Mountain Valley Pipeline Boost Project

Docket No. CP26-__-000

Resource Report 7 – Soils

October 2025

Mountain Valley Pipeline Boost Project
Resource Report 7 – Soils

Resource Report 7 Filing Requirements per 18 CFR § 380.12	
Information	**Location in Resource Report**
Minimum Filing Requirements	
1. List, by the soil associations within the Project area and describe the erosion potential, fertility, and drainage characteristics of each association. (§ 380.12(i)(1))	Section 7.2 Appendix 7-A
2. If an aboveground facility site is greater than 5 acres: (i) List the soil series within the property and the percentage of the property comprised of each series; (ii) List the percentage of each series which would be permanently disturbed (iii) Describe the characteristics of each soil series; and (iv) Indicate which are classified as prime or unique farmland by the U.S. Department of Agriculture, Natural Resources Conservation Service. (§ 380.12(i)(2))	Section 7.2
3. Identify, potential impact from: Soil erosion due to water, wind, or loss of vegetation; soil compaction and damage to soil structure resulting from movement of construction vehicles; wet soils and soils with poor drainage that are especially prone to structural damage; damage to drainage tile systems due to movement of construction vehicles and trenching activities; and interference with the operation of agricultural equipment due to the probability of large stones or blasted rock occurring on or near the surface as a result of construction. (§ 380.12(i)(3))	Section 7.3
4. Identify, by milepost, cropland and residential areas where loss of soil fertility due to trenching and backfilling could occur. (§ 380.12(i)(4))	Section 7.3
5. Describe proposed mitigation measures to reduce the potential for adverse impact to soils or agricultural productivity. Compare proposed mitigation measures with the staff's current "Upland Erosion Control, Revegetation, and Maintenance Plan" which is available from the Commission Internet home page or from the Commission staff, and explain how proposed mitigation measures provide equivalent or greater protections to the environment. (§ 380.12(i)(5))	Section 7.3
Minimum Filing Requirements – Appendix A to Part 380 [Note: May overlap with requirements above.]	
1. Identify, describe, and group the soils affected by the aboveground facilities. (§ 380.12(i)(1))	Section 7.2 Appendix 7-A
2. For aboveground facilities that would occupy sites over 5 acres, determine the acreage of prime farmland soils that would be affected by construction and operation. (§ 380.12(i)(2))	Section 7.2
3. Describe potential impacts on soils. (§ 380.12(i)(3,4))	Section 7.2
4. Identify proposed mitigation to minimize impact on soils, and compare with the staff's Upland Erosion Control, Revegetation, and Maintenance Plan. (§ 380.12(i)(5))	Section 7.3

RESOURCE REPORT 7
SOILS
TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

RESOURCE REPORT 7
SOILS

LIST OF ACRONYMS AND ABBREVIATIONS

E&SCP	Erosion and Sediment Control Plan
EI	Environmental Inspector
FERC	Federal Energy Regulatory Commission
FERC Plan	FERC's May 2013 version of the Upland Erosion Control, Revegetation, and Maintenance Plan
FERC Procedures	FERC's May 2013 version of the Wetland and Waterbody Construction and Mitigation Procedures
MLRA	Major Land Resource Area
MVP	Mountain Valley Pipeline, LLC
MVP Mainline	existing Mountain Valley Pipeline mainline
NRCS	Natural Resources Conservation Service
Project	Mountain Valley Pipeline Boost Project
SSURGO	State Soil Survey Geographic database
USDA	United States Department of Agriculture

RESOURCE REPORT 7
SOILS

Introduction

Mountain Valley Pipeline, LLC (MVP) is seeking a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission (FERC) pursuant to Section 7(c) of the Natural Gas Act authorizing MVP to construct and operate the proposed Mountain Valley Pipeline Boost Project (Project) located in Wetzel, Braxton and Fayette Counties, West Virginia and Montgomery County, Virginia. MVP plans to expand three existing compressor stations and construct one new compressor station to provide timely and cost-effective access to the growing demand for natural gas for use by local distribution companies, industrial users, and power generation in the Mid-Atlantic and Southeastern markets, as well as potential markets in the Appalachian region.

The Project will include a total addition of approximately 265,750 horsepower of compression at isometric conditions from the proposed modifications and operation at the existing Bradshaw, Harris, and Stallworth Compressor Stations, and the construction of the new Swann Compressor Station, including ancillary facilities required for safe and reliable operations. The Project will create approximately 600,000 dekatherms per day of incremental natural gas capacity on the existing Mountain Valley Pipeline mainline (MVP Mainline).

Resource Report 1 provides a complete summary of the Project facilities (Table 1.2-1) and a general location map of the Project facilities (Figure 1.2-1). For purposes of this Resource Report, the Project area is defined to be the limits of disturbance for construction at the Bradshaw, Harris, Stallworth, and proposed Swann Compressor Station sites, including ancillary facilities and offsite laydown yards.

In order to minimize impacts to soils, MVP is committed to implementing the best management practices and mitigation measures included in the May 2013 version of the FERC *Upland Erosion Control, Revegetation and Maintenance Plan* (FERC Plan; FERC 2013a) and FERC *Wetland and Waterbody Construction and Mitigation Procedures* (FERC Procedures; FERC 2013b). MVP will also develop a Project-specific Erosion and Sediment Control Plan (E&SCP) to further minimize impacts on soil resources.

Environmental Resource Report Organization

Resource Report 7 is prepared and organized according to the FERC *Guidance Manual for Environmental Report Preparation* (FERC 2017). The report provides a description and supporting information regarding soils and sediments in the area of the Project. A description of methods used to characterize soils is included in Section 7.1. Soils underlying the Project are described in Section 7.2. Potential impacts to soils due to construction and operation of the Project and measures that MVP will implement to avoid and minimize impacts are described in Section 7.3, and Section 7.4 provides references.

7.1 IDENTIFICATION OF SOIL CONDITIONS

7.1.1 SSURGO Databases

MVP has compiled information on erosion potential, Prime Farmland, hydric soils, compaction potential, drainage, erodibility and re-vegetation potential.

The characteristics of the Project area at the aboveground facility sites were identified using a group of electronic Geographic Information Systems data products developed by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) that provide information on soil characteristics and limitations for various uses. A detailed discussion of the methodology and assumptions that were used to identify and evaluate the information contained in the NRCS electronic data is presented below. This Resource Report is also informed by MVP's field experience with the characteristics and limitations of onsite soils at the Bradshaw, Harris and Stallworth Compressor Stations, where MVP performed significant earthwork during the construction of these compressor stations as part of the MVP Mainline Project.

Soil interpretations and tables were developed using the state Soil Survey Geographic (SSURGO) databases (USDA 2025), and MVP's site-specific experience at the existing compressor stations. The SSURGO databases provide soil series level information, similar to what is provided in a traditional county soil survey (USDA 1976, 1985, 1995, 1997).

