

**Mountain Valley Pipeline, LLC
MVP Southgate Amendment Project
Docket No. CP25-60-000**

**Responses to FERC Office of Energy Projects Environmental Information Request 2
Dated June 25, 2025**

ATTACHMENT 1-1 – CONSTRUCTION PLAN (APPENDIX 1-G) REDLINES

**Mountain Valley Pipeline, LLC
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Docket No. CP25-60-000**

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Construction Plan (Appendix 1-G) Redlines

Emergency Response Plan

Exotic and Invasive Species Control Plan

Fire Prevention and Suppression Plan

General Blasting Plan (Revised July 2025)

Hill View Farm Protection Plan

Horizontal Directional Drill Contingency Plan

Landowner Complaint Resolution Procedure

Landslide Mitigation Report

Nighttime Construction Noise Management Plan

Plan for Unanticipated Discovery of Historic Properties and Human Remains

Public, Stakeholder, and Agency Participation Plan

Spill Prevention, Control and Countermeasure Plan and Unanticipated Discovery of
Contamination Plan for Construction Activities in Virginia and North Carolina

Traffic and Transportation Management Plan

Upland, Erosion Control and Revegetation and Maintenance Plan (Revised July 2025)

Unanticipated Plan for Paleontological Resources

Water Resources Identification and Testing Plan

Wetland and Waterbody Procedures *(will be provided with the remainder of this Environmental
Information Request response that Mountain Valley expects to submit on or before
August 1, 2025)*

Winter Construction Plan

Emergency Response Plan



MVP Southgate Amendment Project

Emergency Response Plan_{for MVP}

Revised February 2025

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APPENDICES

[Appendix A Emergency Plan Updates](#)

[Appendix B Emergency Materials and Supplies – This Section to be Populated prior to Construction.](#)

[Appendix C Company Phone Numbers – This Section to be Populated prior to Construction.](#)

[Appendix D Emergency Response Contact Numbers](#)

[Appendix E Operations and Maintenance Procedures](#)

[Appendix F Contractors Contact Numbers – This Section to be Populated prior to Construction.](#)

[Appendix G Regulatory Agency Contact Numbers](#)

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1.0 SCOPE

1.1 Purpose

- 1.1.1 The purpose of this ~~standard is to provide guidelines for the Company to implement its~~ Emergency Response Plan. ~~This standard will be reviewed at intervals not exceeding 15 months, but at least once each calendar year by the Compliance Department. Appropriate changes will be made as necessary to ensure that the manual is effective.~~ is to establish written procedures to minimize the hazard resulting from a gas pipeline emergency. Appropriate parts of this ~~manual~~ Emergency Response Plan shall be kept via the Company intranet at locations where operations and maintenance activities are conducted.
- 1.1.2 The Emergency Response Plan shall ensure compliance with the Office of Pipeline Safety “Minimum Federal Safety Standards for Gas Pipelines”¹, as set forth in CFR Title 49 Part 192 Subpart L, Paragraphs 192.615 Emergency Plans, 192.617 Investigation of Failures, by establishing:
- 1.1.2.1 Written procedures to minimize the hazards resulting from a pipeline emergency and providing the latest edition of the procedures to appropriate operations personnel.
 - 1.1.2.2 Company requirements for training the appropriate operations personnel in emergency procedures, verifying the training is effective, and reviewing employee activities to determine whether the procedures were effectively followed in an emergency.
 - 1.1.2.3 Company requirements for initializing and maintaining liaison with appropriate fire, police, and other public officials.
 - 1.1.2.4 Procedures for analyzing accidents and failures.

1.2 Plan Objectives

- 1.2.1 The objective of this ~~plan~~ Plan is to assure operations personnel that may be involved in an emergency are prepared to recognize the situation and take immediate, appropriate action in order to:
- 1.2.1.1 Protect the safety of the public and employees.
 - 1.2.1.2 Prevent or minimize facility and property damage.
 - 1.2.1.3 Maintain continuity of service or re-establish service should an interruption occur.
 - 1.2.1.4 Assure immediate reporting and investigation of emergencies.

1.3 Definitions

1.3.1 *The Company* means Mountain Valley Pipeline, LLC ~~(MVP)~~.

1.3.2 *A Pipeline Emergency* means a hazardous or potentially hazardous condition is near or directly involves a pipeline facility to the extent the Emergency Plan procedures shall be implemented. These conditions include, but are not limited to:

1.3.2.1 Gas detected inside or near a building where gas is not intended to be present.

1.3.2.2 A pipeline rupture.

1.3.2.3 A fire located near or directly involving a pipeline facility.

1.3.2.4 An explosion occurring near or directly involving a pipeline facility.

1.3.2.5 A natural disaster such as a flood, tornado, or unforeseen subsidence.

2.0 EMERGENCY RESPONSE PROCEDURES

The procedures set forth in this ~~standard~~ Plan are not intended to be followed in all situations on an item-by-item basis. The investigator should draw on ~~his or her~~ their training and experience and determine whether the steps set forth should be followed in a different order.

COMMUNICATION WITH PUBLIC OFFICIALS AND OTHER EMERGENCY RESPONSE AGENCIES

When an emergency occurs and results in a hazard to public safety, the Company should notify the applicable fire and police departments, the county 911 center(s), and other public officials, as appropriate, for the purpose of coordinating both planned responses and actual responses for the duration of the emergency. The appropriate fire and police departments, the county 911 center, and other public officials should also be utilized whenever their assistance is required to (i) expedite making the area safe, (ii) initiate evacuations and road closings, (iii) establish temporary shelters and/or (iv) respond to requests for information and aid with communications in situations likely to result in numerous calls from the public. Any agency or public official contacted pursuant to this section should be advised when the emergency has been resolved.

2.1 Receiving an Emergency Call

2.1.1 The primary emergency contact number for Mountain Valley Pipeline is 855-740-1092.

2.1.2 The recipient of the emergency call will obtain:

2.1.2.1 The name of the caller

- 2.1.2.2 Telephone number of the caller
- 2.1.2.3 Address of the caller
- 2.1.2.4 Detailed location of the emergency
- 2.1.2.5 Detailed description of the emergency
- 2.1.3 The person receiving the emergency call shall:
 - 2.1.3.1 Identify the field location of the emergency.
 - 2.1.3.2 Contact the appropriate operations personnel and relay the information received in Paragraph 2.1.3.
 - 2.1.3.3 When calls are received by the answering service, the information obtained in Paragraph 2.1.2 should be input into the call log.
 - 2.1.3.4 If requested to do so by appropriate operations personnel, contact outside emergency agencies in accordance with the type of emergency as outlined in Paragraphs 2.1.4 through 2.1.7.
- 2.1.4 Gas, vapor cloud, or odor detected inside or near a building where gas is not intended to be present – dispatched personnel shall:
 - 2.1.4.1 Contact appropriate Operating and Maintenance personnel, including ~~Superintendent~~the Superintendent of Operations for the territory in which the condition exists (contact numbers for non-working hours are listed in Appendix C).
- 2.1.5 Pipeline Rupture
 - 2.1.5.1 Contact appropriate Operating and Maintenance personnel, including ~~Superintendent~~the Superintendent of Operations and Director of Operations for the territory in which the condition exists (contact numbers for non-working hours are listed in Appendix C).
 - 2.1.5.2 Contact Gas Control
 - 2.1.5.3 Contact the police, fire, and/or other appropriate emergency agencies, if necessary, for the municipality in which the condition exists (contact numbers listed in Appendix D).
- 2.1.6 Fire or explosion located near or directly involving a pipeline facility – dispatched personnel shall:
 - 2.1.6.1 Contact appropriate Operating and Maintenance personnel, including the Superintendent of Operations and Director of Operations for the territory in which the condition exists (contact numbers for non-working hours are listed in Appendix C).

2.1.6.2 Contact Gas Control

2.1.6.3 Contact the police, fire, and/or other appropriate emergency agencies, if necessary, for the municipality in which the condition exists (contact numbers listed in Appendix D).

2.1.6.3.1.6.4 If the description of the emergency warrants, consideration must also be given to contacting the Director of Operations and Gas Control operator on duty for the territory in which the condition exists (contact numbers for non-working hours listed in Appendix C).

2.1.7 Natural Disaster

2.1.7.1 Contact appropriate Operating and Maintenance personnel, including ~~Superintendent~~the Superintendent of Operations, Director of Operations, Vice President of Field Operations, and Gas Control operator on duty for the territory in which the condition exists (contact numbers for non-working hours listed in Appendix C).

2.1.7.2 Contact Gas Control

2.1.7.3 Contact the police, fire, and/or other appropriate emergency agencies, if necessary, for the municipality in which the condition exists (contact numbers listed in Appendix D).

2.2 Initial Field Procedures

2.2.1 The following guidelines and procedures apply to all emergencies, regardless of type.

2.2.1.1 The first Company employee or contract representative to arrive at the site of an emergency incident shall take actions toward protecting the public first and then the property.

2.2.1.2 If the incident warrants, an immediate call shall be placed to the immediate supervisor for obtaining additional Company and/or fire, police, or emergency response help.

2.2.1.3 If the police, fire department, or other appropriate officials are already on the scene, the employee/contract representative should make themselves known to them and get a summary of the situation.

2.2.1.4 If escaping gas or product is the cause of the incident, the employee/contract representative should not attempt to control the

gas at the point of discharge unless the following conditions are met:

- 2.2.1.4.1 The gas/product is blowing freely into the atmosphere, and the work can be performed safely and without breathing oxygen-deficient air.
- 2.2.1.4.2 The escape of gas/product can be safely controlled by a method such as closing a valve or by using approved repair methods.
- 2.2.1.5 If the above conditions are not met or the escaping gas/product cannot be readily controlled, a restricted zone determined by the use of gas/hydrocarbon detection equipment, if possible, will be established around the area of the escaping gas/product.
- 2.2.1.6 Service to buildings within the restricted zone will be shut off by contacting the appropriate distribution company.
- 2.2.1.7 Possible sources of ignition will be eliminated within the restricted zone as reasonably as possible.
- 2.2.1.8 Persons within the zone, including those in buildings, are to be advised to leave and remain outside the restricted zone if the situation warrants evacuation provisions as defined in EOP127 Responding to Reported Leak or Rupture ([see Appendix E](#)) or in the judgment of the Operations Coordinator on site.
- 2.2.1.9 Vehicular traffic will be prevented from entering or leaving the restricted zone. Appropriate personnel to utilize applicable traffic control procedures and warning devices such as barricades, cones, flag persons, etc. to safely control vehicles and pedestrians near the established work site.
- 2.2.1.10 Once the emergency has been brought under control, the restricted zone will not be lifted until gas/hydrocarbon detection equipment is employed to verify the safety of the public and/or property. This determination will be made by the Operations Coordinator on site.

2.3 Gas Detected Inside or Near a Building

Dispatched personnel shall follow the procedures referenced below.

See EOP 126 Responding to Gas Detected Inside or Near a Building ([see Appendix E](#))

See EOP 127 Responding to Reported Leak or Rupture ([see Appendix E](#))

2.4 Fire or Explosion Located Near or Directly Involving a Pipeline Facility

Dispatched personnel shall follow the procedures referenced below.

See EOP 128 Responding to Fire and or Explosion ([see Appendix E](#))

2.42.5 Natural Disasters and Severe Weather Conditions

Dispatched personnel shall follow the procedures referenced below.

See EOP 129 Responding to Natural Disaster ([see Appendix E](#))

2.52.6 Emergency Shutdown

See EOP 130 Emergency Shutdown and Pressure Reduction ([see Appendix E](#))

3.0 TELEPHONIC PROCEDURES AND DEPARTMENTAL RESPONSIBILITIES

It is the practice of departments and/or Operating Areas to maintain address and telephone listings of personnel. This listing should be made available to the appropriate personnel and should be available within the department and/or Operating Area during other than normal working hours. Telephone number listings (including Company direct telephone) of Company emergency personnel are made available to appropriate Company personnel and government agencies (see Appendix C). See Telephonic Procedures Flowchart, Page 10.

3.1 Gas Control

- 3.1.1 Remain in communication with the “Operations Coordinator” on the scene.
- 3.1.2 Monitor the affected system during the emergency and, if necessary, during supply shutdown and start-up.
- 3.1.3 Adjust the load to bleed gas from any particular section of the system as determined by location and type of emergency.

3.2 Engineering and Compliance Departments

- 3.2.1 Assist in conducting failure investigations.
- 3.2.2 Assist in the preparation of “safety-related condition” reports.
- 3.2.3 Assist in the preparation of “incident/accident” reports.
- 3.2.4 Telephonic or electronic reporting to external regulatory agencies.

3.3 Environmental and Safety Departments

- Prepare and report any OSHA-required reports.

3.4 Human Resources Department

- Arrange drug or alcohol tests needed as a result of an incident/accident.

3.5 Media Contact

Prepare all news releases and make necessary media announcements. Obtain the following information from the Operations Coordinator as quickly as possible.

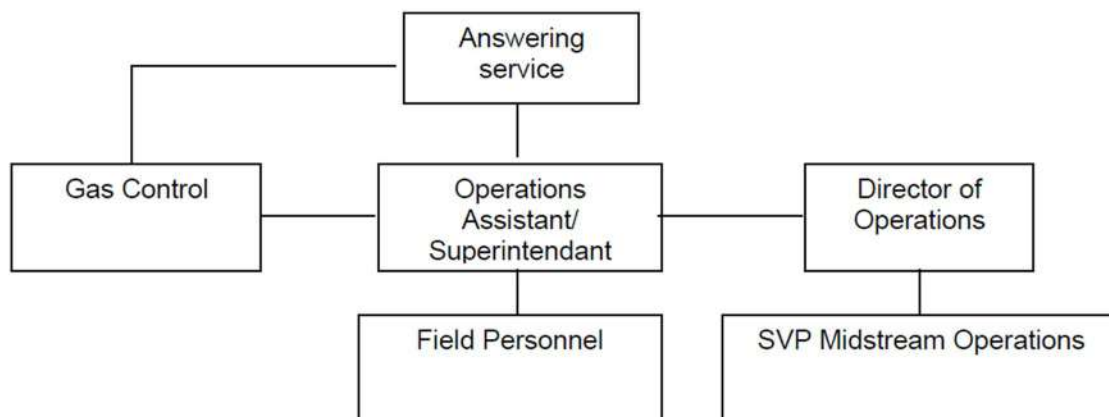
- 3.5.1 Pertinent, detailed facts concerning the nature and location of the emergency or incident/accident.
- 3.5.2 Reasons for delay in shutting off gas flow (if there is a delay).
- 3.5.3 Plans for controlling the emergency.
- 3.5.4 Total number of people, homes, and customers affected by the incident/accident.
- 3.5.5 Estimated time to make repairs.

3.6 Legal Department, Business Risk and Insurance

- 3.6.1 Obtain pertinent information from property owners who have sustained loss so a preliminary cost estimate can be prepared.
- 3.6.2 Survey damages, including photographs and secure statements from witnesses and reports from public investigators of the occurrence.
- 3.6.3 Analyze the situation so that further loss or damage can be prevented.

TELEPHONIC PROCEDURES

Note: Contact phone numbers [are](#) listed in Appendix C.



4.0 INVESTIGATION OF INCIDENTS, ACCIDENTS, FAILURES AND DEFECTIVE MATERIALS

See EOP 132 Investigation of Accidents, Failures, and Defective Materials ([see Appendix E](#)).

5.0 REPORTING – TELEPHONIC AND WRITTEN

Incident/accident reports are classified as telephonic and written.

5.1 Telephonic Reporting

A Telephonic Report shall be made by Compliance at the earliest practicable moment following discovery of a possible gas or hazardous material related incident/accident. Subsequent telephonic reports shall be made to confirm, change, or add the necessary details to include the following: (see also Appendix [GH](#) – Telephonic Notice Worksheet). Written reports are required for all incidents/accidents reported by telephone (except courtesy calls).

The initial telephonic report should be made to the required regulatory agencies within 1 hour after discovery. This is necessary for the agency(ies) to make timely determinations regarding the need for response by their staff.

Complete information is not necessary for the initial telephonic report. In the event that a telephonic report has been made, and further investigation reveals that the situation was not an “incident/accident” and, therefore, not reportable, the telephonic report must be nullified with a letter. That letter must reference the telephonic report number received when the initial notification was made and briefly explain why the telephonic report is being nullified.

The following types of incidents/accidents should be reported by telephone to the National Response Center (DOT–Department of Transportation) at (800)–424-8802 and the jurisdictional state regulatory agency at the earliest practical moment (see Appendix [FG](#) for telephone numbers and addresses of state agencies).

5.1.1 An event that involves a release of gas from a pipeline and:

A death or personal injury necessitating in-patient hospitalization; or

Estimated property damage, including loss to the operator and others, or both, but excluding cost of gas lost of \$50,000 or more

Unintentional estimated gas loss of three million cubic feet or more

An event that results in an emergency shutdown of an underground natural gas storage facility. Activation of an emergency shutdown system for reasons other than an actual emergency does not constitute an incident.

Any situation in the judgment of the operating personnel that presents a continuing danger to life or property, even if it does not meet the criteria of 5.1.1 above.

- 5.1.2 The following situations should be reported by telephone ~~or FAX~~ to the Federal Regulatory Energy Commission (~~F.E.R.C.~~FERC) at the earliest feasible time; ~~telephone~~ _____ (~~at~~ 202)-208-0700; ~~FAX (202) 208-0193~~.

5.1.2.1 A serious interruption of service to any wholesale customer involving facilities operated under F.E.R.C.FERC certification. Serious interruptions of service shall include interruptions of service to communities, major government installations, and large industrial plants. Interruptible service customers that are interrupted under their tariff, interruptions for planned maintenance or construction, or interruptions of less than 3 hours do not need to be reported.

5.1.2.2 The following should be reported by telephone to the jurisdictional state regulatory agency at the earliest practical moment (see Appendix FG for telephone numbers and addresses).

- An unplanned interruption of service to a significant number (1,000 or more); of retail customers.
- Any “non-reportable” gas-related event, ~~which that~~ may cause concern because of mass media coverage (courtesy call).

5.2 Written Reports

Written reports are required for all incidents/accidents reported by telephone (except courtesy calls).

5.1.35.2.1 Reports required by external agencies. The following summarizes the requirements of external regulatory agencies for written reports pertaining to gas or hazardous material incidents/accidents, meeting the criteria of Paragraph 5.1.1 of this StandardPlan. (Addresses of external agencies are listed in Appendix FG):

5.1.3.15.2.1.1 Department of Transportation – Office of Pipeline Safety – As soon as practical, but not more than 30 days following telephonic notice of a gas-related incident to the National Response Center, the Company shall file form PHMSA F-7100.2 *Incident Report Transmission and Gathering Systems* with the Office of Pipeline Safety. Where additional related information is obtained after a report is submitted, the Company shall make a supplemental report

as soon as practicable with a clear reference by date, subject, and confirmation number to the original report.

5.1.3.25.2.1.2

Federal

Energy Regulatory Commission (~~F.E.R.C.~~FERC) – As soon as practical, but not more than 30 days following telephonic ~~or FAX~~ notice of an Interruption of Service is defined in Paragraph 5.1.2 of this Standard Plan, the Company shall file form PHMSA F-7100.2 – Incident Report Transmission and Gathering Systems with ~~F.E.R.C.~~FERC.

6.0 TRAINING AND REVIEW

- 6.1 The Technical Training Department will be responsible for verifying that appropriate training of Company personnel is being conducted and will, when necessary, provide proper guidelines for proper training, which will acquaint the appropriate personnel with the requirements and responsibilities covered by this plan.
- 6.2 The Compliance Department will be responsible for providing a copy of the latest edition of the Emergency Plan, as well as any future updates, to those supervisors responsible for emergency action through a computerized version of the Emergency Plan available on the Corporate Intranet.
- 6.3 When an emergency procedure has been instituted and the incident remedied, the Department Head or others deemed appropriate shall review the handling of the emergency to determine if Emergency Plan procedures were effectively followed by their employee(s). After the review, changes to the plan, training, etc., will be instituted, if so required.

7.0 LIAISON WITH PUBLIC OFFICIALS

The Company will keep on file and accessible on the Company intranet the responsibilities, resources and contact information of the emergency responders in the MVP Company operating territory.

~~Documentation will be provided by Paradigm when the counties are incorporated into the MVP public awareness program.~~

~~(1) Acquaint the officials with the operator's ability in responding to a gas pipeline emergency;~~

Emergency officials will be provided an Emergency Responder Manual which includes MVP information regarding the Company's ability to respond to a gas pipeline emergency. ~~The officials are provided the manual at on site Paradigm Liaison Meetings or for those emergency officials that don't attend, through a mailing.~~

~~(2) Identify the types of gas pipeline emergencies of which the operator notifies the officials; Emergency officials are provided an Emergency Responder Manual and identifies the types of gas pipeline emergencies for which the operator notifies~~

the officials. The ~~officials are provided the manual at on site Paradigm Liaison Meetings or for those emergency officials that don't attend, through a mailing.~~

~~and,~~

~~(3) Plan how the operator and officials can engage in mutual assistance to minimize hazards to life or property.~~

~~Emergency officials are provided an Emergency Responder Manual which also includes MVP Company contact numbers and emergency numbers. Pipeline emergency tabletop exercises are performed to provide guidance for minimizing hazards to life or property when responding to pipeline emergencies.~~

APPENDIX A

EMERGENCY PLAN UPDATES

Compliance Department Responsibilities:

Periodically review and revise the Emergency Plan, as necessary.

The Compliance Department should consider the following during the review:

- A. Changes in organization.
- B. Changes in operating practices.
- C. Code and regulation changes.
- D. Changes in their physical plants.
- E. Changes in appropriate personnel who receive the plan.

Issue the revised plan through the Company Intranet.

Conduct any informational programs necessary as the result of changes from this review.

APPENDIX B

EMERGENCY MATERIALS AND SUPPLIES

*This ~~section~~ Section to be Populated prior to Construction.
~~to be populated~~*

Emergency equipment will be available both internally and through the use of ~~3rd~~ third-party contractors. Third-party contracts will be put in place prior to pipeline operations. The equipment list is to be developed.

APPENDIX C

COMPANY PHONE NUMBERS, MATERIALS, AND SUPPLIES

Compliance Department—Midstream				
NAME	TITLE	OFFICE	CELLULAR	PAGER
Gregg West	VP Mid Compliance&Ops Analysis	(412) 395 2971	(412) 480 9900	
Mark Kerns	Director, Midstream Compliance	(412) 395 3604	(304) 590 7861	
Jacob Lyons	Manager, Compliance	412.395.3135	412.973.4326	N/A
John Butler	Compliance Engineer located in SWV	304.348.3809	304.543.0225	N/A
Andy Gabany	Compliance Engineer located in PA	412.395.5531	412.552 0845	N/A
Joe Lombardo	Compliance Engineer located in PA	412.553.7870	412.295.3962	N/A
Nick Farrell	Integrity Engineer located in PA	412.395.5502	412.304.9671	N/A
Terry Shamblin	Integrity Engineer located in PA	412.553.5743	412.298.7024	N/A
Jacob Barry	Compliance Engineer located in PA	(412) 553 7803	(724) 344 8295	
MVP Operations Managment				
NAME	TITLE	OFFICE	CELLULAR	PAGER
Cliff Baker	SVP Midstream Field Operations	(412) 395 2672	(412) 855 3866	
Jack Mackin	VP Operations	(412) 395 3576	(412) 670 0726	
Bruce Grabiec	Director of Operations	412.395.3652	412. 759.1507	
Wetzel Davis	Supt. Operations	(304) 626 7929	(304) 561 8643	
Rusty Bennett	Asst. Supt.	(304) 627 6445	(304) 543 0848	

This Section to be Populated prior to Construction.

APPENDIX D

EMERGENCY RESPONSE CONTACT NUMBERS

Emergency Contact – 911

Company	City	County	State	Phone
EMERGENCY CALLS	ALL	ALL	ALL	911
BURNSVILLE POLICE DEPT	BURNSVILLE	BRAXTON	WV	304-853-2605
BURNSVILLE VFD	BURNSVILLE	BRAXTON	WV	304-853-2518
FLATWOODS CERT VFD	FLATWOODS	BRAXTON	WV	304-765-4066
FRAMETOWN VFD STATION 4	FRAMETOWN	BRAXTON	WV	304-704-0977
GASSAWAY POLICE DEPT	GASSAWAY	BRAXTON	WV	304-364-5111
GASSAWAY VFD	GASSAWAY	BRAXTON	WV	304-364-5262
CHAPEL VFD	GASSAWAY	BRAXTON	WV	304-364-8443
SUTTON POLICE DEPT	SUTTON	BRAXTON	WV	304-765-5581
BRAXTON COUNTY SHERIFFS DEPT	SUTTON	BRAXTON	WV	304-765-2838
WEST VIRGINIA STATE POLICE TROOP 3 – SUTTON	SUTTON	BRAXTON	WV	304-765-2101
SUTTON VFD	SUTTON	BRAXTON	WV	304-765-7372
BRAXTON COUNTY EMA	SUTTON	BRAXTON	WV	304-765-5361
BRAXTON COUNTY EMS	SUTTON	BRAXTON	WV	304-765-5361
BRAXTON COUNTY 911 CONTROL – PSAP	SUTTON	BRAXTON	WV	304-765-7366
SERVIA VOL FIRE DEPT	DUCK	BRAXTON	WV	304-364-8111
BANCS VFD	NEW MILTON	DODDRIDGE	WV	304-873-2351
WEST VIRGINIA STATE POLICE TROOP 1 – WEST UNION	PENNSBORO	DODDRIDGE	WV	304-873-2101
GREENWOOD VFD 2	PENNSBORO	DODDRIDGE	WV	304-873-3423
MCCLELLAN VFD	SALEM	DODDRIDGE	WV	304-782-2774
MCCLELLAN DIST VFD	SALEM	DODDRIDGE	WV	304-782-2774
SMITHBURG VFD	SMITHBURG	DODDRIDGE	WV	304-873-1493
WEST UNION POLICE DEPT	WEST UNION	DODDRIDGE	WV	304-873-1107
DODDRIDGE COUNTY SHERIFFS DEPT	WEST UNION	DODDRIDGE	WV	304-873-1944
WEST UNION VFD	WEST UNION	DODDRIDGE	WV	304-873-1391
DODDRIDGE COUNTY EMS	WEST UNION	DODDRIDGE	WV	304-873-2211
WEST UNION EMERGENCY SVCS	WEST UNION	DODDRIDGE	WV	304-873-1359
ANSTED POLICE DEPT	ANSTED	FAYETTE	WV	304-658-4666
ANSTED CERTIFIED FIRE DEPT	ANSTED	FAYETTE	WV	304-658-4394
GENERAL AMBULANCE	BECKLEY	FAYETTE	WV	304-465-8995
BOOMER VFD	BOOMER	FAYETTE	WV	304-779-2763
DANESE VFD	DANESE	FAYETTE	WV	304-438-5312
FAYETTEVILLE POLICE DEPT	FAYETTEVILLE	FAYETTE	WV	304-574-0255
FAYETTE COUNTY SHERIFFS DEPT	FAYETTEVILLE	FAYETTE	WV	304-442-4888

FAYETTEVILLE FIRE DEPT	FAYETTEVILLE	FAYETTE	WV	304-574-0712
FAYETTE COUNTY OES – PSAP	FAYETTEVILLE	FAYETTE	WV	304-574-3590
FAYETTE COUNTY EMA	FAYETTEVILLE	FAYETTE	WV	304-574-1610
GAULEY BRIDGE POLICE DEPT	GAULEY BRIDGE	FAYETTE	WV	304-632-1770
WEST VIRGINIA STATE POLICE TROOP 6 – GAULEY BRIDGE	GAULEY BRIDGE	FAYETTE	WV	304-779-2161
GAULEY BRIDGE VFD	GAULEY BRIDGE	FAYETTE	WV	304-632-1810
US DEPT OF INTERIOR – NATIONAL PARK EMS	GLEN JEAN	FAYETTE	WV	304-465-0508
NUTTALL VFD	LOOKOUT	FAYETTE	WV	304-574-3229
MEADOW BRIDGE VFD	MEADOW BRIDGE	FAYETTE	WV	304-484-7117
WESTERN GREENBRIER CERT	MEADOW BRIDGE	FAYETTE	WV	304-578-3140
MOUNT HOPE POLICE DEPT	MOUNT HOPE	FAYETTE	WV	304-877-6661
MOUNT HOPE FIRE DEPT	MOUNT HOPE	FAYETTE	WV	304-877-2488
OAK HILL POLICE DEPT	OAK HILL	FAYETTE	WV	304-465-0597
WEST VIRGINIA STATE POLICE TROOP 6 – OAK HILL	OAK HILL	FAYETTE	WV	304-469-2915
CERT MOUNTAIN DIVISION	OAK HILL	FAYETTE	WV	304-712-1531
LOUP CREEK VFD	PAGE	FAYETTE	WV	304-779-2897
PAX VFD	PAX	FAYETTE	WV	304-877-6691
ARMSTRONG CREEK VFD	POWELLTON	FAYETTE	WV	304-442-9157
SMITHERS POLICE DEPT	SMITHERS	FAYETTE	WV	304-442-5296
SMITHERS VFD	SMITHERS	FAYETTE	WV	304-981-4506
ALDERSON VOL FIRE DEPT	ALDERSON	GREENBRIER	WV	304-445-2916
TRI-COUNTY VOL FIRE DEPT	ALDERSON	GREENBRIER	WV	304-445-2762
LEWISBURG FIRE DEPT	LEWISBURG	GREENBRIER	WV	304-645-3237
WHITE SULPHUR SPRINGS VOL FIRE DEPT	WHITE SULPHUR SPRINGS	GREENBRIER	WV	304-536-3993
WHITE SULPHUR SPRINGS EMS	WHITE SULPHUR SPRINGS	GREENBRIER	WV	304-536-4122
RONCEVERTE VOL FIRE DEPT	RONCEVERTE	GREENBRIER	WV	304-647-5233
FAIRLEA VOL FIRE DEPT	FAIRLEA	GREENBRIER	WV	304-645-7339
RUPERT VOL FIRE DEPT	RUPERT	GREENBRIER	WV	304-392-5819
RAINELLE VOL FIRE DEPT	RAINELLE	GREENBRIER	WV	304-438-5222
RENICK VOL FIRE DEPT	RENICK	GREENBRIER	WV	304-497-2525
NORTH GREENBRIER EMS	RENICK	GREENBRIER	WV	304-497-4334
WILLIAMSBURG VOL FIRE DEPT	WILLIAMSBURG	GREENBRIER	WV	304-647-4006
WILLIAMSBURG EMS	WILLIAMSBURG	GREENBRIER	WV	304-647-1318
CLINTONVILLE VOL FIRE DEPT	CLINTONVILLE	GREENBRIER	WV	304-392-5950
SMOOT AREA VOL FIRE DEPT	SMOOT	GREENBRIER	WV	304-392-9895
QUINWOOD VOL FIRE DEPT	QUINWOOD	GREENBRIER	WV	304-438-6783
ANTHONY CREEK VOL FIRE DEPT	NEOLA	GREENBRIER	WV	304-536-1636
FRANKFORD VOL FIRE DEPT	FRANKFORD	GREENBRIER	WV	304-497-2860
QUINWOOD EMERGENCY AMBULANCE	QUINWOOD	GREENBRIER	WV	304-438-9252
GREENBRIER COUNTY EMERGENCY AMBULANCE	FAIRLEA	GREENBRIER	WV	304-645-2252

ANMOORE POLICE DEPT	ANMOORE	HARRISON	WV	304-622-6250
ANMOORE FIRE DEPT	ANMOORE	HARRISON	WV	304-622-5649
BRIDGEPORT POLICE DEPT	BRIDGEPORT	HARRISON	WV	304-842-8260
WEST VIRGINIA STATE POLICE TROOP 1—BRIDGEPORT	BRIDGEPORT	HARRISON	WV	304-627-2300
BRIDGEPORT FIRE DEPT	BRIDGEPORT	HARRISON	WV	304-842-8251
HARRISON COUNTY CERT	BRIDGEPORT	HARRISON	WV	304-842-8892
BRIDGEPORT EMERGENCY SVCS	BRIDGEPORT	HARRISON	WV	304-842-8200
CLARKSBURG POLICE DEPT	CLARKSBURG	HARRISON	WV	304-624-1610
HARRISON COUNTY SHERIFFS DEPT	CLARKSBURG	HARRISON	WV	304-624-8550
NUTTER FORT POLICE DEPT	CLARKSBURG	HARRISON	WV	304-622-6351
CLARKSBURG FIRE DEPT	CLARKSBURG	HARRISON	WV	304-624-1669
NUTTER FORT VFD	CLARKSBURG	HARRISON	WV	304-622-5001
STONEWOOD VFD	CLARKSBURG	HARRISON	WV	304-677-2269
HARRISON COUNTY EMA	CLARKSBURG	HARRISON	WV	304-623-6559
HARRISON TAYLOR 9 1 1—PSAP	CLARKSBURG	HARRISON	WV	304-623-6559
HARRISON COUNTY EMERGENCY SQUAD	CLARKSBURG	HARRISON	WV	304-623-6611
LOST CREEK VFD	LOST CREEK	HARRISON	WV	304-745-4004
JOHNSTOWN VFD	LOST CREEK	HARRISON	WV	304-624-9382
LUMBERPORT POLICE DEPT	LUMBERPORT	HARRISON	WV	304-532-5513
LUMBERPORT VFD	LUMBERPORT	HARRISON	WV	304-584-4721
MOUNT CLARE VFD	MOUNT CLARE	HARRISON	WV	304-623-9625
REYNOLDSVILLE VFD	REYNOLDSVILLE	HARRISON	WV	304-783-4769
SALEM POLICE DEPT	SALEM	HARRISON	WV	304-782-1313
SALEM VFD	SALEM	HARRISON	WV	304-782-3333
SHINNSTON POLICE DEPT	SHINNSTON	HARRISON	WV	304-592-2121
WEST VIRGINIA STATE POLICE TROOP 1 COMMAND—SHINNSTON	SHINNSTON	HARRISON	WV	304-592-1101
SHINNSTON FIRE DEPT	SHINNSTON	HARRISON	WV	304-592-1851
SPELTER VFD	SPELTER	HARRISON	WV	304-622-8256
STONEWOOD POLICE DEPT	STONEWOOD	HARRISON	WV	304-623-2919

WALLACE VFD	WALLACE	HARRISON	WV	304-796-4014
WEST MILFORD VFD	WEST MILFORD	HARRISON	WV	304-745-3355
MIDWAY VFD	ALUM BRIDGE	LEWIS	WV	304-269-5262
JANE LEW VFD	JANE LEW	LEWIS	WV	304-884-7231
WALKERSVILLE VFD	ROANOKE	LEWIS	WV	304-452-8451
WESTON POLICE DEPT	WESTON	LEWIS	WV	304-269-3207
LEWIS COUNTY SHERIFFS DEPT	WESTON	LEWIS	WV	304-269-8251
WV STATE POLICE TROOP 3 – WESTON	WESTON	LEWIS	WV	304-269-0500
WESTON FIRE DEPT	WESTON	LEWIS	WV	304-269-2349
PRICETOWN VFD	WESTON	LEWIS	WV	304-269-4667
JACKSONS MILL FIRE DEPT	WESTON	LEWIS	WV	304-269-5158
LEWIS COUNTY EMS	WESTON	LEWIS	WV	304-269-8207
LEWIS COUNTY EMA	WESTON	LEWIS	WV	304-269-8235
LEWIS/GILMER E911 – PSAP	WESTON	LEWIS	WV	304-269-8241
UNION COMMUNITY VOL FIRE DEPT	UNION	MONROE	WV	304-772-3182
LINDSIDE VOL FIRE DEPT	LINDSIDE	MONROE	WV	304-753-9929
SWEET SPRINGS RESCUE SQUAD	SWEET SPRINGS	MONROE	WV	304-536-3947
UNION RESCUE SQUAD	UNION	MONROE	WV	304-772-3383
BALLARD VOL FIRE DEPT	BALLARD	MONROE	WV	304-753-4039
PETERSTOWN VOL FIRE DEPT	PETERSTOWN	MONROE	WV	304-753-4343
MONROE COUNTY HEALTH DEPT CERT	UNION	MONROE	WV	304-772-3064
MONROE COUNTY SHERIFFS DEPT	UNION	MONROE	WV	
BIRCH RIVER VFD	BIRCH RIVER	NICHOLAS	WV	304-649-4075
CRAIGSVILLE – BEAVER – COTTLE VFD	CRAIGSVILLE	NICHOLAS	WV	304-742-5409
GAULEY RIVER VFD	JODIE	NICHOLAS	WV	304-632-1851
WILDERNESS VFD	MOUNT LOOKOUT	NICHOLAS	WV	304-872-6339
NETTIE FIRE DEPT	NETTIE	NICHOLAS	WV	304-846-9538
WEST VIRGINIA STATE POLICE TROOP 6 – RICHWOOD	RICHWOOD	NICHOLAS	WV	304-846-6510
RICHWOOD POLICE DEPT	RICHWOOD	NICHOLAS	WV	304-846-2596
RICHWOOD VFD	RICHWOOD	NICHOLAS	WV	304-846-4826
RICHWOOD CITY CERT	RICHWOOD	NICHOLAS	WV	304-651-2245
SUMMERSVILLE POLICE DEPT	SUMMERSVILLE	NICHOLAS	WV	304-872-1920
NICHOLAS COUNTY SHERIFFS DEPT	SUMMERSVILLE	NICHOLAS	WV	304-872-7880

WEST VIRGINIA STATE POLICE TROOP 6 – SUMMERSVILLE	SUMMERSVILLE	NICHOLAS	WV	304-872-0800
SUMMERSVILLE VFD	SUMMERSVILLE	NICHOLAS	WV	304-872-1350
KESSLERS CROSS LANES VFD	SUMMERSVILLE	NICHOLAS	WV	304-872-6999
NICHOLAS COUNTY EMA	SUMMERSVILLE	NICHOLAS	WV	304-872-7890
NICHOLAS COUNTY 9-1-1 – PSAP	SUMMERSVILLE	NICHOLAS	WV	304-872-4911
NICHOLAS COUNTY EMERGENCY SVC	SUMMERSVILLE	NICHOLAS	WV	304-872-7890
FOREST HILL VFD	FOREST HILL	SUMMERS	WV	304-466-1080
SUMMERS COUNTY SHERIFFS DEPT	HINTON	SUMMERS	WV	304-466-7111
HINTON POLICE DEPT	HINTON	SUMMERS	WV	304-466-4657
WEST VIRGINIA STATE POLICE TROOP 6 – HINTON	HINTON	SUMMERS	WV	304-466-2800
SUMMERS COUNTY VFD RESCUE 13	HINTON	SUMMERS	WV	304-466-2389
HINTON FIRE DEPT	HINTON	SUMMERS	WV	304-466-0360
SUMMERS COUNTY EMA	HINTON	SUMMERS	WV	304-466-5613
SUMMERS COUNTY 9-1-1 – PSAP	HINTON	SUMMERS	WV	304-466-5616
SUMMERS COUNTY 9-1-1 – PSAP	HINTON	SUMMERS	WV	304-466-5616
SUMMERS COUNTY EMERGENCY SVCS SUPPORT TEAM CERT	HINTON	SUMMERS	WV	304-466-2184
JUMPING BRANCH – NIMITZ VFD	JUMPING BRANCH	SUMMERS	WV	304-466-3115
PIPESTEM VFD	PIPESTEM	SUMMERS	WV	304-466-5055
SUMMERS COUNTY EMS	PIPESTEM	SUMMERS	WV	304-466-5206
GREEN SULPHUR DIST FIRE DEPT	SANDSTONE	SUMMERS	WV	304-466-2610
GREENBRIER VALLEY RURAL VFD	TALCOTT	SUMMERS	WV	304-466-5100
COWEN VOL FIRE DEPT	COWEN	WEBSTER	WV	304-226-3191
DIANA VOL FIRE DEPT	DIANA	WEBSTER	WV	304-847-5071
ERBACON VFD	ERBACON	WEBSTER	WV	304-226-5342
HACKER VALLEY VOL FIRE DEPT	HACKER VALLEY	WEBSTER	WV	304-493-6470
WEBSTER SPRINGS VOL FIRE DEPT	WEBSTER SPRINGS	WEBSTER	WV	304-847-2301
FOLSOM VFD	FOLSOM	WETZEL	WV	304-334-5782
WEST VIRGINIA STATE POLICE TROOP 1 – HUNDRED	HUNDRED	WETZEL	WV	304-775-4488
HUNDRED POLICE DEPT	HUNDRED	WETZEL	WV	304-775-5131
HUNDRED VFD	HUNDRED	WETZEL	WV	304-775-2384
JACKSONBURG VFD	JACKSONBURG	WETZEL	WV	304-904-2763

WETZEL COUNTY SHERIFFS DEPT	NEW MARTINSVILLE	WETZEL	WV	304-455-2430
NEW MARTINSVILLE POLICE DEPT	NEW MARTINSVILLE	WETZEL	WV	304-455-9100
WEST VIRGINIA STATE POLICE TROOP 1—PADEN CITY	NEW MARTINSVILLE	WETZEL	WV	304-455-0913
GRANDVIEW VFD	NEW MARTINSVILLE	WETZEL	WV	304-455-1317
NEW MARTINSVILLE FIRE DEPT STATION 1	NEW MARTINSVILLE	WETZEL	WV	304-455-9115
SILVER HILL VFD	NEW MARTINSVILLE	WETZEL	WV	304-775-2925
SILVER HILL VFD	NEW MARTINSVILLE	WETZEL	WV	304-775-2925
WETZEL COUNTY EMERGENCY SERVICES—PSAP	NEW MARTINSVILLE	WETZEL	WV	304-455-6730
WETZEL COUNTY EMA	NEW MARTINSVILLE	WETZEL	WV	304-455-6960
WETZEL COUNTY EMS	NEW MARTINSVILLE	WETZEL	WV	304-455-5931
TYLER COUNTY LEPC	NEW MARTINSVILLE	WETZEL	WV	304-337-8964
PADEN CITY POLICE DEPT	PADEN CITY	WETZEL	WV	304-337-2281
PADEN CITY VFD	PADEN CITY	WETZEL	WV	304-337-9289
PINE GROVE VFD	PINE GROVE	WETZEL	WV	304-889-3353
SAINT JOSEPH VFD	PROCTOR	WETZEL	WV	304-455-5206
SAINT JOSEPH VFD	PROCTOR	WETZEL	WV	304-455-4860
READER VFD	READER	WETZEL	WV	304-386-4161
SMITHFIELD VFD	SMITHFIELD	WETZEL	WV	304-334-3642
WILEYVILLE VFD	WILEYVILLE	WETZEL	WV	304-889-2442
JOHNS CREEK VOL FIRE DEPT	NEW CASTLE	CRAIG	VA	540-864-6499
PAINT BANK VOL FIRE DEPT	PAINT BANK	CRAIG	VA	540-897-5200
SIMMONSVILLE VOL FIRE DEPT	NEWPORT	CRAIG	VA	540-544-7769
NEW CASTLE VOL FIRE DEPT	NEW CASTLE	CRAIG	VA	540-864-7079
UPPER CRAIG CREEK VOL FIRE DEPT	CATAWBA	CRAIG	VA	540-864-6087
CRAIG COUNTY EMS	NEW CASTLE	CRAIG	VA	540-864-5115
FRANKLIN COUNTY PUBLIC SAFETY	ROCKY MOUNT	FRANKLIN	VA	540-483-3091
FRANKLIN COUNTY RESCUE SQUAD	ROCKY MOUNT	FRANKLIN	VA	540-483-9700
CALLAWAY VOL RESCUE SQUAD	CALLAWAY	FRANKLIN	VA	540-483-1208
SNOW CREEK VOL RESCUE SQUAD	PENHOOK	FRANKLIN	VA	540-573-3666
FORK MOUNTAIN VOL RESCUE	ROCKY MOUNT	FRANKLIN	VA	540-489-1211
RED VALLEY VOL RESCUE	BOONES MILL	FRANKLIN	VA	540-721-1800
SCRUGGS VOL RESCUE	MONETA	FRANKLIN	VA	540-721-5245
GLADE HILL VOL FIRE DEPT	GLADE HILL	FRANKLIN	VA	540-576-3744
FERRUM VFD	FERRUM	FRANKLIN	VA	540-365-2186
FRANKLIN COUNTY EMA	ROCKY MOUNT	FRANKLIN	VA	540-483-3091

ROCKY MOUNT VOL FIRE DEPT	ROCKY MOUNT	FRANKLIN	VA	540-483-7181
CALLAWAY VOL FIRE DEPT	CALLAWAY	FRANKLIN	VA	540-483-1208
SNOW CREEK VOL FIRE DEPT	PENHOOK	FRANKLIN	VA	540-576-3666
BOONES MILL VOL FIRE DEPT	BOONES MILL	FRANKLIN	VA	540-334-5272
FORK MOUNTAIN VOL FIRE DEPT	ROCKY MOUNT	FRANKLIN	VA	540-489-1211
BURNT CHMINEY VOL FIRE DEPT	WIRTZ	FRANKLIN	VA	540-721-3677
SCRUGGS VOL FIRE DEPT	MONETA	FRANKLIN	VA	540-721-5245
SMITH MOUNTAIN LAKE MARINE VOL FIRE CO	MONETA	FRANKLIN	VA	540-721-5585
GILES LIFESAVING AND RESCUE SQUAD	PEARISBURG	GILES	VA	540-921-4357
NEWPORT VOL RESCUE SQUAD	NEWPORT	GILES	VA	540-544-7695
EGGLESTON VOL FIRE DEPT	EGGLESTON	GILES	VA	540-626-3447
GLEN LYN VOL FIRE DEPT	GLEN LYN	GILES	VA	540-726-3984
NARROWS VOL FIRE DEPT	NARROWS	GILES	VA	540-726-3190
PEARISBURG VOL FIRE DEPT	PEARISBURG	GILES	VA	540-921-3842
PEMBROKE VOL FIRE DEPT	PEMBROKE	GILES	VA	540-626-7693
POPLAR HILL VOL FIRE DEPT	PEARISBURG	GILES	VA	540-921-0310
RICH CREEK VOL FIRE DEPT	RICH CREEK	GILES	VA	540-726-2430
MONTGOMERY COUNTY 911 — NEW RIVER VALLEY EMERGENCY COMMUNICATIONS REGIONAL AUTHORITY	CHRISTIANSBURG	MONTGOMERY	VA	540-394-4467
BLACKSBURG VOL RESCUE SQUAD	BLACKSBURG	MONTGOMERY	VA	540-961-1189
CHRISTIANSBURG RESCUE SQUAD	CHRISTIANSBURG	MONTGOMERY	VA	540-382-9518
RINER VOL RESCUE SQUAD	RINER	MONTGOMERY	VA	540-381-6043
VIRGINIA TEC RESCUE SQUAD	BLACKSBURG	MONTGOMERY	VA	540-961-1189
BLACKSBURG VOL FIRE DEPT	BLACKSBURG	MONTGOMERY	VA	540-231-7138
CHRISTIANSBURG FIRE DEPT	CHRISTIANSBURG	MONTGOMERY	VA	540-382-4388
ELLISTON VOL FIRE DEPT	ELLISTON	MONTGOMERY	VA	540-268-1055
LONGSHOP MCCOY FIRE AND RESCUE	MCCOY	MONTGOMERY	VA	540-639-0836
RINER VOL FIRE DEPT	RINER	MONTGOMERY	VA	540-382-6865
CITY OF DANVILLE-EMERGENCY COMMUNICATIONS CENTER	DANVILLE	PITTSYLVANIA	VA	434-799-6535
PITTSYLVANIA COUNTY – COMMUNICATIONS CENTER	CHATHAM	PITTSYLVANIA	VA	434-432-7700
GRETNA RESCUE SQUAD	GRETNA	PITTSYLVANIA	VA	434-656-6650
CHATHAM VOL RESCUE SQUAD	CHATHAM	PITTSYLVANIA	VA	434-432-8827
COOL BRANCH VOL RESCUE SQUAD	PENHOOK	PITTSYLVANIA	VA	434-927-5050
640 COMMUNITY RESCUE SQUAD	JAVA	PITTSYLVANIA	VA	434-432-2507

