



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF CLEAN WATER

**Discharges of Stormwater Associated with Construction Activities  
Post-Construction Stormwater Management (PCSM) Module 2**

Applicant: **Quaker Valley School District**

Project Site Name: **New High School Campus**

**Pre-Development Site Characterization**

1. Was a pre-development site characterization completed for this project?  Yes  No

If Yes, describe the activities undertaken.

Please see provided PDSC spreadsheet, geotechnical report for known infiltration hazards, and associated PDSC plan.

2. No. Test Pits completed: 6 No. Boreholes completed: 14

3. Number of Infiltration Tests completed: 2 Method(s): Double Ring Infiltrometer

4. Project Site Area: 69.56 acres Area investigated for infiltration capabilities: 0.5 acres

5. DEP's Pre-Development Site Characterization Spreadsheet has been completed and is attached.  Yes  No

6. The infiltration potential of the site is:  Limited  Marginal  Feasible  Not Recommended

7. If the infiltration potential of the site is limited or is otherwise not advised, explain the limitations.

Please see provided PDSC spreadsheet, geotechnical report for known infiltration hazards, and associated PDSC plan.

8. Is the project site located in an area with known karst features?  Yes  No

If Yes, was a subsurface geotechnical investigation conducted and is a report attached?  Yes  No

9. Are there natural stormwater features on-site that will be protected?  Yes  No

If Yes, describe the features and any increase or decrease in stormwater runoff volume to the features.

Existing Streams and Wetlands exist on site, the provided permit plans show the areas to be avoided and protected, including physical barriers, riparian buffer planting, and maximizing the existing drainage areas to the extent practicable. There are three stream crossings proposed, and a Joint Permit Application has been submitted for impacts associated with the project development.



**PCSM SCM Inventory**

1. Identify all PCSM SCMs planned for the project site and provide the information requested.

SCM ID	SCM Name	Latitude	Longitude	DA Treated (acres)	Infiltration?	Factor of Safety	Design Infiltration Rate or Ksat (in/hr)
1	Rate Control SCM	40.568136	-80.202275	10.770	<input type="checkbox"/>		
2	Dry Extended Detention Basin	40.566414	-80.203725	13.090	<input type="checkbox"/>		
3	Rain Garden / Bioretention	40.563236	-80.195936	0.180	<input type="checkbox"/>		
4	Rate Control SCM	40.563083	-80.196100	1.100	<input type="checkbox"/>		
5	Rain Garden / Bioretention	40.563503	-80.198103	0.610	<input type="checkbox"/>		
6	Rate Control SCM	40.563503	-80.198103	4.640	<input type="checkbox"/>		
7	Rain Garden / Bioretention	40.564783	-80.198578	0.120	<input type="checkbox"/>		
8	Rate Control SCM	40.564783	-80.198578	1.070	<input type="checkbox"/>		
9	Rain Garden / Bioretention	40.565694	-80.199350	0.340	<input type="checkbox"/>		
10	Rate Control SCM	40.565411	-80.199236	4.250	<input type="checkbox"/>		
11	Rain Garden / Bioretention	40.565331	-80.200225	0.350	<input type="checkbox"/>		
12	Rate Control SCM	40.565397	-80.19985	0.620	<input type="checkbox"/>		
13	Rain Garden / Bioretention	40.565608	-80.200022	0.120	<input type="checkbox"/>		
14	Rate Control SCM	40.565767	-80.200144	1.790	<input type="checkbox"/>		
15	Rain Garden / Bioretention	40.567039	-80.200903	0.180	<input type="checkbox"/>		
16	Rate Control SCM	40.567386	-80.201269	1.420	<input type="checkbox"/>		
17	Rain Garden / Bioretention	40.566781	-80.201900	0.200	<input type="checkbox"/>		
18	Rate Control SCM	40.566781	-80.201900	4.830	<input type="checkbox"/>		

2. Area not treated by an SCM, Earth Disturbance Area (acres): 21.80      Area not treated by an SCM, Project Site Area (acres): 54.22

