



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES EROSION AND SEDIMENT CONTROL (E&S) MODULE 1

Applicant: Cornwall Properties, LLC

Project Site Name: Residential Subdivision

Surface Water Name(s): Snitz Creek, UNT to Snitz Creek

Surface Water Use(s): TSF

E&S PLAN INFORMATION

1. Describe the existing topographic features of the project site and the immediate surrounding area.

The project site is located on a previous mining operation. There is a drainage divide towards the southern portion of the site that directs runoff towards both the north and south. Slopes range from 1% to 75% depending on the location on the site. There is a large fill pile located in the western portion of the site. The northeastern portion of the site contains various flat pads where structures used to be located and other impervious areas remain. There are pockets of wetlands along the lowly northern and western edges of the site. The Cornwall Open Pit is located just west of the site, across Boyd Street.

2. Complete the following table for soils present at the project site.

Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth (ft)	Hydric
Nec	Neshaminy gravelly silt loam	15.88	C	18.57	4-6	☐
NHE	Neshaminy extremely stony silt loam	21.71	C	25.39	4-6	☐
UoC	Ungers extremely stony loam	9.68	B	11.32	4-6	☐

Discuss any soil limitations and how the E&S Plan was designed to address those limitations.

Neshaminy Soils - The Neshaminy series consists of deep and very deep, well drained soils formed in materials weathered from diabase and other dark colored basic rocks. Saturated hydraulic conductivity is moderately high. Slopes range from 0 to 70 percent. Mean annual precipitation is 42 inches. Mean annual temperature is 50 degrees F. Neshaminy soils may be susceptible to cut banks and cave ins and corrosive to steel and concrete. This soil may also be subject to a seasonally high water table, hydric inclusions, low strength, slow percolation, piping, frost action, shrink-swell, and a poor source of topsoil.

Ungers Soils - The Ungers series consists of deep and very deep, well drained soils formed in residuum from red sandstone and shale. Slopes range from 0 to 60 percent. Permeability is moderate. Mean annual precipitation is 43 inches. Mean annual temperature is 52 degrees F. Ungers soils may be susceptible to cut banks and cave ins, corrosive to concrete, and easily erodible. This soil may also be susceptible to low strength/landslides, slow percolation, and frost action.

Soil Use Limitations and Resolutions

- **Cut-bank caving:** All applicable OSHA standards and regulations shall be implemented at all times during trenching and excavation operations.
- **Corrosion of steel and concrete:** All underground foundations and structures shall be properly protected against corrosion, which may include coating these structures with corrosion-resistant material.
- **Easily erodible:** Erosion and sediment pollution controls will be implemented to avoid the transportation of sediment-laden water off-site. All slopes greater than 3:1 will be stabilized with erosion control lining.
- **Depth to saturated zone/seasonal high water table:** The site may require dewatering of pits during construction, i.e. when pouring footers, excavating trenches, dewatering basins, etc. The geotechnical report did not identify any groundwater in the proposed infiltration basin locations, so limitations are not expected in these areas. Should dewatering be required, a sump pit and filter bag shall be utilized, and water shall be pumped to an undisturbed area upstream of a perimeter control BMP such as a filter sock.
- **Hydric soils/hydric inclusions:** A wetland field survey was conducted, and various wetlands and watercourses were identified on site. No disturbance of said wetlands or watercourses is proposed.
- **Low strength/landslide prone:** The maximum proposed slope on the site is 2:1. All slopes greater than 3:1 will

be stabilized with erosion control lining. This will reduce the potential for erosion and land slide action. All proposed berms shall be compacted fully in order to protect against landslides, and shall be stabilized immediately.

- **Slow percolation:** Adequate precautions will be taken to ensure that the PCSM BMPs infiltrate within the required time period, including infiltration testing and soil modification/underdrain installation, if necessary.
- **Piping:** Anti-seep collars will be provided as part of the PCSM and pipeline designs.
- **Frost action:** The project's impervious surfaces shall be graded at a minimum of 1% in one direction, so that water will not collect on the surface and cause damage during freeze/thaw cycles. Cracks which develop in the impervious surfaces shall be promptly sealed.
- **Shrink/swell:** All site grading shall direct water away from buildings and other impervious surfaces to reduce the likelihood of water infiltrating near or under these structures.
- **Poor source of topsoil:** The adequacy of the topsoil will be evaluated upon the commencement of excavation. As much of the site is an old mining operation, topsoil may need to be imported. If Soil is taken to or borrowed from another construction site, said site must have an approved E&SPC Plan.

