



COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 OFFICE OF WATER MANAGEMENT
 OFFICE OF OIL AND GAS MANAGEMENT

OFFICIAL USE ONLY
ID # _____
Date Received _____

**NOTICE OF INTENT (NOI) FOR COVERAGE
 UNDER THE EROSION AND SEDIMENT CONTROL GENERAL PERMIT (ESCGP-2)
 FOR EARTH DISTURBANCE ASSOCIATED WITH OIL AND GAS EXPLORATION,
 PRODUCTION, PROCESSING, OR TREATMENT OPERATIONS OR TRANSMISSION FACILITIES**

READ THE INSTRUCTIONS PROVIDED IN THIS PERMIT APPLICATION PACKAGE BEFORE COMPLETING THIS FORM.
 PLEASE PRINT OR TYPE INFORMATION IN BLACK OR BLUE INK.

SECTION A. APPLICANT INFORMATION

APPLICATION TYPE NEW RENEWAL MAJOR MODIFICATIONS EXPEDITED PHASED

Applicant's Last Name (If applicable) Gordon		First Name Matthew	MI L	Phone (610) 216-0583 (cell)
				FAX
Organization Name or Registered Fictitious Name Sunoco Pipeline, L.P.				Phone (610) 670-3284 (office)
				FAX
Mailing Address 535 Fritztown Road	City Sinking Spring	State PA	ZIP + 4 19608	
Email Address mlgordon@sunocologistics.com				
Co-Applicant's Last Name (If applicable)		First Name	MI	Phone
				FAX
Organization Name or Registered Fictitious Name				Phone
				FAX
Mailing Address	City	State	ZIP + 4	
Email Address				

SECTION B. SITE INFORMATION

Site Name Pennsylvania Pipeline Project				
Site Location Washington, Allegheny, Westmoreland, Indiana, and Cambria Counties				
Site Location – City Houston, Washington, County, PA to Washington Towship, Cambria County, PA			State PA	ZIP+4
Detailed Written Directions to Site See Directions in Attachment 1				

County	Municipality	City	Boro	Twp.
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Washington, Allegheny, Westmoreland, Indiana, and Cambria Counties	See Municipalities Table in Attachement 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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SECTION C. PROJECT INFORMATION

1. Total Project Area/Project Site (Ac):	1,132	Total Disturbed Area (Ac):	1,132
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2. Project Name Pennsylvania Pipeline Project

3. Project Type (Check all that apply)

Oil/Gas Well Transmission Facility Gathering Facility Processing Facility Treatment Facility
 Centralized Fresh Water Impoundment Centralized Wastewater Impoundment Water Pipeline
 Ground/Surface Water Withdrawal Site Other

If Oil/Gas well, is the well conventional or unconventional? Conventional Unconventional

Project Description

Sunoco Pipeline, L.P. (SPLP) proposes to construct and operate the Pennsylvania Pipeline Project that would expand existing pipeline systems to provide natural gas liquid (NGL) transportation. The project involves the installation of approximately two parallel pipelines within a 306.8-mile, 50-foot-wide right-of-way (ROW) from Houston, Washington County, Pennsylvania (PA) to SPLP's Marcus Hook facility in Delaware County, PA with the purpose of interconnecting with existing SPLP Mariner East pipelines. A 20-inch diameter pipeline would be installed within the ROW from Houston to Marcus Hook (306.8 miles) and a second, 16-inch diameter pipeline, will also be installed in the same ROW. The second line is proposed to be installed from SPLP's Delmont Station, Westmoreland County, PA to the Marcus Hook facility, paralleling the initial line for approximately 255.8 miles. The majority of the new ROW will be co-located adjacent to existing utility corridors, including approximately 230 miles of pipeline that will be co-located in the existing SPLP Mariner East pipeline system. The 20-inch pipeline will be installed first, followed by the 16-inch line. Any temporary stabilization required will be implemented in accordance with the project's Erosion and Sediment (E&S) Plans. For a conventional lay, the pipelines would be installed within the same disturbance to the maximum extent practicable. For safety purposes, the installation would be staggered by what is estimated to be no more than 60 days. At some HDDs with longer drills, however, the time period between installation of the two pipelines may exceed 60 days. Any temporary stabilization required would be implemented in accordance with project's E&S Plans. Any permanent or temporary impacts associated with the second pipeline installation will be similar to the first installation, as described in more detail in the Application and the balance of these responses.

Construction activities will involve clearing and grubbing, trenching, pipe installation, site restoration, and access road construction/improvement. Erosion and sediment controls will be in place during earth disturbance activities. Following completion of pipeline installation, the area will be returned to the general grade present prior to pipeline installation in order to maintain preconstruction elevations and drainage patterns. Disturbed areas will be seeded and mulched. Erosion and sedimentation control devices will be maintained until site work is complete and revegetation is successful.

The project will be constructed for 109 miles in the PADEP Southwest Region. The project disturbance by county is as follows:

- Washington County: 189 acres, Houston Injection Station 2.70 acres (Total 192 acres)
- Allegheny County: 97 acres
- Westmoreland County: 372 acres, Delmont Pump Station 12.40 acres (Total 385 acres)
- Indiana County: 209 acres
- Cambria County: 244 acres, Ebensburg Pump Station 4.44 acres (Total 249 acres)

4. Please provide the latitude and longitude coordinates for the center of the project. The coordinates should be in degrees, minutes seconds (DD MM SS.SS) and North American Datum 1983. For linear projects provide the project's termini.

Latitude 40° degrees 15' minutes 41.62" seconds Longitude 80° degrees 16' minutes 0.91" seconds
 Latitude 40° degrees 24' minutes 32.59" seconds Longitude 78° degrees 33' minutes 24.98" seconds
 Horizontal Collection Method: GPS Interpolated from U.S.G.S. Topographic Map DEP's eMAP

5. U.S.G.S. 7.5 min. Quad Map Name Canonsburg, Midway, Washington East, Washington West, Hackett, Monogahela, Donora, McKeesport, Irwin, Smithton, Greensburg, Murrysville, Slickville, Saltsburg, Blairsville, Bolivar, New Florence, Vintondale, Nanty Glo, Ebensburg, Cresson, Beaverdale, and Blue Knob. (Include a copy of the project area on the 7.5 min quad map)

6. Will the project be conducted as a phased permit project? Yes No
 If Yes, Include Master Site Plan Estimated Timetable for Phased Projects. Additional sheet(s) attached.

Phase No. or Name	Description	Total Area	Disturbed Area	Start Date	End Date

7. List existing and previous land use for a minimum of the previous 5 years. Forested/ agricultural/ rural residential

8. Other Pollutants: Will the stormwater discharge contain polluttional substances other than sediment? Yes No
 If yes, explain and provide any available quantitative data.

9. Will fuels, chemicals, solvents, other hazardous waste or materials be used or stored on site during earth disturbance activities?
 Yes No **(If yes, a PPC Plan must be maintained on site during earth disturbance.)**

10. Does the project have the potential to discharge to siltation-impaired waters?
 Yes No **(If yes, show how the project will not result in a net change in volume, rate or water quality. See section G below.)**

11. Has the project site been investigated to identify naturally occurring geologic formations or soil types that may cause pollution when disturbed?
 Yes No
 Have naturally occurring geologic formations or soil types that may cause pollution when disturbed been identified?
 Yes No **(If yes, BMPs to avoid or minimize the potential pollution must be utilized.)**

12. Has the project site been analyzed to determine potential thermal impacts to surface waters of the Commonwealth?
 Yes No
 Have potential thermal impacts to surface water of the Commonwealth from earth disturbance activity been identified?
 Yes No **(If yes, BMPs to avoid, minimize or mitigated the thermal pollution must be utilized.)**

13. Have the E&S Plan and PCSM/SR Plan been planned, designed and implemented to be consistent?
 Yes No

14. Have existing and/or proposed Riparian Forest Buffers been identified?
 Yes N/A **(If not, they must be shown on the plans.)**

15. Is a riparian buffer waiver being requested?
 Yes No
 If yes, the applicant requesting a waiver must submit a written request that demonstrates that reasonable alternatives will meet the requirements of 25 Pa. Code § 102.14 and to demonstrate that any existing riparian buffer will remain undisturbed to the extent practicable.

16. Have antidegradation implementation requirements for special protection waters been addressed?
 Yes No **(If no, antidegradation requirements must be included in the plan.)** N/A

17. Has the seasonal high groundwater level been identified at all excavation locations for pits and impoundments other than those which will contain top-hole water, fresh water and uncontaminated drill cuttings?
 Yes No N/A **(If no, be advised that a 20-inch separation between the seasonal high groundwater and the bottom of all pits and impoundments containing polluttional substances is required.)**

18. Receiving Water/Watershed Name
See Table in Attachment 3.
 Chapter 93, Designated Use and Existing Use
 Stream Classification
 High Quality Exceptional Value
 Other WWF, CWF, TSF
 Siltation-impaired
 Secondary Receiving Water

Name of Municipal or Private Separate Storm Sewer Operator
 See Table in Attachment 4

19. Is an Expedited Review being requested? Yes No
 If yes, be advised that the Expedited Review is not available for all projects. Refer to the "Expedited Review Process" Item 8, Page 17 of the ESCGP-2 Instructions to determine if your project is eligible.

SECTION D. EROSION AND SEDIMENT CONTROL PLAN BMPS
See the attached Instructions on how to complete this section.

