How to Calculate for Design Rates, Absorption Area and Total Feet for Engineers and other Percolation Testing / Septic System Designers

When calculating for Design Rates using Perc Rates and Absorption Area:

- **LL**: Take most conservative MPI and use the EPA’s LL graph to find Perc rate (sft/gall/day)
- **SP**: (gal/sf/day) 1.1 < Q** < 4

Design Rate: LL # sft/100 gstd*

Total Lineal Feet

Absorption Area (tank size / 100 gal.)

Absorption Area (trench area)

1
(Q x 100 gal)

Tank size
(Q x diameter x 3.14)

LL: (min.) 1.0 ≤ 60 (max.); (min.) 0.6 ≤ Perc rate < 2.26 (max)
SP: (min.) 1.1 < Q < 4 (max.) [if caving occurred: Q < 3 (max.)]
MPI < 30 (max.) → For Lahontan SP only

* County of San Bernardino Design Rates are expressed in units of square feet (sft) per 100 gallons septic tank capacity (gstd).

** For leach lines, you can use the result of the average MPI subtracted from the most conservative MPI. For seepage pits, it is suggested that you used the most conservative Q that falls within the range of 1.1 to 4. If there are Q values greater than 4, then a Q of 4 gallons per square feet (g/sq) is the fastest value that can be chosen to design your septic system.

When calculating for Absorption Area and Total Feet using Design Rates:

- **LL**: Design Rate: sft/100 gstd*
- **SP**: Design Rate: sft/100 gstd*

Design Rate: LL # sft/100 gstd*

Total Depth Feet

Gallon Tank Size

Absorption Area (sf)

Absorption Area (trench area)

Absorption Area (trench area)

Design Rate: SP # sft/100 gstd*

Total Lineal Feet

Absorption Area (sf)

Absorption Area (trench area)

Absorption Area (trench area)