

RHEM Equation Summary

Updated: 4/6/2011

Fe and Fr (friction factors)

$$fe = 0.599 + (1.137 * littercover) + (2.051 * (basalcover + cryptogams)) + (1.154 * rockcover)$$

$$fe = \text{pow}(10, fe)$$

$$fr = 0.599 + (1.137 * littercover) + (2.051 * (basalcover + cryptogams)) + (1.154 * rockcover)$$

$$fr = \text{pow}(10, fr)$$

Ke (Green-Ampt Hydraulic Conductivity)

Shrub Vegetation Community

$$Keb = 0.174 - (1.450 * meanclay) + (2.975 * groundcover) + (0.923 * canopycover);$$

$$Keb = \exp(Keb) * 0.3;$$

$$Ke = Keb * 1.2;$$

Sod Grass Vegetation Community

$$Keb = 0.174 - (1.450 * meanclay) + (2.975 * groundcover) + (0.923 * canopycover)$$

$$Keb = \exp(Keb) * 0.3$$

$$Ke = Keb * 0.8$$

Bunch Grass Vegetation Community

$$Keb = 0.174 - (1.450 * meanclay) + (2.975 * groundcover) + (0.923 * canopycover)$$

$$Keb = \exp(Keb) * 0.3$$

$$Ke = Keb * 1.0$$

Forbs Vegetation Community

$$Keb = 0.174 - (1.450 * meanclay) + (2.975 * groundcover) + (0.923 * canopycover)$$

$$Keb = \exp(Keb) * 0.3$$

$$Ke = Keb * 1.0$$

Kss (Splash and Sheet erosion parameter)

Shrub Vegetation Community

$$Kss = 4.00836 - (1.17804 * rockcover) - (0.98196 * (littercover + canopycover))$$

$$Kss = \text{pow}(10, Kss)$$

Sod Grass Vegetation Community

$$Kss = 3.13334 - (0.20055 * canopycover) - (0.50550 * littercover)$$

$$Kss = \text{pow}(10, Kss)$$

$$Kss = (Kss / 1.5)$$

Bunch Grass Vegetation Community

$$Kss = 3.13334 - (0.20055 * canopycover) - (0.50550 * littercover);$$

$$Kss = \text{pow}(10, Kss)$$

Forbs Vegetation Community

$$Kss = 3.13334 - (0.20055 * canopycover) - (0.50550 * littercover)$$

$$Kss = \text{pow}(10, Kss)$$