

**EROSION AND SEDIMENTATION CONTROL REPORT**

**MAM14\_U1 PIPELINE AND WATERLINE  
BELL AND WASHINGTON TOWNSHIPS  
WESTMORELAND COUNTY, PENNSYLVANIA**

**Prepared For:**

**CNX MIDSTREAM OPERATING COMPANY LLC  
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**CEC Project 332-793**

**December 2023**

**Certification of Plan Preparer:**

*I do hereby certify to the best of my knowledge, information, and belief, that the Erosion and Sediment Control Plan and the Site Restoration Plan 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.*



**Civil & Environmental Consultants, Inc.**

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## 1.0 INTRODUCTION

On behalf of CNX Midstream Operating Company LLC (CNXM), Civil & Environmental Consultants, Inc. (CEC) presents this Erosion and Sedimentation Control (E&S) Report for the MAM14\_U1 Pipeline and Waterline project located in Bell and Washington Townships, Westmoreland County, Pennsylvania. The E&S Report was prepared specifically to address the requirements of the E&S Permit for Discharges of Stormwater Associated with Construction Activities application. The E&S Report is part of the Individual E&S Permit Package and accompanies, and is consistent with, the application form and the Site Restoration (SR) Report.

Project Description and Location: CNXM proposes to construct approximately 9,700 feet of two (2) 12-inch steel gas pipelines and approximately 9,740 feet of one (1) 20-inch high density polyethylene (HDPE) waterline within a 75-foot to 100-foot wide limit of disturbance (LOD). The proposed project begins in Washington Township, Westmoreland County approximately 0.3 miles north of Paul Riggle & Sons Trucking off Marco Road at the future CNX Gas Company LLC (CNX) MAM14 well site. One (1) 20-inch HDPE waterline and two (2) 12-inch steel gas pipelines will traverse in an eastern direction for approximately 1.85 miles and ending approximately 1300 feet in a northwestern direction from the intersection of Coal Hollow Road and State Route (S.R.) 819 in Bell Township, Westmoreland County, Pennsylvania at the CNX MAM15 compressor site. The pipelines will cross Millstone Road (Twp. 804).

Approximately five (5) existing access roads are proposed for construction access to the pipeline portion of this project. Temporary construction workspaces as well as the pipeline right-of-way (ROW) will generally be restored to existing conditions or meadow-good condition.

The following North American Datum 1983 coordinates may be used to locate the approximate beginning and end of the pipeline:

Proposed Beginning of Gas Pipeline and Waterline:	40.536809°N, 79.571682°W
Proposed End of Gas Pipeline:	40.535188°N, 79.546342°W
Proposed End of Waterline:	40.534883°N, 79.547888°W

Wetlands and other potential natural resources conservation areas were considered during the planning stage of this project. Wetlands and streams were delineated in the vicinity of the project area by CEC on various days from August thru November 2023. Consideration was given during the preparation of the E&S Plans to minimize impacts to these sensitive areas. Six (6) wetlands and five (5) streams will be temporarily impacted and by earth disturbance activities as a result of this project. A copy of the Wetland Delineation Report prepared by CEC is included with the Individual E&S Permit package.

Lastly, the proposed ground condition will generally be restored to meadow-good condition for pipeline ROW. Existing access roads for pipeline construction located within the LOD will be maintained during construction and restored to existing widths and cover condition following construction. Temporary workspaces will be restored to approximate existing contour and meadow-good condition following construction activities. Calculations for proposed E&S BMPs are provided in Appendix A.

## 2.0 SOILS INFORMATION

The Soils Map, which is provided in the Soils Report in Appendix C, illustrates the soil types and their respective boundaries. The following table presents the soils and their respective characteristics and limitations that will be encountered during construction of this project. The soils information in the following table was obtained from the United States Department of Agriculture (USDA) Custom Soil Resource Report.

<b>SYMBOL</b>	<b>SOIL TYPE</b>	<b>SLOPE (%)</b>
BeD	Bethesda very channery silt loam	8-25
BeF	Bethesda very channery silt loam	25-75
ErB	Ernest silt loam	3-8
ErC	Ernest silt loam	8-15
GcB	Gilpin channery silt loam	3-8
GcC	Gilpin channery silt loam	8-15
GcD	Gilpin channery silt loam	15-25
Lo	Lobdell silt loam	0-3
ShF	Shelocta-Gilpin channery silt loam	25-75
SxF	Shelocta-Gilpin channery silt loam	25-75
WrB	Wharton silt loam	3-8
WrC	Wharton silt loam	8-15

<b>MAP SYMBOL</b>	<b>SOIL NAME</b>	<b>CORROSIVE TO CONCRETE OR STEEL</b>	<b>DEPTH TO SATURATED ZONE</b>	<b>DEPTH TO HARD BEDROCK</b>	<b>SLOPE</b>	<b>FLOODING</b>	<b>FROST ACTION</b>	<b>LOW STRENGTH</b>	<b>UNSTABLE FILL</b>	<b>CUT BANKS CAVE</b>	<b>POTENTIALLY HYDRIC</b>	<b>SHRINK/SWELL</b>	<b>PIPING</b>
BeD	Bethesda very channery silt loam	C/S	X		X		X	X	X	X			
BeF	Bethesda very channery silt loam	C/S	X		X		X	X	X	X			
ErB	Ernest silt loam	C/S	X		X		X	X		X	X		X
ErC	Ernest silt loam	C/S	X		X		X	X		X	X		X

MAP SYMBOL	SOIL NAME	CORROSIVE TO CONCRETE OR STEEL	DEPTH TO SATURATED ZONE	DEPTH TO HARD BEDROCK	SLOPE	FLOODING	FROST ACTION	LOW STRENGTH	UNSTABLE FILL	CUT BANKS CAVE	POTENTIALLY HYDRIC	SHRINK/SWELL	PIPING
GcB	Gilpin channery silt loam	C/S		X	X		X	X		X	X		
GcC	Gilpin channery silt loam	C/S		X	X		X	X		X	X		
GcD	Gilpin channery silt loam	C/S		X	X		X	X		X	X		
ItB	Itmann extremely channery loam	C/S						X		X			
Lo	Lobdell silt loam	S	X	X			X	X	X		X	X	
ShF	Shelocta-Gilpin channery silt loam	C/S				X	X	X	X		X		
SxF	Shelocta-Gilpin channery silt loam	C/S				X	X	X	X		X		
WrB	Wharton silt loam	C/S	X	X		X		X	X		X	X	
WrC	Wharton silt loam	C/S	X	X		X		X	X		X	X	

### **Soil Limitations and Resolutions**

LIMITATION	RESOLUTION
Corrosion to Concrete/Steel	Concrete and steel construction materials shall be coated with corrosion resistant material.
Depth to Saturated Zone	Pumps and pumped water filter bags shall be utilized if groundwater is encountered
Depth to Hard Bedrock	Excavations shall be as shallow as practicable. Site earthwork operations shall be performed in accordance with the geotechnical recommendations by CEC.
Slope	The site shall be regraded to suitable slopes for desired function.
Flooding	No floodplains will be disturbed during the construction of this project.
Frost Action	Ensure proper protection from damage, especially to roadways.
Low Strength	Proper construction techniques shall be employed during earthmoving activities in order to avoid slope failures.

<b>LIMITATION</b>	<b>RESOLUTION</b>
Unstable Fill	A project specific geohazard mitigation report was prepared to address steep slope and unstable fill construction. Refer the geohazard mitigation report for construction recommendations.
Cut Banks Cave	Trenches and cut slopes shall be excavated with appropriate layback banks to prevent cave-ins. Stockpiles shall be located at a sufficient distance away from the trenches and cut slopes. Applicable Occupational Safety and Health Administration (OSHA) standards and regulations should be implemented.
Hydric/Hydric Inclusions	A wetland study was performed by CEC. Streams and wetlands are shown on the E&S Plans and in the Wetland Delineation Report included in the E&S Permit application.
Shrink/Swell	Replace pre-existing expansive soils with a non-expansive soil or maintain constant soil moisture.
Piping	Trench plugs shall be utilized in accordance with the Pennsylvania Department of Environmental Protection (PADEP) standard detail to minimize water movement via pipe bedding on slopes. Water shall be diverted away from open trenches.

### **3.0 PAST, PRESENT, AND PROPOSED LAND USES**

The past and present land uses of this project site were determined using aerial mapping. Land uses include woodland, meadow, natural gas infrastructure, farmland and utility and road ROW. The existing topography consists of rolling hills with elevations ranging from Elevation (El.) 940 to El. 1280 based on a combination of conventional survey methods performed by CEC and information from the PAMap program LiDAR Data (2-foot internal) dated 2020. The proposed land use will generally consist of utility ROW and the restored pipeline ROW.



#### **4.0 PROJECT SITE RUNOFF DISCUSSION**

E&S BMPs are proposed to control sediment-laden runoff from the project area. The maximum drainage area to each BMP was analyzed as part of the BMP design, which was then used to determine the required capacity and each BMP was designed accordingly. Disturbed areas associated with the project will be restored to existing condition or meadow-good condition.

## 5.0 RECEIVING WATERS

Stormwater runoff from this project will drain to the receiving waters listed in the following table. Receiving waters, as with all streams in Pennsylvania, are classified based upon their designated and existing uses and water quality criteria. Designated uses for waters of the Commonwealth are found in 25 PA Code §93.9a-z at: <http://www.pacode.com/secure/data/025/chapter93/chap93toc.html>. Existing uses of waters of the Commonwealth are found at the PADEP website: <http://www.depgis.state.pa.us/wave/>. The receiving waters for this project and designated/existing uses are listed below.

STREAM NAME	WATERSHED	CHAPTER 93 DESIGNATION	SILTATION IMPAIRED
UNTs to Beaver Run	Kiskiminetas River	TSF	Yes
Beaver Run	Kiskiminetas River	TSF	Yes
UNTs to Trib 42938 to Beaver Run	Kiskiminetas River	TSF	Yes
Trib 42938 to Beaver Run	Kiskiminetas River	TSF	Yes
Trib 42945 to Beaver Run	Kiskiminetas River	TSF	Yes

## 6.0 EROSION CONTROL AND STORMWATER BEST MANAGEMENT PRACTICES

The BMPs listed in this plan shall be installed and maintained in accordance with the *Erosion and Sediment Pollution Control Manual No. 363-2134-008*, as amended and updated, and the *Oil and Gas Operator's Manual No. 550-0300-001*, as amended and updated. The BMPs contained in this plan shall be installed as shown on the approved E&S Plans prior to earth disturbance (including clearing and grubbing) within the tributary area of each BMP. Each BMP shall be kept functional until all earth disturbing activities within the tributary area are completed and a uniform 70 percent perennial vegetated cover is achieved over the entire disturbed area or other suitable permanent erosion protection has been installed.

E&S BMPs shall be installed and maintained as specified in this plan. The permittee shall keep a written record documenting each inspection and BMP repair or replacement and maintenance activities.

The following standard BMPs have been provided to fulfill the requirements of this plan. Additional BMPs are listed in the *Erosion and Sedimentation Pollution Control Manual* as well as the *Oil and Gas Operator's Manual*. BMP construction details are provided on the E&S Plans. Supporting calculations for each BMP, if applicable, are provided in Appendix A.

Rock Construction Entrance (150-foot Alternate): Rock Construction entrances within siltation impaired watersheds, where street sweeping is impractical (e.g., gravel roads), the entrances shall be extended an additional 100 feet (150 feet total) with the first 50 feet of AASHTO No. 1 rock being reduced to 4 inches and topped with 4 inches of rolled and compacted PennDOT 2RC aggregate and a 20-foot wide minimum width. The remaining 100 feet of the entrance shall be 8-inch thick AASHTO No. 1 rock. Refer to the Rock Construction Entrance detail specified in the E&S Plans. Rock construction entrance thicknesses shall be constantly maintained to the specified dimensions by adding rock. A stockpile shall be maintained on-site for this purpose. Sediment deposited on paved roadways shall be removed and returned to the construction site immediately. If excessive amounts of sediment are being deposited on the roadway, extend the length of the

rock construction entrance by 50-foot increments until the condition is alleviated or install a wash rack. Washing the roadway or sweeping the deposits into roadway ditches, sewers, culverts, or other drainage courses is not acceptable.

Multi-Layer Geotextile Filter Fence (Silt Fence): Silt Fence shall be installed on or parallel to the contour at the edge of disturbed areas. Both ends of each fence section must be extended upslope at 45 degrees to the main silt fence alignment. Silt Fence shall be installed in accordance with the manufacturer's specifications. Traffic shall not be permitted to cross silt fence. Accumulated sediment shall be removed when it reaches one-half (1/2) of the aboveground height of the fence. Refer to the detail specified in the E&S Plans for material specifications and additional notes. Upon stabilization of the area tributary to the fence, stakes and silt fence shall be removed. Silt Fence shall be inspected at least weekly and after each runoff event. Damaged fence sections shall be repaired according to manufacturer's specification or replaced within 24 hours.

Waterbar: Waterbars were designed in accordance with the recommended spacing and will be placed in the pipeline ROW as indicated on the drawings. Waterbars are shown on the E&S Plans as general guidance as to the approximate location of installation. The waterbars shall be sloped at a maximum of 2 percent downgrade. Waterbars shall be oriented to discharge runoff downslope of the ROW to prevent it from re-entering the ROW. Sumps may be installed at the waterbar outlets based on conditions encountered during construction, as necessary, to minimize accelerated erosion from the site. Installation of waterbar sumps should be limited to warm season construction (April through October). Accumulated sediment shall be removed when it reaches three quarters (3/4) of the waterbar sump depth. Waterbars located within a special protection watershed or within 150 feet of an existing stream, wetland, or stormwater drainage feature shall be installed with 12-inch compost filter socks at the outlet points. Temporary waterbars shall be removed once the tributary area is stabilized. Waterbars and waterbar sumps shall be inspected weekly and after each runoff event. Damaged or eroded waterbars shall be restored to original dimensions immediately upon inspection. During final restoration of the pipeline ROW, waterbar sumps shall be removed by backfilling with suitable fill material. Maintenance of waterbars shall be provided until ROW has achieved permanent stabilization.