DRY FORK VOL FIRE DEPT	DRY FORK	PITTSYLVANIA	VA	434-432-0431
DANVILLE LIFE SAVING CREW	DANVILLE	PITTSYLVANIA	VA	434-792-CREW
CHATHAM VOL FIRE DEPT	CHATHAM	PITTSYLVANIA	VA	434-432-1516
GRETNA VOL FIRE DEPT	GRETNA	PITTSYLVANIA	VA	434-656-2621
RINGGOLD VOL FIRE AND RESCUE	RINGGOLD	PITTSYLVANIA	VA	434-822-6989
KENTUCK VOL FIRE DEPT	RINGGOLD	PITTSYLVANIA	VA	434-822-8026
TUNSTALL FIRE AND RESCUE	DRY FORK	PITTSYLVANIA	VA	434-724-6677
RENAN VOL FIRE DEPT	GRETNA	PITTSYLVANIA	VA	434-335-5209
MOUNT CROSS FIRE AND RESCUE	DANVILLE	PITTSYLVANIA	VA	434-797-5535
RICEVILLE JAVA VOL FIRE DEPT	JAVA	PITTSYLVANIA	VA	434-432-8623
BACHELORS HALL VOL FIRE DEPT	DANVILLE	PITTSYLVANIA	VA	434-685-1224
HURT VOL FIRE DEPT	HURT	PITTSYLVANIA	VA	434-324-4141
CLIMAX VOL FIRE DPET	CHATHAM	PITTSYLVANIA	VA	434-432-1944
MOUNT HERMON VOL FIRE AND RESCUE	DANVILLE	PITTSYLVANIA	VA	434-836-4356
BLAIRS VOL FIRE DEPT	BLAIRS	PITTSYLVANIA	VA	434-836-3065
CALLANDS VOL FIRE AND RESCUE	CALLANDS	PITTSYLVANIA	VA	434-724-6459
LAUREL GROVE VOL FIRE AND RESCUE	SUTHERLIN	PITTSYLVANIA	VA	434-822-8821
BROSVILLE COMMUNITY VOL FIRE AND RESCUE	DANVILLE	PITTSYLVANIA	VA	434-685-3797
CASCADE VOL FIRE DEPT	CASCADE	PITTSYLVANIA	VA	434-685-1522
COOL BRANCH VOL FIRE DEPT	PENHOOK	PITTSYLVANIA	VA	434-927-5131
RIVERBEND VOL FIRE DEPT	DANVILLE	PITTSYLVANIA	VA	434-792-2312
KEELING VOL FIRE	RINGGOLD	PITTSYLVANIA	VA	434-797-2209
ALTAVISTA EMS	ALTAVISTA	PITTSYLVANIA	VA	434-369-4716
DRAPER VOLUNTEER FIRE DEPARTMENT	EDEN	ROCKINGHAM	NC	336-635-2233
EDEN FIRE DEPARTMENT	EDEN	ROCKINGHAM	NC	336-623-2110
EDEN FIRE STATION 2	EDEN	ROCKINGHAM	NC	336-635-7754
EDEN FIRE STATION 3	EDEN	ROCKINGHAM	NC	336-623-8663
EDEN FIRE STATION 4	EDEN	ROCKINGHAM	NC	336-623-9820
LEAKSVILLE VOLUNTEER FIRE DEPARTMENT	EDEN	ROCKINGHAM	NC	336-623-9020
JACOBS CREEK FIRE DEPARTMENT	MADISON	ROCKINGHAM	NC	336-427-8888
MADISON FIRE DEPARTMENT	MADISON	ROCKINGHAM	NC	336-427-4495
HUNTSVILLE VOLUNTEER FIRE DEPARTMENT	MADISON	ROCKINGHAM	NC	336-427-5397
MAYODAN FIRE DEPARTMENT	MAYODAN	ROCKINGHAM	NC	336-427-5977
NORTHWEST VOLUNTEER FIRE DEPARTMENT	MAYODAN	ROCKINGHAM	NC	336-548-9027
BETHANY FIRE DEPARTMENT STATION 1	REIDSVILLE	ROCKINGHAM	NC	336-951-2155
CHERRY GROVE VOLUNTEER FIRE DEPARTMENT	REIDSVILLE	ROCKINGHAM	NC	336-421-0202
MONROETON VOLUNTEER FIRE DEPARTMENT	REIDSVILLE	ROCKINGHAM	NC	336-342-2945
OREGON HILL VOLUNTEER FIRE	REIDSVILLE	ROCKINGHAM	NC	336-349-5772
REIDSVILLE FIRE DEPARTMENT	REIDSVILLE	ROCKINGHAM	NC	336-634-3200

CITY OF REIDSVILLE FIRE DEPARTMENT	REIDSVILLE	ROCKINGHAM	NC	336-349-1023
REIDSVILLE FIRE DEPARTMENT STATION 2	REIDSVILLE	ROCKINGHAM	NC	336-634-3056
ROCKINGHAM COUNTY EMERGENCY SERVICES	REIDSVILLE	ROCKINGHAM	NC	336-634-3017
ROCKINGHAM COUNTY FIRE MARSHAL	REIDSVILLE	ROCKINGHAM	NC	336-634-3000
WENTWORTH VOLUNTEER FIRE DEPARTMENT	REIDSVILLE	ROCKINGHAM	NC	336-342-2795
WILLIAMSBURG VOLUNTEER FR DEPARTMENT	REIDSVILLE	ROCKINGHAM	NC	336-342-2429
YANCEYVILLE FIRE DEPARTMENT	REIDSVILLE	ROCKINGHAM	NC	336-342-2556
RUFFIN VOLUNTEER FIRE DEPARTMENT	RUFFIN	ROCKINGHAM	NC	336-939-9800
SHILOH VOLUNTEER FIRE DEPARTMENT	STONEVILLE	ROCKINGHAM	NC	336-573-9292
STONEVILLE FIRE DEPARTMENT	STONEVILLE	ROCKINGHAM	NC	336-573-9095
CITY OF ROANOKE—E-911 CENTER	ROANOKE	ROANOKE	VA	540-853-2411
ROANOKE COUNTY FIRE AND RESCUE	ROANOKE	ROANOKE	VA	540-777-8701
ROANOKE FIRE-EMS (ROANOKE CITY)	ROANOKE	ROANOKE	VA	540-853-2327
VINTON FIRST AID CREW	VINTON	ROANOKE	VA	540-983-0641
CAVE SPRING VOL RESCUE SQUAD	ROANOKE	ROANOKE	VA	540-772-2943
VINTON FIRE DEPT	VINTON	ROANOKE	VA	540-983-0629
CAVE SPRING VOL FIRE DEPT	ROANOKE	ROANOKE	VA	540-772-2043
HOLLINS FIRE AND RESCUE	ROANOKE	ROANOKE	VA	540-561-8109
MOUNT PLEASANT FIRE DEPT	ROANOKE	ROANOKE	VA	540-427-3410
CLEARBROOK FIRE AND RESCUE	ROANOKE	ROANOKE	VA	540-774-5099
BENT MOUNTAIN FIRE AND RESCUE	BENT MOUNTAIN	ROANOKE	VA	540-929-4555
FORT LEWIS FIRE AND RESCUE	SALEM	ROANOKE	VA	540-387-6166
BACK CREEK FIRE AND RESCUE	ROANOKE	ROANOKE	VA	540-206-3642
REED MOUNTAIN COUNTY FIRE AND RESCUE	ROANOKE	ROANOKE	VA	540-977-5881
BURLINGTON FIRE DEPARTMENT	BURLINGTON	ALAMANCE	NC	(336) 229-3563
BURLINGTON FIRE DEPARTMENT—STATION 2	BURLINGTON	ALAMANCE	NC	(336) 229-3558
BURLINGTON FIRE DEPARTMENT—STATION 3	BURLINGTON	ALAMANCE	NC	(336) 229-3575
BURLINGTON FIRE DEPARTMENT—STATION 4	BURLINGTON	ALAMANCE	NC	(336) 229-3576
BURLINGTON FIRE DEPARTMENT—STATION 5	BURLINGTON	ALAMANCE	NC	911
FAUCETTE TOWNSHIP VOLUNTEER FIRE DEPARTMENT	BURLINGTON	ALAMANCE	NC	(336) 226-4042
NORTH CENTRAL ALAMANCE VOLUNTEER FIRE DEPARTMENT	BURLINGTON	ALAMANCE	NC	(336) 421-9576
NORTH EASTERN ALAMANCE VOLUNTEER FIRE DEPARTMENT	BURLINGTON	ALAMANCE	NC	(336) 578-3136
ALAMANCE COUNTY EMERGENCY MANAGEMENT	BURLINGTON	ALAMANCE	NC	336-227-1365
ALAMANCE COUNTY EMS MEDIC 1	BURLINGTON	ALAMANCE	NC	336-513-5589
EM HOLT VOLUNTEER FIRE DEPARTMENT	BURLINGTON	ALAMANCE	NC	336-226-0617
ALTAMAHAW—OSSIEE FIRE STATION #2	ELON	ALAMANCE	NC	336-584-0526
ELON FIRE RESCUE	ELON	ALAMANCE	NC	(336) 584-9190
GRAHAM FIRE DEPARTMENT	GRAHAM	ALAMANCE	NC	(336) 570-6707

ELI WHITNEY VOLUNTEER FIRE DEPARTMENT—STATION 2	GRAHAM	ALAMANCE	NC	911
SWEPSONVILLE VOLUNTEER FIRE DEPARTMENT—STATION 10	GRAHAM	ALAMANCE	NC	911
HAW RIVER FIRE DEPARTMENT	HAW RIVER	ALAMANCE	NC	(336) 578-1355
SNOW CAMP VOLUNTEER FIRE DEPARTMENT—STATION 3	LIBERTY	ALAMANCE	NC	911
CITY OF MEBANE FIRE DEPARTMENT	MEBANE	ALAMANCE	NC	(919) 563-5718
CITY OF MEBANE FIRE DEPARTMENT—STATION 2	MEBANE	ALAMANCE	NC	911
CITY OF MEBANE FIRE STATION 3	MEBANE	ALAMANCE	NC	919-563-5718
ELI WHITNEY VOLUNTEER FIRE DEPARTMENT	SNOW CAMP	ALAMANCE	NC	(336) 376-9078
SNOW CAMP VOLUNTEER FIRE DEPARTMENT	SNOW CAMP	ALAMANCE	NC	(336) 376-3442
SWEPSONVILLE VOLUNTEER FIRE DEPARTMENT	SWEPSONVILLE	ALAMANCE	NC	(336) 578-1500

APPENDIX E ~~CONTRACTORS~~**OPERATION AND MAINTENANCE PROCEDURES**

APPENDIX F

CONTRACTOR CONTACT NUMBERS

This ~~section~~Section to be Populated prior to Construction.
~~populated~~

APPENDIX F—G**REGULATORY ~~AGENCIES~~ AGENCY CONTACT NUMBERS****OFFICE OF PIPELINE SAFETY —e DOT**

Information Resources Manager
U.S. Department of Transportation, Pipeline and Hazardous Materials Safety
Administration ~~1200 New Jersey Avenue, SE,~~
1200 New Jersey Avenue, SE,
Washington DC 20590
Phone: ~~(800)~~-424-8802 (National Response Center)
Phone: ~~(202)~~-366-4595

WEST VIRGINIA PUBLIC SERVICE COMMISSION

West Virginia Public Service Commission
Gas Pipeline Safety Division
201 Brooks Street
Charleston, WV 01
Phone – 24-hour emergency reporting (operators only) ~~(304)~~-340-0486

Name	Title	Phone Number
Mary Friend	Director	(304) -340-0770

VIRGINIA STATE CORPORATION COMMISSION

Division of Public Utility Regulation
Tyler Building, 4th ~~floor~~ Floor
1300 E. Main St.
Richmond, Virginia 23219
Phone: ~~(804)~~-371-9980

Name	Title	Phone Number
William F Stephens	Director	(804) -371-9611

NORTH CAROLINA UTILITIES COMMISSION

North Carolina Utilities Commission
430 North Salisbury Street
Dobbs Building
5th Floor
Raleigh, NC 27603-5918

Name	Title	Phone Number
Christopher J Ayers	Executive Director	919-733-4326

FEDERAL ENERGY REGULATORY COMMISSION

Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426
~~Toll~~Phone (toll-free: ~~1~~): 866-208-3372
Enforcement Hotline: ~~1~~-888-889-8030

OSHA AREA OFFICE REGION #3 Virginia**Headquarters State Plan Office**

Main Street Centre
600 East Main Street, Suite 207
Richmond, VA 23219
Business Hours: ~~8:00am~~ ~~4:30pm~~ ET (804) 371-2327 00 a.m. to 4:30 p.m. EST
(~~Phone:~~ 804) ~~371-2327~~
(~~Fax:~~ 804) ~~371-6524~~ ~~FAX~~

OSHA AREA OFFICE REGION #3 West Virginia

Charleston Area Office
U.S. Department of Labor – OSHA
405 Capitol Street, Suite 407
Charleston, West Virginia 25301-1727
(~~Phone:~~ 304) ~~347-5937~~
(~~Fax:~~ 304) ~~347-5275~~ ~~FAX~~

OSHA AREA OFFICE REGION #4 North Carolina

Raleigh Area Office
4407 Bland Road
Somerset Park Suite 210
Raleigh, North Carolina 27609
(~~Phone:~~ 919) ~~790-8096~~
(~~Fax:~~ 919) ~~790-8224~~ ~~FAX~~

APPENDIX ~~G~~ H**REPORTING FORMS**

FORMS INCLUDED IN THIS APPENDIX:

COMPANY

1. Telephonic Notice Worksheet

Telephonic Notice Worksheet

Company/Operator Name: _____

Date of Incident: _____ Time of Incident: _____

Location of Incident: _____

Facilities Involved: _____

Injuries: _____

Description of Incident: _____

Customers/ Suppliers Affected: _____

Emergency Action Taken: _____

Other Significant Facts: _____

Date and Time of Report to National Response Center (NRC)
(800-424-8802; 267-2675 in Washington, D. C.): _____

Report Number Assigned by NRC: _____

Name & Phone Number of Person Making Report to NRC: _____

Operator's 24-hour phone: _____

This form may be reproduced.

Exotic and Invasive Species Control Plan



MVP Southgate Amendment Project

Exotic and Invasive Plant Species Control Plan

~~April 21, 2020~~

~~Revision 3~~

Revised February 2025

1.0 INTRODUCTION

Mountain Valley Pipeline, LLC (“Mountain Valley”) developed an upland ~~exotic~~Exotic and invasive plant species control planInvasive Plant Species Control Plan for the MVP Southgate (“~~Amendment~~ Project”). (“~~Project~~”). Invasive species are defined in Federal Executive Order (“EO”) 13112 (1999) as “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.” The intent of EO 13112 is to “prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause” and directs federal agencies to prevent, detect, respond to, monitor, and research invasive species. The purpose of this plan is to identify potential undesirable vegetation ~~associated with that could occur in the~~ Amendment Project area and outline methods to prevent the recruitment and spread of exotic and invasive species. Mountain Valley will separately develop, as needed and in coordination with the U.S. Fish and Wildlife Service, contingency plans to address the monitoring and treatment procedures if invasive pests are identified that pose a potential risk for infestation or to revegetation.

~~Searches~~Mountain Valley completed rare plant surveys for the Original Certificated Project (i.e., MVP Southgate Project) in 2019. No additional rare plant surveys were required for the Amendment Project. During these surveys, searches for terrestrial invasive plants along the right-of-way were directed to species with a high likelihood of occurring in the geographical region. Species search lists were populated with information available through the Virginia Department of Conservation and Recreation (“VDCR”) and the North Carolina Native Plant Society (Table 1). Species identified in Table 1 as invasive in the state of Virginia are considered to pose a low, moderate, or high risk in the Piedmont Region. Invasive species with a Rank 1 rating (severe threat) in North Carolina are also addressed in Table 1.

Table 1		
An Inventory of Non- native <u>Native and/or</u> Invasive Plant Species with Potential to Occur Along the <u>Amendment</u> Project Route and Notation of Species Presence During <u>Survey Surveys</u>		
<u>Scientific Name</u> <u>Virginia Species – High Rank Category a/</u>		
<u>Ailanthus altissima</u>	Tree of Heaven <u>b/</u>	Tree
<u>Alliaria petiolata</u> Ailanthus altissima	<u>Tree of heaven</u> ^b <u>Garlic mustard b/</u>	Herb
<u>Ampelopsis brevipedunculata</u>	<u>Garlic mustard</u> ^b <u>Porcelain berry b/</u>	Shrub
<u>Arum italicum*</u>	<u>Porcelain berry</u> ^b <u>Italian arum</u>	Herb
<u>Celastrus orbiculatu</u> <u>orbiculatus</u>	Oriental <u>bittersweet</u> ^b <u>bittersweet b/</u>	Vine
<u>Centaurea stoebe ssp. Micranthos</u>	Spotted <u>knapweed</u> ^b <u>knapweed b/</u>	Herb
<u>Cirsium arvense</u>	Canada thistle	Herb
<u>Dioscorea polystachya</u>	Cinnamon vine	Vine
<u>Elaeagnus umbellata</u>	Autumn <u>olive</u> ^b <u>olive b/</u>	Tree
<u>Euonymus alatus</u>	Winged euonymus	Shrub
<u>Ficaria verna</u>	Lesser celandine	Herb
<u>Hydrilla verticillata</u>	Hydrilla	Herb, aquatic
<u>Iris pseudacorus</u>	Yellow flag	Herb
<u>Lespedeza cuneata</u>	<u>Chinese lespedeza</u> ^b <u>Sericea lespedeza b/</u>	Herb
<u>Ligustrum sinense</u>	Chinese <u>privet</u> ^b <u>privet b/</u>	Shrub
<u>Lonicera japonica</u>	Japanese <u>honeysuckle</u> ^b <u>honeysuckle b/</u>	Vine
<u>Lonicera maackii</u>	Amur <u>honeysuckle</u> ^b <u>honeysuckle b/</u>	Shrub

Table 1		
An Inventory of Non-native and/or Invasive Plant Species with Potential to Occur Along the Amendment Project Route and Notation of Species Presence During Survey Surveys		
<i>Lonicera morrowii</i>	Morrow's honeysuckle	Shrub
<i>Ludwigia grandiflora</i> ssp. <i>hexapetala</i> ° <i>hexapetala</i>	Large flower primrose willow	Herb, aquatic
<i>Ludwigia peploides</i> var. <i>glabrescens</i>	Floating primrose-willow	Herb, aquatic
<i>Lythrum salicaria</i>	Purple loosestrife	Herb
<i>Microstegium vimineum</i>	Japanese stiltgrass b/	Grass
<i>Murdannia keisak</i>	Marsh dewflower b/	Herb
<i>Myriophyllum aquaticum</i>	Parrot feather	Herb, aquatic
<i>Myriophyllum spicatum</i>	Eurasian milfoil	Herb, aquatic
<i>Oplismenus hirtellus</i> ssp. <i>undulatifolius</i> ° <i>Oplismenus undulatifolius</i>	Wavyleaf grass	Grass
<i>Persicaria perfoliate</i>	Mile a minute b/	Vine
<i>Phragmites australis</i> ssp. <i>australis</i> Australis	Common reed	Herb, aquatic
<i>Pueraria montana</i> var. <i>lobata</i>	Kudzu b/	Vine
<i>Reynoutria japonica</i>	Japanese knotweed	Herb
<i>Rosa multiflora</i>	Multiflora rose b/	Vine/shrub
<i>Rubus phoenicolasius</i>	RubusWineberry	Vine/shrub
<i>Sorghum halepense</i>	Johnson grass b/	Grass
<i>Trapa bispinosa</i> var. <i>jinumai</i>	Two-horned trapa	Herb, aquatic
<i>Triadica sebifera</i>	Chinese tallow-tree	Tree
<i>Tripidium ravennae</i>	Ravenna grass	Grass
<i>Urtica dioica</i>	Stinging European nettle	Herb
Virginia Species – Medium Rank Category a/		
<i>Acetosa acetosella</i>	Sheep sorrel	Herb
<i>Acer platanoides</i>	Norway maple	Tree
<i>Agrostis capillaris</i>	Colonial bent grass	Grass
<i>Akebia quinata</i>	Five leaf akebia	Vine
<i>Albizia julibrissin</i>	Mimosa b/	Tree
<i>Arthraxon hispidus</i> var. <i>hispidus</i>	Joint head grass b/	Grass
<i>Berberis thunbergii</i>	Japanese barberry	Shrub
<i>Cenchrus purpurascens</i>	Fountain grass	Grass
<i>Cirsium vulgare</i>	Bull thistle b/	Herb
<i>Clematis terniflora</i>	Sweet autumn clematis	Vine
<i>Corydalis incisa</i>	Incised fumewort	Herb
<i>Dipsacus fullonum</i>	Wild teasel	Herb
<i>Egeria densa</i>	Brazilian waterweed	Herb, aquatic
<i>Euonymus fortunei</i>	Winter creeper	Vine
<i>Glechoma hederacea</i>	Gill-over-the-ground	Vine
<i>Hedera helix</i>	English ivy b/	Vine
<i>Heracleum mantegazzianum</i> ° <i>mantegazzianum</i>	Giant hogweed	Herb
<i>Holcus lanatus</i>	Common velvet grass	Grass
<i>Humulus japonicus</i>	Japanese hops	Vine
<i>Ipomoea aquatica</i> ° <i>aquatica</i>	Water spinach	Herb, aquatic
<i>Ligustrum obtusifolium</i> var. <i>obtusifolium</i>	Border privet b/	Shrub
<i>Lonicera tatarica</i>	Tartarian honeysuckle	Shrub
<i>Lysimachia nummularia</i>	Moneywort b/	Herb

Table 1		
An Inventory of Non-native and/or Invasive Plant Species with Potential to Occur Along the Amendment Project Route and Notation of Species Presence During Survey Surveys		
Mahonia bealei	Leatherleaf mahonia	Shrub
<i>Miscanthus sinensis</i>	Chinese silvergrass	Grass
<i>Najas minor</i>	Brittle naiad	Herb
<i>Paulownia tomentosa</i>	Royal paulownia b/	Tree
<i>Persicaria longiseta</i>	Long-bristled smartweed b/	Herb
<i>Phyllostachys aurea</i>	Golden bamboo	Grass
<i>Poa compressa</i>	Flat-stemmed bluegrass	Grass
<i>Poa trivialis</i>	Rough bluegrass	Grass
Potamogeton crispus	Curled pondweed	Herb, aquatic
<i>Pyrus calleryana</i>	Callery pear b/	Tree
<i>Rhodotypos scandens</i>	Jetbead	Shrub
Rumex acetosella	Sheep sorrel^b	
<i>Salvinia molesta</i> ^c molesta	Giant salvinia	Herb, aquatic
<i>Solanum viarum</i> ^c viarum	Tropical soda apple	Shrub
<i>Spiraea japonica</i>	Japanese spiraea	Herb
<i>Stellaria media</i>	Common chickweed	Herb
<i>Veronica hederifolia</i>	Ivy-leaved speedwell	Herb
<i>Viburnum dilatatum</i>	Linden arrow wood b/	Shrub
<i>Wisteria sinensis</i>	Chinese wisteria b/	Vine
Virginia Species – Low Rank Category a/		
Buddleja davidii [*]	Orange-eye butterfly-bush	Shrub
<i>Commelina communis</i>	Asiatic dayflower	Herb
<i>Elaeagnus pungens</i>	Thorny olive	Shrub
<i>Lespedeza bicolor</i>	Shrubby bushclover	Shrub
<i>Lonicera fragrantissima</i>	Winter honeysuckle	Vine
<i>Melia azedarach</i>	Chinaberry	Shrub
<i>Morus alba</i>	White mulberry	Shrub
Nandina domestica	Nandina	Shrub
<i>Perilla frutescens</i>	Beefsteak plant	Herb
<i>Phleum pratense</i>	Timothy	Grass
<i>Populus alba</i>	Silver poplar	Tree
<i>Rumex crispus</i> ssp. <i>crispus</i>	Curly dock	Herb
<i>Securigera varia</i>	Crown-vetch	Vine
<i>Ulmus pumila</i>	Siberian elm	Tree
<i>Vinca major</i>	Greater periwinkle	Vine
<i>Vinca minor</i>	Periwinkle	Vine
<i>Wisteria floribunda</i>	Japanese wisteria	Tree/Vine
North Carolina – Severe Threat Ranking a/		
<i>Ailanthus altissima</i>	Tree of heaven b/	Tree
<i>Albizia julibrissin</i>	Mimosa b/	Tree
<i>Alliaria petiolata</i>	Garlic mustard b/	Herb
Ampelopsis glandulosa (Ampelopsis brevipedunculata)	Porcelain-berry, Amur peppervine	Vine
<i>Celastrus orbiculatus</i>	Asian-bittersweet^b Oriental bittersweet b/	Vine
Dioscorea polystachya (Dioscorea oppositifolia)	Chinese yam, Cinnamon vine	Vine

<i>Elaeagnus umbellata</i>	Autumn olive <u>b/</u>	Tree
<i>Ficaria verna</i> (<i>Ranunculus ficaria</i>)	Lesser celandine, fig buttercup	Herb
<i>Hedera helix</i>	English ivy <u>b/</u>	Vine
<i>Humulus scandens</i> (<i>Humulus japonicus</i>)	Japanese hops	Vine
<i>Hydrilla verticillata</i>	Hydrilla	Herb, aquatic
<i>Lespedeza bicolor</i>	Bicolor lespedeza	Shrub
<i>Lespedeza cuneata</i>	Sericea lespedeza <u>b/</u>	Herb
Ligustrum japonicum	Japanese privet	Shrub
Ligustrum lucidum	Glossy privet	Shrub
<i>Ligustrum sinense</i>	Chinese privet <u>b/</u>	Shrub
<i>Lonicera fragrantissima</i>	Fragrant honeysuckle <u>b/</u>	Vine
<i>Lonicera japonica</i>	Japanese honeysuckle <u>b/</u>	Vine
<i>Microstegium vimineum</i>	Japanese stilt grass <u>b/</u>	Grass
Miscanthus sinensis	Chinese silver grass, eulalia	Grass
<i>Murdannia keisak</i>	Asian spiderwort <u>b/</u>	Herb
<i>Myriophyllum aquaticum</i>	Parrotfeather	Herb, aquatic
<i>Paulownia tomentosa</i>	Princess tree <u>b/</u>	Tree
<i>Persicaria perfoliata</i> (<i>Polygonum perfoliatum</i> L.)	Mile-a-minute vine	Vine
<i>Phragmites australis</i> (Cav.) Trin. ssp. <i>australis</i>	Common reed	Grass, aquatic
Pueraria montana	Kudzu b/	Vine
<i>Pyrus calleryana</i>	Bradford pear <u>b/</u>	Tree
<i>Reynoutria japonica</i> (<i>Polygonum cuspidatum</i>)	Japanese knotweed	Herb
<i>Pueraria montana</i> <i>Reynoutria sachalinensis</i>	Kudzu^bGiant knotweed, sachaline	Herb
Reynoutria x bohemica	Bohemian knotweed, hybrid Japanese knotweed	Herb
<i>Rosa multiflora</i>	Multiflora rose <u>b/</u>	Vine/shrub
Salvinia molesta	Giant salvinia, kariba weed	Herb, aquatic
Spiraea japonica	Japanese spiraea	Shrub
Vitex rotundifolia	Beach vitex, roundleaf chaste-tree	Shrub
Wisteria floribunda	Japanese wisteria	Vine
<i>Wisteria sinensis</i>	Chinese wisteria <u>b/</u>	Vine
<i>Wisteria x formosa</i> (<i>W. floribunda x sinensis</i>)	Hybrid Asian wisteria	Vine
<i>Youngia japonica</i>	Asiatic hawk's-beard, youngia	Herb
Other		
Datura stramonium	Jimsonweed c/	Herb

a/ In Virginia, invasiveness ranks reflect the level of threat to forests and other natural communities and native species. [Ranks](#) [The ranks](#) used on the list are high, medium, and low. High Species pose a significant threat, medium species pose a moderate threat, [Low and low](#) Species pose a low threat. In North Carolina, Rank 1 – Severe Threat plants are exotic plant species that have invasive characteristics and spread readily into native plant communities, displacing native vegetation.

b/ Species observed during [survey](#)the rare plant surveys conducted for the Original Certificated Project.

^e—Early detection species not yet widely established in Virginia but present in the Piedmont region.

c/ Although Jimsonweed is not listed as invasive in Virginia or North Carolina, it is a known weed of concern for both humans and livestock, owing to its poisonous nature to certain alkaloids present in all plant parts ([West Virginia University Extension 2018](#)).

Sources: The [Amendment](#) Project used the Virginia Invasive Plant Species List and the North Carolina Invasive Plant Council List ([Virginia Invasive Species Working Group, 2012](#); [VDCR-DNH, 2018](#); and [Heffernan et al. 2024](#); North Carolina Invasive Plant Council, [2016/2023](#)).

Crews recorded observations of exotic and invasive species concurrent with other field surveys. To ensure adequate survey coverage, the [Amendment](#) Project right-of-way was divided into 1,000-foot-long blocks, and where survey permission was granted, at least one observation of exotic and invasive species was made within each block and along each access road.

Limited weed-free areas were identified in the [Amendment](#) Project [footprint](#). Two or more adjacent blocks that lacked exotic and invasive species were considered weed-free; single isolated weed-free blocks surrounded by blocks with exotic and invasive species were not considered weed-free. Table 2 lists weed-free areas.

Exotic and invasive species were observed throughout the [Amendment](#) Project in both states. In Virginia, observations were completed in 133 blocks and partially completed in 27 blocks out of a total 193 blocks. At least one exotic or invasive species was present in 99% [percent](#) of surveyed and partially surveyed blocks (n=158). From blocks with exotic and invasive species, the most commonly observed species included: Japanese honeysuckle (*Lonicera japonica*) (87%); Chinese lespedeza (*Lespedeza cuneata*) (84%), Japanese stilt-grass (*Microstegium vimineum*) (67%); Chinese privet (*Ligustrum sinense*) (41%); tree of heaven (*Ailanthus altissima*) (35%); multiflora rose (*Rosa multiflora*) (30%); spotted knapweed (*Centaurea stoebe* ssp. *Micranthos*) (27%); and Johnson grass (*Sorghum halepense*) (25%).

In North Carolina, observations were completed in 214 blocks and partially completed in 52 blocks out of a total 338 blocks. At least one exotic or invasive species was present in 80% [percent](#) of surveyed and partially surveyed blocks (n=266). From blocks with exotic and invasive species, the most commonly observed species ~~includes:~~[include](#) Japanese honeysuckle (*Lonicera japonica*) (54%); Japanese stilt-grass (*Microstegium vimineum*) (54%); multiflora rose (34%); Chinese privet (*Ligustrum sinense*) (25%), and tree of heaven (*Ailanthus altissima*) (20%).

Table 2		
Areas Lacking Invasive Species		
County/State	Station Milepost Start	Station Milepost End
Rockingham, NC	31.2 ^a a/	31.40 a/
Rockingham, NC	37.30	37.48 ^a
Rockingham, NC	43.70 ^a	43.90 ^a
Rockingham, NC	47.48 ^a	47.67
Alamance, NC	64.00 ^a	67.50 ^b
^{a/} Weed-free block is adjacent to unsurveyed block; status as weed-free could be revised pending survey of adjacent blocks. ^b Area associated with re-route, surveys pending		

Prior to construction, unsurveyed and partially surveyed blocks will be assessed for [the](#) presence of exotic and invasive species, and Table 2 will be updated to reflect applicable changes.

1.1 Potential Invasive Plant Species Introduction Associated with Pipeline Construction

Excavation for pipeline placement exposes the topsoil surface to [the](#) potential entrance of exotic, noxious, and/or invasive plant species. This can occur either by physical transport onto the exposed soil site by way of equipment, machinery, or vehicles, through windborne dissemination of seeds of exotic or invasive species from the surrounding area, or by introduction of seeds or plant parts contained in mulch or straw bales.

To avoid and minimize [the](#) potential for introduction of these seeds to the [Amendment](#) Project corridor, [the Project Mountain Valley](#) will apply three management strategies to control exotic, noxious, and invasive plant species, including avoidance of exotic and invasive species found in organic materials brought onsite; monitoring and selective treatment of exotic or invasive species encountered during or following construction; and using seed mixes that include native species whenever possible.

- (1) Introduction of invasive species from organic materials brought ~~onsite~~ [on site](#) will be avoided during construction, temporary stabilization, and final reclamation through [the](#) use of certified weed-free mulch, including straw, hay, wood fiber hydromulch, erosion control fabric, or a functional equivalent.
- (2) [The Project Mountain Valley](#) will monitor the [ROW](#) [right-of-way](#) during construction and for two years post-construction to allow for early detection of all exotic or invasive species infestations or outbreaks, regardless of ranking. If species or colonies of exotic or invasive species are found in numbers substantially greater than those existing prior to construction, [the Project Mountain Valley](#) will conduct selective spot ~~eradication~~ [eradication](#) of those species. Eradication measures will include hand cutting ~~and/or~~, mechanical removal, [or herbicidal treatment](#). [Non-herbicidal eradication measures will be prioritized](#) unless [herbicidal treatment is requested by a landowner, approved by a state or federal management agency](#) ~~approves the use of herbicides~~ to achieve effective removal of these species, [or necessary to mitigate imminent risk to human safety, property, or the environment \(e.g., growth of a toxic species in locations readily accessible to humans or livestock\)](#). Herbicide types will be determined based on the species requiring control using methods prescribed by the VDCR or the [NCNHP, North Carolina Natural Heritage Program](#) in each respective state. ~~Appendix A includes agency-prescribed control method recommendations for Virginia species with a High ranking and North Carolina species with a Severe Threat ranking. Should current treatment options involving herbicide use be revised prior to Project construction, Appendix A will be updated accordingly.~~ Actual treatment methods are not presented here, as recent current events regarding herbicide use will likely lead to significant changes in treatment recommendations. [The Project Mountain Valley](#) will use herbicide applications approved for aquatic use as necessary, ~~and all~~. [All](#) herbicides will be applied by applicators appropriately licensed or certified by the state where the work is conducted.
- (3) Seed mixes used during restoration will include native species within the seed mix. [The Project Mountain Valley](#) will implement the restoration measures contained in the [FERC Federal Energy Regulatory Commission's Upland Erosion Control, Revegetation, and Maintenance Plan \("FERC Plan"\)](#) and [Wetland and Waterbody Construction and Mitigation Procedures \("FERC Procedures"\)](#). In accordance with the FERC Plan, [the Project Mountain Valley](#) will monitor all areas disturbed by [Amendment](#) Project construction to determine the post-construction revegetative

success for a minimum of two growing seasons following construction or until revegetation is successful.

In addition to the three strategies described above, the following control measures will be used to further minimize [the](#) introduction and/or spread of these species:

- Adhere to erosion control measures in the FERC Plan and Procedures to ensure that sediment movement and associated movement of non-native seeds into newly disturbed soils is minimized.
- Prior to mobilization into the [Amendment](#) Project area, contractors thoroughly clean all construction equipment to limit [the](#) potential for [the](#) spread of noxious weeds, insects, or other soil-borne pests.
- During construction, the environmental inspector ([“EI”](#)) will ensure all contractors clean the tracks, tires, and blades of equipment by hand or compressed air or water to remove any excess soil prior to [the](#) movement of equipment out of known weed or soil-borne pest-infested areas.
- Use construction techniques along the pipeline route that minimize the duration of bare soil exposure, thus minimizing the opportunity for exotic species to become established.
- In areas along the pipeline identified as containing exotic and invasive species, the topsoil from the full width of the construction [ROWright-of-way](#) is stripped and stored separately from other, less contaminated topsoil and subsoil. Where topsoil segregation is required, identify the topsoil layer as outlined in the FERC Plan. EIs will identify and mark these areas prior to grading activities.
- Reseed all disturbed areas promptly after final grading, weather and soil conditions permitting, and in consideration of written recommendations from the local soil conservation authorities. Prompt reseed ensures bare soil is not available for [the](#) recruitment of exotic or invasive species. Seeding is not required in active [agricultureagricultural](#) lands unless requested by the landowner.
- As described in the FERC Plan, apply mulch (consisting of weed-free straw or hay or other erosion-control materials) if final grading and installation of permanent erosion-control measures are not completed within 20 days after the trench is backfilled or seeding cannot be completed properly due to scheduling outside of recommended seeding dates.
- Do not move mowing and maintenance equipment from an area where invasive species have been encountered during [the](#) operation of the [Amendment](#) Project unless the equipment is cleaned prior to moving.

At [Amendment](#) Project mobilization, contractors shall thoroughly clean all construction equipment prior to initial arrival at contractor yards and staging areas. This includes all equipment traveling along [ROWs.rights-of-way](#). Equipment includes all earth-moving vehicles, mechanized felling equipment, spreaders, track hoes, timber mats, straps, and any other heavy equipment capable of carrying mud and debris. Cleaning of tracks, heavy equipment, tires, and blades is recommended. Cleaning shall remove excess soil and material. Upon arrival of equipment onsite, inspections are completed by the Contractor, and an EI [is](#) to verify equipment is free of soil and debris when it arrives onsite.

In addition to thorough cleaning prior to entering each spread, terrestrial equipment must be cleaned through the use of hand tools and/or pressurized air or water prior to entering areas lacking invasive species populations (Table 2). Information in Table 2 may be revised to include additional areas.

The EI will maintain a log documenting [the](#) inspection of all equipment. Visual markers with date and time noted will be used to identify cleaned and inspected equipment. General requirements for equipment cleaning while on [the Amendment](#) Project are summarized in Table 3.

Table 3	
Requirements of Equipment Cleaning	
Item	Terrestrial Equipment Cleaning
Approved Equipment	Hand tools, high-pressure air, or water.
Inspection	Completed by Contractor and EI
Frequency	Prior to entering a new Spread; and prior to entering areas lacking invasive species, identified in Table 2.

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Fire Prevention and Suppression Plan



MVP Southgate Amendment Project

Fire Prevention and Suppression Plan

~~November 2018~~

Revised February 2025

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1.0 INTRODUCTION

The objective of this Fire Prevention and Suppression Plan (“Fire Plan”) is to prevent a fire from occurring during and after the installation of the Mountain Valley Pipeline, LLC’s (“Mountain Valley”) MVP Southgate [Amendment](#) Project (“~~Project~~” or “~~Southgate~~[Amendment](#) Project”) facilities. It describes the hazardous fuel sources and ~~material~~[materials](#) that could initiate or contribute to the spread of a fire, as well as the communication plan and procedures to suppress the spread of fire.

~~The Southgate Project~~[Mountain Valley](#) recognizes the potential for fire from hot work operations and [has](#) developed a program to protect the public, employees, property, and the environment from fire resulting from hot work operations.

2.0 PURPOSE

The purpose of this Fire Plan is to identify best management practices for preventing fires and responding to inadvertent fires that occur during [the](#) construction of the [SouthgateAmendment](#) Project. The Fire Plan identifies responsibilities and procedures for suppressing fire ignitions, responding to and reporting fire emergencies, and working with emergency response agencies in the event of fire, regardless of cause. The Fire Plan is designed to be consistent with applicable federal and state/commonwealth laws, regulations, plans, and policies, including Chapter 14 of the 2003 International Fire Code (Combustible Dust-Producing Operations) and Section A104 of the International Wildland-Urban Interface Code (Ignition Source Control).

The Fire Plan provides an implementation strategy to ensure immediate and aggressive action to suppress inadvertent fires that occur during [the](#) construction of the [SouthgateAmendment](#) Project and establishes protocols and lines of communication for reporting fires that occur. Implementation of the Fire Plan will ensure that proper types and quantities of safety and fire extinguishing equipment are available in construction areas to suppress fires and that construction workers are adequately trained ~~for response to~~[respond](#) to fires. The [Fire](#) Plan will be used to familiarize [Amendment](#) Project personnel with basic fire emergency planning, response, and evacuation procedures, and their individual roles in fire prevention and suppression. Planning and training will help [Amendment](#) Project personnel respond effectively in the event of a fire, thereby avoiding or minimizing injuries and/or damage to property or the environment.

All employees and personnel have the authority and responsibility to stop work if conditions become unsafe or appear to be unsafe at any time.

3.0 TRAINING

Prior to the start of construction, ~~the Southgate Project~~[Mountain Valley](#) will conduct environmental and safety training for [the](#) Company and contractor personnel. The training program will focus on the Federal Energy Regulatory Commission’s *Upland Erosion Control, Revegetation, and Maintenance Plan* and *Wetland and Waterbody Construction and Mitigation Procedures*; other construction, restoration, and mitigation plans, including this Fire Plan; and applicable permit conditions. In addition, ~~the Project~~[Mountain Valley](#) will provide large-group training sessions before each work crew begins construction, with periodic follow-up training for groups of newly assigned personnel.

Training for fire suppression and response will include:

- the chain of command and fire reporting process;
- emergency contacts and numbers;
- basic fire prevention behavior controls;
- basic uses of hand tools, water backpacks, and other fire suppression equipment;
- fire suppression procedures and precautions; and
- emergency response and evacuation procedures.

Contractor Safe Work Rules will also provide a general overview of specific [Amendment](#) Project policies and procedures and ~~highlights of~~[highlight](#) relevant Occupational Safety and Health Administration (“OSHA”) standards for General Industry and Construction. This document does not include all of the standards or procedures that may be applicable to a job or task, nor is it inclusive of all of the information that may be necessary to be in compliance.

Fire prevention is extremely important ~~at the Southgate Project~~. Aside from natural gas, there are additional fire hazards posed by hydrocarbons, liquids, crude oil, and condensate. Also, there may be flammable compressed gases and ordinary combustibles depending on the work site and the jobs being performed. Contractors must comply with OSHA 29 CFR 1910.39, Fire Prevention and Suppression Plan, and 1926.151, Fire Prevention. Contractors must take appropriate steps and preventive measures to minimize the potential for a fire. These steps include, but are not limited to, the following:

- Only smoke in designated areas.
- Do not allow trash or flammable materials to accumulate.
- Identify and protect or eliminate potential sources of fuel, if possible.
- Recognize and eliminate potential ignition sources, including static electricity.
- Keep flammable liquids in approved, self-closing containers.
- Learn the location of firefighting equipment, emergency shutdowns, and alarms.
- Each piece of construction equipment will be equipped with a fire extinguisher. All inspectors and managers on-site will have fire extinguishers with their vehicles.

3.1 Coordination

~~The Southgate Project~~[Mountain Valley](#) and ~~their~~[its](#) contractors will be responsible for fire prevention during construction. ~~The Project~~[Mountain Valley](#), along with the appropriate emergency response or jurisdictional agencies, will be responsible for fire suppression and investigation. All [Amendment](#) Project personnel, including contractors, will be responsible for complying with applicable laws and regulations for fire prevention and suppression as well as the measures described in this Fire Plan.

3.1.1 Interagency Coordination

Interagency coordination of wildfire management in the southeastern United States is overseen by the Southern Area Multi-Agency Coordination Group (“SAMACG”), which includes representation from federal land managing agencies and state/commonwealth forestry agencies. The SAMACG and an adjunct organization, the Southern Area Coordination Center (“SACC”) ~~includes~~, [include](#) Virginia and North Carolina. Each of the states crossed by the [Southgate Amendment](#) Project ~~have~~[has](#) fire prevention and suppression laws, regulations, and programs. Responsible agencies include the Virginia Department of

Environmental Quality ([“VADEQ”](#)) and [the](#) North Carolina Department of Environmental Quality ([“NCDEQ”](#)). When a fire is initially reported, local and partner firefighting agencies initially respond to the emergency. A local agency can ask for support from the appropriate state/commonwealth or a regional coordination center if a fire could or does exceed the response capabilities of the local agency. The state/commonwealth or regional coordination center may, in turn, request support from the National Interagency Coordination Center (“NICC”) if a regional center exhausts its fire suppression resources. During a fire emergency, coordination is implemented through the Incident Command System (“ICS”), which is part of the National Incident Management System (“NIMS”). ICS is a standard incident management system used by firefighters and emergency medical teams to establish an organizational structure for management. A chain of command is initially established by the local response agencies to direct the response. As an incident progresses, personnel with higher authority and training assume responsibility for directing the response. ICS and NIMS provide a framework that assists agencies, non-governmental organizations, and the private sector in preventing, responding to, and mitigating the effects of incidents and ensuring an appropriate response based on the capabilities of response agencies.

3.2 Responsibilities

The construction contractors working on the [SouthgateAmendment](#) Project will be required to implement the provisions of this Fire Plan. Additionally, each contractor will be required to prepare and implement an individual fire control plan, which will identify responsibilities and describe actions to be implemented by the contractor in the event of an inadvertent fire. Copies of each fire control plan will be appended to this Fire Plan. The key persons responsible for fire prevention and suppression during [the](#) construction of the [SouthgateAmendment](#) Project are Chief Inspectors, Spread Superintendents (if applicable), Field Safety Officers (“FSOs”), Facility Superintendents, Environmental Inspectors (“EIs”), and Authorized Officers (“AOs”) (if applicable). Contact information for these persons will be appended to the “issued-for-construction” Fire Plan prior to the start of construction. At a minimum, each construction spread for the pipeline and each aboveground facility site will have one FSO trained in accordance with National Fire Protection Standards (“NFPS”) 1521, Chapter 4, Responsibilities for a Health and Safety Officer.

3.2.1 Chief Inspector

The Chief Inspector will be responsible for oversight of all activities along the pipeline spreads and above ground facilities, including fire prevention and suppression.

3.2.2 Spread Superintendents

Spread Superintendents (if applicable) will be responsible for general construction operations associated with their individual spreads, including compliance with this Fire Plan. Spread Superintendents will be in communication with Chief Inspectors, FSOs, EIs, AOs, and local emergency response, as necessary, to ensure that construction personnel are aware of fire hazards and prevention methods. Spread Superintendents will coordinate with federal, state/commonwealth, and local emergency responders during periods of high or severe fire conditions to ensure that appropriate preventive measures are in place during construction. Spread Superintendents also will be responsible for [the following](#):

- monitoring construction areas to identify fire hazards and risks;
- developing and implementing fire protection strategies;

- ensuring adequate firefighting equipment is deployed to high-risk areas ~~and~~, that equipment is visible and accessible; and
- ensuring that all firefighting equipment is inspected on a regular basis and maintained in good condition.

