El Paso County, CO
Public Health
Prevent • Promote • Protect

Environmental Health Division

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Conventional (Non-Engineered) On-site Wastewater Treatment System (OWTS) Design Worksheet - Short Form

Property Address: _____ City and Zip: _____

Number of bedrooms: _____ Wastewater Design Flow (Table 6-1) _____

Work will be done by: ☐ Owner ☐ Licensed Installer _____

Note: - Homeowner installation requires the individual installing the system be the listed as the individual on the permit.

Water source:

☐ Well ☐ Municipal ☐ Cistern

Note: - Wells must be located 50' from septic tank and 100' from STA.
- The well must be installed and verified before final signoff will occur.
- An additional trip fee will be charged if EPCPH must return to verify the well location.

Soil Report:

*Note: Report **MUST** stamped by Professional Engineer*

Soil Type: _____ LTAR: _____

Note: - Most limiting layer found within the 4' below the intended infiltrative surface of either profile pit must be used.

Was a limiting layer of Bedrock or Groundwater found within 8 feet? ☐ Yes ☐ No

Groundwater found at _____ inches. Bedrock found at _____ inches.

Septic Tank Requirements

Septic Tank Material: ☐ Concrete ☐ Plastic

Tank Size (Table 9-1): _____ Pump Tank size (if applicable): _____

Note: - Inlet side must have a sanitary "T" that extends 5" above and 8" below inlet or a baffle.
- Tank must have risers to grade and outlet side must have an effluent filter.

Clean outs

Distance from structure to clean out: _____ (no further than 5'from structure)

Note: - There must also be a cleanout at least every 100' from structure to the septic tank

Proposed Soil Treatment Area (STA):

What is the installation depth range for the STA? _____ inches.
Depth of limiting layer: _____inches.
Must maintain appropriate separation

Application of wastewater:	☐ Gravity	☐ Pump-to-gravity	
Distribution Type:	☐ Distribution box	☐ Serial distribution	☐ Manifold
Distribution Layout:	☐ Trench(s)	☐ Bed	
Distribution Media:	☐ Chambers	☐ Rock and Pipe	
Diverter Valve:	☐ Yes	☐ No	
Inspection Ports:	☐ Beg. & End of trenches	☐ 4 corners of each bed	

Calculate the size of the STA:

Soil Treatment Area in square feet required = Design Flow (in gallons per day) / LTAR (in gallons per day per square foot)

Soil Treatment area X (Reduction from table 10-2) X (Reduction from table 10-3) = Final STA size

Design Flow: _____GPD, LTAR: _____
Reductions: Table 10-2: _____ Table 10-3: _____

Show calculations here:
Sample calculation: 3-bedroom home: 450gpd, LTAR 0.8, gravity fed (1.0) chambers in trenches (0.7) system: 450 / 0.8 = 562.5 Sq Ft * 1.0 = 562.5 Sq ft * 0.7 = 394 (393.75 rounds up to 394) Sq ft

_____ / _____ = _____ Sq Ft * _____ = _____ Sq ft * _____ = _____ Sq ft

For Chamber systems:
**Note: total area is calculated by number of chambers and sq ft per chamber allotted.*
Chambers: ☐ Quick4 (12 ft^2) ☐ Arc36 (15 ft^2) Total Chambers: _____ Total ft^2: _____

For Rock and Pipe Systems:
Depth of Rock (under pipe):_____ Depth of Rock (over pipe):_____
Width of each trench/bed: _____ Total Pipe Length: _____
Total ft^2: _____ Type of Cover on Rock: _____

Design Document

A legible drawing *shall* be provided with each permit application (see attached example design documents):

- Must be minimum 8.5”x11” and show then entire property boundary
- Reference locations including street names, building structures, and any other permanent physical features.
- Layout of the entire OWTS and all components from structure to soil treatment area
    - To include dimensions of trenches or beds, distribution method and equipment (including distribution boxes, drop boxes, valves, or other components used.)
- A legible drawing showing location of each OWTS component and distances to all applicable physical features, on both the subject and adjacent properties requiring setbacks (Table 7-1).
- Elevation or depth of infiltrative surface of the soil treatment area, the septic tank invert, and all other components of the OWTS.
- Location of the soil profile test pit excavations. (Must also be clearly marked on site).
- Location of the alternate STA site.
- North direction arrow.
- Contours, OR slope direction and % slope.
- Location of proposed well or existing well.

Note: It is recommended that the design document is completed by a professional in the OWTS industry. EPCPH does not complete or alter design documents. Contact EPCPH with any questions.

Check list for submittal (initial each section):

_____Completed application page
_____Completed calculation sheet
_____ Soil report (PE stamped)
_____ Design document

Note: Please find attached the necessary tables and example design documents for your convenience.

OWTS DESIGN DOCUMENT SAMPLE