If Hydric soils are present, is a wetland determination attached to this module? ☒ Yes ☐ No ☐ N/A

If soils are known to be contaminated, 1) identify the pollutants exceeding Act 2 standards in the space provided below, 2) identify the extent of soil contamination on an E&S Plan Drawing that is attached to this module, and 3) describe the methods that will be used to avoid or minimize disturbance of the contaminated soils in the space provided below.

No soils are known to be contaminated onsite.

3. Describe the characteristics of the earth disturbance activity, including the past, present and proposed land uses and the proposed alteration to the project site.

The current site consists of an old mining operation which is now mostly covered in trees, with various areas of gravel, pavement, abandoned structures, building foundations, etc. Based on Google Earth historical imagery, the two buildings towards the southeast portion of the site were demolished between 2008 and 2010. The large building towards the center of the site was demolished between 2013 and 2015. Proposed improvements include the construction of a 130-lot single-family residential subdivision with associated homes, driveways, roads, connection to public sewer and water, and required stormwater management facilities.

4. Describe the volume and rate of runoff from the project site and its upstream watershed area.

The volume and rate of runoff from the project site will be managed in accordance with local Borough and Chapter 102 standards through the implementation of structural BMPs. There is a relatively small portion of offsite area that drains from the ridge to the south onto the project site. This offsite runoff will be managed by the proposed improvements. There is a large offsite area draining off the hillside to the east of Iron Valley Drive which is currently conveyed by existing storm sewer onto the project site. This area of offsite runoff will be bypassed through the site using swales and piping.

5. Check boxes to indicate all BMPs that will be installed or implemented, identify plan numbers for the BMPs, and describe any deviations from the E&S Manual.

E&S BMPs	Plan No(s). Identified	Plan No(s). for O&M	Deviation(s) from E&S Manual
☒ Rock Construction Entrance	81-85	86-88	Alternative (100'L)
☐ Rock Construction Entrance with Wash Rack			
☐ Rumble Pad			
☐ Wheel Wash			
☐ Temporary and Permanent Access Roads			
☐ Waterbar			
☐ Broad-based Dip			
☐ Open-top Culvert			
☐ Water Deflector			
☐ Roadside Ditch			
☐ Ditch Relief Culvert			
☐ Turnout			
☐ Compost Sock Sediment Trap			
☐ Temporary Stream Crossing			
☐ Temporary Wetland Crossing			
☐ Turbidity Barrier (Silt Curtain)			
☐ Dewatering Work Areas			
☒ Pumped Water Filter Bag	As required	86-88	w/ compost sock ring
☐ Sump Pit			
☐ Waste Management			
☒ Concrete Washout	As required	86-88	
☒ Compost Filter Sock	81-85	86-88	
☐ Compost Filter Berm			
☐ Weighted Sediment Filter Tube			
☐ Rock Filter Outlet			
☐ Silt Fence (Filter Fabric Fence)			
☐ Reinforced Silt Fence			
☐ Super Silt Fence (Super Filter Fabric Fence)			

E&S BMPs	Plan No(s). Identified	Plan No(s). for O&M	Deviation(s) from E&S Manual
☐ Sediment Filter Log (Fiber Log)			
☐ Wood Chip Filter Berm			
☐ Straw Bale Barrier			
☒ Rock Filter	81-85	86-88	w/ compost
☐ Vegetative Filter Strip			
☒ Inlet Filter Bag	81-85	86-88	
☐ Stone Inlet Protection			
☐ Runoff Conveyance (Channel)			
☐ Bench			
☐ Top-of-Slope Berm			
☐ Temporary Slope Pipe			
☒ Sediment Basin	81-85	86-88	w/ skimmer
☐ Sediment Trap			
☒ Riprap Apron	81-85	86-88	
☐ Flow Transition Mat			
☐ Stilling Basin (Plunge Pool)			
☐ Stilling Well			
☐ Energy Dissipater			
☐ Drop Structure			
☐ Earthen Level Spreader			
☐ Structural Level Spreader			
☐ Surface Roughening			
☐ Vegetative Stabilization			
☒ Erosion Control Blanket	81-85	86-88	
☐ Soil Binders			
☐ Sodding			
☐ Cellular Confinement Systems			
☐ Alternative:			
☐ Alternative:			

