

On-Site Wastewater Treatment Systems Permit Application Instructions

The installation of all On-Site Wastewater Treatment Systems (OWTS) requires an approved permit from the Pueblo Department of Public Health and Environment (PDPHE).

Types of permits – application required for all permits

New System Permit - Required for all new structures where people will live, work, or congregate, which are not located within a sanitary sewer district.

Remodel of Existing System Permit - Required for any repair of an approved system that involves an alteration or addition to the septic tank or soil treatment area.

Minor Repair Permit - Required for the repair or replacement of any new building sewer line, connection to an existing OWTS, or repair of any component in which the system is not otherwise altered in any way. Replacement of baffles and risers is exempt.

Application

1. Complete an OWTS application obtained online at pueblohealth.org, Office of Environmental Health, or online application at <https://myhealthdepartment.com/pueblo/login>.
2. Submit to PDPHE with appropriate fees (noted on application).
3. Submit a site and soil evaluation (if not performed by PDPHE) which includes two soil profile test excavations and/or percolation test results conducted by a licensed engineer or competent technician.
4. Submit a clear and legible plot plan on 8 ½ x 11 paper that includes the following ensuring all locations are indicated by accurate measured distances:
 - a. **Property dimensions and size (survey preferred).**
 - b. **Location of proposed and existing buildings and type.**
 - c. **Location of proposed septic tank, septic treatment area and alternate treatment area.**
 - d. **Location of water supply lines to the dwelling and any outbuildings.**
 - e. **Location of all wells, existing or proposed, on and within 150 feet of the property.**
 - f. **Location of streams, lakes, ditches, and drainage areas on or within 50 feet of the property.**

After application is received, an employee of PDPHE will visit the proposed building site to determine compliance with all pertinent state and county regulations. Note: Incomplete and/or inaccurate information on the application or plot plan may increase the processing time.

Site and soil evaluation

All **new** OWTS require site and soil evaluations with two soil profile test pit excavations. Site and soil conducted **in the proposed soil treatment area**. The percolation test with three holes is optional. The purpose of the site and soil evaluation is to determine the suitability of a location to support an OWTS, and to provide the designer a sound basis to select the most appropriate OWTS design for the location and the application. The site and soil evaluations may be performed by either a Professional Engineer licensed in the State of Colorado, a Competent Technician licensed by PDPHE, or an employee of the health department.

Site and soil evaluations must be set up and conducted in accordance with Regulation No. 43 Section 43.5. Each site and soil evaluation shall consist of preliminary investigation, reconnaissance, detailed soil investigation, report, and site plan.

If the site and soil evaluation is conducted by PDPHE, a fee will be charged in addition to the application fee. Also, the property owner or building contractor must excavate and prepare the percolation test holes or the soil profile test hole as outlined below.

The lot must be prepped and marked so the site and soil evaluation can be performed. This includes **mowing the lot, labeling the lot with correct address and/or parcel information, clearly marked percolation holes, two soil profile test pit excavations in the proposed soil treatment area (holes used for foundation purposes will not be evaluated).**

Soil Profile Test Information

As of August 11, 2018, two soil profile test pit excavations shall be dug to provide observation of the soil profile. Observations of the soil profile test pit excavations are to determine soil types, limiting layers and the best depth of the infiltrative surface, and the determination of the soil type for the 4 feet of soil below the infiltrative surface.

The soil profile test pit excavations must be located at or immediately adjacent to the location of the proposed soil treatment area but, if possible, not under the final location of a trench or bed. At least one soil profile test pit excavation must be performed in the portion of the soil treatment area anticipated to have the most limiting conditions. The holes must be excavated to a depth of **8 feet and must be a minimum of 3 feet in width**. If groundwater or bedrock is encountered before reaching the 8-foot depth, the holes may be terminated at that depth.

Soil profile test pit excavations must be conducted prior to the percolation tests to determine whether the soils are suitable to warrant percolation tests and, if suitable, at what depth percolation tests must be conducted. The soil profile test pit excavations and percolation tests must be excavated, prepared, and performed in accordance with this guidance, Regulation 43 and Regulation VIII. Failure to do so will result in cancelation of the site and soil evaluation or rescheduling of the evaluation to a later date when these requirements have been met.

