
**APPENDIX H – RAINFALL AND
UNIVERSAL SOIL LOSS EQUATION (USLE) DATA**

| | |
|------------------|---|
| Table H.1 | Distribution of Rainfall Erosion Index (EI Curves) |
| Table H.2 | 24-Hour Storm Event Rainfall Data |
| Table H.3 | 2-Hour Storm Event Rainfall Data |
| Table H.4 | Universal Soil Loss Equation CP Factors |
| Table H.5 | Universal Soil Loss Equation LS Factors |

Table H.1: Distribution of Rainfall Erosion Index (EI Curves)

| Date | Zone 116 (Greenville, Rock Hill, Spartanburg, Pageland, Greenwood) | Zone 117 (Coastal) | Zone 118 (Columbia, Aiken) |
|--------------|--|------------------------------|--------------------------------------|
| January 1 | 0.0 | 0.0 | 0.0 |
| January 15 | 1.0 | 1.0 | 1.0 |
| February 1 | 3.0 | 2.0 | 2.0 |
| February 15 | 5.0 | 3.0 | 3.0 |
| March 1 | 7.0 | 4.0 | 5.0 |
| March 15 | 9.0 | 5.0 | 7.0 |
| April 1 | 12.0 | 7.0 | 10.0 |
| April 15 | 15.0 | 9.0 | 14.0 |
| May 1 | 18.0 | 11.0 | 18.0 |
| May 15 | 21.0 | 14.0 | 22.0 |
| June 1 | 25.0 | 17.0 | 27.0 |
| June 15 | 29.0 | 22.0 | 32.0 |
| July 1 | 36.0 | 31.0 | 37.0 |
| July 15 | 45.0 | 42.0 | 46.0 |
| August 1 | 56.0 | 54.0 | 58.0 |
| August 15 | 68.0 | 65.0 | 69.0 |
| September 1 | 77.0 | 74.0 | 80.0 |
| September 15 | 83.0 | 83.0 | 89.0 |
| October 1 | 88.0 | 89.0 | 93.0 |
| October 15 | 91.0 | 92.0 | 94.0 |
| November 1 | 93.0 | 95.0 | 95.0 |
| November 15 | 95.0 | 97.0 | 96.0 |
| December 1 | 97.0 | 98.0 | 97.0 |
| December 15 | 99.0 | 99.0 | 97.0 |
| January 1 | 100.0 | 100.0 | 100.0 |

Minimum Value to be used is 50
Average Annual R Factor Zone 116 = 300
Average Annual R Factor Zone 117 = 400
Average Annual R Factor Zone 118 = 350

Table H.2: 24-Hour Storm Event Rainfall Data

| Location | Return Period (years) | | | | | | |
|--|-----------------------|------|------|------|------|------|------|
| | 1 | 2 | 5 | 10 | 25 | 50 | 100 |
| Aiken 4 NE (38-0074) | 3.03 | 3.64 | 4.54 | 5.29 | 6.40 | 7.34 | 8.37 |
| Anderson (38-0165) | 3.03 | 3.62 | 4.50 | 5.29 | 6.57 | 7.78 | 9.23 |
| Beaufort 7 SW (38-0559) | 3.45 | 4.20 | 5.42 | 6.42 | 7.82 | 8.96 | 10.2 |
| Charleston WSO City (38-1549) | 3.48 | 4.23 | 5.47 | 6.47 | 7.89 | 9.04 | 10.3 |
| Columbia University of SC (38-1944) | 3.00 | 3.60 | 4.50 | 5.26 | 6.38 | 7.33 | 8.36 |
| Conway (38-1997) | 3.44 | 4.19 | 5.40 | 6.41 | 7.86 | 9.08 | 10.4 |
| Florence 8 NE (38-3111) | 2.94 | 3.55 | 4.54 | 5.41 | 6.73 | 7.90 | 9.23 |
| Greenville (38-3732) | 3.26 | 3.91 | 4.86 | 5.69 | 6.98 | 8.14 | 9.48 |
| Greenwood 3 SW (38-3754) | 2.92 | 3.50 | 4.35 | 5.12 | 6.36 | 7.53 | 8.93 |
| Orangeburg 2 (38-6527) | 2.96 | 3.56 | 4.53 | 5.39 | 6.71 | 7.87 | 9.19 |
| Rock Hill 5 NE (38-7390) | 2.99 | 3.61 | 4.53 | 5.25 | 6.24 | 7.03 | 7.83 |
| Spartanburg (38-8186) | 3.10 | 3.74 | 4.67 | 5.43 | 6.51 | 7.40 | 8.36 |

