

1. AVERAGE DESIGN FLOW:

- A. Number of Bedrooms:
- Fixture Count (see Table B):
- or Other than single-family dwelling: gallons per day from Table 1, Unit Design Flows
- Design Flow (Table A or Table 1): Gallons Per Day (GPD)
- B. Septic Tank Capacity (Table A): Gallons
- Number of Septic Tanks or Compartments:
- Effluent Screen & Alarm?:

Number of Bedrooms	Fixture Count	Minimum Design Liquid Capacity (gallons)	Design Flow (gal/day)
1	7 or less	1000	150
	More than 7	1000	300
2	14 or less	1000	300
	More than 14	1000	450
3	21 or less	1000	450
	More than 21	1250	600
4	28 or less	1250	600
	More than 28	1500	750
5	35 or less	1500	750
	More than 35	2000	900
6	42 or less	2000	900
	More than 42	2500	1050
7	49 or less	2500	1050
	More than 49	3000	1200
8	56 or less	2000	1200
	More than 56	3000	1350

Residential Fixture Type	Fixture Unit	Residential Fixture Type	Fixture Unit
Bathtub	2	Sink, bar	1
Bidet	2	Sink, kitchen (including dishwasher)	2
Clothes washer	2	Sink, service	3
Dishwasher (Separate from kitchen)	2	Utility tub or sink	2
Lavatory, single	1	Water closet, 1.6 gallons per flush (gpf)	3
Lavatory, double in Master bedroom	1	Water closet, greater than 1.6 to 3.2 gpf	4
Shower, single stall	2	Water closet, greater than 3.2 gpf	6

2. SITE EVALUATION:

- A. Depth to Limiting Layer: inches ft
- B. Maximum Depth of System: inches ft
(a negative number means an alternate system is required)
- C. Type of Soil Treatment and Dispersal Area:
- D. Type of Distribution:
- E. Landscape Position:
- F. Soil Texture:
- G. Percent Land Slope: % $Slope = \frac{Rise}{Run} \times 100 =$ %

3. SOIL ABSORPTION RATE (SAR): Use either A., B., or C. below

A. Calculating SAR when using soil evaluation (ASTM) method

DETAILED SOIL DESCRIPTIONS (SOIL PIT REQUIRED)	
Texture	<input type="text"/>
Structure	<input type="text"/>
Grade	<input type="text"/>
Consistence (moist)	<input type="text"/>
Select SAR (Use Table C):	<input type="text"/> GPD/ft ²

Sequence of Soil Characteristics Questions	SAR Trench, Chamber, Pit (GPD/ft ²)	SAR Bed (GPD/ft ²)
A. Is the horizon gravelly coarse sand or coarser?	A site-specific SAR is required	A site-specific SAR is required
B. Is the the structure of the horizon moderate or strongly platy?	A site-specific SAR is required	A site-specific SAR is required
C. Is the texture of the horizon sandy clay loam, clay loam, silty clay loam, or finer and the soil structure weak platy?	A site-specific SAR is required	A site-specific SAR is required
D. Is the moist consistency stronger than firm or any cemented class?	A site-specific SAR is required	A site-specific SAR is required
E. Is the texture sandy clay, clay, or silty clay of high clay content and the structure massive or weak?	A site-specific SAR is required	A site-specific SAR is required
F. Is the texture sandy clay loam, clay loam, silty clay loam, or silty loam and the structure massive?	A site-specific SAR is required	A site-specific SAR is required
G. Is the texture of the horizon loam or sandy loam and the structure massive?	0.20	0.13
H. Is the texture sandy clay, or silty clay of low clay content and the structure moderate or strong?	0.20	0.13
I. Is the texture sandy clay loam, clay loam, or silty clay loam and the structure weak?	0.20	0.13
J. Is the texture sandy clay loam, clay loam, or silty clay loam and the structure moderate or strong?	0.40	0.27
K. Is the texture sandy loam, loam, or silty loam and the structure weak?	0.40	0.27
L. Is the texture sandy loam, loam, or silt loam and the structure moderate or strong?	0.60	0.40
M. Is the texture fine sand, very fine sand, loamy fine sand, or loamy very fine sand?	0.40	0.27
N. Is the texture loamy sand or sand?	0.80	0.53
O. Is the texture coarse sand?	1.20	A site-specific SAR is required

B. Calculating SAR when using soil percolation method

Table D - SAR Using Percolation Rate by Dispersal Type		
Percolation Rate (mpi)	SAR Trench, Chamber, Pit (GPD/ft ²)	SAR Bed (GPD/ft ²)
Less than 1.00	A site-specific SAR is required	A site-specific SAR is required
1.00 to less than 3.00	1.20	0.93
3.00	1.10	0.73
4.00	1.00	0.67
5.00	0.90	0.60
7.00	0.75	0.50
10.0	0.63	0.42
15.0	0.50	0.33
20.0	0.44	0.29
25.0	0.40	0.27
30.0	0.36	0.24
35.0	0.33	0.22
40.0	0.31	0.21
45.0	0.29	0.20
50.0	0.28	0.19
55.0	0.27	0.18
55.0+ to 60.0	0.25	0.17
60.0+ to 120	0.20	0.13
Greater than 120	A site-specific SAR is required	A site-specific SAR is required

Slowest measured perc rate: (from Uniform State Report form)		Note: use lowest perc rate, NOT average of rates
Select SAR (Use Table D):		

GPD/ft²

C. Calculating the Adjusted Soil Absorption Rate (SAR_a)

$$SAR_a = (((11.39 \div (TSS + BOD_5)^{1/3}) - 1.87)SAR^{1.13} + 1)SAR$$

where TSS = total suspended solids in wastewater delivered to soil treatment area, mg/L
 BOD₅ = five-day biochemical oxygen demand of wastewater delivered to soil treatment area, mg/L

SAR = soil absorption rate for septic tank effluent determined by soil characterization method (3.B.), GPD/ft²

$$SAR_a = (((11.39 \div \text{[TSS]} + \text{[BOD}_5\text{]}^{1/3}) - 1.87) \times \text{[SAR]}^{1.13} + 1) \times \text{[SAR]} = \text{[SAR}_a\text{]} \text{ GPD/ft}^2$$

4 ORGANIC LOADING (if pretreatment is being used)

Organic Loading = Design Flow (gal/d) X Estimated BOD (mg/L) in the effluent X 8.35 (lb/gal*(mg/L)) ÷ 1,000,000

[] GPD X [170] mg/L X 8.35 ÷ 1,000,000 = [] lbs BOD

I hereby certify that I have completed this work in accordance with all applicable ordinances, rules and laws.