Percolation Test Information (optional)

The **three** (3) percolation test holes shall be spaced uniformly over the proposed site (a minimum of 20 feet apart). They shall **most preferably** be 8 inches in diameter. The diameter **may** vary from a **minimum of 8 inches to a maximum of 12 inches**. The holes shall be terminated at the depth of the proposed infiltrative surface or at varying depths to determine the infiltrative surface. The procedure to set up and perform the percolation test must comply with Section 43.5.D.4. or Regulation 43.

The percolation test holes must be filled with water 24 hours before this Department is scheduled to conduct the percolation test. **The test holes must be marked or flagged**. If the test is being done in the winter and the temperature is expected to drop below freezing, the holes should be covered after filling with water. If the percolation holes are not set up properly or presoaked in accordance with the procedure, the percolation test will be delayed and/or rescheduled.

IMPORTANT For safety purposes, if the soil profile test pit excavation is dug by a backhoe or front-end loader, it should be adequately barricaded to prevent people or animals from falling into the excavation. Also, the holes should be dug so that one end of the excavation slopes gradually from the bottom of the pit up to the ground surface. (This will allow entry into the profile hole for a better soil evaluation by this Department and will also allow the escape of any people or animals that may inadvertently fall into the hole.) All test holes should be filled as soon as possible after the soil evaluations are completed.

Important Construction Requirements

1. Construction of the OWTS must be started before the permit expires one (1) year from date of issuance. If the system is started, an additional thirty (30) days can be granted to complete the system. Upon expiration of any permit, a renewal application must be submitted before construction of the system may begin.
2. During installation and before backfilling the earth, all components of the OWTS must be inspected and approved by PDPHE. If uncertain as to when inspections are required, contact PDPHE.

3. The building sewer from the house to the septic tank should be laid on a grade of 2% (¼ inch drop per foot of length). Bends in the building sewer shall be limited to 22 degrees, 45 degrees, or long sweep quarter bends. The pipe used for all OWTS must conform to ASTM Standard D 3034 or equivalent or greater strength. **Schedule 40 is preferred. Schedule 40 PVC pipe is required under driveways and roadways.**
4. The septic tank must be watertight and conform to the size and dimension requirement specified in the Department’s On-Site Wastewater Treatment System Regulation VIII. All tanks require risers to final grade that are sealed to prevent infiltration of storm waters.
5. Soil treatment area shall be laid no less than 10 inches below ground surface. Washed gravel ranging in size, between ½ inch and 2½ inches in diameter, shall be used in the treatment area or gravelless leaching chambers may be used. If gravel is used, gravel must extend at least six (6) inches below the perforated pipe and at least two (2) inches above the perforated pipe. The perforated pipe must be laid level in the soil treatment lateral. The bottom of the leach bed (or trench) must be level and **no less than four (4) feet** above any limiting layer. Untreated building paper, or other approved material must be placed over leach rock before backfilling.
6. See the following chart for proper placement of the OWTS.

Table 7-1 Minimum Horizontal Distances in Feet Between Components of an On-Site Wastewater Treatment System Installed After November 15, 1973, and Water, Physical, and Health Impact Features

	Spring, Well, ¹ Suction Line, Potable Water Supply Cistern ⁴	Potable Water Supply Line ²	Structure w/basement, crawl space or footing drains	Structure without basement, crawl space or footing drains	Property Lines, Piped or Lined Irrigation Ditch, upslope curtain drain	Subsurface Drain, Intermittent Irrigation Lateral, Drywell, Stormwater Structure	Lake, Water Course, Irrigation Ditch, Stream, Wetland	Dry Gulch, Cut Bank, Fill Area (from Crest)	Septic Tank, Higher level treatment Unit, Dosing Tank, Vault or Privy
Septic Tank, Higher Level Treatment Unit, Dosing Tank, Vault or Vault Privy	50 ²	10 ²	5	5	10	10	50	10	--
Building Sewer or Effluent Lines	50 ²	5 ⁶	0	0	10 ²	10 ²	50 ²	10 ²	--
STA Trench, STA Bed, Unlined Sand Filter, Sub-surface Dispersal System, Seepage Pit	150 ³	25 ²	20	10	10	25	50 ³	25	5
Lined Sand Filter	60	10 ²	15	10	10	10	25	10	5
Lined Evapotranspiration Field or Outside of Berm of Lined Wastewater Pond	60	10 ²	15	15	10	10	25	10	5
Unlined Sand Filter in Soil with a Percolation Rate Slower than 60 Minutes per Inch, Unlined or Partially Lined Evapotranspiration System	100	25 ²	15	15	10	25	25	15	10
Slit Trench Latrine, Pit Privy	100	50 ²	25	25	25	25	100	25	N/A
System Not Relying on STA for Dispersal	100 ³	10 ²	125	125 ⁵	10	0	25 ³	10	10