3.2.3 Field Safety Officers

The FSOs will be responsible for managing on-site fire suppression documentation, ensuring that fire suppression equipment is available and maintained, ensuring that construction personnel are trained to use equipment properly, and communicating fire hazards and threat levels to construction personnel. Additional responsibilities of the FSOs include:

- reporting all uncontrolled fires within or in the vicinity of the construction area, regardless of source, to the Spread Superintendent, emergency responders, and nearest fire dispatch;
- conducting weekly ~~inspection~~inspections of tools, equipment, personal protective equipment, and first aid kits;
- developing and maintaining a register of emergency equipment;
- conducting weekly inspections of flammable materials; posting “No Smoking” and “Designated Smoking Area” signs and fire rules at appropriate locations within the construction area;
- providing initial response support in the event of a fire and supervising fire suppression activities until relieved;
- providing and gaining approval of site-specific burn and smoke management plans for pre-planned controlled fires that will be implemented in accordance with federal, state/commonwealth, and local requirements;
- providing written burning and blasting schedules, as required, to the appropriate federal, state/commonwealth, and local fire control jurisdiction;
- monitoring construction areas where activities may present safety issues, such as blasting;
- complying with regulatory requirements in the storage and handling of flammable substances and maintaining a registry of flammable substances;
- establishing facilities for on-site chemical management and maintaining Safety Data Sheets (formally known as Material Safety Data Sheets) for flammable materials;
- establishing controls that minimize exposure to flammable materials;
- ensuring that flammable substances are removed from the construction area when not in use or when the location is unattended;
- training and instructing workers in the use, handling, and storage of flammable materials;
- ensuring that construction personnel have been trained in the requirements of this Fire Plan; and
- monitoring compliance with applicable federal, state/commonwealth, and local laws, ordinances, and regulations regarding fire prevention and suppression.

3.2.4 Facility Superintendents

Facility Superintendents (if applicable) at aboveground facility sites will have the same responsibilities as the Spread Superintendents as described above.

3.2.5 Environmental Inspectors

EIs provide environmental regulatory guidance and oversight. This oversight includes fire prevention and suppression within and in the vicinity of construction areas. EIs will be familiar with federal, state/commonwealth, and local rules and regulations pertaining to fire prevention and response. In the event of a fire emergency, EIs will assist with fire suppression.

3.2.6 Authorized Officers

AOs (if applicable) are agency representatives who supply information or provide direction regarding potential hazard conditions or changes in prevention methods. [AO's AOs](#) may include Interagency Dispatch Centers or staff from land managing agencies. [AO's AOs](#) will provide information on current fire danger ratings, the presence of other fires in the vicinity of construction areas, natural disaster warnings, and temporary restrictions on construction activities due to fire or other emergencies. If extreme fire danger is identified by a land managing agency, the AO may direct the Chief Inspector or Spread Superintendents to increase the level of fire monitoring, install additional fire prevention or suppression equipment, or stop work, if necessary. The Chief Inspector, Spread Superintendents, FSOs, EIs, AOs, and local fire authorities have the authority to stop or reduce construction activities or operations that pose a fire hazard until appropriate measures are implemented to minimize risk. The FSOs will accompany Spread Superintendents, AOs, or third-party compliance monitors on fire inspections and take corrective action when observing or having been notified that fire protection measures have not been properly installed or maintained.

4.0 EMERGENCY NOTIFICATION

In the event of a fire or other emergency, construction personnel on the scene will notify the appropriate Spread Superintendent and FSO immediately. The Spread Superintendent will be responsible for immediately notifying the appropriate fire dispatch center and AO or land [managingmanagement](#) agency, where appropriate. In the case of a serious injury, first aid treatment will be provided [onsite-on-site](#). The FSO or another supervisor will coordinate with local emergency responders if additional support is required. In the event of a fire emergency, personnel will contact 911 or the nearest emergency response center. Contact information for emergency responders will be appended to the “issued-for-construction” version of this Fire Plan. A fire emergency is defined as an incident requiring a coordinated response from one or more agencies. When a response is required, the Spread Superintendent or person in charge will communicate the location and extent of the fire and [the](#) steps underway to control or suppress the fire.

5.0 FIRE DANGER RATINGS

Fire danger ratings based on standard vegetation fuel models will be used by land managing agencies or local fire authorities to determine required fire prevention, control, and monitoring efforts. Based on the fire danger ratings, certain activities such as blasting, welding, or grinding may be restricted at the discretion of a land managing agency or local fire authority. Additionally, the land managing agency or local fire authority may modify or change requirements based on changes in fire restriction notices or localized hazards or risks.

Standard practice Industrial Fire Protection Levels are:

- Closed Season, when fire season requirements are in effect;
- Partial Shutdown, which prohibits activities except as indicated by the state/commonwealth; and
- General Shutdown, when all operations are prohibited.
- Fire danger ratings and associated precautions relevant to the [Southgate Amendment](#) Project include:
 - No Fire Restrictions – normal fire precautions.
 - Stage 1 Fire Restrictions – normal fire precautions, except that designated smoking areas and permits for burning are required.
 - Stage 2 Red Flag Warning – special fire precautions including:
 - Extra precautions such as designating a fire watch, using a spark shield, or wetting work areas down prior to active construction.
 - Machine treatment of slash, skidding, yarding, blasting, welding, metal cutting, and offloading are subject to land managing agency requirements.
 - No slash burning is allowed.
 - Power saws must be shut down from 1:00 p.m. to 8:00 p.m. local time.
 - Hauling trucking must stay on the right-of-way or surfaced roads after 6:00 p.m. local time.
 - Additional personnel, equipment, and prevention measures are required.
 - Stage 3 Fire Restrictions – special fire precautions including:
 - All restrictions listed above.
 - Shutdown of all construction activities except operations on soil or graded areas, watering, grading, trench excavation, padding, backfilling, and clean-up.
 - Activities such as blasting and welding require an exemption from the AO unless these activities are completed on the graded portions of the right-of-way.

State and local fire agencies may authorize their own restrictions within jurisdictions for private lands. Requirements identified in agency-issued fire restrictions will be followed at all times.

The FSOs will contact the appropriate state/commonwealth or local fire management office to obtain information on fire danger ratings. [Contacts Contact](#) will be daily when conditions are favorable for fires and weekly at other times. The FSOs will communicate the fire danger ratings to the Chief Inspector, Spread Superintendents, Facility Superintendents, EIs, and construction crews.

5.1 Fire Prevention

5.1.1 Blasting

Procedures for blasting are discussed in the [Project's](#) General Blasting Plan. Additional measures to be implemented in blasting areas are described below. When fire danger is high, a two-person fire watch will patrol the blast area for a period of one hour after the completion of blasting. If blasting occurs when the fire danger rating is Stage 1, an FSO will be on-site during the operation and remain on-site for one hour after the completion of blasting. At least one Size 0 or larger shovel and one water-filled backpack pump or fire extinguisher will be on site. In addition, a fire watch will be assigned to each crew utilizing blasting equipment. When the fire danger rating is Stage 2 or 3, blasting will be prohibited unless an exemption is granted by the local fire authority. If an exemption is granted, additional fire prevention equipment and personnel will be on-site prior to blasting. Equipment may include water trucks, fire tankers, shovels,

backpack pumps, bulldozers, etc. A fire watch will remain on site for at least two hours after the completion of blasting activities.

5.1.2 Welding

During fire season, welding, cutting, or drilling of metal components ~~of the Southgate Project~~ will require the approval of the Spread Superintendent and the Chief Inspector. In areas where approval has been granted, vegetation will be cleared at a minimum diameter of 30 feet around the center of the work area unless the area has been watered to eliminate the fire danger. Each welding crew will be outfitted with at least one Size 0 or larger shovel, one water-filled backpack pump, and one five-pound dry powder ABC fire extinguisher.

When the fire danger rating is Stage 1, a fire watch will be assigned to each crew utilizing cutting and welding equipment. The fire watch will remain on site for one hour after the completion of welding activities.

When the fire danger rating is Stage 2, an exemption by the AO will be required prior to welding activities unless the activities are performed within the graded portions of the right-of-way or other work areas. If an exemption is granted, all Stage 1 measures will be implemented. In addition, a water tanker and bulldozer will be required to be on-site during welding operations, and a fire watch will remain on site for at least two hours after the completion of welding activities.

When the fire danger rating is Stage 3, welding activities will require approval from the AO. If ~~an~~ approval is granted, all Stage 1 and 2 measures will be implemented. Fire restriction measures also apply to welding operations performed for equipment maintenance. All welding activities require a permit from the jurisdictional agency as per 29 CFR 1910 Subpart Q (welding) and 29 CFR 1910 Subpart I (personal protective equipment).

5.1.3 Equipment

The construction contractor will develop a list of equipment to be used during construction. Equipment used in the construction area may be inspected by the AO or other third-party compliance monitor prior to use on the [Southgate Amendment](#) Project. The equipment may be used only while in good operating order.

5.1.4 Fire Extinguishers

The FSAs will inspect fire extinguishers on a monthly basis to verify that:

- each extinguisher is in its designated place, clearly visible, and not blocked by equipment or other objects that could interfere with access to the fire extinguisher during an emergency;
- the nameplate with operating instructions is legible and ~~facing outwards~~[faces outward](#);
- the pressure gauge is showing that the extinguisher is fully charged;
- the pin and tamper seal are intact; and
- the extinguisher is in good condition, showing no signs of physical damage, corrosion or leakage.

The FSO performing the monthly inspection will initial and date each extinguisher inspection tag. Defective units will be taken out of service and replaced immediately. Fire extinguishers will be used in accordance with 29 CFR 1910.157. Use of fire extinguishers by construction personnel to suppress fires will only be undertaken if:

- the fire is small and is not spreading to other areas;
- escaping the area is possible;
- the fire extinguisher is in working condition, and the individual understands how to use it; and
- the fire extinguisher has been professionally inspected and tagged annually;

5.1.5 Spark Arrestors

Spark arresters used for portable equipment, such as chainsaws, will be in good working condition. Light trucks and cars with factory-installed or equivalent mufflers in good condition may be used on roads where the roadway is cleared of vegetation. Vehicles equipped with catalytic converters are potential fire hazards. These vehicles will be inspected and cleaned, as necessary, and parked ~~on~~ⁱⁿ areas cleared of vegetation. All vehicles operating in vegetation-covered areas will maintain clean and clear undercarriage and exhaust systems, with no chaff, grass, or brush lodged in the exhaust system and skid plates. Cross-country driving outside designated work areas will be prohibited.

5.1.6 Equipment Parking and Storage

Equipment parking areas and small stationary engine sites will be cleared of all extraneous flammable materials. Gas and oil storage areas will be cleared of extraneous flammable material and “No Smoking” signs will be posted within these areas. All used and discarded oil, oil filters, oily rags, or other waste will be disposed of in approved and marked containers. Containers will be stored in approved locations ~~and~~, removed from the site by licensed contractors or approved personnel, and disposed of or recycled at approved facilities. Glass containers will not be used to hold gasoline or other flammable materials.

5.1.7 Power Saws

All gasoline-powered saws will be provided with approved spark arresters/mufflers and maintained in good operating condition. Chainsaw operation will comply with the following:

- the arrester/muffler will contain a 0.023-inch mesh stainless steel screen;
- chainsaw operators will have a fire extinguisher or water backpack and shovel available;
- chainsaws will be moved at least 10 feet from the place of fueling before starting; and
- chainsaw fuel and oil will be carried in safety cans designed for that purpose.

5.1.8 Warning Devices

Highway flares or other devices with open flames will not be allowed in the construction area because of the danger ~~for~~^{of} fire. Contractors will only use electric or battery-operated warning devices within the construction area. Smoke detectors will be provided in all buildings constructed for the ~~Southgate~~^{Amendment} Project, as applicable.

These detectors will provide a distinctive and recognizable signal to ensure timely evacuation from the area of fire or to perform actions designated by this plan or by the FSO. The FSO will test smoke detectors to ensure their safe operation.

5.1.9 Warming and Cooking Fires

Warming and cooking fires will be prohibited on the right-of-way.

5.1.10 Smoking

Smoking is allowed only in areas designated by the FSO. Smoking signs visible to all personnel will be posted ~~at in~~ designated areas. The supervisory personnel will be responsible for enforcing smoking restrictions. “No Smoking” signs will be posted in all refueling areas and in areas where flammable materials are used, stored, or discarded.

5.1.11 Refueling

All fuel trucks will be equipped with a 35-pound minimum ABC fire extinguisher. If required, helicopter refueling trucks will be electrically grounded to the helicopter during refueling. Storage areas will be cleared of all extraneous flammable materials. All discarded oil, oil filters, oily rags, or other potentially flammable wastes will be disposed of or as described in Section 8.7 above. Only approved and properly maintained containers will be used to store or transport flammable liquids.

5.2 Burning

Prior to burning brush, ~~the Southgate Project~~ Mountain Valley will apply for and adhere to all local ordinances in addition to acquiring all applicable permits from the proper agencies. Notifications will be given to local fire departments about the locations and durations ~~that in which~~ burning activities will be taking place. All burning activities will be supervised by a qualified fire watch equipped with a fire extinguisher and other applicable suppression equipment and materials, such as sand or water. The fire watch will monitor all burning activities until all fire or smoldering debris is extinguished. All debris will be extinguished prior to leaving the work area each day. All brush that will be burned will be started using a propane torch only. There will not be any additives used to enhance the start of the fire or to maintain the fire.

5.3 Fire and Emergency Response Equipment

5.3.1 Construction Vehicles

All foreman vehicles and crew buses assigned to the construction area will be equipped with one 10-pound ABC fire extinguisher, one shovel, and an operable backpack water pump of four-gallon capacity. One water truck per construction spread during blasting “red flag warnings” and a fire danger rating of Stage 2 will be outfitted with a pressure pump, adjustable nozzle, threaded rubber-lined hose with a minimum of 300 feet of 1½-inch cotton jacket, and have a minimum water storage capacity of 1,500 gallons. Water trucks on the right-of-way will be able to help with wildfire fighting in the vicinity of the ~~Southgate~~Amendment Project. The construction companies use water trucks that typically have a 4,000-gallon capacity and 150 feet of 1½-inch water hose that would support fire suppression activities. Many of these vehicles have water cannons mounted on the roof. All vehicles and auxiliary equipment will be equipped with properly functioning and baffled exhaust systems.

5.3.2 Fire Fighting Tools

At least three 10-person tool caches will be maintained per spread. One cache will be placed in an ~~EL's~~ELs vehicle. The second cache will be located with the Spread Superintendent or Facility Superintendent. The third cache will be assigned to the FSO. ~~Tool-boxes~~ Toolboxes will be red ~~in color~~, sealed with metal box-car-type seals, and labeled “For Fire Fighting Only.” The tool caches will contain the following:

- electric headlamps with batteries;
- one first aid kit, 10-person unit;
- two knapsacks;
- five pulaskis with sheaths;
- five long-handled, round-point, Size 0 shovels; five fire rakes; and
- one-gallon canteens filled with water.

The Spread Superintendent will expedite delivery of the tool caches upon request of the FSO or AO or when alerted to an emergency requiring the tools. In case a tool cache or first aid kit has been used, it will be immediately replenished. All replenished tool caches or first aid boxes will be inspected by the FSO. These will then be resealed before being returned to the construction site.

6.0 EVACUATION

During an emergency evacuation, ~~the Southgate Project~~ Mountain Valley will depend upon response teams, consisting of trained personnel, to attend to injured and/or trapped victims. Construction workers providing medical attention will not help beyond their capability. ~~The Project~~ Mountain Valley will establish a site-specific emergency communications system utilizing cell phones, hand-held radios, and/or satellite phones to notify workers of emergencies and contact local law enforcement and fire departments. If an immediate evacuation of a construction work area is required, the Chief Inspector, Spread Supervisor, FSO, EI, or other supervisor will direct the evacuation via the nearest escape route to a “safe area.” Otherwise, evacuations will be directed by local emergency responders. Designated evacuation wardens will be assigned to each spread or station to account for all personnel present before, during, and after the evacuation. Construction workers will not return to an evacuated work area until emergency responders have deemed it safe and the Chief Inspector, Spread Supervisor, or Facility Superintendent has given an “all clear” signal.

General Blasting Plan



MVP Southgate Amendment Project

Docket No. CP19-14-000

General Blasting Plan

Revised November 2020

Revised July 2025

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1.0 INTRODUCTION

The ~~MVP-Mountain Valley~~ Southgate ~~Amendment~~ Project (“~~Amendment Project~~”) *General Blasting Plan* (~~“Plan”~~) outlines the procedures and safety measures that the ~~contractor~~ Contractor (s) will adhere to while implementing blasting activities during the construction of the ~~MVP-Southgate~~ ~~Amendment~~ Project. This Plan addresses blasting for the proposed pipeline route alignment ~~and associated Project facilities filed with the Federal Energy Regulatory Commission (FERC or commission).~~

~~Mountain Valley Pipeline, LLC (Mountain Valley) is seeking a certificate of public convenience and necessity (certificate) from FERC pursuant to section 7C of the Natural Gas Act to construct and operate the MVP-Southgate Project (Project). The~~ ~~The Amendment~~ Project will be located in Pittsylvania County, Virginia, and Rockingham ~~and Alamance Counties~~ County, North Carolina. ~~Mountain Valley proposes to construct approximately 73 miles of natural gas pipeline (known as the H 650 pipeline) to provide timely, cost-effective access to new natural gas supplies to meet the growing needs of natural gas users in the south eastern United States. The approximately 75-mile pipeline will be constructed of 24-inch diameter steel and welded pipe starting at milepost 0.00 and ending a milepost 31.0 at which point the pipeline diameter will be reduced to 16-inch diameter steel and welded pipe starting at milepost 31.0 and ending at milepost 73.11.~~

This plan includes a brief description of the pipeline alignment and overall physio geographic setting and bedrock geology in the vicinity of the ~~Amendment~~ Project. Information on shallow bedrock soils and bedrock outcroppings is taken from the ~~Amendment~~ Project’s Resource Report 6—~~Geological Resources~~. A map ~~that~~ depicts the location of the ~~Amendment~~ Project’s route is provided in Figure 1.2-1 ~~Project overview~~ ~~in~~ Resource Report 1—~~General Project Description~~.

Information for blast and rip characteristics of the bedrock may be elevated, at least in a general sense, and applied toward an appropriate bedrock excavating method. The hard and intact nature of the ~~un-~~ ~~weathered~~ ~~unweathered~~ bedrock may possibly be removed by ripping or mechanical means.

Other geologic features may control the effects of blasting, rock fabric, or the arrangement of minerals ~~determines, determine~~ intrinsic rock stressing, and thus influence rock excavation, ~~joint.~~ ~~Joint~~ spacing, bedding, and foliation also influence rock excavation.

2.0 PROJECT ALIGNMENT

The proposed FERC jurisdictional facilities described in this plan will consist of approximately 31.03 miles of 2430-inch diameter pipeline ~~and 42.1 miles of 16-inch diameter pipeline for a pipeline length of 73.1 miles; installing one new compressor station that consist of approximately 28,915 horsepower of compression;~~ aboveground sites for interconnections; ~~main line~~ ~~mainline~~ block valves; launchers and receivers; control systems; and other facilities, as further described in Resource Report 1—~~General Project Description~~.

The proposed pipeline, ~~compressor stations,~~ and interconnect facilities are summarized below:

Pipeline – ~~Facilities would include:~~ Installation of approximately 7331.3 miles of 24-inch and 1630-inch diameter pipeline with 1,440 pounds per square inch gauge (~~“psig”~~) maximum allowable operating pressure (~~“MAOP”~~), with portions of the pipeline paralleling existing buried natural gas pipelines. The

pipeline will be located in the Virginia County of Pittsylvania and the North Carolina ~~Counties~~County of Rockingham ~~and Alamance~~. The proposed pipeline will extend from the existing Mountain Valley Pipeline in Pittsylvania County, Virginia, to its terminal at the ~~T-21-Haw~~Dan River ~~Interconnect in Alamance County, North Carolina~~. ~~Interconnects #1 and #2~~.

- ~~• **Compression** – The project will consist of the construction of one new compressor station, totaling approximately 28,915 horsepower of new compression.~~
- **Interconnections** – The Amendment Project will have a total of four (4) interconnects at Lambert Interconnect in Pittsylvania County, Virginia; LN 3600 Interconnect in Rockingham County, North Carolina; ~~T-15~~-Dan River Interconnect #1 in Rockingham County, North Carolina; and ~~T-21~~HawDan River #2 Interconnect in ~~Alamance~~Rockingham County, North Carolina.

3.0 GEOLOGIC SETTING

The proposed Amendment Project route begins in Pittsylvania County, Virginia and proceeds in a southeasterly direction through one Virginia county into Rockingham County, North Carolina ~~County of Rockingham and at the Dan River, the route turns southeasterly through the remainder of Rockingham county into Alamance County, North Carolina to the T-21 Haw River interconnect~~. Along the proposed project route, the topography ranges from 470484 to 880728 feet above mean sea level (“amsl”) and crosses over several synclines and anticlines, as well as mineral resources that are discussed in detail by Resource Report 6 ~~Geological Resources~~.

3.1 Regional Physiographic Setting

The proposed Amendment Project is located within the Piedmont Uploads Section of the Piedmont Physiographic Province. The ~~project’s~~Amendment Project’s physiographic settings are discussed in detail ~~by~~in Resource Report 6, Section 6.2.1 and the Final Environmental Impact Statement issued by FERC on February 14, 2020.

3.2 Regional Geology

The Amendment Project will traverse the geology of numerous timeframes and rock types, as discussed in detail in Resource Report 6 – ~~Table 6-B-2 in Resource Report 6~~Geological Resources.

3.3 Active Faults

The Amendment Project alignment was evaluated for the presence of Quaternary-age faulting and the potential for ground movement and failure. The findings of the evaluation are discussed in detail in Resource Report 6 ~~Section 6.5~~.

3.4 Areas of Shallow Bedrock

The pipeline will be installed to allow a minimum cover of 36 inches in areas of shallow bedrock. Therefore, the proposed Amendment Project area was evaluated for areas where bedrock might be encountered above a depth of 8060 inches (Resource Report 6 – Appendix A ~~Figure 6-13~~).

Areas where shallow bedrock may be encountered are discussed in detail in Resource Report 6—[Section 6.2](#) and Resource Report 7—[Appendix 7-A](#).

Where ~~un-rippable~~[unrippable](#) subsurface rock is encountered, approved alternative methods of excavation will first be explored, including rock trenching machines, rock saws, hydraulic rams, jackhammers, blasting, etc. The alternative method to be used will be dependent on the proximity to structures, pipelines, wells, cables, water resources, etc., and the capabilities of the alternative excavation method. Should blasting for pipeline grade or trench excavation or site development be necessary, care will be taken to prevent damage to underground structures (e.g., cables, conduits, and pipelines) or to springs, water wells, or other water sources. Blasting mats or padding will be used as necessary to prevent the scattering of loose rock (fly-rock). All blasting will be conducted during daylight hours and will not begin until occupants of nearby buildings, stores, residences, places of business, and farms have been notified. Where competent bedrock occurs in the stream bed, blasting may be used to reduce bedrock so the trench can be excavated. Specific locations requiring blasting will be determined in the field based on the limitations of the mechanical excavation equipment.

3.5 Mineral Resources

Mineral resources, quarries, and other mineral extraction along and within the proposed route of the pipeline and its related facilities are discussed in detail in Resource Report 6—[Section 6.4](#).

No blasting is foreseen to occur within the limits of active mining areas or past mining areas, both surface and deep.

4.0 BLASTING SPECIFICATIONS

Blasting for pipeline facilities grade or trench excavation, ~~compressor station~~ and interconnect site development will be considered only after all other reasonable means of excavation have been evaluated and determined to be unlikely to achieve the required results. MVP [Mountain Valley](#) may specify locations (foreign line crossings, nearby structures, etc.) where consolidated rock will be removed by approved mechanical equipment, such as rock trenching machines, rock saws, hydraulic rams, or jackhammers, instead of blasting. Areas where blasting may be required will be surveyed for features such as karst terrain, structures, utilities, and wells. The ~~pre-construction~~[preconstruction](#) condition of human-occupied buildings will be documented. Occupied buildings and their condition within 250 feet of the construction workspaces will be documented as to their pre-blast condition, as set forth in [Appendix A—the Pre-Blast Survey](#), and their condition after blasting, as set forth in [Appendix E—the Post-Blast Survey](#).

[The](#) Contractor will provide verbal notification, followed by written documentation, to the buildings' occupant(s) of any blasting activity during both ~~pre-construction~~[preconstruction](#) and post-construction within 250 feet of a blast location.

~~The Project~~[Mountain Valley](#) will offer water supply testing to property owners who have wells, springs, surface water intakes, and/or livestock water sources located within 150 feet of a construction workspace, including locations where blasting may occur. Water supply testing will be offered ~~pre-construction~~[preconstruction](#) (baseline) and post-construction. Property owner contact and water supply testing procedures will be conducted in accordance with the [Amendment](#) Project Water [Supply Resources](#)

Identification and Testing Plan (~~21a-1; August, 2020~~). Wells within 150 feet of proposed Project work areas are tabulated in Resource Report 2—~~Water Use and Quality~~.

The Contractor will evaluate, on a timely basis, landowner complaints regarding damage resulting from blasting to wells, homes, or outbuildings. If the damage is substantiated, the Contractor will negotiate a settlement with the landowner that may include repair or replacement. MVP Mountain Valley will monitor these negotiations.

Before any blasting occurs, the Contractor will complete a project/site-specific blasting plan and provide it to MVP Mountain Valley for review. No blasting shall be done without prior approval of MVP Mountain Valley. In no event shall explosives be used where, in the opinion of MVP Mountain Valley, such use will endanger existing facilities and/or structures. The Contractor shall obtain MVP Mountain Valley approval and provide forty-eight (48) hours' notice prior to the use of any explosives. Contractor will provide at least a 2448-hour notice to occupants of nearby (within 250 feet of blasting area) buildings, stores, residences, businesses, farms, and other occupied areas prior to initiating blasting operations. These notices will be verbal, followed by written documentation of the 2448-hour notice.

4.1 Specifications

Blasting shall adhere to the following federal, state, county, township, local, and MVP Mountain Valley standards and regulations. These standards and regulations are to be considered as the minimum requirements. Should there be a conflict between jurisdictions, standards, and regulations, the most stringent jurisdictions, standards, and regulations shall be followed.

These blasting requirements for the MVP Amendment Project are as follows:

MVP

- Amendment Project, Resource Report 6—Geological Resources, Docket No. PF18-4CP25-XX-000.
- MVP Mountain Valley, Design and Construction Manual, Design Standard, Pipeline, 4.11 Blasting Proximate to Buried Pipelines.
- MVP Mountain Valley, Design and Construction Manual, Design Standard, Pipeline, 4.17 Blasting Activities During Construction.
- ATF P5400.7 – Federal Explosives Laws and Regulations
- 29 CFR 1926 Subpart U – Blasting and the Use of Explosives.
- 29 CFR Part 1910.109 – Explosives and Blasting Agents (Occupational Safety and Health Administration)
- 27 CFR 555 Subpart K, U.S. Bureau of Alcohol, Tobacco, and Firearms.
- 27 CFR Part 181 – Commerce in Explosives
- 30 CFR 816.68 Mine Safety and Health Administration (~~(“MSHA”).~~).
- 49 CFR Part 192 USDOT.
- 49 CFR Part 177 – Carriage by Public Highway
- 27 CFR Part 55.
- 30 CFR ‘715.19.

- 18th or later version of the International Society of Explosives Engineers (“ISEE”) – Blaster’s Handbook
- National Fire Protection Association 495.
- U.S. Bureau of Mines Report of Investigations 8507.
- Virginia 4 VAC25-130-816.11, 4 VAC25-130-816.64, 4 VAC25-110-210, and 3 VAC25-150-250.
- North Carolina Chapter 33 Explosives and Fireworks 2006 North Carolina State Fire Prevention Code (Fire Code).

Additionally, this plan is intended to address [the](#) environmental aspects of blasting activities and identify areas of concern along the proposed pipeline segments and related facilities.

5.0 PRE-BLAST INSPECTIONS

As required by Resource Report 6—[Geological Resources](#), [the](#) Contractor shall conduct pre-blast surveys, with landowner permission, to assess the conditions of structures within 250 feet and wells, springs, and utilities within 150 feet of the proposed construction [ROW-right-of-way](#). Should local or state ordinances require inspections more than 150 feet from the work, the local or state ordinances shall prevail. The survey will include, at a minimum:

- Informal discussions to familiarize the adjacent property owners with blasting effects and planned precautions to be taken on this project;
- Determination of the existence and location of site-specific structures, utilities, septic systems, and wells;
- Detailed examination, photographs, and/or video records of adjacent structures and utilities; and
- Detailed mapping and measurement of large cracks, crack patterns, and other evidence of structural distress.

The results will be summarized in a Pre-Blast Condition Report that will include photographs and be completed prior to the commencement of blasting. The pre-blast conditions will be documented with the information outlined by “Pre-Blast Survey, [MVPAmendment](#) Project.” This Pre-Blast Survey Form is considered the minimum information needed. [Appendix A presents the Pre Blast Survey Form](#). The completion of the Pre-Blast Survey Form is in addition to all other local, county, township, state, or federal reporting/survey data collection and reports.

6.0 MONITORING OF BLASTING ACTIVITIES

During blasting, [MVPMountain Valley](#) contractors will take precautions to minimize damage to adjacent areas and structures. Precautions include:

- Dissemination of blast warning signals in the area of blasting.
- Backfilling with subsoil (no topsoil to be used) ~~or~~, blasting mats, or other approved methods.
- Blast warning in congested areas, in shallow water bodies, or near structures that could be damaged by fly-rock.
- Use of matting or other suitable cover, as necessary, to prevent fly-rock from damaging adjacent protected natural resources.
- Posting warning signals, flags, and/or barricades.

- Following federal, state, local, and [MVP Mountain Valley](#) procedures and regulations for safe storage, handling, loading, firing, and disposal of explosive materials.
- Manning adjacent pipelines at valves for emergency response, as appropriate.
- Posting of portable signage, portable barricades, and visual survey of the blast area access ways to prevent unauthorized entrance into the blast zone by spectators and/or intruders.
- Maintain communications between all persons involved for [the](#) security of the blast zone during all blasting/firing.

Excessive vibration will be controlled by limiting the size of charges and by using charge delays, which stagger each charge in a series of explosions.

If the Contractor must blast near buildings, structures, or wells, a qualified independent Contractor will inspect structures within 250 feet or wells within 150 feet, or farther if required by local or state regulations, of the construction right-of-way prior to blasting and with landowner permission. Post-blast inspections by ~~company's~~ [the Company's](#) representative will also be performed, as warranted. All blasting will be performed by registered blasters and monitored by experienced blasting inspectors or [MVP Mountain Valley](#) designated representatives. Recording seismographs will be installed by the Contractor at selected monitoring stations under the observation of [MVP Mountain Valley](#) personnel. During construction, the Contractor will submit blast reports for each blast and keep detailed records as described in Section 7.10.

As appropriate, [the](#) effects of each discharge will be monitored at the outer limits of the construction right of way and closest adjacent facilities by seismographs.

If a charge greater than eight pounds per delay is used, the distance of monitoring will be in accordance with the U.S. Bureau of Mines Report of Investigations 8507.

To maximize its responsiveness to the concerns of affected landowners, [MVP Mountain Valley](#) will evaluate all complaints of well or structural damage associated with construction activities, including blasting. A toll-free landowner hotline will be established by [MVP Mountain Valley](#) for landowners to use in reporting complaints or concerns. In the unlikely event that blasting activities temporarily impair a water well, [MVP Mountain Valley](#) will provide alternative sources of water or otherwise compensate the owner. If well or structural damage is substantiated, [MVP Mountain Valley](#) will either compensate the owner for damages to the structure and well or arrange for a new well to be drilled.

6.1 Site-Specific Blasting Plans

For each area determined to require blasting, a site-specific Blasting Specification Plan will be created. The Contractor's Blasting Specification Plan shall include, at a minimum, the following information:

- Blaster's name, Company, copy of [the](#) license, and statement of qualifications; seismograph company, names, equipment and sensor location
- Site location (milepost and stationing), applicable alignment sheet numbers, and associated rock type and geological structure (solid, layered, or fractured)
- Copies of all required federal, state, and local permits
- Methods and materials including explosive type, product name, and size, weight per unit, and density; stemming material; tamping method; blasting sequence; use of non-electrical initiation

systems for all blasting operations; magazine type and locations and security for storage of explosives and detonating caps

- Site dimensions including explosive depth, distribution, and maximum charge and weight per delay; hole depth, diameter, pattern, and number of holes per delay
- Dates and hours of conducting blasting, distance, and orientation to nearest aboveground and underground structures; schedule identifying when blasting would occur within each waterbody greater than 10 feet wide or within any wetlands or designated sensitive waterways
- Blasting procedures for:
 - Storing, handling, transporting, loading, and firing explosives
 - Prevention of misfires, flying rock, fire prevention, noise, and stray current accidental detonation of Signs, flagmen, and warning signals prior to each blast
 - Those locations where the pipeline route:
 - Parallels or crosses an electrical transmission corridor, cable, or pipeline
 - Parallels or crosses a highway or road
 - Is within or adjacent to forested areas
 - Approaches within 150 feet of a water well or spring
 - Approaches within 1,000 feet of any residence, building, or occupied structure
 - Local notification
 - Pre-blast inspections
 - Inspections after each blast of Disposal of waste blasting material

7.0 BLASTING REQUIREMENTS

7.0 MVPBLASTING REQUIREMENTS

[Mountain Valley](#) has standard practices for blasting operations, as outlined by Sections 1.0 and 4.0 of this Blasting Plan. The potential for blasting along the pipeline to affect any wetland, municipal water supply, waste disposal site, well, septic system, spring, or ~~pipelines~~pipeline will be minimized by controlled blasting techniques and by using mechanical methods for rock excavation as much as possible. Controlled blasting techniques have been effectively employed by [MVPMountain Valley](#) and other companies to protect active gas pipelines within 15 feet of trench excavation. The following text presents details of procedures for powder blasting.

7.1 General Provisions

- The Contractor will provide all personnel, labor, and equipment to perform necessary blasting operations related to the work. The Contractor will provide a permitted blaster possessing all permits required by the local, county, township, and states in which blasting is required during construction, and having a working knowledge of state and local laws and regulations that pertain to explosives.
- [Amendment](#) Project blasting will be done in accordance with 27 CFR Part 55, 30 CFR 715.19, National Fire Protection Association 495 – Explosive Materials Code; the above-referenced Specification; and all other state and local laws, when required; and regulations applicable to obtaining, transporting, storing, handling, blast initiation, ground motion monitoring, and disposal of explosive materials and/or blasting agents.

- The Contractor shall be responsible for supplying explosives and blasting materials that are perchlorate-free to eliminate the potential for perchlorate contamination of groundwater. Further, the use of ammonium nitrate is prohibited. However, the use of emulsion-type explosives, including those having ammonium nitrate as a constituent, such as Dyna 1062 Bulk Emulsion, shall be permitted, as these types of explosives are considered [the](#) industry standard for area blasting related to large-scale earthwork construction. In addition, detonators containing small amounts of perchlorate, such as Dyno Nobel NONEL EZ Dets, are an industry standard and shall be permitted.
- The Contractor shall be responsible for securing and complying with all necessary permits required for the transportation, storage, and use of explosives. The Contractor shall be responsible for all damages or liabilities occurring on or off the right-of-way resulting from the use of explosives. When the use of explosives is necessary to perform the work, the Contractor shall use utmost care not to endanger life or adjacent property and shall comply with all applicable laws, rules, and regulations governing the storage, handling, and use of such explosives. [MVP Mountain Valley](#) will conduct a pre- and post-surficial leak survey along the centerline of each adjacent live pipeline to the planned blast area. The surficial leak survey will be conducted by [MVP's Mountain Valley's](#) employees and/or designated [representative representatives](#), with the surficial leak survey extending a minimum of 100 feet ([in](#) both directions) past the limits of the planned blast area.
- Blasting activities will strictly adhere to all [MVP Mountain Valley](#), local, state, and federal regulations and requirements applying to controlled blasting and blast vibration limits regarding structures, underground gas pipelines, and underground utilities. In addition to following state and federal blasting guidelines, [MVP Mountain Valley](#) will contact each governmental agency (if project is not undertaken within twelve months as of the date of this Blasting Plan) along the proposed route to determine local ordinances or guidelines for blasting (refer to Table 7.1.1).
- Special blasting controls will be required if blasting is needed for waterbody crossings. The type of explosive, size of charges, sequence of firing, etc., will be selected to minimize shock wave stresses on aquatic life adjacent to the blasting area. If dry crossings are needed, matting will be used to control fly rock. In addition, where specified, the Contractor will furnish the necessary labor and equipment to employ air bubble curtains to protect nearby aquatic life from blasting shock waves. Air bubble curtains could be specified for both wet and dry crossings, depending on the aquatic life present. For wet crossings the air bubble curtains would be placed upstream and downstream of the blasting area. For dry crossings, the air bubble curtains would be in the dammed-off areas on either side of the pipe ditch.

**TABLE 7.1.1 MVP PROJECT
CONTACTS AND RELATED PERMITTING PRIOR TO BLASTING**

JURISDICTION	CONTACT	AGENCY	PERMIT/REGULATION
Virginia	Marshal R. Moore 276.415.9700	DMME Virginia Department of Mines, Minerals, and Energy	Permit and Notification
Virginia	Region 3 Marion Office 276.783.4860	DGIF	Notification: 48-hour notice

**TABLE 7.1.1 MVP PROJECT
CONTACTS AND RELATED PERMITTING PRIOR TO BLASTING**

JURISDICTION	CONTACT	AGENCY	PERMIT/REGULATION
Virginia	Office: 804.371.0220 statefiremarshal@ vdfp.virginia.gov	Virginia Department of Game and Inland Fisheries SFMQ Virginia State Fire Marshal's Office	Permit and Notification: 24- hour notice
Virginia	Anita Bradburn Realty Specialist Management Branch Huntington District USACE 304.399.5890	US Army Corps of Engineers	Notification: Blasting within 0.25 mile of Weston and Gauley Bridge Turnpike Trail
Virginia	Joby Timm Forest Supervisor O: 540.265.5118 C: 540.339.2523 jtimmm@fs.fed.us	US Forest Service	Notification: Blasting within 0.25 mile of the Jefferson National Forest
North Carolina	Matthew Gantt Engineering Supervisor 336-776-9654 matt.gantt@ncdeq.gov	NC-DEQ	Permit and Notification Notice
North Carolina	Tonya Caddle Director Planning and Inspection 336-342-8137 tcaddieco.rockingham.nc.us	Rockingham CO, NC	Permit and Notification Notice
North Carolina	Robert L. Key Director Inspection 336-570-4060 Robert.key@alamance-nc.com	Alamance Co, NC	Permit and Notification Notice

Table 1			
Amendment Project Contacts and Related Permitting Prior to Blasting			
<u>Jurisdiction</u>	<u>Contact</u>	<u>Agency</u>	<u>Permit/Regulation</u>
<u>Virginia</u>	<u>Tarah Kesterson</u> <u>276.523.8146</u>	<u>Virginia Department</u> <u>of Mines, Minerals,</u> <u>and Energy</u>	<u>Permit and Notification</u>
<u>Virginia</u>	<u>Region 2</u> <u>Forest Office</u> <u>434.525.7522</u>	<u>DWR</u> <u>Virginia Department</u> <u>of Wildlife Resources</u>	<u>Notification: 48-hour</u> <u>notice</u>
<u>Virginia</u>	<u>Billy Hux</u> <u>State Fire Marshal</u> <u>540.270.6617</u> <u>Billy.hux@vdfp.virginia.gov</u>	<u>SFMO</u> <u>Virginia State Fire</u> <u>Marshal's Office</u>	<u>Permit and</u> <u>Notification: 24-hour</u> <u>notice</u>
<u>North Carolina</u>	<u>Raleigh Regional Office</u> <u>877.623.6748</u>	<u>NC DEQ</u>	<u>Permit and Notification</u> <u>Notice</u>
<u>North Carolina</u>	<u>Stacie Julian</u> <u>Central Permitting Administrator</u> <u>336.342.8130</u> <u>rcpermits@rockinghamcountync.gov</u>	<u>Rockingham County,</u> <u>NC</u>	<u>Permit and Notification</u> <u>Notice</u>

Drilling and blasting shall be performed with a Company Construction Inspector present. Approval is required to proceed prior to each blast. Approval does not relieve the Contractor from responsibility or full liability.

The Construction Contractor will be made aware of all applicable procedures and local requirements, and it will ultimately be the Contractor's responsibility to notify officials and receive appropriate blasting permits and authorization.

Typically, local regulations require copies of the blasting Contractor's Certificate of Insurance and License. In some jurisdictions, a Certificate of Bond will also be required, as well as a qualified person hired to oversee the blasting procedure. This qualified person is described in this document as [MVPMountain Valley's](#) designated representative or [MVPMountain Valley](#) representative.

The [MVPMountain Valley](#) designated representative shall have the opportunity to witness all rock excavations or other use of explosives. The Contractor shall conduct all blasting operations in a safe manner ~~which that~~ will not cause harm to the existing pipelines and structures in the vicinity. If the [MVPMountain Valley](#) representative determines that any project blasting operations have been conducted in an unsafe manner, the [MVPMountain Valley](#) representative will notify the Contractor of the unsafe activity. If any further unsafe actions occur on the part of the blasting firm, the [MVPMountain Valley](#) representative will request the Contractor terminate the Contract of the blasting firm and hire another blasting company.

Any failure to comply with the appropriate law and/or regulations is the sole liability of the Contractor. The Contractor and the Contractor's permitted blaster shall be responsible for the conduct of all blasting operations, which shall be subject to inspection requirements.

A Blasting Fact Sheet will be distributed to landowners where blasting is proposed, and affected landowners will be contacted prior to any blasting activities.

7.2 Storage Use at Sites

Explosives and related materials shall be stored in approved facilities required under the applicable provisions contained in 27 CFR Part 55, Commerce in Explosives. The handling of explosives may be performed by the person holding a permit to use explosives or by other employees under ~~his or her~~[their](#) direct supervision, provided that such employees are at least 21 years of age. While explosives are being handled or used, smoking shall not be permitted, and no one near the explosives shall possess matches, open light, or other fire or flame within 50 feet of the explosives, in accordance with OSHA requirements. Suitable devices or lighting safety fuses are exempt from this requirement. No person shall handle explosives while under the influence of intoxicating liquors or narcotics at any time during [the](#) construction of the [Amendment](#) Project.

Original containers or Class II magazines shall be used for taking detonators and other explosives from storage magazines to the blasting area. Partial reels of detonating cord do not need to be in closed containers unless transported over public highways. Containers of explosives shall not be opened in any magazine or within 50 feet of any magazine. In opening kegs or wooden cases, no sparking metal tools shall be used; wooden wedges and either wood, fiber, or rubber mallets shall be used. Non-sparking metallic slitters may be used for opening fiberboard cases.

No explosive materials shall be located or stored where they may be exposed to flame, excessive heat, sparks, or impact.

Explosives or blasting equipment that are obviously deteriorated or damaged shall not be used. Explosive materials shall be protected from unauthorized possession and shall not be abandoned.

No attempt shall be made to fight a fire if it is determined the fire cannot be contained or controlled before it reaches explosive materials. In such cases, all personnel shall be immediately evacuated to a safe location, and the area shall be guarded from entry by spectators or intruders.

No firearms shall be discharged into or near a vehicle containing explosive materials or into or near a location where explosive material is being handled, used, or stored.

[The](#) Contractor shall maintain a daily blast inventory record of all explosive materials transported (to and from [the](#) blast area), used, and returned to off-site storage when no storage is located on [the](#) blast site.

7.3 Pre-Blast Operations

The Contractor is required to submit a planned schedule of blasting operations to the [MVPMountain Valley](#) representative [for](#) approval prior to [the](#) commencement of any blasting or pre-blast operation, which indicates the maximum charge weight per delay, hole size, spacing, depth, and blast layout. If blasting is to be conducted adjacent to an existing pipeline, approval must be received from the pipeline's Engineering Department. The Contractor shall provide this schedule to the [MVPMountain Valley](#) representative at least five working days prior to any pre-blast operation for approval and use. Where residences or other structures are within 250 feet of the blasting operation, the [MVPMountain Valley](#) representative may require notification in excess of five days. The blasting schedule is to include the blast geometry, drill hole dimensions, type and size of charges, stemming, and delay patterns and should also include a location survey of any dwelling or structures that may be affected by the proposed operation. Face material shall be carefully examined before drilling to determine the possible presence of unfired explosive material.

Drilling shall not be started until all remaining butts of old holes are examined for unexploded charges, and if any are found, they shall be ~~re-fired~~refired before work proceeds. No person shall be allowed to deepen the drill holes that have contained explosives.

Drill holes shall be large enough to permit the free insertion of cartridges of explosive materials. Drill holes shall not be collared in bootlegs or in holes that have previously contained explosive materials. Holes shall not be drilled where there is a danger of intersecting another hole containing explosive material. Charge loading shall be spread throughout the depth of the drill hole or at the depths ~~or of~~ rock concentration in order to obtain the optimum breakage of rock.

Loading and firing shall be performed or supervised only by a person possessing an appropriate blasting permit and license. All drill holes shall be inspected and cleared of any obstruction before loading. No holes shall be loaded except those to be fired in the next round of blasting. After loading, all remaining explosives shall be immediately returned to an authorized magazine.

A maximum loading factor of 4.0 pounds of explosive per cubic yard of rock shall not be exceeded. However, should this loading fail to effectively break up the rock, a higher loading factor shall be allowed if the charge weight per delay is reduced by a proportional amount and approved by the MVP Mountain Valley representative. The minimum safe distance from the blasting area to a live buried pipeline is placed at 10 feet, measured horizontally from the edge of the blasting area to the outer edge of the affected pipeline. The site-by-site minimum safe distance between blasting areas and adjacent live natural gas pipelines will be calculated each time blasting is to occur using PIPEBLAST computer modeling program or other recognized industrial standards and applying the measured site conditions. The minimum safe distance and supporting calculations and site measurements are to be submitted for approval to MVP's Mountain Valley's representative at least 48 hours before blasting is to occur.

All blasts will be monitored (Seismograph Monitoring-Transverse, Vertical, Longitudinal, PPV, and Acoustic) to ensure the peak particle velocity does not exceed the following specified maximum velocities:

- Four (4) inches per second for underground, welded steel pipeline.
- Two (2) inches per second for underground, coupled, steel pipelines, aboveground and underground structures, or water wells.
- The Contractor shall provide seismographic equipment to measure the peak particle velocity ("PPV") of all blasts in the vertical, horizontal, and longitudinal directions.
- The Contractor shall measure the PPV at any adjacent pipelines, at any water wells, potable springs and at any aboveground structures within 150 feet of the blasting. The MVP Mountain Valley Engineering Department may approve higher peak particle velocities in writing, given site-specific conditions.
- For all aboveground facilities within 150 feet of the blasting, the Contractor shall provide additional seismograph equipment to determine the PPV at the aboveground facility. If the measured PPV at an existing pipeline or other structure exceeds the above limits, the Contractor shall stop blasting activities immediately and notify the Company Representative. The Blasting Plan must be modified to reduce the PPV prior to any further blasting.
- The frequency caused by the detonation of the explosive charge shall not drop below 25 hertz without the review and approval of the designated Company Representative.
- The minimum time delay between the detonations of charges shall be 8 milliseconds.