Erosion and Sediment Control Plan BMPs should be designed to minimize accelerated erosion and sedimentation through limiting the extent and duration of earth disturbance, protection of existing drainage and vegetation, limiting soil compaction and controlling the generation of increased runoff. The Department recommends the use of the Erosion and Sediment Control BMP Manual to achieve this goal. The E&S Plan must meet the requirements of Pa. Code § 102.4(b) and submitted with the NOI.

1. E & S Plan

The E & S Plan must satisfy at least one of subparagraph A or B below.

Provide a brief summary of proposed BMPs and their performance to manage E & S for the project. If E & S BMPs and their application do not follow the guidelines referenced in the Pa. Erosion and Sediment Pollution Control Program Manual, provide documentation to demonstrate performance equivalent to, or better than, the BMPs in the Manual.

Compost Filter Socks - This temporary sedimentation control measure consists of wood or metal posts driven through a compost filled mesh tube. Filter socks will be located as needed on side-slope and down-slope boundaries of disturbed areas. Compost filter socks will be sized using the DEP Construction Detail.

Tarpaulin Covers - Tarpaulin covers may be used, as necessary, to protect topsoil storage stockpiles from wind and precipitation erosion. Stockpile slopes will be 2:1 or less. A minimal amount of soil will be stockpiled so that the height of the stockpile is less than 35 feet.

Rock Construction Entrance – Temporary access routes will be established on and proximate to the site to facilitate construction activities. The use of access routes will help confine truck and equipment traffic to specific corridors thus minimizing land disturbance and protecting vegetation. Site traffic during wet weather will be limited. No vehicles will be permitted in streams or rivers.

Wash Racks – Wash racks will be used at rock construction entrances and will be designed to accommodate anticipated vehicular traffic. A water supply will be made available at wash racks to wash the wheels of vehicles exiting the site.

Pumped Water Filter Bag – Pumped water filter bags may be used to filter water pumped from disturbed areas prior to discharging to surface waters. Compost filter socks shall be installed within 50 feet of any receiving surface water or where grassy area is not available.

Erosion Control Blanket - A manufactured erosion control blanket shall be installed on all slopes 3:1 (H:V) or steeper and within 100 feet of stream banks, where applicable. The blanket shall be biodegradable but capable of providing protection for two growing seasons. Straw or similar fiber material shall be placed between two biodegradable nets. The top net shall be heavyweight and UV stabilized; the bottom net shall be a lightweight netting. Erosion control blankets shall be anchored and stapled in place in accordance with the manufacturer's recommendations and the detail on the construction drawings. For slopes between 3:1 and 1:1 (H:V) use erosion control blanket SC 150 as manufactured by North American Green or Owner approved equal material or equal method.

Waterbars – Waterbars shall be installed across the right-of-way on all slopes greater than 5%. Waterbars should be constructed at a slope of 2% and discharge to a well-vegetated area. Waterbars should not discharge into an open trench. Waterbars should be oriented so that the discharge does not flow back onto the right-of-way. Obstructions (e.g. compost filter socks etc.) should not be placed in any waterbars. Where needed, they should be located below the discharge end of the waterbar.

Trench Plugs - To be used to prevent piping along the pipeline.

- A. E & S plan is designed using BMPs in the Pennsylvania Erosion & Sedimentation Pollution Control Manual (ESPC) (Technical Guidance #3632134-008/March 2012)

OR

- B. E & S plan is designed using an alternative BMP or design standard

2. Riparian Buffer Information

- A. Will you be protecting, converting or establishing a riparian buffer or a riparian forest buffer as a part of this project?

Protect Yes No Convert Yes No Establish Yes No

- B. Will you be protecting, converting or establishing a voluntary riparian forest buffer as part of this project?

Yes No

- C. Are you proposing to conduct oil and gas activities for which site reclamation or restoration is required as part of the Chapter 78 permit authorization in a high quality or exceptional value watershed that is currently attaining its designated use and within 150 ft of a perennial or intermittent river, stream or creek or lake, pond or reservoir?

Yes No If yes, provide a demonstration that any existing riparian buffer is undisturbed to the extent practicable.

- D. If the regulations require a riparian buffer or riparian forest buffer and you are not providing one, list the waiver provisions in the Chapter 102 regulations, Section 102.14(d)(2)(i)-(vi), that you are requesting and provide additional documentation to demonstrate reasonable alternatives for compliance with 102.14 requirements and to demonstrate that any existing riparian buffer will remain undisturbed to the extent practicable.

This project qualifies for an exception of the riparian forest buffer requirement under Chapter 102.14(d)(1)(ix). Existing riparian forest buffers within the project area are identified on the E&S plan drawings in Attachment 2 of the E&S Plan. Existing riparian forest buffers will be protected to the extent practicable by minimizing the limit of disturbance at stream crossings. In addition to the exception, we are requesting a waiver under 102.14(d)(2)(ii) for areas within 150' of surface waters that are outside of the Chapter 105 permit area.

All disturbance activities, including those which impact riparian forest buffers, have been reduced to the extent practicable. The limit of disturbance has been reduced to 50 feet wide at all stream crossings within the riparian forest buffer area where possible. In areas where it is not practicable to reduce the LOD throughout the entire extent of the riparian forest buffer, the LOD has been reduced to 50 feet wide surrounding the stream channel. The operations within the limit of disturbance near stream crossings typically includes a topsoil stockpile, a stockpile for pipe trench excavation material, a pipe trench, a travel lane, a work area for equipment operation and pipeline welding outside the trench, and an area to install the erosion control BMPs. In addition, site conditions such as steep slopes, varying depths of topsoil, and other on-site conditions limit the amount of work area. Reducing the limit of disturbance to a greater extent could potentially result in unsafe working conditions and would hinder the ability to complete the stream crossing within the required time frame of 24 hours or less. Workspaces that provide additional space for stream crossing activities have been placed outside of riparian forest buffers where possible.

Note: If the proposed activity protects, converts or establishes a riparian or riparian forest buffer a Buffer Management Plan is required in the PCSM Plan.

3. Thermal Impacts Analysis

Please explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

Potential thermal impacts to surface waters will be minimized by minimizing clearing and retaining existing vegetation where possible. The disturbed areas will be reseeded as soon as practicable following construction.

SECTION E. SITE RESTORATION (SR) PLAN BMPS
 See the attached Instructions on how to complete this section.

If this section is not applicable to your project, please indicate by checking this box: N/A

For earth disturbance projects involving oil and gas activities authorized by Chapter 78 (well pads) or pipelines and other similar utility infrastructure provide the information outlined below. If your project includes both oil and gas activities authorized by Chapter 78 (well pads) or pipelines and other similar utility infrastructure and other activities requiring Post Construction Stormwater Management, provide the information outlined in this Section as well as Section F.

Site Restoration BMPs should be designed to use natural measures to eliminate pollution, infiltrate runoff, not require extensive construction/maintenance activity, promote pollutant reduction, and preserve the integrity of stream channels. The Department recommends the use of PA Stormwater BMP manual to achieve this goal. The SR Plan must meet the requirements of Pa Code § 102.8(n) and be submitted with the NOI.

1. Site Restoration Plan Information – The Site Restoration Plan should be designed to maximize volume reduction technologies, eliminate (where possible) or minimize point source discharges to surface waters, preserve the integrity of stream channels, and protect the physical, biological and chemical qualities of the receiving surface water.

Design standards applied to develop the Site Restoration Plan. Check those that apply.

Act 167 Plan – The attached SR Plan is consistent with an applicable approved Act 167 Plan.

Complete the following for all approved Act 167 Stormwater Management Plans. (Use additional sheets if necessary)

Act 167 Plan Name _____ Date Adopted _____ Consistency Letter Included

See Table in Attachment 5 _____ Verification Report Included

NOTE: A consistency letter is not required if a verification report is provided. Please see NOI Instructions. The Site Restoration Plan must satisfy either sub paragraph A, B, **or** C below. Check those that apply.

- A. Act 167 Plan approvals on or after January 2005 - The attached PCSM Plan, in its entirety, is consistent with all requirements pertaining to rate, volume, and water quality from an Act 167 Stormwater Management Plan approved by DEP on or after January 2005. Letter A must be checked if a current, DEP approved Act 167 plan exists.
- B. The PCSM meets the standard design criteria from the PA Stormwater BMP Manual. For projects involving oil and gas activities authorized by a permit issued under Chapter 78 (well pads) or pipelines and other similar utility infrastructure, post construction stormwater management requirements are met for all areas that are restored to preconstruction conditions or to a condition of meadow in good condition or better.
- C. Alternative Design Standard – The attached PCSM Plan was developed using approaches other than 102.8(g)(2). Demonstrate/explain in the space provided below how this standard will be either more protective than what is required in 102.8(g)(2) or will maintain and protect existing water quality and existing and designated uses.

2. Riparian Buffer Information

- A. Will you be protecting, converting or establishing a riparian buffer or a riparian forest buffer as part of this activity?
Protect Yes No Convert Yes No Establish Yes No
- B. Will you be protecting, converting or establishing a voluntary riparian forest buffer as part of this activity?
 Yes No
- C. Are you proposing to conduct oil and gas activities for which site reclamation or restoration is required under a permit issued under the authority of the 2012 Oil and Gas Act and Chapter 78 in a high quality or exceptional value watershed that is currently attaining its designated use and within 150 ft of a perennial or intermittent river, stream or creek or lake, pond or reservoir?
 Yes No If yes, provide a demonstration that any existing riparian buffer is undisturbed to the extent practicable.