7.1.2 Methodology for Assessing Soil Resources

A digital version of the Project area, including each of the aboveground sites, was overlain onto SSURGO using ArcGIS.

Based on the data provided by the USDA NRCS through SSURGO (USDA 2025), soils were grouped and evaluated according to characteristics that could affect construction, restoration, or increase the potential for soil impacts. These characteristics include Prime Farmland, hydric soils, compaction-prone soils, highly erodible soils, and poor revegetation potential. Soil contamination was also considered in the analysis.

7.1.2.1 Highly Erodible Soils

Soil erosion potential is affected by soil lithology, including mineralogy, grain size, texture, and organic content. Soil erosion potential can also be influenced by slope and exposure to erosion mechanisms. Soil erosion increases in inverse proportion to the effectiveness of vegetation cover (i.e., soils with denser vegetation cover are less susceptible to erosion). Removal of vegetation as a result of construction activities, either by direct stripping or by other mechanical means, greatly increases erosion potential. Highly erodible soils, as classified by the NRCS, are directly related to the susceptibility of a soil to erosion by water or wind. To determine erosion potential of the soils in the Project area, MVP examined slope, soil capability class, along with the NRCS wind erodibility group and water erosion attributes, to provide an indication of potential soil loss by water and wind action.

7.1.2.2 Prime Farmland and Hydric Soils

Prime Farmland soils are defined by the USDA as best suited for growing food, feed, forage, fiber, and oilseed crops (USDA 2005). Soil map units designated as Prime Farmland do not have to be actively cultivated to receive this designation. In addition to Prime Farmland, SSURGO describes farmland soils of both state and local concern.

Hydric soils are, by definition, soils that are saturated, flooded, or ponded long enough during the growing seasons to develop anaerobic conditions in the upper part of the soil column (USDA 2005).

Both Prime Farmland and hydric soil designations are component soil series attributes in the SSURGO data. Hydric soils may indicate the presence of wetlands or agricultural drain tiles. The Prime Farmland

and hydric soils encountered in the Project area are discussed in more detail in Section 7.2 and listed in Table 7.2-1.

7.1.2.3 Compaction Potential

Soils with a high potential for compaction can be adversely affected during construction activities through the repeated movement of machinery across the soil surface. Soils with high shrink-swell potential and poor drainage characteristics tend to be susceptible to compaction, particularly when wet. These soils tend to have high clay content consisting of platy particles with water in interstitial spaces, and the packing of the clay particles can be compressed through repeated stress. Soils with a high silt or sand content tend to be comprised of sub-rounded to rounded particles and are less compactable. Although surface "crusts" may form on these types of soils when subjected to repeated traffic, upon drying, the compacted particles are often readily separated.

Formation of hardpans is a potential result of repeated traffic over susceptible soils. The formation of hardpans is typically limited to soil with high to very high shrink-swell potential. Hardpan layers tend to form horizons where there is a significant physical or chemical change in the subsoil, often between the A and B or B and C horizons. Hardpans related to artificial compaction tend to form at relatively shallow depths where mechanical stress is not effectively dissipated by the overlying soil column. Hardpans also commonly form at the base of the plow zone, where a change in the soil porosity and permeability may cause perching of water and subsequent physical and chemical changes resulting in the formation of a hardpan.

7.2 EXISTING SOIL RESOURCES

A list including descriptive information of each soil series in the Project area is provided in Table 7.2-1; maps presenting the soil extent and location in the Project area are provided in Appendix 7-A.

7.2.1 Major Land Resource Areas

Soil interpretations at the broadest scale in the United States are based on Major Land Resource Areas (MLRAs). MLRAs are geographically associated with land resource units, usually encompassing several thousand acres, characterized by a particular pattern of soils, geology, climate, water resources, and land use (USDA 2006). MLRAs are a useful tool for describing the general soils and the natural and anthropogenic features affecting those soils. The Project is located in four MLRAs: the Central Allegheny Plateau, the Cumberland Plateau and Mountains, the Eastern Allegheny Plateau and Mountains, and Southern Blue Ridge.

7.2.1.1 Bradshaw Compressor Station–Central Allegheny Plateau

The Central Allegheny Plateau MLRA is a dissected plateau that is underlain mainly by horizontally bedded sedimentary rocks. The narrow, level valleys and narrow, sloping ridgetops are separated by long, steep and very steep side slopes. Elevation throughout the Central Allegheny Plateau ranges from 650 feet on the lowest valley floors to 1,310 feet or more on the highest ridgetops. Local relief is approximately 330 feet (USDA 2006).

The dominant soil orders in the Central Allegheny Plateau MLRA are Alfisols, Ultisols, and Inceptisols. The soils in the area have a mesic soil temperature regime, a udic soil moisture regime, and mixed mineralogy. They generally are shallow to very deep, excessively drained to somewhat poorly drained, and skeletal to clayey (USDA 2006).

Table 7.2-1

Soils within the Project area

Facility Name	Soil Unit	Soil Name	Sum of Area (Acre) a/ b/	Percentage (Acres) b/	Prime Farmland c/	Hydric d/	Compaction Potential e/	Drainage f/	Water Erosion Potential g/	Wind Erosion Potential h/	Poor Vegetive Potential i/
Bradshaw Compressor Station	GpD	Gilpin-Peabody complex, 15 to 25 % slopes	3.6 j/	57%	Yes	No	No	Well drained	Severe	Low	Poor
	GpE	Gilpin-Peabody complex, 25 to 35 % slopes, moderately eroded	2.7 j/	43%	Yes	No	No	Well drained	Severe	Low	Poor
Harris Compressor Station	GaF	Gilpin silt loam, 35 to 70 % slopes, very stony	2.7 j/	48%	Yes	No	No	Well drained	Severe	Low	Poor
	GlD	Gilpin-Lily complex, 15 to 25 % slopes	2.8 j/	50%	Yes	No	No	Well drained	Severe	High	Poor
	GlE	Gilpin-Lily complex, 25 to 35 % slopes	0.1 j/	2%	Yes	No	No	Well drained	Severe	High	Poor
Stallworth Compressor Station	CaC	Cateache channery silt loam, 8 to 15 % slopes	6.3 j/	97%	Yes	No	No	Well drained	Moderate	High	Poor
	CcG	Cateache-Pipestem complex, 35 to 80 % slopes, very stony	0.2 j/	3%	No	No	No	Well drained	Severe	High	Poor
Swann Compressor Station	25	McGary and Purdy soils	0.1	<1%	Yes	No	No	Somewhat poorly drained	Slight	High	-
	29	Udorthents and Urban land	17.4	69%	No	No	No	NA	NA	NA	Poor
	30C	Unison and Braddock soils, 7 to 15 % slopes	4.0	16%	Yes	No	No	Well drained	Severe	Low	Poor
	30D	Unison and Braddock soils, 15 to 25 % slopes	3.1	12%	Yes	No	No	Well drained	Severe	Low	Poor
	3D	Berks-Lowell-Rayne complex, 15 to 25 % slopes	<0.1	<1%	Yes	No	No	Well drained	Severe	High	Poor
	3E	Berks-Lowell-Rayne complex, 25 to 65 % slopes	0.6	2%	No	No	No	Well drained	Severe	High	Poor
Laydown Yard MVP-LY-001 (Bradshaw)	EkB	Elk silt loam, 3 to 8 % slopes	2.6	98%	Yes	No	No	Well drained	Moderate	Low	-
	No	Nolin loam	<0.1	2%	Yes	No	No	Well drained	Slight	Low	-
Laydown Yards MVP-CY-002 and MVP-CY-002A (Harris)	GlD	Gilpin-Lily complex, 15 to 25 % slopes	1.5	100%	Yes	No	No	Well drained	Severe	High	Poor
Swann Laydown Yard	11C	Duffield-Ernest complex, 7 to 15 % slopes	3.1	18%	Yes	No	No	Well drained	Severe	High	Poor
	19B	Guernsey silt loam, 2 to 7 % slopes	11.5	65%	Yes	No	No	Moderately well drained	Moderate	High	Poor
	25	McGary and Purdy soils	0.3	2%	Yes	No	No	Somewhat poorly drained	Slight	High	Poor
	29	Udorthents and Urban land	2.5	15%	Yes	No	No	NA	NA	NA	Poor