- Limits on PPV for surface structures are based on studies [which that](#) established the limits at which plaster in homes will crack. The primary purpose of the limit is to prevent damage to homes. The Company may increase the limit for other structures, such as steel transmission line towers, as appropriate.
- The designated [MVP Mountain Valley](#) representative may approve higher velocities for given site-specific conditions in advance.

The type of explosive and initiation system to be used is as follows:

7.3.1 Dyno Nobel Unimax TM (or equivalent)

An extra-gelatin dynamite with a specific gravity of 1.51 g/cc, a detonation rate of 17,400 f/s (unconfined), and a calculated energy of 1,055 c/g. The cartridge size will generally be 2" x 8" (1.25 lbs/cartridge) or 2" x 16" (2.50 lbs/cartridge).

7.3.2 Dyno Nobel Unigel TM (or equivalent)

A semi-gelatin dynamite with a specific gravity of 1.30 g/cc, a detonation rate of 14,200 f/s (unconfined), and a calculated energy of 955 c/g. The cartridge size will generally be 2" x 8" (1.15 lbs/cartridge) or 2" x 26" (2.30 lbs/cartridge).

7.3.3 Dyno Nobel Dynamax ProTM (or equivalent)

A propagation-resistant dynamite with a specific gravity of 1.45 g/cc, a detonation rate of 19,700 f/s (unconfined), and a calculated energy of 1,055 c/g. The cartridge size will generally be 2" x 8" (1.225 lbs/cartridge) or 2" x 16" (24.45 lbs/cartridge).

7.3.4 Dyno Nobel NONEL TM 17 or 25 Millisecond Delay Connectors or Dyno Nobel NONEL EZ Det TM (or equivalent)

A nonelectric delay detonator with a 25/350, 25/500, or 25/700-millisecond delay.

7.3.5 Dyno Nobel NONEL TM Nonelectric Shock Tube System Detonator (or equivalent)

The Shock Tube will be used to initiate all shots. The Shock Tube will be attached at one point only for [the](#) initiation of the entire shot and will not be used for downhole priming.

7.3.6 Dyno Nobel 1062 Bulk Emulsion (or equivalent)

An emulsion/gel product commonly used for area blasting, such as road alignments or large pads. It contains the following major components: ammonium nitrate (30 to 80% w/w, calcium nitrate, sodium nitrate, and No. 2 diesel fuel (1 to 8% w/w).

Each borehole shall be primed with NONEL EZ DefTM system. The total grains of the detonator system should be limited to prevent blowing stemming out of the drill hole. Boreholes shall be delayed with a minimum of 25 milliseconds ("ms"). Slightly longer delays may be used over steep hills with prior approval of the [MVP Mountain Valley](#) designated representative. Primers shall not be assembled closer than 50 feet (15.25 m) from any magazine. Primers shall be made up only when and as required for immediate needs.

Blasting shall not be permitted if any part of the live pipeline lies within the perimeter of the crater zone, regardless of [the](#) size of the blast/shot. Crater zone shall be defined as a circle created by turning a radius along the ground surface equal to the length of the depth below the surfaces where the shot is placed.

Tamping shall be done only with wood rods without exposed metal parts, but non-sparking metal connectors may be used for jointed poles. Plastic tamping poles may be used, provided the authority having jurisdiction has approved them. Violent tamping shall be avoided.

Recommended stemming material shall consist of clean crushed stone with d50 – 3/8 inch, which will not bridge over like dirt and will completely fill voids in the hole.

When [a](#) safety fuse is used, the burning rate shall be determined, and in no case shall fuse lengths less than 120 seconds be used. The blasting cap shall be securely attached to the safety fuse with a standard ring-type cap crimper.

Pneumatic loading of blasting agents in blast holes primed with electric blasting caps or other static-sensitive initiation systems shall comply with the following requirements:

- A positive grounding device shall be used for the equipment to prevent [the](#) accumulation of static electricity;
- A semi-conductive discharge hose shall be used, and a [MVP Mountain Valley](#) designated representative shall evaluate all systems to [assure ensure](#) they will adequately dissipate static charges under field conditions.
- No blasting caps or other detonators shall be inserted in the explosives without first making a hole in the cartridge for the cap with a wooden punch of proper size or standard cap crimper.
- After loading for a blast is completed, all excess blasting caps or electric blasting caps and other explosives shall immediately be removed from the area and returned to their separate storage magazines.

7.4 Protection of Aboveground and Underground Structures

The Contractor will exercise control to prevent damage to aboveground and underground structures, including buildings, pipelines, utilities, springs, and water wells. The Contractor will implement the following procedures:

- If blasting occurs within 150 feet of identified water well or potable springs, water flow performance and water quality testing will be conducted before blasting. If the water well or spring is damaged, the well or spring will be repaired or otherwise restored, or the well owner will be compensated for damages. The Company will provide an alternative potable water supply to the landowner at the Contractor's expense until repairs occur. Locations of known water wells or systems within 150 feet of the construction work area are indicated on the Company's construction alignment sheets or in other project-related documentation.
- If blasting occurs within 250 feet of any aboveground structures, the Contractor and the Company representative will inspect structures before and after blasting. In the unlikely event that damage occurs to the aboveground structure, the owner will be compensated by the Contractor.
- The Contractor shall be responsible for the ultimate resolution of all damage claims resulting from blasting. Such liability is not restricted by the 150-foot inspection requirement cited above.

- Blasting will not be allowed within 15 feet of an existing pipeline unless specifically authorized by the Company.
- Holes that have contained explosive material shall not be re-drilled. Holes shall not be drilled where danger exists of intersecting another hole containing explosive material.
- Blasting mats or padding shall be used on all shots where necessary to prevent the scattering of loose rock outside of the approved construction workspace areas and to prevent damage to nearby structures and overhead utilities.
- Blasting shall not begin until occupants of nearby buildings, residences, places of business, places of public gathering, and farmers/ranchers have been notified by the Contractor sufficiently in advance to protect personnel, property, and livestock. The Contractor shall notify all such parties at least 48 hours (2 normal working days M to F, non-holiday) prior to blasting. The Company shall work with ranchers to relocate livestock and other animals to safe areas away from the blast zone to prevent injury to the livestock or to prevent stampeding of the livestock as thea result of the blast.

The Contractor shall take sole liability for property damage, injury, or fatalities to people and livestock caused by blasting operations.

- Only authorized, qualified, and experienced personnel shall handle explosives.
- No explosive materials shall be located where they may be exposed to flame, excessive heat, sparks, or impact. Smoking, firearms, matches, open flames, and heat and spark-producing devices shall be prohibited in or near explosive magazines or while explosives are being handled, transported, or used.
- A code of blasting signals shall be established, posted in conspicuous places, and utilized during blasting operations. Contractor training, including those directly involved in the blasting operations and all other persons involved in the project (e.g., the Company and their authorized representatives and other Contractor personnel)), shall be conducted on the use and implementation of the code.
- The Contractor shall use every reasonable precaution including, but not limited to, visual and audible warning signals, warning signs, flag person, and barricades to ensure personnel safety.
- Warning signs, with lettering a minimum of four inches in height on a contrasting background, will be erected and maintained at all approaches to the blast area. Contractor personnel may need to be in place at these locations just prior to the blast through the “ALL CLEAR” if there is a high likelihood of people entering the blast area.
- Flaggers will be stationed on all roadways passing within 1,000 feet of the blast area to stop all traffic during blasting operations.
- All personnel not involved in the actual detonation shall stand back at least 1,000 feet, and workers involved in the actual detonation shall stand back at least 650 feet from the time the blast signal is given until the “ALL CLEAR” has been sounded.
- No loaded holes shall be left unattended or unprotected at any time, including overnight.
- No explosives or blasting agent shall be abandoned.
- In the case of a misfire, the blaster shall provide proper safeguards for personnel until the misfire has been re-blasted or safely removed.
- The exposed areas of the blast will be matted wherever practicable. In cases where such a procedure is not deemed to be feasible, the Contractor will submit an alternative procedure for review by the

Company, and the site in question must be visited and examined by the designated [MVP Mountain Valley](#) representative before any approval is granted.

- The Company may employ two-way radios for communication between vehicles and office facilities. The Contractor shall advise the Company and other pipeline contractors of any need to cease [the](#) use of such equipment during blasting activities.
- All loading and blasting activity shall cease, and personnel in and around the blast area will retreat to a position of safety during the approach and progress of an electrical storm, irrespective of the type of explosives or initiation system used. **THIS IS A MAJOR SAFETY PRECAUTION AND WILL ALWAYS BE OBSERVED.** All explosive materials, all electrical initiation systems, and all ~~non-electric~~[nonelectric](#) initiation systems are susceptible to premature initiation by lightning.
- Previous blast areas must be inspected to verify the absence of misfires. No drilling may commence until such inspection occurs. If a misfire occurs adjacent to a hole to be drilled, the misfire will be cleared by the blaster using whatever techniques are called for by the situation prior to [the](#) commencement of drilling. If a misfire occurs at some distance from the drilling area, drilling may be stopped while clearing preparations are underway. When the misfire is to be cleared by re-shooting, drilling will be shut down, and personnel [will be](#) evacuated to a place of safety prior to detonation.
- All transportation of explosives will be conducted in accordance with applicable federal, state, and local laws and regulations. Vehicles used to transport explosives shall be in proper working condition and equipped with tight wooden or non-sparking metal floor and sides. If explosives are carried in an open-bodied truck, they will be covered with a waterproof and flame-resistant tarpaulin. Wiring will be fully insulated to prevent short-circuiting, and at least two fire extinguishers will be carried. The truck will be plainly marked to identify its cargo so that the public may be adequately warned. Metal, flammable, or corrosive substances will not be transported in the same vehicle with explosives. There will be no smoking, and unauthorized or unnecessary personnel will not be allowed in the vehicle. Competent, qualified personnel will load and unload explosives into or from the vehicle.
- No sparking metal tools will be used to open kegs or wooden cases of explosives. Metallic slitters will be used to open fiberboard cases, provided the metallic slitter does not come in contact with the metallic fasteners of the case. There will be no smoking, no matches, no open lights, or other fire or flame (including welding) nearby while handling or using explosives. Explosives will not be placed where they are subject to flame, excessive heat, sparks, or impact. Partial cases or packages of explosives will be re-closed after use. No explosives will be carried in the pockets or clothing of personnel. The wires of an electric blasting cap shall not be tampered with in any way. Wires will not be uncoiled. The use of electric blasting caps will not be permitted during dust storms or near any other source of large charges of static electricity. Uncoiling of the wires or use of electric caps will not be permitted near radio-frequency transmitters. The firing circuit will be completely insulated from the ground or other conductors.
- No blast will be fired without a positive signal from the person in charge. This person will have made certain that all surplus explosives are in a safe place, all persons, vehicles, and/or boats are at a safe distance, and adequate warning has been given. Adequate warning of a blast will consist of, but is not limited to, the following:
 - Notification to nearby homeowners and local agencies, if necessary

- Stop vehicular and/or pedestrian traffic near the blast site
- Signal given by an air horn, whistle, or similar device using standard warning signals
- Only authorized and necessary personnel will be present where explosives are being handled or used.
- Condition of the hole will be checked with a wooden tamping pole prior to loading. Surplus explosives will not be stacked near working areas during loading. Detonating fans will be cut from spool before loading the balance of [the](#) charge into the hole. No explosives will be forced into a bore hole past an obstruction. Loading will be done by a blaster holding a valid license or by personnel under his direct supervision.
- A risk of accidental detonation caused by lightning strikes exists at any time the workplace is experiencing an electrical storm, and there are loaded holes on site. If this hazard is judged to exist by the Company representative, work shall discontinue at all operations, and workers will be moved to secure positions away from the loaded holes. Furthermore, workers shall not return to the work site until the storm has passed and the Company representative has indicated it is clear to return.
- The Company's Contractor shall have on-site and use approved lightning detectors capable of measuring the degree of electrical activity as a storm approaches and the distance to the storm front from the instrument on the ROW, such as:
 - SD-2508 manufactured by Electronics Division
 - S.D.I. International Model 350 manufactured by Thomas Instruments Inc.
 - Skyscan Lighting Detector manufactured by Skyscan Technologies
 - Or approved equivalent

7.5 Waterbody Crossing Blasting Procedures

Blasting should not be conducted within or near a stream channel without prior consultation and approval from the appropriate federal, state, and local authorities having jurisdiction to determine what protective measures must be taken to minimize damage to the environment and aquatic life of the stream. At a minimum, a five-work day notice must be provided to the appropriate federal, state, and/or local authorities. In addition to the blasting permits, a separate permit and approvals are required for blasting within the waters of the states of Virginia and North Carolina.

Rock drill or test excavation will occur within the limits of a flowing stream only after the streamflow has been redirected and maintained via dam and pump or flume crossing, as presented in Resource Report 2 – [Section 2.3.1.4 Waterbody Crossing Methods.](#) [Appendix 2A.](#) For those streams that have no flow at the time of rock drill or test excavation activities, the rock testing will be conducted in the streambed and the streambed disturbance created by the rock testing will be restored within the same day of disturbance.

Rock drill or test excavation and resulting blasting will only occur once the streamflow has been redirected and maintained via dam and pump or flume crossing method. For these crossings of flowing streams, work will commence immediately after the initial disturbance and continue until the stream crossing is completely installed and the streambed restored. Stream crossing methods and crossing mitigation measures are presented in Resource Report 2 – Section 2.3.

To facilitate planning for blasting activities for waterbody crossings, rock drilled, or test excavations may be used in waterbodies to test the ditch-line during mainline blasting operations to evaluate the presence of

rock in the trench-line. The excavation of the test pit or rock drilling is not included in the time window requirements for completing the crossing. For testing and any subsequent blasting operations, streamflow will be maintained through the site.

When blasting is required, the FERC timeframes for completing in-stream construction begin when the removal of blast rock from the waterbody is started. If, after removing the blast rock, additional blasting is required, a new timing window will be determined in consultation with the Environmental Inspector. If blasting impedes the flow of the waterbody, the Contractor can use a backhoe to restore the stream flow without triggering the timing window. The complete waterbody crossing procedures are included in [MVP's E&SCP Mountain Valley's Erosion Sediment Control Plan](#).

[MVP Mountain Valley](#) will immediately halt all construction activities if the loss of streamflow occurs after a blasting event. The construction contractor and [MVP's Mountain Valley's](#) Environmental Inspector will immediately evaluate the loss of water and develop a Contingency Plan to restore streamflow. This Contingency Plan will be provided to the local, state, and federal agencies having jurisdiction over the stream impacted for their review and approval. Congruent with the contractor's and [MVP's Mountain Valley's](#) Environmental Inspector's evaluation, temporary emergency contingency measures will be employed to halt the loss of streamflow. Immediately upon the agencies' approval of the Contingency Plan, the Contractor will implement the measures outlined in the agency-approved Contingency Plan.

The temporary emergency contingency measures and the agency-approved Contingency Plan measures will be implemented in accordance with Resource Report 2 – [Section 2.4.1](#).

~~–Section 2.4.1 Construction and Operation Impacts and Mitigation–~~

7.6 Karst Terrain Blasting Procedures

~~Karst Terrain Mitigation Plan has been developed for the Karst Terrain areas identified (Resource Report Appendix 6 Section 6.5.1 and Table 6.5.1). This Karst Terrain Mitigation Plan will be followed should any blasting be required for grade and trench excavation.~~

~~Blasting Mountain Valley evaluated karst topography areas and determined that there is negligible potential for karst hazards to be present within 0.25 mile of the Amendment Project pipeline. Mountain Valley's Karst Specialist ("KS") previously assessed areas of potential karst terrain and determined that no impacts on karst formations were anticipated during construction and operation.~~

~~In the event that areas of karst are identified during construction, blasting~~ in a Karst Terrain will only be considered after all other reasonable means of excavating have been evaluated and determined to be unlikely to achieve the required grade.

Blasting should not be conducted within or near a karst Area without ~~MVP's Karst Specialist (Mountain Valley's KS)~~ review and the Karst Blasting Plan obtaining approval from the appropriate federal, state, and local authorities having jurisdiction to determine protective measures that must be taken to minimize damage to the karst Terrain. At a minimum, the individual Karst Terrain Blasting Plan will be provided to the appropriate federal, state, and local authorities for review and approval five working days prior to conducting the blasting.

Blasting will be conducted in a manner that will not compromise the structural integrity of the karst hydrology of known karst structures. If rock is required to be blasted to achieve grade, then the following parameters will be adhered to:

- The excavation will be carefully inspected for any voids, openings or other tell-tale signs of solution activity by [MVP's Mountain Valley's KS](#).
- If the rock removal intercepts an open void, channel, or cave, the work in that area will be stopped until a remedial assessment can be carried out by [MVP's Mountain Valley's KS](#).
- All use of explosives will be limited to low-force charges that are designed to transfer the explosive force only to the rock ~~which~~[that](#) is designated for removal (e.g., maximum charge of 2 inches per second ground acceleration).

7.7 Wetland Crossing Blasting Procedures

~~Wetland Crossings Mitigation Plan has been developed for the wetland crossings identified (Resource Report 2—Section 2.4 Wetland Resources). This Wetland Crossings Mitigation Plan will be followed should any blasting be required for trench excavation.~~

Blasting for trench excavation crossing a wetland will only be considered after all other reasonable means of excavating have been evaluated and determined to be unlikely to achieve the required trench grade.

Blasting should not be conducted within or near a wetland without [MVP's Mountain Valley's](#) Environmental Inspector review and development of a Wetland Crossing Blasting Plan that includes protective measures to minimize damage to wetlands. At a minimum, the individual Wetland Crossing Blasting Plan will be provided to the appropriate federal, state, and local authorities for review and approval five working days prior to conducting the blasting.

Blasting will be conducted in a manner that will not compromise the structural integrity of the wetland hydrology of known wetlands. If rock is required to be blasted to achieve trench grade, then the following parameters will be adhered to:

- The excavation will be carefully inspected for any voids, openings, fractures, or other tell-tale signs of dewatering activity by [MVP's Mountain Valley's](#) Environmental Inspector.
- If the rock removal intercepts an open void, channel, or fracture, the work in that area will be stopped until a remedial assessment can be carried out by [MVP's Mountain Valley's](#) Environmental Inspector.
- All use of explosives will be limited to low-force charges that are designed to transfer the explosive force only to the rock ~~which~~[that](#) is designated for removal (e.g., maximum charge of 2 inches per second ground acceleration).

7.8 Rock Disposal Due to Blasting

During the course of blasting for grade and trench excavation, excess rock fragments that are deemed ~~as~~ unacceptable for trench backfill may be incurred. This excess rock may be used in the restoration of the disturbed right-of-way limits, with the rock buried within the reclamation limits of the right-of-way in the location from which it originated. With the acceptance, approval and signed individual landowner agreements for the placement of this excess rock, the rock placement will be to a depth that will help stabilize the right-of-way restoration and will be below the root zones of the cover vegetation.

Excess rock fragments not suitable for reburial at the point of origin will be considered construction debris and disposed of in accordance with the [MVP Mountain Valley Southgate Amendment](#) Project Upland Erosion Control, Revegetation, and Maintenance Plan ([MVP Mountain Valley Plan](#)) at Sections III.E and V.A.3, incorporated below for reference.

— [MVP Mountain Valley Plan](#) Section III.E (Disposal Planning) – Determine methods and locations for the regular collection, containment, and disposal of excess construction materials and debris (e.g., timber, slash, mats, garbage, drill cuttings, and fluids, excess rock) throughout the construction process. Disposal of materials for beneficial reuse must not result in adverse environmental impact and is subject to compliance with all applicable survey, landowner or land management agency approval, and permit requirements.

— [MVP Mountain Valley Plan](#) Section V.A.3 (Cleanup) – Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Rock that is not returned to the trench shall be considered construction debris, unless approved for use as mulch or ~~for~~ some other use on the construction work areas by the landowner or land managing agency.

If the excess rock is to be removed from the construction area, it is to be hauled to an approved local- and state-permitted disposal site. This disposal facility will need to demonstrate that it is permitted to accept and dispose of the excess rock from the blasting operations. [MVP Mountain Valley](#) will obtain a copy of the disposal facility's permit, as issued by the local jurisdiction having authority over the disposal facility and the disposal site within.

7.9 Disposal of Explosive Materials

All explosive materials that are obviously deteriorated or damaged shall not be used and shall be destroyed according to applicable local, state, and federal requirements.

Empty containers and packages and paper or fiberboard packing materials that have previously contained explosive materials shall not be reused for any purpose. Such packaging materials shall be destroyed by burning (outside of the construction right-of-way) at an approved outdoor location or by other approved ~~method~~[methods](#). All personnel shall remain at a safe distance from the disposal area.

All other explosive materials will be transported from the job site in approved magazines per local and/or state regulations.

7.10 Blasting Records

A record of each blast shall be made and submitted, along with seismograph reports, to [MVP's Mountain Valley's](#) designated representative. The record shall contain the following minimum data for each blast:

- Name of Company or Contractor;
- Location, date, and time of blast;
- Name, signature, and license number of Contractor and blaster in charge;
- Blast location referenced to the pipeline station/milepost;
- Picture record of the blast area disturbance and of [the](#) blasted trench;
- Type of material blasted;
- Number of holes, depth of burden and stemming, and spacing;

- Diameter and depth of holes;
- Volume of rock in shot;
- Types of explosives used, specific gravity, energy release, pounds of explosive per delay, and total pounds of explosive per shot;
- Delay type, interval, total number of delays and holes per delay;
- Maximum amount of explosives per delay period of 17 milliseconds or greater;
- Power factor;
- Method of firing and type of circuit;
- Direction and distance in feet to nearest structure and utility neither owned or leased by the person conducting the blasting;
- Weather conditions;
- Type and height or length of stemming;
- If mats or other protection were used; and
- Type of detonators used and delay periods used.

Within 48 hours following a blast, a Blast Report is to be provided to the [MVP's Mountain Valley's](#) designated representative. The Blast Report shall provide the information outlined by "Blast Report [MVP Amendment](#) Project." This Blast Report form is considered the minimum information needed. ~~Appendix B and C present the Blast Report forms.~~ In addition to the completed Blast Report, the blast design is to be attached and made part of the Blast Report. The Blast Report [MVP Amendment](#) Project is in addition to all other local, county, township, state, or federal reporting requirements. Copies of these Blast Reports are to be provided to the [MVP Mountain Valley](#) designated representative.

At the conclusion of each blasting event, the Blasting Contractor is to conduct and inventory blasting/explosive materials with a written inventory report attached to the Blast Report. All blasting/explosive materials are to be accounted for. Any discrepancies are to be immediately reported to the governing agencies and the [MVP's Mountain Valley's](#) designated representative.

The person taking the seismograph reading shall accurately indicate the exact location of the seismograph, if used, and shall also show the distance of the seismograph from the blast.

Seismograph records should include:

- Name of person and firm operating and analyzing the seismograph record;
- Seismograph serial number;
- Seismograph reading; and
- Maximum number of holes per delay period of 17 milliseconds or greater.

Within 72 hours following a blast, at sites monitored by a seismograph, a Seismograph Report is to be provided to the [MVP's Mountain Valley's](#) designated representative. ~~Appendix D presents the Seismograph Report Form for the MVP Project.~~ In addition to the completed Seismograph Report, the seismograph readings and written interpretations are to be attached to the report. This reporting is in addition to all other local, county, township, state, or federal reporting requirements. Copies of these Seismograph Reports are to be provided to the [MVP Mountain Valley](#) designated representative.

8.0 POST-BLASTING INSPECTION

An approved independent contractor, with landowner permission, will examine the condition of structures within 150 feet, or as required by state or local ordinances, of the construction area after completion of blasting operations to identify any changes in the conditions of these properties or confirm any damages noted by the landowner. The independent Contractor, with landowner approval, will conduct a resampling of wells within 150 feet, or as required by state or local ordinances, of the construction area. Should any damage or change occur during the blasting operations, an additional survey of the affected property may be made.

Upon receiving notice that a structure or other damages have possibly occurred due to the blasting operations, the blasting contractor is to conduct a post-blast conditions survey. The post-blast conditions survey shall be conducted within 48 hours after being notified or at the landowner's schedule and permission. The post-blast conditions will be documented with the information outlined ~~by in the~~ "Post-Blast Survey for the MVP [Amendment](#) Project." This post-blast form is considered the minimum information needed. ~~Appendix E presents the Post-Blast Survey form.~~

9.0 STORAGE REQUIREMENTS

All explosives, blasting agents, and initiation devices shall be stored in locked magazines that have been located, constructed, approved, and licensed in accordance with local, state, and federal regulations.

- The storage of explosives, blasting agents and initiation devices is not permitted on the ROW and will only be stored at approved staging areas or construction yards.
- Magazines shall be dry, well-ventilated, reasonably cool (painting of the exterior with a reflective color), bullet and fire-resistant, and kept clean.
- Initiation devices shall not be stored in the same box, container, or magazine with other explosives. Explosives, blasting agents, or initiation devices shall not be stored in wet or damp areas, near oil, gasoline, cleaning solvents, near sources of heat radiators, steam pipes, stoves, etc. No metal or metal tools shall be stored in the magazine. There shall be no smoking, matches, open lights, or other fire or flame inside or within 50 feet of storage magazines or explosive materials. The loading and unloading of explosive materials into or out of the magazine shall be done in a business-like manner with no loitering, horseplay, or prank-playing.
- Magazines shall be kept locked at all times unless explosives are being delivered or removed by authorized personnel. Admittance shall be restricted to the magazine keeper, blasting supervisor, or licensed blaster. Magazine construction shall meet the requirements of Bureau of Alcohol, Tobacco and Fire Arms P5400.7 "Explosives Law and Regulations" and be in accordance with local, state, or federal regulations and the ISEE Blaster's Handbook.
- Accurate and current records shall be kept of the explosive material inventory to ensure that [the](#) oldest stocks are utilized first, satisfy regulatory requirements, and for immediate notification of any loss or theft. Magazine records shall reflect the quantity of explosions removed, the amount returned, and the net quantity used at the blasting site. Copies of these records are to be supplied at the end of the project or ~~anytime at any time~~ requested by the Company throughout the project.
- When explosive materials are taken from the storage magazine, they shall be kept in the original containers until used. Small quantities of explosive materials may be placed in day boxes, powder chests, or detonator boxes. Any explosive material not used at the blast site shall be returned to the

storage magazine and replaced in the original container as soon as possible, but in any case, before the end of the workday.

- Magazine locations shall be in accordance with local, state, or federal regulations. Where no regulations apply, magazines shall be located in accordance with the latest edition of the 18th Anniversary Edition of the Blaster's Handbook and ATF P5400-7 Explosives Law and Regulations. Magazines shall be marked in minimum three-inch high letters with the words "DANGER – EXPLOSIVES" prominently displayed on all sides and roof.

Hill View Farm Protection Plan



MVP Southgate Amendment Project

~~Docket No. CP19-14-000~~

Hill View Farm (“HVF”) Protection Plan

~~Draft 4 June 2020~~

Revised February 2025

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1.0 INTRODUCTION

Mountain Valley Pipeline, LLC (Mountain Valley). The Southgate project will deliver gas to Dominion Energy of North Carolina at two interconnect points in North Carolina. Mountain Valley Pipeline, LLC, is a joint venture led by EQM Midstream Partners, LP, and NextEra US Gas Assets, LLC.

The MVP Southgate Project (Project) anticipates pipeline construction activities taking place on the Hill View Farm (“HVF”) located in Pittsylvania County, Virginia in the Spring 2021 (subject to regulatory approvals). The Hill View Farm. The HVF is currently certified by the Virginia Crop Improvement Association (“VCIA”) for specialty small-grain seed crops. As a result of these proposed activities and in order for Seed Certification to be maintained, certain mitigation measures are required to be implemented on portions of the HVF that will be impacted by the Project. Mountain Valley. Joyce Ford, agricultural consultant, has been was hired to assist Mountain Valley in developing and implementing the HVF Protection Plan. The Virginia Handbook of Seed Certification Standards (revised February 2010), as well as information from Mountain Valley, Mr. Robert Pollok, the landowner, and Tom Hardiman, the VCIA person in charge of their seed certification program, is used as the basis for identified mitigation measures.

2.0 HILL VIEW FARM INFORMATION

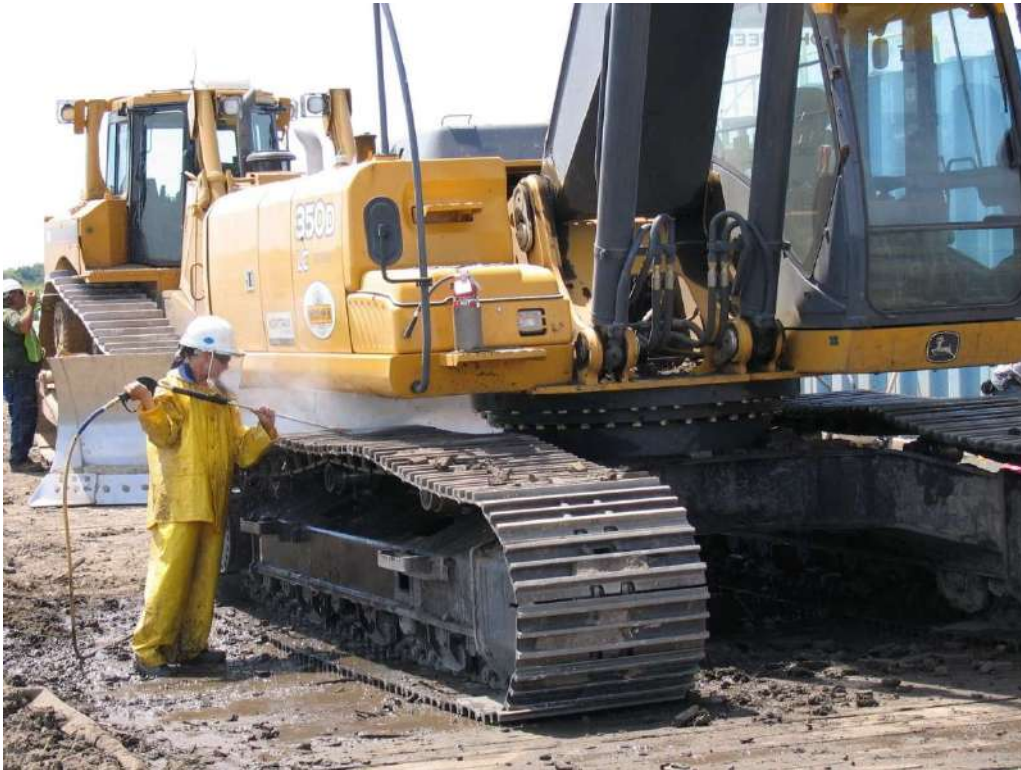
- (1) HVF is owned and operated by Mr. Robert Pollok. He utilizes portions of his own property and neighboring properties for farming purposes. Locations that comprise Hill View Farm HVF that are impacted by the Amendment Project:
 - VA-PI-099.000 & VA-PI-099.100 (Pollok) – milepost (“MP-14.9”) 15.3 (Whitmell School Rd. Crossing Road crossing) through MP 15.33 exiting property
 - VA-PI-100.000 (Rust) – Eastern Neighbor to Pollok/MP 14.9 15.3 – MP 15.33 79
 - VA-PI-115.000 (Johnson) – MP 16.59 (Silver Creek Rd. Crossing) through 17.45 exiting property
- (2) Mr. Pollok’s farm equipment is dedicated to use on his own farm. This insuresensures his own equipment does not import foreign soil-borne diseases and weed seeds.
- (3) Crop rotations have been corn-small grain-soybeans (small grain and soybeans may be grown in 4one year) or corn-soybeans. He also runs a beef cattle operation and harvests hay.
- (4) Mr. Pollok has concerns about losing his customers for his VCIA-Certifiedcertified varietal-specific barley and wheat seeds. He also has concerns about long-term effects or damage to soil fertility, which the farm has experienced in the past.

3.0 MITIGATION MEASURES

Signage at all construction right-of-way (“ROW”) boundaries will be put into place to alert all personnel that they are “entering Hill View Farm ROW”, and listing mitigation plan requirements.

- (1) *Equipment.* In order to prevent foreign soil-borne diseases and weed seeds from migrating onto the HVF, all equipment, vehicles, and hand tools will be cleaned prior to entering the HVF construction ROWright-of-way. Four wash stations, utilizing air or water, will be constructed (two per farming area) just outside the boundary of the construction ROWright-of-way associated with HVF so that any equipment or vehicles entering the construction ROWright-of-way from either direction can be cleaned. Timber mats will be used to move cleaned equipment and vehicles onto the HVF construction ROWright-of-way. Equipment and vehicles shall be inspected by the Environmental Inspector (“EI”) prior to moving onto HVF construction ROWright-of-way. A record of equipment, vehicle, and hand tool cleaning will be maintained by EIs. See the attached photos for reference to the level of cleanliness.
- (2) *Weed seed production prevention.* Mountain Valley, will, to the extent feasible, implement weed control methods consistent with the Amendment Project Exotic and Invasive Species Control Plan. Use of herbicides or other weed management measures may be used to prevent weed-seedsweeds in the topsoil windrow and other areas of the ROWright-of-way from going to seed. The specific types of weed problems expected and potential herbicides/management measures ~~is to~~will be discussed with Mr. Pollok prior to implementation.
- (3) *Soil handling.* This is an important mitigation measure for the prevention of future disease and weed seed problems and for the maintenance of soil fertility.
 - a. Silt fencing or other material will be used to mark the boundaries of the HVF ROWright-of-way (i.e., construction workspace).
 - b. Topsoil and subsoil layers that are removed during construction on the HVF ROWright-of-way will be stored separately and replaced in the proper sequence after laying the pipeline.
 - c. Unless otherwise specified in this document, Mountain Valley will not use this soil for other purposes.
 - d. No topsoil or subsoil ~~(other than incidental amounts associated with the movement of construction equipment)~~ may be removed from HVF.
 - e. HVF will not be used for storage of soil from adjacent lands.
 - f. After construction and subsoils and topsoils have been put back in place in the pipeline trench, a specific fertility mitigation plan identified by Mountain Valley and Mr. Pollok will be implemented and included as a section of this document. These include:
 - i. Pre-construction and post-construction compaction tests, the results of which will be made available to Mr. Pollok and Joyce Ford.
 - ii. ~~De-compaction~~Decompaction measures, such as subsoiling, may be employed to help mitigate compaction.
 - iii. Specific cover crops identified by Mr. Pollok may be planted. The choice depends on the time of year and Mr. Pollok’s crop rotation for the areas. Rye

- cannot be used as a cover crop. Isolation strips may be used to prevent mechanical mixtures.
- g. To the extent feasible, Mountain Valley will implement erosion control methods consistent with the Amendment Project ESC-Erosion and Sediment Control (“E&SC”) Plan. On land adjacent to HVF, Mountain Valley’s Best Management Practices (BMPs) best management practices will be designed so that sediment from adjacent lands will not be transported along the ROW-right-of-way and deposited on HVF ROW-right-of-way.
- (4) *Trench dewatering.* This is important to reduce the spread of soil-borne diseases and weed seeds. All trench dewatering operations on the HVF will be performed in accordance with Mountain Valley’s ECP-E&SC plan. During construction, Mountain Valley will leave an earthen plug in the trench at the boundary of HVF and adjacent lands to prevent any accumulating water in the trench from flowing from adjacent land to HVF land. Mountain Valley will not allow trench dewatering from adjacent land to be discharged or flow onto HVF.
- (5) *Bridge or alternative access to fields for farm equipment.* Mr. Pollok would like to access fields on both sides of the ROW-right-of-way with his farm equipment. Locations are to be identified by Mr. Pollok prior to construction starting in the affected areas. Plugs and timber mats will be used to bridge the construction ditch in locations as needed.
- (6) *Monitoring.* In addition to the responsibilities of the Environmental InspectorEI described in the Amendment Project ECPE&SC plan, the following monitoring procedures will apply to HVF:
- Joyce Ford Training will conduct a trainingbe conducted on the implementation of this HVF Protection Plan for Environmental InspectorsEIs.
 - An Environmental Inspector or Joyce FordEI will monitor construction and restoration activities on the HVF ROW-right-of-way to ensure compliance with the provisions of this Protection Plan. Daily reports will document compliance activities and identify activities that could potentially result in decertification.
 - Instances of non-compliance will be made immediately available to Joyce Ford, Mr. Pollok, the appropriate state and federal agencies, and the VCIA.





Horizontal Directional Drill Contingency Plan



MVP Southgate Amendment Project

Horizontal Directional Drill Contingency Plan

~~1~~ REVISED MARCH 2019

Revised February 2025

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APPENDICES

~~APPENDIX A — MATERIAL SAFETY DATA SHEETS~~

ACRONYMS

HDD	Horizontal Directional Drilling
Project or Southgate Project	MVP Southgate Project
IR	inadvertent return
CI	Chief Inspector
EI	Environmental Inspector
PC	Permit Coordinator
CM	Construction Project Manager

1.0 OVERVIEW

Horizontal Directional Drilling (“HDD”) is a trenchless excavation method that is accomplished in three phases. The first phase consists of drilling a small diameter pilot hole along a designed directional path. The second phase consists of enlarging the pilot hole to a diameter suitable for [the](#) installation of the pipe. The third phase consists of pulling the pipe into the enlarged hole. HDD is accomplished using a specialized horizontal drilling rig with ancillary tools and equipment. A properly executed HDD crossing will allow for the pipeline to be installed in a minimally invasive manner.

The HDD method is proposed for the MVP Southgate [Amendment](#) Project (“[Amendment](#) Project” ~~or “Southgate Project”~~) ~~crossings~~) [crossing](#) in [Virginia of the Sandy River in Pittsylvania County and North Carolina of the Dan River in Rockingham County and Stony Creek Reservoir in Alamance County](#). ~~The Project~~ [Mountain Valley](#) is still evaluating [the route crossing methods](#), and additional ~~HDD’s~~ [HDDs](#) may be proposed based on feedback from field surveys and stakeholders.

The inadvertent return (“IR”) of drilling lubricant is a potential concern when HDD methods are utilized. The HDD procedure for these crossings will utilize [drilling lubricants, such as bentonite](#) ~~for drilling lubricant or similar commonly used products~~. In general, IRs can occur because of existing rock fractures, low-density soils, or unconsolidated geology. There is a potential for ~~inadvertent returns~~ [IRs](#) to directly impact surface and ground waters via existing or enhanced fracture zones or if there is a release upland ~~which that~~ flows over [the](#) ground into wetlands or streams.

The purpose of this *HDD Contingency Plan* is to:

- Minimize the potential for an IR associated with horizontal directional drilling activities.
- Provide for the timely detection of an IR.
- Protect areas that are considered environmentally sensitive (streams, wetlands, other biological resources, cultural resources).
- Provide an organized, timely, and “minimum-impact” response in the event of an IR.

Provide that all appropriate notifications are made to the [Virginia Department of Environmental Quality \(“VADEQ”\)](#), North Carolina Department of Environmental Quality ([“NCDEQ”](#)), and other appropriate regulatory agencies and that documentation is completed.

- Provide an alternative crossing method if the HDD is deemed unsuccessful.

<u>Table 1</u>					
<u>Proposed HDD Locations</u>					
<u>Crossing Name</u>	<u>Pipeline Diameter (inches)</u>	<u>Approximate Entry Milepost</u>	<u>Approximate Exit Milepost</u>	<u>Total Length (feet)</u>	<u>Subsurface Material</u>
Sandy River	30	18.2	17.85	2,260	TBD*
Dan River	30	30.6	31.0	2,109	Fine-grained silty sand/ Sandstone/Limestone
* Information to be provided when available.					

Table 3.1-1 Proposed HDD Locations

Crossing Name	Pipeline Diameter (inches)	Approximate Entry Milepost	Approximate Exit Milepost	Total Length (feet)	Subsurface Material
Project Component Name					
Dan River	24	30.37	29.9	2,523	Fine-grained silty sand/ Sandstone/Limestone
Stony Creek Reservoir	16	63.75	63.44	1,619	Clay/Sandstone/Schist/Quartzite

2.0 PERSONNEL AND RESPONSIBILITIES

The actions in this HDD Plan are to be implemented by the following personnel:

Construction Project Manager – A Construction Project Manager (~~“CM”~~) has authority over all aspects of the fieldwork during construction. The Chief Inspector reports directly to the CM, and the CM has final approval over all field decisions for the ~~project.~~ Amendment Project.

Chief Inspector – ~~The Project~~ Mountain Valley will designate a Chief Inspector (“CI”) for the Amendment Project. The CI has overarching authority over all inspection activities occurring throughout the Amendment Project and works directly with the contractor.

Environmental Inspector – ~~The Project~~ Mountain Valley will designate a minimum of one Environmental Inspector (“EI”) to monitor HDD activities. The EI(s) will monitor the HDD alignment for IRs and other signs of environmental impact (such as sinkhole development or subsidence over the alignment). The EI is in the same peer group withas all other inspectors and reports directly to the CI. The EI has the authority to stop any activities ~~whichthat~~ are out of compliance with the Federal Energy Regulatory Commission (“FERC”) certificate (if applicable), other applicable permits, or landowner requirements. Additionally, the EI can order corrective action.

HDD Superintendent – The HDD contractor’s senior representative on-site is the HDD Superintendent. It is the HDD Superintendent’s responsibility to implement this HDD Plan on the contractor’s behalf. The HDD Superintendent must be familiar with all aspects of the drilling activities, the contents of this HDD Plan and the conditions of approval under which the activity is permitted. The HDD Superintendent will maintain a copy of this HDD Plan on all drill sites and distribute, as appropriate, to construction personnel. The HDD Superintendent ensures that workers are properly trained and familiar with the necessary response procedures to implement should there be an inadvertent release.

HDD Operator – The HDD Operator is employed by the HDD contractor to operate the drilling rig, driller, and fluid pumps. The HDD Operator is responsible for monitoring circulation through entry and exit locations as well as annular pressures during the drilling of the pilot hole. Should circulation loss or higher than expected annular pressures occur, the HDD Operator must communicate the relevant details of this event to the HDD Superintendent and HDD contractor field crews as well as the on-site Amendment Project inspection staff. The HDD Operator is responsible for stopping or changing the drilling program in the event of observed or anticipated ~~inadvertent returns~~ IRs.

HDD Contractor Personnel – During HDD installation, field crews and ~~the Project’s~~ Mountain Valley’s field representatives will be responsible ~~to monitor~~ for monitoring the HDD alignment. Field crews will coordinate with the EI and are responsible for timely notifications and responses to observed releases in accordance with this HDD Plan. The EI ultimately must sign off on corrective action plans mitigating releases.

Permit Coordinator – Company individual(s) that is accountable for all permit approvals and communication with respective agencies for the ~~project.~~ Amendment Project.

3.0 PRE-CONSTRUCTION ACTIVITIES

Prior to ~~the~~ implementation of the HDD, ~~the Southgate Project~~ Mountain Valley and the contractor will identify the potential for inadvertent releases at the HDD location. The review will include a visual review of entry and exit points and ~~the~~ entire HDD drill path. The contractor will review the ~~Amendment~~ Project's HDD Geotechnical Investigations Report, which may include descriptions of subsurface conditions, laboratory testing, design recommendations, and construction recommendations.

In addition, private water supplies within 150 feet, if identified, will be protected by implementing the following measures:

- The drilling contractor will review the site conditions prior to the start of work.
- Construction limits will be clearly marked.
- Barriers will be erected between the bore site and nearby sensitive resources prior to drilling as per the ~~Amendment~~ Project-specific Erosion and Sediment Control Plan.
- On-site briefings will be conducted for the workers to identify and locate sensitive resources at the site.
- Provide that all field personnel understand their responsibility for timely reporting of IRs.
- Maintaining necessary response equipment on-site and in good working order.

The primary areas of concern for IRs occur at the entrance and exit points, where the drilling equipment is generally at their shallowest depths. The likelihood of an IR decreases as the depth of the pipe increases.

To minimize the potential extent of impacts from an IR, HDD operations will be continuously monitored to look for observable IR conditions or lowered pressure readings on the drilling equipment. Early detection is essential to minimizing the area of potential impact.

No oil or gas wells were identified within 0.25 mile of the ~~Amendment~~ Project areas based on ~~a~~ review of Virginia and North Carolina databases (~~VDMME, 2018~~ NCDEQ 2024; U.S. Geological Survey ["USGS"] 2024b; Virginia Department of Mines, Minerals and ~~NCGS, 2016~~ ~~Energy~~ 2024).

3.1 Training

Prior to the start of construction, the Site Supervisor/Foreman will ensure that the crew members receive training on the following:

- The provisions of this Contingency Plan.
- Inspection procedures for IR prevention and containment equipment materials.

Contractor/crew obligation to immediately stop the drilling operation upon first evidence of the occurrence of an IR and to immediately report any IRs to the ~~Project's Environmental Inspector~~ EI and Environmental Coordinator.

- Contractor/crew member responsibilities in the event of an IR.
- Operation of release prevention and control equipment and the location of release control materials, as necessary and appropriate.
- Protocols for communication with agency representatives who might be on-site during the clean-up effort.

- Copies of this contingency plan and the contractor's site-specific contingency plan will always be maintained at the HDD entry and exit sites in a visible and accessible location.

3.2 Site Inspection

[The Project Mountain Valley](#) will inspect each drill path prior to construction. Any site-specific condition(s) that impedes the ability to conduct the visual and pedestrian field inspection of any portion of a drill path will be identified, and a site-specific modification to the proposed inspection routine will be developed for that location. [The Project Mountain Valley](#) will incorporate modifications into site-specific HDD crossing plans, as applicable, prior to construction and communicate these modifications to HDD contractors as part of the initial environmental training. If necessary, [the Project Mountain Valley](#) will also file updated HDD crossing plans within its implementation plan or ~~within~~ a variance request should modifications be required outside of certificated workspace areas.

Appropriate monitoring and reporting protocols include:

- If circulation is lost or [an](#) annular fluid pressure increase is observed that is not within the normal pressure variations, the HDD Operator will immediately notify the HDD Superintendent and field crews of the event and [the](#) approximate position of the tooling;
- Where it is possible to safely do so, field crew personnel will visually inspect the ground surface near [the](#) cutting head location;
- If an inadvertent release is observed, the following chain of command and associated procedures should be implemented:
 - Field crew will immediately notify the HDD Operator;
 - The HDD Operator will stop pumping drilling fluid and notify the HDD Superintendent, EI and CI;
 - The CI/EI notifies the CM and [PC Permit Coordinator](#), and they formulate a response;
 - The [PC Permit Coordinator](#) will notify the appropriate regulatory authorities (see Section 3.4) as necessary, relaying relevant details of the event, the proposed response, and required documentation within 24 hours;
 - The [PC Permit Coordinator](#) will immediately notify the applicable state agency, VADEQ, or NCDEQ (see Section 3.4) of any inadvertent drilling fluid returns within wetlands, waterbodies, or regulated wetland adjacent areas and;
 - The [PC Permit Coordinator](#) will prepare a report summarizing the incident, the response, and [the](#) outcome.

