



**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES
POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) MODULE 2**

Applicant: Kennett Township

Project Site Name: Greenway Trail along Chandler Mill Rd

Surface Water Name(s): W Branch Red Clay Ck

Surface Water Use(s): TSF-MF

PCSM PLAN INFORMATION

1. Identify all structural and non-structural PCSM BMPs that have been selected and provide the information requested.

Discharge Point(s)	BMP ID	BMP Name	BMP Manual	Latitude	Longitude	DA Treated (ac)
001	1	Infiltration Bed 1	6.4.3	39.812153	-75.713896	0.04
004	2	Infiltration Bed 2	6.4.3	39.814980	-75.714993	0.09
005	3	Infiltration Bed 3	6.4.3	39.815624	-75.714925	0.06
011	4	Infiltration Bed 4	6.4.3	39.823816	-75.717032	0.17
012	5	Infiltration Bed 5	6.4.3	39.825522	-75.717757	0.03
012	6	Infiltration Bed 6	6.4.3	39.825704	-75.717787	0.04
012	7	Infiltration Bed 7	6.4.3	39.825894	-75.717820	0.03
013	8	Infiltration Bed 8	6.4.3	39.827005	-75.717801	0.11
005	9	Vegetated Swale 1	6.4.8	39.815497	-75.714879	0.16

Undetained Areas: 1.16 acre(s)

The Project Qualifies as a Site Restoration Project (25 Pa. Code §102.8(n))

2. Describe the sequence of PCSM BMP implementation in relation to earth disturbance activities and a schedule of inspections for the critical stages of PCSM BMP installation.

Refer to Sheet 3 of the PCSM plan.

3. <input type="checkbox"/> Plan drawings have been developed for the project and will be available on-site.
4. <input checked="" type="checkbox"/> Plan drawings have been developed for the project and are attached to the NOI/application.
5. <input checked="" type="checkbox"/> Recycling and proper disposal of materials associated with PCSM BMPs are addressed as part of long-term operation and maintenance of the PCSM BMPs.
6. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM BMPs are operational and the applicant's plan to avoid or minimize potential pollution and its impacts. No geologic formations or adverse soil conditions were observed on-site.
7. Identify whether the potential exists for thermal impacts to surface waters from post-construction stormwater. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts. The improvements proposed for this project do not include a significant increase in impervious area relative to the existing roadway, and the proposed project has an extensive plan to quickly restore natural and native vegetation (refer to the Landscaping Plans). As such, this project will not have adverse impacts to the natural temperatures of receiving surface waters. The trail pavement section includes a cross-slope of 2% to ensure quick drainage of runoff off the proposed path. Most runoff will pass through filtration devices (such as compost filter sock) during construction rather than through settlement methods, which will allow the runoff to immediately exit the project site through a pipe system or travel through vegetative ground cover, which will cool the runoff and prevent extended exposure to the sun or asphalt.
8. <input checked="" type="checkbox"/> The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.
9. <input checked="" type="checkbox"/> A pre-development site characterization has been performed.

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name: West Branch Red Clay Creek

Discharge Point(s): 001

1. The design standard is based on volume management requirements in an Act 167 Plan approved by DEP within the past five years.
2. The design standard is based on managing the net change for storms up to and including the 2-year/24-hour storm.
3. An alternative design standard is being used.
4. A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.
5. 2-Year/24-Hour Storm Event: _____ inches Source of precipitation data: _____
6. Stormwater Runoff Volume, Pre-Construction Conditions: _____ CF Calculations attached
7. Stormwater Runoff Volume, Post-Construction Conditions: _____ CF Calculations attached
8. Net Change (Post-Construction – Pre-Construction Volumes): _____ CF
9. Identify all selected structural PCSM BMPs and provide the information requested. Calculations attached

DP No.	BMP ID	Series	Vol. Routed to BMP (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				

Total Infiltration & ET Credits (CF):

Non-Structural BMP Volume Credits (CF) (Attach Calculations):

Managed Release Credits (CF) (Attach MRC Design Summary):

Volume Required to Reduce/Manage (CF):

Total Credits (CF):

