

Monterey County Health Department Environmental Health Bureau

1270 Natividad Road, Salinas, CA 93906 (831) 755-4505



Residential Onsite Wastewater Treatment Systems (OWTS) Conventional Dispersal System Replacements

This guidance document has been prepared based upon the requirements specified by the Monterey County Code, Chapter 15.20, Sewage Disposal, effective date June 13, 2023. This information is provided as a courtesy only and the requirements in the code shall prevail in the event any discrepancy is identified.

1) DETERMINE WASTEWATER DESIGN VOLUME

Refer to Table 6 (back of sheet).

2) ESTABLISH SOIL CHARACTERISTICS

- a. **Soil Profile Analysis** completed to 3 feet past the bottom on the proposed trench. Can be completed using a boring or excavation, and the same boring or excavation may be used to determine the depth of groundwater if it has sufficient depth.

b. **Absorptive Characteristics**

Option 1 – Direct Inspection completed by a Qualified Consultant, describing the soil at the depth equal to the bottom of the proposed trench. Soil Application Rate (SAR) determined by Table 5 (back of sheet).

Option 2 – Percolation Testing completed by a Qualified Consultant, completed at the depth equal to the bottom of the proposed trench. Soil Application Rate (SAR) determined by Table 4 (back of sheet).

- c. **Determination of Depth of Groundwater** can be completed using a boring or excavation. The minimum vertical setback varies based on the type of soil encountered at the depth equal to the bottom of the proposed trench.

Option 1 – Direct Inspection – Refer to Table 4

Option 2 – Percolation Testing – Refer to Table 5

3) CALCULATE OWTS DISPERSAL SYSTEM REQUIREMENT

$$\text{Dispersal System Capacity (square feet)} = \frac{\text{Design Volume (gallons)}}{\text{Soil Application Rate (gallons/square foot)}}$$

4) CALCULATE LENGTH OF DISPERSAL SYSTEM TRENCH

$$\text{Trench Length (linear feet)} = \frac{\text{Dispersal System Capacity (square feet)}}{4 \text{ square feet/linear foot}^{**}}$$

**** Typically 4 s.f. / l.f.; however, up to 10 s.f. / l.f. may be allowed by variance when site constraints preclude the use of a shallow (4 s.f. / l.f.) dispersal system.**

Table 4. Soil Application Rate and Minimum Vertical Separation from Bottom of Dispersal Field to Groundwater, Determined from Stabilized Percolation Rates

Source: Modified version of Table 3, OWTS Policy, Tier 1

Percolation Rate (minutes per Inch)	Maximum Soil Application Rate (gallons per day per square foot)	Vertical Groundwater ¹ Separation (feet)
< 1	1.2 (Requires alternative OWTS with supplemental treatment)	Refer to Table 12 (Minimum Vertical Separation to Groundwater for Alternative OWTS)
1 – 5	1.2	20
6 – 10	0.8	8
11 – 17	0.7	8
18 – 24	0.6	8
25 – 33	0.5	8
34 – 42	0.4	5
43 – 51	0.3	5
52 – 60	0.3	5
61 – 66	0.18	5
67 – 72	0.16	5
73 – 78	0.14	5
79 – 84	0.12	5
85 – 90	0.1	5
> 90 – 120 ²	0.1 (Requires alternative OWTS with supplemental treatment)	Refer to Table 12 (Minimum Vertical Separation to Groundwater for Alternative OWTS)

¹ Includes all groundwater that cannot be captured and redirected around an OWTS using a curtain drain system.

²When percolation testing yields slower than 90 MPI, the qualified professional shall incorporate alternative OWTS with supplemental treatment to further reduce BOD and TSS beyond primary treated effluent to slow down the development of biomat and extend the life of the disposal field; nitrogen reduction is not required. No OWTS permit shall be issued when the percolation rate is slower than 120 MPI.

Number of Bedrooms	OWTS Design Volume (gallons per day)	Septic Tank Capacity
1 bedroom or studio	150	1,000 gallons
2 bedrooms	300	
3 bedrooms	375	
4 bedrooms	450	1,500 gallons
5 bedrooms:	525	2,000 gallons
6 bedrooms:	600	
Each additional bedroom	add 75 gallons	Add 250 gallons
With garbage grinder (per unit)		Add 500 gallons

Table 5. Soil Application Rate and Minimum Vertical Separation from Bottom of Dispersal System to Groundwater, Determined from Soil Texture, Structure and Grade

(Source: OWTS Policy Tier 1 Table 4, based on US EPA Onsite Wastewater Treatment Systems Manual,

Soil Texture (per the USDA Soil Classification System)	Soil Structure Shape	Grade	Maximum Soil Application Rate (gallons per day per square foot)	Vertical Groundwater ¹ Separation (feet)
Coarse Sand, Sand, Loamy Coarse Sand, Loamy Sand	Single grain	Structureless	0.8	20
Fine Sand, Very Fine Sand, Loamy Fine Sand, Loamy Very Fine Sand	Single grain	Structureless	0.4	8
Coarse Sandy Loam, Sandy Loam	Massive	Structureless	0.2	8
	Platy	Weak	0.2	8
		Moderate, Strong	Prohibited	n/a
	Prismatic, Blocky, Granular	Weak	0.4	8
Moderate, Strong		0.6	20	
Fine Sandy Loam, very fine Sandy Loam	Massive	Structureless	0.2	8
	Platy	Weak, Moderate, Strong	Prohibited	n/a
	Prismatic, Blocky, Granular	Weak	0.2	8
Moderate, Strong		0.4	8	
Loam	Massive	Structureless	0.2	8
	Platy	Weak, Moderate, Strong	Prohibited	n/a
	Prismatic, Blocky, Granular	Weak	0.4	8
		Moderate, Strong	0.6	20
Silt Loam	Massive	Structureless	Prohibited	n/a
	Platy	Weak, Moderate, Strong	Prohibited	n/a
	Prismatic, Blocky, Granular	Weak	0.4	8
		Moderate, Strong	0.6	20
Sandy Clay Loam, Clay Loam, Silty Clay Loam	Massive	Structureless	Prohibited	n/a
	Platy	Weak, Moderate, Strong	Prohibited	n/a
	Prismatic, Blocky, Granular	Weak	0.2	8
Moderate, Strong		0.4	8	
Sandy Clay, Clay, or Silty Clay	Massive	Structureless	Prohibited	n/a
	Platy	Weak, Moderate, Strong	Prohibited	n/a
	Prismatic, Blocky, Granular	Weak	Prohibited	n/a
		Moderate, Strong	0.2	8

¹ Includes all groundwater that cannot be captured and redirected around an OWTS using a curtain drain system.