NOTE: The minimum distances shown above must be maintained between the OWTS components and the features described. Where soil, geological or other conditions warrant, greater distances may be required by the local board of health or by the Water Quality Control Commission pursuant to section 25-8-206, C.R.S. and applicable regulations. For repair or upgrading of existing OWTS where the size of lot precludes adherence to these distances, a repaired OWTS must not be closer to setback features than the existing OWTS, as reviewed and approved by PDPHE. Components that are not watertight should not extend into areas of the root system of nearby trees.

1. Includes potable wells, irrigation wells and monitoring wells set within a potable aquifer and infiltration galleries permitted as wells by the Division of Water Resources.
2. Crossings or encroachments may be permitted at the points as noted above provided that the water or wastewater conveyance pipe is encased for the minimum setback distance on each side of the crossing. A length of pipe with a minimum Schedule 40 rating of sufficient diameter to easily slide over and completely encase the conveyance must be used. Rigid end caps of at least Schedule 40 rating must be glued or secured in a watertight fashion to the ends of the encasement pipe. A hole of sufficient size to accommodate the pipe must be drilled in the lowest section of the rigid cap so that the conveyance pipe rests on the bottom of the encasement pipe. The area in which the pipe passes through the end caps must be sealed with an approved underground sealant compatible with the piping used. Other methods of encasement that provide equal protection are allowed. These methods must be reviewed and approved by PDPHE.
3. Add eight feet additional distance for each 100 gallons per day of design flows between 1,000-2,000 gallons per day, unless it can be demonstrated by a professional engineer or geologist by a hydrologic analysis or the use of a barrier, consisting of a minimum 30 mil PVC liner or equivalent, that contamination will be minimized. If effluent meets Treatment Level 3N and PDPHE has a maintenance oversight program in accordance with section 14.D. of this regulation, the distance addition is not required. Flows greater than 2,000 gallons per day must be hydrologically analyzed for flow, velocity, hydraulic head, and other pertinent characteristics as means of estimating distances required to minimize contamination as part of the site application and permitting process.
4. All horizontal setbacks to a potable water supply cistern must be met unless a variance by the Board of Examiners of Water Well Construction and Pump Installation Contractors is granted per section 18.2 of the Water Well Construction Rules, 2 CCR 402-2. Setback requirements which may necessitate a variance are found within section.10.2 or 11.4 of the Water Well Construction Rules, as applicable. The minimum horizontal setback that may be granted through a variance is to 25 feet.
5. If the structure is not used as a habitable unit, the isolation may be reduced by the local board of health to no less than 50 feet.
6. Building sewer installations shall meet the design requirements of the Colorado Plumbing Code.

Notice

The approval of plans for an **On-Site Wastewater Treatment System** does not provide any authority to proceed with the building of the occupied structure. For any new construction or remodeling of a residence or occupied structure, it is required that a permit be obtained from the Pueblo Regional Building Department.

The final written approval of an OWTS is in no way a written guarantee that the system will give indefinite, trouble-free service. Even with a proper installation, as outlined for your proposed construction, there remains many uncertainties, and difficulties can still arise in the operation of this system in the future. Septic tanks must be given periodic cleanings to protect leach fields from clogging with excessive sludge and solids. The placing of additional loads on a system, such as garbage grinders, other plumbing fixtures, more persons, etc., without first providing the necessary enlargements are also important points to be remembered in the operation of an OWTS. Proper design, construction, and maintenance can assist in minimizing these uncertainties but cannot eliminate them entirely.