3.  One or more SCMs will be located off-site.      SCM IDs:



PCSM SCM Inventory					
5. List the critical stages for each SCM and identify the licensed professional and/or company that will sign SCM Construction Certification forms for the SCM.					
SCM ID	Critical Stages	LP Name	Company	LP Employed by Company	Contract
1	Excavation, Bedding, Geotextile, Chamber Installation, Sewer Connections, Underdrain and Orifices		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Excavation, Geotextile, Outlet Structure, Filter Diaphragm, Emergency Spillway, Forebay, Permanent Stabilization		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Excavation, Geotextile, Soil Media, Outlet Structure, Anti-Seep Collars, Plantings, Permanent Stabilization		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Excavation, Bedding, Geotextile, Chamber Installation, Sewer Connections, Underdrain and Orifices, Diversion Structure		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Excavation, Geotextile, Soil Media, Outlet Structure, Anti-Seep Collars, Plantings, Permanent Stabilization		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Excavation, Bedding, Geotextile, Chamber Installation, Sewer Connections, Underdrain and Orifices, Diversion Structure		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	Excavation, Geotextile, Soil Media, Outlet Structure, Anti-Seep Collars, Plantings, Permanent Stabilization		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	Excavation, Bedding, Geotextile, Chamber Installation, Sewer Connections, Underdrain and Orifices, Diversion Structure		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9	Excavation, Geotextile, Soil Media, Outlet Structure, Anti-Seep Collars, Plantings, Permanent Stabilization		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10	Excavation, Bedding, Geotextile, Chamber Installation, Sewer Connections, Underdrain and Orifices, Diversion Structure		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11	Excavation, Geotextile, Soil Media, Outlet Structure, Anti-Seep Collars, Plantings, Permanent Stabilization		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12	Excavation, Bedding, Geotextile, Chamber Installation, Sewer Connections, Underdrain and Orifices, Diversion Structure		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
13	Excavation, Geotextile, Soil Media, Outlet Structure, Anti-Seep Collars, Plantings, Permanent Stabilization		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

14	Excavation, Bedding, Geotextile, Chamber Installation, Sewer Connections, Underdrain and Orifices, Diversion Structure		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
15	Excavation, Geotextile, Soil Media, Outlet Structure, Anti-Seep Collars, Plantings, Permanent Stabilization		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16	Excavation, Bedding, Geotextile, Chamber Installation, Sewer Connections, Underdrain and Orifices, Diversion Structure		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
17	Excavation, Geotextile, Soil Media, Outlet Structure, Anti-Seep Collars, Plantings, Permanent Stabilization		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
18	Excavation, Bedding, Geotextile, Chamber Installation, Sewer Connections, Underdrain and Orifices, Diversion Structure		Civil & Environmental Consultants, Inc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Stormwater Analysis – Runoff Volume**

**Surface Water Name:** Discharge to MS4 **POA(s):** 1

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: 2.6 inches Source of precipitation data: NOAA/Township
6. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Pre-Construction: 99,116 CF
7. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Post-Construction: 243,653 CF
8. Net Change (Post-Construction – Pre-Construction Volumes): 144,537 CF
9. Identify all selected structural PCSM SCMs and provide the information requested.  Calculations attached

SCM ID	Series	MRC	Vol. Routed to SCM (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
1	Off-Site	<input type="checkbox"/>	16,247				<input type="checkbox"/>				
2	Off-Site	<input type="checkbox"/>	20,000	5,000	0	12	<input checked="" type="checkbox"/>	2.0	37,066	0	314
3	to SCM No. 1	<input type="checkbox"/>	275	4,180	0	12	<input checked="" type="checkbox"/>	1.5	156	0	251

4	to SCM No. 1	<input checked="" type="checkbox"/>			0	12	<input type="checkbox"/>	0.5			
5	to SCM No. 1	<input type="checkbox"/>	1,901	5,036	0	12	<input checked="" type="checkbox"/>	1.5	736	0	303
6	to SCM No. 1	<input checked="" type="checkbox"/>					<input type="checkbox"/>				
7	to SCM No. 1	<input type="checkbox"/>	336	370	0	12	<input checked="" type="checkbox"/>	1.5	64	0	22
8	to SCM No. 1	<input checked="" type="checkbox"/>					<input type="checkbox"/>				
9	to SCM No. 2	<input type="checkbox"/>	805	481	0	12	<input checked="" type="checkbox"/>	1.5	363	0	29
10	to SCM No. 2	<input checked="" type="checkbox"/>					<input type="checkbox"/>				
11	to SCM No. 1	<input type="checkbox"/>	1,600	3,180	0	12	<input checked="" type="checkbox"/>	1.5	583	0	191
12	to SCM No. 1	<input checked="" type="checkbox"/>					<input type="checkbox"/>				
13	to SCM No. 2	<input type="checkbox"/>	274	253	0	12	<input checked="" type="checkbox"/>	1.5	53	0	15
14	to SCM No. 2	<input checked="" type="checkbox"/>					<input type="checkbox"/>				
15	to SCM No. 2	<input type="checkbox"/>	403	742	0	12	<input checked="" type="checkbox"/>	1.5	102	0	45
16	to SCM No. 2	<input checked="" type="checkbox"/>					<input type="checkbox"/>				
17	to SCM No. 1	<input type="checkbox"/>	340	3,965	0	12	<input checked="" type="checkbox"/>	1.5	175	0	238
18	to SCM No. 1	<input checked="" type="checkbox"/>					<input type="checkbox"/>				