Table 7.2-1

Soils within the Project area

Facility Name	Soil Unit	Soil Name	Sum of Area (Acre) a/ b/	Percentage (Acres) b/	Prime Farmland c/	Hydric d/	Compaction Potential e/	Drainage f/	Water Erosion Potential g/	Wind Erosion Potential h/	Poor Vegetive Potential i/

Source: USDA 2025
Notes:
a/ Based on soil survey data, which may not be accurate at fine scales. Geotechnical, wetlands, and site-specific sampling data may differ locally from mapped soil types.
b/ Minor discrepancies in totals are due to rounding.
c/ Areas identified as prime farmland soils are identified as lands that meet the “all prime farmland” or “farmland of statewide and local importance” criteria as determined by SSURGO.
d/ Areas identified to have a hydric rating include the “all” and “partial” criteria as determined by SSURGO.
e/ Areas identified to have a severe compaction potential are limited to silt loam or finer based on particle size and “somewhat poor,” “poor,” and “very poor” drainage as determined by SSURGO.
f/ Areas drainage potential as determined by SSURGO.
g/ Areas identified as highly water erodible soils are ranked by SSURGO erosion hazard (Road/Trail) criteria.
h/ Areas identified as highly wind erodible soils have a wind erodibility group of greater than 5 and less than 8 as determined by SSURGO.
i/ Areas identified to have poor revegetation potential are lands that have a Capability Class 3 or greater and slopes greater than 8 percent as determined by SSURGO.
j/ Most of the soils within the Bradshaw, Harris, and Stallworth Compressor Stations are within the area of existing operation, as certificated for the MVP Mainline in Docket No. CP16-10-000. No acres at the Bradshaw Compressor Station, less than 0.1 acre at the Harris Compressor Station, 0.5 acre at the Stallworth Compressor Station are outside of the area of existing operation.

The major soil resource concerns in the Central Allegheny Plateau MLRA are sheet and rill erosion on pasture, land slippage, subsidence resulting from mining, stream bank erosion, gullying, surface compaction caused by livestock trampling, and a reduced content of organic matter on cropland. Conservation practices on cropland generally include crop rotations, contour farming, nutrient management, grassed and forested riparian buffers, cover crops, hayland planting, diversions, and grassed waterways. Pasture management includes rotational grazing, watering systems, fencing, managed livestock access to streams, pasture planting, and nutrient management. Forest management includes forest harvest trails, critical area planting, and water bars on trails.

7.2.1.2 Harris Compressor Station–Cumberland Plateau and Mountains

The northern third of Cumberland Plateau and Mountains MLRA is primarily in the Kanawha Section of the Appalachian Plateaus Province of the Appalachian Highlands. The southern two-thirds is primarily in the Cumberland Plateau Section of the same province and division. A strip along the central part of the east edge of the area is in the Cumberland Mountain Section of the same province and division, and small areas of the MLRA along the southwestern edge are in the Highland Rim Section of the Interior Low Plateaus Province of the Interior Plains. This MLRA occurs mainly as a series of long, steep side slopes between narrow ridgetops or crests and narrow stream flood plains. Elevation ranges from 650 feet on the flood plain along the Ohio River to about 980 feet on nearby ridgetops. It gradually rises from these areas to areas near the Virginia-Kentucky border, where it is about 1,650 feet on local flood plains and 3,950 feet on the higher mountains.

Most of the soils in the undulating to rolling areas on the Cumberland Plateau are Hapludults. Moderately deep or deep, well drained, loamy Hapludults (Lily, Lonewood, and Hartsells series) formed in sandstone residuum. Shallow, somewhat excessively drained, loamy Dystrudepts (Ramsey series) also formed in sandstone residuum.

The major soil resource concerns are water erosion, deposition of sediment, depletion of organic matter, surface compaction, and soil contaminants. Conservation practices on cropland generally include systems of crop residue management, especially no-till systems; cover crops; and nutrient management. The most important conservation practice on pasture is prescribed grazing. Forest management practices generally include planting and harvesting methods that minimize disturbance of the surface (USDA 2006).

7.2.1.3 Stallworth Compressor Station–Eastern Allegheny Plateau and Mountains

The deeply dissected Eastern Allegheny Plateau and Mountains MLRA terminates in a high escarpment, the Allegheny Front, in the eastern part of the area. Steep slopes are dominant, but level to gently rolling plateau remnants are conspicuous in the northern part of the area. Elevation ranges from 980 feet in the lowest valleys to 1,970 to 2,620 feet throughout much of the top of the plateau. It is 3,600 to 4,600 feet on the mountains in the southeastern part of the area. Local relief is mainly about 330 feet, but some mountain peaks in the southern part of the area rise 980 feet or more above the plateau or adjacent valleys (USDA 2006).

The dominant soil orders in the Eastern Allegheny Plateau and Mountains MLRA are Ultisols and Inceptisols. The soils dominantly have a mesic or frigid soil temperature regime, a udic soil moisture regime, and mixed or siliceous mineralogy. They generally are moderately deep to very deep, excessively drained to somewhat poorly drained, and loamy.