Trench Plugs: A trench plug is a flow obstruction, constructed from clay, bentonite, or concrete fill sack, that is placed in a trench to prevent flow along the waterline either prior to or after backfilling of the trench. Impervious trench plugs are required for all stream, river, wetland, or other surface water crossings regardless of trench slope. Trench plugs not located at surface water crossings may be fitted with a controlled drainage outlet, if deemed necessary for geohazard prevention and mitigation. The approximate locations of trench plug installation are shown on the E&S drawings.

Slope Stabilization: Slope stabilization shall be installed in disturbed areas for all slopes 3 horizontal to 1 vertical (3H:1V) or steeper, within 50 feet of a surface water, or where soil conditions indicate blanketing is needed to achieve adequate vegetative cover. Refer to the detail specified in the E&S Plans for anchoring and stapling requirements. Manufacturer's recommendations should be followed for installation and maintenance requirements.

Pumped Water Filter Bag: Filter bags shall be made from nonwoven geotextile material sewn with high strength, double stitched "J" type seams and shall trap particles larger than 150 microns. Pumping rates shall be no greater than 750 gallons per minute or one-half (1/2) the maximum specified by the manufacturer, whichever is less. Filter bags shall be replaced when they become one-half (1/2) full. A suitable means of accessing the bag with machinery required for disposal purposes must be provided. Spare bags shall be kept available for replacement of those that have failed or are filled. Bags shall be located in well-vegetated (grassy) areas and discharge onto stable, erosion resistant areas. Where this is not possible, a geotextile flow path shall be provided. Bags shall not be placed on slopes greater than 5 percent. Bags shall be placed on straps to facilitate removal unless bags come with lifting straps already attached.

Wood Mats: Wood mats (also called timber mats) shall be installed in the locations shown on the plans and in accordance with the "Wood Mat for Wetland Crossing" standard detail provided. A layer of geotextile shall be placed between the wood mats and wetland. Inspect wood mats routinely to provide proper protection and stability. Replace geotextile in any locations where tears are found.

Temporary Stabilization: Temporary stabilization will be applied upon temporary cessation of earth disturbance activity or any stage of an activity exceeding four (4) days; the site shall immediately be seeded, mulched, or otherwise protected from accelerated erosion pending future earth disturbance activities. For an earth disturbance activity or any stage of an activity to be considered temporarily stabilized, the disturbed areas shall be covered with one (1) of the following: a minimum uniform coverage of mulch and seed with a density capable of resisting accelerated erosion or an acceptable BMP that temporarily minimizes accelerated erosion. Temporary stabilization will not occur on active vehicular travel ways within the project LOD. The on-site environmental inspector will log daily activity within the project LOD and notify CNXM of areas requiring temporary stabilization [i.e., areas where work has ceased for at least four (4) days]. These areas will be temporarily stabilized in accordance with the plan drawings and specifications.

Permanent Stabilization: Permanent stabilization shall occur at the conclusion of the construction phase. Upon completion or temporary cessation of the earth disturbance activity in a special protection watershed, that portion of the project site tributary to the special protection waters must be immediately stabilized. Disturbed areas shall be seeded and mulched in accordance with the specification presented herein. Soil amendments shall be applied before seeding. It is recommended that soil tests be completed by a qualified professional to determine proper soil amendment application rates for the proposed site conditions and seed mixtures.

## 7.0 BEST MANAGEMENT PRACTICE INSTALLATION SEQUENCE

The MAM14\_U1 Pipeline project will consist of the construction and maintenance of two (2) 12-inch steel gas lines, one (1) 20-inch HDPE Waterline, and E&S BMPs. E&S BMPs shall be installed in accordance with the approved E&S Plan and the PADEP *Erosion and Sediment Pollution Control Program Manual* dated March 2012. Refer to the E&S Plans for the location of the proposed work and the associated BMPs.

A generalized construction sequence is provided below. The construction sequence is intended to provide a general course of action in order to conform to the applicable regulatory agency requirements for temporary and permanent soil E&S. Necessary parts for proper and complete execution of work pertaining to this plan, whether specifically mentioned or not, are to be performed by the contractor. It is not intended the drawings and this report show every detailed piece of material or equipment. The contractor shall comply with all requirements listed in this section. The contractor may be required to alter controls based on effectiveness of controls or differing conditions encountered in the field.

A pre-construction meeting is required prior to the start of any construction activity. PADEP must be invited to this meeting at least seven (7) days in advance. Also, at least three (3) days before starting earth disturbance activities, contractors involved in those activities shall notify the Pennsylvania One-Call System Incorporated at 1-800-242-1776 to locate buried utilities.

Pipeline construction is expected to be performed in a segmental fashion to progress along the project route. As such, different segments of the pipeline may be at different stages in the construction sequence during the life of the project. For each segment of pipeline, the contractor should generally follow steps below and repeat for each new segment of pipeline construction. Upon completion of an earth disturbance activity or any stage or phase of an activity, the site shall be immediately stabilized or otherwise protected from accelerated erosion and discharge of sediment.

All BMPs shall be installed in accordance with the E&S Plan standard details, specifications defined in the PADEP E&S BMP Manual or Alternative BMP list and, where applicable, the product manufacturer's recommendations. A copy of the approved drawings (stamped, signed, and dated) must be available at the project site at all times.

1. Layout the limits of the project, including survey staking the LOD, establish benchmarks, reference points, and sensitive areas, which are to be preserved or avoided during construction. Install orange construction safety fence in the locations identified on the E&S Plans to protect sensitive areas.
2. Locate access points, including construction entrances and staging areas. Install sediment barriers as shown on the E&S Plans downslope of these areas.
3. Install rock construction entrances at the locations shown on the E&S Plans and in accordance with the standard details. Rock construction entrance locations may be adjusted within the LOD at the locations shown on the E&S Plans to account for prevailing site conditions. Rock construction entrance maintenance stockpiles may be relocated within the LOD from locations shown on the E&S Plans to allow for efficient flow of construction traffic.
4. Minimize total area of disturbance. Remove trees and brush to effectively install perimeter controls. Level side cuts to grant access for vehicles and workers to safely perform the installation of sediment barriers as shown on the E&S Plans. Installation, BMP sizing, and spacing must conform to the details and specifications provided on the E&S Plans.
5. Clear and grub only within the LOD defined on the E&S Plans. No grubbing or earth disturbance shall occur until BMPs are installed downslope of tributary areas.
6. During clearing along the ROW, install temporary equipment crossings at wetlands and streams as shown on the E&S Plans. Crossings must be installed in accordance with the



requirements of the approved Chapter 105 General Permit documents associated with each individual crossing location.

### Pipeline Construction

7. Begin pipeline construction. Segregation of topsoil and subsoil shall take place throughout the ROW. Soil stockpile locations shall be adjusted, as necessary, during construction to allow for efficient flow of construction or to accommodate prevailing site conditions. The ROW shall be used as the work area for excavation, equipment movement, and material stockpiles. Equipment, stockpiles, and other materials must remain upslope of BMPs during construction activity.
8. For the duration of construction, pooling water encountered within the construction area shall be dewatered by using pumps, hoses, and pumped water filter bags that discharge into well vegetated areas.
9. Coal or other potential acid producing rock (APR) material shall be handled in accordance with the approved APR Management Plan.
10. Apply soil supplements and temporarily seed and mulch topsoil stockpiles on disturbed areas that will receive no construction activity within four (4) days.
11. Proceed with gas pipeline and waterline installation.
12. Install trench plugs and geological hazard mitigation plan (GHMP) BMPs at the locations identified on the E&S Plans. GHMP BMP locations may be adjusted, relocated, or added per prevailing site conditions and at the discretion of a qualified professional under direct supervision of the appropriate licensed professional.
13. Upon completion of pipeline installation, backfill the trench with suitable material.

## Right-of-Way Restoration

14. Apply soil supplements and permanent seed and mulch to disturbed areas that have achieved final grade and will no longer be subjected to construction activity. For slope areas 3H:1V and steeper, the area shall be vertically tracked and erosion control blankets shall be installed once soil supplements, seed, and mulch have been applied. For slope areas 3H:1V and steeper, a steep slope seed mixture shall be used.
15. Upon completion of construction activities, the site shall be restored in accordance with the PCSM/SR Plan. During restoration of the ROW, the contractor shall implement decompactive procedures (ripping, discing, tilling, etc.) through the upper 12 to 18 inches of subsoil to promote root growth. Topsoil will be respread above the decompacted soils. Apply soil supplements and permanent seed and mulch to all remaining disturbed areas. Existing third party access roads crossed by the pipeline shall be restored to their pre-construction condition.
16. Reseed, as necessary, any areas that become disturbed or where vegetation has not been established.
17. Remove all temporary BMPs once a uniform 70 percent perennial vegetative cover has established on all previously disturbed areas.
18. If future maintenance activities along the ROW are required, CNXM and the contractor shall monitor equipment leaving the ROW to ensure sediment is not tracked onto the roadway. CNXM shall obtain additional permits, if necessary, depending on the scope of the maintenance activities. Sediment deposited onto the roadway shall be removed and returned to the construction site by the end of each work day.

Minor modifications to the E&S and SR Plans shall be noted on the plan that is available at the site and initialed by the appropriate PADEP staff. Minor changes to the plan may include adjustments to BMPs and locations within the permitted boundary to improve environmental

performance, prevent potential pollution, change in ownership or address, typographical errors, on-site field adjustments such as the addition or deletion of BMPs, or alteration of earth disturbance activities to address unforeseen circumstances. Major modifications to the approved E&S Plans involving new or additional earth disturbance activities other than those described as minor modifications above and/or the addition of a discharge will require prior approval by the reviewing entity and may require the submittal of a new plan.

## 8.0 MATERIAL RECYCLING AND DISPOSAL

Practices and procedures must be in place to ensure the proper handling, storage, control, disposal, and recycling of garbage, fuels, or any substance which may be harmful to human, aquatic, or fish life. The listed items shall be prevented from entering springs, streams, ponds, lakes, wetlands, or a water course or water body. Oils, fuels, lubricants, and coolants shall be placed in suitable containers and disposed of properly. All synthetic erosion control features (e.g., silt fencing, nettings, mats), which are intended for temporary use during construction, shall be completely removed and properly disposed of after their purpose has been served. Orange construction fence, and similar, shall be removed and properly disposed of immediately upon completion of its intended purpose. Only natural fiber materials which will “completely breakdown” within a reasonable timeframe, as to be indistinguishable from the natural environment, may be abandoned in place. Trash and garbage shall be collected and disposed of properly.

## **9.0 NATURALLY OCCURRING GEOLOGIC FORMATIONS, MINING, AND SOIL CONDITIONS**

According to publicly available mapping from the Pennsylvania Department of Conservation and Natural Resources (PADCNR), the stratigraphic rock units present at or near the surface along the pipeline alignment are generally Pennsylvanian aged and belongs primarily to cyclic sequences of the Allegheny and Glenshaw Formations.

The Glenshaw Formation generally consists of cyclic sequences of shale, sandstone, red beds, as well as thin limestone and coal seams. The base of the Glenshaw Formation (and top of Allegheny Formation) is generally defined by the Upper Freeport Coal seam. The Allegheny Formation generally consists of cyclic sequences of sandstone, shale, limestone, clay, and coal.

USGS geologic descriptions for these units were reviewed to assess the potential for karst formations as well as radioactive and arsenic bearing potential.

The USDA soil survey indicates that the site soils primarily consist of the Bethasda, Ernest, Gilpin, Itmann, Lobdell, Shelocta-Gilpin, and Whatron silt loam series of soils.

Based on the above, CEC has proposed site specific geologic hazard mitigation BMPs to minimize the risks related with geologic formations, landslides, or soil conditions, which may have the potential to cause pollution during or after earth disturbing activities. Refer to CEC's Naturally Occurring Geologic Condition Assessment Report and APR Management Plan for additional information. Should issues related to geologic formations, landslides, or slope stability be encountered during construction, CEC should be notified immediately to provide recommendations to minimize or avoid potential problems.

## 10.0 POTENTIAL THERMAL IMPACTS

The project will not have significant changes in land cover; therefore, the principal source of thermal impacts is related to proposed temporary vegetation disturbance. Thermal impacts from the temporary disturbance of the pipeline ROW will be minimized by allowing runoff to flow over vegetated surfaces prior to entering any surface waters. Additionally, all disturbed areas will be restored as soon as practicable to existing condition or meadow-good condition to reduce the effects of thermal impacts on the surface waters. Temporary access roads and workspace areas will be restored to existing condition or meadow-good condition as soon as practicable. Likewise, vegetation removal will be limited to the extent practicable. Further, maintaining existing tree canopies and riparian buffers will limit ground surface exposure to direct sunlight.

## **11.0 RIPARIAN FOREST BUFFERS**

The PADEP requires a 150-foot riparian forest buffer for projects located within a High Quality (HQ) or special protection watershed. The site is located within the Kiskiminetas River, watershed which is not HQ; therefore, the 150-foot riparian buffer requirement is not applicable to this project.

## 12.0 ANTI-DEGRADATION ANALYSIS

Projects that are located in special protection watersheds that have a designated or existing use of HQ or exceptional value (EV), Wild Trout Streams, or non-special protection watersheds impaired for sediment must demonstrate that construction and post construction discharges will not degrade the physical, chemical, or biological characteristics of the surface waters. The project drains to receiving streams within the Kiskiminetas River watershed which are designated as siltation impaired, as shown in Section 5.0 of this report. Thus, an anti-degradation analysis required for this project.