- D. If the regulations require a riparian buffer or riparian forest buffer and you are **not** providing one, list below the waiver provisions in the Chapter 102 regulations, Section 102.14(d)(i)-(vi), that you are requesting and provide additional documentation to demonstrate reasonable alternatives for compliance with 102.14 requirements and to demonstrate that any existing riparian buffer will remain undisturbed to the extent practicable.

(See Attachment 6 for Riparian Buffer Waiver Request Information)

This project qualifies for an exception of the riparian forest buffer requirement under Chapter 102.14(d)(1)(ix). Existing riparian forest buffers within the project area are identified on the E&S plan drawings in Attachment 2 of the E&S Plan. Existing riparian forest buffers will be protected to the extent practicable by minimizing the limit of disturbance at stream crossings. In addition to the exception, we are requesting a waiver under 102.14(d)(2)(ii) for areas within 150' of surface waters that are outside of the Chapter 105 permit area.

All disturbance activities, including those which impact riparian forest buffers, have been reduced to the extent practicable. The LOD has been reduced to 50 feet wide at all stream crossings within the riparian forest buffer area where possible. In areas where it is not practicable to reduce the LOD throughout the entire extent of the riparian forest buffer, the LOD has been reduced to 50 feet wide surrounding the stream channel. The operations within the LOD near stream crossings typically includes a topsoil stockpile, a stockpile for pipe trench excavation material, a pipe trench, a travel lane, a work area for equipment operation and pipeline welding outside the trench, and an area to install the erosion control BMPs. In addition, site conditions such as steep slopes, varying depths of topsoil, and other on-site conditions limit the amount of work area. Reducing the LOD to a greater extent could potentially result in unsafe working conditions and would hinder the ability to complete the stream crossing within the required time frame of 24 hours or less. Workspaces that provide additional space for stream crossing activities have been placed outside of riparian forest buffers where possible.

Note: If the proposed activity protects, converts or establishes a riparian or riparian forest buffer a Buffer Management Plan is required in the PCSM Plan.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA

See Attachment D in the Instructions on how to Complete This Section

This section does not need to be completed for areas of projects involving oil and gas activities authorized by Chapter 78 (well pads) or pipelines and other similar utility infrastructure which will be restored to meadow in good condition or better or existing conditions.

Watershed Name: N/A - Restoring pipeline right of way to a meadow condition. See Section F for stormwater management calculations associated with the permanent access roads and block valves.

Design storm frequency _____ Rainfall amount _____ inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)			
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs			
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs			
Stormwater discharge rate for the design frequency storm	Pre-construction	Post Construction	Net Change
1) 2-Year/24-Hour			
2) 10-Year/24-Hour			
3) 50-year/24-Hour			
4) 100-year/24-Hour			

4. SUMMARY DESCRIPTION OF SITE RESTORATION BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Site Restoration <input checked="" type="checkbox"/> Restore Site to Meadow in Good Condition or Better, or Existing Conditions	Infiltration/Recharge Detention/WQ Treatment	_____	_____
Bio-infiltration areas <input type="checkbox"/> Infiltration Trench <input type="checkbox"/> Infiltration Bed <input type="checkbox"/> Infiltrated Basin	Infiltration/Recharge	_____ _____ _____	_____ _____ _____
Natural Area Conservation <input type="checkbox"/> Streamside Buffer Zone <input type="checkbox"/> Wetland Buffer Zone <input type="checkbox"/> Sensitive Area Buffer Zone <input checked="" type="checkbox"/> Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____
Stormwater Retention <input type="checkbox"/> Constructed Wetlands <input type="checkbox"/> Wet Ponds <input type="checkbox"/> Retention Basin	Detention/Retention	_____ _____ _____	_____ _____ _____
Sediment and Pollutant Removal <input type="checkbox"/> Vegetated Filter Strips <input type="checkbox"/> Detention Basins	Water Quality Treatment	_____ _____	_____ _____

Access Road Design <input type="checkbox"/> Road Crowning <input type="checkbox"/> Ditches <input checked="" type="checkbox"/> Turnouts <input type="checkbox"/> Culverts <input type="checkbox"/> Roadside Vegetated Filter Strips	Infiltration/Recharge	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____
Stormwater Energy Dissipaters <input type="checkbox"/> Level Spreaders <input type="checkbox"/> Riprap Aprons <input type="checkbox"/> Upslope Diversions <input type="checkbox"/> _____	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____

5. Off-site Discharge Analysis.
 Does the activity propose any off-site discharges to areas other than surface waters? Yes No
 If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.
 The Applicant must provide a demonstration in both the E&S and Site Restoration Plans that the discharge will not cause erosion, damage, or a nuisance to off-site properties.
 See Attachment 8

6. Thermal Impact Analysis.
 Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.
 Potential thermal impacts to surface waters will be minimized by minimizing clearing and retaining existing vegetation where possible. Permanent seeding will occur as soon as practicable during germinating months.

SECTION F. POST CONSTRUCTION STORMWATER MANAGEMENT (PCSM) PLAN BMPS
 See the attached Instructions on how to complete this section.

If this section is not applicable to your project, please indicate by checking this box: N/A

For earth disturbance projects requiring post construction stormwater management, provide the information outlined below. If your project includes both oil and gas activities authorized under a well permit issued under the 2012 Oil and Gas Act and Chapter 78 (well pads) or pipelines and other similar utility infrastructure and other activities requiring Post Construction Stormwater Management, provide the information outlined in this Section as well as Section E.

Post Construction Stormwater Management BMPs should be designed to use natural measures to eliminate pollution, infiltrate runoff, not require extensive construction/maintenance activity, promote pollutant reduction, and preserve the integrity of stream channels. The Department recommends the use of PA Stormwater BMP manual to achieve this goal. If PCSM BMPs and their application do not follow the guidelines referenced in the PA Stormwater BMP Manual, provide documentation to demonstrate performance equivalent to, or better than, the BMPs in the Manual.

1. Post Construction Stormwater Management Plan Information – The Post Construction Stormwater Management Plan must meet the requirements in 25 Pa. Code §102.8 and should be designed to maximize volume reduction technologies, eliminate (where possible) or minimize point source discharges to surface waters, preserve the integrity of stream channels, and protect the physical, biological and chemical qualities of the receiving surface water.

Design standards applied to develop the Post Construction Stormwater Management Plan. Check those that apply.

Act 167 Plan – The attached PCSM Plan is consistent with an applicable approved Act 167 Plan.

Complete the following for all approved Act 167 Stormwater Management Plans. (Use additional sheets if necessary)

Act 167 Plan Name _____ Date Adopted _____ Consistency Letter Included

See Table in Attachment 5 _____ Verification Report Included

NOTE: A consistency letter is not required if a verification report is provided. Please see NOI Instructions.

The PCSM Plan must satisfy either subparagraph A, B, or C below. Check those that apply. If a current, DEP approved Act 167 Plan exists, letter A must be checked.

- A. Act 167 Plan approvals on or after January 2005 - The attached PCSM Plan, in its entirety, is consistent with all requirements pertaining to rate, volume, and water quality from an Act 167 Stormwater Management Plan approved by DEP on or after January 2005.
- B. The PCSM meets the standard design criteria from 102.8(g)(2) and (3) the PA Stormwater BMP Manual. [Note: PCSM plans have to meet both the volume and rate requirements in the regulations, which are provided in these 2 sections].
- C. Alternative Design Standard – The attached PCSM Plan was developed using alternative approaches as provided in 102.8(g)(2)(iv) and 102.(g)(3)(iii). Demonstrate/explain in the space provided below how this standard will be either more protective than what is required in 102.8(g)(2) and 102.8(g)(3) or will maintain and protect existing water quality and existing and designated uses.

2. Riparian Buffer Information

A. Will you be protecting, converting or establishing a riparian buffer or a riparian forest buffer as part of this activity?
Protect Yes No Convert Yes No Establish Yes No

B. Will you be protecting, converting or establishing a voluntary riparian forest buffer as part of this activity?
 Yes No

C. Are you proposing to conduct oil and gas activities for which site reclamation or restoration is required under a well permit issued under the authority of the 2012 Oil and Gas Act and Chapter 78 and in a high quality or exceptional value watershed that is currently attaining its designated use and within 150 ft of a perennial or intermittent river, stream or creek or lake, pond or reservoir?

Yes No If yes, provide a demonstration that any existing riparian buffer is undisturbed to the extent practicable.

D. If the regulations require a riparian buffer or riparian forest buffer and you are not providing one, list below the waiver provisions in the Chapter 102 regulations, Section 102.14(d)(i)-(vi), that you are requesting and provide additional documentation to demonstrate reasonable alternatives for compliance with 102.14 requirements and to demonstrate that any existing riparian buffer will remain undisturbed to the extent practicable.

(See Attachment 6 for Riparian Buffer Waiver Information)

This project qualifies for an exception of the riparian forest buffer requirement under Chapter 102.14(d)(1)(ix). Existing riparian forest buffers within the project area are identified on the E&S plan drawings in Attachment 2 of the E&S Plan. Existing riparian forest buffers will be protected to the extent practicable by minimizing the limit of disturbance at stream crossings. In addition to the exception, we are requesting a waiver under 102.14(d)(2)(ii) for areas within 150' of surface waters that are outside of the Chapter 105 permit area.

