

Overview of the Colorado State Domestic Ground Water Discharge Permit Program

The Water Quality Control Division (the Division) at the Colorado Department of Public Health and Environment (CDPHE) regulates discharges to ground water from wastewater treatment systems, such as impoundments, land application systems, and septic tank systems. This guidance document provides an overview of the regulatory and permitting requirements that apply to these systems.

➤ **Does Your Wastewater Treatment System Require a Ground Water Discharge Permit?**

Under Colorado Regulation No. 61, *Colorado Discharge Permit System Regulations* domestic wastewater treatment systems that discharge to ground water, including impoundments, land application systems, and septic tank systems, are required to obtain a Colorado ground water discharge permit.

Only select wastewater treatment systems (or portions thereof) are exempted from the ground water discharge permit requirements. Exemptions and waivers provided in Regulation No. 61 [Sections 61.14(1); 61.14(2); and 61.14(9)] include the following:

- ✓ The following facilities are exempted from coverage under a ground water discharge permit:
 - Any impoundment subject to regulation under the Uranium Mill Tailings Radiation Control Act, 42 U.S.C., Section 7901, et seq. as amended.
 - Any impoundment used in the treatment, storage or recharge of raw or potable water.
 - Any stormwater retention or detention impoundment.
 - Any tank which does not result in a discharge to ground water.
 - Any impoundment or land application system for which a currently valid certificate of designation has been obtained pursuant to the Solid Waste Disposal Sites and Facilities Act, C.R.S. 1973,30-20-101, et seq. as amended, and other impoundments or land application systems subject to regulation under that Act which are not part of a wastewater treatment system for which a Colorado Discharge Permit System (CDPS) permit for a discharge to surface waters is required.
 - Any disposal of biosolids through beneficial application to land pursuant to the "Biosolids Regulation", Regulation 64 (5 CCR 1002-64).
 - Any facility operating under a permit issued pursuant to the Underground Injection Control provisions of the Safe Drinking Water Act, 42 U.S.C. 300f, et seq.
 - Any (domestic) individual sewage disposal system with a design capacity of 2,000 gallons per day or less, if designed and constructed in accordance with requirements pursuant to the Individual Sewage Disposal System Act, section 25-10-101 C.R.S., et. seq.

- Any onsite *landscape irrigation* system located on a domestic wastewater treatment plant site using treated effluent that is applied at an agronomic rate.
- ✓ Land application areas where the owner of a land application system can demonstrate the following are also exempt:
 - The design and operation of the system will result in complete evapotranspiration of the effluent;
 - There is adequate storage provided for the effluent during periods of inclement weather or where the ground has been frozen unless the provisions of (A) above, can be met during the entire year; and;
 - Any augmentation plan or substitute supply plan for the land application site does not provide a credit for return of the effluent to ground water.
- ✓ Land application areas where application of reclaimed water is occurring under the provision of a “notice of authorization” issued under Regulation 84 are exempt from coverage under a ground water discharge permit.
- ✓ The owner of any impoundment who can demonstrate, using a method which has been approved by the Division, that the seepage from the impoundment does not exceed 1×10^{-6} cm/sec (“Allowable Seepage”) will be considered not to have a discharge to waters of the state, by virtue of the insignificant nature of the seepage, and a waiver of the requirement to obtain a discharge permit will be granted by the Division.
- ✓ Activities that are subject to the jurisdiction of the following implementing agencies are exempted from coverage under a ground water discharge permit:
 - The Mined Land Reclamation Division of the Department of Natural Resources.
 - The State Engineer of the Department of Natural Resources.
 - The Oil and Gas Conservation Commission of the Department of Natural Resources.
 - The Hazardous Materials and Waste Management Division of the Department of Public Health and Environment.

➤ Applying for a Ground Water Discharge Permit

Domestic wastewater treatment systems that are not specifically exempted from ground water permitting are required to submit a discharge permit application to the Division prior to discharging to waters of the state. Permit applications for *general permits* must be submitted at least 30 days prior to discharge, while applications for *individual permits* must be submitted at least 180 days prior to discharge. General and individual permits are further described below.