**Total Infiltration & ET Credits (CF):** 1,408

**Other Credits (CF) (Attach Calculations):** 33,102  
**Managed Release Credits (CF) (Attach MRC Spreadsheet):** 111,730  
**Volume Required to Manage (CF):** 144,537  
**Total Credits (CF):** 149,268

Stormwater Analysis – Runoff Volume											
<b>Surface Water Name:</b> Discharge to Non-Surface Waters			<b>POA(s):</b> 2								
10. <input type="checkbox"/> The design standard is based on volume management requirements in an Act 167 Plan approved by DEP within the past five years.											
11. <input type="checkbox"/> The design standard is based on managing the net change for storms up to and including the 2-year/24-hour storm.											
12. <input type="checkbox"/> An alternative design standard is being used.											
13. <input checked="" type="checkbox"/> A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.											
14. 2-Year/24-Hour Storm Event: 2.6 inches Source of precipitation data: NOAA/Township											
15. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Pre-Construction: 19,595 CF											
16. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Post-Construction: 7,061 CF											
17. Net Change (Post-Construction – Pre-Construction Volumes): -12,534 CF											
18. Identify all selected structural PCSM SCMs and provide the information requested. <input checked="" type="checkbox"/> Calculations attached											
SCM ID	Series	MRC	Vol. Routed to SCM (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
1		<input type="checkbox"/>					<input type="checkbox"/>				

**Total Infiltration & ET Credits (CF):**

**Other Credits (CF) (Attach Calculations):**  
**Managed Release Credits (CF) (Attach MRC Spreadsheet):**  
**Volume Required to Manage (CF):** -12,534  
**Total Credits (CF):**

Stormwater Analysis – Runoff Volume											
<b>Surface Water Name:</b> Discharge to Non-Surface Waters			<b>POA(s):</b> 3								
19. <input type="checkbox"/> The design standard is based on volume management requirements in an Act 167 Plan approved by DEP within the past five years.											

20.  The design standard is based on managing the net change for storms up to and including the 2-year/24-hour storm.

21.  An alternative design standard is being used.

22.  A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.

23. 2-Year/24-Hour Storm Event: 2.6 inches Source of precipitation data: NOAA/Township

24. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Pre-Construction: 6,072 CF

25. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Post-Construction: 2,946 CF

26. Net Change (Post-Construction – Pre-Construction Volumes): -3,127 CF

27. Identify all selected structural PCSM SCMs and provide the information requested.  Calculations attached

SCM ID	Series	MRC	Vol. Routed to SCM (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
1		<input type="checkbox"/>					<input type="checkbox"/>				

**Total Infiltration & ET Credits (CF):**

**Other Credits (CF) (Attach Calculations):**

**Managed Release Credits (CF) (Attach MRC Spreadsheet):**

**Volume Required to Manage (CF):** -3,127

**Total Credits (CF):**

Stormwater Analysis – Runoff Volume	
<b>Surface Water Name:</b> Discharge to Non-Surface Waters	<b>POA(s):</b> 4
28. <input type="checkbox"/> The design standard is based on volume management requirements in an Act 167 Plan approved by DEP within the past five years.	
29. <input type="checkbox"/> The design standard is based on managing the net change for storms up to and including the 2-year/24-hour storm.	
30. <input type="checkbox"/> An alternative design standard is being used.	
31. <input checked="" type="checkbox"/> A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.	
32. 2-Year/24-Hour Storm Event: 2.6 inches Source of precipitation data: NOAA/Township	
33. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Pre-Construction: 7,127 CF	
34. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Post-Construction: 4,126 CF	
35. Net Change (Post-Construction – Pre-Construction Volumes): -3,001 CF	
36. Identify all selected structural PCSM SCMs and provide the information requested. <input checked="" type="checkbox"/> Calculations attached	

