



COLORADO

Department of Public Health & Environment

Dedicated to protecting and improving the health and environment of the people of Colorado

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Vertical Separation and Media Depth Chart Explanation

The purpose of the attached chart is to provide guidance for a consistent state-wide application of the requirements for vertical separation and soil/sand media depths found within Regulation 43 [e.g., Table 7-2, Table 10-1, section 43.11(C)(2)]. Be sure to note the items listed near the top left of the chart: “Quality of Effluent Applied,” “Existing Soil Type,” and “Pressure Dose Required.” The specific combinations of each of these items will determine the applicable requirements of vertical separation and sand media depth.

- Column A:** Effluent Quality Applied: TL1 - TL2 Soil Type: 1 - 5 Pressure Dosed: No
This column illustrates the requirements for a standard gravity flow OWTS. A minimum of 4’ of suitable soils must exist from the base of the distribution media to any limiting layer.
- Column B:** Effluent Quality Applied: TL1 - TL2 Soil Type: 1 - 5 Pressure Dosed: Yes
This column illustrates the requirements for a pressure dosed OWTS receiving TL1 - TL2 effluent. A minimum of 3’ of suitable soils must exist from the base of the distribution media to any limiting layer.
- Column C:** Effluent Quality Applied: TL2N - TL3N Soil Type: 1 - 5 Pressure Dosed: Yes
This column illustrates the requirements for a pressure dosed OWTS receiving TL2N - TL3N effluent. A minimum of 2’ of suitable soils must exist from the base of the distribution media to any limiting layer.
- Column D:** Effluent Quality Applied: TL2N - TL3N Soil Type: 0 - 5 Pressure Dosed: Yes
Unlined Sand Filter: This column illustrates the requirements for a pressure dosed OWTS where a minimum of 2’ of a soil type “0” has been removed and replaced with the required sand media. Note, the allowance to only remove 2’ of soil type “0” requires that the quality of effluent distributed over the top of the sand filter must be TL2 - TL3N.
- Column E:** Effluent Quality Applied: TL1 Soil Type: 0 Pressure Dosed: Yes
Unlined Sand Filter: This column illustrates the requirements for a pressure dosed OWTS where a minimum of 3’ of a soil type “0” has been removed and replaced with the required sand media. Note that the quality of effluent distributed over the top of the sand filter in this example is TL1. Further note that if a limiting layer (groundwater or bedrock) exists below the OWTS, an additional 2’ of sand, or suitable, soil is required as noted in Section 43.11(C)(2)(c)(1).
- Column F:** Effluent Quality Applied: TL2 Soil Type: 0 Pressure Dosed: Yes
Unlined Sand Filter: This column illustrates the requirements for a pressure dosed OWTS where a minimum of 3’ of a soil type “0” has been removed and replaced with the required sand media. Note that the quality of effluent distributed over the top of the sand filter in this example is TL2. Further note that Section 43.11(C)(2)(c)(2) allows the base of the sand to be at or above the limiting layer
- Column G:** Effluent Quality Applied: TL1 - TL2 Soil Type: 1 - 5 Pressure Dosed: Yes
Mound or At-Grade OWTS: This column illustrates the requirements for a pressure dosed mound where the base of the distribution media is above existing natural grade, and where less than 2’ of sand media has been placed. Note that this example is similar to column “B”, the only differences being that the infiltrative surface is above grade and less than 2’ of sand has been added. The treatment level for this type system is TL1 or TL2, depending on the quality of effluent applied to the infiltrative surface.
- Column H:** Effluent Quality Applied: TL1 - TL2 Soil Type: 1 - 5 Pressure Dosed: Yes
Mounded Sand Filter: This column illustrates the requirements for a pressure dosed mound where the base of the distribution media is above existing natural grade, and where at least 2’ of sand media has been placed. Note that Table 7-2 requires a minimum 3’ separation to a restrictive layer when TL1 or TL2 effluent is applied to the infiltrative surface. Therefore there may be instances where more than 2’ of sand media will be required.
- Column I:** Effluent Quality Applied: TL2N - TL3N Soil Type: 0 - 5 Pressure Dosed: Yes
Mounded Sand Filter: This column illustrates the requirements for a pressure dosed mound where the base of the distribution media is above existing natural grade, and where at least 2’ of sand media has been placed. Note that the allowance for only 2’ of sand above the restrictive layer requires that the quality of effluent distributed over the top of the sand filter must be TL2N - TL3N (Table 7-2).