- **All rainfall values given are in inches**
- For additional storm event rainfall data please reference the following source:
 - *Source: NOAA's National Weather Service Hydrometeorological Design Studies Center: Precipitation Frequency Data Server February 2013.*

Table H.3: 2-Hour Storm Event Rainfall Data

| Location | Return Period (years) | | | | | | |
|--|-----------------------|------|------|------|------|------|------|
| | 1 | 2 | 5 | 10 | 25 | 50 | 100 |
| Aiken 4 NE (38-0074) | 1.82 | 2.17 | 2.63 | 3.08 | 3.66 | 4.18 | 4.72 |
| Anderson (38-0165) | 1.56 | 1.87 | 2.32 | 2.69 | 3.22 | 3.67 | 4.16 |
| Beaufort 7 SW (38-0559) | 2.03 | 2.45 | 3.04 | 3.55 | 4.16 | 4.67 | 5.16 |
| Charleston WSO City (38-1549) | 2.05 | 2.48 | 3.12 | 3.68 | 4.39 | 4.97 | 5.55 |
| Columbia University of SC (38-1944) | 1.77 | 2.10 | 2.57 | 3.01 | 3.57 | 4.07 | 4.57 |
| Conway (38-1997) | 1.95 | 2.35 | 2.95 | 3.49 | 4.21 | 4.85 | 5.48 |
| Florence 8 NE (38-3111) | 1.67 | 1.99 | 2.49 | 2.93 | 3.51 | 4.01 | 4.51 |
| Greenville (38-3732) | 1.62 | 1.94 | 2.42 | 2.81 | 3.37 | 3.86 | 4.39 |
| Greenwood 3 SW (38-3754) | 1.66 | 1.98 | 2.45 | 2.83 | 3.39 | 3.87 | 4.41 |
| Orangeburg 2 (38-6527) | 1.77 | 2.09 | 2.53 | 3.03 | 3.63 | 4.20 | 4.76 |
| Rock Hill 5 NE (38-7390) | 1.65 | 1.99 | 2.47 | 2.83 | 3.32 | 3.70 | 4.10 |
| Spartanburg (38-8186) | 1.62 | 1.95 | 2.43 | 2.81 | 3.37 | 3.84 | 4.35 |

- All rainfall values given are in inches
- For additional storm event rainfall data please reference the following source:
 - Source: NOAA's National Weather Service Hydrometeorological Design Studies Center: Precipitation Frequency Data Server February 2013.

Table H.4: Universal Soil Loss Equation CP Factors

| Condition | CP Factor |
|------------------------------------|------------------|
| Bare Soil | 1.0 |
| Compacted Root Raked Soil | 1.2 |
| Compacted Bulldozer Scraped Soil | 1.2 |
| Fresh Unprepared Seedbed | 0.64 |
| Temporary Seeding 0-60 Days | 0.40 |
| Temporary Seeding After 60 Days | 0.05 |
| Permanent Seeding 2-12 Months | 0.05 |
| Brush | 0.35 |
| Temporary Erosion Control Blankets | 0.01 - 0.05 |
| HECPs | 0.01 - 0.50 |