Stabilizing and revegetating surface-mined areas and controlling acid drainage water from deep mines are major management concerns in this MLRA. The major soil resource concerns are sheet and rill erosion on pasture, land slippage, subsidence caused by mining, streambank erosion, gullying, surface compaction caused by livestock trampling, and a reduced content of organic matter on cropland. Conservation practices on cropland generally include crop rotations, contour farming, nutrient management, grassed and forested riparian buffers, cover crops, hayland planting, diversions, and grassed waterways. Pasture management includes rotational grazing, watering systems, fencing, managed livestock access to streams, pasture planting, and nutrient management. Forest management includes properly constructed forest harvest trails, critical area planting, and water bars on trails.

7.2.1.4 Swann Compressor Station–Southern Blue Ridge

The Southern Blue Ridge MLRA is mainly in the Southern Section of the Blue Ridge Province of the Appalachian Highlands. The southern tip of the MLRA and areas to the east are in the Piedmont Uplands Section of the Piedmont Province of the Appalachian Highlands. This MLRA consists of several distinct topographic areas, including the Blue Ridge Escarpment on the eastern edge of the area, the New River Plateau on the northern end, interior low and intermediate mountains throughout the MLRA, intermountain basins between the major mountains, and the high mountains making up the bulk of the MLRA. Elevation ranges from about 900 feet at the south and southwest boundaries of the area to more than 6,600 feet at the crest of the Great Smoky and Black Mountain ranges (USDA 2006).

The dominant soil orders in this MLRA are Inceptisols and Ultisols. The soil moisture regime is udic. The soil temperature regime typically is mesic, but it is frigid at elevations above 4,200 feet. Soil depth ranges from shallow to very deep. The general textural class is loamy or clayey. In areas at elevations of less than 3,500 feet, the soils on uplands generally are red, fine-loamy or fine Typic Hapludults (Evard, Junaluska, and Hayesville series) (USDA 2006). Proper woodland management is extremely important since privately held forestland makes up a significant portion of the land area in this MLRA. Proper design, construction, and stabilization of disturbed areas can minimize the impact of timber management on water quality. Conservation practices in agricultural areas include field borders, grassed waterways, diversions, and riparian buffers along streams.

7.2.2 Special Designated Soils and Soils with Limitations

Soils that have special designations, or that may have limiting characteristics relevant to construction and restoration, are discussed below and identified in Table 7.2-1. Table 7.2-1 also contains the percentage of each type of soil. The potential for existing contamination is discussed in Section 7.3.6.

7.2.2.1 Prime Farmland Soils

The USDA defines Prime Farmland as “land that is best suited to food, feed, forage, fiber, and oilseed crops” (USDA 2005). This designation relates to soil characteristics and not necessarily the existing land use; hence, it includes cultivated land, pasture, woodland, or other lands that are either used for food or fiber crops or vacant land that could be made available for these uses. Developed land and open water are excluded from Prime Farmland designation. Prime Farmland typically contains few or no rocks, is permeable to water and air, is not excessively erodible or saturated with water for long periods, and is not subject to frequent, prolonged flooding during the growing season. Soils that do not meet the above criteria may be considered Prime Farmland if the limiting factor is mitigated (e.g., artificial drainage in bottomlands).

Prime Farmland soils were identified in the Project area based on information in the SSURGO database and NRCS soil surveys (USDA 2025). The Prime Farmland column in Table 7.2-1 also includes Farmland of Statewide or Local Importance.

Prior to original construction of the existing Bradshaw, Harris, and Stallworth Compressor Stations, soils at these sites were mapped as Prime Farmland. However, the existing compressor station sites were converted to developed land under industrial use as part of the construction of the compressor stations with the MVP Mainline. Although mapped as Prime Farmland in the SSURGO database, it is expected these developed areas would no longer be classified as Prime Farmland soils, due to grading and site fill during construction of the compressor station facilities.

MVP initiated Project consultation with the NRCS in West Virginia on July 30, 2025. The NRCS responded on September 18, 2025, that based on a review of the documents submitted by MVP, aerial photography, and the soil survey mapping, the Project does not impact prime or other important farmland in the Project area in Wetzel, Braxton, and Fayette Counties, and is therefore not subject to the Farmland Protection Policy Act.

At the proposed Swann Compressor Station site, 17.4 acres (69 percent) consists of previously altered (urban) soils and not Prime Farmland, and an additional 0.6 acres (2 percent) of Berks-Lowell soil is too steep to be considered Prime Farmland. The remaining 7.3 acres (29 percent) are considered Prime Farmland soils. These soils are located predominantly in an area of existing undeveloped forested/vegetated land that is not under agricultural land use.

Soils within temporary laydown yards for the Project have been previously disturbed as these laydown yards were used during construction of the MVP Mainline and for other projects. Section 1.3.3 of Resource Report 1 provides additional information on the current land use at Project laydown yards. To the extent Prime Farmland soils may be present at these laydown yard sites, disturbance will be temporary, and the laydown yards will be returned to pre-construction conditions to the extent practicable following the construction of the Project.

7.2.2.2 Hydric Soils

There are no hydric soils identified in the Project area based on information in the SSURGO database and NRCS soil surveys. A majority of the soil at each of the four compressor station sites is considered moderately to well drained with the exception of 0.1 acre at the Swann Compressor Station, and 0.3 acre within the associated Swann Laydown Yard, which are considered somewhat poorly drained.

7.2.2.3 Erosion Potential

Soils with a high percentage of silt and fine sand, as well as those that occur at steeper slopes, are more susceptible to erosion than those with a high clay content and in relatively flat areas. To determine erosion potential of the soils, MVP evaluated slope, soil capability class, and the wind erodibility group, which provides an indication of potential soil loss by water and wind action. MVP will address erosion potential via construction and reclamation techniques in compliance with the FERC Plan and Procedures and will develop a Project-specific E&SCP.

7.3 GENERAL IMPACTS AND MITIGATION

To minimize or avoid impacts on soils, MVP has sited the Project to be located predominantly within existing facility sites and use construction workspace/laydown yards that have been previously disturbed for construction of the MVP Mainline. MVP will also implement soil mitigation measures as outlined in the FERC Plan and Procedures and in the Project-specific E&SCP that will be developed by MVP. The FERC Plan and Procedures address project planning, construction, and restoration. Additional Project-specific measures for minimizing soil impacts may also be required as a result of other federal and state permits and consultations. Any such measures will be identified when final permits are received and plans are developed. Final erosion and sediment controls will be developed based upon field conditions and permit requirements.

Table 7.3-1 presents the temporary and soil impacts resulting from the Project. Operation of the permanent aboveground facilities will result in the permanent conversion of approximately 25.2 acres of land to commercial/industrial uses. Removal of soils excavated for the compressor stations will represent a permanent impact. Construction at the existing and proposed aboveground facilities could also result in the loss of soil due to water or wind erosion. MVP will minimize impacts to the extent possible by employing erosion control and soil conservation techniques during construction in accordance with the FERC Plan and Procedures. No additional mitigation requirements are anticipated.