Anti-degradation Best Available Combination of Technologies (ABACT) approved BMPs were utilized within the Kiskiminetas River watershed to prevent degrading discharge. The following is a list of each of the “Non-discharge” BMPs and an explanation as to why/how each of them were or were not used:

Limited Disturbed Area – The amount of land disturbed within the LODs will be minimized to the extent practicable at all times. Land will only be disturbed at the rate necessary to progress installation of the proposed pipelines, waterline, and associated facilities.

Immediate Stabilization – All disturbed areas will be restored to meadow-good condition, agricultural use, or a stable gravel cover as soon as practicable following construction.

Other - Revegetation – All disturbed areas will be restored to meadow-good condition as soon as practicable following construction, unless otherwise noted on the plan drawings.

ABACTs are proposed for this project and include the following:

- Preparedness, Prevention, and Contingency (PPC) Plan – A PPC Plan will be available on site to identify applicable pollution prevention practices while the site is in operation; and



- ABACT BMPs – Silt fence will be utilized upslope of special protection waters during construction to minimize the transport of sediment pollution to the special protection waters. Rock construction entrances upslope of special protection waters will be extended and additional 50 feet (100 feet total) where street sweeping will be conducted or extended to a total length of 150 feet with 50 feet of rolled PennDOT 2C at the entrance, where street sweeping will not be conducted (i.e., along an existing access road). Waterbars and pumped water filter bags within the special protection watersheds will include a compost filter sock at the discharge outlets. Disturbed areas will be immediately stabilized with vegetative stabilization, following reaching final grades.

Based on the above summary, ABACT BMPs have been utilized to satisfy the requirements of this antidegradation analysis.

### **13.0 OFF-SITE DISCHARGE ANALYSIS**

The PADEP requires that proposed off-site discharges of stormwater from site restoration areas and PCSM BMPs to areas other than surface waters must demonstrate that the discharge will not cause erosion, damage, or a nuisance to off-site properties. There are no proposed point source discharges to areas other than surface waters associated with this project; therefore, erosion, damage, or nuisance is not anticipated to off-site properties.

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**APPENDIX A**  
**SUPPORTING CALCULATIONS**

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## **SILT BARRIERS**

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## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AA

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	22	SLOPE LENGTH =	37	100	100	63	63%	OK
SEGMENT B	SLOPE =	9	SLOPE LENGTH =	66	250	158	92	37%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> (FT)	<b>103</b>
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AB

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	42	SLOPE LENGTH =	30	50	50	20	40%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 30
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

**BARRIER AC**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	45	SLOPE LENGTH =	20	50	50	30	60%	OK
SEGMENT B	SLOPE =	17	SLOPE LENGTH =	56	150	90	34	23%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 76
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AD

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	5	SLOPE LENGTH =	50	350	350	300	86%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> <b>50</b> (FT)
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments



## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AE

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	36	SLOPE LENGTH =	38	55	55	17	31%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 38
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

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**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

**BARRIER AF**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	22	SLOPE LENGTH =	37	100	100	63	63%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> (FT) <b>37</b>
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AG

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 28

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	28	SLOPE LENGTH =	118	125	125	7	6%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 118
---

\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AI

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	27	SLOPE LENGTH =	50	75	75	25	33%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 50
--

\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

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**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AH

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 21

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	35	SLOPE LENGTH =	68	90	90	22	24%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> (FT) <b>68</b>
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

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\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

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**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AJ

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 28

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	18	SLOPE LENGTH =	53	250	250	197	79%	OK
SEGMENT B	SLOPE =	15	SLOPE LENGTH =	55	350	276	221	63%	OK
SEGMENT C	SLOPE =	19	SLOPE LENGTH =	73	250	158	85	34%	OK
SEGMENT D	SLOPE =	20	SLOPE LENGTH =	53	250	85	32	13%	OK
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 234
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

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\*\*Based on the percent remaining from upslope segments

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**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AK

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 28

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE = 18	18	SLOPE LENGTH = 53	53	250	250	197	79%	OK
SEGMENT B	SLOPE = 15	15	SLOPE LENGTH = 55	55	350	276	221	63%	OK
SEGMENT C	SLOPE = 19	19	SLOPE LENGTH = 73	73	250	158	85	34%	OK
SEGMENT D	SLOPE = 20	20	SLOPE LENGTH = 53	53	250	85	32	13%	OK
SEGMENT E	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT F	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT G	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT H	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT I	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT J	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT K	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT L	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT M	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 234
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AL

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 21

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	20	SLOPE LENGTH =	156	200	200	44	22%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> <b>156</b> (FT)
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments



## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AM

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE = 9	9	SLOPE LENGTH = 81	81	250	250	169	68%	OK
SEGMENT B	SLOPE = 29	29	SLOPE LENGTH = 48	48	75	51	3	4%	OK
SEGMENT C	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT D	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT E	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT F	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT G	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT H	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT I	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT J	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT K	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT L	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT M	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 129
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

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\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

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**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

**BARRIER AN**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	2	SLOPE LENGTH =	98	700	700	602	86%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 98
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

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\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

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**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AO

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	6	SLOPE LENGTH =	40	250	250	210	84%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 40
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

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\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

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**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AP

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	7	SLOPE LENGTH =	100	250	250	150	60%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 100
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\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

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**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AQ

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	5	SLOPE LENGTH =	285	350	350	65	19%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> <b>285</b> (FT)
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

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\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

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**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

**BARRIER AR**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	3	SLOPE LENGTH =	95	350	350	255	73%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 95
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

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**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

**BARRIER AS**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	3	SLOPE LENGTH =	122	350	350	228	65%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 122
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

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\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

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**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AT

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	14	SLOPE LENGTH =	43	200	200	157	79%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b>	<b>43</b>
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**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AU

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	18	SLOPE LENGTH =	143	150	150	7	5%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> <b>143</b> (FT)
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/4/2023                      **DATE:** 12/7/2023

### BARRIER AV

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	13	SLOPE LENGTH =	68	200	200	132	66%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b>	<b>68</b>
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

### BARRIER AW

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	33	SLOPE LENGTH =	59	65	65	6	9%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 59
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

### BARRIER AX

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	50	SLOPE LENGTH =	27	40	40	13	33%	OK
SEGMENT B	SLOPE =	10	SLOPE LENGTH =	47	250	81	34	14%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 74
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

### BARRIER AY

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 28

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	50	SLOPE LENGTH =	39	60	60	21	35%	OK
SEGMENT B	SLOPE =	44	SLOPE LENGTH =	14	80	28	14	18%	OK
SEGMENT C	SLOPE =	11	SLOPE LENGTH =	31	350	61	30	9%	OK
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 84
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

### BARRIER AZ

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 28

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	50	SLOPE LENGTH =	59	60	60	1	2%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 59
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

### BARRIER BA

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	50	SLOPE LENGTH =	15	40	40	25	63%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 15
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

### BARRIER BB

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	50	SLOPE LENGTH =	32	40	40	8	20%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 32
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments



## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

**BARRIER BC**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	20	SLOPE LENGTH =	20	150	150	130	87%	OK
SEGMENT B	SLOPE =	50	SLOPE LENGTH =	8	40	35	27	67%	OK
SEGMENT C	SLOPE =	23	SLOPE LENGTH =	61	100	67	6	6%	OK
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> <b>89</b> (FT)
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

### BARRIER BD

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	17	SLOPE LENGTH =	35	150	150	115	77%	OK
SEGMENT B	SLOPE =	23	SLOPE LENGTH =	51	100	77	26	26%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 86
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

**BARRIER BE**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	25	SLOPE LENGTH =	39	100	100	61	61%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> <b>39</b> (FT)
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

**BARRIER BF**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	21	SLOPE LENGTH =	98	100	100	2	2%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 98
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

### BARRIER BG

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	20	SLOPE LENGTH =	65	150	150	85	57%	OK
SEGMENT B	SLOPE =	37	SLOPE LENGTH =	30	55	31	1	2%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 95
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

### BARRIER BH

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE = 16	16	SLOPE LENGTH = 60	60	150	150	90	60%	OK
SEGMENT B	SLOPE = 24	24	SLOPE LENGTH = 45	45	100	60	15	15%	OK
SEGMENT C	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT D	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT E	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT F	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT G	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT H	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT I	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT J	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT K	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT L	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-
SEGMENT M	SLOPE = 0	0	SLOPE LENGTH = 0	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 105
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
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**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

### BARRIER BI

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	17	SLOPE LENGTH =	77	150	150	73	49%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 77
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
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**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

**BARRIER BJ**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	5	SLOPE LENGTH =	112	350	350	238	68%	OK
SEGMENT B	SLOPE =	9	SLOPE LENGTH =	87	250	170	83	33%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 199
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

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\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments



## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

**BARRIER BK**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	5	SLOPE LENGTH =	81	350	350	269	77%	OK
SEGMENT B	SLOPE =	8	SLOPE LENGTH =	38	250	192	154	62%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> (FT) <b>119</b>
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
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**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

**BARRIER BL**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	6	SLOPE LENGTH =	163	250	250	87	35%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> <b>163</b> (FT)
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
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**DATE:** 12/6/2023                      **DATE:** 12/7/2023

### BARRIER BM

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	7	SLOPE LENGTH =	117	250	250	133	53%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 117
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
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**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

**BARRIER BN**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	17	SLOPE LENGTH =	50	150	150	100	67%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 50
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

**BARRIER BO**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	23	SLOPE LENGTH =	65	100	100	35	35%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 65
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

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\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

**BARRIER BP**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	34	SLOPE LENGTH =	52	65	65	13	20%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> <b>52</b> (FT)
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

### BARRIER BQ

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	5	SLOPE LENGTH =	111	350	350	239	68%	OK
SEGMENT B	SLOPE =	16	SLOPE LENGTH =	68	150	102	34	23%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 179
---

\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

**BARRIER BR**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	18	SLOPE LENGTH =	21	150	150	129	86%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> <b>21</b> (FT)
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments



## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

### BARRIER BS

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	5	SLOPE LENGTH =	134	350	350	216	62%	OK
SEGMENT B	SLOPE =	8	SLOPE LENGTH =	94	250	154	60	24%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> <b>228</b> (FT)
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

**BARRIER BT**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	7	SLOPE LENGTH =	116	250	250	134	54%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> <b>116</b> (FT)
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

**BARRIER BU**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	4	SLOPE LENGTH =	106	350	350	244	70%	OK
SEGMENT B	SLOPE =	6	SLOPE LENGTH =	120	250	174	54	22%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH      226 (FT)</b>
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

**BARRIER BV**

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	2	SLOPE LENGTH =	78	700	700	622	89%	OK
SEGMENT B	SLOPE =	3	SLOPE LENGTH =	105	350	311	206	59%	OK
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH</b> (FT) <b>183</b>
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

\*Silt Fence from Chapter 6 Page 31 of the ODNR Rainwater and Land Development manual (Third Edition 2006)

\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

## SILT FENCE & COMPOST FILTER SOCK DESIGN

**PROJECT NAME:** MAM14\_U1 Pipeline & Waterline  
**PROJECT #:** 332-793  
**PREPARED BY:** LMK                      **CHECKED BY:** SCT  
**DATE:** 12/6/2023                      **DATE:** 12/7/2023

### BARRIER BW

**SILT FENCE OR COMPOST FILTER SOCK TYPE:** SILTRON 16

SLOPE SEGMENT	ACTUAL SLOPE	%	ACTUAL FLOW LENGTH	FEET	MAXIMUM ALLOWABLE FLOW LENGTH* (FT)	ACTUAL ALLOWABLE FLOW LENGTH** (FT)	REMAINING LENGTH (FT)	PERCENT REMAINING	RESULT
SEGMENT A	SLOPE =	4	SLOPE LENGTH =	193	350	350	157	45%	OK
SEGMENT B	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT C	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT D	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT E	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT F	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT G	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT H	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT I	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT J	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT K	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT L	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-
SEGMENT M	SLOPE =	0	SLOPE LENGTH =	0	0	0	0	0%	-

<b>TOTAL ACTUAL FLOW LENGTH (FT)</b> 193
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\*Filtrexx® SiltSoxx™ based on maximum slope lengths of Filtrexx® slope interruption based on a 1 in/24 hr rainfall event provided in Filtrexx® Design Manual version 10.0

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\*Super Silt Fence based on maximum slope lengths of 18 inch Filtrexx® SiltSoxx™

\*Siltron® Advanced Silt Fence based on maximum slope lengths provided by MKB Company, LLC

\*\*Based on the percent remaining from upslope segments

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## **TEMPORARY CHANNELS**

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Temporary Channel Flow Calculations - 2-Year Design Storm  
 Project: MAM14 U1 Pipeline and Waterline  
 CEC Project #: 332-793 332-793  
 Prepared By: SCT  
 Date: 12/7/2023

Checked By:  
 Date:

PERMANENT CHANNEL CONDITION																		Vegetated State					
Channel No.	Drainage Area (AC)	Time of Concentration (min)	Design Storm	Intensity (in/hr)	Runoff Coefficient	Flow, Q=CIA (cfs)	Min. Slope (%)	Max. Slope (%)	Bottom Width (FT)	Left Side Slope, x (X:1)	Right Side Slope, x (X:1)	Channel Depth (FT)	Normal Depth Minimum Slope (FT)	Freeboard (FT) <sup>3</sup>	Normal Depth Maximum Slope (FT)	Bottom Width to Flow Depth Ratio <sup>4</sup>	Manning's 'n' <sup>1</sup>		Shear Stress <sup>5</sup>		Velocity <sup>5</sup>		Channel Lining
																	For use with Min. Slope	For use with Max. Slope	Calculated (PSF)	Allowable (PSF)	Calculated (FPS)	Allowable (FPS)	
Temporary Diversion Berm 1	1.61	10	2 Year	3.54	0.37	1.73	5.7	5.7	1.0	4.0	2.0	1.5	0.34	1.16	0.34	2.9	0.052	0.052	1.22	10.00	2.48	N/A <sup>2</sup>	NAG S200
Temporary Diversion Berm 2	1.41	10	2 Year	3.54	0.38	1.56	1.0	1.0	1.0	4.0	2.0	1.5	0.62	0.88	0.62	1.6	0.085	0.085	0.39	10.00	0.88	N/A <sup>2</sup>	NAG S200

<sup>1</sup> Manning's 'n' values obtained from the online North American Green Erosion Control Materials Design Software, Version 7.0.

