

50. **REASONING AND SOLUTION** The volume flow rate is given by

$$Q = Av = \pi r^2 v = \pi(0.305 \text{ m})^2(1.22 \text{ m/s}) = 0.356 \text{ m}^3/\text{s}$$

The number of gallons that flows in one day ( $8.64 \times 10^4 \text{ s}$ ) is

$$(0.356 \text{ m}^3 / \text{s}) \left( \frac{1.0 \text{ gal}}{3.79 \times 10^{-3} \text{ m}^3} \right) (8.64 \times 10^4 \text{ s}) = \boxed{8.12 \times 10^6 \text{ gal}}$$