3.3 Landowner Notification Procedures

[The Project Mountain Valley](#) will notify landowners (via mail, phone, or direct contact) where HDD activities will occur a minimum of 48 hours prior to the commencement of drilling. In addition, [the Project Mountain Valley](#) will request written access permission for limited pedestrian surveys outside of the approved workspace areas to facilitate monitoring of the HDD activities and identification of and response to potential IRs. ~~Copies of these permissions will be included within the final HDD Contingency Plan.~~

3.4 Agency Notification Procedures

The [PC Permit Coordinator](#) will notify the appropriate regulatory authorities of the event as soon as possible and within 24 hours of identification of the release to coordinate site-specific response procedures.

~~2~~ ~~EQM Midstream Partners, LP Environmental Team:~~

MVP Southgate Amendment Project:

~~Mr. Cory Chalmers~~

~~Permit Coordinator 304-848-0061 (office)~~

~~304-627-8173 (cell)~~

Ms. Megan ~~Stahl~~

~~Environmental~~ [Neylon](#), Permitting – ~~Supervisor 412-553-7783 (office)~~ [Manager, 304-841-2086](#)

~~412-737-2587 (cell)~~

~~Ms. Hanna McCoy~~

~~Director – Environmental~~ [Mr. Cory Chalmers](#), Permitting ~~724-873-3476 (office)~~ [Specialist, 304-627-8173](#)

~~412-216-9316 (cell)~~

Include the following information:

- Time the spill was first identified
- Description of where the spill occurred – [Amendment](#) Project [MP Milepost](#)/Station
- Latitude and longitude of [the](#) spill
- Size of spill and control measures in place
- Name of affected water resource (if known/applicable)
- Photographs of spill area and corrective measures – when available (Do not wait to notify [the Project Mountain Valley](#) until pictures are available. Photo documentation should begin immediately upon detection and ~~continued~~[continue](#) throughout the duration of the ~~cleanup~~[clean-up](#)).

Regulatory authorities that will be contacted [by the environmental team](#) in the event of a release include the following:

(1) *FERC (all releases)*

First Call: ~~Amanda Mardiney–Terry Turpin, 202-502-8081~~[8700](#)

Alternate if [there is](#) no response from [the](#) first call: FERC Enforcement Hotline, 888-889-8030

(2) *Virginia Department of Environmental Quality (for releases in Virginia)*

~~First Call: Mr. Michael Johnson–757-247-2255~~

[First Call: L. Allen Linkenhoker \(Pollution Response Coordinator Sr., PREP\), 540-613-0819](#)

Alternate if [there is](#) no response from [the](#) first call: VADEQ Spill Hotline—~~1~~, 800-468-8892

(3) *North Carolina Department of Environmental Quality ([for releases in North Carolina](#))*

First Call: ~~Ms. Susan Homewood—336-776-9693~~[Richard Rogers, 919-707-9014](#)

Alternate if [there is](#) no response from first call: NCDEQ Spill Hotline—~~1~~, 800-858-0368

4.0 DOCUMENTATION

A copy of this HDD Contingency Plan will be provided within the environmental compliance binders that are developed for construction, and copies will also be kept at each HDD location as well as at the contractor field offices. Additional documentation that will be maintained by [the Project Mountain Valley](#) for each HDD location and includes, but is not limited to, the following:

- Records of employee training detailing when training was conducted, material covered, and employees in attendance. This training may coincide with the overall environmental training for the [Amendment](#) Project;
- Logs of HDD visual and pedestrian monitoring events – these may coincide with the daily environmental inspection reports;
- Drilling fluid composition – the contractor will maintain a log of drilling fluid physical properties such as mud weight, viscosity, sand content, and pH during drilling activities; and
- Records of communication with landowners and applicable regulatory agencies that occur during HDD activities. These records may include inquiries and comments as well as [Project Mountain Valley](#) response actions.

5.0 DRILLING FLUID MANAGEMENT

During the HDD process, drilling fluid ~~consisting of bentonite clay and water~~ is maintained in drilling pits within the construction work area and used for continuous pumping into the boring. Drilling fluid is [typically](#) a slurry composed of water and bentonite clay, usually approximately 95 percent fresh water, intended to maintain the stability of the drilling hole, lubricate the drilling head, and reduce soil friction. Bentonite clay (sodium montmorillonite) is ~~a~~ naturally occurring and extremely hydrophilic; it can absorb up to ten times its weight in water.

The HDD Contractor strives to maintain the integrity of the fluid by continuously sampling, testing, and recording its properties throughout drilling operations. Analysis of samples allows for adjustments to be made to the slurry which helps maintain the most efficient drilling fluid flow adaptable to various geological conditions.

Bentonite is not hazardous nor is it toxic to aquatic ecosystems. The formulation of drilling fluids and ~~its~~[their](#) engineering properties are specified and tested to ensure their suitability for the given subsurface conditions encountered along the alignment and at each individual HDD location. [If alternative types of drilling fluids are needed, Mountain Valley will use only non-hazardous and non-petrochemical-based products that are also on the NSF60 list.](#)

The slurry is designed to:

- Stabilize the hole against collapse;
- Lubricate, cool, and clean the cutters;
- Transport cuttings by suspension and flow to entry and exit points; and
- Reduce soil friction and required pull loads during pilot hole, reaming, and carrier pipe installation.

5.1 Drilling Fluid Additives

Small amounts of additives (typically less than one percent) may be mixed with the drilling fluids to improve drilling performance or in response to excessive fluid loss. If any additives are necessary, the ~~Project's goal is to~~ Mountain Valley will utilize only water-soluble and non-hazardous substances. The following is a narrative of the drilling fluids, materials, and additives that may be incorporated into a unique drill, depending upon subsurface and other conditions.

Anticipated or Typical Drilling Mud Ingredientse

- (1) Water – This is the largest component. It may be used in its natural state, or salts may be added to change filtrate reactivity with the formation.
- (2) Weighting Agents – These are added to control down-hole fluid pressure. Sodium barite is [the](#) most common agent.
- (3) Clay – Most commonly, bentonite is used to provide viscosity and create a filter cake on the borehole wall to control fluid loss. Clay can be replaced by organic colloids such as biopolymers, cellulose polymers, or starch.
- (4) Polymers – These are used to reduce filtration, stabilize clays, flocculate drilled solids, and increase cuttings-carrying capacity. Cellulosic, polyacrylic, and natural gum polymers are used to help maintain hole stability and minimize dispersion of the drill cuttings.
- (5) Thinners – These are added to the mud to reduce its resistance to flow. They are typically plant tannins, polyphosphates, lignitic materials, [and](#) lignosulfonates.
- (6) Surfactants – These agents serve as emulsifiers, foamers and defoamers, wetting agents, detergents, lubricators, and corrosion inhibitors.
- (7) Inorganic chemicals – A variety of inorganic chemicals are added to mud to carry out various functions. Typical chemicals: calcium hydroxide, sodium hydroxide, and potassium hydroxide (caustic soda and caustic potash) are used to increase mud pH; sodium carbonate (soda ash) to remove hardness, sodium chloride for inhibition and sodium chloride to increase salinity and density.
- (8) Bridging Materials – Calcium carbonate or cellulose fibers are added to build up a filler cake on the borehole wall and help reduce filtrate loss.
- (9) Lost Circulation Materials – These are used to block large openings in the borehole. These include walnut shells, mica ~~and xanthum, xanthan,~~ [and xanthan,](#) and cellulose.

There are several manufacturers that focus on products specifically for deep well drilling and/or shallow HDDs as they are similar processes. HDD contractors typically have preferred manufacturers that they use

depending upon the specifics of each drill location. ~~Technical data sheets for the more typical benign and environmentally friendly products that are approved for use by the Project are included in Appendix A.~~ Manufacture substitutions for like-in-kind products are acceptable; however, proprietary blends will be avoided, and no materials will be allowed on-site without current Material Safety Data Sheets being approved in advance. Specific Material Safety Data Sheets for products selected by the HDD contractor(s) must be submitted to ~~the Project~~ Mountain Valley and ~~or, if requested, to~~ FERC for approval prior to use.

5.2 Drilling Fluid Physical Properties

The contractor shall submit a daily log at the end of each day. ~~The Project~~ Mountain Valley shall provide the current version of the requested form, which shall include, at a minimum, the total length of drill or ream, average penetration rate, average mud flow rate, annular pressure, and basic mud properties (i.e., pH, funnel viscosity, density, and sand content). Mud samples and drill statistics shall be recorded a minimum of three (3) times per shift with no less than two (2) hours between each record. If a Mud Engineer is on site, the daily log shall also include rheometer readings to determine plastic viscosity and yield point as well as gel strength. The Mud Engineer shall also supply filter press data in the form of API fluid loss and filter cake thickness. These measurements do not need to meet the three (3) times per shift quota.

5.3 Drilling Fluid Disposal

Disposal of excess drilling fluid will be the responsibility of the selected HDD contractor. Prior to beginning HDD operations, the contractor will be required to submit their proposed drilling fluid disposal procedures to ~~the Project~~ Mountain Valley for approval. In some instances, a list of approved disposal sites will be provided to the contractor. ~~The Project~~ Mountain Valley will review these procedures and verify that they comply with all environmental regulations, right-of-way and workspace agreements, and permit requirements.

Should, after the removal of cutting, bentonite slurry ~~remains remain~~, it may be ~~re-used~~ reused (recycled) in the active HDD process. The method of disposal applied to each crossing will be dependent upon applicable regulations. Potential disposal methods include transportation to a remote disposal site and land farming on the construction right-of-way or ~~an~~-adjacent property. Land farming involves distributing the excess drilling fluid evenly over an open area and mechanically incorporating it into the soil. Where land farming is employed, the condition of the land farming site will be governed by ~~the Project's~~ Mountain Valley's standard clean-up and site restoration specifications and FERC's *Upland Erosion Control, Revegetation and Maintenance Plan*.

6.0 HDD OPERATIONAL CONDITIONS AND RESPONSE ACTIONS

6.1 Drilling Procedures

Drilling pressures will be closely monitored so they do not exceed those needed to penetrate the formation. Pressure levels will be monitored continuously by the ~~operator~~ HDD Operator. Pressure levels will be set at a minimum level to reduce the risk of IRs. Cutters and reamers will be pulled back into previously drilled sections after each joint of pipe is added. ~~The Project's~~ Mountain Valley's HDD contractor will provide and maintain the following during the drilling process: instrumentation, which will accurately measure the

torsional loads and the drilling fluid discharge rate and pressure. ~~In, in~~ addition to mud pump pressure monitoring.

Additionally, ~~the Project's~~ Mountain Valley's HDD contractor will provide a means of measuring and monitoring annular pressure during pilot hole operations. Annular pressure monitoring will be required during reaming as well, depending on whether pressure-sensitive situations were discovered during the pilot process. ~~The Project~~ Mountain Valley will have access to instruments and their readings at all times.

Entry and exit pits will be enclosed by sediment barriers as specified in the [Amendment](#) Project-specific Erosion and Sediment Control Plan and straw bales. A spill kit will be on-site and used if an IR occurs. Except as noted below, a vacuum truck will be readily available on-site prior to and during all drilling operations. Per the [Amendment](#) Project's Spill Prevention, Control, and Countermeasure plan, containment materials (straw, fabric filter fence, ~~sand bags~~ sandbags, spill kits, boom ~~and~~, turbidity curtain, etc.) will be staged on-site at a location where they are readily available and easily mobilized for immediate use in the event of an IR. Filter ~~Fence~~ fence or ~~Filter Sock~~ filter sock will be installed between the bore sites and the edge of water sources prior to drilling.

The Site Supervisor ~~and EI~~ will verify that:

- All equipment and vehicles are inspected and maintained daily to prevent leaks of hazardous materials.
- Spill kits and spill containment materials are available on-site at all times, and ~~that~~ the equipment is in good working order.
- Equipment required to contain and clean up an IR is available at the bore sites during drilling activities.

NOTE: It is the drilling contractor's responsibility to provide any IR containment materials that are necessary to respond to the release of drill fluids. The materials listed in this contingency plan are not to be considered inclusive and may require additional equipment depending on site conditions.

If the site of the IR is not able to be accessed by a vacuum truck, a pump with sufficient power to convey the released drill fluid to a containment area will be used instead. Along with the pump, an adequate amount of hose, several filter bags, straw bales, ~~sand bag~~ sandbags, and ~~an 18" Fabric Filter Fence~~ inch fabric filter fence (or ~~Compost Filter Sock~~ compost filter sock) will be kept on-site to create a containment area on site. Water containing mud, silt, drilling fluid, or other materials from equipment washing or other activities will not be allowed to enter a lake, flowing stream, or any other water source.

6.2 Monitoring and Pedestrian Surveys

6.2.1 Drilling Fluid Monitoring Protocol

The drilling fluid monitoring protocol to be applied will vary depending ~~upon~~ the following operational conditions.

- Condition 1: Full Circulation
- Condition 2: Loss of Circulation
- Condition 3: ~~Inadvertent Returns~~ IRs

6.2.1.1 Monitoring Protocol for Condition 1 – Full Circulation

When HDD operations are in progress and full drilling fluid circulation is being maintained at one or both of the HDD endpoints, the following monitoring protocol will be implemented.

- Utilization of an annular pressure monitoring tool during pilot hole operations
- The presence of drilling fluid returns at one or both of the HDD endpoints will be periodically documented.
- Land-based portions of the drilled alignment will be regularly walked, visually inspected, and documented by the HDD contractor and ~~environmental inspector~~EI to achieve early detection of inadvertent releases of drilling fluid as well as surface heaving and settlement. This will occur throughout the daytime and will continue to occur whenever ~~night time~~nighttime operations are being undertaken. Waterways will be visually inspected from the banks for a visible drilling fluid plume.
- Constant communication between experienced driller and mud system operator to assist in the observation of fluid loss.
- Proper mud pumping volume and pressures are to be managed for the ground conditions encountered.
- Swabbing of the borehole to assist in cuttings removal and maintaining circulation when drilling conditions allow.
- Proper mud properties are to be maintained for the conditions encountered. A drilling fluid specialist may be consulted if any changes to mud properties are required.
 - Mud properties that will be monitored include mud weight, viscosity, sand content, and pH.
 - The monitoring of mud properties will occur every 3 hours during drilling operations.
 - A drilling fluid specialist will be consulted if the following scenarios are encountered:
 - if there is a fluid spike in the annular pressure tool during pilot hole drilling;
 - if cuttings are not being removed from the hole during pilot hole drilling and/or reaming;
 - if there is a total loss of drilling fluid circulation; or
 - if high torque or pullback forces are encountered during any of the drilling phases.
- Electronic monitoring of the mud tank level will be utilized. Drilling fluid products present at the job site will be documented.

If an IR is detected during routine monitoring, the monitoring protocol associated with Condition 3 will immediately be implemented.

6.2.1.2 Monitoring Protocol for Condition 2 – Loss of Circulation

When HDD operations are in progress and drilling fluid circulation to the HDD endpoints is lost or severely diminished, the following monitoring protocol will be implemented. It should be noted that lost circulation is common and anticipated during HDD installation and does not necessarily indicate that drilling fluid is inadvertently returning to a point on the surface.

- ~~Immediate stoppage of fluid pumps after any noticed loss of drilling fluids, followed by an immediate surface walk to look for any fluids that may have reached the surface.~~

- ~~The Project~~Mountain Valley and its HDD contractor will implement a protocol of conducting terrestrial walks along accessible drill pathway locations to monitor for surface returns whenever a loss of downhole pressure is detected. At a minimum, accessible locations will be monitored once per hour when operating under Condition 2. For less accessible locations an aerial drone or marine craft may be utilized to conduct monitoring for surface returns.
- ~~The Project's environmental inspector~~Mountain Valley's EI will notify the Environmental Project Manager that drilling fluid circulation to the HDD endpoints has been lost or severely diminished.
- ~~The Project's environmental~~Mountain Valley's EIs and HDD inspectors will document steps taken by the HDD contractor to restore circulation. Should the contractor fail to comply with the requirements of the HDD Specification, the ~~Project's environmental~~Mountain Valley's EIs and HDD inspectors will notify the Environmental Project Manager and the Amendment Project Manager so that appropriate actions can be taken.
- If circulation is regained, ~~the Project's environmental inspector~~Mountain Valley's EI will inform the Environmental Project Manager and resume the monitoring protocol associated with Condition 1.
- If circulation is not re-established, ~~the Project's environmental inspector~~Mountain Valley's EI will increase the frequency of visual inspection along the drilled path alignment as appropriate. Additionally, ~~the Project's environmental inspector~~Mountain Valley's EI will document periods of contractor downtime (during which no drilling fluid is pumped) and the contractor's drilling fluid pumping rate in case it should become necessary to estimate lost circulation volumes.

6.2.1.3 Monitoring Protocol for Condition 3 – Inadvertent Returns

If an inadvertent returnIR of drilling fluids is detected, the following monitoring protocol will be implemented.

- ~~The Project's environmental inspector~~Mountain Valley's EI will inform the Construction Project Manager that an inadvertent drilling fluid return has occurred and provide documentation with respect to the location, magnitude, and potential impact of the return.
- If the inadvertent returnIR occurs on land, ~~the Project's environmental inspector~~Mountain Valley's EI will document steps taken by the HDD contractor to contain and collect the return. Should the contractor fail to comply with the requirements of the HDD Specification, ~~the Project's environmental inspector~~Mountain Valley's EI will notify the Construction Project Manager so that appropriate actions can be taken.
- If the inadvertent returnIR occurs in a waterway, ~~the Project~~Mountain Valley, in consultation with appropriate parties, will determine if the return poses a threat to the environment or public health and safety.
- If it is determined that the return does not pose a threat to the environment or public health and safety, HDD operations will continue. ~~the Project's environmental inspector~~ Mountain Valley's EI will monitor and document the inadvertent returnIR as well as periods of contractor downtime and the contractor's drilling fluid pumping rate in case it should become necessary to estimate inadvertent returnIR volumes.
- If it is determined that the return does pose a threat to the environment or public health and safety, drilling operations will be suspended until containment measures can be implemented by the contractor. Documentation of any containment measures employed will be provided by ~~the~~

~~Project's environmental inspector.~~ Mountain Valley's EI. Once adequate containment measures are in place, the contractor will be permitted to resume drilling operations subject to the condition that drilling operations will again be suspended immediately should the containment measures fail. ~~the Project's environmental inspector~~ Mountain Valley's EI will periodically monitor and document both the ~~inadvertent return~~IR and the effectiveness of the containment measures. Periods of contractor downtime and the contractor's drilling fluid pumping rate will also be documented in case it should become necessary to estimate ~~inadvertent return~~IR volumes. Upon completion of the HDD installation, ~~the Project~~Mountain Valley will ensure that the inadvertent drilling fluid returns are cleaned up to the satisfaction of governing agencies and any affected parties.

7.0 RESPONDING TO INADVERTENT RELEASES

Throughout the HDD process there is a loss of drilling fluid into the geologic formation through which the drill passes. In some cases, the drilling fluid may be forced to the surface, resulting in what is commonly referred to as an ~~inadvertent return~~IR. Therefore, while the intent of the HDD method is to avoid surface disturbance, surface disturbance may occur when there is an ~~inadvertent return~~IR of drilling fluid.

It is extremely important to note that a loss of drilling fluid into the formation is not necessarily an indication that an ~~inadvertent return~~IR has occurred or is about to occur. It is normal to lose a significant amount of fluid into the formation without ever having an ~~inadvertent return~~IR. In fact, in very soft ground formations or ~~in~~-highly fractured formations, it is normal to lose all the drill fluid pumped into the borehole without an ~~inadvertent return~~IR occurring. Drill fluid pumping rates can be as high as 750 gallons per minute.

An ~~inadvertent return~~IR cannot occur unless drill fluid escapes from the borehole into the formation. Hence, preventing and managing such escapes will, in turn, prevent and manage ~~inadvertent returns~~IRs. Drilling fluid releases are typically caused by pressurization of the drill hole beyond the containment capability of the overburden soil material. In some cases, an ~~inadvertent return~~IR of drilling fluid can be caused by existing conditions in the geologic materials (e.g., fractures)), even if the ~~down hole~~downhole pressures are low.

Drill fluid pressures are generally the highest during the pilot hole process, and hence, it is this process that presents the greatest risk for an ~~inadvertent return~~IR. If an ~~inadvertent return~~IR occurs during the pilot hole, it opens a path through the ground formation for drill fluid to escape during the subsequent processes. Hence ~~inadvertent returns~~, IRs are likely at the same location during the hole opening and pullback process. Similarly, if the pilot hole process can be completed without an ~~inadvertent return~~IR, then it is likely that the entire installation can also be completed without an ~~inadvertent return~~IR.

~~The Project~~Mountain Valley will conduct IR response activities in accordance with applicable regulatory requirements and will seek environmental and cultural resource clearances/approvals as necessary prior to the commencement of response activities. Additionally, ~~the Project~~Mountain Valley will conduct IR response activities in accordance with the standards and restrictions described within Resource Reports 1 and 2 for activities within uplands and wetlands/waterbodies, respectively. Therefore, ~~the Project~~Mountain Valley does not anticipate additional restrictions for equipment use and clearing to access and clean up IRs that may occur.

Considerations for managing ~~inadvertent returns~~IRs are described below.

7.1 Terrestrial Release Procedures

- Stop work immediately.
- The bore stem will be pulled back to relieve pressure on the IR.
- Isolate the area with hay bales, sandbags, filter sock, or silt fencing to surround and contain the drilling mud.
- Determine and document the following to the extent reasonably possible:
 - Quantity (gallons) of material released
 - Distance (feet) to the nearest waterbody
 - Name of the waterbody affected, if any.
- Immediately contact the appropriate parties as listed in the “Required Notifications” section at the end of this document.
- A mobile vacuum truck (or pump if in an inaccessible area) will be used to pump the drilling mud from the contained area and into either a return pit or (if using a pump) into a filter bag surrounded by ~~18” Fabric Filter Fence or Compost Filter Sock~~ [18-inch fabric filter fence or compost filter sock](#).
- Once excess drilling mud is removed, the area will be seeded and/or replanted using species similar to those in the adjacent area or allowed to re-grow from existing vegetation.
- When there is no visible indication of flow at the IR location, the IR will be considered stabilized.

After the IR is stabilized, document the IR from discovery through post-cleanup conditions with photographs and prepare an IR incident report describing [the](#) time, place, actions taken to remediate IR, and measures implemented to prevent recurrence. The incident report will be provided to the [Project](#) Environmental Coordinator within 24 hours of the occurrence.

7.2 Aquatic Release Procedures

- Stop work immediately.
- The bore stem will be pulled back to relieve pressure on the IR.
- Isolate the area with hay bales, sandbags (cofferdam), plastic sheeting, filter sock, silt fence, or other appropriate containment structure to surround and contain the IR;
- Immediately contact the appropriate parties as listed in the “Required Notifications” section at the end of this document.
- Utilize clean water pumps to establish a pump ~~around~~ to convey upstream flow around the IR;
- Turbidity curtains may be deployed (depending on site conditions at [the](#) time of IR);
- Determine and document the following to the extent reasonably possible:
 - Quantity (gallons) of the IR
 - Quantity (gallons) that was released ~~to~~[into](#) the waterbody
 - Distance (feet) the material traveled down the waterbody
 - Name of the affected waterbody
- A mobile vacuum truck (or pump if in an inaccessible area) will be used to pump the drilling mud from the contained area and into either a return pit or (if using a pump) into a filter bag surrounded by ~~18” Fabric Filter Fence or Compost Filter Sock~~ [18-inch fabric filter fence or compost filter sock](#).

- Drilling mud will be collected and typically recycled through the drilling mud reclaimer, reused, or disposed of at a licensed disposal facility.
- When there is no visible indication of flow at the IR location, the IR will be considered stabilized.

After the IR is stabilized, document the IR from discovery through post-cleanup conditions with photographs and prepare an IR incident report describing [the](#) time, place, actions taken to remediate IR, and measures implemented to prevent recurrence. The incident report will be provided to the ~~Project~~ Environmental Coordinator within 24 hours of the occurrence.

If an IR impacts a private drinking water supply, ~~the Southgate Project~~ [Mountain Valley](#) will supply a temporary drinking water supply in accordance with the [Amendment](#) Project's Water Resources Identification and Testing Plan immediately after the problem is discovered. The temporary water would be supplied until testing confirms that the water quality of the water supply returns to baseline. Additional long-term measures will be employed in accordance with the Water Resources Identification and Testing Plan if necessary, including the installation of permanent treatment, connection to a secondary water source, or establishment of a new on-site source.

7.3 Wetland Release Procedures

~~The Project~~ [Mountain Valley](#) intends the final designs of the HDDs to minimize the potential for inadvertent releases at resource crossing locations. However, inadvertent releases are still possible. Should one occur, the following measures will be employed:

- (1) Estimate the amount of release to conclude if containment structures would effectively contain the release.
- (2) Implement necessary containment measures to contain and recover the slurry unless one of the following conditions is present:
 - a. The sensitivity of wetland areas may result in containment and recovery efforts causing additional disturbance due to [the](#) travel of equipment and personnel, possibly offsetting any benefit gained from containing and removing the slurry.
 - b. Should the amount of the slurry be too small to allow practical collection from the affected area, the fluid will be diluted with fresh water or allowed to dry and dissipate naturally.
- (3) Suspend drilling operations if the release cannot be controlled or contained until appropriate containment can be installed.
- (4) Remove contained fluids by either a vacuum truck or by pumping [them](#) to a location where a vacuum truck can access them.
- (5) Conduct final clean-up once HDD installation is complete

7.4 Accessing Releases Off Right-of-Way and in Inaccessible Areas

Prior to the commencement of HDD activities, ~~the Project~~ [Mountain Valley](#) will attempt to acquire written permission from landowners crossed by the HDDs to allow for pedestrian monitoring and/or IR ~~cleanup~~ [cleanup](#) activities. The permission will allow for biological and cultural resource surveys as necessary as well as for limited equipment access for ~~cleanup~~ [cleanup](#)/restoration should an IR to surface

or within a wetland/ waterbody occur. Should an IR occur outside of approved workspaces or require a workspace variance for access to allow for ~~cleanup/clean-up~~/restoration, ~~the Project~~Mountain Valley will obtain the necessary environmental and/or cultural clearances and submit a request for variance to FERC for review and approval prior to the initiation of any activity outside of those approved workspaces.

8.0 RESTORATION

Mountain Valley will restore areas affected by IRs to pre-construction conditions and surface elevations to the extent practicable. Upland areas will be restored through standard right-of-way restoration procedures as detailed within Resource Report 3 of the Environmental Report and applicable regulatory clearances and approvals. Restoration of wetlands and waterbodies will be conducted in accordance with the procedures identified within Resource Report 2 of the Environmental Report, as well as applicable regulatory clearances and approvals.

9.0 CONTINGENCY PLANNING

9.1 Alternate Crossing Measures

If the HDD installation is unsuccessful and ~~the Southgate Project~~Mountain Valley determines abandonment of the HDD is necessary, ~~the Project's~~Mountain Valley's proposed alternative is to use the Contingency Plan. The Contingency Plan includes ~~the~~ implementation of an open-cut wet or dry ditch crossing method (scenario dependent). This alternative crossing method would require ~~Federal Energy Regulatory Commission~~FERC and other environmental permitting approvals.

9.2 Abandonment

Should an HDD fail, and the drill hole needs to be abandoned to allow for a secondary attempt or an alternative construction method, ~~the Project~~Mountain Valley will, if necessary, seal the drill hole with grout to a point approximately five feet from the surface. The remainder of the annulus will be filled with soil and compacted as necessary to meet the density of the surrounding soil. Abandonment procedures will be completed in accordance with applicable regulatory requirements.

10.0 REFERENCES

This Contingency Plan was adapted from the following websites:

3 — http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/cfdocs/greencore.Par.0871.File.dat/P_ODappH.pdf

4 — <https://www.esx.com/index.cfm/library/files/customers/property-real-estate/permitting/sample-fraction-mitigation-plan/>

5 — http://www.energy.ca.gov/sitingeases/smud/documents/applicants_files/Data_Response_Set-1Q/APPENDIX_C_FRAC_OUT_PLAN3.PDF

Other — U.S. Geological Survey. 2024a. Geologic Units by Geographic Area. Pittsylvania, Virginia and Rockingham County, North Carolina. Available at: <https://mrdata.usgs.gov/geology/state/geog-units.html>. Accessed August 2024.

6 — [North Carolina](#) include:

7 — [Virginia Department of Environmental Quality \(VDEQ\). 2018. Division of. 2024. NC Mineral Mining. Available online at: https://dmme.virginia.gov/DMM/uraniumpermit.shtml](#) Accessed July 19, 2018.

North Carolina Geological Survey (NCGS). 2016. NC Oil and Gas Wells. Resources—An Overview. Available [online](https://files.nc.gov/ncdeq/Energy%20Mineral%20and%20Land%20Resources/Energy/documents/Energy/NC_Oil_%26_Gas_Wells_terrane_plot.jpg) at: https://files.nc.gov/ncdeq/Energy%20Mineral%20and%20Land%20Resources/Energy/documents/Energy/NC_Oil_%26_Gas_Wells_terrane_plot.jpg — <https://www.deq.nc.gov/about/divisions/energy-mineral-land-resources/north-carolina-geological-survey/mineral-resources/mineral-resources-faq>. Accessed July 16, 2018. August 2024.

Virginia Department of Mines, Minerals and Energy. 2024. Division of Gas and Oil Data Information System. Available at: <https://www.energy.virginia.gov/dgo inquiry/frmmain.aspx>. Accessed August 2024.

Landowner Complaint Resolution Procedure



MVP Southgate Amendment Project

Landowner Complaint Resolution Procedure

LANDOWNER COMPLAINT RESOLUTION PROCEDURES

Mountain Valley Pipeline, LLC (“Mountain Valley”) will work to address and resolve complaints regarding the construction and restoration of the MVP Southgate Project (~~Amendment Project~~) (“Amendment Project”) in a timely manner. ~~The Project team~~ Mountain Valley has worked diligently with landowners to identify the best possible route for the proposed pipeline, and we value the relationships we have formed with these stakeholders. Mountain Valley will continue to work with landowners throughout the construction of the pipeline to address any issues that may arise, and we have established specific procedures to resolve any landowner concerns.

First, Mountain Valley has established local contacts for landowners to call first with their concerns. The name and contact information for this local contact will be provided to landowners. Landowners should generally expect an initial response from the local contact within 24 hours.

Second, if landowners are not satisfied with the response from the local contact, they can call the Project’s 24-hour hotline at 1-833-MV-SOUTH (1-833-687-6884) or send an email to mail@mvpssouthgate.com. The hotline is a toll-free number that serves as a means for landowners and stakeholders to contact appropriate representatives with questions, concerns, and complaints. The hotline call response process is as follows:

Step 1: Gathering Information

A Mountain Valley representative will contact and request all necessary information to complete the caller information section of the hotline record, including the caller’s name, address, phone number, and a brief description of the purpose of the call.

Step 2: Defining the Issues

The Mountain Valley representative will work with the caller to help understand and address their concerns. If a representative can resolve the issue, they will record this on the hotline record. Otherwise, the caller will be advised that their concerns have been documented and that they can generally expect a return call within 24 hours from an appropriate Mountain Valley representative.

Step 3: Resolution

If the issues are resolved during Step 2, a representative will complete the process by documenting how a resolution was reached for the hotline record. If a resolution is not reached during Step 2, the hotline record will be forwarded to the appropriate Mountain Valley representative, who will return the call. The process for this issue should generally follow these steps until a resolution is reached. For any contact received through a means other than the hotline or the local contact described above, the Mountain Valley representative will either (a) direct the landowner to the local contact or hotline as appropriate or (b) request all necessary information to complete the caller information section of the record including the caller’s name, address, phone number, and Project reference and proceed to Step 2 above.

Third, if a resolution is not reached or the landowner is not satisfied with the response from Mountain Valley, then the landowner may contact the FERC Landowner Helpline at 877-337-2237 or LandownerHelp@ferc.gov.

Landslide Mitigation Report



MVP Southgate ~~–H-605 and H-650~~
Pipelines Amendment Project
Revision: 4-08/21/2020

Landslide Mitigation Report

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APPENDICES

Appendix A Site-Specific Slide Mitigation ~~Report~~—Controls

Appendix B Slide Mitigations Details

1.0 EXECUTIVE SUMMARY

~~This report addresses potential post-construction landslide hazards for the pipeline listed below.~~ Mountain Valley Pipeline, LLC (“Mountain Valley”) prepared this *Landslide Mitigation Report* to address potential post-construction landslide hazards for MVP Southgate Amendment Project (“Amendment Project”). The pipeline route was analyzed to determine if mitigation controls installed during construction are necessary to avoid potential landslide issues following construction. Potential landslide sites were identified by a desktop analysis that considered previous landslide activity, slope steepness, and sidehill construction. MVP Mountain Valley Design Engineering (“Design Engineering”) has determined that the areas that are listed in **Appendix A** require additional controls to maintain slope stability. A summary of the required mitigation controls can be found in **Section 4.0**. These controls may be added, edited, or removed based on changing construction practices through the design of the pipeline and/or field conditions at the time of construction. A plan depicting the extent of the controls for each site can be found in **Appendix A**, and details for the controls are provided in **Appendix B**.

Name	of	System:
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Mountain Valley Pipeline, LLC		
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Name	of	Pipeline:
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MVP Southgate - H-650 Pipelines		
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Length	of	Pipeline:
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1.3 Miles		3
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~~Name of pipeline: MVP Southgate – H-605 and H-650 Pipelines~~

~~Length of pipeline: 75.1 miles~~

1.02.0 DESKTOP ANALYSIS

A desktop analysis was performed for the entire length of the pipeline route to identify areas most susceptible to landslide issues. The analysis considered three critical factors:

- ~~Previous landslide activity: LIDAR and field verification were used to determine if there is evidence of movement on slopes crossed by the project. The United States Geological Survey (“USGS”) Landslide Potential Maps (USGS 2024), as well as publicly available LIDAR data, was used to determine if there is evidence of movement and/or a high probability of landslide hazards on slopes crossed by the Amendment Project.~~
- Steepness of Slope: Portions of the pipeline that traverse slopes with an angle of inclination of ~~18~~16 degrees or greater are considered to be in a steep slope area. A slope of ~~18-16~~ degrees is marginally stable with a typical low-strength in-situ soil and is therefore used as the threshold for this analysis. Slopes were measured using LIDAR flown for the original MVP Southgate Project, as approved June 18, 2020. The steepness of the slope is measured without regard for the orientation of the pipeline (i.e., perpendicular to the contour lines even if the pipeline is sidehill).

- Sidehill construction: If the orientation of a segment of the pipeline is parallel or near parallel to the contour lines of a slope, then the segment is considered an area of sidehill construction.

3.0 FIELD REVIEW

Prior to construction, Mountain Valley's geotechnical engineer will field review the areas where potential stability issues were identified, as detailed in Appendix A, to verify the mitigation measures required. If updates are required, a supplement to this report will be created.

2.04.0 PROPOSED MITIGATION CONTROLS

The following section provides a description of proposed mitigation controls. One or a combination of controls may be utilized and shall be based on the actual field conditions encountered. The comments column in Appendix A provides suggested controls based on the desktop analysis.

In addition to the mitigation controls specified in Appendix A, drains should be installed in any seep or spring identified during construction, and transverse trench drains will be installed throughout the length of every sidehill. All drains shall be installed to collect and control the release of water to a stable and well-vegetated location outside of existing streams or environmentally sensitive areas.

2.14.1 Surface and Subsurface Drainage Controls

- **Trench Breaker Daylight Drain (MVP-SG-35):** The trench breaker daylight drains will prevent saturation of the trench backfill by pulling groundwater moving along the trench to the surface. A 4" perforated pipe bedded in free-draining AASHTO #57 stone and wrapped in permeable geotextile filter fabric will be placed against the upslope face of a trench breaker (perpendicular to the pipeline) at the bottom of the trench underneath the pipeline. The perforated pipe will turn 90 degrees at the low point of the trench and daylight into a riprap apron to dissipate the flow of water.
- **Cutoff Drain (MVP-SG-36A/B and MVP-SG-37):** For sidehill construction, the cutoff drain works by catching or "cutting off" groundwater as it enters the right-of-way ("ROW"). The sidehill cutoff ~~drains~~drain is a subsurface drain constructed of a 6" perforated pipe bedded in AASHTO #57 stone and wrapped in geotextile filter fabric. The drain is placed upslope of and parallel to the pipe for the specified length before turning downslope and daylighting near the edge of the ROW into riprap to dissipate the flow of water. For downhill construction, the cutoff drain is intended to cut off groundwater flowing along the ROW at a specified location. The downhill cutoff drain will be identical to the sidehill cutoff drain, except that it will be oriented perpendicular to the pipelines. In both cases, the drain pipe will be solid and surrounded by typical trench backfill for the portion crossing the pipeline trench in order to prevent the migration of water from the drain pipe into the trench.
- **Transverse Trench Drain (MVP-SG-38A/B):** These drains are to be installed within the trench at specified intervals and/or at low points of sidehill construction. They are constructed by digging a small ditch extending from the pipeline trench to the edge of the ROW. The ditch will be lined with geotextile filter fabric and a 4" perforated pipe will be laid in the ditch and surrounded with AASHTO #57 stone. The remainder of the ditch will be filled with the same type of stone to the top of the ditch and then covered with backfill as required for grading purposes. The drain should

form a 10 ft tee within the trench against the back (uphill side) of the trench. Where this drain crosses the pipeline trench, stone backfill in the drain will only extend to just below the bottom of the pipe, after which typical trench backfill will be used.

- **Rock Lined Swale (MVP-SG-39):** A small surface drainage ditch will be constructed to efficiently convey water across the pipeline ROW and into a wooded area off the ROW and prevent surface water from seeping into the ground ~~and~~, causing saturation of the ROW. The drainage ditch will be lined with geotextile filter fabric overlain by 6" to 12" rock (which can be sourced from excavated spoils).
- **Riprap Natural Drains (MVP-SG-40):** Where natural drains intersect the pipeline ROW, the drain shall be restored to its original dimensions and drainage path. The drain shall be lined with geotextile filter fabric overlain by 6" to 12" rock (which can be sourced from excavated spoils).
- **Riprap Slope Breakers (MVP-SG-41):** Slope breakers (water bars) that may experience more constant or higher peak flows may be lined with riprap to ensure their long-term integrity. Slope breakers receiving riprap treatment will be lined with 3" to 6" rock (which can be sourced from excavated spoils).
- **Trench Breaker Pass-through Drain (MVP-SG-43A/B):** The pass-through trench breaker drain is intended to prevent the buildup of water behind trench breakers, which could saturate the slope and cause a slide. These pass-through drains will be installed on the same slopes as the trench breaker daylight drains and will provide a way for groundwater to reach the daylight drains and ultimately be pulled to the surface. The trench breaker pass-through drains will allow water to pass through the trench breaker using two 2" PVC pipes, which will be placed near the bottom of the trench breaker.
- ~~**Brow Ditch (MVP-SG-46):** The brow ditch is a rock-lined ditch intended to catch surface water runoff and divert it around a protected area of the ROW. These are typically installed in sidehill sections oriented parallel to the pipeline at the uphill edge of the ROW to catch the water flowing from upslope of the ROW. The brow ditch will eventually turn and cross the ROW to safely carry the water to an exit point at the downhill edge of the ROW.~~
- ~~**Other (Site Specific) Drainage Controls:** Depending on the site, this may consist of either grading the area to drain surface water runoff a certain direction or relocation of existing drainage controls (e.g., culverts). Design Engineering will come up with site-specific details for these items if required.~~

2.2 — Stabilization Controls

- **Geogrid Reinforcement (MVP-SG-42A/B/C):** In areas where the existing grade of the slope is too steep to maintain long-term stability, layers of geogrid reinforcement may be placed during backfill operations to provide additional strength to the slope.
- **Highwall Revetment (MVP-SG-44A/B):** For near vertical slopes requiring additional trench stabilization measures, sakrete highwall revetment may be used. The revetment is essentially acting as a concrete retaining wall, and therefore a footing in the form of a toe key and rebar will be utilized to help stabilize the wall. The trench may be filled with sandbags or crushed rock. Design

Engineering shall determine or approve all materials used. Weephole drains should be installed at specified intervals to relieve water pressure from behind the revetment.

- **Steep Slope Revetment (MVP-SG-45):** For steep slopes requiring additional trench stabilization measures, sakrete trench breakers with a sakrete or riprap revetment may be used. The trench may be filled with sandbags or crushed rock, or in some cases, native material. Design Engineering shall determine or approve all materials used and the spacing of the sakrete trench breakers. All sakrete breakers shall have drains installed.
- **Other (Site-Specific) Stabilization:** Depending on the site, this may involve regrading the slope to a more stable angle or installing some sort of engineered retaining structure (soil nails, soldier pile wall, gabions, etc.). Design Engineering will produce site-specific details for these items if required.

2.34.2 Additional Measures

In addition to these site-specific controls, the following practices should be applied to the entire length of the pipeline:

- **Compact Soil Backfill:** During construction, areas will be encountered that require placement on compacted soil backfill. Soil backfill shall be placed in successive horizontal layers of 12" in loose depth for the full width of the cross-sectional area and shall be compacted using equipment approved by the Engineer or Designee. Each lift shall be compacted to a minimum of no visual movement before the overlaying lift is placed. Moisture content of the backfill material shall be adjusted by wetting or aerating as necessary as determined by the Engineer or Designee. Depending on the site specifics additional compaction testing and specifications may be required.
- **Compact Slope Breakers:** All slope breakers (water bars) shall be compacted as specified in the ESCP-Erosion and Sediment Control Plan drawings. Compaction can be achieved via bucket tamping with a hoe. This will help ensure that water bars maintain their intended drainage and are not deformed by freeze-thaw cycles.
- **Track-In Workspaces:** Tracking consists of using machinery to create a series of ridges and depressions that run perpendicular to the slope (on the contour). This can be accomplished with any appropriate implement that can be safely operated on the slope, and that will not cause undue compaction. All workspaces on a hillside that have had fill temporarily placed during construction and then removed for backfill operations shall be tracked in. For sidehill construction areas, special attention shall be paid to the area where the cut and fill portions of the slope meet, as this is the most likely area for cracks to form. If this area is not tracked in, water can seep into the crack and may eventually destabilize the hillside.

Note that the information contained in this report is based upon the results of the desktop analysis and field-reported areas of concern received to date. If additional areas of concern are encountered during construction, the author of this report should be contacted for guidance.

4.3 Construction Considerations

Design Engineering recommends that the contractor submit to MVPMountain Valley a description of the construction means and methods for the areas identified in this report. The purpose of this is to allow MVPMountain Valley to determine if temporary construction conditions could lead to a slide.

5.0 REFERENCES

United States Geological Survey. 2024. U.S. Landslide Inventory and Susceptibility Map. Available online at: <https://www.usgs.gov/tools/us-landslide-inventory-and-susceptibility-map>. Accessed September 2024.

Appendix A

Site-Specific Mitigation Controls

Geohazard Point	Approx. Station ¹		Approx. Coordinates ²				Mitigation Controls (Appendix B)	Mitigation Controls ^{3, 4}	Geohazard Description
			Start		End				
	Start	End	Lat.	Long.	Lat.	Long.			
<u>1</u>	<u>6+25</u>	<u>6+60</u>	<u>36.82908</u>	<u>-79.34453</u>	<u>36.82897</u>	<u>-79.34456</u>	--	<u>Water bar installed at tops of stream bank (6+25 and 6+60).</u>	<u>Stream crossing with moderately steep slopes on stream bank.</u>
<u>2</u>	<u>35+00</u>	<u>35+65</u>	<u>36.82298</u>	<u>-79.34746</u>	<u>36.82286</u>	<u>-79.34759</u>	--	<u>Water bar installed at tops of stream bank (35+00 and 35+65).</u>	<u>Stream Crossing with moderately steep slopes on stream bank.</u>
<u>3</u>	<u>43+25</u>	<u>43+75</u>	<u>36.82121</u>	<u>-79.34926</u>	<u>36.82111</u>	<u>-79.34936</u>	--	<u>Water bar installed at tops of stream bank (43+25 and 43+75).</u>	<u>Stream Crossing with moderately steep slopes on stream bank.</u>
<u>4</u>	<u>72+45</u>	<u>72+90</u>	<u>36.81502</u>	<u>-79.35548</u>	<u>36.81494</u>	<u>-79.35558</u>	--	<u>Water bar installed at tops of stream bank (72+45 and 72+90).</u>	<u>Stream Crossing with moderately steep slopes on stream bank.</u>
<u>5</u>	<u>106+40</u>	<u>106+90</u>	<u>36.80848</u>	<u>-79.36302</u>	<u>36.80835</u>	<u>-79.36317</u>	--	<u>Water bar installed at tops of stream bank (106+40 and 106+90).</u>	<u>Stream Crossing with moderately steep slopes on stream bank.</u>
<u>6</u>	<u>133+25</u>	--	<u>36.80305</u>	<u>-79.36921</u>	--	--	<u>MVP-SG-35</u>	<u>Trench breaker with outlet drain.</u>	<u>Moderately steep slope section (16-26 deg). Less than 50 feet section or ROW with moderately steep slope.</u>
<u>7</u>	<u>186+15</u>	<u>186+85</u>	<u>36.79216</u>	<u>-79.38113</u>	<u>36.79202</u>	<u>-79.38128</u>	--	<u>Water bar installed at tops of stream bank (186+15 and 186+85).</u>	<u>Stream Crossing with moderately steep slopes on stream bank.</u>
<u>8</u>	<u>234+00</u>	<u>234+75</u>	<u>36.78284</u>	<u>-79.39049</u>	<u>36.78277</u>	<u>-79.39067</u>	<u>MVP-SG-40</u>	<u>Water bar installed at tops of stream bank (234+00 and 234+75) and rip rap armoring of stream channel and banks.</u>	<u>Stream crossing with steep slopes.</u>
<u>9</u>	<u>249+80</u>	<u>251+60</u>	<u>36.78109</u>	<u>-79.39542</u>	<u>36.78079</u>	<u>-79.39558</u>	<u>MVP-SG-36A/B and MVP-SG-37</u>	<u>Cut off drain with outlet.</u>	<u>PI near partial side slope area with drainage downhill of ROW.</u>

Geohazard Point	Approx. Station ¹		Approx. Coordinates ²				Mitigation Controls (Appendix B)	Mitigation Controls ^{3, 4}	Geohazard Description
			Start		End				
	Start	End	Lat.	Long.	Lat.	Long.			
10	271+25	273+00	36.77572	-79.39842	36.77531	-79.39865	MVP-SG-35, MVP-SG-43A/B	Trench breakers with outlet drains for each trench breaker.	Moderately steep slope section (16-26 degrees).
11	277+15	277+90	36.77425	-79.39920	36.77404	-79.39931	--	Water bar installed at tops of stream bank (277+15 and 277+90).	Larger stream crossing with moderate to steep slopes on stream bank.
12	285+80	287+00	36.77191	-79.39999	36.77186	-79.40022	MVP-SG-35, MVP-SG-43A/B	Trench breakers with outlet drains.	Steep slope section. Slopes ~26 degrees.
13	312+82	--	36.76853	-79.40775	--	--	MVP-SG-35	Trench breakers with outlet drains.	Moderately steep slope section (16-26 degrees). Less than 50 feet section or ROW with moderately steep slope.
14	314+50	315+50	36.76819	-79.40812	36.76799	-79.40834	--	Water bar installed at tops of stream bank (314+50 and 315+50).	Steep slopes around small creek drainage.
15	334+00	337+00	36.76415	-79.41249	36.76349	-79.41315	MVP-SG-36A/B	In order to avoid steep slopes and drainage features east of ROW, do not install pipeline east of current center line alignment. Install cutoff drain from station 334+00 to 337+00.	Steep slope on east side of ROW. East of proposed CL.
16	367+45	--	36.75695	-79.41961	--	--	MVP-SG-40	Riprap armoring of stream channel and banks.	Steep slopes around small creek drainage.
17	385+30	386+30	36.75309	-79.42344	36.75292	-79.42361	MVP-SG-45	Steep slope revetment.	Steep slope section, Slope ~25-30 degrees.
18	416+50	417+50	36.74619	-79.42983	36.74596	-79.43005	MVP-SG-45	Steep slope revetment. During restoration, reestablish existing natural drainage swale at STA 416+50.	Steep slopes on north side of drainage area with pond off ROW to west. Slopes ~16-26 degrees with isolated, very steep areas. Possible old slide area based on Google Earth.