INFILTRATION INFORMATION	
BMP ID: 1 (Infiltration Bed 1)	<input checked="" type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed: 2	
2. Method(s) used for infiltration testing: Double Ring Infiltrometer	
3. Test Pit Identifiers (from PCSM Plan Drawings): TP-1	
4. Avg Infiltration Rate: 1.5 in/hr	5. FOS: 2 : 1
6. Infiltration rate used for design: 0.75 in/hr	
7. Separation distance between the BMP bottom and bedrock: >2 feet	
8. Separation distance between the BMP bottom and seasonal high-water table: >2 feet	
9. Comments: No groundwater or bedrock were encountered at the test location.	
BMP ID: 2 (Infiltration Bed 2)	
<input checked="" type="checkbox"/> Soil/geologic test results are attached.	
1. No. of infiltration tests completed: 2	
2. Method(s) used for infiltration testing: Double Ring Infiltrometer	
3. Test Pit Identifiers (from PCSM Plan Drawings): TP-2	
4. Avg Infiltration Rate: 0.5 in/hr	5. FOS: 2 : 1
6. Infiltration Rate Used for Design: 0.25 in/hr	
7. Separation distance between the BMP bottom and bedrock: >2 feet	
8. Separation distance between the BMP bottom and seasonal high-water table: >2 feet	
9. Comments: No groundwater or bedrock were encountered at the test location.	
BMP ID: 3 (Infiltration Bed 3)	
<input checked="" type="checkbox"/> Soil/geologic test results are attached.	
1. No. of infiltration tests completed: 2	
2. Method(s) used for infiltration testing: Double Ring Infiltrometer	
3. Test Pit Identifiers (from PCSM Plan Drawings): TP-3	
4. Avg Infiltration Rate: 1 in/hr	5. FOS: 2 : 1
6. Infiltration Rate Used for Design: 0.5 in/hr	
7. Separation distance between the BMP bottom and bedrock: >2 feet	
8. Separation distance between the BMP bottom and seasonal high-water table: >2 feet	
9. Comments: No groundwater or bedrock were encountered at the test location.	

INFILTRATION INFORMATION	
BMP ID: 4 (Infiltration Bed 4)	<input checked="" type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed: 2	
2. Method(s) used for infiltration testing: Double Ring Infiltrometer	
3. Test Pit Identifiers (from PCSM Plan Drawings): TP-6	
4. Avg Infiltration Rate: 1.00 in/hr	5. FOS: 2 : 1
6. Infiltration rate used for design: 0.50 in/hr	
7. Separation distance between the BMP bottom and bedrock: >2 feet	
8. Separation distance between the BMP bottom and seasonal high-water table: >2 feet	
9. Comments: No groundwater or bedrock were encountered at the test location.	
BMP ID: 5 (Infiltration Bed 5)	
<input checked="" type="checkbox"/> Soil/geologic test results are attached.	
1. No. of infiltration tests completed: 2	
2. Method(s) used for infiltration testing: Double Ring Infiltrometer	
3. Test Pit Identifiers (from PCSM Plan Drawings): TP-7	
4. Avg Infiltration Rate: 2.0 in/hr	5. FOS: 2 : 1
6. Infiltration Rate Used for Design: 1.0 in/hr	
7. Separation distance between the BMP bottom and bedrock: >2 feet	
8. Separation distance between the BMP bottom and seasonal high-water table: >2 feet	
9. Comments: No groundwater or bedrock were encountered at the test location.	
BMP ID: 6 (Infiltration Bed 6)	
<input checked="" type="checkbox"/> Soil/geologic test results are attached.	
1. No. of infiltration tests completed: 4	
2. Method(s) used for infiltration testing: Double Ring Infiltrometer	
3. Test Pit Identifiers (from PCSM Plan Drawings): TP-7, TP-8	
4. Avg Infiltration Rate: 0.5 in/hr	5. FOS: 2 : 1
6. Infiltration Rate Used for Design: 0.57 in/hr	
7. Separation distance between the BMP bottom and bedrock: >2 feet	
8. Separation distance between the BMP bottom and seasonal high-water table: >2 feet	
9. Comments: No groundwater or bedrock were encountered at the test location.	