Table 1 – For PAG-01 applicants, complete the requested information for each selected E&S BMP, where applicable.

Site Access BMPs									
BMP Name	No.	Length (ft)	Width (ft)	% Slope	Spacing (ft)	Length of Upslope Drainage (ft)	Culvert Diameter (in)	Soil Type in Ditch	E&S Manual Figure/Detail No.
Rock Construction Entrance (RCE)									
RCE with Wash Rack									
Temporary and Permanent Access Roads – Crowned Roadway									
Temporary and Permanent Access Roads – Insloped Roadway									
Waterbar									
Broad-based Dip									
Open-top Culvert									
Water Deflector									
Roadside Ditch									
Ditch Relief Culvert									
Sediment Barriers / Filters									
BMP Name	DA (ac)	Diameter (in)	Storage Capacity (cf)	Trap Height (in)	% Slope	Slope Length Above Barrier (ft)	Barrier Height (in)	E&S Manual Figure/Detail No.	
Compost Sock Sediment Trap									
Compost Filter Sock									
Compost Filter Berm									
Silt Fence (Filter Fabric Fence)									
Super Silt Fence									
Sediment Filter Log									
Weighted Sediment Filter Tube									
Straw Bale Barrier									
Wood Chip Filter Berm									
Toe-of-Slope Berm									

Table 1 – For PAG-01 applicants, complete the requested information for each selected E&S BMP, where applicable.

Runoff Conveyance BMPs													
BMP Name	Temporary	Design Storm	DA (ac)	Multiplier	Qr (cfs)	Q (cfs)	Manning's n	Va (fps)	V (fps)	D (ft)	d (ft)	Flow Depth Ratio	E&S Manual Figure/Detail No.
Vegetated Channel	☐												
Sodded Channel	☐												
Riprap Channel	☐												
Energy Reduction BMPs													
BMP Name	Downstream Distance to Drainage Course (ft)		Downstream % Slope		DA (ac)	Discharge (cfs)	Manhole Depth (ft)	Inflow Pipe Diameter (in)	Outlet Pipe Diameter (in)	E&S Manual Figure/Detail No.			
Level Spreader													
Drop Structure													
Stilling Basins / Wells													
BMP Name	Pipe Diameter (in)	Discharge (cfs)	Well Diameter (in)	Depth of Well Below Invert (ft)	Basin Depth (ft)	Median Riprap Size (in)	Distance from Discharge Pipe to Basin Center (ft)	E&S Manual Figure/Detail No.					
Stilling Basin													
Stilling Well													
Other BMPs													
BMP Name	DA (ac)	Pipe Diameter (in)	Berm Height (in)	Length (ft)	% Slope	Vertical Spacing (ft)	Channel Depth (ft)	Riprap Size	Riprap Thickness (in)	Initial Width (ft)	Terminal Width (ft)	E&S Manual Figure/Detail No.	
Temporary Slope Pipe													
Bench													
Rock Filter													
Riprap Apron													

For selected BMPs not identified in Table 1, report the name of the BMP and the Figure or Detail No. from the E&S Manual that will be used for design and implementation (PAG-01 only).

BMP Name	E&S Manual Figure/Detail No.	BMP Name	E&S Manual Figure/Detail No.

6. ☒ All applicable Standard E&S Worksheets from Appendix B of the E&S Manual have been completed and are attached.

7. ☐ Other worksheets or calculations equivalent to Appendix B of the E&S Manual have been completed and are attached.