Geohazard Point	Approx. Station ¹		Approx. Coordinates ²				Mitigation Controls (Appendix B)	Mitigation Controls ^{3, 4}	Geohazard Description
			Start		End				
	Start	End	Lat.	Long.	Lat.	Long.			
19	417+50	419+30	36.74596	-79.43005	36.74565	-79.43033	MVP-SG-35	Trench breakers with outlet drains.	Steep slope section on south side of drainage.
20	437+60	439+00	36.74153	-79.43406	36.74127	-79.43431	MVP-SG-35	Trench breakers with outlet drains.	Steep slope section. Slopes ~16 to 30 degrees.
21	469+50	471+00	36.73456	-79.44054	36.73423	-79.44084	MVP-SG-35	Trench breakers with outlet drains.	Steep slope section. Slopes ~26 to 33 degrees.
22	543+25	544+25	36.72027	-79.45537	36.72027	-79.45537	MVP-SG-45, MVP-SG-35	Steep slope revetment from station 543+25 to 543+75. Trench breakers with outlet drains from station 543+75 to 544+25.	Steep slope section. Slopes ~26 to 40 degrees.
23	544+25	547+50	36.71999	-79.45568	36.71942	-79.45657	MVP-SG-38A/B	Transverse drains with outlet drain every 100 feet along ROW.	Large side slope section.
24	548+25	549+25	36.71932	-79.45680	36.71917	-79.45705	MVP-SG-35	Trench breakers with outlet drains.	Steep slope section. Large side slope section.
25	550+25	551+00	36.71901	-79.45720	36.71884	-79.45735	MVP-SG-35, MVP-SG-43A/B	Breakers with alternating outlet/daylight and pass through drains.	Moderately steep slope section. >16 degrees.
26	597+00	600+75	36.70874	-79.46673	36.70771	-79.46699	MVP-SG-35	Trench breakers with outlet drains.	Semi-sidehill section with moderately steep slopes.
27	600+75	601+75	36.70771	-79.46699	36.70744	-79.46703	MVP-SG-45	Steep slope revetment along south of stream.	Steep slope section, Slope ~25-30 degrees.
28	632+50	--	36.70140	-79.47364	--	--	MVP-SG-35	Breaker with drain.	Moderately steep slope section (16-26 deg). Less than 50 feet section or ROW with moderately steep slope.
29	643+00	--	36.69923	-79.47554	--	--	MVP-SG-35	Trench breaker with outlet drain.	Topographic slope map shows possible drainage with steep slopes.
30	648+20	650+25	36.69780	-79.47723	36.69816	-79.47687	MVP-SG-35, MVP-SG-43A/B	Trench breaker with alternating outlet/daylight and pass through drains.	Moderately steep slope section. >16 degrees. In USGS Landslide low probability slide zone.

Geohazard Point	Approx. Station ¹		Approx. Coordinates ²				Mitigation Controls (Appendix B)	Mitigation Controls ^{3, 4}	Geohazard Description
			Start		End				
	Start	End	Lat.	Long.	Lat.	Long.			
<u>31</u>	<u>692+70</u>	<u>693+75</u>	<u>36.68868</u>	<u>-79.48632</u>	<u>36.68848</u>	<u>-79.48652</u>	<u>MVP-SG-35</u>	<u>Trench breakers with outlet drains.</u>	<u>Steep slope section, Slope ~25-30 degrees. IN USGS low probability landslide area.</u>
<u>32</u>	<u>728+80</u>	<u>730+80</u>	<u>36.68023</u>	<u>-79.49036</u>	<u>36.67976</u>	<u>-79.49075</u>	<u>MVP-SG-35, MVP-SG-45</u>	<u>Steep slope revetment from station 728+80 to 729+20. Trench breakers with outlet drains from station 729+20 to 730+80.</u>	<u>Steep slope section, Average Slope ~25-30 degrees with steep section ~40 degrees. IN USGS low probability landslide area.</u>
<u>33</u>	<u>738+50</u>	<u>739+00</u>	<u>36.68055</u>	<u>-79.49316</u>	<u>36.68048</u>	<u>-79.49334</u>	<u>MVP-SG-38A/B</u>	<u>Transverse drain for 50 feet south of the PI.</u>	<u>PI in area with moderate slopes ~16 degrees in drainages south of PI.</u>
<u>34</u>	<u>742+30</u>	<u>--</u>	<u>36.68006</u>	<u>-79.49436</u>	<u>--</u>	<u>--</u>	<u>MVP-SG-35</u>	<u>Trench breakers with outlet drains.</u>	<u>Moderately steep slope section (16-26 deg) in drainage. Less than 50 feet section or ROW with moderately steep slope.</u>
<u>35</u>	<u>755+00</u>	<u>--</u>	<u>36.67766</u>	<u>-79.49734</u>	<u>--</u>	<u>--</u>	<u>MVP-SG-35</u>	<u>Trench breakers with outlet drains.</u>	<u>Moderately steep slope section (16-26 deg) in drainage. Less than 50 feet section or ROW with moderately steep slope.</u>
<u>36</u>	<u>774+80</u>	<u>775+80</u>	<u>36.67345</u>	<u>-79.50161</u>	<u>36.67326</u>	<u>-79.50180</u>	<u>--</u>	<u>Water bar installed at tops of stream bank (774+80 and 775+80).</u>	<u>Stream crossing with moderately steep slopes on stream bank.</u>
<u>37</u>	<u>825+10</u>	<u>825+50</u>	<u>36.66212</u>	<u>-79.51121</u>	<u>36.66206</u>	<u>-79.51129</u>	<u>--</u>	<u>Water bar installed at tops of stream bank (825+10 and 825+50).</u>	<u>Stream Crossing with moderately steep slopes on stream bank.</u>
<u>38</u>	<u>847+00</u>	<u>848+00</u>	<u>36.65820</u>	<u>-79.51667</u>	<u>36.65797</u>	<u>-79.51699</u>	<u>Site-specific controls</u>	<u>Stream bank protection along ROW.</u>	<u>Stream bank on southeast side of TWS has bank erosion and steep slope (+40 degrees) cutting into the ROW.</u>
<u>39</u>	<u>850+00</u>	<u>850+75</u>	<u>36.65753</u>	<u>-79.51737</u>	<u>36.65737</u>	<u>-79.51750</u>	<u>Site-specific controls</u>	<u>Trench breaker with outlet drain and possible rock-lined stream banks.</u>	<u>Meandering stream crossing with steep banks.</u>

Geohazard Point	Approx. Station ¹		Approx. Coordinates ²				Mitigation Controls (Appendix B)	Mitigation Controls ^{3, 4}	Geohazard Description
			Start		End				
	Start	End	Lat.	Long.	Lat.	Long.			
40	857+30	857+75	36.65590	-79.51878	36.65573	-79.51893	MVP-SG-36A/B and MVP-SG-37	Cutoff drains on top side of the LOD from station 857+30 to 857+75.	Moderate slopes of drainages crossing ROW.
41	860+30	--	36.65524	-79.51939	--	--	MVP-SG-35	Trench breaker with outlet drain.	Moderately steep slope section (16-26 degrees) in drainage. Less than 50 feet section or ROW with moderately steep slope.
42	875+00	875+75	36.651976	-79.522157	36.651642	-79.522444	MVP-SG-35	Trench breakers with outlet drains. Install breakers at toe of slope in steeper section (station 875+70).	Stream Crossing with moderately steep slopes on stream bank.
43	908+25	908+75	36.64397	-79.527388	36.643802	-79.527354	--	Water bar installed at tops of stream bank (908+25 and 908+75).	Stream Crossing with moderately steep slopes on stream bank.
44	916+70	917+00	36.641988	-79.528759	36.641916	-79.528838	--	Water bar installed at tops of stream bank (916+70 and 917+00).	Stream Crossing with moderately steep slopes on stream bank.
45	933+75	936+25	36.639913	-79.533857	36.639577	-79.534623	MVP-SG-35, MVP-SG-45	Trench breakers with outlet drains every breaker. Steep slope revetment on west bank of slope from station 935+00 to 935+50.	Steep slopes leading to drainage. Steep slopes on both sides. Slopes up to ~30 degrees. In USGS low probability landslide area.
46	998+50	--	36.627925	-79.547958	--	--	MVP-SG-35	Trench breaker with outlet drain.	Moderate slopes with multiple PIs.
47	999+50	--	36.627732	-79.548318	--	--	MVP-SG-35	Trench breaker with outlet drain.	Moderate slopes with multiple PIs.
48	1053+00	--	36.617154	-79.560019	--	--	MVP-SG-35	Trench breaker with outlet drain. Install breaker uphill of PI at a safe distance from welds and fittings.	Moderate slopes near PIs.

Geohazard Point	Approx. Station ¹		Approx. Coordinates ²				Mitigation Controls (Appendix B)	Mitigation Controls ^{3, 4}	Geohazard Description
			Start		End				
	Start	End	Lat.	Long.	Lat.	Long.			
49	1058+00	1061+00	36.615908	-79.560857	36.615518	-79.561119	MVP-SG-38A/B	Continuous transverse trench drain for entire length between station 1058+00 and 1061+00 with at least two outlets.	Slight side slope (~12 degrees). The ROW is downhill of recently cleared area that may lead to additional drainage across ROW.
50	1101+70	1103+70	36.606006	-79.568075	36.605426	-79.56857	MVP-SG-35	Trench breakers with outlet drains every breaker.	Steep slopes leading to drainage. Steep slopes on both sides. Slopes up to ~25 degrees. In USGS low probability landslide area. Very steep slopes off ROW to southeast.
51	1114+20	1116+00	36.603071	-79.570585	36.602605	-79.570989	MVP-SG-35, MVP-SG-43A/B	Trench breakers with alternating outlet/daylight and pass through drains.	Moderately steep slope section. >16 degrees. In USGS low probability landslide area.
52	1132+80	1133+15	36.598933	-79.574146	36.598848	-79.574219	--	Water bar installed at tops of stream bank (1132+80 and 1133+15).	Stream Crossing with moderately steep slopes on stream bank.
53	1211+75	--	36.582538	-79.592092	--	--	MVP-SG-35	Trench breaker with outlet drain.	PI in side slope area.
54	1224+25	1226+50	36.580509	-79.594363	36.579533	-79.594988	MVP-SG-35	Trench breakers with outlet drains every breaker.	Moderate slopes (>16 degrees) in area of USGS moderate landslide probability. Some semi-side slope areas. Pipeline is partial side slope.
55	1230+00	1238+00	36.579145	-79.59551	36.577544	-79.59727	MVP-SG-35	Trench breakers with outlet drains every breaker.	Moderate slopes (>16 degrees) in area of USGS moderate landslide probability. Some semi-side slope areas. Pipeline is partial side slope.
56	1250+60	1251+40	36.574816	-79.599904	36.574704	-79.600099	MVP-SG-35	Trench breakers with outlet drains every breaker.	Steep slope (26 to 30 degrees) in area of USGS moderate landslide probability.
57	1251+50	1254+00	36.574643	-79.600207	36.574264	-79.600867	MVP-SG-35, MVP-SG-43A/B	Trench breakers with alternating outlet/daylight and pass through drains.	Moderate slopes (~12-16 degrees) in area of USGS moderate landslide probability.

Geohazard Point	Approx. Station ¹		Approx. Coordinates ²				Mitigation Controls (Appendix B)	Mitigation Controls ^{3, 4}	Geohazard Description
			Start		End				
	Start	End	Lat.	Long.	Lat.	Long.			
58	1255+00	1256+00	36.574125	-79.60111	-79.60134	36.57399	MVP-SG-36A/B	Transverse drain from station 1255+00 to 1256+00.	Moderate slope (>16 degrees) side slope area on north side or ROW.
59	1313+40	1314+00	36.563758	-79.613674	36.563504	-79.613571	--	Water bar or maybe riprap lined water bar if high flow velocity is a concern.	Stream/drainage Crossing with moderately steep slopes on stream bank.
60	1347+00	1348+00	36.556419	-79.617843	36.556162	-79.618118	MVP-SG-35	Trench breakers with outlet drains every breaker.	Moderate slopes (>16 degrees) in area of USGS moderate landslide probability. A very steep area (>33 degrees near drainage).
61	1358+00	1359+00	36.554094	-79.62022	36.553964	-79.620349	MVP-SG-35	Trench breakers with outlet drains every breaker.	Moderate slopes (>16 degrees) above proposed bore pit under railroad tracks.
62	1395+85	1396+30	36.546013	-79.628291	36.545917	-79.628386	--	Water bar installed at tops of stream bank (1395+85 and 1396+30).	Stream Crossing with moderately steep slopes on stream bank.
63	1481+75	1482+75	36.528178	-79.646037	36.527867	-79.646336	--	Water bar installed at tops of stream bank (1481+75 and 1482+75).	Stream Crossing with moderately steep slopes on stream bank.
64	1537+50	1538+00	36.516262	-79.656848	36.516091	-79.657028	--	Water bar installed at tops of stream bank (537+50 and 1538+00).	Stream Crossing with moderately steep slopes on stream bank.
65	1553+50	--	36.512926	-79.660336	--	--	MVP-SG-35	Trench breaker with outlet drain. Install breaker uphill of PI at a safe distance from welds and fittings.	PI in side slope area. Locate trench breaker 50 feet from PI to avoid welds and fittings.
66	1561+00	1564+00	36.51138	-79.662117	36.510679	-79.662848	MVP-SG-35, MVP-SG-43A/B	Trench breakers with alternating outlet/daylight and pass through drains.	Moderate slopes (>16 degrees) in area of USGS moderate landslide probability. Pipeline is partial side slope.

Geohazard Point	Approx. Station ¹		Approx. Coordinates ²				Mitigation Controls (Appendix B)	Mitigation Controls ^{3, 4}	Geohazard Description
			Start		End				
	Start	End	Lat.	Long.	Lat.	Long.			
<u>67</u>	<u>1567+50</u>	<u>1568+75</u>	<u>36.510017</u>	<u>-79.66354</u>	<u>36.509737</u>	<u>-79.663833</u>	<u>MVP-SG-35, MVP-SG-43A/B</u>	<u>Trench breakers with alternating outlet/daylight and pass through drains.</u>	<u>Moderate slopes (>16 degrees) in area of USGS moderate landslide probability.</u>
<u>68</u>	<u>1583+50</u>	<u>1585+75</u>	<u>36.506652</u>	<u>-79.667062</u>	<u>36.506135</u>	<u>-79.667427</u>	<u>MVP-SG-35, MVP-SG-43A/B</u>	<u>Breakers with alternating outlet/daylight and pass through drains.</u>	<u>Moderate slopes (>16 degrees) in area of USGS moderate landslide probability.</u>
<u>69</u>	<u>1588+00</u>	<u>1590+50</u>	<u>36.505374</u>	<u>-79.667489</u>	<u>36.504822</u>	<u>-79.667534</u>	<u>MVP-SG-35, MVP-SG-43A/B</u>	<u>Breakers with alternating outlet/daylight and pass through drains.</u>	<u>Moderate slopes (~20 degrees) in area of USGS moderate landslide probability.</u>
<u>70</u>	<u>1593+50</u>	<u>1592+00</u>	<u>36.504523</u>	<u>-79.667715</u>	<u>36.504201</u>	<u>-79.668094</u>	<u>MVP-SG-35, MVP-SG-43A/B</u>	<u>Breakers with alternating outlet/daylight and pass through drains.</u>	<u>Moderate slopes (~20 degrees) in area of USGS moderate landslide probability.</u>
<u>71</u>	<u>1598+00</u>	<u>1598+40</u>	<u>36.50371</u>	<u>-79.66958</u>	<u>36.50369</u>	<u>-79.66963</u>	<u>MVP-SG-45</u>	<u>Steep slope revetment.</u>	<u>Moderately steep slope (26 to 30 degrees).</u>
¹ Stationing is approximate based on the alignment stationing provided at the time this report was prepared (November 2024). Please refer to the coordinates provided to verify the geohazard and mitigation control location. The location of the mitigation controls should be field fit based on conditions observed during construction. ² The coordinates provided are approximate locations of mitigation controls. The actual locations should be field fit based on conditions observed during construction. ³ All surface and subsurface drains should be graded for positive drainage with outlets at the wooded or well-vegetated area at the edge of the LOD. Surface and subsurface drains should outlet away from and on the opposite side of the ROW from existing facilities (i.e. the Transco pipelines). Drain outlets should be in stable areas outside of existing streams or environmentally sensitive areas. ⁴ The mitigation controls are recommended as general guidance; additional controls may be necessary based on field conditions observed during construction.									

Line Name	Site ID	Sidehill	Steep Slope	Previous Landslide	Downslope Resource	Distance From Downslope Resource (ft.)	Approx. Station	Mitigation Controls (Appendix B)	Comments
H-650	SS-01		X		Wetland	0.00	273+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a segment with an average slope of 20 degrees (36%). A trench breaker daylight drain will be utilized in this location.
H650	SS-02		X		Stream	9.00	425+00	MVP-SG-35	This pipeline segment is a steep planar segment with an average slope of 27 degrees (50%). Trees are well established, with no visible signs of slope movement. One trench breaker daylight drain will be utilized at this location behind the E&S specified trench breaker.
H-650	SS-03		X		Wetland	0.00	456+50	MVP-SG-35	This segment is a steep planar segment with an average slope of 25 degrees (47%) with localized segments of 28 degrees. A daylight drain will be used behind a sakrete trench breakers to provide additional stability to the slope. One additional trench breaker will be placed at approximately 457+00, at the top of the hill with a daylight drain.
H-650	SS-04		X	X	Wetland	10.00	528+75	MVP-SG-35	This segment is located on a steep area with an average slope of 31 degrees (60%) and previous landslide activity. Sakrete trench breakers with daylight drains will be utilized to stabilize the trench and previous landslide activity at the E&S specified locations. One additional sakrete trench breaker and daylight drain will be utilized at approximately at 529+00 at the top of the hill.
H-650	SH-05	X			Wetland	94.70	530+60	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on an 10-degree slope (17.6%). A transverse trench drain will extend through the trench from approximately 529+50 to 531+00 and sidehill cutoff drains will be utilized where seeps occur.

Line Name	Site ID	Sidehill	Steep Slope	Previous Landslide	Downslope Resource	Distance From Downslope Resource (ft.)	Approx. Station	Mitigation Controls (Appendix B)	Comments
H-650	SS-06		X		Wetland	10.00	536+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a slope with an average inclination of 19 degrees (34%). Install one trench breaker with daylight drain at the E&S specified breaker location.
H-650	SS-07		X		Stream	57.00	678+50	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a slope with an average inclination of 18 degrees. Install a trench breaker daylight drain at the one trench as specified on the E&S plans at approximately 678+75
H-650	SS-08		X		Wetland	0.00	714+50	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep planar segment with an average slope of 28 degrees (32%). Trees are well established, with no visible signs of slope movement. A daylight drain will be installed behind a sakrete trench breaker in the E&S specified location. One additional sakrete trench breaker will be installed at approximately 715+00 with a trench breaker daylight drain.
H-650	SS-09		X		Stream	0.00	920+70	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a steep area of 25 degrees (47%) with a stream at the very base of the hill. There is a localized segment measuring 31 degrees (60%) as well. Install one sakrete trench breaker at approximately 920+50 with a daylight drain, and install the second at the location specified on the E&S plans.
H-650	SS-10		X		Wetland	12.00	941+75	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep planar segment with an average slope of 26 degrees (49%). Trees are well established, with no visible signs of slope movement. Trench breaker daylight drains will be installed in the pipeline trench to prevent an accumulation of water behind the trench breakers which could saturate the local soil. Place one daylight drain in

Line Name	Site ID	Sidehill	Steep Slope	Previous Landslide	Downslope Resource	Distance From Downslope Resource (ft.)	Approx. Station	Mitigation Controls (Appendix B)	Comments
									the E&S specified trench breaker, and add one trench breaker at approximately 942+00 with a daylight drain.
H-650	SH-11	X			Stream	78.00	945+00	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on an 10 degree (17.6%) slope. A transverse trench drain will extend from approximately 945+00 to 945+50 through the trench and sidehill cutoff drains will be utilized where seeps occur.
H-650	SS-12		X		Stream	5.00	947+75	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep segment with an average slope of 18 degrees (32%). A trench breaker daylight drain will installed behind one trench breaker to avoid accumulation of water in the ditch. Install a trench breaker daylight drain behind the trench breaker specified on the E&S plan.
H-650	SS-13		X		Wetland	27.00	961+60	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a 20 degree (36%) slope with well established vegetation and no evidence of movement. Install a trench breaker daylight drain behind the trench breaker specified on the E&S plan.
H-650	SS-14		X		Stream	96.00	1100+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep segment with an average slope of 18 degrees (32%). A trench breaker with daylight will be added at station 1100+00 with a daylight drain behind it.
H-650	SS-15		X		Wetland	1100.00	1148+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment has an average slope of 16 degrees (29%). A trench breaker daylight drain will be utilized to prevent an accumulation of water behind the trench breaker. Install a trench breaker daylight drain behind the drain as specified in the E&S plans at approximately 1148+25
H-650	SH-16	X			Stream	1500.00	1213+50	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on an 10 degree (17.6%) slope. A transverse trench drain will extend approximately from

Line Name	Site ID	Sidehill	Steep Slope	Previous Landslide	Downslope Resource	Distance From Downslope Resource (ft.)	Approx. Station	Mitigation Controls (Appendix B)	Comments
									1212+00 to 1215+00 through the trench, outletting at the downhill side of the edge of ROW. Sidehill cutoff drains will be utilized where seeps occur.
H-650	SS-17		X		Stream	792.00	1217+25	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep segment with an average slope of 18 degrees (32%). Install trench breaker daylight drains at the E&S specified locations, approximately at 1217+00 and 1219+00.
H-650	SS-18		X		Stream	160.00	1236+50	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a slope with an average inclination of 27 degrees (50%). Install trench breaker daylight drains behind sakrete breakers at the E&S specified locations. An additional sakrete breaker and daylight drain may be necessary depending on the pipe placement.
H-650	SS-19		X		Stream	160.00	1238+50	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a slope with an average inclination of 21 degrees (38%). Alternate trench breaker daylight drains and trench breaker pass through drains per the E&S plan trench breakers.
H-650	SS-20		X		Stream	675.00	1344+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep segment with an average slope of 18 degrees (32%). A trench breaker daylight drain will be utilized to prevent an accumulation of water behind the trench breaker on the E&S plans.
H-650	SS-21		X		Stream	29.00	1547+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a planar segment of 21 degrees (28%) with no evidence of slope movement. Install one trench breaker at approximately 1547+00 with a daylight drain behind it.
H-650	SS-22		X		Stream	400.00	1574+50	MVP-SG-35, MVP-	This segment is located on a slope with an average inclination

Line Name	Site ID	Sidehill	Steep Slope	Previous Landslide	Downslope Resource	Distance From Downslope Resource (ft.)	Approx. Station	Mitigation Controls (Appendix B)	Comments
								SG-43A, MVP-SG-43B	of 19 degrees (34%). Install one trench breaker at approximately 1575+00 with a daylight drain behind it.
H-650	SS-23		X		Stream	334.00	1578+30	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a slope with an average inclination of 21 degrees (38%). Install one trench breaker at approximately 1578+00 with a daylight drain behind it.
H-650	SS-24		X		Stream	0.00	1672+50	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	Planar segment of 20 degrees (36%) that is going down into a creek. No evidence of movement. Install one trench breaker with a daylight drain behind it.
H-650	SS-25		X		Stream	5.00	1674+50	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep segment with an average slope of 21 degrees (38%). A trench breaker daylight drain will be utilized to prevent an accumulation of water behind the trench breaker. If more than one trench breaker is to be installed along this segment, alternating pass through drains and daylight drains will be utilized
H-650	SS-26		X		Stream	14.50	1675+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep segment with an average slope of 21 degrees (38%). A trench breaker daylight drain will be utilized to prevent an accumulation of water behind the trench breaker at approximately 1675+50.
H-650	SS-27		X		Stream	5.00	1684+00	MVP-SG-35	This segment has no evidence of movement. Use a sakrete trench breaker with daylight drain at approximately 1684+25 to help stabilize the trench.
H-650	SS-28		X		Stream	20.00	1685+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is 23 degrees (42%) and extends from the other side of the stream bank. The area is well vegetated and there is no evidence of movement. This slope will need a trench breaker with a daylight drain at approximately 1685+20.

Line Name	Site ID	Sidehill	Steep Slope	Previous Landslide	Downslope Resource	Distance From Downslope Resource (ft.)	Approx. Station	Mitigation Controls (Appendix B)	Comments
H-650	SH-29	X			Stream	175.00	1705+50	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on a 10-degree (17.6%) slope with no movement present. Transverse trench drains should be utilized in the low portions of this sidehill segment to convey any accumulated water out of the trench.
H-650	SS-30		X		Wetland	64.00	1724+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is a short 29 degree (55%) segment that will require one trench breaker with a daylight drain.
H-650	SS-31		X		Stream	68.20	1748+75	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is planar with an average slope of 21 degrees (38%). The area is well vegetated and has no evidence of movement. One trench breaker and daylight drain should be installed at approximately 1748+75.
H-650	SS-32		X		Wetland	39.00	1753+20	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is planar with an average slope of 23 degrees (42%). There is no evidence of movement and the area is well vegetated. One daylight drain should be installed behind a trench breaker at approximately 1753+25.
H-650	SS-33	X			Stream	290.60	1764+00	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on an 11 degree (19.4%) slope. A transverse trench drain will extend from 1763+50 to 1766+00 through the trench and sidehill cutoff drains will be utilized where seeps occur.
H-650	SS-34		X		Wetland	18.50	1781+75	SG-45, MVP-SG-35	This segment is on a very steep slope, with an average measurement of 35 degrees (70%). While there is no evidence of movement currently, a riprap revetment will be utilized in this section with sakrete trench breakers to provide stability.

Line Name	Site ID	Sidehill	Steep Slope	Previous Landslide	Downslope Resource	Distance From Downslope Resource (ft.)	Approx. Station	Mitigation Controls (Appendix B)	Comments
H-650	SS-35		X		Stream	36.50	1790+80	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep segment with an average slope of 18 degrees (32%). A trench breaker daylight drain will be utilized to prevent an accumulation of water behind the trench breaker at approximately 1791+00.
H-650	SS-36		X		Stream	50.00	1792+20	SG-45, MVP-SG-35	This segment is on a very steep slope, with an average measurement of 38 degrees (78%). This segment is near a stream and to preserve future slope stability, a riprap revetment with sakrete breakers should be used with daylight drains behind each trench breaker.
H-650	SH-37	X			Wetland	234.00	1793+60	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on an 12 degree (21%) slope. A transverse trench drain will extend from approximately 1793+00 to 1794+00. Sidehill cutoff drains will be utilized where seeps occur.
H-650	SH-38	X			Wetland	212.00	1809+00	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on an 11 degree (19.4%) slope. A transverse trench drain will extend from approximately 1809+25 to 1810+00. Sidehill cutoff drains will be utilized where seeps occur.
H-650	SS-39		X		Wetland	0.00	1811+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep segment with an average slope of 18 degrees (32%). A trench breaker daylight drain will be utilized to prevent an accumulation of water behind the trench breaker specified on the E&S plans
H-650	SS-40		X		Wetland	5.00	1811+90	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep segment with an average slope of 23 degrees (42%). A trench breaker daylight drain will be utilized to prevent an accumulation of water behind the trench breaker.

Line Name	Site ID	Sidehill	Steep Slope	Previous Landslide	Downslope Resource	Distance From Downslope Resource (ft.)	Approx. Station	Mitigation Controls (Appendix B)	Comments
H-650	SS-41		X		Stream	16.70	1814+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep planar segment with an average slope of 27 degrees (50%) with localized segments up to 31 degrees. Trees are well established, with no visible signs of slope movement. Trench breaker daylight drains will be used behind sakrete breakers at approximately 1814+00 and 1814+50.
H-650	SS-42		X		Stream	600.00	1818+40	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a slope with an average inclination of 18 degrees (32%). A trench breaker daylight drain will be used behind the trench breaker specified on the E&S plans.
H-650	SH-43	X			Stream	291.00	1822+20	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on an 12 degree (21%) slope. A transverse trench drain will extend through the trench from approximately 1821+75 to 1823+00. Sidehill cutoff drains will be utilized where seeps occur.
H-650	SH-44	X			Stream	336	1827+00	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on an 13 degree (23%) slope. A transverse trench drain will extend through the trench from approximately 1826+00 to 1828+00. Sidehill cutoff drains will be utilized where seeps occur.
H-650	SS-45		X		Stream	16.00	1839+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a slope with an average inclination of 18 degrees (32%). Trench breaker pass through drains will be utilized behind the E&S specified trench breakers. In addition to the landslide mitigation, there will be some bank resoration needed in this area—please refer to the standard details for bank restoration
H-650	SS-46		X		Stream	83.00	1855+00	MVP-SG-35, MVP-SG-43A, MVP-SG-	This segment is located on a slope with an average inclination of 19 degrees (34%). A trench breaker pass through drain will

Line Name	Site ID	Sidehill	Steep Slope	Previous Landslide	Downslope Resource	Distance From Downslope Resource (ft.)	Approx. Station	Mitigation Controls (Appendix B)	Comments
								43B	be used behind a breaker at approximately 1855+25.
H-650	SS-47		X		Stream	45.00	1857+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B, MVP-SG-38A, MVP-SG-38B, MVP-SG-36A	This segment is located on a slope with an average inclination of 18 degrees (32%). A trench breaker pass through drain will be utilized behind the E&S specified trench breaker location. This section is also located next to a side slope area. A transverse trench drain will extend from 1857+00 to 1859+00. Cutoff drains will be utilized as necessary in the sidehill.
H-650	SH-48	X			Stream	122.00	1883+25	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on a 10 degree slope (17.6%) with no movement present. Transverse trench drains should be utilized in the low portions of this sidehill segment to convey any accumulated water out of the trench.
H-650	SH-49		X		Stream	149.00	1897+00	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on a 10 degree (17.6%) slope with no movement present. Transverse trench drains should be utilized from 1897+00 to 1898+00. Cutoff drains should be used as seeps occur.
H-650	SS-50			X	Stream	0.00	1931+75	MVP-SG-35	This segment has an average slope of 27 degrees (47%) and doesn't have any evidence of movement. If bedrock is encountered at shallow depths, sakrete may be used in lieu of sandbag breakers. Place a trench breaker daylight drain behind the breakers specified on the E&S plan.
H-650	SH-51		X		Stream	88.00	1971+00	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on an 13 degree (23%) slope. A transverse trench drain will extend through the trench from 1970+00 to 1972+00. Sidehill cutoff drains will be utilized where seeps occur.

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H-651	SS-52			X	Wetland	10.00	2068+00	SG-45, MVP-SG-35	This planar segment has an average slope of 39 degrees (80%). While the area is well vegetated, there is evidence of landslide activity. To stabilize the area, a riprap revetment using R4 and/or R5 riprap should be used in conjunction with sakrete trenchbreakers and daylight drains.
H-650	SS-53			X	Wetland	16.00	2080+75	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep segment with an average slope of 22 degrees (40%). A trench breaker daylight drain will be utilized to prevent an accumulation of water behind the trench breaker specified on the E&S plans.
H-650	SH-54		X		Stream	56.00	2096+00	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on an 13 degree (23%) slope. A transverse trench drain will extend through the trench from 2095+00 to 2096+00. Sidehill cutoff drains will be utilized where seeps occur.
H-650	SS-55			X	Stream	0.00	2177+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a slope with an average inclination of 18 degrees (32%). A trench breaker daylight drain will be used behind the trench breaker specified on the E&S plans.
H-650	SS-56			X	Stream	0.00	2178+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a slope with an average inclination of 18 degrees (32%). A trench breaker daylight drain will be used behind the trench breaker specified on the E&S plans.
H-650	S-57			X	Stream	34.00	2187+50	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep segment with an average slope of 24 degrees (45%). A trench breaker daylight drain will be utilized to prevent an accumulation of water behind the trench breaker. If more than one trench breaker is to be installed along this segment, alternating pass through drains and daylight drains will be utilized per the breakers on the

Line Name	Site ID	Sidehill	Steep Slope	Previous Landslide	Downslope Resource	Distance From Downslope Resource (ft.)	Approx. Station	Mitigation Controls (Appendix B)	Comments
									E&S plan.
H-650	SS-58				Wetland	0.00	2206+50	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep segment with an average slope of 17 degrees (31%). A trench breaker daylight drain will be utilized to prevent an accumulation of water behind the trench breaker per the E&S plans.
H-650	SH-59	X			Stream	375.00	2226+00	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on an 11 degree slope (19.4%). A transverse trench drain will extend through the trench from approximately 2225+00 to 2226+50. Sidehill cutoff drains will be utilized where seeps occur.
H-650	SS-60			X	Stream	45.00	2236+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a slope with an average inclination of 23 degrees (42%). Install a trench breaker with a daylight drain at 2236+20.
H-650	SS-61			X	Stream	16.00	2267+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a slope with an average inclination of 19 degrees (34%). Use a trench breaker daylight drain behind the trench breakers specified on the E&S plans.
H-650	SH-62	X			Home	150.00	2272+25	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on a 10 degree (17.6%) slope with no movement present. Transverse trench drains should be utilized from 2272+00 to 2274+00. Use cutoff drains in the low points of the sidehill or as seeps occur.

Line Name	Site ID	Sidehill	Steep Slope	Previous Landslide	Downslope Resource	Distance From Downslope Resource (ft.)	Approx. Station	Mitigation Controls (Appendix B)	Comments
H-650	SH-63		X		Stream	148.00	2363+50	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on a 12-degree (21%) slope with no movement present. Transverse trench drains should be utilized from 2364+00 to 2364+50. Use cutoff drains as seems occur.
H-650	SS-64			X	Stream	81.00	2367+50	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a slope with an average inclination of 18-degrees. Trench breaker pass through and daylight drains will be utilized in this location per the E&S plan.
H-650	SS-65			X	Stream	72.80	2450+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a slope with an average inclination of 18-degrees (32%). Trench breaker pass through and daylight drains will be utilized in this location per the E&S plan.
H-650	SS-66			X	Stream	89.00	2456+00	MVP-SG-35	This pipeline segment is a steep planar segment with an average slope of 28-degrees (53%). Trench breaker daylight drains will be installed in the pipeline trench to prevent an accumulation of water behind the trench breakers which could saturate the local soil. If bedrock is shallow, sakrete breakers may be used. Install trench breakers at 2456+00, and 2456+50.
H-650	SS-67			X	Stream	29.00	2466+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a slope with an average inclination of 18-degrees (32%). Trench breaker pass through and daylight drains will be utilized in this location behind E&S plan specified trench breakers.
H-650	SH-68		X		Stream	201.00	2471+50	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on a 10-degree (17.6%) slope with no movement present. Transverse trench drains should be utilized from 2471+00 to 2472+00.

Line Name	Site ID	Sidehill	Steep Slope	Previous Landslide	Downslope Resource	Distance From Downslope Resource (ft.)	Approx. Station	Mitigation Controls (Appendix B)	Comments
H-650	SS-69			X	Wetland	0.00	2518+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This is a planar segment of 23 degrees (42%) with no evidence of movement. Install two trench breaker daylight drains behind trench breakers at 2519+00 and 2519+25.
H-650	SS-70			X	Stream	45.00	2337+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is located on a slope with an average inclination of 18 degrees (32%). Install alternating trench breaker daylight drains and pass through drains from station 2535+00 to 2537+00 from the trench breakers on the E&S plan.
H-650	SH-71		X		Stream	183.00	2540+50	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on a 10-degree (17.6%) slope with no movement present. Transverse trench drains should be utilized in the low portions of this sidehill segment to convey any accumulated water out of the trench.
H-650	SS-72			X	Stream	10.00	2548+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep segment with an average slope of 21-degrees (38%). A trench breaker daylight drain will be utilized to prevent an accumulation of water behind the trench breaker. If more than one trench breaker is to be installed along this segment, alternating pass through drains and daylight drains will be utilized. Install trench breakers per the E&S plan.
H-650	SH-73		X		Home	411.00	2662+50	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on a 10-degree (17.6%) slope with no movement present. Transverse trench drains should be utilized from 2661+00 to 2663+00. Use cutoff drains as seeps occur.

Line Name	Site ID	Sidehill	Steep Slope	Previous Landslide	Downslope Resource	Distance From Downslope Resource (ft.)	Approx. Station	Mitigation Controls (Appendix B)	Comments
H-650	SH-74		X		Stream	87.90	3756+00	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on an 13 degree (23%) slope. A transverse trench drain will extend through the trench from 3751+30 to 3759+00. Use cutoff drains as seeps occur.
H-650	SS-75			X	Stream	61.00	3773+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This pipeline segment is a steep planar segment with an average slope of 26 degrees (49%). A trench breaker daylight drain will be installed behind the trench breaker to prevent water accumulation.
H-650	SH-76		X		Stream	260.00	3778+40	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on a 10 degree (17.6%) slope with no movement present. Install a cutoff drain at approximately 3778+40
H-650	SH-77		X		Stream	360.00	3824+50	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on a 11 degree (19.4%) slope with no movement present. Transverse trench drains should be utilized as necessary from 3824+00 to 3827+00. Use cutoff drains as seeps occur
H-650	SS-78			X	Stream	122.00	3833+00	MVP-SG-35	This pipeline segment is a steep planar segment with an average slope of 29 degrees (55%). Install a sakrete trench breaker at 3832+80 with a daylight drain to prevent water from accumulating in the trench.
H-650	SH-79		X		River	186.00	3856+00	MVP-SG-38A, MVP-38B, MVP-SG-36A	This segment is sidehill on a 15 degree (27%) slope with no movement present. Transverse trench drains should be utilized in the low portions of this sidehill segment from 3856+00 to 3859+00. Use cutoff drains as seeps occur and at 3856+30 in the natural drain.

Line Name	Site ID	Sidehill	Steep Slope	Previous Landslide	Downslope Resource	Distance From Downslope Resource (ft.)	Approx. Station	Mitigation Controls (Appendix B)	Comments
H-650	SS-80			X	Stream	20.00	3889+50	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is planar with an average slope of 20-degrees (36%). The area is well vegetated and has no evidence of movement. Alternating pass through and daylight drains will be utilized on the slope at the E&S specified trench breakers.
H-650	SS-81			X	River	326.00	3894+00	MVP-SG-35, MVP-SG-43A, MVP-SG-43B	This segment is planar with an average slope of 21-degrees (38%). Install a trench breaker daylight drain behind the breaker specified on the E&S plans
H-650	SS-82			X	River	52.40	3900+00	MVP-SG-35	This pipeline segment is a steep planar segment with an average slope of 30-degrees (57%). Trench breaker daylight drains will be used behind sakrete trench breakers at approximately 3937+00 and 3937+50.
H-650	SH-83		X		Stream	50.00	3944+00	MVP-SG-38A, MVP-SG-38B, MVP-SG-36A	This segment is sidehill on an 11-degree (19.4%) slope. A transverse trench drain will extend through the trench from 3943+00 to 3945+00 and sidehill cutoff drains will be utilized where seeps occur.

Appendix B

Slide Mitigation Details

Nighttime Construction Noise Management Plan



MVP Southgate Amendment Project

Nighttime Construction Noise Management Plan

Revised February 2025

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ACRONYMS

CI ————— Chief Inspector

dBA ————— decibels on the A-weighted scale

FERC ————— Federal Energy Regulatory Commission

HDD ————— horizontal directional drill

Ldn ————— day-night sound level

Mountain Valley ————— Mountain Valley Pipeline, LLC

NSA ————— noise sensitive area

Plan ————— Horizontal Directional Drilling Nighttime Construction Noise Management
Plan Evaluation Project ————— Southgate Project

1.0 INTRODUCTION

Mountain Valley Pipeline, LLC (“Mountain Valley”) is requesting that the Federal Energy Regulatory Commission (“FERC”) approve nighttime construction at the following locations during the construction of the MVP Southgate Amendment Project (“Amendment Project”):

- ~~Lambert Compressor Station / Interconnect (MP 0.0)~~
- ~~Interconnects~~
 - ~~LN 3600 Interconnect (MP 28.7)~~
 - ~~T 15 Dan River Interconnect (MP 31.1)~~
 - ~~T 21 Haw River Interconnect (MP 75.0)~~
- Horizontal Direction Drills (“HDDs”)
 - Sandy River (milepost [“MP”] 18.1)
 - ~~Dan River HDD (MP 30.6)~~
 - ~~Stony Creek Reservoir HDD (MP 65.08)~~
- Railroad Bores
 - Railroad Crossing 1 (MP 5.36)
 - Railroad Crossing 2 (MP 25.47)
 - ~~Railroad Crossing 3 (MP 40.3)~~
 - ~~Railroad Crossing 4 (MP 71.5)~~

The above list is subject to change as Mountain Valley finalizes its crossing method determinations. The purpose of this *Nighttime Construction Noise Management Plan* (“Plan”) is to demonstrate noise levels will be reduced to below 48.6 decibels on the A-weighted scale (“dBA”) at night and 55 dBA day-night sound level (“L_{dn}”) overall at the nearest noise sensitive area (“NSA”), or not exceed 10 dBA over the ambient at the nearest NSA where ambient noise levels are already above ~~55 dBA~~ 55 dBA. Additionally, this ~~plan~~ Plan describes site-specific mitigation measures and resulting noise impacts on NSAs for the above-listed locations.

2.0 PERSONNEL AND RESPONSIBILITIES

The actions in this Plan are to be implemented by the following personnel:

Chief Inspector: The Project will designate a Chief Inspector (“CI”) for the Amendment Project. The CI has overarching authority over all construction activities occurring throughout the Amendment Project.

HDD/Bore Superintendent: The HDD contractor’s senior representative on-site is the HDD Superintendent. It is the HDD Superintendent’s responsibility to implement this Plan on the contractor’s behalf. The HDD Superintendent must be familiar with all aspects of the drilling activities, the contents of this Plan, and the conditions of approval under which the activity is permitted. The HDD Superintendent will maintain a

copy of this Plan on all drill sites and distribute, as appropriate, to construction personnel. The HDD Superintendent ensures that workers are properly trained and familiar with the mitigation measures herein.

HDD / Bore Operator: The HDD operator is employed by the HDD contractor to operate the drilling rig, driller, and fluid pumps. The HDD Operator is responsible for installing noise mitigation measures described in this plan and for monitoring nighttime noise. Should noise levels go above the FERC-regulated nighttime noise limits, the HDD Operator must communicate this information to the HDD Superintendent and HDD contractor field crews as well as the on-site [Amendment](#) Project inspection staff. The HDD Operator is responsible for stopping ~~or~~ the drilling program and implementing additional noise mitigation should noise levels go above the FERC sound level guidelines.

A copy of this Plan will be included in the bid package documents for the [Amendment](#) Project.

~~3.0 LAMBERT COMPRESSOR STATION / INTERCONNECT (MP 0.0)~~

~~Construction at the Lambert Compressor Station would include use of typical construction equipment (see Section 4.0 below) and may occur at night. The nighttime and 24 hour Ldn noise impacts at the Lambert Compressor Station were estimated to be below 55 Ldn as presented in the FERC Certificate Application for the Project. However, considering the length of construction at the Lambert Compressor Station, nighttime noise may be disruptive to nearby residents due to the equipment usage and vehicle back-up alarms. To minimize potential disruption to nearby residents, Mountain Valley proposes to use the following general mitigation measures at the Lambert Compressor Station construction area:~~

- ~~• For excavation/embankment activities, the haul routes and dump locations will be planned to limit the backing required from the off-road trucks. This limits the number of times the white noise back-up alarms are activated.~~
- ~~• Use of broadband backup alarms on all equipment operating at night.~~
- ~~• Excavator operators will communicate through the use of radios or ground man.~~
- ~~• Clearing and grading operations near the Interconnect sites perimeter area will be limited to daytime hours. Other operations with smaller equipment, such as the equipment used to install perimeter control devices (e.g., silt fencing, earth dikes and ditches, and drainage piping) will continue.~~
- ~~• Lights will be placed in the direction of the work zones, to minimize impacts on areas outside of the Interconnect sites.~~
- ~~• No idling of equipment will occur; when not in use, equipment will be turned off.~~
- ~~• Training will be provided to nighttime work crews, focusing on not over-revving engines, avoiding unnecessary idling, and proper inspection and maintenance of moving parts and mufflers.~~

~~4.0 INTERCONNECTS~~

~~A Nighttime Construction Noise Evaluation Technical Memorandum for the Project Interconnects is included in Appendix A of this Plan. Construction activities during the nighttime at the LN 3600 Interconnect, T-15 Dan River Interconnect, and T-21 Haw River Interconnect will be the same as daytime~~

~~activities except that it will not involve significant noise-producing construction activities (e.g., demolition, pile driving, tree clearing and grubbing). Additionally, nighttime construction activities are anticipated to use less equipment in total. Nighttime noise at the Interconnects will be generated by the following:~~

- ~~• two komatsu 228 excavators or equivalent;~~
- ~~• two Caterpillar D6T bulldozers or equivalent;~~
- ~~• two 26-ton articulated dump trucks;~~
- ~~• three light plants; and,~~
- ~~• one 25-ton smooth drum roller.~~

~~As the Nighttime Construction Noise Evaluation concludes (see Appendix A), updated modeling with reduced equipment and limiting general construction activities predicts that noise from nighttime construction activities at these locations will be lower than the FERC sound level guidelines. Despite this, Mountain Valley proposes to use the following general mitigation measures at the LN3600, T-15, and T-21 construction areas:~~

- ~~• For excavation/embankment activities, the haul routes and dump locations will be planned to limit the backing required from the off-road trucks. This limits the number of times the white noise back-up alarms are activated.~~
- ~~• Use of broadband backup alarms on all equipment operating at night.~~
- ~~• Excavator operators will communicate through the use of radios or ground man.~~
- ~~• Clearing and grading operations near the Interconnect sites perimeter area will be limited to daytime hours. Other operations with smaller equipment, such as the equipment used to install perimeter control devices (e.g., silt fencing, earth dikes and ditches, and drainage piping) will continue.~~
- ~~• Lights will be placed in the direction of the work zones, to minimize impacts on areas outside of the Interconnect sites.~~
- ~~• No idling of equipment will occur; when not in use, equipment will be turned off.~~
- ~~• Training will be provided to nighttime work crews, focusing on not over-revving engines, avoiding unnecessary idling, and proper inspection and maintenance of moving parts and mufflers.~~

5.03.0 HORIZONTAL DIRECTIONAL DRILLING AND RAILROAD CROSSING SITES

The HDD method will be used to cross the [Dan/Sandy River](#) in Virginia and the [Stony Creek Reservoir/Dan River](#) in North Carolina. In addition, there will be [four/two](#) railroad crossings that will be performed using

the conventional boring methods and will likely require nighttime construction work. A noise evaluation has been performed for each HDD site and railroad crossing. An ambient noise survey at the potential HDD and railroad crossing sites was conducted to quantify the current ambient sound levels around each site and to document/identify existing NSAs. All NSAs are residences. A noise evaluation has been performed for each HDD site and railroad crossing as part of the [FERC Certificate Amendment Application for the Project](#).

