



STORM BULLETIN 16

CRITERIA FOR STORMWATER TREATMENT PRODUCTS

- **Performance and Sizing Criteria**

- The USEPA standard for performance is MEP (Maximum Extent Practicable). This standard recognizes that the pollutants present in stormwater runoff will be site-specific, the composition/concentration will be extremely variable, and the pollutant wash-off process will be inconsistent.
- Many regulatory agencies have established their own performance standards for treating stormwater runoff. The standard may be based on per cent removal efficiency or Total Maximum Daily Load (TMDL). One concern with setting performance standards for stormwater treatment is that the operating conditions may be extremely inconsistent and cannot be accurately predicted. This why sizing guidelines for public domain Best Management Practices (BMP); e.g., ponds, swales; is presumed adequate to meet a specified performance standard.
- The EPA and some state regulatory agencies have been certifying or verifying proprietary products as providing 75% Total Suspended Solids (TSS) removal efficiency or meeting some other performance standard.
- Performance certifications usually require flow monitoring of an installed system. Since flow monitoring data is extremely scattered and inconsistent, the site-specific performance certification is based on regression analysis of the pollutant concentrations found in the flow monitoring data.
- A recent trend is to use controlled testing and mass balance sampling to evaluate how effectively a product is employing the scientific principles associated with the treatment process. These tests define the capability for providing performance and provide the foundation for sizing a product that will treat a specified flow rate and pollutant composition/concentration. Examples of hydraulic and treatment principles are:
 - Hydraulic behavior as a function of internal flow rate – a sedimentation system will become more turbulent and thereby less efficient at a higher hydraulic loading rate.
 - Hydraulic behavior as a function of the hydraulics of the inlet and outlet piping – this addresses the kinetic energy and junction losses associated with the flow in these pipes.
 - Determining sediment removal efficiency as a function of hydraulic loading rate and particle size.

- **Maintenance Criteria**

- Ease of access by maintenance vehicles must be provided when locating a treatment structure on a site. Preferred location is within or adjacent to paved traffic area.
- Depth to the floor of the product must consider the 13-14 ft vacuum lift capability of standard pump-out trucks. Site-specific product drawings for treatment structures



should specify the rim minus the floor distance to confirm that standard pump-out equipment can be used.

- Internal clearances must be adequate to allow movement of a pump-out wand. If necessary additional access openings should be added in the ceiling of the product. Product drawings should provide an elevation view depicting the internal clearances.