

## Appendix B: Conversion Factor Derivation

Flow and concentration values must be multiplied by a conversion factor in order to express the load in the units “pounds/day.” The following expressions detail how the conversion factor was determined:

$$\text{Flow} \left( \frac{\text{million gallons}}{\text{day}} \right) \times \text{concentration} \left( \frac{\text{milligrams}}{\text{Liter}} \right) \times CF = \text{Load} \left( \frac{\text{pounds}}{\text{day}} \right)$$

$$10^6 \frac{\text{gal}}{\text{day}} \times \frac{\text{mg}}{\text{L}} \times \left( \frac{3.785 \text{L}}{\text{gal}} \times \frac{\text{lb}}{454000 \text{mg}} \right) = \frac{\text{lb}}{\text{day}}$$

$$10^6 \times \frac{3.785 \text{L}}{\text{gal}} \times \frac{\text{lb}}{454000 \text{mg}} = 8.34 \frac{\text{L} - \text{lb}}{\text{gal} - \text{mg}}$$

$$CF = 8.34 \frac{\text{L} - \text{lb}}{\text{gal} - \text{mg}}$$

$$CF = 8.34$$