



CRWD Manufactured Treatment Devices Stormwater Crediting and Use Policy

Adopted 05/05/2021

Background:

Capitol Region Watershed District (CRWD) Rule C, Stormwater Management, requires stormwater be retained onsite in the amount equivalent to 1.1 inches of runoff over the impervious surfaces of the development. If the applicant cannot provide the full volume through abstraction (i.e. infiltration, reuse), filtration may be used through alternative compliance sequencing. CRWD acknowledges that filtration does not provide equivalent benefit to infiltration and credits filtration as follows:

- Sand filtration receives 55% volume credit (required runoff volume shall be multiplied by 1.82)
- Iron-enhanced sand filtration receives 80% volume credit (required runoff volume shall be multiplied by 1.25)
- Other enhanced filtration media may be considered and credited at the sole discretion of the District.

Enhanced filtration is not explicitly defined in CRWD rules. However, if a device is properly designed, maintained, and has undergone adequate third-party verification, the District may grant additional credit above the standard 55% where appropriate.

CRWD has received multiple requests to review manufactured treatment devices (MTDs) to determine qualification as enhanced filtration media. CRWD staff have reviewed product information, existing stormwater treatment certification programs, analytical data, site information, and sampling methodologies to determine how to appropriately credit MTDs under Rule C.

CRWD reviewed other MTD crediting programs and determined the Washington State Department of Ecology (Ecology) Technology Assessment Protocol (TAPE) provided the most complete evaluation of MTDs for the purpose of crediting these technologies for use. The TAPE program evaluates new stormwater treatment technologies using field-collected data and has specific phosphorous related performance goals. An MTD receiving the General Use Level Designation (GULD) in this program has demonstrated with a high degree of confidence it can achieve the TAPE performance goal (50% removal of total phosphorous (TP) for influent concentrations ranging from 0.1 – 0.5 mg/L and 80% removal of total suspended solids (TSS) for influent concentrations between 100 – 200 mg/L.). The GULD further certifies all the data was collected under consistent protocols as approved by the TAPE Program.

Policy:

This policy provides guidance to applicants and staff to ensure consistent design and evaluation of stormwater treatment systems under existing CRWD rules. Full compliance with CRWD rules is required when an MTD is proposed.

1. All MTDs requesting enhanced filtration crediting must first receive GULD for phosphorous treatment through the Ecology TAPE program.
2. All MTDs requesting consideration for enhanced filtration credit must submit a request for review by CRWD. The request shall include the following:
 - a. The Technical Evaluation Report(s) (TER) used in the TAPE study. Data shall include:
 - i. influent and effluent concentrations for TSS, TP, and dissolved phosphorous (DP);
 - ii. total runoff volume for each event; and
 - iii. runoff volume that bypasses the MTD for each event.
 - b. If dissolved phosphorous (DP) data is not received, volume reduction credit shall be calculated assuming 0% DP removal.
 - c. Additional data outside of the TAPE program may also be provided. Additional data will be considered at CRWD's sole discretion. Additional data shall conform with industry standard quality assurance/quality control procedures.
3. An MTD that has received GULD status through the TAPE program is eligible to receive the standard filtration 55% volume credit.
4. If the submitted data demonstrates the removal of DP, the MTD will be assigned a 68% volume credit (required runoff volume shall be multiplied by 1.47).
5. CRWD shall maintain a list of all such MTDs qualifying for enhanced filtration credit.
6. CRWD shall maintain a list of all such MTDs qualifying for standard filtration credit.
7. Development projects applying for a CRWD permit proposing to use an approved MTD for filtration credit must design the MTD such that the treatment flow rate does not exceed the flow rate approved through the TAPE program.
8. Prior to issuing a permit for a development project proposing to use an approved MTD for filtration credit, CRWD must review and approve a maintenance plan. The maintenance plan must include:
 - a. Requirements to maintain the MTD when drawdown of the storage system upstream of the MTD exceeds 48 hours.
 - b. Recommended maintenance intervals, the maximum design maintenance interval is 1-year. The designer shall submit calculations or justification that MTD sediment storage is sufficient.
 - c. Recommended filtration media replacement interval.
 - d. Cost estimate for maintenance/replacement of filter media.
The maintenance plan shall be recorded with Ramsey County and run with the property.
9. A maintenance surety, to be returned after 5 years of satisfactory maintenance and MTD performance will be collected. The surety amount is set by Board Resolution and will approximate the expected cost for 5 years of maintenance. Up to 20% of the total surety is

available to be returned each year following receipt of an annual inspection/maintenance report.

10. An executed maintenance contract for the MTD with a qualified vendor must be received by CRWD prior to permit closure and before the project can begin the 5 years of satisfactory maintenance and MTD performance period.

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