SCM ID	Series	MRC	Vol. Routed to SCM (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
1		<input type="checkbox"/>					<input type="checkbox"/>				

**Total Infiltration & ET Credits (CF):**

**Other Credits (CF) (Attach Calculations):**

**Managed Release Credits (CF) (Attach MRC Spreadsheet):**

**Volume Required to Manage (CF):** -3,001

**Total Credits (CF):**

Stormwater Analysis – Runoff Volume											
<b>Surface Water Name:</b> Discharge to Non-Surface Waters						<b>POA(s):</b> 5					
37. <input type="checkbox"/> The design standard is based on volume management requirements in an Act 167 Plan approved by DEP within the past five years.											
38. <input type="checkbox"/> The design standard is based on managing the net change for storms up to and including the 2-year/24-hour storm.											
39. <input type="checkbox"/> An alternative design standard is being used.											
40. <input checked="" type="checkbox"/> A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.											
41. 2-Year/24-Hour Storm Event: 2.6 inches Source of precipitation data: NOAA/Township											
42. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Pre-Construction: 2,326 CF											
43. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Post-Construction: 1,541 CF											
44. Net Change (Post-Construction – Pre-Construction Volumes): -785 CF											
45. Identify all selected structural PCSM SCMs and provide the information requested. <input checked="" type="checkbox"/> Calculations attached											
SCM ID	Series	MRC	Vol. Routed to SCM (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
1		<input type="checkbox"/>					<input type="checkbox"/>				

**Total Infiltration & ET Credits (CF):**

**Other Credits (CF) (Attach Calculations):**

**Managed Release Credits (CF) (Attach MRC Spreadsheet):**

**Volume Required to Manage (CF):** -785

**Total Credits (CF):**

Stormwater Analysis – Runoff Volume											
<b>Surface Water Name:</b>			<b>Discharge to Non-Surface Waters</b>					<b>POA(s): 6</b>			
46. <input type="checkbox"/> The design standard is based on volume management requirements in an Act 167 Plan approved by DEP within the past five years.											
47. <input type="checkbox"/> The design standard is based on managing the net change for storms up to and including the 2-year/24-hour storm.											
48. <input type="checkbox"/> An alternative design standard is being used.											
49. <input checked="" type="checkbox"/> A printout of DEP’s PCSM Spreadsheet – Volume Worksheet is attached.											
50. 2-Year/24-Hour Storm Event: 2.6 inches Source of precipitation data: NOAA/Township											
51. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Pre-Construction: 1,465 CF											
52. Stormwater Runoff Volume @ 2-Year/24-Hour Storm, Post-Construction: 887 CF											
53. Net Change (Post-Construction – Pre-Construction Volumes): -578 CF											
54. Identify all selected structural PCSM SCMs and provide the information requested. <input checked="" type="checkbox"/> Calculations attached											
SCM ID	Series	MRC	Vol. Routed to SCM (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
1		<input type="checkbox"/>					<input type="checkbox"/>				

**Total Infiltration & ET Credits (CF):**

**Other Credits (CF) (Attach Calculations):**

**Managed Release Credits (CF) (Attach MRC Spreadsheet):**

**Volume Required to Manage (CF): -578**

**Total Credits (CF):**

Stormwater Analysis – Peak Rate								
<b>Surface Water Name:</b> Discharge to MS4					<b>POA(s):</b> 1			
1. <input type="checkbox"/> The design standard is based on rate requirements in an Act 167 Plan approved by DEP within the past five years.								
2. <input type="checkbox"/> The design standard is based on managing the net change for 2-, 10-, 50-, and 100-year/24-hour storms.								
3. <input type="checkbox"/> An alternative design standard is being used.								
4. <input checked="" type="checkbox"/> DEP's PCSM Spreadsheet – Rate Worksheet was used for peak rate calculations and is attached.								
5. <input type="checkbox"/> Alternative rate calculations are attached.								
6. Identify precipitation amounts. Source of precipitation data: NOAA/Township								
2-Year/24-Hour Storm:		2.6			10-Year/24-Hour Storm		3.9	
50-Year/24-Hour Storm:		4.64			100-Year/24-Hour Storm		5.2	
7. Identify all SCMs used to mitigate peak rate differences and provide the requested information.								
SCM ID	Inflow to SCM (cfs)				Outflow from SCM (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
1								
2								
3								
4								
8. Report peak rates for pre-construction and post-construction with SCMs and identify the differences.								
Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)		Post-Construction Peak Rate with SCMs (cfs)	Difference (cfs)			
2-Year/24-Hour	84.50	139.12		75.62	-8.88			
10-Year/24-Hour	202.22	294.46		175.53	-26.69			
50-Year/24-Hour	276.89	390.27		246.42	-30.47			
100-Year/24-Hour	335.61	464.82		300.25	-35.36			