Table 7.3-1

Acres of Soil Characteristics Affected by the Proposed Aboveground Facilities

Facility Name	Soil Unit	Soil Name	Area Affected by Construction (Acres) a/ b/ c/	Area Affected by Operation (Acres) a/ b/ c/	Prime Farmland d/	Hydric e/	Compaction Potential f/	Drainage g/	Water Erosion Potential h/	Wind Erosion Potential i/	Poor Vegetive Potential j/
Bradshaw Compressor Station	GpD	Gilpin-Peabody complex, 15 to 25 % slopes	0	3.6 k/	Yes	No	No	Well drained	Severe	Low	Poor
	GpE	Gilpin-Peabody complex, 25 to 35 % slopes, moderately eroded	0	2.7 k/	Yes	No	No	Well drained	Severe	Low	Poor
Harris Compressor Station	GaF	Gilpin silt loam, 35 to 70 % slopes, very stony	0	2.7 k/	Yes	No	No	Well drained	Severe	Low	Poor
	GlD	Gilpin-Lily complex, 15 to 25 % slopes	0	2.8 k/	Yes	No	No	Well drained	Severe	High	Poor
	GlE	Gilpin-Lily complex, 25 to 35 % slopes	0	0.1 k/	Yes	No	No	Well drained	Severe	High	Poor
Stallworth Compressor Station	CaC	Cateache channery silt loam, 8 to 15 % slopes	0	6.3 k/	Yes	No	No	Well drained	Moderate	High	Poor
	CcG	Cateache-Pipestem complex, 35 to 80 % slopes, very stony	0	0.2 k/	No	No	No	Well drained	Severe	High	Poor
Swann Compressor Station	25	McGary and Purdy soils	0.1	0.0	Yes	No	No	Somewhat poorly drained	Slight	High	-
	29	Udorthents and Urban land	0.2	17.2	No	No	No	NA	NA	NA	Poor
	30C	Unison and Braddock soils, 7 to 15 % slopes	0	4.0	Yes	No	No	Well drained	Severe	Low	Poor
	30D	Unison and Braddock soils, 15 to 25 % slopes	0	3.1	Yes	No	No	Well drained	Severe	Low	Poor
	3D	Berks-Lowell-Rayne complex, 15 to 25 % slopes	0	<0.1	Yes	No	No	Well drained	Severe	High	Poor
	3E	Berks-Lowell-Rayne complex, 25 to 65 % slopes	0	0.6	No	No	No	Well drained	Severe	High	Poor
Laydown Yard MVP-LY-001 (Bradshaw)	EkB	Elk silt loam, 3 to 8 % slopes	2.6	0	Yes	No	No	Well drained	Moderate	Low	-
	No	Nolin loam	<0.1	0	Yes	No	No	Well drained	Slight	Low	-
Laydown Yards MVP-CY-002 and MVP-CY-002A (Harris)	GlD	Gilpin-Lily complex, 15 to 25 % slopes	1.5	0	Yes	No	No	Well drained	Severe	High	Poor
Swann Laydown Yard	11C	Duffield-Ernest complex, 7 to 15 % slopes	3.1	0.0	Yes	No	No	Well drained	Severe	High	Poor
	19B	Guernsey silt loam, 2 to 7 % slopes	11.5	0.0	Yes	No	No	Moderately well drained	Moderate	High	Poor
	25	McGary and Purdy soils	0.3	0.0	Yes	No	No	Somewhat poorly drained	Slight	High	Poor
	29	Udorthents and Urban land	2.5	0.0	Yes	No	No	NA	NA	NA	Poor

Table 7.3-1

Acres of Soil Characteristics Affected by the Proposed Aboveground Facilities

Facility Name	Soil Unit	Soil Name	Area Affected by Construction (Acres) a/ b/ c/	Area Affected by Operation (Acres) a/ b/ c/	Prime Farmland d/	Hydric e/	Compaction Potential f/	Drainage g/	Water Erosion Potential h/	Wind Erosion Potential i/	Poor Vegetive Potential j/

Source: USDA 2025

Notes:

a/ Based on soil survey data, which may not be accurate at fine scales. Geotechnical, wetlands, and site-specific sampling data may differ locally from mapped soil types.

b/ Minor discrepancies in totals are due to rounding.

c/ Land required for operation will also be used during construction of the Project. Acreage totals for soils affected by construction reflect only land that will not be used during operation.

d/ Areas identified as prime farmland soils are identified as lands that meet the “all prime farmland” or “farmland of statewide and local importance” criteria as determined by SSURGO.

e/ Areas identified to have a hydric rating include the “all” and “partial” criteria as determined by SSURGO.

f/ Areas identified to have a severe compaction potential are limited to silt loam or finer based on particle size and “somewhat poor,” “poor,” and “very poor” drainage as determined by SSURGO.

g/ Areas drainage potential as determined by SSURGO.

h/ Areas identified as highly water erodible soils are ranked by SSURGO erosion hazard (Road/Trail) criteria.

i/ Areas identified as highly wind erodible soils have a wind erodibility group of greater than 5 and less than 8 as determined by SSURGO.

j/ Areas identified to have poor revegetation potential are lands that have a Capability Class 3 or greater and slopes greater than 8 percent as determined by SSURGO.

k/ Most of the soils within the Bradshaw, Harris, and Stallworth Compressor Stations are within the area of existing operation, as certificated for the MVP Mainline in Docket No. CP16-10-000. No acres at the Bradshaw Compressor Station, less than 0.1 acre at the Harris Compressor Station, 0.5 acre at the Stallworth Compressor Station are outside of the area of existing operation.

7.3.1 Loss of Soil Due to Water or Wind Erosion

Erosion is a continuing natural process that can be accelerated by human disturbance. Factors that influence the degree of erosion include the time the construction area is exposed to the elements, soil texture, structure, length and percent of slope, vegetative cover, and rainfall or wind intensity. Soils most susceptible to erosion by water are typified by bare or sparse vegetative cover, non-cohesive soil particles with low infiltration rates, and moderate to steep slopes. Wind erosion processes are less affected by slope angles. Clearing, grading, and equipment movement accelerates the erosion process, and without adequate protection, can result in transport of sediment to waterbodies and wetlands. Soil loss due to erosion could also reduce soil fertility and impair revegetation.

MVP has identified the soils that are considered potentially highly erodible in Table 7.2-1 and Table 7.3-1. Timely erosion controls will be implemented during construction and maintained in accordance with the FERC Plan and Procedures. Erosion control measures from the FERC Plan are also consistent with the expected other federal, state and local requirements and guidelines.