Discharge permit applications require information regarding the facility ownership and location, treatment system design, discharges, proposed monitoring locations, and receiving waters. The discharge application also requires verification that a complete Site Application has been submitted to the appropriate District Engineer’s office prior to, or in conjunction with, the submission of the discharge permit application to the Division. (Contact information for District Engineers and additional information on the Site Application and Design Approval process for domestic wastewater treatment systems is provided at: www.cdphe.state.co.us/wq/engineering/techhom.html.)

Ground water discharge permit applications and copies of the general permits are available through the Division at 303-692-3500 and available for download at: www.cdphe.state.co.us/wq/PermitsUnit/landD/index.html.

➤ General and Individual Discharge Permits

Wastewater treatment systems requiring a ground water discharge permit may be issued a *General Permit* or an *Individual Permit*. General Permits were developed to cover specific types of discharges that are similar in design and operation and have similar regulatory requirements. Once a General Permit completes a 30-day public notice period, qualified facilities are allowed to “certify” under the General Permit without repeating the public notice period. General Permits are currently available for the following domestic discharges:

- **General Permit 631000 - Land Disposal of Effluent from Domestic Wastewater Treatment Works (WWTWs):** This permit covers wastewater treatment systems where effluent limitations and ground water standards are met *prior to* effluent discharge to an unlined impoundment [i.e., an infiltration basin or any lagoon or impoundment for which the Permittee has not adequately demonstrated that the seepage rate is less than 10^{-6} centimeters per second (cm/sec)] and/or a land disposal site. Compliance monitoring is required at the point of effluent discharge. Ground water monitoring wells are not required.
- **General Permit 632000 – Land Treatment of Effluent from Domestic Wastewater Treatment Works (WWTWs):** This permit covers wastewater treatment systems where ground water standards are met *subsequent to* discharge to an unlined impoundment [i.e., an infiltration basin or any lagoon or impoundment for which the Permittee has not adequately demonstrated that the seepage rate is less than 10^{-6} centimeters per second (cm/sec)] and/or a land treatment site. Compliance monitoring is required at the point of effluent discharge and at ground water monitoring wells located hydraulically down-gradient of the treatment system. In some cases, lysimeters may be required in addition to, or in lieu of, ground water monitoring.
- **General Permit 633000 – Land Treatment of Effluent at Agronomic Rates from Domestic Wastewater Treatment Works (WWTWs):** This permit covers wastewater treatment systems that discharge to ground water solely through land treatment at Division-approved agronomic rates and that are not covered under Regulation No. 84 – Reclaimed Water Control Regulation. To apply for this permit, you must include a copy of the facility's *Land Application Management Plan* with the permit application. Compliance monitoring is required at the point of effluent discharge. Ground water monitoring wells are not required.
- **General Permit 621000 – Domestic Wastewater Treatment On-site Systems with Design Capacity Equal or Greater than 2,000 Gallons per Day (GPD).** This permit covers domestic wastewater treatment on-site systems, including septic and advance treatment systems that discharge to leachfields/absorption fields. Compliance monitoring is required at the point of effluent discharge and at ground water monitoring wells located hydraulically down-gradient of the WWTW.
- **General Permit 622000 – Domestic Wastewater Treatment Works with No Ground Water Monitoring Requirements.** This permit covers domestic wastewater treatment works that have adequately demonstrated to the Division, and have received Division-approval, that ground water monitoring is not required to ensure the protection of State waters. To apply for this permit, you must include a copy of the facility's site-specific risk based evaluation with the complete permit application. This permit does not require ground water monitoring, but does emphasize the use of best management practices.

Where a General Permit is not applicable or does not meet the specific needs of a facility, an Individual Permit is issued through the traditional permit process. General and Individual Permits are valid for five years.

➤ Elements of a Ground Water Discharge Permit

Ground water discharge permits include effluent limitations that are protective of ground water and that apply at designated locations called the “point of compliance.” Ground water discharge permits may also include requirements for the development a ground water monitoring program, installation of ground water monitoring wells, proper handling and disposal of biosolids and/or septage, implementation of best management practices, and recordkeeping and reporting requirements. Domestic ground water discharge permits typically include limitations on the allowable hydraulic and organic loading to the wastewater treatment system and expansion planning and construction requirements.

✓ Ground Water Discharge Limitations

Applicable ground water discharge limitations that may be included in the discharge permit are provided in the following Colorado Water Quality Control Commission (WQCC) regulations:

- Regulation No. 41, The Basic Standards for Ground Water;
- Regulation No. 42, Site-Specific Water Quality Classifications and Standards for Ground Water;
- Regulation No. 62, Regulations for Effluent Limitations; and
- Regulations No. 71 – 75, Watershed Protection Control Regulations.