For those HDD or railroad crossing sites where the predicted HDD or boring activity sound levels at the NSAs are predicted to be greater than 55 dBA L_{dn} , noise mitigation for the equipment or compensation/relocation will likely be necessary to achieve the noise goals. For noise mitigation on HDD or conventional bore equipment, engine exhaust and barrier treatments are typically used to reduce the sound level contribution to less than 55 dBA L_{dn} . Typically, all engines on power units, gensets, etc., would be fitted with residential-grade exhaust mufflers, and temporary barriers may be installed between the HDD/conventional bore site and the nearest NSAs. Secondary noise control treatments may be required, depending on the actual equipment and site layout used.

As an alternative to these primary and/or secondary noise control treatments, [the Project Mountain Valley](#) may consider offering the residents compensation or temporary relocation as a means of reducing the temporary construction noise impact. If all impacted residents choose to accept temporary relocation compensation, then temporary barriers or other treatments will not be necessary.

Railroad Crossings 1 and 2 are located in Pittsylvania County and, therefore, are subject to the county noise ordinance. Construction noise is exempt from the Pittsylvania County noise ordinance if it occurs between 7:00 a.m. and 10:00 p.m. However, if nighttime construction is necessary, the sound due to construction is expected to be less than 52 dBA at the nearest resident's property line for both locations.

The acoustical assessment indicates that the noise of HDD operations at the entry site for the planned HDD crossing at the [Stony Creek Reservoir could exceed 55 dBA \$L_{dn}\$ at the closest NSAs. Noise from the direct bore work at Railroad Crossings 3 and 4 will likely also](#) [Sandy River and Dan River could](#) exceed 55 dBA L_{dn} at the closest NSAs.

HDD activities can occur over the course of several weeks, so compensation or relocation [are](#) typically not practical for HDD work areas. ~~Railroad crossings typically take several days, so compensation or relocation of affected residents of the most impacted NSAs is a practical noise mitigation option.~~

Noise mitigation for the [Stony Creek Reservoir](#) [Sandy River and Dan River](#) HDD ~~sites~~ will likely take the form of a noise barrier erected between the HDD site and the closest NSAs. Calculations indicate that an approximately ~~129–21~~ decibel reduction in the HDD site sound level contributions [are](#) possible through the implementation of a series of ~~12–14~~ 20- to 24-foot-tall noise barriers located approximately 20 feet from the primary noise-generating equipment at the HDD site. Similar reductions would be expected for the conventional boring equipment at the railroad crossings. Table 4-1 shows the predicted sound levels with a noise barrier in place for the [Stony Creek Reservoir](#) [Sandy River and Dan River](#) HDD ~~site and at Railroad Crossings 3 and 4 sites~~.

Table 4-1

Predicted Temporary Sound Levels Due to ~~HDD / Railroad Crossings~~ [HDDs](#) and Noise Mitigation

HDD Crossing (Entry or Exit Site)	Distance and Direction of the Closest NSA to Site Center	Existing Ambient (L_{dn} dBA)	Calculated L_{dn} of the Operations (L_{dn} dBA)	Existing Ambient L_{dn} Plus L_{dn} of Operations (L_{dn} dBA)	Temporary Change in the Ambient Sound Level (L_{dn} dBA)
Stony Creek Reservoir HDD Sandy River	300650 feet NorthwestNNW	42.847.3	48.754.4	49.755.2	67.9
Railroad Crossing 3Dan River	250740 feet NorthwestSSW	4549.5	57.554.6	5755.8	126.3
Railroad Crossing 4	700 feet North	48.9	44.7	50.3	1.4

~~Even with noise barriers in place, it is likely that the sound levels due to the conventional bore at Railroad Crossing 3 will exceed 55 dBA L_{dn} due to the close proximity of the NSA to the work area. Due to the short term nature of the railroad crossing work, temporary compensation or relocation of the effected residents is likely the most efficient method.~~

Appendix A
~~Technical Memorandum—MVP Southgate Project, Pipeline~~
~~Interconnects,~~
Horizontal Directional Drilling
Nighttime Construction Noise Evaluation

Plan for Unanticipated Discovery of Historic Properties and Human Remains



MVP Southgate Amendment Project

Plan for Unanticipated Discoveries of Historic Properties and Human Remains

~~MVP Southgate Project~~

~~FERC Docket No. CP19-14-000~~

~~November 2018; Updated May 201~~

Revised March 2025

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1.0 INTRODUCTION

On June 18, 2020, in Docket No. CP19-14-000, the Federal Energy Regulatory Commission (“FERC” or “Commission”) issued a Certificate of Public Convenience and Necessity pursuant to Section 7(c) of the Natural Gas Act to Mountain Valley Pipeline, LLC (“Mountain Valley”) authorizing Mountain Valley to construct and operate the MVP Southgate Project (“Southgate(or “Original Certificated Project” or “”). A Final Environmental Impact Statement (“FEIS”) was issued by FERC on February 14, 2020.

In December 2023, Mountain Valley submitted an update on the status of the Original Certificated Project”). The-, indicating that it had entered into precedent agreements for a redesigned pipeline route. Mountain Valley is currently seeking to amend the MVP Southgate Project (“Amendment Project”) by truncating the Original Certificated Project to approximately 31.3 miles, incorporating certain route deviations, increasing the diameter of the pipeline, removing the Lambert Compressor Station, and modifying the proposed interconnects. The Amendment Project facilities will be located in Pittsylvania County, Virginia, and Rockingham, Alamance, Guilford, and Caswell counties County, North Carolina.

Mountain Valley recognizes that, despite the extensive archaeological field investigations that are conducted prior to Amendment Project construction, it is possible that potentially significant cultural resources could be discovered during construction, especially during excavation activities. The Southgate Project Mountain Valley recognizes its role to protect and preserve cultural resources that may be found during construction in accordance with federal and state regulations. Cultural resources in this context are defined as archaeological sites, objects, and features and include human remains and associated or unassociated funerary objects.

This *Plan for Unanticipated Discoveries of Historic Properties and Human Remains* (“Plan”) was developed on behalf of the Southgate Project Mountain Valley and in consultation with the Virginia Department of Historic Resources (“VDHR”) and the North Carolina Historic Preservation Office (“NC HPO”), which represent the State Historic Preservation Officers (“SHPOs”) in Virginia and North Carolina, respectively. This Plan summarizes the approach the Project Mountain Valley will follow to address the discovery of archaeological finds or human remains during construction activities within the Amendment Project’s Area of Potential Effects (“APE”).

2.0 GUIDELINES, REGULATIONS, AND LEGISLATION FOR UNANTICIPATED DISCOVERIES OF CULTURAL RESOURCES AND HUMAN REMAINS

The stipulations of the Plan, as set forth below, are in accordance with the current guidelines detailed in the following federal and state guidelines, regulations, and legislation:

2.1 FEDERAL

- Section 106 of the *National Historic Preservation Act* (“NHPA”), as amended (54 United States Code (“USC”) 306101 et seq.)
- Secretary of the Interior’s *Standards for Archeology and Historic Preservation* (48 FR 44716-42)

- Advisory Council for Historic Preservation’s (“ACHP’s”): *Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects* (ACHP February 23, 2007)
- Federal Energy Regulatory Commission’s (“FERC”) Office of Pipeline Regulations *Guidelines for Reporting on Cultural Resources Investigations for Natural Gas Projects* (FERC 2017);

2.2 VIRGINIA

- VDHR’s *Guidelines for Conducting Historic Resources Survey in Virginia* (2017)
- Virginia Antiquities Act, (§ 10.1-2305 Code of Virginia), “Permit required for the archaeological excavation of human remains;”

2.3 NORTH CAROLINA

- North Carolina Office of State Archaeology’s (“OSA’s”) *Archaeological Investigations Standards and Guidelines* (OSA December 2017)
- North Carolina General Statute 70-3, *The Unmarked Human Burial and Skeletal Remains Protection Act*.

3.0 CONSULTATION WITH SHPOS AND NATIVE AMERICAN TRIBES

~~The Southgate Project~~ Mountain Valley initiated consultation with VDHR and NC HPO for the Original Certificated Project on April 27, 2018. ~~The Consultation was reinitiated for the Amendment Project is also contacting in July 2024.~~ Mountain Valley, on behalf of the FERC, previously contacted (via email, phone calls, and meetings) federally recognized Native American Tribes groups to ~~solicit their provide them the opportunity to identify~~ concerns ~~and input related to the Original Certificated Project.~~ A revised letter regarding ~~potential Project effects to historic properties, tribal resources, the amended route and human remains other changes~~ was sent to those groups associated with the Amendment Project on July 31, 2024. Contact information for the VDHR, NC HPO, and the tribes is included in Section 5.0 of this Plan. In the event that cultural resources and/or human remains are encountered during construction, ~~the Project~~ Mountain Valley will notify the VDHR or NC HPO (as applicable), those tribes that have asked to be consulted in the event of a discovery (“Interested Tribes”), any other consulting parties for the Amendment Project (potentially including non-federally recognized tribes or other organizations), and/or law enforcement, as outlined below.

4.0 UNANTICIPATED DISCOVERY PROTOCOL

4.1 CULTURAL RESOURCES TRAINING

~~The Southgate Project~~ Mountain Valley requires that its employees and contractors have a basic understanding of the nature of cultural resources, and all Amendment Project inspectors and construction contractor personnel will be given basic training in cultural resource site recognition prior to beginning work on the Amendment Project.

The cultural resource training will review ~~the Project’s~~ Mountain Valley’s commitments regarding cultural resources compliance and provide examples of the types of cultural resources that may be encountered during construction. In addition, the training program will emphasize the exact procedures to be followed,

as outlined in this Plan, regarding actions to be taken and notifications required in the event of a significant site discovery or a discovery of human remains or funerary objects during construction.

The training will ensure that ~~Southgate Project~~Mountain Valley personnel and construction contractors understand the extent of the archaeological survey program that has been performed for the Original Certificated Project and the Amendment Project and are fully aware of the distinction between sites that have been located and “cleared” under the cultural resource program (i.e., sites that have been determined to be non-significant after different levels of investigation or have already undergone data recovery excavations) and new discoveries that may be made during the construction process.

4.2 NOTIFICATION AND ASSESSMENT PROCEDURES (NOT INVOLVING HUMAN REMAINS OR FUNERARY OBJECTS)

The following steps will be followed in the event an unanticipated discovery of artifacts or other indications of a cultural resource (not involving human remains or funerary objects) is made during ~~Southgate~~Amendment Project construction:

- (1) The Contractor or relevant party will immediately notify the Lead Environmental Inspector (“EI”) (or Chief Inspector, if the Lead EI is not immediately available) of an unanticipated discovery.
- (2) The Lead EI or Chief Inspector will direct a *Stop Task Order* to the Contractor’s Site Foreman to ensure that the activity within 100 feet of the unanticipated discovery ceases and will instruct the Contractor to flag or fence off the discovery location and buffer and take any necessary measures to ensure site security. Any unanticipated discovery made on a weekend or overnight hours will be protected with security fencing until all appropriate parties are notified of the discovery. The Contractor will not restart work in the area of the find until the Chief Inspector has agreed in writing that work can resume.
- (3) The Lead EI will inform the Amendment Project Archaeologist (“PA”) of the discovery. If the PA determines that the location is not an archaeological site or determines that the find is a previously known and cleared archaeological resource and that the find would not alter the current understanding of the resource, the PA will report that documentation to the Lead EI. The Lead EI will document that determination and notify the Chief Inspector to resume work.
- (4) If the PA determines that the find is not a previously known and cleared resource or potentially represents information that would alter the current understanding of a previously known and cleared archaeological resource, ~~she/he~~they will notify ~~the Project~~Mountain Valley. If the find is not determined insignificant by the PA within 24 hours of notification, the PA will conduct a preliminary field assessment of the discovery to determine if it is potentially a significant archaeological site.
- (5) If, based on that inspection or further review, the PA determines that the discovery is an isolated find or otherwise not a potentially significant archaeological site (e.g., lacks the type of archaeological features, intact contacts, or patterned artifact distributions that could provide substantive information concerning prehistory or history), the PA will document that determination and report the determination to the Lead EI. The Lead EI will then notify the Chief Inspector to resume work.

- (6) If the PA determines that the find is a newly identified and potentially significant archaeological site or represents information that would alter the current understanding of a previously known and cleared archaeological resource, the PA will inform ~~the Southgate Project~~Mountain Valley, the Lead EI, and the Chief Inspector of that determination.
- a. Within 24 hours of that determination, ~~the Project~~Mountain Valley will notify the FERC, the relevant SHPO, and the Interested Tribes of the determination.
 - b. Following notification of the FERC, the relevant SHPO, and the Interested Tribes, the PA will evaluate the discovery and assess its horizontal and vertical extent, cultural association(s), and integrity. If the find appears to be significant, the PA will also evaluate potential strategies (i.e., the installation of protective fencing or matting) that would allow the passage of construction equipment through the discovery area pending treatment of the resource. Apart from the potential installation of matting or other protective measures, further ground-disturbing activities within the flagged or fenced-off discovery location will not resume until authorized by the FERC.
 - c. The PA will inform ~~the Project~~Mountain Valley, the Lead EI, the Chief Inspector, the FERC, the relevant SHPO, and the Interested Tribes of the findings and recommendations regarding site significance and, if necessary, the implementation of protective measures. If the FERC, in consultation with the SHPO and Interested Tribes, determines that the find is not eligible for the NRHP, the Chief Inspector will grant clearance for construction to resume. If the FERC determines that the find is eligible for the NRHP, the PA or their designee will develop an archaeological treatment plan that will be submitted to the FERC, the relevant SHPO, and Interested Tribes (if appropriate) for review and comment.
 - d. Upon authorization by the FERC, ~~the Project~~Mountain Valley will implement the treatment plan.
 - e. At the conclusion of archaeological fieldwork, a meeting or site visit may be held with the FERC, ~~the Project~~Mountain Valley, the relevant SHPO, and the Interested Tribes to review the results of the work accomplished.
 - f. Upon receiving written acceptance of the results of the implemented treatment from the FERC, the Lead EI and Chief Inspector will grant clearance to the construction team to resume ground-disturbing activities within the discovery area.

4.3 NOTIFICATION AND TREATMENT PROCEDURES (HUMAN REMAINS OR FUNERARY OBJECTS)

~~The Southgate Project~~Mountain Valley will treat any human remains encountered during the Amendment Project in a manner guided by the ACHP's *Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects* (2007) and by the relevant state laws and guidelines. In particular, human remains must be treated with the utmost dignity and respect at all times. Human remains and/or associated artifacts (including grave markers, coffin hardware, or funerary objects) will be left in place and not disturbed, and no unnecessary photographs will be taken. No skeletal remains or materials associated with the remains

will be collected or removed until appropriate consultation has taken place and a plan of action has been developed. All personnel involved with the discovery will maintain confidentiality concerning the remains, and any press contacts will be referred to appropriate [Project Mountain Valley](#) or agency personnel.

The following measures will be taken in the event an unanticipated discovery of potential or confirmed human remains or funerary objects is made during [Amendment](#) Project construction.

- (1) The Contractor will immediately notify the Lead EI (or Chief Inspector if the Lead EI is not immediately available) of the discovery.
- (2) The Lead EI or Chief Inspector will direct a *Stop Task Order* to the Contractor's Site Foreman to ensure that work within 100 feet of the discovery ceases. The Lead EI or Chief Inspector will instruct the Contractor to flag or fence off the discovery location and buffer and take any necessary measures to ensure site security. Work will not resume in the area of the find until the Chief Inspector grants clearance to recommence work (see below).
- (3) All human remains and/or funerary items will be left in place ~~and~~, treated with dignity and respect, and protected from the elements. All efforts will be made to prevent the general public from viewing any gravesites and/or funerary objects.
- (4) The Lead EI will contact ~~the Project Mountain Valley~~ and the PA on the day of the discovery, and the PA will examine the discovery within 24 hours of notification. If the PA determines that the finds are human remains or funerary items, the PA will immediately notify ~~the Project Mountain Valley~~.
- (5) For finds in Virginia, ~~the Project Mountain Valley~~ will immediately notify the FERC, the landowner, and the VDHR of the find, as well as the Virginia State Police.

For finds in North Carolina, ~~the Project Mountain Valley~~ will immediately notify the FERC, the landowner, the County Medical Examiner, and the North Carolina State Archaeologist, who shall conduct

- (6) ~~further~~ notifications per North Carolina General Statute 70-3, *The Unmarked Human Burial and Skeletal Remains Protection Act*.
- (7) If, upon inspection by the appropriate legal authorities, the remains are determined to be a criminal matter and not archaeological, ~~the Project Mountain Valley~~ will await clearance by the appropriate legal authorities before resuming construction.
- (8) If the find is determined not to be a criminal matter, ~~the Southgate Project Mountain Valley~~ will comprehensively evaluate the potential to avoid and/or minimize the [Amendment](#) Project's effects to the human remains.
 - a. If human remains are determined to be Native American, the remains will be left in place and protected from further disturbance with security fencing and, if necessary, a security guard until a site-specific work plan for their avoidance or, if necessary, their removal can be generated. Note that avoidance is the preferred choice of the SHPOs

and Tribes. ~~The Project~~ Mountain Valley will assist the FERC, the appropriate SHPO, and the Interested Tribes in their consultation to develop a plan of action.

- b. If human remains are determined to be non-Native American, the remains will be left in place and protected from further disturbance with security fencing and, if necessary, a security guard until a site-specific work plan for their avoidance or removal can be generated. Please note that avoidance is the preferred choice of the SHPOs. Consultation with the SHPO and other appropriate parties, in accordance with Virginia or North Carolina state law, will be required to determine a treatment plan.
- c. In Virginia, if human skeletal remains must be removed, ~~the Project~~ Mountain Valley will obtain a Permit for *Archaeological Removal of Human Burials* from the VDHR, and consultation will be conducted with Interested Tribes and lineal descendants, as appropriate. In North Carolina, any removal of human remains would be done in accordance with *The Unmarked Human Burial and Skeletal Remains Protection Act* and other relevant state statutes and through consultation with the NC HPO, Interested Tribes, and lineal descendants, as appropriate.
- d. ~~The Project~~ Mountain Valley will be responsible for all costs associated with the discovery, evaluation ~~and~~, agency consultation, excavation, investigation and study, disinterment, repatriation, re-interment, reporting, and curation of any human remains and associated funerary items encountered during Amendment Project construction.
- e. Amendment Project construction may resume within the flagged or fenced-off discovery location only after successful implementation of the treatment plan and after ~~the Project~~ Mountain Valley receives written approval ~~by~~from the FERC, the relevant SHPO, and the Interested Tribes.

5.0 CONTACTS

Federal Agency Contact	
Federal Energy Regulatory Commission Paul Friedman Allison King Office of Energy Projects 888 First Street, NE Washington, D.C. 20426 Tel: (202)-502-80598847 Email: paul.friedman@ferc.gov Email: allison.king@ferc.gov	
State Historic Preservation Office Contacts	
Virginia	
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Chickahominy Tribe, Eastern Division The Honorable Gerald A. Stewart, Chief Eastern Division 2895 Mt. Pleasant Road, Providence Forge, VA 23140 Tel: 804-966-7815 Email: jerry.stewart@cit-ed.org	Coharie Tribe The Honorable Ammie Gordon "Gordie," Chief 7531 N.US. Highway 421 Clinton, NC 28328
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<u>Mattaponi Tribe</u> The Honorable Mark Custalow, Chief 1314 Mattaponi Reservation Circle, West Point, VA 23181 Tel: 804-353-5908 Email: mcustalow1@gmail.com	<u>Meherrin Indian Tribe</u> The Honorable Jonathan Caudill, Jr., Chief P.O. Box 274, Ahoskie, NC 27910 Email: billyoilman2@yahoo.com
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<u>Pawmunkey Indian Tribe</u> The Honorable Robert Gray, Chief 1054 Pocahontas Trail King William, VA 23086 Tel: 804-843-2353 Email: robert.gray@pamunkey.org	<u>Patawomeck Tribe</u> Mr. Charles "Bootsie" Bullock 638 Kings Highway, Fredericksburg, VA 22405 Tel: 540-842-0501 Email: patawomecktribalcenter@gmail.com
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<u>a/ Responded to outreach and requested to be notified in the case of unanticipated discoveries.</u>	

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North Carolina	
North Carolina Office of the Chief Medical Examiner (All Project Rockingham County <u>/ all NC counties</u>) 4312 District Drive, Raleigh, NC 27607 Tel: (919) 743-9000	

Public, Stakeholder, and Agency Participation Plan



MVP Southgate Amendment Project

Public, Stakeholder, and Agency Participation Plan

Revised February 2025

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APPENDICES

[Appendix A Amendment Project Stakeholder Outreach Activities 2023 – Present](#)

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1.0 — PLAN PURPOSE

The purpose of this Public, Stakeholder and Agency Participation Plan is to identify stakeholders and potential issues related to the proposed MVP Southgate Project (“Project” or “Southgate Project”), determine appropriate and effective methods of communication with stakeholders, identify responsible parties, document the public consultation process, and adhere to communication protocols. The Southgate Project team is dedicated to seeking out greater involvement from the various affected groups early in the planning so that those who are interested may participate in the decision making process. The Project’s goal is to work with stakeholders to achieve consensus and settlements on mutually acceptable Project designs. The Southgate Project team believes an early and more collaborative approach will lead to Project designs that minimize impacts to landowners, communities, and the environment, while enabling us to develop more comprehensive applications for submittal to the Federal Energy Regulatory Commission (“FERC”) and other agencies.

2.0 — PROJECT SCOPE

Mountain Valley Pipeline, LLC (“Mountain Valley”) is seeking a Certificate of Public Convenience and Necessity from the FERC” or “Commission pursuant to Section 7(c) of the Natural Gas Act to construct and operate the Southgate Project. The Project will provide timely, cost effective access to new natural gas supplies to meet the growing needs of natural gas users in the southeastern United States, including for the Project’s anchor shipper, PSNC Energy, a wholly owned subsidiary of SCANA Corporation, a local distribution company serving customers in North Carolina. The Southgate Project is expected be in service by late 2020. The Project is a separate project from the 303-mile Mountain Valley Pipeline that is currently under construction. The Southgate Project will be developed, constructed, and owned by Mountain Valley and will be operated by EQM Midstream Partners, LP.

The Southgate Project includes an approximate 0.4-mile-long 24-inch-diameter pipeline (H-605), 73 miles of 24- and 16-inch-diameter natural gas pipeline (H-650), a new 28,915 nominal horsepower compressor station (Lambert Compressor Station), meter stations and other ancillary facilities (e.g. contractor yards and access roads) required for the safe and reliable operation of the pipeline. The Southgate Project facilities will be located in Pittsylvania County, Virginia and Rockingham and Alamance counties, in North Carolina.—

3.0 — OUTREACH PLAN GOAL

MOUNTAIN VALLEY AND THE SOUTHGATE PROJECT TEAM KNOW THAT STAKEHOLDER OUTREACH AND PUBLIC CONSULTATION

1.0 BACKGROUND

Mountain Valley Pipeline, LLC (“Mountain Valley”) first initiated contact with stakeholders for the MVP Southgate Project (“Original Certificated Project”) in April 2018 and, as part of the Original Certificated Project application, Mountain Valley filed a *Public, Stakeholder, and Agency Participation Plan* (“Plan”). Mountain Valley has continued its stakeholder outreach for the MVP Southgate Amendment Project (“Amendment Project”) and provides this updated Plan describing additional outreach activities for the Amendment Project.

2.0 PLAN PURPOSE

Mountain Valley recognizes that stakeholder outreach and public engagement are essential elements of the permitting process and will play an important role in the overall successful development of the Amendment Project.

~~The Southgate Project team~~ Mountain Valley has ~~developed~~continued to develop a comprehensive stakeholder list and ~~public participation plan~~. ~~The plan is built~~build the Plan around the fundamental principle that open, honest, and proactive communication is ~~simply~~the right thing to do and necessary for the sound development of the Amendment Project. ~~The Project strives~~ We strive to be a good neighbor and a good corporate citizen and ~~believes~~believe that every person, organization, and institution that ~~might~~may be affected by the Amendment Project has the right to be informed and ~~should~~have an opportunity to participate in the decisions that ~~might~~may affect them.

~~The Southgate Project team, including land agents and survey crews, will participate in Public Consultation Training. This training includes appropriate communication, participation~~Plan outlines our continued approach to providing opportunities for community members to share concerns and ask questions through multiple ways of engagement. Our goal is to be clear and ~~documentation practice~~transparent with community members, providing information that is both accurate and easy to understand, and to work with stakeholders.

~~The Southgate Project team will also be trained in appropriate research methods about determining property ownership and legal descriptions. They will receive training to achieve consensus and settlements on landowner negotiations, including effective listening skills. These skills are a fundamental part of the communication process between stakeholder and agent.~~

4.0—OUTREACH AND PUBLIC PARTICIPATION PLAN

mutually acceptable project designs. We believe an early, ongoing, and collaborative approach led to Amendment Project designs that minimized impacts to landowners, communities, and the environment and enabled us to develop more comprehensive applications for submittal to the Federal Energy Regulatory Commission (“FERC”) and other agencies. It is the Southgate Project’s ~~our~~ objective to ensure that all potential federal, state, and community stakeholders ~~are~~ be informed of our intentions ~~relatively~~ related to the proposed Amendment Project in a timely manner. The Public, Stakeholder, and Agency Participation Plan, herein As outlined, has in this document, the Plan consists of the following objectives:

- Identify ~~all~~ key stakeholders along the proposed pipeline route. While landowners are the most obvious and directly affected stakeholders, many additional individuals and organizations along the proposed route may have a stake in the Southgate Amendment Project. Identifying and engaging them is important to the success of the Amendment Project.
- Establish and maintain channels for two-way communication throughout the life of the Amendment Project. ~~Mountain Valley realizes~~ We realize that effective communication must be two-way. In addition to sharing information, ~~the Project’s~~ Mountain Valley’s outreach ~~effort~~ efforts are designed to create a continuing dialogue with stakeholders, from the ~~start of the pre-filing process~~ Original Certificated Project through the construction of the Amendment Project, restoration, and operation. It is also designed to provide stakeholders with a central point of contact to maintain ease of communication and ensure consistency of messaging.
- Ask for public input at critical stages of planning. ~~Mountain Valley believes~~ We believe that the Southgate Amendment Project is a partnership not only with the commercial partners but with all stakeholders. With that idea in mind, for the Southgate Amendment Project ~~team has, we~~ sought to gain input and ideas from stakeholders during the planning ~~and pre-filing~~ process. This ~~has helped to identify and address areas of concern. The Project held three open houses at locations convenient to affected stakeholders along the proposed Southgate Project route. These open house events initiated the open dialogue process with our community members. The Southgate Project open houses and other activities outlined herein, have been designed to serve as opportunities for the public to learn about the Project and for the Southgate Project team to listen to concerns of affected stakeholders.~~
- Keep stakeholders informed throughout the process. ~~Early and timely communication with all stakeholders is essential to the Southgate Project’s success. The Project is committed to proactively communicating, through the use of website updates and other methods, during all phases of the Project.~~ Many outreach plans are designed to communicate effectively during the early stages of implementation—especially during the approval stage—~~but then reduce communication during~~

Examples of FERC Key Stages and other information to be communicated:

- ~~Pre-filing Request~~
- ~~Open Houses~~
- ~~Draft Resource Reports and Alternatives~~
- ~~Monthly Status Reports~~
- ~~FERC issues Notice of Intent~~
- ~~Draft Resource Reports~~
- ~~FERC Scoping Meetings~~
- ~~Responses to Scoping Comments~~
- ~~File Application~~
- ~~Data Requests & Responses~~
- ~~Supplemental information~~
- ~~Commission Order~~
- ~~Construction~~
- ~~In-service~~

~~construction~~. While communication about the Southgate Amendment Project will certainly be heaviest early in the process, ~~the Project team plans we plan~~ to proactively communicate via website updates and other methods during all phases of the Amendment Project, even after all approvals have been received.

- ~~Engage local resources. To gain insight into public perceptions along the route and to improve the credibility of the Project, the Southgate Project team has retained community involvement specialists, who are very familiar with and knowledgeable about the , we have consulted with~~ local area, to supplement the efforts of the Project team. These specialists will arrange community meetings and other necessary meetings between the Project and stakeholders. Additionally, they will serve as the “eyes and ears” of the Project, helping to identify growing areas of concern, potential issues, and misinformation.

5.0 — STAKEHOLDER IDENTIFICATION

Mountain Valley will focus its efforts on reaching the following audiences:

- ~~Landowners~~
- ~~Local elected officials~~
 - ~~Mayors, city councils, boards of supervisors~~
 - ~~County commissioners~~
 - ~~County and municipal planning organizations~~
 - ~~Zoning boards, etc.~~
- ~~State elected officials~~
 - ~~State senators (local area staff)~~
 - ~~community leaders and organizers to State congressmen (local area staff)~~
- ~~Federal elected officials~~
 - ~~U.S. Senators (local area staff)~~
 - ~~U.S. Congressmen (local area staff)~~
- ~~Federal, state, and local regulatory agencies~~
- ~~Native American Tribes~~
- ~~Economic development agencies/chambers of commerce~~
- ~~Owners of mineral rights, such as coal companies~~
- ~~Local law enforcement agencies~~
- ~~Local emergency services (fire departments, ambulatory)~~
- ~~Local media outlets~~

- ~~Environmental non-governmental organizations~~
- ~~Community at large~~

~~The status of contacts made to date with federal and state agencies, local elected officials and municipal planning agencies can be found in the Southgate Project's pre-filing monthly reports to the FERC.~~

5.1 — AGENCIES

~~In April 2018, the Project team made phone calls to all permitting agencies that require consultation of the projects plan to use the FERC pre-filing process and invited them to participate in the pre-filing process. Additionally, the Southgate Project team sent written correspondence to many of the aforementioned agencies requiring consultation that included a formalized invitation to participate in the FERC pre-filing process, a basic project overview, and a point of contact for the project.~~

~~The Southgate Project team remains committed to working with federal and state agencies. In the spirit of two-way engagement, the Project team is responding, and will continue to respond, to requests for information from these agencies in a timely manner. During the initial contacts, a specific line of communication was established between the agency personnel and Project staff. This line of communication will be utilized as confirmation to better understand agency requests and reaffirm agency receipts of requested information.~~

5.2 — OTHER STAKEHOLDERS

~~The Southgate Project contacted stakeholders, including any affected landowners (as that term is defined by 18 CFR Section 157.6(d)(2)). In areas where notifying a larger group may be necessary, the Project will expand the mailing list to include landowners that may fall outside the requirements stated in 18 CFR Section 157.6(d)(2). Many of these stakeholders will have already been contacted, but it is the Project's goal to provide all stakeholders—including those with whom we have been in contact—the same information at the same time. The letter will describe the Project and provide updated information and inform stakeholders of the pre-filing process timeline and invite them to open houses.~~

5.3 — STAKEHOLDER OUTREACH ACTIVITIES

- ~~Mountain Valley will employ the following methods to ensure successful communication and the outreach, including: effort for the Amendment Project.~~

3.0 STAKEHOLDER IDENTIFICATION ~~AND ISSUES MANAGEMENT & DATABASE TRACKING SYSTEM: AFTER IDENTIFYING STAKEHOLDERS, THE SOUTHGATE PROJECT HAS DEVELOPED AND MAINTAINED AN ISSUES~~

Efforts to identify stakeholders focused on landowners; federal, state, and local elected officials; federal, state, and local regulatory agencies; Native American tribes; environmental justice communities, economic development agencies/chambers of commerce; faith-based organizations; community organizations; local law enforcement agencies; emergency response agencies; educational institutions; local media outlets; non-governmental organization; and the community at large. Mountain Valley has continued to develop and maintain a contact management system to track ~~contact~~engagement with these stakeholders in a manner

that ~~helps identify~~ ~~address~~ assists in the identification and ~~resolve~~ resolution of emerging issues and concerns.

Information Materials: The Southgate Project has developed messages and materials to inform stakeholders about the Project and to address potential questions and areas of concern. These materials include, for example:

- ~~A project overview fact sheet~~
- ~~Frequently Asked Questions (FAQ)~~
- ~~“Standard presentation” information posters, etc. for use at open houses and other meetings~~
- ~~Internal project guidance concerning key messages about the Southgate Project to ensure consistency in communication~~
- ~~Media advisories to announce public meetings and other Project updates~~
- ~~Project newsletter to be physically mailed directly to affected landowners and other stakeholders 3-4 times per year and made available online via the Project website~~
- ~~Project website that will include all the above, as well as maps of the proposed pipeline route~~

Media Relations: Keeping the media appropriately informed helps minimize the potential for misunderstanding and allows the Project to inform all stakeholders while reducing inaccurate information. Messages and materials about the Southgate Project will continue to be refined throughout the development effort to contain updated information and to address stakeholder concerns that may arise. In addition, materials contain the following information:

- ~~Purpose and Need of the Project~~
- ~~Information on Mountain Valley~~
- ~~Information on environmental and other benefits of natural gas~~
- ~~Discussion of today’s energy market and the need for expanded natural gas infrastructure~~
 - ~~FERC background information—The role of the FERC and other regulatory agencies in the process, and an overview of the pre-filing and filing processes~~
 - ~~Information on construction, including the types and sizes of equipment used~~
 - ~~Information on environmental activities conducted throughout the project, including pre-construction environmental surveys, measures during construction to minimize impact on environmental resources including agricultural resources, restoration, and post construction monitoring~~
 - ~~Safety information—A discussion of pre and post construction safety, and an overview of the safety record of the interstate natural gas pipeline industry and of the Project’s affiliates~~
 - ~~A Project time line—An intended time frame for completing key phases of the Southgate Project.~~

Training: A significant component of the outreach and communication team's effort is focused on training the Project team. The goal of the training effort is to familiarize all personnel who participate in the Project—both home office and field staff, including sub-contractors—of the Southgate Project outreach and public participation plan and to provide specific modules of training—including those developed by INGAA/IRWA for those personnel and contractors who interface with the public. Southgate Project staff receiving training includes all Project personnel and all contractors involved in field engineering, siting and survey, permitting and environmental impact mitigation, land acquisition, operations, property owner relations, and government affairs. The Southgate Project's guiding principle is to train each individual shortly after retention for the Project or before the individual engages in his or her designated role.

3.1 WEBSITE: BECAUSE OF ITS ACCESSIBILITY AND THE ABILITY TO BE CONSTANTLY UPDATED, ONLINE COMMUNICATIONS WILL PLAY A VITAL ROLE IN STAKEHOLDER DIALOGUE, OUTREACH AND ENGAGEMENT METHODS

Mountain Valley's public outreach and engagement methods include but are not limited to updates to the Amendment Project website (www.mvpsouthgate.com), local advertising, digital advertising, email, flyers, in-person meetings, sponsorship of and participation in community events, and virtual meetings. Allowing for non-native English speakers, Mountain Valley continues its commitment to employ resources such as providing translated materials and interpretation services as necessary.

3.1.1 Amendment Project Website Information

Early in the stakeholder outreach process, Mountain Valley established a website (www.mvpsouthgate.com). In addition to serving as a repository for up-to-date materials and information, the MVP Southgate Project website will feature features mechanisms for stakeholders to ask questions and provide input about the Amendment Project.

3.1.2 Direct Points of Contact Outreach:

Mountain Valley will utilize direct contact, either in-person, by phone, or correspondence (e-mail operates and letter) with monitors a toll-free phone number, email address, and postal mailing address that enables stakeholders throughout the Project, to obtain additional Amendment Project information and provide input. This information is printed on all materials and included on the Amendment Project website and includes a single point of contact for stakeholder inquiries.

Email: mail@mvpsouthgate.com

Phone: 833-MV-SOUTH

Mail: 2200 Energy Drive, Canonsburg, PA 15317

3.2 STATE AND FEDERAL PERMITTING AGENCIES

Engagement with state and federal permitting agencies began in 2018 for the Original Certificated Project and has continued to the present. In July 2024, Mountain Valley sent letters to all permitting agencies and agencies that require consultation, notifying them of our plan to file an amendment application with FERC and inviting them to participate in the process. Copies of the submitted consultation letters are provided in Appendix I-I to Resource Report 1. Mountain Valley followed up on these letters to seek guidance from

agencies and requested meetings as appropriate. In the spirit of two-way engagement, Mountain Valley is responding and will continue to respond to requests for information from these agencies in a timely manner. During the initial contacts, a specific line of communication was established between the agency personnel and Amendment Project staff. This line of communication will be utilized to confirm our understanding of agency requests and to confirm agency receipt of requested information.

3.3 AMENDMENT PROJECT BRIEFINGS/INFORMATION UPDATES

Mountain Valley is committed to maintaining contact with local government officials, non-governmental organizations, and other interested stakeholders in the Amendment Project area. Mountain Valley created and distributed informational collateral materials to stakeholders via traditional mail, in person, and utilizing electronic technologies. Additionally, Mountain Valley seeks out opportunities to speak with and listen to community members at public meetings and events, community events, and other gathering places. Mountain Valley has provided and will continue to provide various updates, including periodic newsletters and other communications that inform stakeholders about recent activities, Amendment Project milestones, and what to expect next. The Southgate Project will notify first newsletter was distributed in August 2018 for the Original Certificated Project. Eight newsletters have been distributed in total, and Mountain Valley intends to distribute additional newsletters, starting with the ninth newsletter slated for early 2025.

Mountain Valley continues to work with local news media to facilitate accurate and informed reporting on the Amendment Project, and work with local government and non-governmental organizations to provide Amendment Project updates and respond to questions as they arise in the community. Mountain Valley has engaged with various civic groups and non-governmental groups through event and program sponsorships and ongoing efforts to raise the Amendment Project's visibility and introduce the public to the Amendment Project. This approach was initiated in 2018 for the Original Certificated Project and continued through 2022, 2023, and 2024, with the most recent Amendment Project update communicated via flyer beginning in August 2024. Mountain Valley will continue these efforts to build relationships, engage meaningfully with the community, and ensure stakeholders have ample opportunity to learn about the Amendment Project and get answers to their questions.

We have provided and will continue to provide copies of the filing materials, including resource reports, to participating federal agencies and public libraries along the proposed pipeline route and to certain state offices so the public will have the opportunity to view the materials and provide comments. Copies are posted to the website, www.mvpsouthgate.com/news-info/ and will be provided to the following libraries in the Amendment Project area:

- Eden Public Library – Eden, North Carolina;
- Pittsylvania County Public Library - Chatham, Virginia.

3.4 LANDOWNER ENGAGEMENT

Engagement with landowners continues today for the Amendment Project. Landowners were contacted beginning in April 2024 to request access for survey permissions to perform updated civil and environmental surveys for the amended pipeline route, access roads, staging areas and aboveground facility sites.

The Amendment Project team, including land agents and survey crews, participated in Public Consultation Training, which included appropriate communication, participation, and documentation practices with stakeholders. The Amendment Project team was also trained in appropriate research methods with regard to determining property ownership and legal descriptions. They received training on landowner negotiations, including effective listening skills. These skills are a fundamental part of the communication process between stakeholder and agent, and we are pleased to report that as of September 2024, all easements needed for the amended Amendment Project in North Carolina have been fully acquired, and more than 95 percent of easements needed for the amended Amendment Project in Virginia have been acquired.

Landowners and stakeholders will be kept informed about the Amendment Project's FERC process and permitting status through various means. In April 2024, we sent a letter to the directly affected by the Project as required by FERC's regulations. For example, direct contact by Project right-of-way representatives is a necessity in communicating with and abutting properties affected landowners. Direct contact with agencies has already been initiated by Project environmental staff and will continue by the construction work areas. The letters also provided information regarding procedures to follow in the event that the landowner has any issues during construction. We have also implemented a Landowner Complaint Resolution Process, which outlines these procedures.

Open Houses: In June 2018, Mountain Valley conducted three community open houses at locations in the project area. The Southgate Project's community open houses were in addition to the FERC scoping meetings. A formal presentation was not given during these open houses. However, attendees had direct, one-on-one access to members of the Project team who listened to stakeholder ideas and concerns and answered questions about the Project. The Project used an "information station" open house format with topic-specific stations covering possible concerns and potential solutions. The stations included rights-of-way, environmental, construction, engineering, etc., as well as a station dedicated specifically for FERC personnel. Each station contained information pertinent to that area of project responsibility, presented both in larger visual aids and/or in handout form and manned by Project team members knowledgeable of the subject presented. This allowed attendees arriving at different times to circulate among the stations and gather information in a more personal and relaxed fashion. Land agents were present at the open houses to review the proposed route and to answer any specific landowner concerns.

The Southgate Project utilized GIS software as a means of highlighting the proximity of the Southgate Project route to individual landowners' properties, businesses, farms, neighbors, etc. Stakeholders were notified and invited directly via invitations sent by U.S. mail and indirectly through news media reports, advertising and the MVP Southgate Project website about the open house schedule.

Locations of the open houses were determined and selected based on their proximity to the Southgate Project route and meeting room capacity, with intent to be as convenient as possible to the majority of landowners along the route. A list of dates and locations are provided in the table below:

3.5 COMMUNITY ENGAGEMENT

For the past two years, Mountain Valley has been actively engaged with our community to advance the Amendment Project. Mountain Valley has held numerous meetings and conversations with a wide range of stakeholders, including public safety officials like the Eden Police and Fire Departments, Draper Volunteer Fire Department, Dry Fork Fire Department, and the Pittsylvania County Sheriff's Office.

Mountain Valley has also collaborated with local businesses and organizations such as the Eden Chamber of Commerce, the Danville-Pittsylvania Chamber of Commerce, and nonprofit groups like the Boys & Girls Club of the Danville area and Life's Blessings Soup Kitchen.

Additionally, Mountain Valley has maintained open communication with local, state, and federal elected officials, as well as city and county administrators. Mountain Valley has engaged with community college and public school officials to explore potential partnerships and educational opportunities and has worked with local news outlets to keep the community informed about the Amendment Project's progress and benefits. Appendix A to this Plan contains a summary of activities, including sponsorships, advertising, and memberships, that Mountain Valley has participated in since 2023.

3.6 ENVIRONMENTAL JUSTICE

Amendment Project team members conducted a desktop Environmental Justice review to identify disadvantaged communities within a one mile footprint of the Amendment Project corridor to help ensure that underserved community members are included in outreach and engagement efforts. Utilizing available online resources and census data, information was collected to identify Environmental Justice Communities, sensitive receptor locations, as well as additional demographic, socioeconomic, and health data in order to gain a greater understanding of the communities that will be impacted by the Amendment Project. For additional information regarding our Environmental Justice analysis see Section 5.5 of Resource Report 5.

Mountain Valley has focused its stakeholder outreach to groups and individuals who have been historically underrepresented in project development processes and identified and engaged with relevant stakeholders in census tracts in and adjacent to the Amendment Project area. This outreach has included direct engagement and conversation about the Amendment Project's purpose, scope, and status, as well as distribution of Amendment Project information to dozens of businesses, organizations, and churches located near the project area and/or serving minority and economically disadvantaged residents. A copy of the Amendment Project materials is attached as Appendix B to this Plan.

Mountain Valley has posted updates to the project website, engaged with state Environmental Justice officials, and established relationships with first responders. Mountain Valley has sponsored and attended numerous events and activities benefitting disadvantaged children in the project area in Virginia and North Carolina; provided direct financial assistance and volunteer hours at a soup kitchen in Eden, North Carolina; made in-kind and financial contributions to local welding programs at public educational institutions; and funded need-based scholarships for participants in the Leadership Rockingham (North Carolina) program and students at Danville Community College (Virginia). We are committed to engaging meaningfully with stakeholders, building relationships, and informing the public about our project and our values. Highlights of Mountain Valley's local engagement include:

- **Pittsylvania Career & Technical Center, Virginia:** Mountain Valley has been pleased to provide meaningful support to the welding program and its students during the past six years. Mountain Valley donated 40 feet of 42-inch diameter pipe for welding program participants' use. Some of the donated material was fabricated into a "LOVE" sign on display at a public park in Pittsylvania County. Additionally, since the MVP Southgate project was announced, Mountain Valley has donated \$20,000 to the program to support the purchase of welding equipment, supplies, and materials.

- **Danville Community College, Virginia:** Mountain Valley worked with officials at Danville Community College to identify ways to provide meaningful support to qualifying students from lower-income families. The project team has provided funding for scholarships through contributions to the college's foundation and has remained engaged with foundation and college leaders since early in the project's development. These ongoing efforts supplement Mountain Valley's direct contribution of \$20,000 to support annual scholarships to qualifying students of limited financial means and living in local areas affected by the project's proposed route.
- **Boys & Girls Clubs of the Danville Area, Virginia:** The Boys & Girls Clubs of the Danville Area serves a high concentration of lower-income and minority families in the Danville and Pittsylvania County area. Since the project's announcement in 2018, Mountain Valley has been pleased to participate in fundraisers and provide financial support for the Boys & Girls Clubs of the Danville Area's programs. These contributions, totaling more than \$24,000, have supported the club's food bank, hot meal program, holiday programs, and after-school programs serving local children from disadvantaged families.





- **Life's Blessings Soup Kitchen, North Carolina:** Mountain Valley has supported this soup kitchen, serving lower-income and homeless residents in Eden's Draper area, through volunteer hours and financial contributions totaling more than \$4,000 since 2023. Donations have funded soup kitchen operations as well as seasonal programs, including a holiday meal event and a back-to-school drive benefitting local children from lower-income families.
- **Rockingham Community College, North Carolina:** In 2024, Mountain Valley donated 20 feet of 42-inch diameter pipe to the welding program at Rockingham Community College. The two sections of pipe provide students with the opportunity to cut and weld large-diameter pipe. College officials said many program students are interested in a career in pipeline welding. The College recently expanded its welding program capacity through a facility expansion and the acquisition of new equipment.
- **Sunshine School, North Carolina:** Mountain Valley is working with organizers of a nonprofit group focused on saving and restoring an aging Rosenwald School in Eden. The former Sunshine School building has been vacant for years but traces its history to the segregation era when it was constructed to serve as a classroom for local African-American students. Mountain Valley has provided funds to facilitate the nonprofit group's effort to remove dangerous trees hanging over the structure, and project team members are volunteering time and expertise to assist the nonprofit owner in protecting, preserving, and restoring the structure for public use as a museum and community center.