During construction and restoration, the effectiveness of temporary erosion control devices will be inspected and maintained on a routine basis in accordance with the FERC Plan and Procedures. Environmental Inspectors (EIs) hired by MVP will monitor temporary erosion control devices as specified in the Plan and Procedures. Temporary erosion controls including sediment filter devices (e.g., silt fences, erosion control socks) will be installed following initial ground disturbance. Temporary erosion control devices will be maintained until the area is successfully revegetated and the potential for siltation has been minimized. Following successful revegetation of construction areas and upon authorization from the federal and state agencies, if applicable, temporary erosion control devices will be removed. The effectiveness of revegetation and permanent erosion control devices will be monitored by MVP operating personnel during the long-term operation and maintenance of the Project. Monitoring physical structures, their effectiveness, and any effects on surrounding vegetation will meet the requirements of the FERC Plan and Procedures.

Minimizing sediment transport to streams and waterbodies is a primary objective of erosion control measures. Resource Report 2, Water Use and Quality, discusses mitigation to address the potential for runoff from the Project construction area.

7.3.2 Reduction of Topsoil Quality

During construction, topsoil and subsoil will be disturbed during grading and by heavy equipment. The potential mixing of topsoil or surface soil with the subsoil from these activities could result in a loss of soil fertility, due to loss nutrients and suitable soil structure to support the plants/trees growth.

While the Project will be located in areas of Prime Farmland soils, minimal existing agricultural use is present in the Project area. At the existing compressor station facilities, temporary and permanent land requirements are almost entirely within developed land under existing industrial use. The NRCS has determined that the Project does not impact prime or other important farmland in West Virginia. At the proposed Swann Compressor Station site, Prime Farmland soils are primarily in areas of existing forested/vegetated land that is not under agricultural land use. To the extent Prime Farmland soils are disturbed within temporary laydown yards, impacts will be temporary and the areas will be returned to pre-construction conditions to the extent practicable following the construction of the Project. Additional information on laydown yards is provided in Section 1.3.3 of Resource Report 1.

To the extent small areas of agricultural land exist within the Project area, within existing MVP Mainline right-of-way and proposed temporary laydown yards, topsoil segregation (topsoil set in a separate pile) will be performed where required as detailed in the FERC Plan and Procedures in non-saturated wetlands, croplands, pastures, hayfields, and in areas requested by the landowner, to prevent mixing of the soil horizons or incorporation of additional rock into the topsoil. In the event topsoil segregation is required, up to 12 inches of topsoil will be removed from the ground surface, segregated, as appropriate, from all subsoil, and replaced in the proper order during backfilling and final grading. MVP will make diligent efforts to remove excess rock/stone greater than four inches in size from the topsoil and exposed subsoil of all disturbed soils to the extent practicable. Implementation of proper topsoil segregation will help ensure post-construction revegetation success, thereby minimizing loss of crop productivity and/or the potential for long-term erosion problems.

7.3.3 Compaction of Soils

Soil compaction modifies the structure and reduces the porosity and moisture-holding capacity of soils. Compaction decreases infiltration and increases the potential for erosion. Construction equipment traveling over wet soils could disrupt the soil structure, reduce pore space, increase runoff potential, and cause rutting. The degree of compaction depends on moisture content and soil texture. Fine-textured soils with poor internal drainage that are moist or saturated during construction are the most susceptible to compaction and rutting. Based on the particle size, soil description of the various soil types presented in Table 7.2-1 compaction should be minimal.

In order to minimize compaction, MVP will limit construction traffic to only that required to accomplish the construction. Following completion of construction, if temporary workspace areas that will be restored following construction have been subject to heavy compaction, these areas will be identified by EIs and will be tilled, as necessary, when soil moisture conditions are suitable. To determine the extent of compaction, the EI will conduct tests on the same soil type under similar moisture conditions in undisturbed areas to establish approximate preconstruction conditions using a penetrometer or other appropriate device. The results of the compaction tests in undisturbed areas will be matched in the construction area. Since impacts related to mechanical compaction are expected to be limited to the upper soil horizon or the contact between the upper horizons, tilling is expected to effectively mitigate the impact. In areas where topsoil has been segregated, the subsoil will be de-compacted before replacing the segregated topsoil.

7.3.4 Potential for Poor Revegetation of Disturbed Areas

There is the potential for some temporarily disturbed areas not to revegetate adequately after construction is complete. To maximize successful restoration of these areas, MVP may utilize soil amendments to increase coverage potential. Additionally, a surface erosion control fabric such as curlex/jute may be installed as necessary to control erosion. If post-construction grading is completed after the end of the growing season, the area will be mulched and seeding will take place during the next growing season. Post-construction inspections will be conducted in accordance with the FERC Plan and Procedures to ensure that revegetation is adequate. See Resource Report 3 for additional discussion of revegetation planning, seed mixes, and post-construction revegetation monitoring.

7.3.5 Mixing Stones or Rock in Surface Soil

Introducing stones or rocks to surface soil layers that are not currently rocky may reduce soil moisture-holding capacity, resulting in a reduction of soil productivity. Construction through soils with shallow bedrock could result in the incorporation of bedrock fragments into surface soils. MVP anticipates that mechanical rock removal and/or blasting may be required for the Project.

Within the permanent compressor station sites, rock may be used for engineering purposes as part of the elevation and site design. Otherwise, if bedrock is encountered, MVP will take precautions to minimize the mixing of excavated bedrock with backfill. To the extent practicable, MVP anticipates rock material will be reused or disposed of on site. Reuse or disposal of excess rock debris on site will be within the approved construction areas in accordance with regulatory requirements. Otherwise, where on-site reuse or disposal is not possible, MVP will dispose of excess rock off site at an approved landfill.

7.3.6 Potential for Soil Contamination

Soil contamination may result from material spills during construction. Contamination from spills or leaks of fuels, lubricants, coolants, or solvents from construction equipment could adversely affect soils. The effects of contamination are typically minor because of the low frequency and volumes of spills and leaks.

MVP has developed Spill Prevention, Control, and Countermeasure Plans (Appendix 2-A1 and Appendix 2-A2 of Resource Report 2) that specify cleanup procedures in the event of soil contamination from spills or leaks of fuel, lubricants, coolants, or solvents. MVP and its contractors will use the Spill Prevention, Control, and Countermeasure Plan to prevent and contain, if necessary, accidental spills of any material that may contaminate soils and to ensure that inadvertent spills of fuels, lubricants, coolants, or solvents are contained, cleaned up, and disposed of in an appropriate manner.

The Phase IA Environmental Site Assessment (Schnabel Engineering 2019) conducted at the Swann Compressor Station parcel indicated existing environmental impairment to be low. Limited surface debris across the site also appears to be of insufficient quantity and type to be of significant adverse environmental effect.

