute approval for any specific project or application of that technology.

Authorizing statute(s): 75-5-301, 75-5-303, MCA

Implementing statute(s): 75-5-303, MCA

History: NEW, 2004 MAR p. 1384, Eff. 6/18/04; AMD, 2024 MAR p. 1581, Eff. 7/6/24.