Stormwater Analysis – Peak Rate								
<b>Surface Water Name:</b> Discharge to Non-Surface Waters					<b>POA(s):</b> 2			
9. <input type="checkbox"/> The design standard is based on rate requirements in an Act 167 Plan approved by DEP within the past five years.								
10. <input type="checkbox"/> The design standard is based on managing the net change for 2-, 10-, 50-, and 100-year/24-hour storms.								
11. <input type="checkbox"/> An alternative design standard is being used.								
12. <input checked="" type="checkbox"/> DEP's PCSM Spreadsheet – Rate Worksheet was used for peak rate calculations and is attached.								
13. <input type="checkbox"/> Alternative rate calculations are attached.								
14. Identify precipitation amounts. Source of precipitation data: NOAA/Township								
2-Year/24-Hour Storm:		2.6			10-Year/24-Hour Storm		3.9	

50-Year/24-Hour Storm: 4.64		100-Year/24-Hour Storm 5.2						
15. Identify all SCMs used to mitigate peak rate differences and provide the requested information.								
SCM ID	Inflow to SCM (cfs)				Outflow from SCM (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
1								
16. Report peak rates for pre-construction and post-construction with SCMs and identify the differences.								
Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Post-Construction Peak Rate with SCMs (cfs)	Difference (cfs)				
2-Year/24-Hour	4.86		2.89	-1.97				
10-Year/24-Hour	16.67		7.56	-9.11				
50-Year/24-Hour	24.76		10.63	-14.13				
100-Year/24-Hour	31.32		13.07	-18.25				

Stormwater Analysis – Peak Rate								
<b>Surface Water Name:</b> Discharge to Non-Surface Waters		<b>POA(s):</b> 3						
17. <input type="checkbox"/> The design standard is based on rate requirements in an Act 167 Plan approved by DEP within the past five years.								
18. <input type="checkbox"/> The design standard is based on managing the net change for 2-, 10-, 50-, and 100-year/24-hour storms.								
19. <input type="checkbox"/> An alternative design standard is being used.								
20. <input checked="" type="checkbox"/> DEP’s PCSM Spreadsheet – Rate Worksheet was used for peak rate calculations and is attached.								
21. <input type="checkbox"/> Alternative rate calculations are attached.								
22. Identify precipitation amounts. Source of precipitation data: NOAA/Township								
2-Year/24-Hour Storm: 2.6		10-Year/24-Hour Storm 3.9						
50-Year/24-Hour Storm: 4.64		100-Year/24-Hour Storm 5.2						
23. Identify all SCMs used to mitigate peak rate differences and provide the requested information.								
SCM ID	Inflow to SCM (cfs)				Outflow from SCM (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
1								
24. Report peak rates for pre-construction and post-construction with SCMs and identify the differences.								
Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Post-Construction Peak Rate with SCMs (cfs)	Difference (cfs)				
2-Year/24-Hour	1.33		1.26	-0.07				
10-Year/24-Hour	6.45		3.42	-3.03				
50-Year/24-Hour	10.13		4.85	-5.28				
100-Year/24-Hour	13.16		5.99	7.17				
Stormwater Analysis – Peak Rate								