<sup>2</sup> North American Green channel lining performance is evaluated solely on the basis of shear stress. Therefore, maximum allowable velocities are not applicable in the lined, unvegetated state or in any state for TRM liners.

<sup>3</sup> Freeboard conservatively evaluated using normal depth minimum slope.

<sup>4</sup> Channel bottom width to flow depth ratio conservatively evaluated using normal depth maximum slope.

<sup>5</sup> Shear Stress and Velocity conservatively evaluated at maximum channel slope conditions.



North American Green  
 5401 St. Wendel-Cynthiana Rd.  
 Poseyville, Indiana 47633  
 Tel. 800.772.2040  
 >Fax 812.867.0247  
 www.nagreen.com  
 ECMDS v7.0

**CHANNEL ANALYSIS**

> > Temporary Diversion Berm 1

Name Temporary Diversion Berm  
 1  
 Discharge 1.73  
 Channel Slope 0.057  
 Channel Bottom Width 1  
 Left Side Slope 4  
 Right Side Slope 2  
 Low Flow Liner  
 Retardence Class C 6-12 in  
 Vegetation Type Mix (Sod and Bunch)  
 Vegetation Density Good 65-79%  
 Soil Type Silt Loam (SM)

**S200**

Phase	Reach	Discharge	Velocity	Normal Depth	Mannings N	Permissible Shear Stress	Calculated Shear Stress	Safety Factor	Remarks	Staple Pattern
S200 Unvegetated	Straight	1.73 cfs	3.34 ft/s	0.28 ft	0.035	2.3 lbs/ft2	1 lbs/ft2	2.3	STABLE	E
Underlying Substrate	Straight	1.73 cfs	3.34 ft/s	0.28 ft	0.035	1.68 lbs/ft2	0.66 lbs/ft2	2.55	STABLE	E
S200 Reinforced Vegetation	Straight	1.73 cfs	2.48 ft/s	0.34 ft	0.052	10 lbs/ft2	1.22 lbs/ft2	8.21	STABLE	E
Underlying Substrate	Straight	1.73 cfs	2.48 ft/s	0.34 ft	0.052	4.41 lbs/ft2	0.78 lbs/ft2	5.67	STABLE	E





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 >Fax 812.867.0247  
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 ECMDS v7.0

**CHANNEL ANALYSIS**

> > Temporary Diversion Berm 2

Name Temporary Diversion Berm  
 2  
 Discharge 1.56  
 Channel Slope 0.01  
 Channel Bottom Width 1  
 Left Side Slope 4  
 Right Side Slope 2  
 Low Flow Liner  
 Retardence Class C 6-12 in  
 Vegetation Type Mix (Sod and Bunch)  
 Vegetation Density Good 65-79%  
 Soil Type Silt Loam (SM)

**S200**

Phase	Reach	Discharge	Velocity	Normal Depth	Mannings N	Permissible Shear Stress	Calculated Shear Stress	Safety Factor	Remarks	Staple Pattern
S200 Unvegetated	Straight	1.56 cfs	1.33 ft/s	0.48 ft	0.049	2.3 lbs/ft2	0.3 lbs/ft2	7.68	STABLE	E
Underlying Substrate	Straight	1.56 cfs	1.33 ft/s	0.48 ft	0.049	1.68 lbs/ft2	0.18 lbs/ft2	9.35	STABLE	E
S200 Reinforced Vegetation	Straight	1.56 cfs	0.88 ft/s	0.62 ft	0.085	10 lbs/ft2	0.39 lbs/ft2	25.85	STABLE	E
Underlying Substrate	Straight	1.56 cfs	0.88 ft/s	0.62 ft	0.085	10 lbs/ft2	0.22 lbs/ft2	44.68	STABLE	E

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## **TEMPORARY CULVERTS**

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# Culvert Report

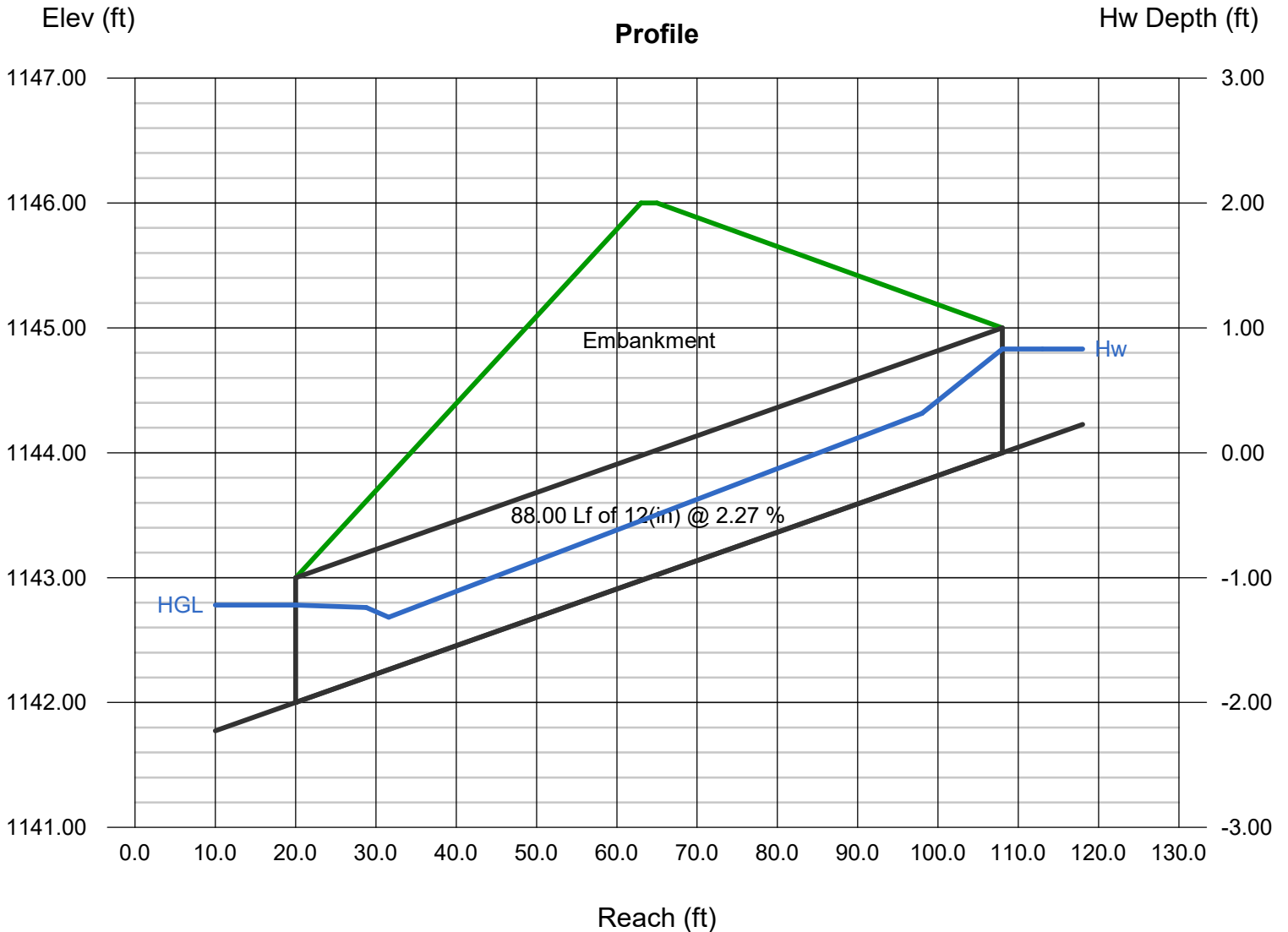
## 332-793 Temp Culvert 1

Invert Elev Dn (ft) = 1142.00  
 Pipe Length (ft) = 88.00  
 Slope (%) = 2.27  
 Invert Elev Up (ft) = 1144.00  
 Rise (in) = 12.0  
 Shape = Circular  
 Span (in) = 12.0  
 No. Barrels = 1  
 n-Value = 0.012  
 Culvert Type = Circular Culvert  
 Culvert Entrance = Smooth tapered inlet throat  
 Coeff. K,M,c,Y,k = 0.534, 0.555, 0.0196, 0.9, 0.2

**Calculations**  
 Qmin (cfs) = 1.74  
 Qmax (cfs) = 1.74  
 Tailwater Elev (ft) = (dc+D)/2

**Highlighted**  
 Qtotal (cfs) = 1.74  
 Qpipe (cfs) = 1.74  
 Qovertop (cfs) = 0.00  
 Veloc Dn (ft/s) = 2.65  
 Veloc Up (ft/s) = 3.84  
 HGL Dn (ft) = 1142.78  
 HGL Up (ft) = 1144.56  
 Hw Elev (ft) = 1144.83  
 Hw/D (ft) = 0.83  
 Flow Regime = Inlet Control

**Embankment**  
 Top Elevation (ft) = 1146.00  
 Top Width (ft) = 2.00  
 Crest Width (ft) = 95.00



# Culvert Report

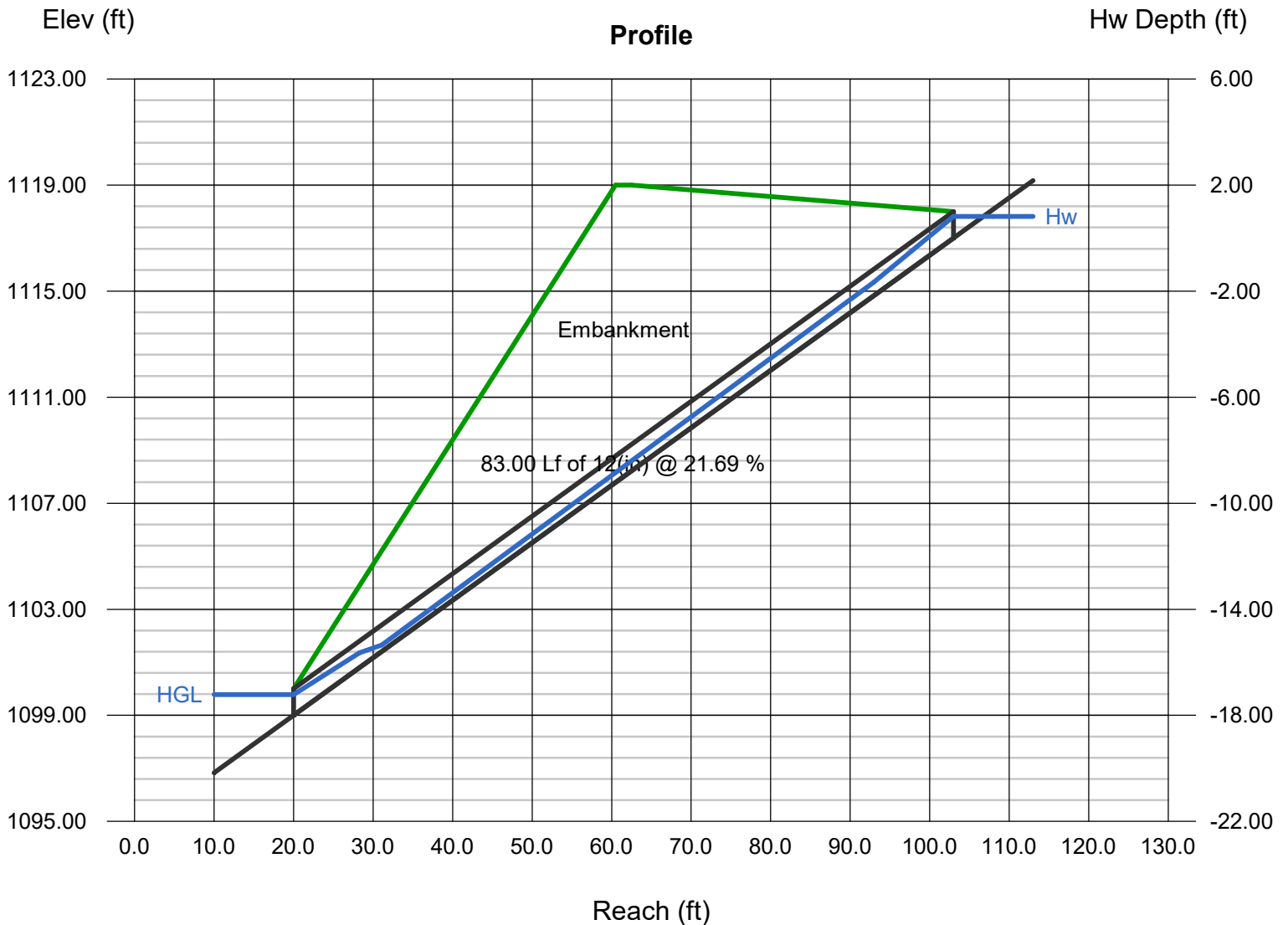
## 332-793 Temp Culvert 2

Invert Elev Dn (ft) = 1099.00  
 Pipe Length (ft) = 83.00  
 Slope (%) = 21.69  
 Invert Elev Up (ft) = 1117.00  
 Rise (in) = 12.0  
 Shape = Circular  
 Span (in) = 12.0  
 No. Barrels = 1  
 n-Value = 0.012  
 Culvert Type = Circular Culvert  
 Culvert Entrance = Smooth tapered inlet throat  
 Coeff. K,M,c,Y,k = 0.534, 0.555, 0.0196, 0.9, 0.2

