Chapter 2 Examples: Chemistry of Surface Waters II

Example 3: Redox Sequence A 0.1-g roach is accidentally bottled in a 1-L bottle of soda, which initially contains 10 mg/L or oxygen and 1.2 mg/L NO$_3^-$ . Assume 10% of the roach’s fresh weight is CH$_2$O.

a) If microbes capable of completely mineralizing the roach are present, does the bottle become anaerobic?

b) Is any of the nitrate consumed?

Example 4: p$\epsilon$ and $E_h$ The measured concentration of HS$^-$ is 0.1 ppm in a sediment pore water whose sulfate concentration is 10$^{-6}$ M. The pH of the pore water is 7.3. What are the theoretical p$\epsilon$ and $E_h$ if these species are in equilibrium?