All disturbance activities, including those which impact riparian forest buffers, have been reduced to the extent practicable. The LOD has been reduced to 50 feet wide at all stream crossings within the riparian forest buffer area where possible. In areas where it is not practicable to reduce the LOD throughout the entire extent of the riparian forest buffer, the LOD has been reduced to 50 feet wide surrounding the stream channel. The operations within the LOD near stream crossings typically includes a topsoil stockpile, a stockpile for pipe trench excavation material, a pipe trench, a travel lane, a work area for equipment operation and pipeline welding outside the trench, and an area to install the erosion control BMPs. In addition, site conditions such as steep slopes, varying depths of topsoil, and other on-site conditions limit the amount of work area. Reducing the LOD to a greater extent could potentially result in unsafe working conditions and would hinder the ability to complete the stream crossing within the required time frame of 24 hours or less. Workspaces that provide additional space for stream crossing activities have been placed outside of riparian forest buffers where possible

Note: If the proposed activity protects, converts or establishes a riparian or riparian forest buffer a Buffer Management Plan is required in the PCSM Plan.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name:			
Design storm frequency _____ Rainfall amount _____ inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)			
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs			
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs			
Stormwater discharge rate for the design frequency storm			
1) 2-Year/24-Hour			
2) 10-Year/24-Hour			
3) 50-year/24-Hour			
4) 100-year/24-Hour			

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas <input type="checkbox"/> Infiltration Trench <input type="checkbox"/> Infiltration Bed <input type="checkbox"/> Infiltrated Basin	Infiltration/Recharge	_____ _____ _____	_____ _____ _____
Natural Area Conservation <input type="checkbox"/> Streamside Buffer Zone <input type="checkbox"/> Wetland Buffer Zone <input type="checkbox"/> Sensitive Area Buffer Zone <input type="checkbox"/> Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____
Stormwater Retention <input type="checkbox"/> Constructed Wetlands <input type="checkbox"/> Wet Ponds <input type="checkbox"/> Retention Basin	Detention/Retention	_____ _____ _____	_____ _____ _____
Sediment and Pollutant Removal <input type="checkbox"/> Vegetated Filter Strips <input type="checkbox"/> Compost Filter Sock <input type="checkbox"/> Detention Basins	Water Quality Treatment	_____ _____ _____	_____ _____ _____

Access Road Design <input type="checkbox"/> Road Crowning <input type="checkbox"/> Ditches <input type="checkbox"/> Turnouts <input type="checkbox"/> Culverts <input type="checkbox"/> Roadside Vegetated Filter Strips	Infiltration/Recharge	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____
Stormwater Energy Dissipaters <input type="checkbox"/> Level Spreaders <input type="checkbox"/> Riprap Aprons <input type="checkbox"/> Upslope Diversions <input type="checkbox"/> _____	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____

5. Off-site Discharge Analysis.
 Does the activity propose any off-site discharges to areas other than surface waters? Yes No
 If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.
 The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

6. Thermal Impact Analysis.
 Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

7. Critical PCSM Plan stages.
 Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: Chartiers Run			
Design storm frequency <u>2-year</u> Rainfall amount <u>2.38</u> inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0.0	1.095	+ 1.095
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	0.041	0.156	+ 0.115
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.039	- 0.02
Stormwater discharge rate for the design frequency storm	0.38 cfs	0.00 cfs	- 0.38 cfs
1) 2-Year/24-Hour	-	-	-
2) 10-Year/24-Hour	1.20 cfs	1.18 cfs	- 0.02 cfs
3) 50-year/24-Hour	2.38 cfs	1.73 cfs	- 0.65 cfs
4) 100-year/24-Hour	2.99 cfs	1.99 cfs	- 1.00 cfs

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas <input type="checkbox"/> Infiltration Trench <input checked="" type="checkbox"/> Infiltration Bed <input type="checkbox"/> Infiltrated Basin	Infiltration/Recharge GeoWeb Cells	 <u>0.117 ac-ft</u>	 <u>1.095</u>
Natural Area Conservation <input type="checkbox"/> Streamside Buffer Zone <input type="checkbox"/> Wetland Buffer Zone <input type="checkbox"/> Sensitive Area Buffer Zone <input type="checkbox"/> Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	 _____ _____ _____ _____	 _____ _____ _____ _____
Stormwater Retention <input type="checkbox"/> Constructed Wetlands <input type="checkbox"/> Wet Ponds <input type="checkbox"/> Retention Basin	Detention/Retention	 _____ _____ _____	 _____ _____ _____
Sediment and Pollutant Removal <input type="checkbox"/> Vegetated Filter Strips <input type="checkbox"/> Compost Filter Sock <input type="checkbox"/> Detention Basins	Water Quality Treatment	 _____ _____ _____	 _____ _____ _____

Access Road Design <input type="checkbox"/> Road Crowning <input type="checkbox"/> Ditches <input type="checkbox"/> Turnouts <input type="checkbox"/> Culverts <input type="checkbox"/> Roadside Vegetated Filter Strips	Infiltration/Recharge	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____
Stormwater Energy Dissipaters <input type="checkbox"/> Level Spreaders <input type="checkbox"/> Riprap Aprons <input type="checkbox"/> Upslope Diversions <input type="checkbox"/> _____	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____

5. Off-site Discharge Analysis.
 Does the activity propose any off-site discharges to areas other than surface waters? Yes No
 If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.
 The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

6. Thermal Impact Analysis.
 Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

Clearing and grubbing will be minimized to maintain existing shade tree canopy. BMPs utilize (underground storage and infiltration to minimize radiation contact.

7. Critical PCSM Plan stages.
 Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

A licensed professional engineer shall be onsite during and/or after construction of all BMPs to certify their correct installation.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: Tributary 43017 to Beaver Run (POI-A)

Design storm frequency <u>2-year</u> Rainfall amount <u>2.7</u> inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	12.482	14.445	+ 1.963
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	3.326	3.466	+ 0.140
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		3.170	- 0.156
Stormwater discharge rate for the design frequency storm	37.80 cfs	35.52 cfs	- 2.28 cfs
1) 2-Year/24-Hour	-	-	-
2) 10-Year/24-Hour	72.79 cfs	68.18 cfs	- 4.61 cfs
3) 50-year/24-Hour	101.35 cfs	94.16 cfs	- 7.19 cfs
4) 100-year/24-Hour	113.00 cfs	105.00 cfs	- 8.00 cfs

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas <input type="checkbox"/> Infiltration Trench <input type="checkbox"/> Infiltration Bed <input checked="" type="checkbox"/> Infiltrated Basin	Infiltration/Recharge	0.297 ac-ft	2.575
Natural Area Conservation <input type="checkbox"/> Streamside Buffer Zone <input type="checkbox"/> Wetland Buffer Zone <input type="checkbox"/> Sensitive Area Buffer Zone <input type="checkbox"/> Pre-Construction Drainage Pattern Intact	Infiltration/Recharge		
Stormwater Retention <input type="checkbox"/> Constructed Wetlands <input type="checkbox"/> Wet Ponds <input checked="" type="checkbox"/> Retention Basin	Detention/Retention Underground Storage Pipes	0	3.058
Sediment and Pollutant Removal <input type="checkbox"/> Vegetated Filter Strips <input type="checkbox"/> Compost Filter Sock <input type="checkbox"/> Detention Basins	Water Quality Treatment		

Access Road Design <input type="checkbox"/> Road Crowning <input type="checkbox"/> Ditches <input type="checkbox"/> Turnouts <input type="checkbox"/> Culverts <input type="checkbox"/> Roadside Vegetated Filter Strips	Infiltration/Recharge	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____
Stormwater Energy Dissipaters <input type="checkbox"/> Level Spreaders <input type="checkbox"/> Riprap Aprons <input type="checkbox"/> Upslope Diversions <input type="checkbox"/> _____	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____

5. Off-site Discharge Analysis.
 Does the activity propose any off-site discharges to areas other than surface waters? Yes No
 If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.
 The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

 Pipe outlets are dissipated and spread out to shallow flow with riprap outlet protection.

6. Thermal Impact Analysis.
 Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

 Clearing and grubbing will be minimized to maintain existing shade tree canopy. BMPs utilize underground storage and infiltration to minimize radiation contact.

7. Critical PCSM Plan stages.
 Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

 A licensed professional engineer shall be onsite during and/or after construction of all BMPs to certify their correct installation.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: UNT to Turtle Creek (POI-B)			
Design storm frequency <u>2-year</u> Rainfall amount <u>2.7</u> inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0.159	0.689	+0.530
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	0.235	0.256	+0.021
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.184	0.051
Stormwater discharge rate for the design frequency storm	4.08 cfs	2.19 cfs	- 1.89 cfs
1) 2-Year/24-Hour	-	-	-
2) 10-Year/24-Hour	8.78 cfs	5.09 cfs	- 3.69 cfs
3) 50-year/24-Hour	12.72 cfs	8.75 cfs	- 3.97 cfs
4) 100-year/24-Hour	14.34 cfs	10.14 cfs	- 4.20 cfs

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas <input type="checkbox"/> Infiltration Trench <input checked="" type="checkbox"/> Infiltration Bed <input type="checkbox"/> Infiltrated Basin	Infiltration/Recharge Underground Storage Pipes	 <u>0.072 ac-ft</u>	 <u>1.104</u>
Natural Area Conservation <input type="checkbox"/> Streamside Buffer Zone <input type="checkbox"/> Wetland Buffer Zone <input type="checkbox"/> Sensitive Area Buffer Zone <input type="checkbox"/> Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	 _____ _____ _____ _____	 _____ _____ _____ _____
Stormwater Retention <input type="checkbox"/> Constructed Wetlands <input type="checkbox"/> Wet Ponds <input type="checkbox"/> Retention Basin	Detention/Retention	 _____ _____ _____	 _____ _____ _____
Sediment and Pollutant Removal <input type="checkbox"/> Vegetated Filter Strips <input type="checkbox"/> Compost Filter Sock <input type="checkbox"/> Detention Basins	Water Quality Treatment	 _____ _____ _____	 _____ _____ _____

Access Road Design <input type="checkbox"/> Road Crowning <input type="checkbox"/> Ditches <input type="checkbox"/> Turnouts <input type="checkbox"/> Culverts <input type="checkbox"/> Roadside Vegetated Filter Strips	Infiltration/Recharge	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____
Stormwater Energy Dissipaters <input type="checkbox"/> Level Spreaders <input type="checkbox"/> Riprap Aprons <input type="checkbox"/> Upslope Diversions <input type="checkbox"/> _____	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____

5. Off-site Discharge Analysis.
 Does the activity propose any off-site discharges to areas other than surface waters? Yes No
 If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.
 The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

 Pipe outlets are dissipated and spread out to shallow flow with riprap outlet protection.
 Pipe outlets are directed to an existing ditch.