**Calculations**  
 Qmin (cfs) = 1.71  
 Qmax (cfs) = 1.71  
 Tailwater Elev (ft) = (dc+D)/2

**Highlighted**  
 Qtotal (cfs) = 1.71  
 Qpipe (cfs) = 1.71  
 Qovertop (cfs) = 0.00  
 Veloc Dn (ft/s) = 2.61  
 Veloc Up (ft/s) = 3.82  
 HGL Dn (ft) = 1099.78  
 HGL Up (ft) = 1117.56  
 Hw Elev (ft) = 1117.82  
 Hw/D (ft) = 0.82  
 Flow Regime = Inlet Control

**Embankment**  
 Top Elevation (ft) = 1119.00  
 Top Width (ft) = 2.00  
 Crest Width (ft) = 95.00



# Culvert Report

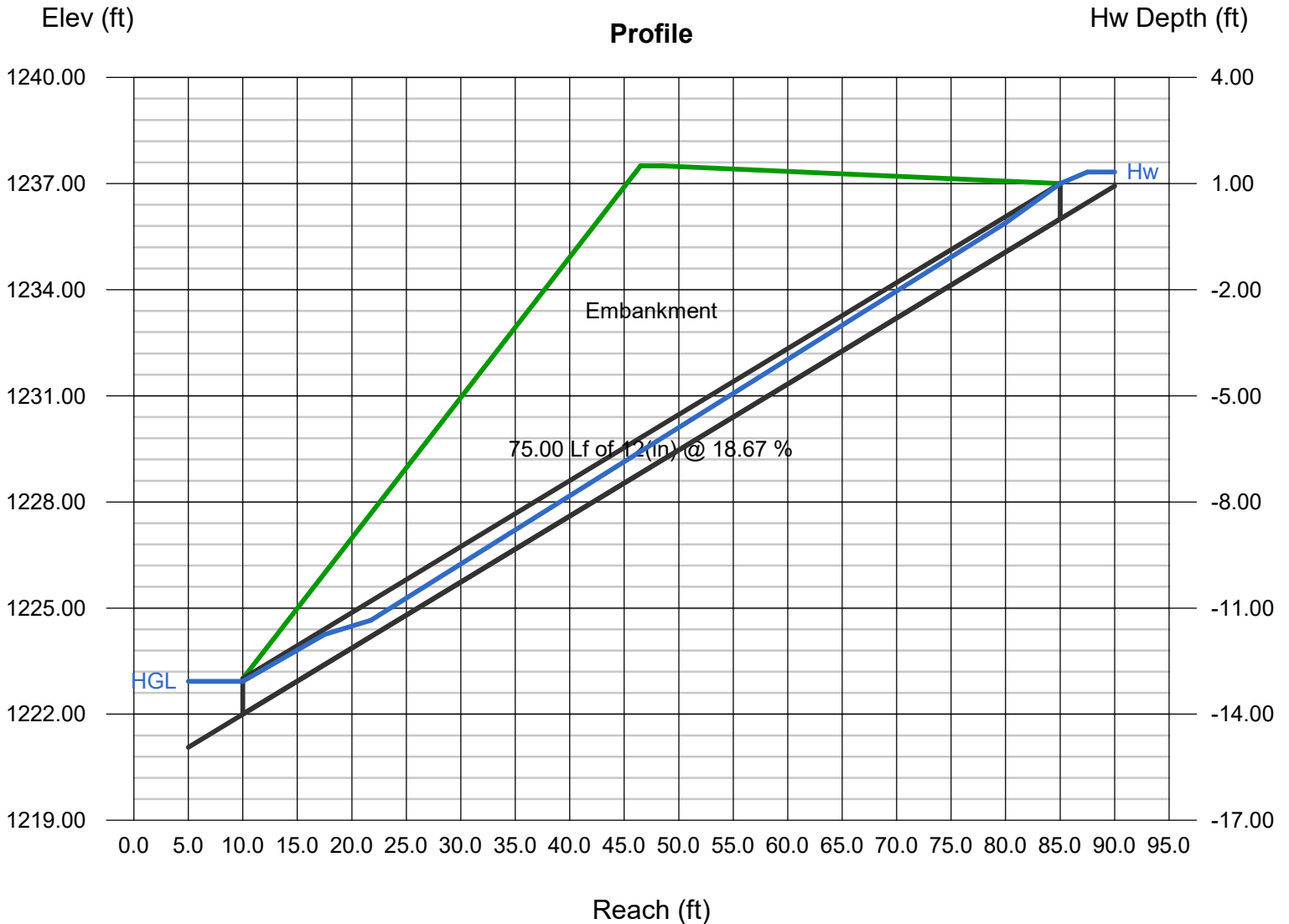
## 332-793 Temp Culvert 3

Invert Elev Dn (ft)	=	1222.00
Pipe Length (ft)	=	75.00
Slope (%)	=	18.67
Invert Elev Up (ft)	=	1236.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

<b>Calculations</b>	
Qmin (cfs)	= 4.04
Qmax (cfs)	= 4.04
Tailwater Elev (ft)	= (dc+D)/2

<b>Highlighted</b>	
Qtotal (cfs)	= 4.04
Qpipe (cfs)	= 4.04
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 5.32
Veloc Up (ft/s)	= 5.68
HGL Dn (ft)	= 1222.93
HGL Up (ft)	= 1236.85
Hw Elev (ft)	= 1237.33
Hw/D (ft)	= 1.33
Flow Regime	= Inlet Control

<b>Embankment</b>	
Top Elevation (ft)	= 1237.50
Top Width (ft)	= 2.00
Crest Width (ft)	= 95.00



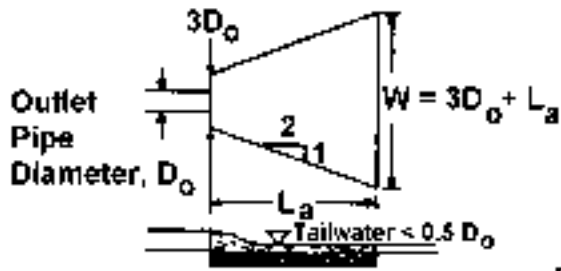
---

**TEMPORARY RIPRAP APRONS**

---

**DESIGN OF RIPRAP APRON OUTLET PROTECTION FROM A ROUND PIPE FLOWING FULL  
MINIMUM TAILWATER CONDITION ( $T_w < 0.5$  DIAMETER)**

Adapted from USDA - NRCS



Not to be used for Box Culverts

NOTE: Do not extrapolate

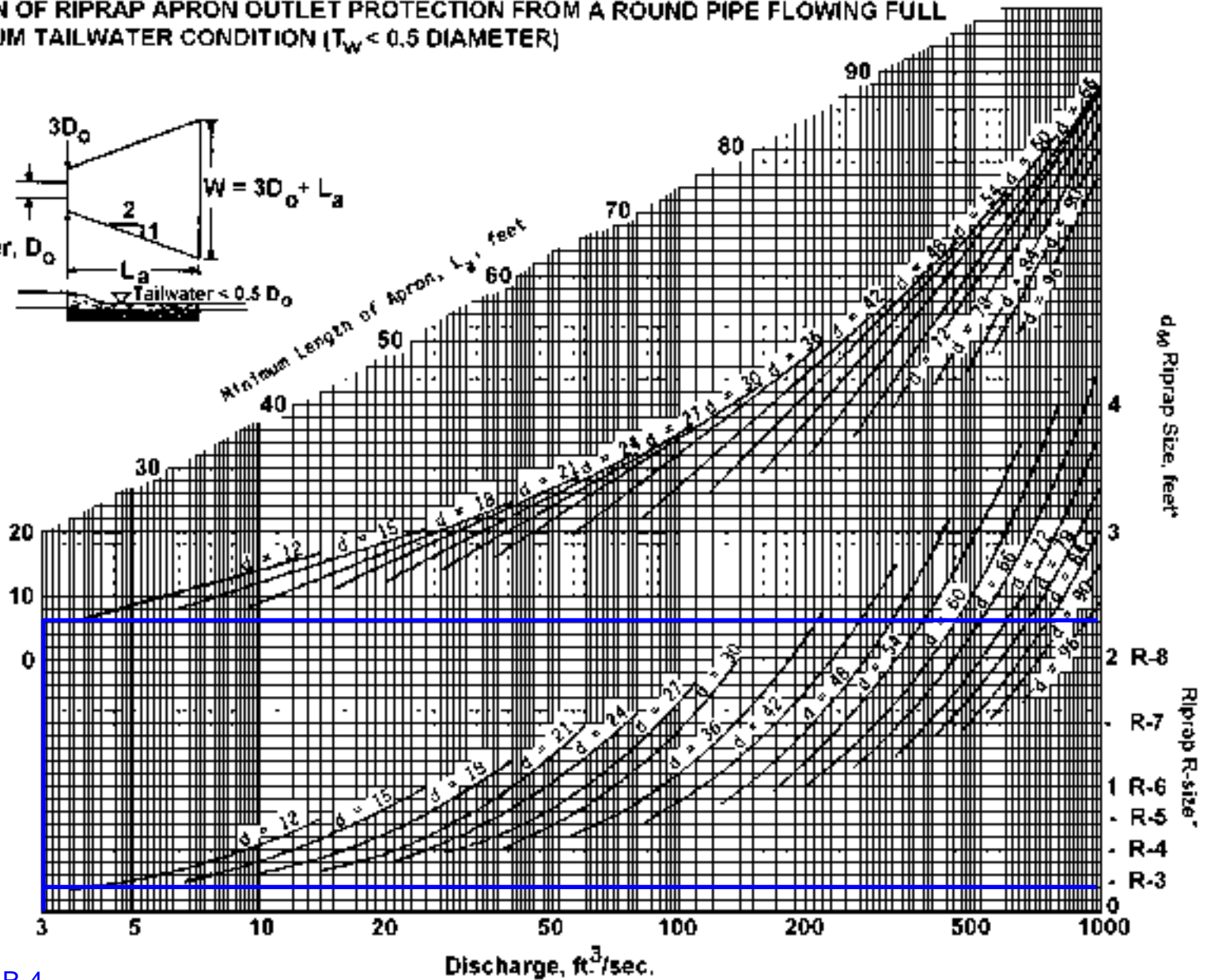


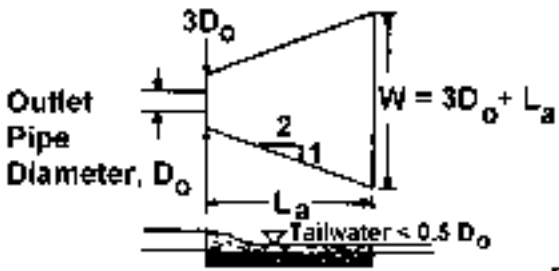
FIGURE 9.3  
Riprap Apron Design, Minimum Tailwater Condition

Temp Riprap Apron No. 1 - R-4  
 $Q = 1.74$  cfs  
 $V = 2.65$  ft/sec  $L_a = 6$  ft  
 $D_o = 12$ -in  $W = 9$  ft  
 Prepared By: SCT 12/07/2023  
 Checked By:

$V_{max}$  for R-4 = 9.0 ft/s  
 Use R-4 Rip-Rap

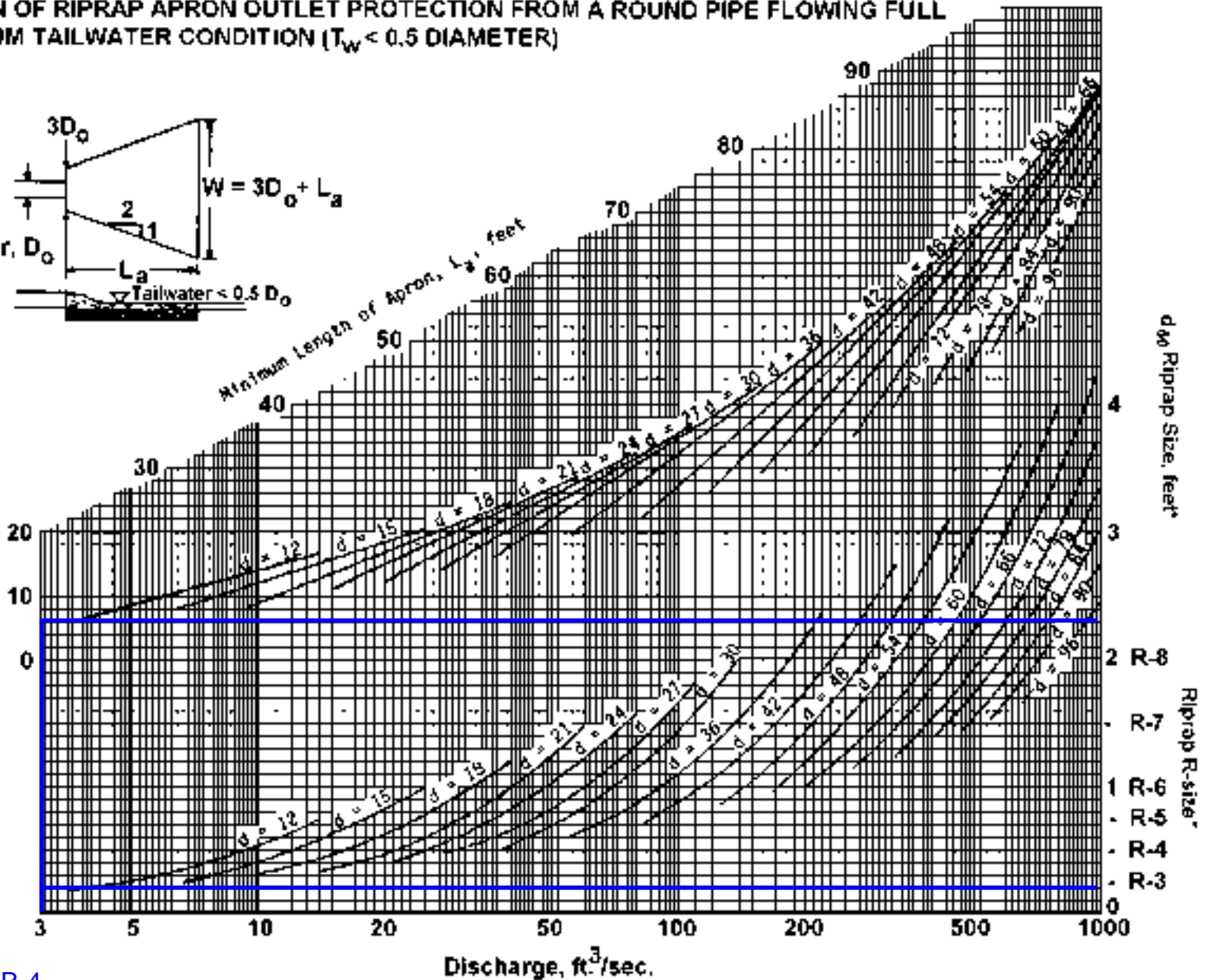
**DESIGN OF RIPRAP APRON OUTLET PROTECTION FROM A ROUND PIPE FLOWING FULL  
MINIMUM TAILWATER CONDITION ( $T_w < 0.5$  DIAMETER)**