The WQCC regulations are available though the Division and downloadable at:
www.cdphe.state.co.us/regulations/wqccregs/index.html.

✓ Point of Compliance

The *point of compliance* provided in the permit describes the point (or points) at which the ground water standards apply and must be met. The point of compliance is determined based on the design and operation of the wastewater treatment system. For example, some systems may be required to meet groundwater standards at a point prior to discharge to land (end-of-pipe), while other systems may be required to demonstrate compliance with ground water standards at one or more down-gradient groundwater monitoring well.

✓ Biosolid and/or Septage Handling

Because wastewater treatment facilities generate sewage sludge, septage, and/or biosolids (referred to generally as “sewage sludge” herein), there is a need for the removal of this material on a periodic basis. If sewage sludge is removed from the facility, the material must be disposed of in accordance with local, state and federal regulations.

Federal Requirements: If and when a wastewater treatment facility practices or contracts any methods of sewage sludge disposal (including hauling, beneficial use, landfilling, or any combination of disposal methods), the permittee is required to obtain and comply with an Environmental Protection Agency (EPA) General Permit and to determine and report the annual rate of sewage sludge produced. Additional information on the EPA General Permit is available at: www.epa.gov/region8/water/biosolids/

State Requirements: In Colorado, biosolids (but not septage) generated at domestic wastewater treatment works are also subject to state-specific regulatory requirements. Specifically, Colorado WQCC Regulation No. 64, Biosolids Regulation, applies to: 1) any domestic wastewater treatment system when biosolids generated by the system are withdrawn for beneficial use, and 2) to any person treating, manipulating, or applying biosolids to land for beneficial purposes. Regulation No. 64 includes requirements for biosolids use, classification, storage, distribution and marketing, and compliance monitoring, recordkeeping and

reporting. Additional information of Colorado WQCC Regulation No. 64 is available at:
www.cdphe.state.co.us/wq/PermitsUnit/biosolids/index.html

Biosolids that are landfilled (i.e., not beneficially reused) are subject to the requirements of the Colorado Hazardous Materials Waste Management Division (HMWMD). Additional information is available through the HMWMD Solid Waste Unit at: www.cdphe.state.co.us/hm/solidwaste.htm

✓ Waste Management Requirements

Discharge permits for domestic wastewater treatment systems require the permittee to protect the system from any contributing discharges (such as industrial wastes), which would inhibit, interfere, or otherwise be incompatible with operation of the treatment facility or with the use or disposal of the municipal sludge. Select publicly owned treatment works may be required federal pretreatment regulations.

✓ Expansion Planning and Construction Requirements

Discharge permits for domestic systems also require the permittee to monitor and compare the system's 30-day average hydraulic and organic loading to the average design capacities specified in the treatment system's approved site application. Permittees are required to initiate engineering and financial planning for expansion of domestic wastewater treatment works whenever throughput and treatment reaches eighty (80) percent of design capacity. Whenever throughput and treatment reaches ninety-five (95) percent of the design capacity, permittees must commence construction of the necessary treatment expansion. The permit includes specific reporting requirements to ensure that any necessary expansions are planned and completed, or that any exceedances of design capacities are documented as anomalies that are not likely to reoccur.

➤ **Fees**

There is no application or permitting processing fee for obtaining a ground water discharge permit. However, State law requires all sources which are required to obtain a discharge permit pay an annual fee. The fee is based on the discharge Categories and Subcategories as established in the Colorado Water Quality Control Act. Fee schedules are updated annually and available for download at:
www.cdphe.state.co.us/wq/PermitsUnit/Fees.pdf.

The Division also assesses fees for the development of preliminary effluent limitations (PELs) during the site application process for new or modified domestic wastewater treatment plants. Additional information on PELs and the fee schedule is available for download at: www.cdphe.state.co.us/wq/PermitsUnit/PELBrochure.PDF.

➤ **Help Is Available**

The WQCD Permits Section is available to help wastewater treatment facilities to understand and comply with ground water discharge permit requirements. If you have questions on your permitting requirements, please contact the WQCD Permits Section at 303-692-3500.