INFILTRATION INFORMATION	
BMP ID: 7 (Infiltration Bed 7)	<input checked="" type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed: 2	
2. Method(s) used for infiltration testing: Double Ring Infiltrometer	
3. Test Pit Identifiers (from PCSM Plan Drawings): TP-8	
4. Avg Infiltration Rate: 0.5 in/hr	5. FOS: 2 : 1
6. Infiltration rate used for design: 0.25 in/hr	
7. Separation distance between the BMP bottom and bedrock: >2 feet	
8. Separation distance between the BMP bottom and seasonal high-water table: >2 feet	
9. Comments: No groundwater or bedrock were encountered at the test location.	
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BMP ID: 8 (Infiltration Bed 8)	<input checked="" type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed: 2	
2. Method(s) used for infiltration testing: Double Ring Infiltrometer	
3. Test Pit Identifiers (from PCSM Plan Drawings): TP-9	
4. Avg Infiltration Rate: 1.5 in/hr	5. FOS: 2 : 1
6. Infiltration Rate Used for Design: 0.75 in/hr	
7. Separation distance between the BMP bottom and bedrock: >2 feet	
8. Separation distance between the BMP bottom and seasonal high-water table: >2 feet	
9. Comments: No groundwater or bedrock were encountered at the test location.	
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BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	

STORMWATER ANALYSIS – PEAK RATE

Surface Water Name: **PROJECT SITE MEETS SMALL SITE**
EXCEPTION - RATE WORKSHEET NOT Discharge Point(s):
REQUIRED

1. The design standard is based on rate requirements in an Act 167 Plan approved by DEP within the past five years.
2. The design standard is based on managing the net change for 2-, 10-, 50-, and 100-year/24-hour storms.
3. An alternative design standard is being used.
4. A printout of DEP's PCSM Spreadsheet – Rate Worksheet is attached.
5. Alternative rate calculations are attached.

6. Identify precipitation amounts. Source of precipitation data:

2-Year/24-Hour Storm: 10-Year/24-Hour Storm

50-Year/24-Hour Storm: 100-Year/24-Hour Storm

7. Report peak discharge rates, pre- and post-construction (without BMPs), based on a time of concentration analysis.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Difference (cfs)
2-Year/24-Hour			
10-Year/24-Hour			
50-Year/24-Hour			
100-Year/24-Hour			

8. Identify all BMPs used to mitigate peak rate differences and provide the requested information.

BMP ID	Inflow to BMP (cfs)				Outflow from BMP (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr

9. Report peak rates for pre-construction and post-construction with BMPs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with BMPs) (cfs)	Difference (cfs)
2-Year/24-Hour			
10-Year/24-Hour			
50-Year/24-Hour			
100-Year/24-Hour			

STORMWATER ANALYSIS – WATER QUALITY

A printout of DEP's PCSM Spreadsheet – Quality Worksheet is attached for all surface waters receiving discharges.

LONG-TERM O&M

Describe the long-term operation and maintenance (O&M) requirements for each selected PCSM BMP.

