RHEM Equation Summary

Updated: 9/20/2011

Fe and Fr (friction factors)

Fe = 5 + (groundcover *10)

Log10(Fr) = 0.599 + (1.137 * *littercover*) +
(2.051 * (*basalcover* + *cryptogams*)) + (1.154 * *rockcover*)

Ke (Green-Ampt Hydraulic Conductivity)

Shrub Vegetation Community

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

Ke = Keb * 0.3 * 1.2;

Sod Grass Vegetation Community

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

Ke = Keb * 0.3 * 0.8

Bunch Grass Vegetation Community

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

Ke = Keb * 0.3 * 1.0

Forbs Vegetation Community

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

Ke = Keb * 0.3 * 1.0

Kss (Splash and Sheet erosion parameter)

Shrub Vegetation Community

Log10(Kss) = 4.00836 - (1.17804 * *rockcover*) - (0.98196 * (*littercover* + *canopycover*))

Sod Grass Vegetation Community

Log10(Kss) = 3.13334 - (0.20055 * *canopycover*) - (0.50550 * *littercover*)

Kss = Kss/1.5

Bunch Grass Vegetation Community

Log10(Kss) = 3.13334 - (0.20055 * *canopycover*) - (0.50550 * *littercover*);

Forbs Vegetation Community

Log10(Kss) = 3.13334 - (0.20055 * *canopycover*) - (0.50550 * *littercover*)

Kc and τ_c

Kc = 0.0000870 * exp(-4.75 * *littercover*)

τ_c = 1.12