6. Thermal Impact Analysis.
 Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

 Clearing and grubbing will be minimized to maintain existing shade tree canopy. BMPs utilize underground storage and infiltration to minimize radiation contact.

7. Critical PCSM Plan stages.
 Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

 A licensed professional engineer shall be onsite during and/or after construction of all BMPs to certify their correct installation.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: UNT to Turtle Creek (POI-C)			
Design storm frequency <u>2-year</u> Rainfall amount <u>2.7</u> inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0.157	0.446	+ 0.289
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	0.107	0.156	+ 0.049
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.100	- 0.007
Stormwater discharge rate for the design frequency storm	1.91 cfs	1.49 cfs	- 0.42 cfs
1) 2-Year/24-Hour	-	-	-
2) 10-Year/24-Hour	3.89 cfs	2.91 cfs	- 0.98 cfs
3) 50-year/24-Hour	5.58 cfs	4.22 cfs	- 1.36 cfs
4) 100-year/24-Hour	6.28 cfs	4.75 cfs	- 1.53 cfs

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas <input type="checkbox"/> Infiltration Trench <input type="checkbox"/> Infiltration Bed <input checked="" type="checkbox"/> Infiltrated Basin	Infiltration/Recharge	0.055 ac-ft	0.722
Natural Area Conservation <input type="checkbox"/> Streamside Buffer Zone <input type="checkbox"/> Wetland Buffer Zone <input type="checkbox"/> Sensitive Area Buffer Zone <input type="checkbox"/> Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	_____	_____
Stormwater Retention <input type="checkbox"/> Constructed Wetlands <input type="checkbox"/> Wet Ponds <input type="checkbox"/> Retention Basin	Detention/Retention	_____	_____
Sediment and Pollutant Removal <input type="checkbox"/> Vegetated Filter Strips <input type="checkbox"/> Compost Filter Sock <input type="checkbox"/> Detention Basins	Water Quality Treatment	_____	_____

Access Road Design <input type="checkbox"/> Road Crowning <input type="checkbox"/> Ditches <input type="checkbox"/> Turnouts <input type="checkbox"/> Culverts <input type="checkbox"/> Roadside Vegetated Filter Strips	Infiltration/Recharge	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____
Stormwater Energy Dissipaters <input type="checkbox"/> Level Spreaders <input type="checkbox"/> Riprap Aprons <input type="checkbox"/> Upslope Diversions <input type="checkbox"/> _____	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____

5. Off-site Discharge Analysis.
 Does the activity propose any off-site discharges to areas other than surface waters? Yes No
 If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.
 The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

 Pipe outlets are dissipated and spread out to shallow flow with riprap outlet protection.
 Pipe outlets are directed to an existing stormwater inlet.

6. Thermal Impact Analysis.
 Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

 Clearing and grubbing will be minimized to maintain existing shade tree canopy. BMPs utilize infiltration to minimize radiation contact.

7. Critical PCSM Plan stages.
 Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

 A licensed professional engineer shall be onsite during and/or after construction of all BMPs to certify their correct installation.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: Koontz Road - Westmoreland County

Design storm frequency <u>2</u> -yr Rainfall amount <u>2.10</u> inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0.00	0.15	0.15
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	0.047	0.058	0.011
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.021	-0.026
Stormwater discharge rate for the design frequency storm			
1) 2-Year/24-Hour	1.854 cfs	1.187 cfs	-0.667 cfs
2) 10-Year/24-Hour	3.989 cfs	2.351 cfs	-1.638 cfs
3) 50-year/24-Hour	6.779 cfs	3.843 cfs	-2.936 cfs
4) 100-year/24-Hour	8.185 cfs	5.281 cfs	-2.904 cfs

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas <input type="checkbox"/> Infiltration Trench <input type="checkbox"/> Infiltration Bed <input type="checkbox"/> Infiltrated Basin	Infiltration/Recharge	_____ _____ _____	_____ _____ _____
Natural Area Conservation <input type="checkbox"/> Streamside Buffer Zone <input type="checkbox"/> Wetland Buffer Zone <input type="checkbox"/> Sensitive Area Buffer Zone <input type="checkbox"/> Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____
Stormwater Retention <input type="checkbox"/> Constructed Wetlands <input type="checkbox"/> Wet Ponds <input type="checkbox"/> Retention Basin	Detention/Retention	_____ _____ _____	_____ _____ _____
Sediment and Pollutant Removal <input type="checkbox"/> Vegetated Filter Strips <input type="checkbox"/> Compost Filter Sock <input type="checkbox"/> Detention Basins	Water Quality Treatment	_____ _____ _____	_____ _____ _____

Access Road Design <input type="checkbox"/> Road Crowning <input type="checkbox"/> Ditches <input type="checkbox"/> Turnouts <input type="checkbox"/> Culverts <input type="checkbox"/> Roadside Vegetated Filter Strips	Infiltration/Recharge	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____
Stormwater Energy Dissipaters <input type="checkbox"/> Level Spreaders <input type="checkbox"/> Riprap Aprons <input type="checkbox"/> Upslope Diversions <input checked="" type="checkbox"/> Infiltration Berm _____	Infiltration/Recharge	_____ _____ _____ <u>1617 cubic feet</u>	_____ _____ _____ <u>1.030</u>

5. Off-site Discharge Analysis.

Does the activity propose any off-site discharges to areas other than surface waters? Yes No

If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.

The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

6. Thermal Impact Analysis.

Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

7. Critical PCSM Plan stages.

Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: Bush Road - Westmoreland County

Design storm frequency <u>2-yr</u> Rainfall amount <u>2.45</u> inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0.00	0.15	0.15
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	0.053	0.058	0.005
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.018	-0.035
Stormwater discharge rate for the design frequency storm			
1) 2-Year/24-Hour	5.591 cfs	4.665 cfs	-0.926 cfs
2) 10-Year/24-Hour	11.44 cfs	9.74 cfs	-1.70 cfs
3) 50-year/24-Hour	19.05 cfs	16.33 cfs	-2.72 cfs
4) 100-year/24-Hour	22.83 cfs	19.57 cfs	-3.26 cfs

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas <input type="checkbox"/> Infiltration Trench <input type="checkbox"/> Infiltration Bed <input type="checkbox"/> Infiltrated Basin	Infiltration/Recharge	_____ _____ _____	_____ _____ _____
Natural Area Conservation <input type="checkbox"/> Streamside Buffer Zone <input type="checkbox"/> Wetland Buffer Zone <input type="checkbox"/> Sensitive Area Buffer Zone <input type="checkbox"/> Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____
Stormwater Retention <input type="checkbox"/> Constructed Wetlands <input type="checkbox"/> Wet Ponds <input type="checkbox"/> Retention Basin	Detention/Retention	_____ _____ _____	_____ _____ _____
Sediment and Pollutant Removal <input type="checkbox"/> Vegetated Filter Strips <input type="checkbox"/> Compost Filter Sock <input type="checkbox"/> Detention Basins	Water Quality Treatment	_____ _____ _____	_____ _____ _____

Access Road Design <input type="checkbox"/> Road Crowning <input type="checkbox"/> Ditches <input type="checkbox"/> Turnouts <input type="checkbox"/> Culverts <input type="checkbox"/> Roadside Vegetated Filter Strips	Infiltration/Recharge	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____
Stormwater Energy Dissipaters <input type="checkbox"/> Level Spreaders <input type="checkbox"/> Riprap Aprons <input type="checkbox"/> Upslope Diversions <input checked="" type="checkbox"/> Infiltration Berm _____	Infiltration/Recharge	_____ _____ _____ <u>1745 cubic feet</u>	_____ _____ _____ <u>0.610</u>

5. Off-site Discharge Analysis.

Does the activity propose any off-site discharges to areas other than surface waters? Yes No

If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.

