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: **Maiden Creek Associates, L.P. c/o Steve Wolfson**

Project Site Name: **Proposed Warehouse Facility**

Surface Water Name(s): **Peters Creek**

Surface Water Use(s): **EV, 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)
002	1	Dry Extended Detention Basin (MRC)	6.6.3	40.457175	-75.886589	27.24
002	2	Dry Extended Detention Basin (MRC)	6.6.3	40.458047	-75.886323	24.56
003	3	Dry Extended Detention Basin (MRC)	6.6.3	40.459473	-75.890367	15.44
002,003	4	Level Spreader	6.8.1	-	-	-
001	5	Vegetated Swale	6.4.8	-	-	-

Undetained Areas: 12.20 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 PCSWM Detail Sheet C-646 for Sequence of PCSWM BMP implementation and for critical stages information.

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. **Geological formations are not anticipated to be encountered during and after construction activities. If during construction geologic formations are encountred, the contractor is to contact the owner, the design professional, Berks County Conserivation District, and the PADEP for proper handling.**
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. **A potential for thermal impacts exists in instances where surface runoff is directly conveyed to a receiving stream without adequate attenuation or cooling. To avoid thermal impacts, the following are proposed: MRC basins with outlet structures to increase detention times and level spreaders at each discharge point to filter and release the flow of water over a longer length and time. Thermal impacts will also be avoided through the use of the various plantings within the MRC basins which will filter, detain and provide evapotranspiration throughout the BMP system. All of these measures will help to control runoff volume, rate and water quality and thereby minimize thermal impacts 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: **Peters Creek** **Discharge Point(s):** **001,002,003**

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: **2.88** inches Source of precipitation data: **Maidencreek Township Ordinance**
6. Stormwater Runoff Volume, Pre-Construction Conditions: **70,765** CF ☒ Calculations attached
7. Stormwater Runoff Volume, Post-Construction Conditions: **516,012** CF ☒ Calculations attached
8. Net Change (Post-Construction – Pre-Construction Volumes): **445,248** 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)
002	1	-	200,637	70,005	0	96	☒	2.5	77,644	0	45,153
002	2	-	192,971	65,195	0	96	☒	2.5	72,364	0	42,051
003	3	-	99,622	51,300	0	96	☒	2.5	43,739	0	33,089
							☐				
							☐				
							☐				
							☐				
							☐				
							☐				

Total Infiltration & ET Credits (CF): **120,293**

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

Managed Release Credits (CF) (Attach MRC Design Summary): **372,938**

Volume Required to Reduce/Manage (CF): **445,248**

Total Credits (CF): **499,752**

INFILTRATION INFORMATION	
BMP ID: 1,2,3	☒ Soil/geologic test results are attached.
1. No. of infiltration tests completed: **24**	
2. Method(s) used for infiltration testing: **Double-Ring Infiltrometer & Cased Borehole**	
3. Test Pit Identifiers (from PCSM Plan Drawings): **SWB/SPP**	
4. Avg Infiltration Rate: **0.58** in/hr	5. FOS: **2** : 1
6. Infiltration rate used for design: **0** in/hr	
7. Separation distance between the BMP bottom and bedrock: **N/A** feet	
8. Separation distance between the BMP bottom and seasonal high-water table: **N/A** feet	
9. Comments: **Preliminary Geotechnical Investigaiton & SWM Evaluation Report is provided in Appendix.**	
BMP 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:	
BMP 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: **Peters Creek** **Discharge Point(s):** **001,002,003**

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: Maidencreek Township

2-Year/24-Hour Storm:	2.88	10-Year/24-Hour Storm	4.56
50-Year/24-Hour Storm:	6.48	100-Year/24-Hour Storm	7.44

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	31.81	210.99	+179.18
10-Year/24-Hour	95.89	375.74	+279.85
50-Year/24-Hour	183.90	580.97	+397.07
100-Year/24-Hour	231.10	687.48	+456.38

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
1	83.56	143.05	241.64	251.28	3.88	12.96	32.30	46.70
2	80.66	135.58	200.82	234.03	3.51	11.01	21.83	37.83
3	41.14	73.37	113.13	133.70	1.09	3.42	7.49	12.11

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	31.81	9.32	-22.49
10-Year/24-Hour	95.89	41.98	-53.91
50-Year/24-Hour	183.90	91.60	-92.30
100-Year/24-Hour	231.10	132.36	-98.74

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
1,2,3	Refer to Sheet C-647. Table Titled "Long-Term Operation and Maintenance Schedule"
4	Refer to Sheet C-647. Table Titled "Long-Term Operation and Maintenance Schedule"

PCSM PLAN DEVELOPER

☒ I am trained and experienced in PCSM methods.

☒ I am a licensed professional.

Name:	**Cornelius Brown, P.E.**	Title:	**Principal, Regional Manager**
Company:	**Bohler Engineering PA, LLC**	Phone No.:	**267-402-3400**
Address:	**1515 Market Street, Suite 920**	Email:	**cbrown@bohlereng.com**
City, State, ZIP:	**Philadelphia, PA 19102**	License No.:	**PE075317**
License Type:	**Professional Engineer**	Exp. Date	**9/30/2023**

PCSM Plan Developer Signature

06/30/2023

Date