BMP ID	O&M Requirements
<p>1-8 (Infiltration Bed)</p>	<p>ALL DRAINAGE STRUCTURES ASSOCIATED WITH THE INFILTRATION BED SHOULD BE INSPECTED AND CLEANED AT LEAST 2 TIMES PER YEAR.</p> <p>PROHIBIT VEHICULAR ACCESS ON ANY SUBSURFACE INFILTRATION AREAS.</p> <p>IF STANDING WATER IS OBSERVED AT AN INFILTRATION BED LOCATION FOR LONGER THAN 72 HOURS, THE TRENCH MAY BE FAILING AND FURTHER INVESTIGATION IS NECESSARY:</p> <p>a. CONFIRM STANDING WATER IS NOT ASSOCIATED WITH HIGH GROUND WATER FLOWS</p> <p>b. CONDUCT SMALL (1 FOOT X 1 FOOT) TEST PIT EXPLORATIONS THROUGH PAVEMENT TO CONFIRM GEOTEXTILE FUNCTIONALITY. IF CLOGGED, REPLACEMENT OF GEOTEXTILE IS REQUIRED.</p> <p>c. FOR POORLY INFILTRATING UNDERLYING SOILS, CONDUCT INFILTRATION TESTING ADJACENT TO THE SCM FOOTPRINT AT THE BOTTOM ELEVATION AND AT THE SUCCESSIVE DEPTHS BELOW SCM BOTTOM TO ASSESS INFILTRATION CAPACITY AND LIMITING ZONES OF UNDERLYING SOILS. IF SUITABLE INFILTRATION RATES WITH NO LIMITING ZONES ARE IDENTIFIED BELOW THE ORIGINAL SCM BOTTOM ELEVATION, RECONSTRUCT THE PERVIOUS PAVING WITH A THICKER AGGREGATE SUBLAYER TO LOWER BOTTOM ELEVATION TO THE DEPTH OF SUITABLE INFILTRATION, REINSTALL PERVIOUS PAVEMENT SURFACE TO PLAN SURFACE GEOMETRY WITH PLAN SPECIFIED MATERIALS AND INSTALLATION METHODS</p>
<p>9 (Vegetated Swale)</p>	<p>MAINTENANCE ACTIVITIES TO BE DONE ANNUALLY:</p> <ul style="list-style-type: none"> -INSPECT AND CORRECT EROSION PROBLEMS, DAMAGE TO VEGETATION, AND SEDIMENT AND DEBRIS ACCUMULATION (ADDRESS WHEN >3 INCHES AT ANY SPOT OR COVERING VEGETATION). -INSPECT VEGETATION ON SIDE SLOPES FOR EROSION AND FORMATION OF RILLS OR GULLIES. CORRECT AS NEEDED. -INSPECT FOR POOLS OF STANDING WATER. DEWATER AND DISCHARGE TO AN APPROVED LOCATION AND RESTORE TO DESIGN GRADE. -MOW AND TRIM VEGETATION TO ENSURE SAFETY, AESTHETICS, PROPER SWALE OPERATION, OR TO SUPPRESS WEEDS AND INVASIVE VEGETATION. DISPOSE OF CUTTINGS IN A LOCAL COMPOSTING FACILITY. MOW ONLY WHEN SWALE IS DRY TO AVOID RUTTING. -INSPECT FOR LITTER AND REMOVE PRIOR TO MOWING. -INSPECT FOR UNIFORMITY IN CROSS SECTION AND LONGITUDINAL SLOPE. CORRECT AS NEEDED. -INSPECT SWALE INLET AND OUTLET FOR SIGNS OF EROSION OR BLOCKAGE. CORRECT AS NEEDED. <p>MAINTENANCE ACTIVITIES TO BE PERFORMED AS NEEDED:</p> <ul style="list-style-type: none"> -PLANT ALTERNATIVE GRASS SPECIES IN THE EVENT OF UNSUCCESSFUL ESTABLISHMENT. -RESEED BARE AREAS AND INSTALL APPROPRIATE EROSION CONTROL MEASURES WHEN NATIVE SOIL IS EXPOSED OR EROSION CHANNELS ARE FORMING. -ROTOTILL AND REPLANT SWALE IF DRAW DOWN TIME IS MORE THAN 48 HOURS. -WATER DURING DRY PERIODS, FERTILIZE, AND APPLY PESTICIDE ONLY WHEN ABSOLUTELY NECESSARY. <p>ADDITIONAL MAINTENANCE FOR WINTER CONDITIONS:</p> <ul style="list-style-type: none"> -INSPECT SWALE IMMEDIATELY AFTER THE SPRING MELT, REMOVE RESIDUALS (E.G. SAND) AND REPLACE DAMAGED VEGETATION WITHOUT DISTURBING REMAINING VEGETATION. -IF ROADSIDE OR PARKING LOT RUNOFF IS DIRECTED TO THE SWALE, MULCHING AND/OR SOIL AERATION/MANIPULATION MAY BE REQUIRED IN THE SPRING TO RESTORE SOIL STRUCTURE AND MOISTURE CAPACITY AND TO REDUCE THE IMPACTS OF DEICING AGENTS. <p>USE SALT-TOLERANT VEGETATION IN SWALES.</p>

PCSM PLAN DEVELOPER

I am trained and experienced in PCSM methods.

I am a licensed professional.

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PCSM Plan Developer Signature

9/8/2022

Date