If contaminated or suspect soils (e.g., oil-stained soils) are identified during construction operations, MVP's plan to address the contamination is as follows: the construction contractor will notify MVP, and work in the area of the suspected contamination will be halted until the type and extent of the contamination is determined. MVP will notify all applicable agencies of the discovered material. The response action will be identified based on the type and extent of contamination; the responsible party; and local, state, and federal regulations, depending on the type of contamination.

7.4 REFERENCES

FERC (Federal Energy Regulatory Commission). 2013a. Upland Erosion Control, Revegetation and Maintenance Plan. May 2013. Available online: https://www.ferc.gov/sites/default/files/2020-04/upland-pocket-guide.pdf

FERC. 2013b. Wetland and Waterbody Construction and Mitigation Procedures. May. Available online at: https://www.ferc.gov/sites/default/files/2020-04/wetland-pocket-guide.pdf FERC. 2017. Guidance Manual for Environmental Report Preparation. Volume 1. Available online at: https://www.ferc.gov/sites/default/files/2020-04/guidance-manual-volume-1.pdf. Accessed August 13, 2025.

Schnabel Engineering. 2019. Phase I Environmental Site Assessment Swann Site 1A Route 11/460 Elliston, Virginia Prepared For: Mountain Valley Pipeline / Equitrans Midstream Corporation.

USDA. (U.S. Department of Agriculture). 1976. Soil Survey of Fayette County Virginia. Soils Conservation Service. 188 pp.

USDA. 1985. Soil Survey of Montgomery County Virginia. Soils Conservation Service. 233 pp.

USDA. 1995. Soil Survey of Wetzel County, West Virginia. Natural Resource Conservation Service. 110 pp.

USDA. 1997. Soil Survey of Braxton County, West Virginia. Natural Resource Conservation Service. 133 pp.

USDA. 2005. National Soil Survey Handbook, Title 430-VI. Natural Resource Conservation Service.

USDA. 2006. Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin. Natural Resource Conservation Service.

USDA. 2025. Soil Survey Geographic (SSURGO) Database. Natural Resource Conservation Service. Available online at: USA SSURGO Downloader https://www.arcgis.com/home/item.html?id=806c857d504c476ba6477ac475c45bf5.

Mountain Valley Pipeline Boost Project

Docket No. CP26-__-000

Resource Report 7

Appendix 7-A
Soil Map Units and Descriptions

Mountain Valley Pipeline Boost Project: Resource Report 7: Soils	**Scale:**1:1,861,217 **Spatial Reference**: NAD 1983 UTM Zone 17N	0 10 20 30 40 Miles

Compressor Station

Milepost

MVP Mainline

State Boundary

MOUNTAIN VALLEY PIPELINE

Data Sources: ESRI Topographic. Mountain Valley Pipeline, Tetra Tech.

Updated: 10/9/2025 4:17 PM

NOT FOR CONSTRUCTION

Path: \\tt.local\GIS\US\CES\Projects\BOS\EQT_Equitrans\MVP_Expansion_Project\Spatial\MapDocs\MVP_FERC_Permit_Figures\RR7_Soils_20250729\MVP_Boost_RR7_Figures.aprx

Mountain Valley Pipeline Boost Project:
Resource Report 7: Soils

MOUNTAIN VALLEY PIPELINE

Data Sources: ESRI Imagery, NRCS, Tetra Tech.

Updated: 10/9/2025 4:10 PM

Scale:1:5,000 **Spatial Reference**: NAD 1983 UTM Zone 17N

N

0 150 300 450 600 Feet

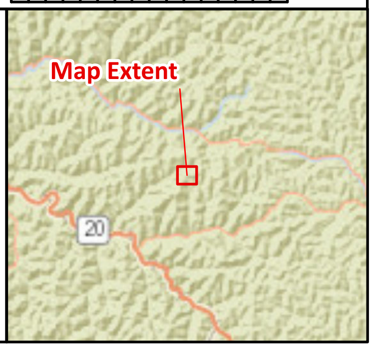
Compressor Station

USDA SSURGO Soil Type

Gilpin-Peabody complex, 15 to 25 percent slopes

Gilpin-Peabody complex, 25 to 35 percent slopes, moderately eroded

NOT FOR CONSTRUCTION



Path: \\tt.local\GIS\US\CES\Projects\BOS\EQT_Equitrans\MVP_Expansion_Project\Spatial\MapDocs\MVP_FERC_Permit_Figures\RR7_Soils_20250729\MVP_Boost_RR7_Figures.aprx

Mountain Valley Pipeline Boost Project:
Resource Report 7: Soils

Scale:1:5,000 **Spatial Reference**: NAD 1983 UTM Zone 17N

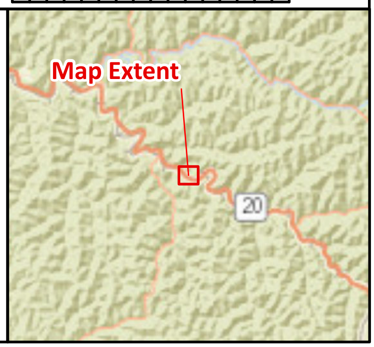
0 150 300 450 600 Feet

Laydown Yard

USDA SSURGO Soil Type

Elk silt loam, 3 to 8 percent slopes

Nolin loam



Data Sources: ESRI Imagery, NRCS, Tetra Tech.

Updated: 10/9/2025 4:10 PM

NOT FOR CONSTRUCTION

Path: \\tt.local\GIS\US\CES\Projects\BOS\EQT_Equitrans\MVP_Expansion_Project\Spatial\MapDocs\MVP_FERC_Permit_Figures\RR7_Soils_20250729\MVP_Boost_RR7_Figures.aprx

Mountain Valley Pipeline Boost Project:
Resource Report 7: Soils

Data Sources: ESRI Imagery, NRCS, Tetra Tech.

Updated: 10/9/2025 4:10 PM

Scale:1:5,000 **Spatial Reference**: NAD 1983 UTM Zone 17N

N

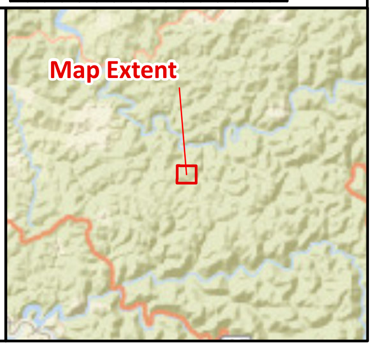
0 150 300 450 600 Feet

Compressor Station
Laydown Yard

USDA SSURGO Soil Type

Gilpin silt loam, 35 to 70 percent slopes, very stony
Gilpin-Lily complex, 15 to 25 percent slopes
Gilpin-Lily complex, 25 to 35 percent slopes

NOT FOR CONSTRUCTION



Path: \\tt.local\GIS\US\CES\Projects\BOS\EQT_Equitrans\MVP_Expansion_Project\Spatial\MapDocs\MVP_FERC_Permit_Figures\RR7_Soils_20250729\MVP_Boost_RR7_Figures.aprx

Mountain Valley Pipeline Boost Project:
Resource Report 7: Soils

Data Sources: ESRI Imagery, NRCS, Tetra Tech.