Table H.5: Universal Soil Loss Equation LS Factors

| % Slope | Slope Length (feet) | | | | | | | | | | | | | | | | | |
|---------|---------------------|------|------|------|------|------|------|-------|------|------|------|------|------|-------|-------|-------|-------|-------|
| | 20 | 50 | 75 | 100 | 120 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 | 900 | 1000 |
| 0.5 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.11 | 0.114 | 0.12 | 0.12 | 0.13 | 0.13 | 0.13 | 0.137 | 0.141 | 0.145 | 0.148 | 0.152 |
| 1.0 | 0.1 | 0.11 | 0.12 | 0.13 | 0.14 | 0.14 | 0.15 | 0.15 | 0.17 | 0.18 | 0.19 | 0.20 | 0.20 | 0.22 | 0.23 | 0.24 | 0.25 | 0.25 |
| 2.0 | 0.12 | 0.16 | 0.18 | 0.20 | 0.21 | 0.22 | 0.24 | 0.26 | 0.27 | 0.29 | 0.30 | 0.31 | 0.32 | 0.34 | 0.36 | 0.37 | 0.38 | 0.40 |
| 3.0 | 0.17 | 0.23 | 0.26 | 0.28 | 0.30 | 0.32 | 0.35 | 0.37 | 0.38 | 0.41 | 0.43 | 0.45 | 0.46 | 0.49 | 0.51 | 0.53 | 0.55 | 0.57 |
| 4.0 | 0.21 | 0.30 | 0.35 | 0.40 | 0.43 | 0.47 | 0.52 | 0.57 | 0.62 | 0.66 | 0.69 | 0.73 | 0.76 | 0.81 | 0.87 | 0.91 | 0.96 | 1.00 |
| 5.0 | 0.23 | 0.37 | 0.46 | 0.53 | 0.58 | 0.65 | 0.75 | 0.84 | 0.92 | 1.00 | 1.07 | 1.13 | 1.19 | 1.31 | 1.41 | 1.51 | 1.60 | 1.69 |
| 6.0 | 0.30 | 0.47 | 0.58 | 0.67 | 0.73 | 0.82 | 0.95 | 1.06 | 1.16 | 1.25 | 1.34 | 1.42 | 1.50 | 1.64 | 1.78 | 1.90 | 2.01 | 2.12 |
| 7.0 | 0.36 | 0.58 | 0.71 | 0.82 | 0.90 | 1.01 | 1.16 | 1.30 | 1.42 | 1.54 | 1.65 | 1.75 | 1.84 | 2.02 | 2.18 | 2.33 | 2.47 | 2.60 |
| 8.0 | 0.44 | 0.70 | 0.85 | 0.99 | 1.08 | 1.21 | 1.40 | 1.56 | 1.71 | 1.85 | 1.98 | 2.10 | 2.21 | 2.42 | 2.62 | 2.80 | 2.97 | 3.13 |
| 9.0 | 0.52 | 0.82 | 1.01 | 1.17 | 1.28 | 1.43 | 1.65 | 1.85 | 2.03 | 2.19 | 2.34 | 2.48 | 2.62 | 2.87 | 3.10 | 3.31 | 3.52 | 3.71 |
| 10.0 | 0.61 | 0.96 | 1.18 | 1.36 | 1.50 | 1.67 | 1.93 | 2.16 | 2.37 | 2.56 | 2.74 | 2.90 | 3.06 | 3.35 | 3.62 | 3.87 | 4.10 | 4.33 |
| 11.0 | 0.70 | 1.11 | 1.36 | 1.58 | 1.73 | 1.93 | 2.23 | 2.49 | 2.73 | 2.95 | 3.16 | 3.35 | 3.53 | 3.87 | 4.18 | 4.46 | 4.74 | 4.99 |