Adapted from USDA - NRCS



Not to be used for Box Culverts

NOTE: Do not extrapolate



**FIGURE 9.3**  
Riprap Apron Design, Minimum Tailwater Condition

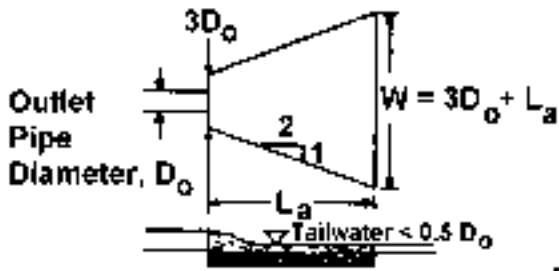
\* For discharge velocities exceeding Maximum Allowable for Riprap indicated, increase  $d_{50}$  stone size and/or provide velocity reduction device

$V_{max}$  for R-4 = 9.0 ft/s  
Use R-4 Rip-Rap



**DESIGN OF RIPRAP APRON OUTLET PROTECTION FROM A ROUND PIPE FLOWING FULL  
MINIMUM TAILWATER CONDITION ( $T_w < 0.5$  DIAMETER)**

Adapted from USDA - NRCS



Not to be used for Box Culverts

NOTE: Do not extrapolate

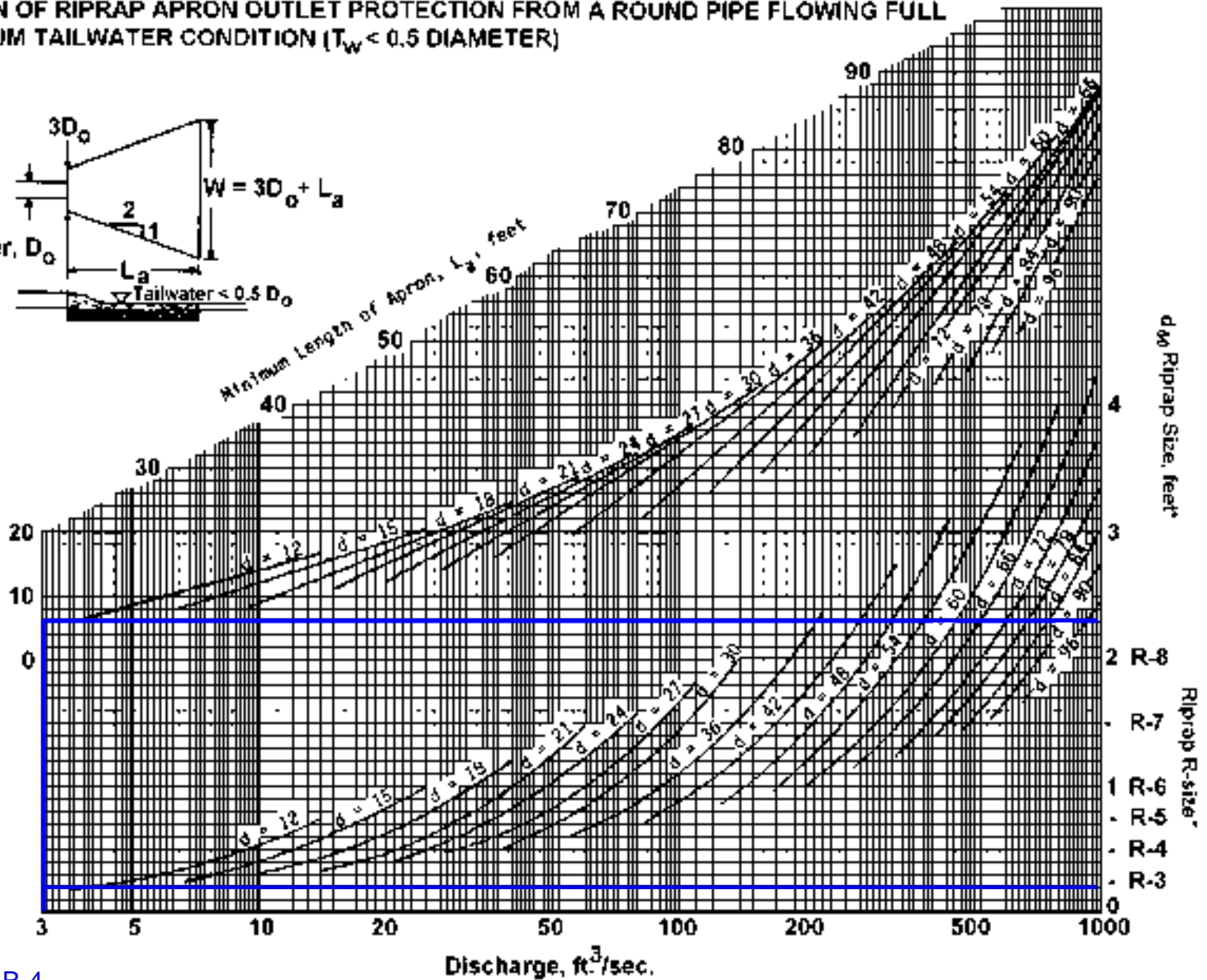


FIGURE 9.3  
Riprap Apron Design, Minimum Tailwater Condition

Temp Riprap Apron No. 3 - R-4  
 Q = 4.04 cfs  
 V = 5.32 ft/sec     $L_a = 6$  ft  
 $D_o = 12$ -in       $W = 9$  ft  
 Prepared By: SCT 12/07/2023  
 Checked By:

\* For discharge velocities exceeding Maximum Allowable for Riprap indicated, increase  $d_{50}$  stone size and/or provide velocity reduction device

$V_{max}$  for R-4 = 9.0 ft/s  
 Use R-4 Rip-Rap

---

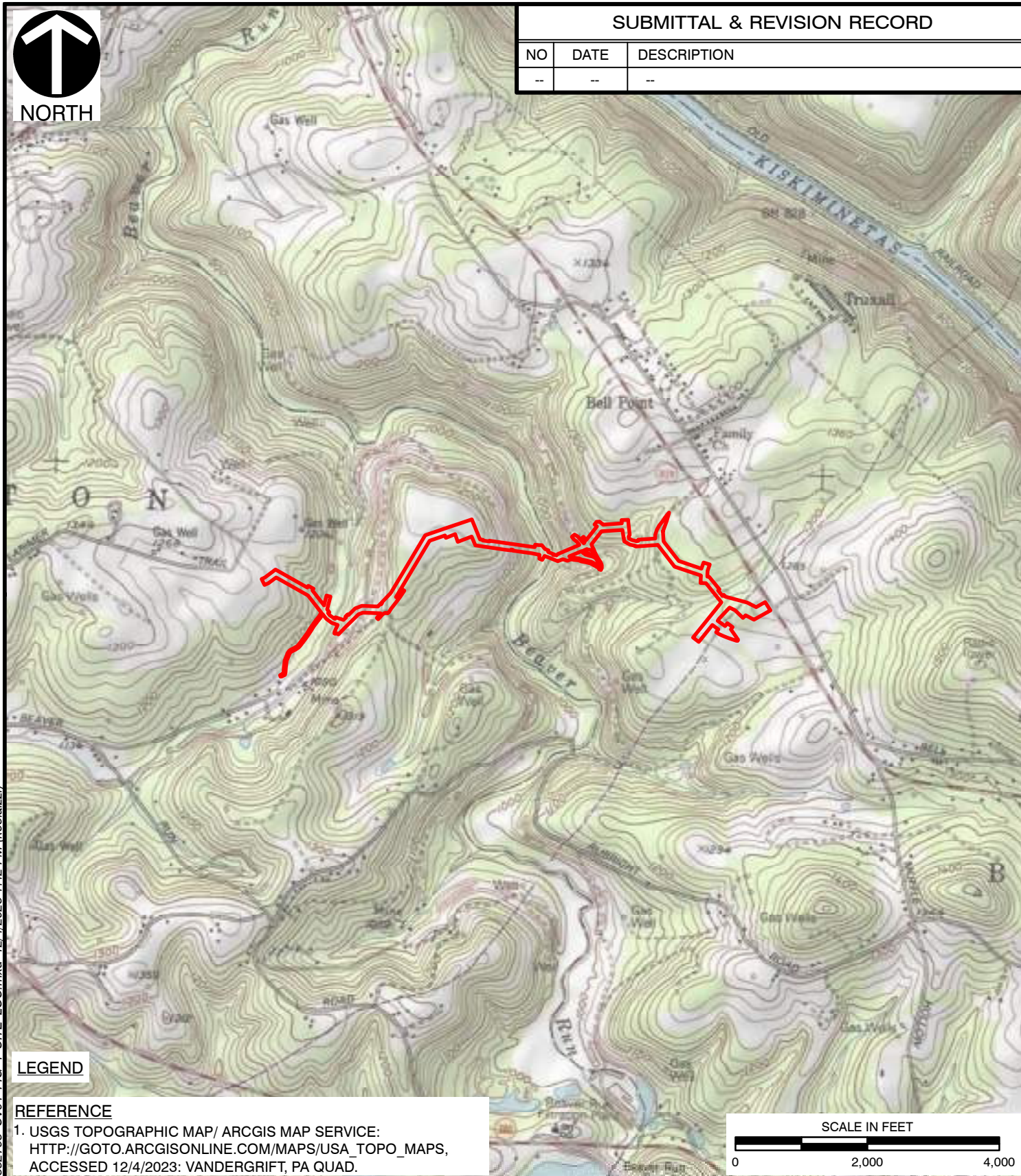
**APPENDIX B**  
**SITE LOCATION MAP**

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### SUBMITTAL & REVISION RECORD

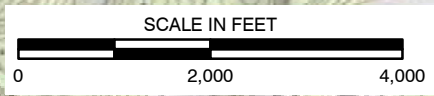
NO	DATE	DESCRIPTION
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#### LEGEND

#### REFERENCE

1. USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE:  
[HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA\\_TOPO\\_MAPS,](http://goto.arcgisonline.com/maps/usa_topo_maps)  
 ACCESSED 12/4/2023: VANDERGRIFT, PA QUAD.



P:\330-000\332-793\GIS\Maps\CV01\332793\_CV01\_FIG 1 SITE LOC.mxd 12/4/2023 1:42 PM (kcolatizzi)



**Civil & Environmental Consultants, Inc.**

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 724-327-5200 · 800-899-3610  
[www.cecinc.com](http://www.cecinc.com)

CNX MIDSTREAM OPERATING COMPANY LLC  
 MAM14\_U1 PIPELINE  
 BELL AND WASHINGTON TOWNSHIPS,  
 WESTMORELAND COUNTY, PENNSYLVANIA

### SITE LOCATION MAP

DRAWN BY:	KMC	CHECKED BY:	DRAFT	APPROVED BY:	DRAFT*	FIGURE NO:	1
DATE:	12/04/2023	SCALE:	1" = 2,000'	PROJECT NO:	332-793	* Hand signature on file	

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**APPENDIX C**

**USDA CUSTOM SOIL RESOURCE REPORT**

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United States  
Department of  
Agriculture

NRCS

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Westmoreland County, Pennsylvania



# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

## Custom Soil Resource Report

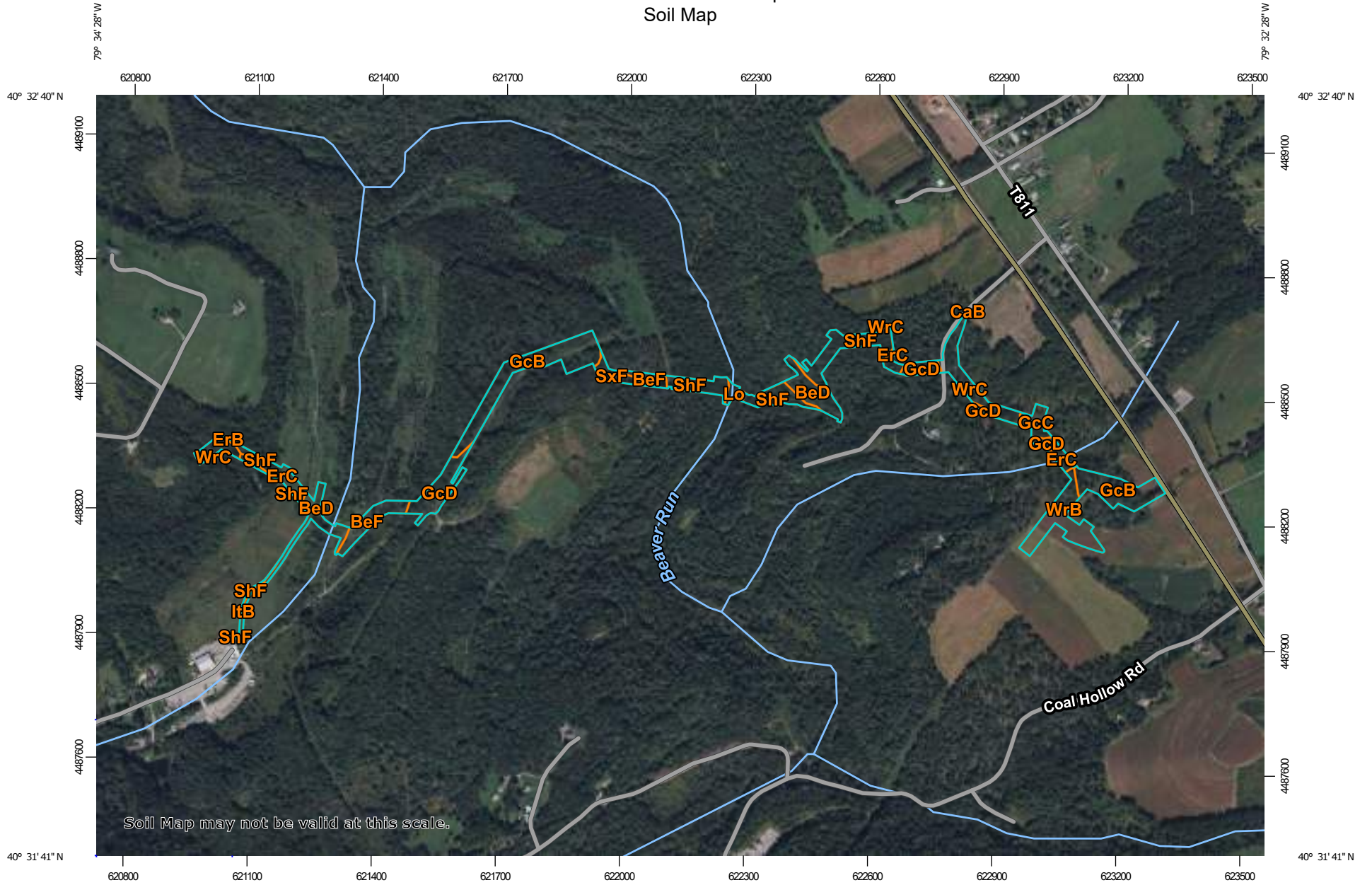
identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

---

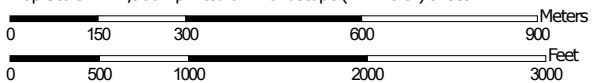
The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map



Soil Map may not be valid at this scale.


Map Scale: 1:12,900 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)


**Soils**


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**

 Blowout

 Borrow Pit


 Clay Spot


 Closed Depression

 Gravel Pit

 Gravelly Spot


 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop


 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole

 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

**Water Features**

 Streams and Canals


**Transportation**

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Westmoreland County, Pennsylvania  
 Survey Area Data: Version 20, Sep 7, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 11, 2021—Nov 16, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	3.6	10.9%
BeF	Bethesda very channery silt loam, 25 to 75 percent slopes	2.1	6.4%
CaB	Cavode silt loam, 3 to 8 percent slopes	0.0	0.0%
ErB	Ernest silt loam, 3 to 8 percent slopes	0.0	0.1%
ErC	Ernest silt loam, 8 to 15 percent slopes	2.1	6.4%
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	7.6	23.1%
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	0.9	2.6%
GcD	Gilpin channery silt loam, 15 to 25 percent slopes	3.3	10.0%
ItB	Itmann extremely channery loam, 0 to 8 percent slopes	0.3	0.8%
Lo	Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded	0.4	1.1%
ShF	Shelocta-Gilpin channery silt loams, 25 to 75 percent slopes	5.4	16.4%
SxF	Shelocta-Gilpin channery silt loams, 25 to 75 percent slopes, very stony	0.8	2.4%
WrB	Wharton silt loam, 3 to 8 percent slopes	3.1	9.5%
WrC	Wharton silt loam, 8 to 15 percent slopes	3.3	10.2%
<b>Totals for Area of Interest</b>		<b>32.8</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some

## Custom Soil Resource Report

observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The



## Custom Soil Resource Report

pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Westmoreland County, Pennsylvania

### BeD—Bethesda very channery silt loam, 8 to 25 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2w1w9  
*Elevation:* 800 to 2,160 feet  
*Mean annual precipitation:* 39 to 53 inches  
*Mean annual air temperature:* 46 to 51 degrees F  
*Frost-free period:* 110 to 180 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Bethesda, unstable fill, and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Bethesda, Unstable Fill

##### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Shoulder, backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear  
*Parent material:* Acid loamy coal extraction mine spoil derived from interbedded sedimentary rock

##### Typical profile

*A - 0 to 6 inches:* very channery silt loam  
*C - 6 to 80 inches:* very channery clay loam

##### Properties and qualities

*Slope:* 8 to 25 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Low (about 4.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* D  
*Ecological site:* F124XY100OH - Mine Spoil (reserved)  
*Hydric soil rating:* No

#### Minor Components

##### Bethesda, loam, unstable fill

*Percent of map unit:* 5 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope, shoulder

## Custom Soil Resource Report

*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Fairpoint, unstable fill**

*Percent of map unit:* 4 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope, shoulder  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Convex, linear  
*Other vegetative classification:* Limy Hills (LH2), Unnamed (G126XYH-10H)  
*Hydric soil rating:* No

### **Unnamed, hydric**

*Percent of map unit:* 1 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope, shoulder  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

## **BeF—Bethesda very channery silt loam, 25 to 75 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2wdqv  
*Elevation:* 670 to 2,310 feet  
*Mean annual precipitation:* 38 to 52 inches  
*Mean annual air temperature:* 48 to 51 degrees F  
*Frost-free period:* 110 to 170 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Bethesda, unstable fill, and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Bethesda, Unstable Fill**

#### **Setting**

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope, shoulder  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex, linear  
*Parent material:* Acid loamy coal extraction mine spoil derived from interbedded sedimentary rock

## Custom Soil Resource Report

### Typical profile

*O<sub>i</sub> - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 6 inches:* very channery silt loam  
*C - 6 to 80 inches:* very channery clay loam

### Properties and qualities

*Slope:* 25 to 75 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (K<sub>sat</sub>):* Very low to moderately low (0.00 to 0.14 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Low (about 3.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* D  
*Forage suitability group:* Unnamed (G124XYH-1OH)  
*Other vegetative classification:* Unnamed (G124XYH-1OH)  
*Hydric soil rating:* No

### Minor Components

#### Bethesda, loam, unstable fill

*Percent of map unit:* 5 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope, shoulder  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex, linear  
*Hydric soil rating:* No

#### Fairpoint, unstable fill

*Percent of map unit:* 5 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope, shoulder  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Convex, linear  
*Other vegetative classification:* Limy Hills (LH2), Unnamed (G126XYH-1OH)  
*Hydric soil rating:* No

#### Rock outcrop

*Percent of map unit:* 0 percent

#### Water

*Percent of map unit:* 0 percent

## CaB—Cavode silt loam, 3 to 8 percent slopes

### Map Unit Setting

*National map unit symbol:* 2wdpc

*Elevation:* 780 to 2,960 feet

*Mean annual precipitation:* 38 to 58 inches

*Mean annual air temperature:* 46 to 51 degrees F

*Frost-free period:* 110 to 195 days

*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Cavode and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Cavode

#### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, backslope

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Concave, linear

*Across-slope shape:* Concave, linear

*Parent material:* Acid clayey residuum weathered from clayey shale

#### Typical profile

*Ap - 0 to 10 inches:* silt loam

*Btg - 10 to 47 inches:* silty clay loam

*BCg - 47 to 57 inches:* channery silt loam

*R - 57 to 67 inches:* bedrock

#### Properties and qualities

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* 40 to 80 inches to lithic bedrock

*Drainage class:* Somewhat poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)

*Depth to water table:* About 6 to 18 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* High (about 9.4 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3w

*Hydrologic Soil Group:* C/D

*Ecological site:* F124XY002OH - Acid Mixed Sedimentary Upland

*Hydric soil rating:* No

## Minor Components

### Gilpin

*Percent of map unit:* 10 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Shoulder, summit, backslope

*Landform position (three-dimensional):* Interfluvium

*Down-slope shape:* Convex

*Across-slope shape:* Linear, convex

*Hydric soil rating:* No

### Brinkerton

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Toeslope, footslope

*Landform position (three-dimensional):* Base slope, head slope

*Down-slope shape:* Concave, linear

*Across-slope shape:* Concave, linear

*Hydric soil rating:* Yes

## ErB—Ernest silt loam, 3 to 8 percent slopes

### Map Unit Setting

*National map unit symbol:* 2t32b

*Elevation:* 690 to 2,230 feet

*Mean annual precipitation:* 37 to 55 inches

*Mean annual air temperature:* 47 to 52 degrees F

*Frost-free period:* 155 to 191 days

*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Ernest and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Ernest

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Footslope, toeslope

*Landform position (three-dimensional):* Base slope, head slope

*Down-slope shape:* Concave, linear

*Across-slope shape:* Concave

*Parent material:* Fine-loamy colluvium derived from sedimentary rock

#### Typical profile

*Ap - 0 to 8 inches:* silt loam

*Bt1 - 8 to 15 inches:* silt loam

*Bt2 - 15 to 24 inches:* silt loam

*Btx1 - 24 to 36 inches:* channery silt loam

## Custom Soil Resource Report

*Btx2 - 36 to 50 inches: channery silt loam*

*C - 50 to 74 inches: channery silt loam*

### Properties and qualities

*Slope: 3 to 8 percent*

*Depth to restrictive feature: 23 to 28 inches to fragipan*

*Drainage class: Moderately well drained*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)*

*Depth to water table: About 15 to 22 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Available water supply, 0 to 60 inches: Low (about 4.9 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 2e*

*Hydrologic Soil Group: C/D*

*Ecological site: F124XY002OH - Acid Mixed Sedimentary Upland*

*Hydric soil rating: No*

### Minor Components

#### Gilpin

*Percent of map unit: 5 percent*

*Landform: Hillslopes*

*Landform position (two-dimensional): Backslope, footslope*

*Landform position (three-dimensional): Side slope*

*Down-slope shape: Convex*

*Across-slope shape: Linear, convex*

*Hydric soil rating: No*

#### Buchanan

*Percent of map unit: 5 percent*

*Landform: Hillslopes*

*Landform position (two-dimensional): Toeslope, footslope*

*Landform position (three-dimensional): Base slope, head slope*

*Down-slope shape: Concave, linear*

*Across-slope shape: Concave*

*Hydric soil rating: No*

#### Brinkerton

*Percent of map unit: 5 percent*

*Landform: Hillslopes*

*Landform position (two-dimensional): Toeslope, footslope*

*Landform position (three-dimensional): Base slope, head slope*

*Down-slope shape: Concave*

*Across-slope shape: Concave*

*Other vegetative classification: Wetlands (W3)*

*Hydric soil rating: Yes*

## ErC—Ernest silt loam, 8 to 15 percent slopes

### Map Unit Setting

*National map unit symbol:* 2t32c

*Elevation:* 590 to 2,290 feet

*Mean annual precipitation:* 37 to 58 inches

*Mean annual air temperature:* 47 to 53 degrees F

*Frost-free period:* 155 to 203 days

*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Ernest and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Ernest

#### Setting

*Landform:* Hillslopes

*Landform position (two-dimensional):* Toeslope, footslope

*Landform position (three-dimensional):* Base slope, head slope

*Down-slope shape:* Concave

*Across-slope shape:* Concave, linear

*Parent material:* Fine-loamy colluvium derived from sedimentary rock

#### Typical profile

*Ap - 0 to 8 inches:* silt loam

*Bt1 - 8 to 15 inches:* silt loam

*Bt2 - 15 to 24 inches:* silt loam

*Btx1 - 24 to 36 inches:* channery silt loam

*Btx2 - 36 to 50 inches:* channery silt loam

*C - 50 to 74 inches:* channery silt loam

#### Properties and qualities

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* 23 to 28 inches to fragipan

*Drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.60 in/hr)

*Depth to water table:* About 15 to 22 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Low (about 4.9 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* C/D

*Ecological site:* F126XY002OH - Footslope , F124XY002OH - Acid Mixed  
Sedimentary Upland



## Custom Soil Resource Report

*Forage suitability group:* Unnamed (G124XYF-3OH)  
*Other vegetative classification:* Unnamed (G124XYF-3OH)  
*Hydric soil rating:* No

### Minor Components

#### Brinkerton

*Percent of map unit:* 5 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Footslope, toeslope  
*Landform position (three-dimensional):* Base slope, head slope  
*Microfeatures of landform position:* Closed depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave, linear  
*Hydric soil rating:* Yes

#### Buchanan

*Percent of map unit:* 5 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Toeslope, footslope  
*Landform position (three-dimensional):* Base slope, head slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave, linear  
*Hydric soil rating:* No

#### Gilpin

*Percent of map unit:* 5 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope, head slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear, convex  
*Hydric soil rating:* No

### GcB—Gilpin channery silt loam, 3 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2t1kt  
*Elevation:* 870 to 2,720 feet  
*Mean annual precipitation:* 40 to 53 inches  
*Mean annual air temperature:* 47 to 52 degrees F  
*Frost-free period:* 167 to 179 days  
*Farmland classification:* All areas are prime farmland

#### Map Unit Composition

*Gilpin and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Gilpin

### Setting

*Landform:* Hills

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Convex

*Across-slope shape:* Linear, convex

*Parent material:* Acid fine-loamy residuum weathered from shale and siltstone

### Typical profile

*Ap - 0 to 8 inches:* channery silt loam

*Bt - 8 to 24 inches:* channery silt loam

*C - 24 to 30 inches:* extremely channery loam

*R - 30 to 40 inches:* bedrock

### Properties and qualities

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* 30 to 36 inches to lithic bedrock

*Drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.20 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Low (about 4.3 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* C