8. Identify the E&S Plan Drawing number(s) that describes the sequence of BMP installation and removal in relation to the scheduling of earth disturbance activities, prior to, during and after earth disturbance activities that ensure the proper functioning of all BMPs.

86

9. ☐ Supporting E&S calculations have been completed and are available upon request (PAG-01 only).

10. ☒ Supporting E&S calculations are attached to the NOI/application.

11. ☐ Plan drawings consist of standard Figures/Construction Details in E&S Manual (PAG-01 only).

12. ☒ Plan drawings have been developed for the project and are attached to the NOI/application.

13. ☒ BMPs will be inspected on a weekly basis and after measurable storm events (i.e., at least 0.25 inch).

14. Identify the following information relating to temporary stabilization measures on an E&S Plan Drawing and identify the Drawing No. below: 1) vegetative species, 2) % pure live seed, 3) seed application rate, 4) fertilizer type, 5) fertilizer application rate, 6) mulch type, 7) mulching rate, and 8) liming rate.

E&S Plan Drawing No(s): 88

15. Identify the following information relating to permanent stabilization measures on an E&S Plan Drawing and identify the Drawing No. below: 1) vegetative species, 2) % pure live seed, 3) seed application rate, 4) fertilizer type, 5) fertilizer application rate, 6) mulch type, 7) mulching rate, 8) liming rate, 9) anchor material, 10) anchoring method, 11) rate of anchor material application, 12) topsoil placement depth, and 13) seeding season dates.

E&S Plan Drawing No(s): 88

16. Describe the procedures that will be taken to ensure that recycling or disposal of materials associated with or from the project site will be conducted properly.

The operator shall remove from the site, recycle or dispose of all building materials and wastes in accordance with the Department's Solid Waste Management Regulations at 25 PA Code 260.1 et seq., 271.1 et seq., and 287.1 et seq. The contractor shall not illegally bury dump, or discharge any building material or wastes on or off the site. These building wastes include, but are not limited to, excess soil materials, building materials, concrete wash water, sanitary wastes, etc. that could adversely impact water quality.

17. Identify the presence of any naturally occurring geologic formations or soil conditions that may have the potential to cause pollution during earth disturbance activities. If such formations or conditions exist, identify BMPs that will be implemented to avoid or minimize potential pollution.

The PA DEP's eMapPA does not identify any karst features within or immediately adjacent to the project site. The site is underlain by Diabase and the Hamburg sequence rocks (shale, siltstone, and graywacke). These bedrock formations are not susceptible to karst activity, as such the risk for karst activity is considered low. Should a geotechnical hazard be encountered, a geotechnical engineer will be immediately contacted and required to oversee any mitigation measures.

18. Identify whether the potential exists for thermal impacts to surface waters from the earth disturbance activity. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts.

All existing site runoff currently leaves the site un-detained with no treatment of this runoff in any way. Seven (7) infiltration basins are proposed to treat the majority of the disturbed site and proposed impervious areas. Runoff reaching the infiltration basins will be cooled by the vegetation in the basin bottom before being filtered through an engineered soil mixture and infiltrated into the ground. Runoff reaching the one (1) detention basin will be

cooled by the vegetation in the basin bottom prior to being released slowly to the downstream storm sewer system. Street trees are also proposed along both sides of all proposed roads to shade these areas and provide temperature relief for runoff that flows over the impervious surfaces.

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

20. If applicable, identify existing and proposed riparian forest buffers on E&S and PCSM Plan Drawings and identify the Drawing No(s) below (select N/A if not applicable).

E&S Plan Drawing No(s):

☒ N/A

PCSM Plan Drawing No(s):

E&S PLAN DEVELOPER

☒ I am trained and experienced in E&S control methods.

☐ I am a licensed professional.

Name: Ethan Gehenio

Title: Engineering Associate

Company: Steckbeck Engineering & Surveying, Inc.

Phone No.: 717-272-7110 x108

Address: 279 N. Zinns Mill Road, Suite A

Email: egehenio@steckbeck.net

City, State, ZIP: Lebanon, PA 17042

License No.: _____

License Type: _____

Exp. Date: _____



E&S Plan Developer Signature

3/21/2024

Date