| 12.0 | 0.80 | 1.27 | 1.56 | 1.80 | 1.97 | 2.21 | 2.55 | 2.65 | 3.12 | 3.37 | 3.60 | 3.82 | 4.03 | 4.42 | 4.77 | 5.10 | 5.41 | 5.70 |
| 13.0 | 0.91 | 1.44 | 1.76 | 2.04 | 2.23 | 2.50 | 2.88 | 3.23 | 3.53 | 3.82 | 4.08 | 4.33 | 4.56 | 5.00 | 5.40 | 5.77 | 6.12 | 6.46 |
| 14.0 | 1.02 | 1.62 | 1.98 | 2.29 | 2.51 | 2.81 | 3.24 | 3.62 | 3.97 | 4.29 | 4.58 | 4.86 | 5.13 | 5.62 | 6.07 | 6.49 | 6.88 | 7.25 |
| 15.0 | 1.14 | 1.81 | 2.21 | 2.56 | 2.80 | 3.13 | 3.62 | 4.04 | 4.43 | 4.79 | 5.12 | 5.43 | 5.72 | 6.27 | 6.77 | 7.24 | 7.68 | 8.09 |
| 16.0 | 1.26 | 2.00 | 2.45 | 2.83 | 3.11 | 3.47 | 4.01 | 4.48 | 4.91 | 5.31 | 5.67 | 6.02 | 6.34 | 6.95 | 7.51 | 8.02 | 8.51 | 8.97 |
| 17.0 | 1.40 | 2.21 | 2.71 | 3.13 | 3.42 | 3.83 | 4.42 | 4.94 | 5.42 | 5.85 | 6.26 | 6.64 | 7.00 | 7.66 | 8.28 | 8.85 | 9.39 | 9.89 |
| 18.0 | 1.53 | 2.42 | 2.97 | 3.43 | 3.76 | 4.20 | 4.85 | 5.43 | 5.94 | 6.42 | 6.86 | 7.28 | 7.68 | 8.41 | 9.08 | 9.71 | 10.3 | 10.9 |
| 19.0 | 1.67 | 2.65 | 3.24 | 3.75 | 4.10 | 4.59 | 5.30 | 5.93 | 6.49 | 7.01 | 7.50 | 7.95 | 8.38 | 9.18 | 9.92 | 10.6 | 11.3 | 11.9 |
| 20.0 | 1.82 | 2.88 | 3.53 | 4.07 | 4.46 | 4.99 | 5.76 | 6.45 | 7.06 | 7.63 | 8.15 | 8.65 | 9.12 | 10.0 | 10.7 | 11.5 | 12.2 | 12.9 |
| 25.0 | 2.63 | 4.16 | 5.1 | 5.89 | 6.45 | 7.21 | 8.33 | 9.31 | 10.2 | 11.0 | 11.8 | 12.5 | 13.2 | 14.4 | 15.6 | 16.7 | 17.7 | 18.6 |
| 33.3 | 4.22 | 6.67 | 8.17 | 9.44 | 10.3 | 11.6 | 13.4 | 14.9 | 16.4 | 17.7 | 18.9 | 20.0 | 21.1 | 23.1 | 25.0 | 26.7 | 28.3 | 29.9 |
| 40.0 | 5.65 | 8.94 | 8.94 | 12.7 | 13.9 | 15.5 | 17.9 | 20 | 21.9 | 23.7 | 25.3 | 26.8 | 28.3 | 31.0 | 33.5 | 35.8 | 38.0 | 40.0 |
| 50.0 | 7.97 | 12.6 | 12.6 | 17.8 | 19.5 | 21.8 | 25.2 | 28.2 | 30.9 | 33.3 | 35.6 | 37.8 | 39.9 | 43.7 | 47.2 | 50.4 | 53.5 | 56.4 |
| 66.6 | 11.9 | 18.9 | 18.9 | 26.7 | 29.2 | 32.7 | 37.7 | 42.2 | 46.2 | 49.9 | 53.3 | 56.6 | 59.6 | 65.3 | 70.5 | 75.4 | 80.0 | 84.3 |
| 100.0 | 18.9 | 29.9 | 29.9 | 42.2 | 46.3 | 51.7 | 59.7 | 66.8 | 73.2 | 79.0 | 84.5 | 89.6 | 94.5 | 103. | 112 | 120 | 126 | 134 |