*Ecological site:* F126XY001OH - Dry Ridge

*Hydric soil rating:* No

## Minor Components

### Wharton

*Percent of map unit:* 10 percent

*Landform:* Hills

*Landform position (two-dimensional):* Summit, backslope, shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

### Weikert

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Nose slope

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

## **GcC—Gilpin channery silt loam, 8 to 15 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2t1kw

*Elevation:* 800 to 3,090 feet

*Mean annual precipitation:* 40 to 62 inches

*Mean annual air temperature:* 46 to 53 degrees F

*Frost-free period:* 166 to 181 days

*Farmland classification:* Farmland of statewide importance

### **Map Unit Composition**

*Gilpin and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Gilpin**

#### **Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Convex

*Across-slope shape:* Linear, convex

*Parent material:* Acid fine-loamy residuum weathered from shale and siltstone

#### **Typical profile**

*Ap - 0 to 8 inches:* channery silt loam

*Bt - 8 to 24 inches:* channery silt loam

*C - 24 to 30 inches:* extremely channery loam

*R - 30 to 40 inches:* bedrock

#### **Properties and qualities**

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* 30 to 36 inches to lithic bedrock

*Drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.20 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Low (about 4.3 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* C

*Ecological site:* F126XY001OH - Dry Ridge

*Hydric soil rating:* No

## Minor Components

### Wharton

*Percent of map unit:* 10 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Shoulder, summit  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Weikert

*Percent of map unit:* 5 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Nose slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## GcD—Gilpin channery silt loam, 15 to 25 percent slopes

### Map Unit Setting

*National map unit symbol:* 2t1kv  
*Elevation:* 790 to 3,120 feet  
*Mean annual precipitation:* 39 to 61 inches  
*Mean annual air temperature:* 46 to 53 degrees F  
*Frost-free period:* 161 to 181 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Gilpin and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Gilpin

#### Setting

*Landform:* Hills  
*Landform position (two-dimensional):* Summit, shoulder  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear, convex  
*Parent material:* Acid fine-loamy residuum weathered from shale and siltstone

#### Typical profile

*Ap - 0 to 8 inches:* channery silt loam  
*Bt - 8 to 24 inches:* channery silt loam  
*C - 24 to 30 inches:* extremely channery loam  
*R - 30 to 40 inches:* bedrock

## Custom Soil Resource Report

### Properties and qualities

*Slope:* 15 to 25 percent  
*Depth to restrictive feature:* 30 to 36 inches to lithic bedrock  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Low (about 4.3 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* C  
*Ecological site:* F126XY004OH - Side Slope  
*Hydric soil rating:* No

### Minor Components

#### Weikert

*Percent of map unit:* 10 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Nose slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Wharton

*Percent of map unit:* 5 percent  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope, shoulder  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

## ItB—Itmann extremely channery loam, 0 to 8 percent slopes

### Map Unit Setting

*National map unit symbol:* mhs4  
*Elevation:* 700 to 1,700 feet  
*Mean annual precipitation:* 36 to 46 inches  
*Mean annual air temperature:* 41 to 62 degrees F  
*Frost-free period:* 130 to 160 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Itmann, unstable fill, and similar soils:* 100 percent

## Custom Soil Resource Report

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Itmann, Unstable Fill

#### Setting

*Landform:* Plateaus

*Down-slope shape:* Convex, linear

*Across-slope shape:* Convex, linear

*Parent material:* Loamy coal extraction mine spoil derived from shale and siltstone

#### Typical profile

*A - 0 to 14 inches:* extremely channery loam

*C - 14 to 65 inches:* extremely channery loam

#### Properties and qualities

*Slope:* 0 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Somewhat excessively drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 6.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Low (about 5.1 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4s

*Hydrologic Soil Group:* A

*Ecological site:* F124XY100OH - Mine Spoil (reserved)

*Hydric soil rating:* No

## Lo—Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded

### Map Unit Setting

*National map unit symbol:* 2t326

*Elevation:* 520 to 1,430 feet

*Mean annual precipitation:* 39 to 44 inches

*Mean annual air temperature:* 49 to 53 degrees F

*Frost-free period:* 167 to 191 days

*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Lobdell and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Lobdell

#### Setting

*Landform:* Flood plains

*Down-slope shape:* Linear

## Custom Soil Resource Report

*Across-slope shape:* Linear

*Parent material:* Fine-loamy alluvium derived from sedimentary rock

### Typical profile

*Ap - 0 to 6 inches:* silt loam

*Bw1 - 6 to 20 inches:* loam

*Bw2 - 20 to 38 inches:* loam

*C - 38 to 65 inches:* stratified loam to silt loam

### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.57 to 1.98 in/hr)

*Depth to water table:* About 16 to 30 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Very high (about 12.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2w

*Hydrologic Soil Group:* B/D

*Ecological site:* F126XY006OH - Well Drained Floodplain

*Forage suitability group:* Unnamed (G126XYA-5OH)

*Other vegetative classification:* Unnamed (G126XYA-5OH)

*Hydric soil rating:* No

### Minor Components

#### Orrville

*Percent of map unit:* 5 percent

*Landform:* Flood plains

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Hydric soil rating:* No

#### Melvin

*Percent of map unit:* 5 percent

*Landform:* Flood plains

*Down-slope shape:* Concave, linear

*Across-slope shape:* Concave, linear

*Hydric soil rating:* Yes

#### Holly

*Percent of map unit:* 5 percent

*Landform:* Flood plains

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Other vegetative classification:* Wetlands (W3)

*Hydric soil rating:* Yes

## ShF—Shelocta-Gilpin channery silt loams, 25 to 75 percent slopes

### Map Unit Setting

*National map unit symbol:* 18qt  
*Elevation:* 480 to 3,000 feet  
*Mean annual precipitation:* 30 to 65 inches  
*Mean annual air temperature:* 41 to 62 degrees F  
*Frost-free period:* 120 to 180 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Shelocta and similar soils:* 50 percent  
*Gilpin and similar soils:* 40 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Shelocta

#### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Convex, linear  
*Parent material:* Acid fine-loamy colluvium derived from sandstone and siltstone

#### Typical profile

*O<sub>i</sub> - 0 to 1 inches:* slightly decomposed plant material  
*O<sub>e</sub> - 1 to 2 inches:* moderately decomposed plant material  
*A - 2 to 8 inches:* channery silt loam  
*B<sub>t1</sub> - 8 to 14 inches:* channery silt loam  
*B<sub>t2</sub> - 14 to 40 inches:* channery silt loam  
*C - 40 to 80 inches:* very channery loam

#### Properties and qualities

*Slope:* 25 to 75 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (K<sub>sat</sub>):* Moderately high to high  
(0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Moderate (about 8.0 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* B



## Custom Soil Resource Report

*Ecological site:* F126XY004OH - Side Slope, F124XY004OH - Acid Mixed  
Sedimentary Toeslope  
*Hydric soil rating:* No

### Description of Gilpin

#### Setting

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Acid fine-loamy residuum weathered from shale and siltstone

#### Typical profile

*O<sub>i</sub> - 0 to 1 inches:* slightly decomposed plant material  
*O<sub>e</sub> - 1 to 2 inches:* moderately decomposed plant material  
*A - 2 to 8 inches:* channery silt loam  
*B<sub>t</sub> - 8 to 24 inches:* channery silt loam  
*C - 24 to 30 inches:* very channery loam  
*R - 30 to 35 inches:* bedrock

#### Properties and qualities

*Slope:* 25 to 75 percent  
*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock  
*Drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (K<sub>sat</sub>):* Moderately high to high  
(0.20 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Low (about 3.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* C  
*Ecological site:* F126XY004OH - Side Slope, F124XY002OH - Acid Mixed  
Sedimentary Upland  
*Hydric soil rating:* No

### Minor Components

#### Ernest

*Percent of map unit:* 8 percent  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

#### Rock outcrop

*Percent of map unit:* 2 percent

## **SxF—Shelocta-Gilpin channery silt loams, 25 to 75 percent slopes, very stony**

### **Map Unit Setting**

*National map unit symbol:* mhsb  
*Elevation:* 480 to 3,000 feet  
*Mean annual precipitation:* 30 to 65 inches  
*Mean annual air temperature:* 37 to 62 degrees F  
*Frost-free period:* 110 to 180 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Shelocta and similar soils:* 50 percent  
*Gilpin and similar soils:* 35 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Shelocta**

#### **Setting**

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Acid fine-loamy colluvium derived from sandstone and siltstone

#### **Typical profile**

*O<sub>i</sub> - 0 to 1 inches:* slightly decomposed plant material  
*O<sub>e</sub> - 1 to 2 inches:* moderately decomposed plant material  
*A - 2 to 8 inches:* channery silt loam  
*B<sub>t1</sub> - 8 to 14 inches:* channery silt loam  
*B<sub>t2</sub> - 14 to 40 inches:* channery silt loam  
*C - 40 to 80 inches:* very channery loam

#### **Properties and qualities**

*Slope:* 25 to 75 percent  
*Surface area covered with cobbles, stones or boulders:* 2.0 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (K<sub>sat</sub>):* Moderately high to high  
(0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Moderate (about 8.1 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* B  
*Ecological site:* F127XY012WV - Convergent Uplands, F126XY004OH - Side Slope, F124XY004OH - Acid Mixed Sedimentary Toeslope  
*Hydric soil rating:* No

**Description of Gilpin**

**Setting**

*Landform:* Hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Acid fine-loamy residuum weathered from shale and siltstone

**Typical profile**

*O<sub>i</sub> - 0 to 1 inches:* slightly decomposed plant material  
*O<sub>e</sub> - 1 to 2 inches:* moderately decomposed plant material  
*A - 2 to 8 inches:* channery silt loam  
*B<sub>t</sub> - 8 to 24 inches:* channery silt loam  
*C - 24 to 30 inches:* very channery loam  
*R - 30 to 35 inches:* bedrock

**Properties and qualities**

*Slope:* 25 to 75 percent  
*Surface area covered with cobbles, stones or boulders:* 1.6 percent  
*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock  
*Drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (K<sub>sat</sub>):* Moderately high to high (0.20 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Low (about 3.8 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* C  
*Ecological site:* F127XY013WV - Divergent Uplands, F126XY004OH - Side Slope, F124XY002OH - Acid Mixed Sedimentary Upland  
*Hydric soil rating:* No

**Minor Components**

**Wharton**

*Percent of map unit:* 10 percent  
*Landform:* Hillsides or mountainsides  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear

## Custom Soil Resource Report

*Hydric soil rating:* No

### **Ernest**

*Percent of map unit:* 5 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* No

## **WrB—Wharton silt loam, 3 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2t185

*Elevation:* 760 to 2,860 feet

*Mean annual precipitation:* 37 to 57 inches

*Mean annual air temperature:* 46 to 53 degrees F

*Frost-free period:* 158 to 205 days

*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Wharton and similar soils:* 80 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Wharton**

#### **Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Summit, backslope, shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Fine-loamy residuum weathered from shale and siltstone

#### **Typical profile**

*Ap - 0 to 9 inches:* silt loam

*Bt1 - 9 to 16 inches:* silt loam

*Bt2 - 16 to 22 inches:* silt loam

*Bt3 - 22 to 31 inches:* silt loam

*BC - 31 to 46 inches:* silty clay loam

*C - 46 to 69 inches:* channery silty clay loam

*Cr - 69 to 79 inches:* bedrock

#### **Properties and qualities**

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* 40 to 71 inches to paralithic bedrock

*Drainage class:* Moderately well drained

## Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)

*Depth to water table:* About 16 to 28 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* High (about 9.5 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* C/D

*Ecological site:* F124XY002OH - Acid Mixed Sedimentary Upland

*Hydric soil rating:* No

### Minor Components

#### Cavode

*Percent of map unit:* 8 percent

*Landform:* Hills

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### Gilpin

*Percent of map unit:* 7 percent

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Interfluvium, side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear, convex

*Hydric soil rating:* No

#### Brinkerton

*Percent of map unit:* 5 percent

*Landform:* Depressions on hillslopes

*Landform position (two-dimensional):* Footslope, toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Linear, concave

*Across-slope shape:* Linear, concave

*Hydric soil rating:* Yes

## WrC—Wharton silt loam, 8 to 15 percent slopes

### Map Unit Setting

*National map unit symbol:* 2t5mm

*Elevation:* 620 to 2,160 feet

*Mean annual precipitation:* 37 to 51 inches

*Mean annual air temperature:* 47 to 53 degrees F

*Frost-free period:* 161 to 205 days

## Custom Soil Resource Report

*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Wharton and similar soils:* 80 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Wharton

#### Setting

*Landform:* Hills

*Landform position (two-dimensional):* Backslope, shoulder

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Parent material:* Fine-loamy residuum weathered from shale and siltstone

#### Typical profile

*Ap - 0 to 9 inches:* silt loam

*Bt1 - 9 to 16 inches:* silt loam

*Bt2 - 16 to 22 inches:* silt loam

*Bt3 - 22 to 31 inches:* silt loam

*BC - 31 to 46 inches:* silty clay loam

*C - 46 to 69 inches:* channery silty clay loam

*Cr - 69 to 79 inches:* bedrock

#### Properties and qualities

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* 40 to 71 inches to paralithic bedrock

*Drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)

*Depth to water table:* About 16 to 28 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* High (about 9.5 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* C/D

*Ecological site:* F126XY003OH - Moist Ridge

*Forage suitability group:* Unnamed (G126XYA-6OH)

*Other vegetative classification:* Unnamed (G126XYA-6OH)

*Hydric soil rating:* No

### Minor Components

#### Gilpin

*Percent of map unit:* 10 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Backslope, shoulder

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear, convex

*Hydric soil rating:* No

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### **Rarden**

*Percent of map unit:* 5 percent

*Landform:* Hills

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil rating:* No

### **Ernest**

*Percent of map unit:* 5 percent

*Landform:* Hillslopes

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* No

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