

Addendum to the Pilot Study Procedure for Proprietary Devices

A comprehensive protocol has been developed by the Sacramento Stormwater Quality Partnership (Partnership) to study and evaluate the performance of proprietary stormwater quality treatment devices in Sacramento County. In addition to the Partnership's protocol, other agencies also developed protocol to evaluate the emerging stormwater treatment technologies and new proprietary products. Two of the most referenced protocols are Washington Department of Ecology (Ecology)'s *Guidance for Evaluating Emerging Stormwater Treatment Technologies, Technology Assessment Protocol – Ecology (TAPE)*, updated in 2008 and *The Technology Acceptance Reciprocity Partnership (TARP), Protocol for Stormwater Best Management Practice Demonstrations*, endorsed by California, Massachusetts, Maryland, New Jersey, Pennsylvania, and Virginia, last updated in 2003. A comparison of the Partnership's protocol with *TAPE* and *TARP* is summarized in Table 1. As shown in Table 1, storm event criteria and sampling procedures are similar. Data collected following one protocol may qualify under another protocol.

Table 1. Comparison of TAPE, TARP and SSQP Protocols

	TAPE (2008)	TARP (2003)	SSQP Protocol	Note
Number of test sites	1	None	2	
Number of Storms	12-35	15-20	10 per site	
Storm Event Criteria				
Storm Depth (inch)	≥ 0.15	≥ 0.10	0.15-1.5	
Antecedent dry period (hr)	6 hours minimum with less than 0.04 inches of rain	6	None	
Storm Duration (hr)	≥ 1	None	2-24 hr	
Average storm intensity (in/hr)	None	None	0.05-0.25	
Sampling Procedure				
Sampling methods	automatic sampler*	automatic sampler	automatic sampler*	except for chemical constituents that require manual grab samples
Type of samples	flow-weighted composite	flow-weighted composite	flow-weighted composite	
Minimum # of aliquots	10	10	10	
Volume coverage (covering at least x% of each storm's total runoff volume)	75	70	60 (overall average of all storms ≥ 75%)	
*Analytes (Field Monitoring)				The analytes listed here are from SSQP protocol.
TSS	√	√	√	
pH	lab		√	
Metals (Zn, Cu, Cd)	√ (total and dissolved Cu and Zn for enhanced treatment)		√	
oil and grease	visible sheen		√	
TPH	*NWTPH-Dx (optional)		√	Semi-Volatile Petroleum Products Method for Soil and Water
TP	√ (for Phosphorus treatment)		√	
TKN			√	
SSC	Optional	√	√	
Performance Criteria	80% TSS Removal			Depending on influent TSS conc and PSD

Proprietary stormwater treatment devices that have already conducted field monitoring tests following *TAPE* or *TARP* protocols may submit qualified field monitoring data for review. The data shall be submitted per the Partnership's report format. To qualify

events, the data must demonstrate compliance with the Partnership's Protocol ("Sampling requirements" Exhibit D):

- Storm events (intensity, duration, dry period, etc)
- The design operating rate would be consistent with the Sacramento Area

A minimum of six (6) qualified events have to be included for each site (land use)

If the submitted data meets all the above requirements, the qualified events will be credited to the manufacturer's pilot study.

The following revision to the existing pilot study procedures would then apply:

*The minimum number of storm events per site will be **10 minus qualified events from other protocols.***

All other requirements will be the same as required in the Partnership's protocol. The monitoring study report shall include all the items required in Partnership's Exhibit D, Maintenance Agreement – Pilot Study, Monitoring Requirements "Final Monitoring Report"

(<http://www.sactostormwater.org/documents/newdevelopment/PilotStudy-MonitoringReqmts.pdf>).

The maintenance agreement has to be signed prior to the approval of the pilot study. Final approval of the proprietary device will depend on the review of all qualified monitoring study results.