The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

6. Thermal Impact Analysis.

Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

7. Critical PCSM Plan stages.

Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: Westinghouse Road - Westmoreland County

Design storm frequency <u>2</u> -yr Rainfall amount <u>2.50</u> inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0.00	0.00	0.00
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	0.047	0.058	0.011
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.030	-0.017
Stormwater discharge rate for the design frequency storm			
1) 2-Year/24-Hour	0.744 cfs	0.108 cfs	-0.636 cfs
2) 10-Year/24-Hour	1.554 cfs	0.451 cfs	-1.103 cfs
3) 50-year/24-Hour	2.626 cfs	1.141 cfs	-1.485 cfs
4) 100-year/24-Hour	3.161 cfs	1.617 cfs	-1.544 cfs

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas <input type="checkbox"/> Infiltration Trench <input type="checkbox"/> Infiltration Bed <input type="checkbox"/> Infiltrated Basin	Infiltration/Recharge	_____ _____ _____	_____ _____ _____
Natural Area Conservation <input type="checkbox"/> Streamside Buffer Zone <input type="checkbox"/> Wetland Buffer Zone <input type="checkbox"/> Sensitive Area Buffer Zone <input type="checkbox"/> Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____
Stormwater Retention <input type="checkbox"/> Constructed Wetlands <input type="checkbox"/> Wet Ponds <input type="checkbox"/> Retention Basin	Detention/Retention	_____ _____ _____	_____ _____ _____
Sediment and Pollutant Removal <input type="checkbox"/> Vegetated Filter Strips <input type="checkbox"/> Compost Filter Sock <input type="checkbox"/> Detention Basins	Water Quality Treatment	_____ _____ _____	_____ _____ _____

Access Road Design <input type="checkbox"/> Road Crowning <input type="checkbox"/> Ditches <input type="checkbox"/> Turnouts <input type="checkbox"/> Culverts <input type="checkbox"/> Roadside Vegetated Filter Strips	Infiltration/Recharge	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____
Stormwater Energy Dissipaters <input type="checkbox"/> Level Spreaders <input type="checkbox"/> Riprap Aprons <input type="checkbox"/> Upslope Diversions <input checked="" type="checkbox"/> Infiltration Berm _____	Infiltration/Recharge	_____ _____ _____ <u>1222 cubic feet</u>	_____ _____ _____ <u>0.770</u>

5. Off-site Discharge Analysis.

Does the activity propose any off-site discharges to areas other than surface waters? Yes No

If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.

The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

6. Thermal Impact Analysis.

Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

7. Critical PCSM Plan stages.

Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: Newport Road - Indiana County

Design storm frequency <u>2-yr</u> Rainfall amount <u>2.51</u> inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0.00	0.31	0.31
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	0.087	0.120	0.033
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.058	-0.029
Stormwater discharge rate for the design frequency storm			
1) 2-Year/24-Hour	5.466 cfs	3.665 cfs	-1.801 cfs
2) 10-Year/24-Hour	11.50 cfs	7.863 cfs	-3.637 cfs
3) 50-year/24-Hour	19.42 cfs	13.41 cfs	-6.01 cfs
4) 100-year/24-Hour	23.37 cfs	16.53 cfs	-6.84 cfs

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas <input type="checkbox"/> Infiltration Trench <input type="checkbox"/> Infiltration Bed <input type="checkbox"/> Infiltrated Basin	Infiltration/Recharge	_____ _____ _____	_____ _____ _____
Natural Area Conservation <input type="checkbox"/> Streamside Buffer Zone <input type="checkbox"/> Wetland Buffer Zone <input type="checkbox"/> Sensitive Area Buffer Zone <input type="checkbox"/> Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____
Stormwater Retention <input type="checkbox"/> Constructed Wetlands <input type="checkbox"/> Wet Ponds <input type="checkbox"/> Retention Basin	Detention/Retention	_____ _____ _____	_____ _____ _____
Sediment and Pollutant Removal <input type="checkbox"/> Vegetated Filter Strips <input type="checkbox"/> Compost Filter Sock <input type="checkbox"/> Detention Basins	Water Quality Treatment	_____ _____ _____	_____ _____ _____

Access Road Design <input type="checkbox"/> Road Crowning <input type="checkbox"/> Ditches <input type="checkbox"/> Turnouts <input type="checkbox"/> Culverts <input type="checkbox"/> Roadside Vegetated Filter Strips	Infiltration/Recharge	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____
Stormwater Energy Dissipaters <input type="checkbox"/> Level Spreaders <input type="checkbox"/> Riprap Aprons <input type="checkbox"/> Upslope Diversions <input checked="" type="checkbox"/> Infiltration Berm _____	Infiltration/Recharge	_____ _____ _____ <u>2695 cubic feet</u>	_____ _____ _____ <u>1.500</u>

5. Off-site Discharge Analysis.

Does the activity propose any off-site discharges to areas other than surface waters? Yes No

If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.

The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

6. Thermal Impact Analysis.

Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

7. Critical PCSM Plan stages.

Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: Chestnut Road - Westmoreland County

Design storm frequency <u>2-yr</u> Rainfall amount <u>2.57</u> inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0.00	0.00	0.00
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	0.024	0.043	0.019
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.017	-0.007
Stormwater discharge rate for the design frequency storm			
1) 2-Year/24-Hour	0.361 cfs	0.181 cfs	-0.180 cfs
2) 10-Year/24-Hour	3.620 cfs	2.318 cfs	-1.302 cfs
3) 50-year/24-Hour	9.841 cfs	6.705 cfs	-3.136 cfs
4) 100-year/24-Hour	13.37 cfs	9.210 cfs	-4.160 cfs

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas <input type="checkbox"/> Infiltration Trench <input type="checkbox"/> Infiltration Bed <input type="checkbox"/> Infiltrated Basin	Infiltration/Recharge	_____ _____ _____	_____ _____ _____
Natural Area Conservation <input type="checkbox"/> Streamside Buffer Zone <input type="checkbox"/> Wetland Buffer Zone <input type="checkbox"/> Sensitive Area Buffer Zone <input type="checkbox"/> Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____
Stormwater Retention <input type="checkbox"/> Constructed Wetlands <input type="checkbox"/> Wet Ponds <input type="checkbox"/> Retention Basin	Detention/Retention	_____ _____ _____	_____ _____ _____
Sediment and Pollutant Removal <input type="checkbox"/> Vegetated Filter Strips <input type="checkbox"/> Compost Filter Sock <input type="checkbox"/> Detention Basins	Water Quality Treatment	_____ _____ _____	_____ _____ _____

Access Road Design <input type="checkbox"/> Road Crowning <input type="checkbox"/> Ditches <input type="checkbox"/> Turnouts <input type="checkbox"/> Culverts <input type="checkbox"/> Roadside Vegetated Filter Strips	Infiltration/Recharge	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____
Stormwater Energy Dissipaters <input type="checkbox"/> Level Spreaders <input type="checkbox"/> Riprap Aprons <input type="checkbox"/> Upslope Diversions <input checked="" type="checkbox"/> Infiltration Berm _____	Infiltration/Recharge	_____ _____ _____ <u>1155 cubic feet</u>	_____ _____ _____ <u>1.400</u>

5. Off-site Discharge Analysis.

Does the activity propose any off-site discharges to areas other than surface waters? Yes No

If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.

The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

6. Thermal Impact Analysis.

Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

7. Critical PCSM Plan stages.

Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: Grange Hall Road - Indiana County

Design storm frequency <u>2-yr</u> Rainfall amount <u>2.59</u> inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0.00	0.17	0.17
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	0.027	0.039	0.012
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.000	-0.027
Stormwater discharge rate for the design frequency storm			
1) 2-Year/24-Hour	1.063 cfs	0.239 cfs	-0.824 cfs
2) 10-Year/24-Hour	2.113 cfs	1.135 cfs	-0.978 cfs
3) 50-year/24-Hour	3.557 cfs	2.892 cfs	-0.665 cfs
4) 100-year/24-Hour	4.311 cfs	3.470 cfs	-0.841 cfs

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas <input type="checkbox"/> Infiltration Trench <input type="checkbox"/> Infiltration Bed <input type="checkbox"/> Infiltrated Basin	Infiltration/Recharge	_____ _____ _____	_____ _____ _____
Natural Area Conservation <input type="checkbox"/> Streamside Buffer Zone <input type="checkbox"/> Wetland Buffer Zone <input type="checkbox"/> Sensitive Area Buffer Zone <input type="checkbox"/> Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____
Stormwater Retention <input type="checkbox"/> Constructed Wetlands <input type="checkbox"/> Wet Ponds <input type="checkbox"/> Retention Basin	Detention/Retention	_____ _____ _____	_____ _____ _____
Sediment and Pollutant Removal <input type="checkbox"/> Vegetated Filter Strips <input type="checkbox"/> Compost Filter Sock <input type="checkbox"/> Detention Basins	Water Quality Treatment	_____ _____ _____	_____ _____ _____

Access Road Design <input type="checkbox"/> Road Crowning <input type="checkbox"/> Ditches <input type="checkbox"/> Turnouts <input type="checkbox"/> Culverts <input type="checkbox"/> Roadside Vegetated Filter Strips	Infiltration/Recharge	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____
Stormwater Energy Dissipaters <input type="checkbox"/> Level Spreaders <input type="checkbox"/> Riprap Aprons <input type="checkbox"/> Upslope Diversions <input checked="" type="checkbox"/> Infiltration Berm _____	Infiltration/Recharge	_____ _____ _____ <u>1755 cubic feet</u>	_____ _____ _____ <u>0.62</u>

5. Off-site Discharge Analysis.

Does the activity propose any off-site discharges to areas other than surface waters? Yes No

If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.