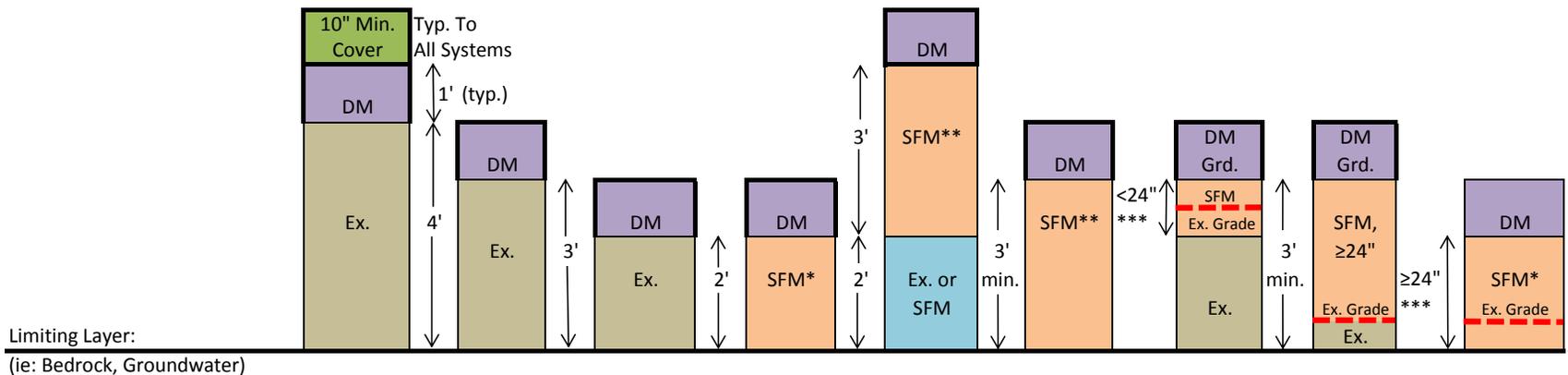
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Vertical Separation and Media Depth Requirements; Regulation 43: Rev. June, 2015

Requirements for schematic obtained from the following sections of Regulation 43:
Table 7-2, Table 10-1, Section 43.11(C)(2)

Column Identifier:	A	B	C	D	E	F	G	H	I
Quality of Effluent Applied:	TL1 - TL2	TL1 - TL2	TL2N - TL3N	TL2N - TL3N	TL1	TL2	TL1 - TL2	TL1 - TL2	TL2N - TL3N
Existing Soil Type:	1 - 5	1 - 5	1 - 5	0 - 5	0	0	1 - 5	1 - 5	0 - 5
Pressure Dose Required:	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes



Limiting Layer:

(ie: Bedrock, Groundwater)

			In-ground Un-Lined Sand Filter	In-ground Un-Lined Sand Filter	In-ground Un-Lined Sand Filter	Mound or At-Grade OWTS, TL1 , TL2 LTAR	Mounded Sand Filter w/TL2 LTAR	Mounded Sand Filter w/TL2 LTAR or Higher
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LEGEND:

Distribution Media/Chambers DM

Exist. Soils (in-situ); Type 1-5 Ex.

Sand Filter Media;
Regulation 43.11(C)(2)(a)(1) SFM

Buffer Soils: Ex. or SFM

NOTES:

*Suggest 6" (min.) add'l.
Buffer; however
Not req'd. in Reg. 43

**May also modify
soil type "0"
to be, "Suitable Soil"

***Ref 43.11.C.2.c,
and 43.11.C.2.d
for Mounded S. F.