<b>Surface Water Name: Discharge to Non-Surface Waters</b>		<b>POA(s): 4</b>						
25. <input type="checkbox"/> The design standard is based on rate requirements in an Act 167 Plan approved by DEP within the past five years.								
26. <input type="checkbox"/> The design standard is based on managing the net change for 2-, 10-, 50-, and 100-year/24-hour storms.								
27. <input type="checkbox"/> An alternative design standard is being used.								
28. <input checked="" type="checkbox"/> DEP's PCSM Spreadsheet – Rate Worksheet was used for peak rate calculations and is attached.								
29. <input type="checkbox"/> Alternative rate calculations are attached.								
30. Identify precipitation amounts.		Source of precipitation data: NOAA/Township						
2-Year/24-Hour Storm:	2.6	10-Year/24-Hour Storm	3.9					
50-Year/24-Hour Storm:	4.64	100-Year/24-Hour Storm	5.2					
31. Identify all SCMs used to mitigate peak rate differences and provide the requested information.								
SCM ID	Inflow to SCM (cfs)				Outflow from SCM (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
1								
32. Report peak rates for pre-construction and post-construction with SCMs and identify the differences.								
Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Post-Construction Peak Rate with SCMs (cfs)	Difference (cfs)				
2-Year/24-Hour	1.51		1.48	-0.03				
10-Year/24-Hour	8.22		4.60	-3.62				
50-Year/24-Hour	13.22		6.69	-6.53				
100-Year/24-Hour	17.37		8.38	-8.99				

Stormwater Analysis – Peak Rate									
<b>Surface Water Name: Discharge to Non-Surface Waters</b>		<b>POA(s): 5</b>							
33. <input type="checkbox"/> The design standard is based on rate requirements in an Act 167 Plan approved by DEP within the past five years.									
34. <input type="checkbox"/> The design standard is based on managing the net change for 2-, 10-, 50-, and 100-year/24-hour storms.									
35. <input type="checkbox"/> An alternative design standard is being used.									
36. <input checked="" type="checkbox"/> DEP's PCSM Spreadsheet – Rate Worksheet was used for peak rate calculations and is attached.									
37. <input type="checkbox"/> Alternative rate calculations are attached.									
38. Identify precipitation amounts.		Source of precipitation data: NOAA/Township							
2-Year/24-Hour Storm:	2.6	10-Year/24-Hour Storm	3.9						
50-Year/24-Hour Storm:	4.64	100-Year/24-Hour Storm	5.2						
39. Identify all SCMs used to mitigate peak rate differences and provide the requested information.									
SCM ID	Inflow to SCM (cfs)				Outflow from SCM (cfs)				
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr	

1							
40. Report peak rates for pre-construction and post-construction with SCMs and identify the differences.							
Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Post-Construction Peak Rate with SCMs (cfs)	Difference (cfs)			
2-Year/24-Hour	0.55		0.47	-0.08			
10-Year/24-Hour	2.12		2.04	-0.08			
50-Year/24-Hour	3.21		3.15	-0.06			
100-Year/24-Hour	4.10		4.07	-0.03			

**Stormwater Analysis – Peak Rate**

**Surface Water Name:** Discharge to Non-Surface Waters      **POA(s):** 6

41.  The design standard is based on rate requirements in an Act 167 Plan approved by DEP within the past five years.
42.  The design standard is based on managing the net change for 2-, 10-, 50-, and 100-year/24-hour storms.
43.  An alternative design standard is being used.
44.  DEP’s PCSM Spreadsheet – Rate Worksheet was used for peak rate calculations and is attached.
45.  Alternative rate calculations are attached.

46. Identify precipitation amounts.      Source of precipitation data: NOAA/Township

2-Year/24-Hour Storm:	2.6	10-Year/24-Hour Storm	3.9
50-Year/24-Hour Storm:	4.64	100-Year/24-Hour Storm	5.2

47. Identify all SCMs used to mitigate peak rate differences and provide the requested information.

SCM ID	Inflow to SCM (cfs)				Outflow from SCM (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
1								

48. Report peak rates for pre-construction and post-construction with SCMs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Post-Construction Peak Rate with SCMs (cfs)	Difference (cfs)
2-Year/24-Hour	0.28		0.18	-0.10
10-Year/24-Hour	1.28		1.07	-0.21
50-Year/24-Hour	2.01		1.74	-0.27
100-Year/24-Hour	2.61		2.31	-0.30

**Stormwater Analysis – Water Quality**

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

**Other Information**

- A long-term operation and maintenance (O&M) plan has been prepared for each SCM.
- A long-term O&M plan will be recorded with a legal instrument for each property containing an SCM.
- PCSM Plan Drawings have been developed for the project and are attached to the NOI/application.

4.  The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.

5.  Recycling and proper disposal of materials associated with PCSM SCMs are addressed as part of long-term operation and maintenance of the PCSM SCMs.

