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| Worksheet 5: Simple Design Capture Volume Sizing Method for Full Infiltration BMPs | | | | | | |
| Part 1: Calculate the DCV | | | | | | |
| 1 | Enter design capture storm depth, *d* (inches) | | d= |  | inches |
| 2a | Enter the combined effect of provided HSCs, *dHSC* (inches)  (based on Worksheet 4) including any other upstream BMPs | | dHSC= |  | inches |
| 2b | Calculate the remainder of the design capture storm depth, *dremainder* = d – dHSC | | dremainder= |  | inches |
| 3a | Enter DMA area tributary to BMP(s), *A* (acres) excluding any self-retaining areas | | A= |  | acres |
| 3b | Enter DMA Imperviousness, imp (unitless) after removal of self-retaining areas | | imp= |  |  |
| 3c | Calculate runoff coefficient, *C= (0.75 x imp) + 0.15* | | C= |  |  |
| 3d | Calculate runoff volume, *DCV= (C x dremainder x A x 43560 x (1/12)) (See Section E.2.2)* | | DCV= |  | cu-ft |
| Part 2: Design BMP and Calculate Effective Storage Depth and Footprint | | | | | |
| 4 | Enter total effective storage depth (sum of values below) | | Dtotal\_ effective |  | inches |
| 4a | Ponding storage depth | | Dpond |  | inches |
| 4b | Media effective storage depth (depth \* 0.2) | | Dmedia\_ effective |  | inches |
| 4c | Gravel effective storage (depth \* 0.4) | | Dgravel\_ effective |  | inches |
| 5 | Determine required effective footprint: ABMP = DCV /(DTotal \*12 inches/ft) If sides are sloped, measure ABMP at the mid-ponding depth of the BMP. | | ABMP= |  | sq-ft |
| Part 3: Check Drawdown Time | | | | | |
| 6a | Calculate design infiltration rate, *Kdesign = Kobserved / Stotal*(See Worksheet 3 and Appendix D) | Kdesign= | |  | in/hr |
| 6b | Calculate drawdown time (*Dtotal\_effective / Kdesign*) (must be less than or equal to 48 hours). | *Tdrawdown*= | |  | hours |
| 6c | If using Method 2 for drawdown (Section E.2.5) which accounts for sidewall infiltration, insert result and attach relevant calculations below. | *Tdrawdown*= | |  | hours |
| Part 4: Check Minimum Infiltrating Surface Area for Premature Clogging | | | | | |
| 7a | Calculate BMP infiltrating surface area as percent of tributary impervious area (Ainfiltrating/(A \* imp \* 43560 sq-ft/ac) | | |  | % |
| 7b | Calculate minimum infiltrating surface area required for BMP to avoid premature clogging (Section E.4.1) | | |  | % |