



¹Note: For use as general guidelines only. Soil conditions will dictate actual formulation.

Hole Volumes										
Hole diameter, in.	2	4	6	8	10	12	14	16	18	20
Volume, gal/ft	0.16	0.65	1.47	2.61	4.08	5.87	7.99	10.44	13.21	16.31

$$\frac{(\text{Hole diameter, in.})^2}{24.52} = \text{Hole vol, gal/ft}$$

$$\frac{\text{Hole vol, gal/ft} \times \text{Rod length, ft} \times \text{Safety factor}}{\text{Pump output, gal/min}} = \text{Drilling rate, min/rod}$$

Soil	Safety Factor (ratio of fluid pumped to soil volume)
Sand, gravel, rock	1 or 2 (1:1 or 2:1)
Sandy clay, clay	2 or 3 (2:1 or 3:1)
Reactive clay	3, 4 or 5 (3:1, 4:1 or 5:1)