3800-PM-BCW0406b Rev. 12/2019 PCSM Module 2 pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF CLEAN WATER

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

Applicant: 222 Church Road LLC			Project Site Name: 222 Church Road							
Surface Water Name(s): Tookany Creek			Surface Water Use(s): WWF, MF							
PCSM PLAN INFORMATION										
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	001	Bioretention Basin	6.4.5	40.06893	-75.11775	2.50				
Undetained	Areas:	0.46 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 20 'Record Plan (2 of 6) - PCSM Notes' for the overall site's Sequence of Construction and list of critical stages of PCSM BMP installation.										
Refer to Sheet 20 'Record Plan (2 of 6) - PCSM Notes' and Sheet 24 'Record Plan (6 of 6) - PCSM Details' for the inspection and maintenance procedures for the proposed PCSM BMPs.										

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3.	☐ Plan drawings have been developed for the project and will be available on-site.
4.	☐ Plan drawings have been developed for the project and are attached to the NOI/application.
5.	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.
	There are no known naturally occurring formations or soil conditions that have the potential to cause pollution during earth disturbance activities.
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.
	There is a potential for thermal impacts to surface waters in instances where surface runoff is directly conveyed to a receiving stream without adequate attenuation or cooling. To avoid thermal impacts, the following measures are proposed in the post-construction conditions: a Bioretention Basin, shading from proposed landscaping, and conveyance of stormwater via underground pipes. These measures will help to control runoff volume and peak rate thereby providing additional cooling time or provide shading of runoff and thereby minimizing thermal impactst to the receiving stream.
8.	☐ The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.
9.	A pre-development site characterization has been performed.

STORMWATER ANALYSIS – RUNOFF VOLUME											
Surface Water Name: Tookany 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 alternat	3.										
4. A printout	of DEP's	PCSM S	preadsheet – Vo	olume Worksh	neet is attache	d.					
5. 2-Year/24-Hou	r Storm E	Event:	3.30 in	ches So	ource of precip	itation data:	NOAA A	Atlas 14, Volume	e 2, Version 3		
6. Stormwater Ru	ınoff Volu	ıme, Pre-	-Construction Co	onditions:	9,245	CF	⊠ Calcu	lations attached			
7. Stormwater Ru	ınoff Volu	ıme, Pos	t-Construction C	Conditions:	20,698	CF CF	⊠ Calcu	lations attached			
8. Net Change (F	ost-Cons	struction -	Pre-Construct	ion Volumes):	11,454	CF					
9. Identify all sele	cted stru	ctural PC	CSM BMPs and	provide the in	formation reqเ	uested.	⊠ Calcu	lations attached			
DP No. BM	P ID S	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)
001 0	01	N	18,285	3,971	0.66	43	\boxtimes	4.00	9,273	8,452	3,923

Total Infiltration & ET Credits (CF): 12,376

Non-Structural BMP Volume Credits (CF) (Attach Calculations): 0

Managed Release Credits (CF) (Attach MRC Design Summary): 0

Volume Required to Reduce/Manage (CF): 11,454

Total Credits (CF): 12,376

INFILTRATION INFORMATION								
BN	BMP ID: 001 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-5 and TP-6							
4.	Avg Infiltration Rate: 1.32 in/hr 5. FOS: 2 : 1							
6.	Infiltration rate used for design: 0.66 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: Limiting Zones were not encountered at both test pit locations to a depth of 126.4 which is more than 2 feet below the proposed bottom of planting soil elevation of 129.00.							
BN	IP ID: □ Soil/geologic test results are attached.							
1.	No. of infiltration tests completed:							
2.	Method(s) used for infiltration testing:							
3.	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:							
BN	IP ID: 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	: Tookany	Discharge Point(s): 001								
1. The design sta	1. The design standard is based on rate requirements in an Act 167 Plan approved by DEP within the past five years.							ears.		
2. The design sta	andard is base	ed on manaç	ging the net	change for 2	-, 10-, 50-, a	nd 100-yea	r/24-hour s	torms.		
3. An alternative	design standa	ard 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: NOAA Atlas 14, Volume 2, Version 3										
2-Year/24-Hour S	torm: 3.3	0		10-Yea	r/24-Hour S	torm	4.91			
50-Year/24-Hour \$	Storm: 6.9	0		100-Ye	ar/24-Hour	Storm	7.90			
7. Report peak disch	arge rates, pr	e- and post-	construction	ı (without BM	IPs), based	on a time of	concentrat	tion analysi	S.	
Design Storm	Pre-Cons	truction Pe	eak Rate	Post-Construction Peak Rate (cfs)			Di	Difference (cfs)		
2-Year/24-Hour		7.15		13.10			+5.95			
10-Year/24-Hour		9.28		16.98			+7.70			
50-Year/24-Hour		11.01		20.14 +9.13						
100-Year/24-Hour		11.66				+9.67				
8. Identify all BMPs เ	used to mitiga	te peak rate	differences	and provide	the requeste	ed information	on.			
BMP ID			Inflow to	BMP (cfs) Outflow from BMP (cfs)						
DIVIP ID		2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr	
001		10.51	13.65	16.19	17.15	2.08	3.95	5.95	6.69	
9. Report peak rates	for pre-constr	ruction and p	oost-constru	ction with BN	/IPs and ider	ntify the diffe	erences.			
Design Storm	Pre-Cons	truction Pe (cfs)	ak Rate	Post-Construction Peak Rate (with BMPs) (cfs) Difference (cfs)			fs)			
2-Year/24-Hour	_	7.15								
10-Year/24-Hour		9.28		7.28			-2.00			
50-Year/24-Hour 11.01			9.90				-1.11			
100-Year/24-Hour	100-Year/24-Hour 11.66			10.87			-0.79			

	STORMWATER ANAL	YSIS - WATER O	QUALITY								
☑ A printout of DEP's PCSM Spreadsheet – Quality Worksheet is attached for all surface waters receiving discharges.											
	LONG-1	TERM O&M									
Describe the	scribe the long-term operation and maintenance (O&M) requirements for each selected PCSM BMP.										
BMP ID	O&M Requirements										
001	Refer to Sheet 20 'Record Plan (2 of 6) - PCSM for the long-term operations and maintenance										
	PCSM PLAI	N DEVELOPER									
	ned and experienced in PCSM methods.	☐ I am a licen	sed professional.								
Name: Robert E. Blue, Jr., P.E.		Title:	President								
Company: Robert E. Blue Consulting Engineers, P.C.		Phone No.:	610-277-9441								
Address: 1149 Skippack Pike		Email:	rblue@robertblue.com								
City, State, Z	ZIP: Blue Bell, PA, 19422	License No.:	PE26169-E								
License Type	e: Professional Engineer	Exp. Date	9/30/2023								
	PCSM Plan Developer Signature	9/12/2023 Date									