6.  There are pre-construction stormwater discharges to wetlands from the project site.

Wetland ID	Pre-Construction		Post-Construction		
	Drainage Area (ac)	Volume (CF)	Drainage Area (ac)	Volume (CF)	Ponding Depth Increase or Decrease (±%)

7. Describe the sequence of PCSM SCM implementation in relation to earth disturbance activities.  
**Please refer to the permit plan sheets for construction sequence.**

8. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM SCMs are operational and the applicant's plan to avoid or minimize potential pollution and its impacts.  
**Please see the included geotechnical report with included discussion on naturally occurring geologic formations and soil conditions. As a protective measure proposed SCMs will be lined with an impermeable liner.**

9. Thermal Impacts: check the appropriate box(es) if any of the following (a. – c.) are true:  Not Applicable

a. One or more peak rate control SCMs are proposed that will receive stormwater from a drainage area containing more than 25% impervious surface.

i. Drainage Area of SCM: **23.54** acres

ii. Drainage Area of Surface Water at POA of SCM: **118.43** acres

iii. Ratio of SCM Drainage Area : Surface Water Drainage Area: **19.9** %

*If the value reported for a.iii. exceeds 10%, attach a quantitative thermal impact analysis.*

b. A Wet Basin or Engineered Stormwater Treatment Wetland is proposed that does not include shading and/or a reversed slope outlet pipe (if true, attach a quantitative thermal impact analysis).

c. There will be post-construction undetained areas, within the limit of disturbance, that contain impervious surface.

i. Undetained Impervious Area: \_\_\_\_\_ acres

ii. Drainage Area of Surface Water Receiving Stormwater from Undetained Impervious: \_\_\_\_\_ acres

iii. Ratio of Undetained Impervious: Surface Water Drainage Area: \_\_\_\_\_ %

*If the value reported for c.iii. exceeds 10%, attach a quantitative thermal impact analysis.*

d. A quantitative thermal impact analysis is not required.



**PCSM Plan Preparer**

I am trained and experienced in PCSM methods.

I am a licensed professional.

No. years of experience preparing PCSM Plans: 14

Name: Andrew Celender, P.E., CPESC

Title: Project Manager III

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License No.: PE096169

License Type: P.E.

Exp. Date: 9/30/27

6/18/2026

**PCSM Plan Preparer Signature**

**Date**

Identify those who assisted the individual identified above in preparing the PCSM Plan:

Name	Company	Field	LP?	License Type
Garrett Geresti	CEC	Civil	<input type="checkbox"/>	
Christopher Remley	CEC	Civil	<input checked="" type="checkbox"/>	PE
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	

## CHAPTER 102 STORMWATER THERMAL ANALYSIS SPREADSHEET

Project Name: **Quaker Valley School District - New High School**

Select the thermal analysis scenario from the dropdown list:

**Scenario 1 - One or more peak rate control SCMs are proposed that will receive stormwater from a drainage area containing more than 25% impervious surface.**

SCM ID: **2**

SCM Drainage Area: **23.54** acres

Total Drainage Area of Surface Water at SCM's DP: **118.43** acres

Ratio of SCM Drainage Area : Surface Water Drainage Area: **19.9** %

**A thermal analysis is required because the ratio exceeds 10%.**

**SCM Information**

2-Year/24-Hour Storm Precipitation Depth: **2.6** inches

SCM Discharge Period: **14** hours

Total Volume Discharged During SCM Discharge Period: **93,271** CF

Average SCM Discharge Rate: **1.851** cfs

Average SCM Discharge Temperature: **82.0** °F

**Surface Water Information**

Surface Water Name: **Stream UNT 2**

Chapter 93 Classification: **WWF**

Surface Water Q<sub>7-10</sub> Flow: **0.001** cfs

Site-Specific Ambient Temperature Data are Available: **No**

**Contributing Flow from Watershed**

Watershed Area (Outside SCM Drainage Area):	<u>94.89</u>	acres
% Impervious in Watershed Area:	<u>52</u>	%
Total Volume of Runoff During 2-Year/24-Hour Storm:	<u>372,507</u>	CF
Average Watershed Runoff Rate:	<u>4.311</u>	cfs
Average Watershed Runoff Temperature:	<u>77.8</u>	°F

**Downstream Results**

Temperature Period	Allowable Temperature (°F)	Projected Temperature (°F)	
Jun 1-15	80	78	✓
Jun 16-30	84	78	✓
Jul 1-31	87	79	✓
Aug 1-15	87	78	✓
Aug 16-31	87	78	✓
Sep 1-15	84	77	✓
Sep 16-30	78	77	✓