Updated: 10/9/2025 4:10 PM

Scale:1:5,000 **Spatial Reference**: NAD 1983 UTM Zone 17N

N

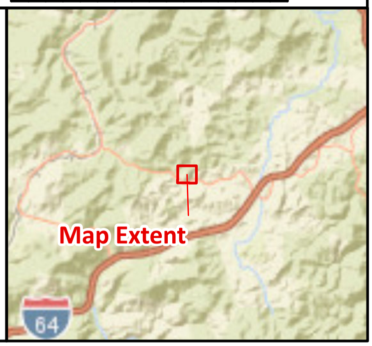
0 150 300 450 600 Feet

Compressor Station

USDA SSURGO Soil Type

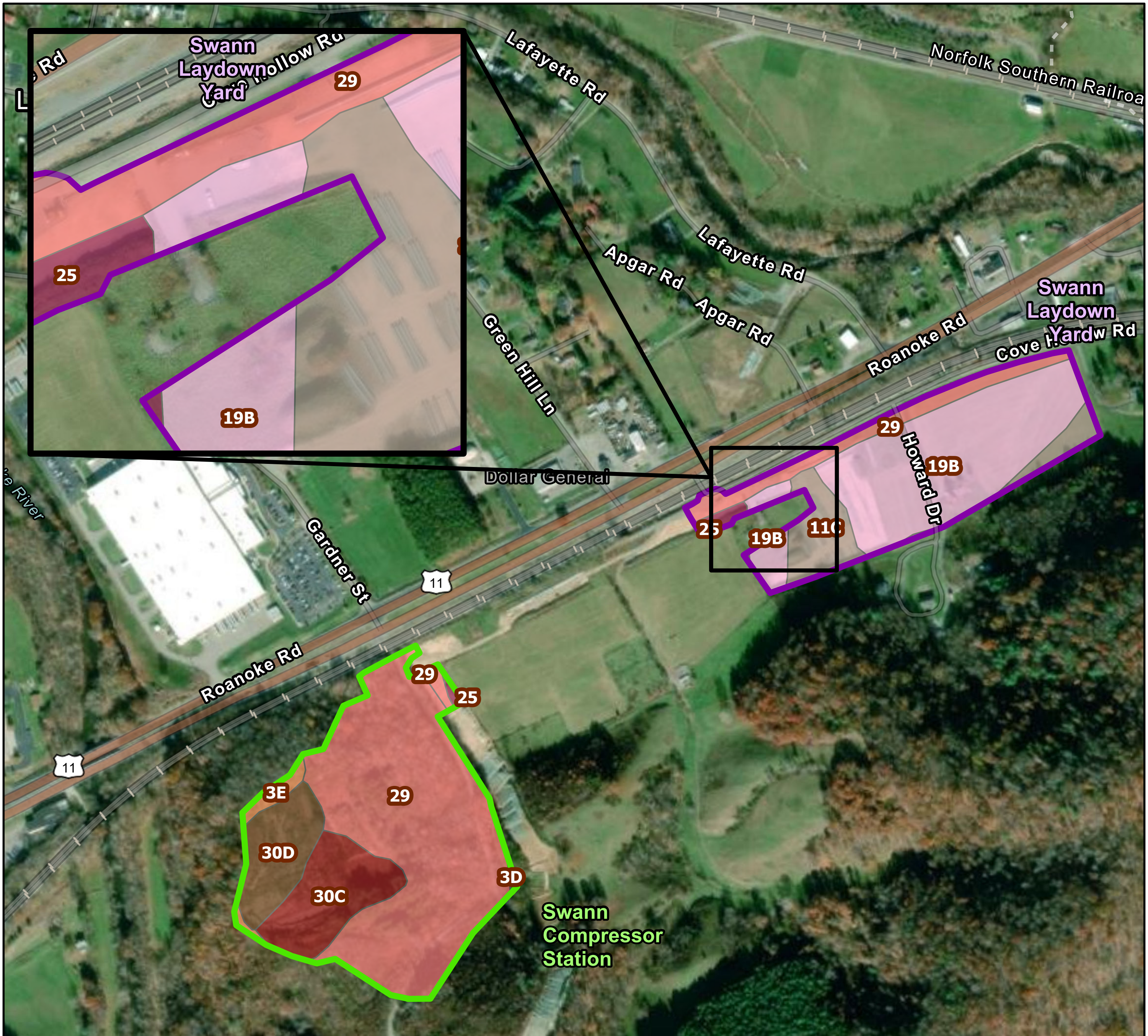
Cateache channery silt loam, 8 to 15 percent slopes

Cateache-Pipestem complex, 35 to 80 percent slopes, very stony



NOT FOR CONSTRUCTION

Path: \\tt.local\GIS\US\CES\Projects\BOS\EQT_Equitrans\MVP_Expansion_Project\Spatial\MapDocs\MVP_FERC_Permit_Figures\RR7_Soils_20250729\MVP_Boost_RR7_Figures.aprx



Mountain Valley Pipeline Boost Project:
Resource Report 7: Soils

Data Sources: ESRI Imagery, NRCS, Tetra Tech.

Updated: 10/9/2025 4:10 PM

Scale:1:7,500 **Spatial Reference**: NAD 1983 UTM Zone 17N

N

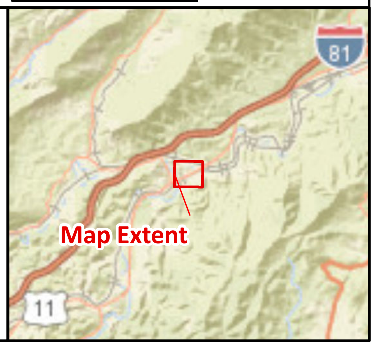
0 150 300 450 600 Feet

Compressor Station
Laydown Yard

USDA SSURGO Soil Type

Berks-Lowell-Rayne complex, 15 to 25 percent slopes
Berks-Lowell-Rayne complex, 25 to 65 percent slopes
Duffield-Ernest complex, 7 to 15 percent slopes
Guernsey silt loam, 2 to 7 percent slopes
McGary and Purdy soils
Udorthents and Urban land
Unison and Braddock soils, 15 to 25 percent slopes
Unison and Braddock soils, 7 to 15 percent slopes

NOT FOR CONSTRUCTION



Path: \\tt.local\GIS\US\CES\Projects\BOS\EQT_Equitrans\MVP_Expansion_Project\Spatial\MapDocs\MVP_FERC_Permit_Figures\RR7_Soils_20250729\MVP_Boost_RR7_Figures.aprx