The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

6. Thermal Impact Analysis.

Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

7. Critical PCSM Plan stages.

Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: Cooney Road - Cambria County

Design storm frequency <u>2-yr</u> Rainfall amount <u>2.62</u> inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0.00	0.18	0.18
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	0.078	0.085	0.007
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.028	-0.050
Stormwater discharge rate for the design frequency storm			
1) 2-Year/24-Hour	2.154 cfs	1.226 cfs	-0.928 cfs
2) 10-Year/24-Hour	4.315 cfs	2.422 cfs	-1.893 cfs
3) 50-year/24-Hour	7.212 cfs	4.025 cfs	-3.187 cfs
4) 100-year/24-Hour	8.680 cfs	5.327 cfs	-3.353 cfs

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas <input type="checkbox"/> Infiltration Trench <input type="checkbox"/> Infiltration Bed <input type="checkbox"/> Infiltrated Basin	Infiltration/Recharge	_____ _____ _____	_____ _____ _____
Natural Area Conservation <input type="checkbox"/> Streamside Buffer Zone <input type="checkbox"/> Wetland Buffer Zone <input type="checkbox"/> Sensitive Area Buffer Zone <input type="checkbox"/> Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____
Stormwater Retention <input type="checkbox"/> Constructed Wetlands <input type="checkbox"/> Wet Ponds <input type="checkbox"/> Retention Basin	Detention/Retention	_____ _____ _____	_____ _____ _____
Sediment and Pollutant Removal <input type="checkbox"/> Vegetated Filter Strips <input type="checkbox"/> Compost Filter Sock <input type="checkbox"/> Detention Basins	Water Quality Treatment	_____ _____ _____	_____ _____ _____

Access Road Design <input type="checkbox"/> Road Crowning <input type="checkbox"/> Ditches <input type="checkbox"/> Turnouts <input type="checkbox"/> Culverts <input type="checkbox"/> Roadside Vegetated Filter Strips	Infiltration/Recharge	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____
Stormwater Energy Dissipaters <input type="checkbox"/> Level Spreaders <input type="checkbox"/> Riprap Aprons <input type="checkbox"/> Upslope Diversions <input checked="" type="checkbox"/> Infiltration Berm _____	Infiltration/Recharge	_____ _____ _____ <u>2486 cubic feet</u>	_____ _____ _____ <u>0.880</u>

5. Off-site Discharge Analysis.

Does the activity propose any off-site discharges to areas other than surface waters? Yes No

If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.

The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

6. Thermal Impact Analysis.

Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

7. Critical PCSM Plan stages.

Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: Sanders Run			
Design storm frequency <u>2-year</u> Rainfall amount <u>2.8</u> inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	3.090	4.924	+ 1.834
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	1.994	2.144	+ 0.150
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		1.947	- 0.047
Stormwater discharge rate for the design frequency storm	17.92 cfs	16.62 cfs	- 1.30 cfs
1) 2-Year/24-Hour	-	-	-
2) 10-Year/24-Hour	53.57 cfs	50.17 cfs	3.40 cfs
3) 50-year/24-Hour	77.46 cfs	68.26 cfs	3.06 cfs
4) 100-year/24-Hour	99.67 cfs	99.63 cfs	0.04 cfs

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas <input type="checkbox"/> Infiltration Trench <input checked="" type="checkbox"/> Infiltration Bed <input type="checkbox"/> Infiltrated Basin	Infiltration/Recharge Underground Storage Pipes	 <u>0.197 ac-ft</u>	 <u>2.15</u>
Natural Area Conservation <input type="checkbox"/> Streamside Buffer Zone <input type="checkbox"/> Wetland Buffer Zone <input type="checkbox"/> Sensitive Area Buffer Zone <input type="checkbox"/> Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	 _____ _____ _____ _____	 _____ _____ _____ _____
Stormwater Retention <input type="checkbox"/> Constructed Wetlands <input type="checkbox"/> Wet Ponds <input checked="" type="checkbox"/> Retention Basin	Detention/Retention Underground Storage Pipes	 <u>0</u>	 <u>2.15</u>
Sediment and Pollutant Removal <input type="checkbox"/> Vegetated Filter Strips <input type="checkbox"/> Compost Filter Sock <input type="checkbox"/> Detention Basins	Water Quality Treatment	 _____ _____ _____	 _____ _____ _____

Access Road Design <input type="checkbox"/> Road Crowning <input type="checkbox"/> Ditches <input type="checkbox"/> Turnouts <input type="checkbox"/> Culverts <input type="checkbox"/> Roadside Vegetated Filter Strips	Infiltration/Recharge	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____
Stormwater Energy Dissipaters <input type="checkbox"/> Level Spreaders <input type="checkbox"/> Riprap Aprons <input type="checkbox"/> Upslope Diversions <input type="checkbox"/> _____	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____

5. Off-site Discharge Analysis.
 Does the activity propose any off-site discharges to areas other than surface waters? Yes No
 If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.
 The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

 Pipe outlets are dissipated and spread out to shallow flow with riprap outlet protection.
 Pipe outlets are directed to an existing ditch.

6. Thermal Impact Analysis.
 Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

 Clearing and grubbing will be minimized to maintain existing shade tree canopy. BMPs utilize underground storage and infiltration to minimize radiation contact.

7. Critical PCSM Plan stages.
 Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

 A licensed professional engineer shall be onsite during and/or after construction of all BMPs to certify their correct installation.

3. SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA
See Attachment D in the Instructions on how to Complete This Section

Watershed Name: Kozak Road - Cambria County

Design storm frequency <u>2-yr</u> Rainfall amount <u>2.66</u> inches	Pre-construction	Post Construction	Net Change
Impervious area (acres)	0.00	0.00	0.00
Volume of stormwater runoff (acre-feet) without planned stormwater BMPs	0.027	0.046	0.019
Volume of stormwater runoff (acre-feet) with planned stormwater BMPs		0.015	-0.012
Stormwater discharge rate for the design frequency storm			
1) 2-Year/24-Hour	4.055cfs	3.027 cfs	-1.028 cfs
2) 10-Year/24-Hour	9.055 cfs	9.048 cfs	-0.007 cfs
3) 50-year/24-Hour	15.87 cfs	15.62 cfs	-0.25 cfs
4) 100-year/24-Hour	19.44 cfs	19.05 cfs	-0.39 cfs

4. SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs

In the lists below, check the BMPs identified in the Post Construction Stormwater Management Plan. The primary function(s) of the BMP listed in the functions column (infiltration/recharge; detention/retention; water quality). Additional functions may be added if applicable to that BMP. List the stormwater volume and area of runoff to be treated by each BMP type when calculations are required. If any BMP in the Site Restoration Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
Bio-infiltration areas <input type="checkbox"/> Infiltration Trench <input type="checkbox"/> Infiltration Bed <input type="checkbox"/> Infiltrated Basin	Infiltration/Recharge	_____ _____ _____	_____ _____ _____
Natural Area Conservation <input type="checkbox"/> Streamside Buffer Zone <input type="checkbox"/> Wetland Buffer Zone <input type="checkbox"/> Sensitive Area Buffer Zone <input type="checkbox"/> Pre-Construction Drainage Pattern Intact	Infiltration/Recharge	_____ _____ _____ _____	_____ _____ _____ _____
Stormwater Retention <input type="checkbox"/> Constructed Wetlands <input type="checkbox"/> Wet Ponds <input type="checkbox"/> Retention Basin	Detention/Retention	_____ _____ _____	_____ _____ _____
Sediment and Pollutant Removal <input type="checkbox"/> Vegetated Filter Strips <input type="checkbox"/> Compost Filter Sock <input type="checkbox"/> Detention Basins	Water Quality Treatment	_____ _____ _____	_____ _____ _____

Access Road Design <input type="checkbox"/> Road Crowning <input type="checkbox"/> Ditches <input type="checkbox"/> Turnouts <input type="checkbox"/> Culverts <input type="checkbox"/> Roadside Vegetated Filter Strips	Infiltration/Recharge	 	
Stormwater Energy Dissipaters <input type="checkbox"/> Level Spreaders <input type="checkbox"/> Riprap Aprons <input type="checkbox"/> Upslope Diversions <input checked="" type="checkbox"/> Infiltration Berm _____	Infiltration/Recharge	 <u>1372 cubic feet</u>	 <u>1.290</u>

5. Off-site Discharge Analysis.

Does the activity propose any off-site discharges to areas other than surface waters? Yes No

If yes, it is the applicant's responsibility to ensure that they have legal authority for any off-site discharge.

The Applicant must provide a demonstration in both the E&S and PCSM Plans that the discharge will not cause erosion, damage, or nuisance to off-site properties.

6. Thermal Impact Analysis.

Explain how thermal impacts associated with this project were avoided, minimized, or mitigated.

7. Critical PCSM Plan stages.

Identify and list critical stages of implementation of the PCSM Plan for which a licensed professional or designee shall be present on site.

SECTION G. ANTIDEGRADATION ANALYSIS

This section must be completed where earth disturbance activities will be conducted in special protection or siltation-impaired watersheds.

Part 1 NONDISCHARGE ALTERNATIVES EVALUATION

The applicant must consider and describe any and all nondischarge alternatives for the entire project area which are environmentally sound and will:

- Minimize accelerated erosion and sedimentation during the earth disturbance activity
- Achieve no net change from pre-development to post-development volume, rate and concentration of pollutants in water quality

E & S Plan	Official Use Only	PCSM/Site Restoration Plan	Official Use Only
<p>Check off the environmentally sound nondischarge Best Management Practices (BMPs) listed below to be used prior to, during, and after earth disturbance activities that have been incorporated into your E & S Plan based on your site analysis. For non-discharge BMPs not checked, provide an explanation of why they were not utilized. Also for BMPs checked, provide an explanation of why they were utilized. (Provide your analysis and attach additional sheets if necessary) The best possible pipeline route was selected based on landowner agreements, and minimization of environmental impacts, and engineering/constructibility factors. The project's disturbed area will be limited to the area required for construction, and the duration of construction will be minimized to the extent practicable. Riparian forest buffers will be protected to the extent practicable during construction activities at stream crossings.</p>		<p>Check off the environmentally sound nondischarge Best Management Practices (BMPs) listed below to be used after construction that have been incorporated into your PCSM/SR Plan based on your site analysis. For non-discharge BMPs not checked, provide an explanation of why they were not utilized. Also for BMPs checked, provide an explanation of why they were utilized. (Provide your analysis and attach additional sheets if necessary) The best possible pipeline route was selected based on landowner agreements, and minimization of environmental impacts, and engineering/constructibility factors. The pipeline right of way will be restored to a meadow condition at original contours to maintain the pre-construction drainage patterns. Riparian forest buffers will be protected to the extent practicable.</p>	
<p>Nondischarge BMPs</p> <p><input type="checkbox"/> Alternative Siting</p> <p style="padding-left: 20px;"><input type="checkbox"/> Alternative location</p> <p style="padding-left: 20px;"><input type="checkbox"/> Alternative configuration</p> <p style="padding-left: 20px;"><input type="checkbox"/> Alternative location of discharge</p> <p><input checked="" type="checkbox"/> Limited Disturbed Area</p> <p><input checked="" type="checkbox"/> Limiting Extent & Duration of Disturbance (Phasing, Sequencing)</p> <p><input type="checkbox"/> Riparian Buffers (150 ft. min.)</p> <p><input type="checkbox"/> Riparian Forest Buffer (150 ft. min.)</p> <p><input type="checkbox"/> Other _____</p>		<p>Nondischarge BMPs</p> <p><input type="checkbox"/> Alternative Siting</p> <p style="padding-left: 20px;"><input type="checkbox"/> Alternative location</p> <p style="padding-left: 20px;"><input type="checkbox"/> Alternative configuration</p> <p style="padding-left: 20px;"><input type="checkbox"/> Alternative location of discharge</p> <p><input type="checkbox"/> Low Impact Development (LID / BSD)</p> <p><input type="checkbox"/> Riparian Buffers (150 ft. min.)</p> <p><input type="checkbox"/> Riparian Forest Buffer (150 ft. min.)</p> <p><input checked="" type="checkbox"/> Infiltration</p> <p><input type="checkbox"/> Water Reuse</p> <p><input checked="" type="checkbox"/> Other <u>re-construction drainage pattern intact within the right of way</u></p>	

Will the non-discharge alternative BMPs eliminate the net change in rate, volume and quality during and after construction?

- Yes No

If yes, antidegradation analysis is complete.
 If no, proceed to Part 2.

PART 2 ANTIDegradation BEST AVAILABLE COMBINATION OF TECHNOLOGIES (ABACT)

If the net change in stormwater discharge from or after construction is not fully managed by nondischarge BMPs, the applicant must utilize ABACT BMPs to manage the difference. The Applicant must specify whether the discharge will occur during construction, post-construction or both, and identify the technologies that will be used to ensure that the discharge will be a non-degrading discharge. ABACT BMPs include but are not limited to:

E & S Plan	Official Use Only	PCSM/Site Restoration Plan	Official Use Only
<p><input checked="" type="checkbox"/> Treatment BMPs:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Sediment basin with skimmer <input type="checkbox"/> Sediment basin ratio of 4:1 or greater (flow length to basin width) <input type="checkbox"/> Sediment basin with 4-7 day detention <input type="checkbox"/> Flocculants <input checked="" type="checkbox"/> Compost Filter Socks <input type="checkbox"/> Compost Filter Sock Sediment Basin <input checked="" type="checkbox"/> RCE w/ Wash Rack <p><input type="checkbox"/> Land disposal:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Vegetated filters <input type="checkbox"/> Riparian buffers <150ft. <input type="checkbox"/> Riparian Forest Buffer <150ft. <input checked="" type="checkbox"/> Immediate stabilization <p><input checked="" type="checkbox"/> Pollution prevention:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> PPC Plans <input type="checkbox"/> Street sweeping <input type="checkbox"/> Channels, collectors and diversions lined with permanent vegetation, rock, geotextile or other non-erosive materials <p><input type="checkbox"/> Stormwater reuse technologies:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Sediment basin water for dust control <input type="checkbox"/> Sediment basin water for irrigation <p><input checked="" type="checkbox"/> <u>Other Rock construction entrances with wash racks, compost filter socks, erosion control blanket placed within 100-feet of streams</u></p>		<p><input type="checkbox"/> Treatment BMPs:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Infiltration Practices <input type="checkbox"/> Wet ponds <input type="checkbox"/> Created wetland treatment systems <input type="checkbox"/> Vegetated swales <input type="checkbox"/> Manufactured devices <input type="checkbox"/> Bio-retention/infiltration <input type="checkbox"/> Green Roofs <p><input type="checkbox"/> Land disposal:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Vegetated filters <input type="checkbox"/> Riparian Buffers <150ft. <input type="checkbox"/> Riparian Forest Buffer <150ft. <input type="checkbox"/> Disconnection of roof drainage <input type="checkbox"/> Bio-retention/bio-infiltration <p><input checked="" type="checkbox"/> Pollution prevention:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Street sweeping <input type="checkbox"/> Nutrient, pesticide, herbicide or other chemical application plan alternatives <input checked="" type="checkbox"/> PPC Plans <input type="checkbox"/> Non-structural Practices <input checked="" type="checkbox"/> Restoration BMPs <p><input type="checkbox"/> Stormwater reuse technologies:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Divert rainwater into impoundment <input type="checkbox"/> Underground storage <input type="checkbox"/> Spray/Drip Irrigation <p><input type="checkbox"/> Other _____</p>	

SECTION H. COMPLIANCE REVIEW

Is the applicant in violation of any existing permit, regulation, order, or schedule of compliance issued by the Department within the last 5 years?

Yes No

If yes, provide the permit number or facility name, a brief description of the violation, the compliance schedule (including dates and steps to achieve compliance) and the current compliance status. (Attach additional information on a separate sheets, when necessary)

Notices of Violations can be found in Tab 9 of the ESCGP-2 Permit Application

SECTION I. CERTIFICATION BY PERSON PREPARING APPLICATION

I do hereby certify to the best of my knowledge, information, and belief, that the Erosion and Sediment Control and PCSM/Site Restoration Plans are true and correct, represent actual field conditions, and are in accordance with the 25 Pa. Code Chapters 78 and 102 of the Department's rules and regulations. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Print Name Robert F. Simcik, P.E. Signature *Robert F. Simcik*

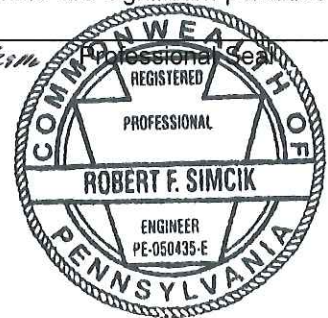
Company Tetra Tech

Address 661 Andersen Drive, Foster Plaza 7, Pittsburgh, PA 15220

Phone (412) 921-8163

Most Recent DEP Training Attended Location Greensburg, PA Date 04/03/2014

e-Mail Address robert.simcik@tetrattech.com



EXPEDITED REVIEW PROCESS

In addition to the certification required above applicants using the expedited permit review process must attach an E&S and PCSM/Site Restoration Plans developed and sealed by a licensed professional engineer, surveyor or professional geologist. The plans shall contain the following certification:

I do hereby certify to the best of my knowledge, information, and belief, that the E & S Control and SR/PCSM BMPs are true and correct, represent actual field conditions and are in accordance with the 25 Pa. Code Chapters 78 and 102 of the Department's rules and regulations. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SECTION J. APPLICANT CERTIFICATION

Applicant Certification. I certify under penalty of law that this document and all attachments were prepared by me or under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. The responsible official's signature also verifies that the activity is eligible to participate in the permit, and that the applicant agrees to abide by the terms and conditions of the permit. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Matthew L. Gordon - Principal Engineer - Sunoco
 Print Name and Title of Applicant

Matthew L. Gordon
 Signature of Applicant

11/28/2016
 Date Application Signed

 Print Name and Title of Co-Applicant (if applicable)

 Signature of Co-Applicant

 Date Application Signed

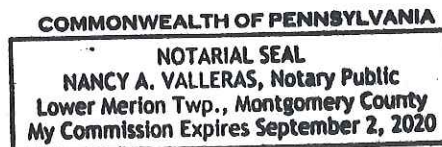
Notarization
 Sworn to and subscribed to before me this
28th day of November, 2016

Nancy A. Valleras
 Notary Public

Commonwealth of Pennsylvania
 County of Montgomery

My Commission expires 9/2/20

AFFIX SEAL



SECTION K. CONTACT FOR ADDITIONAL INFORMATION

Contact's Last Name	First Name	MI	Phone	(412) 921-8163
Simcik	Robert	F	FAX	
Mailing Address	City	State	ZIP + 4	
661 Andersen Drive, Foster Plaza 7	Pittsburgh	PA	15220	
e-Mail Address robert.simcik@tetrattech.com				