Starting in July 2024 and continuing through subsequent months, Mountain Valley conducted ongoing outreach with community members and local officials, businesses, churches, and other non-governmental associations to share information about the revised scope of the Amendment Project. Mountain Valley distributed updated project information prioritizing locations with significant populations of economically disadvantaged and minority residents. The information was shared at the locations in Table 1 below by providing it to individuals, taping to entrance/lobby windows, displaying on counters, and posting to bulletin boards in high-visibility locations frequented by audiences who historically have been underrepresented during project development processes.

Project Open House Meetings – MVP Southgate ProjectTable 1	
Locations Where Updated Amendment Project Information was Distributed	
LocationDate	StateLocation
Community College Student Center	Virginia
Pittsylvania Boys & Girls Club	Virginia
DCC Educational Foundation	Virginia
Dollar General Store	Virginia
Emmanuel Pentecostal Holiness Church	Virginia
Hope Chapel Baptist Church	Virginia
Olde Dominion Agriculture ComplexJune 28, 2018	VirginiaOlde Dominion Agriculture Complex Chatham, VA
Mill's Grill & Market	Virginia
Tunstall Fire & Rescue	Virginia
Dry Fork Volunteer Fire Department	Virginia
Jones Food Market	Virginia
Dollar General	Virginia
Pittsylvania County Public Works	Virginia
Dollar General Store	Virginia
Dry Fork Post Office	Virginia
June 26, 2018Pittsylvania County Pet Center	Reidsville Event Center Reidsville, NCVirginia
Pittsylvania County Administration Lobby	Virginia
Pittsylvania County Administration Bulletin Board	Virginia
June 25, 2018Pittsylvania County Community Action Center	The Palladium Event Center Burlington, NCVirginia
Pittsylvania County Community Action Center	Virginia
Pittsylvania County Community Action Center	Virginia
Pittsylvania County Community Action Center	Virginia
Danville-Pittsylvania County Chamber of Commerce	Virginia
Pittsylvania County Public Library	Virginia
Mt. Hermon Public Library	Virginia
Brosville/Cascade Public Library	Virginia
Exxon Station	Virginia
Railroad Café	North Carolina
U.S. Postal Service Office	North Carolina
Mill Avenue Recreation Center	North Carolina
Dollar General	North Carolina
Santana's Restaurant	North Carolina
Eden City Hall	North Carolina
Rockingham County Office of Economic Development	North Carolina
Eden Chamber of Commerce	North Carolina

Walmart/Woodforest National Bank	North Carolina
Rockingham County Public Library	North Carolina
Osborne Baptist Church	North Carolina
Life's Blessings Soup Kitchen/Gospel Tabernacle	North Carolina
Aging, Disability & Transit Services	North Carolina
Immanuel Friends Church	North Carolina
Draper Volunteer Fire Department	North Carolina

~~Scoping Meetings: The FERC conducted scoping meetings in the Southgate Project area. The Project participated in those scoping meetings, as well as in meetings with Federal, State, and local resource agencies.~~

Appendix A

Amendment Project Stakeholder Outreach Activities 2023 – Present

FERC Scoping Meetings—MVP Southgate Project Association	Outreach Activity
Date Boys and Girls Clubs of Danville Area	Location Sponsorship
Boys and Girls Clubs of Danville Area	Sponsorship – Holiday Meals
Carolinas Natural Gas Coalition	Sponsorship – Fall Meeting
Chatham Rotary Club	Sponsorship
Chatham Fire Department	Sponsorship
Danville Community College	Sponsorship
Danville Pittsylvania Chamber of Commerce	Sponsorship
Danville Area Alzheimer's Association	Sponsorship - Alzheimer's Walk
Eden Chamber of Commerce	Sponsorship – Awards Dinner
Explore Eden NC	Sponsorship – Eden Riverfest Event
Fine Arts Festival of Rockingham County	Sponsorship
Life's Blessings Soup Kitchen	Sponsorship - Back to School Event
Life's Blessings Soup Kitchen	Sponsorship – Holiday Event
Life's Blessings Soup Kitchen	Sponsorship – Annual Gift
Life's Blessings Soup Kitchen	Sponsorship – Holiday Gift Drive
Leadership Rockingham	Sponsorship – Two Financial Need Scholarships
NC Chamber	Sponsorship - Government Affairs Reception
NC Chamber	Sponsorship – Annual Awards Dinner
August 23, 2018NC Chamber	Vailtree Event and Sponsorship – Annual Conference Center Haw River, NC
NC Chamber	Sponsorship – Building NC
NC Chamber	Sponsorship – Environmental Compliance Conference
North Carolina Disaster Relief Fund	Hurricane Helene Relief Donation
North Carolina Economic Development Association	Sponsorship - Spring Conference
North Carolina Economic Development Association	Sponsorship - Summer Conference
North Carolina Economic Development Association	Sponsorship - Fall Conference
North Carolina Economic Development Association	Sponsorship - Annual Membership
North Carolina Eden Chamber	Sponsorship - Annual Dinner
North Carolina Eden Chamber	Sponsorship – Community Sponsor
North Carolina Eden Chamber	Sponsorship – Temptations in the Garden Event
August 21, 2018Old Dominion Agricultural Complex	Olde Dominion Agriculture Complex Chatham, VASponsorship - Bluegrass Festival
August 20, 2018Pittsylvania County Career and Tech Center	Reidsville Event Center Reidsville, NCSponsorship – Welding Program
Rotary of Chatham	Sponsorship - Gala Fundraiser
RoCo is Home LLC	Sponsorship - Christmas Parade
Southern Area Agency on Aging	Sponsorship
Virginia Danville Pittsylvania Chamber of Commerce	Sponsorship - Southside Leadership Dinner
Virginia Manufacturers Association	Sponsorship - Virginia Energy Summit
Virginia Public Access Project	Sponsorship - Annual Luncheon
Virginia Oil and Gas Association	Sponsorship – Annual Gift
VA Chamber	Sponsorship – Annual Gift
Virginia FREE	Sponsorship – Annual Gift
Virginia Oil and Gas Association	Sponsorship
Virginia Oil and Gas Association	Sponsorship – Fall Meeting

Project Contact Information: The Southgate Project maintains and monitors a toll-free phone number, e-mail address, and postal mailing address that enable stakeholders to obtain additional Project information and provide input. This information is included on printed materials and the Project website.

In summary, the Southgate Project understands that Stakeholder Outreach does not stop at submittal of the application or possible receipt of a certificate of Public Convenience and Necessity but is an ongoing commitment to keeping the public at large, affected landowners, the market, and other interested parties informed of the Project status. The Project will seek to continue the relationships and dialogue built during these crucial early stages of public interaction.

5.4 COMMUNICATIONS MILESTONES

- April 2018 to present—Initial communications with agencies and stakeholders
- April 2018—MVP Southgate Project website live and online
- April 2018—Landowner welcome packet to introduce the Southgate Project
- May 15, 2018—FERC accepts the Southgate Project into Pre-filing Process
- May—June 2018—Additional informational letter to stakeholders; open-house invitations; print media outreach
- June 2018—Community open houses
- August 2018—MVP Southgate Project first newsletter
- August 2018—Public scoping meetings hosted by FERC
- November 2018—File Certificate Application

5.5 COMMUNICATION VEHICLES

- Briefing materials for elected officials
- Website: www.mvpsouthgate.com
- Toll-free hotline: 833-MV-SOUTH
- Email: mail@mvpsouthgate.com
- Community open houses
- Site visits
- Maps for stakeholders to view (hard copy and electronic versions)
- High-level maps for general distribution
- Regular mailings to engage stakeholders without internet access and locations set up to review voluminous Project info
- Newspaper advertorials as needed

- ~~Media interviews, including TV, radio, newspapers, to produce ongoing public stories and articles regarding updates on the MVP Southgate Project~~

5.6 — FERC LANDOWNER ASSISTANCE

~~The FERC landowner helpline via telephone is toll free at 1-877-337-2237 and via email address is LandownerHelp@FERC.gov~~

5.7 — MVP SOUTHGATE PROJECT LANDOWNER RESOLUTION PROCESS

~~In the early stages of the Project's planning and development, the Southgate Project established a protocol to address landowner concerns and answer questions. The protocol utilizes Southgate Project's toll-free phone line (833-MV-SOUTH) and/or email submission to mail@mypsouthgate.com and this same protocol will be utilized during the construction phase as well. These communication portals were created as a means for landowners, as well as community members, to contact Project representatives with questions, concerns, and issues. The Southgate Project also keeps a formal record of all calls and emails received in order to effectively track inquiries and resolutions. The three-step process is as follows:~~

Step 1: Gather Information

- ~~Southgate Project representative will request all necessary information to complete the information section of the Inquiry/Issues Tracking Log, including the individual's name, address, parcel number, phone number, and Project reference. Additionally, any details offered regarding the purpose of the call will be entered on the Tracking Log.~~

Step 2: Define the Inquiry/Issue

- ~~Southgate Project representative will work with the individual to help understand and address their concerns. If the representative can resolve the issue, they will record this on the Tracking Log. Otherwise, the individual will be advised that their concerns have been documented and that they can generally expect a return call within three business days from an MVP Southgate Project representative. The questions/concerns/issues as documented on the Tracking Log will then be directed to the appropriate right-of-way agent.~~

Step 3: Resolution

- ~~If the issues are resolved during Step 2, the Southgate Project representative will complete the process by documenting how a resolution was reached for the Tracking Log. If a resolution is not reached during Step 2, the Tracking Log is forwarded to the appropriate right-of-way agent who will return the call and also update the Tracking Log with the resolution. The delegation of the issue should generally follow this progression until resolution is reached. If a right-of-way agent receives a direct phone call relating to environmental, construction, or non-right-of-way issues from a landowner during pre-construction, construction, or post-construction activities, the agent will request all necessary information (as outlined in Step 1) and will initiate submission of the information on the Inquiry/Issues Tracking Log. The agent will then proceed to Steps 2 and 3 until a resolution is reached. After working with the Southgate Project representative and appropriate right-of-way agent, if the landowner is still not completely satisfied with the resolution, the individual should contact the Commission's Landowner Helpline at (877) 337-2237, or by email, LandownerHelp@FERC.gov.~~

5.8 MVP SOUTHGATE PROJECT FORMAL APPLICATION – PUBLIC LOCATIONS FOR VIEWING

When the formal application from Southgate Project is filed with the FERC, it will be sent to a public location in each county in Virginia and North Carolina. The list below identifies the locations in each county where the public can review a hard copy and/or a digital copy (depending on the preference of the library or county building):

County	Name	Address
Pittsylvania	Pittsylvania County Public Library	24 Military Drive, Chatham, VA 24531
Rockingham	Reidsville Public Library	204 W Morehead Street, Reidsville, NC 27320
Rockingham	Eden Public Library	598 S. Pierce Street, Eden, NC 27188
Alamance	May Memorial Library	342 S. Spring Street, Burlington, NC 27215

Appendix B

Amendment Project Materials

**Spill Prevention, Control and Countermeasure Plan and
Unanticipated Discovery of Contamination Plan for
Construction Activities in Virginia and North Carolina**



MVP Southgate Amendment Project

Spill Prevention, Control, and Countermeasure Plan and Unanticipated Discovery of Contamination Plan for Construction Activities in Virginia and North Carolina

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APPENDICES

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ACRONYMS AND ABBREVIATIONS

A	acceptable
Amendment Project	MVP Southgate Amendment Project
BMP	best management practice
CIC	Compliance Inspection Contractor
CFR	Code of Federal Regulations
FERC	Federal Energy Regulatory Commission
EC	Emergency Coordinator
EI	Environmental Inspector
E&SC	Erosion and Sediment Control
ID	identification
Mountain Valley	Mountain Valley Pipeline, LLC
NCDEQ	North Carolina Department of Environmental Quality
PCB	polychlorinated biphenyl
Plan	Preparedness, Prevention, and Contingency and Spill Prevention Control and Countermeasures Plan
PPC	Preparedness, Prevention, and Contingency
PPE	Personal Protective Equipment
ppm	parts per million
ROW	right-of-way
SDS	Safety Data Sheet
SOP	standard operating procedure
SPCC	Spill Prevention Control and Countermeasures
TBD	to be determined
U	unacceptable
VADEQ	Virginia Department of Environmental Quality

1.0 OVERVIEW

The MVP Southgate [Amendment](#) Project (“~~Project~~” or “~~Southgate~~[Amendment](#) Project”) has [the](#) potential to impact sensitive environmental resources, and as a result, environmental protection measures have been developed to minimize potential impacts on these resources and will be applied, as applicable, to the [Amendment](#) Project. This Spill Prevention, [Control](#), and Countermeasures Plan (“[SPCC](#)”) is intended to serve as the general plan for the [Amendment](#) Project. Site-specific plans will be developed for each facility and yard, as applicable. ~~Tables~~[The tables](#) shown below will be completed by the Contractor prior to/during construction.

The Federal Energy Regulatory Commission (“FERC”) may utilize a third-party Compliance Inspection Contractor (“CIC”) contracted to ~~the Southgate Project~~[Mountain Valley Pipeline, LLC \(“Mountain Valley”\)](#) to act on behalf of the agency to provide [Amendment](#) Project-wide construction oversight and monitor compliance. The CIC will inspect and monitor preconstruction and construction activities and enforce requirements related to the National Historic Preservation Act, the Endangered Species Act, and other applicable laws and regulations. [The Project Mountain Valley](#) will adhere to all federal, state, and local permits.

2.0 WASTE MANAGEMENT

This waste management section provides an overview and checklist to be used before each phase of construction begins at each spread. Each job might require different chemicals and equipment with different fuel requirements that must be documented, accounted for, and contained. Also included at the end of this section ~~are~~[is](#) the *Weekly Hazardous Materials and Waste Inspection Log* for weekly inspection of hazardous materials and waste.

2.1 MATERIAL AND WASTE INVENTORY

Prior to each phase of construction at each spread, the material and waste inventory must be completed. The inventory must be provided in ~~the tables~~[Tables](#) 2-1 to 2-4 below and will, depending on the specific circumstances of the planned construction activity, include but not limited to the following:

- Nutrients, such as fertilizers, herbicides, and sanitary wastes;
- Solid waste, such as scrap metals, masonry products, and other raw construction materials and debris;
- Construction chemicals, such as paints, soils additives, weld coding, and acids for cleaning;
- Petroleum products, such as diesel fuel, hydraulic fluid, and lubricants; and
- Other materials, including concrete wash from mixers and explosives.

The list must include oils and fuels, commercial chemicals, hazardous and ~~nonhazardous~~[non-hazardous](#) wastes, and incompatible materials to be used or stored on-site during construction. The Contractors will be responsible ~~to maintain~~[for maintaining](#) a log of Material Safety Data Sheets for each chemical listed in Tables 2-1, 2-2, 2-3, and 2-4 on the construction site at all times.

TABLE 2-1

List of Oil and Fuel to be Used or Stored On-Site during Construction

Spread	Contractor	Type	Quantity	Containment Method	Location

~~Notes~~Note: A Safety Data Sheet (“SDS”) for all hazardous substances listed in the above tables shall be provided by the ~~contractor~~Contractor. Chemicals, solvents, and fuels shall be kept at least 100 feet from wetlands, streams, and riparian areas and shall be placed within secondary containment.

TABLE 2-2

List of Commercial Chemicals to be Used or Stored On-Site during Construction

Spread	Contractor	Type	Quantity	Containment Method	Location

~~Notes~~Note: ~~An~~An SDS for all hazardous substances listed in the above tables shall be provided by the ~~contractor~~Contractor. Chemicals, solvents, and fuels shall be kept at least 100 feet from wetlands, streams, and riparian areas and shall be placed within secondary containment.

TABLE 2-3

List of Hazardous and ~~Nonhazardous~~Non-hazardous Wastes to be Used or Stored On-Site during Construction

Spread	Contractor	Type	Quantity	Containment Method	Location

~~Notes: A~~Note: An SDS for all hazardous substances listed in the above tables shall be provided by the ~~contractor~~Contractor. Chemicals, solvents, and fuels shall be kept at least 100 feet from wetlands, streams, and riparian areas and shall be placed within secondary containment.

TABLE 2-4

List of Incompatible Materials to be Used or Stored On-Site during Construction

Spread	Contractor	Type	Quantity	Containment Method	Location

~~Notes: A~~Note: An SDS for all hazardous substances listed in the above tables shall be provided by the ~~contractor~~Contractor. Chemicals, solvents, and fuels shall be kept at least 100 feet from wetlands, streams, and riparian areas and shall be placed within secondary containment.

Incompatible materials shall be stored in separate areas in accordance with nationally recognized standards. Incompatible materials shall not be consecutively placed into a container or tank. Additionally, sources of ignition are prohibited in hazardous materials and ~~wastes~~waste areas.

The Contractor shall identify and list all sources of potential large spills, including tank overflow, rupture, or leakage. SPCC information must be included for all containers greater than 55 gallons with a cumulative capacity of 1,320 gallons or greater that contain oil, including petroleum, fuel oil, sludge, oil refuse, and oil mixed with waste, as required in the Code of Federal Regulations (“CFR”), Title 40, Part 112 (40 CFR Part 112). The Contractor shall list large spill sources in Table 2-5A. Additional sources of large spills can be listed in Table 2-5B. Additional tables shall be provided as needed.

TABLE 2-5A

List of Large Spill Sources

Spread	Contractor	Product	Total Quantity Storage Size, Type		Potential Direction of Flow	Maximum Rate of Flow	Structures or Equipment to Contain Spills	Location of Use
			Present	Location				

Note: Chemicals, solvents, and fuels shall be kept at least 100 feet from wetlands, streams, and riparian areas and shall be placed within secondary containment.

TABLE 2-5B

List of Large Spill Sources

Spread	Contractor	Product	Total Quantity Storage Size, Type		Potential Direction of Flow	Maximum Rate of Flow	Structures or Equipment to Contain Spills	Location of Use
			Present	Location				

Note: Chemicals, solvents, and fuels shall be kept at least 100 feet from wetlands, streams, and riparian areas and shall be placed within secondary containment.

2.2 HAZARDOUS MATERIALS AND WASTE INSPECTIONS

The Contractor shall inspect weekly hazardous materials and waste and associated storage areas. These weekly inspections shall document the condition of the hazardous materials and waste and the associated storage containers. The Contractor shall file all inspection records with the Chief Inspector and Environmental Inspector ([“EI”](#)) on a weekly basis. The weekly inspection form is at the end of this section and is titled *Weekly Hazardous Materials and Waste Inspection Log*.

WEEKLY HAZARDOUS MATERIALS AND WASTE INSPECTION LOG

For each item listed below, the Contractor shall indicate whether existing conditions are acceptable (“A”) or unacceptable (“U”). Resolution of all unacceptable conditions must be documented. Contractor shall inspect all storage facilities on a regular basis, but not less than weekly. Contractor shall file all inspection records with the Chief Inspector and [Environmental Inspector EI](#) on a weekly basis.

I. STORAGE AREAS FOR FUELS, LUBRICANTS, AND CHEMICALS

General A/U

- ☐ Construction yard or storage areas secured
- ☐ National Fire Protection Association symbol posted in storage area or at yard entrance
- ☐ Storage areas properly prepared and signed
- ☐ Safety Data Sheets available
- ☐ Hazardous Materials Management Plan and Spill Prevention and Countermeasure Plan available

Hazardous Materials Management A/U

- ☐ No evidence of spill or leaking materials
- ☐ Incompatible materials separated
- ☐ All containers labeled properly
- ☐ All containers securely closed
- ☐ All containers upright
- ☐ No evidence of container bulging, damage, rust, or corrosion

Secondary Containment Areas A/U

- ☐ Containment berm intact and capable of holding 110 percent of material stored plus precipitation
- ☐ Lining intact
- ☐ No materials overhanging berms
- ☐ No materials stored on berms
- ☐ No flammable materials used for berms

Compressed Gases A/U

- ☐ Cylinders labeled with contents
- ☐ Cylinders secured from falling
- ☐ Oxygen stored at least 25 feet away from fuel
- ☐ Cylinders in bulk storage are separated from incompatible materials by fire barriers or by appropriate distance

II. HAZARDOUS WASTE MANAGEMENT

Waste Container Storage A/U

- ☐ No evidence of spilled or leaking wastes
- ☐ Adequate secondary containment for all wastes
- ☐ Separate containers for each waste watercourse (no piles)
- ☐ Waste area not adjacent to combustibles or compressed gases
- ☐ All containers securely closed
- ☐ Bungs secured tightly
- ☐ Open-top drum hoops secured
- ☐ All containers upright
- ☐ No evidence of container bulging or corrosion
- ☐ No severe damage or rust
- ☐ Containers are compatible with waste (e.g., plastic liner for corrosives, metal liner for solvents)
- ☐ No smoking and general danger and/or warning signs posted

Waste Container Labeling A/U

- ☐ Containers properly labeled

Name, address, and U.S. Environmental Protection Agency identification (“ID”) number or ID number of generator listed (Not required if Contractor is an exempt small quantity generator)

- ☐ Accumulation start date listed
- ☐ Storage start date listed
- ☐ Chemical and physical composition of waste listed
- ☐ Hazardous property listed

~~Nonhazardous~~Non-hazardous Waste Areas A/U

- ☐ No litter in the yard
- ☐ No hazardous wastes or used oil mixed with trash (e.g., contaminated soil, oily rags, diapers, or other oily materials)
- ☐ Empty oil and aerosol containers for disposal are completely emptied

III. EMERGENCY RESPONSE EQUIPMENT A/U

- ☐ Shovels
- ☐ Absorbent materials (e.g., booms, pads, pillows, socks, “Speedy Dry”)
- ☐ Personal protective equipment (e.g., goggles, gloves)
- ☐ Fire-fighting equipment
- ☐ First aid supplies (e.g., medical supplies, squeeze bottle eye wash)
- ☐ Department-of-Transportation-approved containers
- ☐ Plastic sheeting, bags, and ties
- ☐ Communication equipment
- ☐ Bung wrench (non-sparking)

IV. CORRECTIVE ACTIONS TAKEN (Required for all unacceptable conditions)

Enter information here

Date

Contractor Name

Inspected by (Contractor’s Inspector)

Signature

3.0 SPILL PLAN

This section of the SPCC Plan describes spill preparedness, prevention, and containment. Spill preparedness and prevention training is also discussed in this section.

3.1 SPILL AND LEAK PREPAREDNESS AND PREVENTION**3.1.1 Employee Training**

Prior to construction, contractors and ~~the Southgate Project~~Mountain Valley personnel shall be trained in hazardous waste management procedures that will enable them to respond effectively to emergencies by

familiarizing them with emergency procedures, equipment, and communication systems. Personnel who handle, sample, or come in direct contact with oils or hazardous matter shall undergo basic training that stresses the importance of pollution control. Spill prevention control procedures shall be thoroughly explained during the training briefings, which will be conducted by the Contractor Superintendent, the [Amendment](#) Project Chief Inspector, and the [Amendment](#) Project ~~Environmental Inspector~~ [EI](#) or their designated representative on the job site. The [Amendment](#) Project Emergency Coordinator (“EC”) shall maintain training verification.

Prior to construction, all [SouthgateAmendment](#) Project ~~Chief~~ [Chiefs](#) and ~~Environmental Inspectors~~ [EIs](#) shall receive a copy of this SPCC Plan and an approved list of emergency response contractors. Inspectors shall be trained on equipment maintenance, fuel and hazardous material handling, spill prevention procedures, and spill response.

All personnel involved in constructing the proposed facilities shall be aware of the SPCC [Plan](#) and the Preparedness, Prevention, and Contingency (“PPC”) Plan. Regular training briefings shall be conducted on an as-required basis by the Contractor Superintendent and the [Amendment](#) Project Chief Inspector on the job site. These briefings shall include the following:

- Precautionary measures to prevent spills
- Potential sources of spills, including equipment failure and malfunction
- Standard operating procedures (“SOPs”) in the event of a spill
- Applicable notification requirements
- Equipment, materials, and supplies available for spill clean-up

A log will be kept in the construction trailer documenting that everyone on-site during construction has participated in the necessary training sessions and will be made available to regulatory agencies.

3.1.2 Security

Hazardous wastes and waste containing polychlorinated biphenyls (“PCBs”) greater than 50 parts per million (“ppm”) shall be stored in a secured location (i.e., fenced, locked). Fuel storage areas shall be located to minimize, as much as possible, tampering by unauthorized personnel during nonoperational hours.

3.1.3 Prevention and Preparedness

A discharge from the construction site into waters of the state is unlikely to occur. The construction site shall have on-site spill prevention and control facilities and routinely inspect tank and container storage areas (inspection form: Weekly Hazardous Materials/Waste Inspection Log included Section 2), which will mitigate the potential for oil and hazardous material to be released to soil or surface waters. In areas where hazardous materials are required to be stored or used within a wetland, the Contractor shall prepare and submit ~~for approval~~ a secondary containment plan before working in the wetland area.

Spill or overfill of petroleum that results in a release to the environment that is equal to or greater than 25 gallons or that causes a sheen on nearby surface water must be reported immediately. Generally, minor spills or leaks shall be contained within secondary containment areas. In Virginia, spills or overfills must be reported to the Virginia Department of Environmental Quality (“VADEQ”) State Water Control Board within 24 hours in the following cases (Virginia Water Control Law, Article 11, 62.1-44.34:19). The

reporting requirements for petroleum products are in North Carolina's Oil Pollution and Hazardous Substances Control Act of 1978, §143-215.85 (a and b) state that if the petroleum discharged, released or spilled must be reported to the North Carolina Department of Environmental Quality ("[NCDEQ](#)") within 24 hours of discharge:

- Spill or overflow of a hazardous substance that results in a release to the environment that equals or exceeds its reportable quantity under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (40 CFR Part 302).
- Oil spills less than 25 gallons to lands that cannot be cleaned up within 24 hours.

TABLE 3-1			
Areas Where Potential Spills and Leaks Might Occur			
Location/Use or Equipment	Quantity/Reportable Quantity	Containment Method	Product
	/		
	/		
	/		
	/		
Note: All containers shall have secondary containment.			

3.1.4 Tanks

The Contractor shall take the following precautions to prevent a spill from occurring within tank storage areas. Use of storage tanks will be in accordance with Virginia and North Carolina storage tank regulations, as appropriate:

- Only those tanks for fuel and material storage that meet the [Southgate Amendment](#) Project's approval shall be operated.
- Single-wall tanks shall be provided with temporary secondary containment that will hold at least 110 percent of the tank capacity of the largest tank inside the containment area.
- Precipitation shall be inspected first for evidence of oil, including a sheen or other contaminants. If a sheen or other indicators of oil or contamination [isare](#) present, then the material shall be collected for proper disposal off-site. Any precipitation shall be removed from the containment area to maintain the available containment volume at 110 percent of the volume of material stored.
- Only self-supporting tanks constructed of carbon steel or other materials compatible with the contents of each tank shall be used.
- PCB storage will be in compliance with 40 CFR 761.
- Elevated tanks shall be a maximum of two feet above grade.
- [Tank](#) With the exception of tanks used for water storage (e.g., those used for water filtration at stream crossings), tank storage shall be located in areas that are at least 100 feet from all waterbodies, wetlands, and designated municipal watershed areas.
- All tanks shall be inspected daily for leaks and deterioration by the Contractor EC or designee. The results of all inspections shall be recorded on the Weekly Hazardous Materials and Waste

Inspection Log (included at the end of Section 2). Copies of the log for unsatisfactory storage area inspections shall be distributed to the [SouthgateAmendment](#) Project's EC and the [Amendment](#) Project Manager. Leaking and/or deteriorated tanks shall be repaired or replaced as soon as the condition is first detected.

- Tanks and secondary containment drains shall remain closed when not in use.
- Vehicle-mounted tanks shall be equipped with flame and/or spark arrestors on all vents to prevent self-ignition.
- Incompatible materials shall not be stored in sequence in tanks prior to decontamination. A list of incompatible materials is listed in Section 2, Waste Management, Table 2-4.
- Tanks used to store hazardous materials shall be decontaminated before they are used at a different construction location if they could contaminate the next material to be placed in the tank. The tanks shall be decontaminated if they are to be returned to a vendor. The tanks shall also be decontaminated if they are being returned to [aan Amendment](#) Project yard and no immediate, specific same-service use is scheduled.

Wastes will be disposed of properly at a permitted facility. The [Southgate–ProjectMountain Valley](#) environmental professional or its environmental consultant will determine disposal requirements.

TABLE 3-2			
Tank and Container Storage Exception Areas			
Material	Quantity	Containment Method	Location
Note: Exception areas must be approved by the EC.			

3.1.5 Containers

The Contractor shall take the following precautions to prevent a spill from occurring within container storage areas:

- For drum storage, reference the [Amendment](#) Project's Environmental SOPs; the [Amendment](#) Project EC shall maintain a copy of the current Environmental SOPs.
- Containers shall remain closed when not in use.
- All containers shall have temporary containment. A list of temporary containment is listed in Section 2, Waste Management, [tablesTables](#) 2-1 through 2-4.
- Small cans of gasoline, diesel, solvents, and other hazardous materials shall be stored within the temporary containment or [within](#)-secured trailers or vehicles when not in use.
- Incompatible materials shall not be in sequence in containers before decontamination. A list of incompatible materials is included in Section 2, Waste Management, Table 2-4.
- Containers used to store hazardous materials shall be decontaminated before they are used at a different construction location if they could contaminate the next material to be placed in the

container. The containers shall always be decontaminated if they are being returned to [aan Amendment](#) Project yard and no immediate, specific same-service use is scheduled.

- If a container contains a hazardous material, then transportation shall follow the steps outlined in the [Amendment](#) Project's Environmental SOPs.
- No incompatible material shall be stored together in the same containment area.
- Leaking and/or deteriorated containers shall be replaced as soon as the condition is first detected.
- Containers shall be stored in areas that are at least 100 feet from all waterbodies, wetlands, and designated municipal watershed areas, with certain exceptions as approved by the Contractor EC as listed in ~~Table 3~~ [Table 3-2](#).
- All container storage and containment areas shall be used to store waste or products according to the guidelines described in the [Amendment](#) Project's Environmental SOPs regarding Facility Inspections.

3.1.6 Loading and Unloading Areas

The Contractor shall take the precautions listed below to prevent a spill from occurring within loading and unloading areas when those areas are located at the construction site; ~~Southgate Project.~~ [Mountain Valley](#) personnel shall be present during loading and unloading activities:

- Liquids shall be transferred and refueling shall only occur in ~~predesignated and preapproved~~ locations that are at least 100 feet from all waterbodies and wetlands. Exceptions might be approved by the ~~Environmental~~ [Chief](#) Inspector ~~or EI~~ if no reasonable alternatives are available and secondary containment is used. Certain exceptions are listed in Table 3-2.
- All loading and unloading areas shall be closely monitored to prevent any leaks and spills.
- The area beneath loading and unloading locations shall be inspected for spills before and after each use.
- All hose connections shall use drip pans at the hose connections while loading and unloading liquids. If a leak or spill occurs, then the loading and unloading operation shall be stopped, and the spill shall be contained, cleaned up, and collected before operations continue.
- All tank truck outlets shall be inspected before trucks leave the loading and unloading area to prevent possible leakage from the truck while in transit.
- Each refueling vehicle shall have a sufficient number of shovels, brooms, 10-millimeter polyethylene sheeting, and fire protection equipment to contain a moderate oil and/or fuel spill.
- Any service vehicle used to transport lubricants and fuel shall be equipped with an emergency response kit that is equipped with materials, including absorbents, gloves, drums, and labels.

3.1.7 Concrete Coating Areas for Field Joints

Concrete coating of field joints shall be performed at least 100 feet from the edge of all waterbodies. Where topographic conditions and/or ~~work space~~ [workspace](#) limitations necessitate applying concrete coating within 100 feet of a watercourse, sufficient containment measures shall be implemented to eliminate the spill of any concrete coating materials into a wetland or watercourse. Containment such as the following (or equivalent as approved by the [Amendment](#) Project EC in a secondary containment plan to be submitted by the Contractor) shall be used:

- Concrete coating materials shall be temporarily stored in an earthen berm with a polyethylene lining of 10-millimeter thickness or in a portable containment tray constructed of steel plate measuring a minimum of 4 feet square by 1 foot deep.
- Portable mechanical mixing equipment, if required, shall be operated within a containment area constructed of temporary earthen berms and polyethylene lining a minimum of 10-millimeter thickness.
- Concrete materials in a portable container (such as a 55-gallon drum cut in half or equivalent) shall be mixed within an earthen berm with polyethylene lining of 10-millimeter thickness or within a portable containment tray constructed of steel plate, measuring a minimum of 4 feet square by 1 foot deep.

3.1.8 Equipment Inspections

All construction equipment in use on the pipeline right-of-way (~~“ROW”~~) shall be inspected daily. Any leaks shall be repaired immediately, or the piece of equipment shall be removed from service, removed from the ~~ROW~~right-of-way, and repaired prior to returning to service. All inspections shall be documented on a daily leak report submitted to ~~the Project~~Mountain Valley.

3.1.9 Emergency Equipment

The construction site and/or contractor yard shall have adequate manpower and equipment necessary to divert any spilled material from waterbodies and wetland areas. Emergency equipment shall include but is not limited to, shovels, backhoes, dozers, front-end loaders, oil-absorbent booms, pillows, socks and/or ~~mats~~sormats, granular oil absorbent, and chemical absorbent pulp. A list of emergency response equipment and personal protective equipment (“PPE”) is provided in Section 4.3.

3.1.10 Contractor’s Site Map

The Contractor shall prepare a site map before construction begins. At a minimum, the Contractor’s site map shall include the following:

- Orientation and scale
- Total land area in square feet
- Access and egress points
- Buildings and/or temporary trailers
- Parking lots
- Adjacent land uses (if business, indicate business name)
- Surrounding roads, storm drains, and waterways (e.g., waterbodies and wetlands)
- Locations of hazardous materials and waste storage
- Underground and aboveground tanks
- Containment or diversion structures (e.g., dikes, berms, retention ponds)
- Shutoff valves and/or circuit breakers
- Location of emergency response materials and equipment
- Location of MSDS and SPCC Plan
- Location of emergency assembly area

3.2 HOUSEKEEPING PROGRAM

The construction area shall be maintained in a neat and orderly manner. Solid wastes, such as food wrappings, cigarette butts, and packets, Styrofoam cups and plates, and similar wastes, shall be disposed of ~~offsite~~[off-site](#) and not in any construction excavation area. Any spills or leaks shall be cleaned up as expeditiously as possible. Trash shall be routinely collected for ~~offsite~~[off-site](#) disposal. Container storage areas shall be maintained in a neat and orderly manner.

4.0 KARST AREA EROSION AND SEDIMENTATION CONTROL

Mountain Valley conducted a desktop review of peer-reviewed, publicly-available geologic mapping and determined that there is negligible potential for karst features and related karst hazards to be present within 0.25 mile of the [Amendment](#) Project alignment. While karst hazards are not anticipated, if karst features are observed during construction, ~~the Southgate Project~~[Mountain Valley](#) will employ a karst specialist to conduct a field investigation to inspect and characterize the karst features and potential for subsurface connectivity. The karst specialist will coordinate with the [Amendment](#) Project qualified geologist to conduct the field inspection and will notify the applicable agencies regarding the karst feature. If the karst feature is determined to have subsurface connectivity and present a potential hazard to pipeline construction and operation or be a potential conduit to local groundwater resources, appropriate mitigation measures will be identified by the karst specialist and will be discussed with the applicable agencies prior to implementation.

4.1 REGULATORY OVERSIGHT

Virginia codified a law for protecting caves (the Virginia Cave Protection Act, Code of Virginia Section 10.1-1000 to 1008); there is no corresponding law that specifically protects karst.

The Virginia Department of Conservation and Recreation, a division of the Department of Environmental Quality, includes a Karst Protection Coordinator branch. Coordination with the Karst Protection Coordinator is described in more detail in this plan.

4.2 OBJECTIVES

The primary objectives for karst-specific ESC are to prevent erosion, overland flow, and sediment transport to water bodies and karst features during pipeline construction and to prevent erosion, sedimentation, and flooding problems in karst areas after pipeline construction and land reclamation. The primary means to reduce risks for erosion, sedimentation, and flooding in karst terrain is to restore land surface grades to ~~pre-construction~~[preconstruction](#) characteristics and not significantly change the volume of surface water that enters a karst feature. This can be accomplished by preventing direct impact to karst features and water bodies during construction, and minimizing to the extent practical land surface alterations after pipeline installation and land reclamation. Enhanced Best Management Practices (“BMPs”) and construction planning in karst terrain are presented herein to accomplish these objectives.

4.3 CONSIDERATIONS FOR SURFACE WATER MANAGEMENT AND EROSION & SEDIMENT

Unlike typical construction and development activities, [construction of the Southgate Amendment Project](#) will not result in large swaths of impervious land or large swaths of altered grade. The [Amendment Project](#) is primarily a relatively narrow linear subsurface construction project that will be regraded to ~~pre-construction~~[preconstruction](#) characteristics and revegetated.

To minimize the potential for impacts to a karst feature (e.g., sinkhole, cave opening, etc.) or a water resource (e.g., well, spring, stream, pond) from pipeline construction in karst areas, industry-standard ~~ESC~~[Erosion and Sediment Control \(“E&SC”\)](#) practices will be supplemented with enhanced BMPs, and implemented by ~~the Project~~[Mountain Valley](#) and its contractors, to accomplish the following objectives:

- Minimize the volume of stormwater and other construction-related surface water ~~run-off~~[runoff](#);
- Minimize the permanent alteration of land surface characteristics and surface runoff patterns (existing drainage patterns and features should be taken into consideration to minimize changes to the rate ~~that at which~~ water enters the subsurface through a karst feature);
- Promote broad and shallow surface water flow dispersion with suitable spreading or diversion techniques;
- Prevent uncontrolled release of surface water and sediment to a water body or karst feature;
- Prevent artificial routing of ~~storm water~~[stormwater](#) to karst features;
- Prevent blockage or filling of karst features;
- Do not construct artificial ~~storm water~~[stormwater](#) structures within karst features;
- Prevent disposal of materials into a karst feature that will degrade the quality of water entering the subsurface through [the](#) karst feature;
- Install double lines of sediment control fencing and straw bales upslope of a water body or karst feature;
- ~~Stock pile~~[Stockpile](#) excavated material at least 100 feet from a water body so that the material cannot slough back into these areas;
- Monitor ESC and stormwater management structures periodically during construction, and particularly after precipitation events (stormwater and ESC structures include sediment control fencing, straw bales, temporary detention basins, diversion berms, or containerization - clean, repair, and replace structures as necessary);
 - Inspecting and ensuring the maintenance of temporary erosion control measures at least:
 - on a daily basis in areas of active construction or equipment operation;
 - on a weekly basis in areas with no construction or equipment operation; and
 - within 24 hours of each 0.5 inch of rainfall or snow melt;
- Do not discharge hydrostatic test water in karst areas;
- Establish staging areas for the crew, equipment, hazardous materials, chemicals, fuels, lubricating oils, etc., at least 100 feet from a water body or karst feature;
- Install ESC and stormwater management structures surrounding staging areas to prevent run-on to and then ~~run-off~~[runoff](#) and sediment migration from these sites;
- Store construction waste materials, debris, and excess materials at least 100 feet from a water body or karst features;

- Refuel and maintain construction equipment at least 100 feet from a water body or karst feature;
- Limit the removal of riparian vegetation to only when it is necessary;
- ~~Re-vegetate~~Revegetate all disturbed areas as soon as possible after construction using only native plants to reduce soil erosion. Annual species, such as rye or wheat, may initially be planted along with native species in areas subject to immediate soil loss, such as a steep slope, to provide rapid erosion control. Final re-vegetation should use native species only;
- Replace woody riparian vegetation unavoidably lost using native riparian plants to help prevent the spread of invasive plants;
- Where possible and practical, leave a minimum of 100-foot wide natural vegetated buffer area around a water body or karst feature. Plant a vegetative buffer of at least 100 feet around a water body or karst feature if the vegetation was previously cleared;
- Apply fertilizers, herbicides, pesticides, or other chemicals no closer than 100 feet of a water body or karst feature;
- Evaluate the establishment of vegetation after project completion and inspect all sediment control structures at one-month intervals for at least 3 months. Retain sediment control structures until site stabilization is achieved;
- Remove and dispose of all debris and excess construction materials properly upon project completion;
- Remove temporary sediment/erosion control structures upon final site stabilization;
- Trench breakers made from sandbags or concrete-filled sacks should be included in pipeline installation design and constructed at appropriate intervals along the trench excavation to impede subsurface flow along the trench.

5.0 CONTINGENCY PLAN AND EMERGENCY PROCEDURES

Emergency response procedures have been developed for the [Southgate Amendment](#) Project to guide responses to fires, explosions, [and](#) releases of oils or hazardous waste to the air, land, or waters of the state, regardless of the quantity involved in the incident. For [the](#) unanticipated release of hydrostatic test waters, ~~the Project~~[Mountain Valley](#) shall utilize BMPs, as described in the [Amendment](#) Project-specific ~~Erosion and Sediment Control Plan (E&SCP)~~[SC Plan](#), as soon as possible after the release.

5.1 RESPONSIBILITIES OF THE [AMENDMENT](#) PROJECT AND CONTRACTOR PERSONNEL

If notification is given that an evacuation is necessary, all personnel shall evacuate the construction area via the primary evacuation route and await further instructions from the EC. If direct access to the primary evacuation route is restricted by fire, spill, smoke, or vapor, facility personnel shall evacuate the facility via alternate evacuation routes to the nearest accessible open area.

5.2 FIRST RESPONDER

Any individual who first observes a spill or any other imminent or actual emergency situation shall take the following steps:

- (1) Assess the situation to determine if the situation poses an immediate threat to human health or the environment.

- (2) Identify hazardous substances involved, if any.
- (3) Report the emergency or spill to [the Project Mountain Valley](#) and Contractor EC(s) immediately.
- (4) Standby at a safe distance and keep others away.
- (5) Activate emergency shutdown, if necessary.

The Contractor Superintendent shall act as the EC for the Contractor. The Chief Inspector shall act as the EC for the [Amendment](#) Project. The responsibilities of the EC are presented in the remainder of this section.

5.2.1 Contractor EC Responsibilities

The Contractor EC shall coordinate the response to all spills that occur as a result of Contractor operations. The Contractor shall not coordinate the response of spills of pipeline liquids, hazardous wastes, or the unanticipated release of hydrostatic test waters; these spills shall be coordinated by the [Southgate Amendment](#) Project EC.

~~Following~~ [The following](#) are specific Contractor EC responsibilities:

- (1) Determine any immediate threat to human health, the environment, and the neighboring community.
- (2) Ensure personnel safety and evacuate, if necessary.
- (3) Identify [the](#) source, character, amount, and extent of release.
- (4) Determine if hazardous substances are involved.
- (5) Inform the [Amendment](#) Project EC and follow instructions.
- (6) Direct and document remediation efforts to contain and control spill release.
- (7) Document remedial efforts.
- (8) Coordinate cleaning and disposal activities.

5.2.2 The [Amendment](#) Project EC Responsibilities

The [Southgate Amendment](#) Project ~~Emergency Coordinator~~ EC shall coordinate [the](#) clean-up of all spills of pipeline liquids, hazardous wastes, and any unanticipated release of hydrostatic test water.

Upon notification of pipeline liquid spills, hazardous materials spills, or the unanticipated release of hydrostatic test waters, the [Amendment](#) Project EC shall be responsible for the following:

- (1) Assess [the](#) situation for potential ~~threathreats~~ to human health, [the](#) environment, and the neighboring community
- (2) Implement evacuation, if necessary
- (3) Ensure personnel safety
- (4) Control source as conditions warrant
- (5) Immediately notify supervisory personnel immediately for spills that meet one or more of the following criteria:
 - a. One pound or more of ~~a~~ solid material (excluding horizontal directional drilling mud spilled on land)

- b. Five gallons or more of a liquid spilled on land
 - c. Any substance that creates a sheen on water
 - d. Air pollution incidents where there might be a release of a toxic substance
 - e. Unanticipated release of hydrostatic test water
- (6) If necessary, notify the local fire department, law enforcement authority, or health authority as appropriate, and provide the following information:
- a. Name of the caller and call-back number
 - b. The exact location and nature of the incident
 - c. The extent of personnel injuries and damage
 - d. The extent of release
 - e. The material involved and appropriate safety information
- (7) Ensure that any waste or product that might be incompatible with a released material is kept away from the affected area.
- (8) Keep any potential ignition source away from [the](#) emergency area, if spilled material is flammable.
- (9) Minimize affected [areaareas](#) with appropriate containment or diking.
- (10) Assemble required spill response equipment as required (e.g., protective clothing, gear, heavy equipment, pumps, absorbent material, and empty drums).
- (11) Place spilled material in appropriate containers in accordance with the [MVPAmendment Project](#) Environmental SOPs.
- (12) Label and store containers in accordance with the [Amendment](#) Project Environmental SOPs.
- (13) Coordinate waste disposal and equipment decontamination.
- (14) Terminate response.
- (15) Ensure that all emergency response equipment is fully functional. Any equipment that cannot be reused shall be replaced.
- (16) For PCB spills, follow special spill response requirements related to PCB spills.
- (17) Assist with the coordination of clean-up and disposal activities as described in Sections 4.4, 4.5, and 4.6.
- (18) If necessary, contact outside remediation services to assist with clean-up.
- (19) Complete Waste Removal Storage and Disposal Record Form to track waste generated during this [Amendment](#) Project.
- (20) Complete Field Spill Report (included at the end of this section) and distribute accordingly.
- (21) For unanticipated release of hydrostatic test waters, notify state contact if required by state permit in accordance with timeframes required by state permit.
- (22) As required by permit, arrange for [the](#) immediate sampling of the test water (from the pipe or a representative sample of released water where possible) or soil where the test water was released and water from [the](#) adjacent watercourse if test water was released into the watercourse. Samples shall be analyzed in accordance with hydrostatic test discharge permit criteria.

- (23) Ensure that a [Project Mountain Valley](#) representative notifies the municipal manager and/or mayor, as required.

5.3 EMERGENCY EQUIPMENT

The construction site and Contractor yards shall have adequate personnel and equipment necessary to divert any spill from waterbodies and wetland areas. Emergency equipment shall include, but is not limited to, shovels, backhoes, dozers, front-end loaders, oil-absorbent booms, pillows, socks and/or mats, granular oil absorbent, and chemical absorbent pulp. Table 5-1 lists emergency response equipment and PPE (to be completed by Contractor).

TABLE 5-1		
Spill Response Equipment		
Equipment	Quantity	Location

TABLE 5-2		
Fire Response Equipment		
Equipment	Quantity	Location

TABLE 5-3		
Personal Protective Equipment		
Equipment	Quantity	Location

5.4 SPILL CLEAN-UP/WASTE DISPOSAL PROCEDURES

The following identifies the clean-up and control measures to be used in the event of a spill of oil, fuel, or hazardous substance or unanticipated release of hydrostatic test water.

5.4.1 Oil and/or Fuel Spills

- Ensure no immediate threat to surrounding landowners or [the](#) environment.
- Remediate small spills and leaks as soon as feasible. Use absorbent pads whenever possible to reduce the amount of contaminated articles.
- Restrict the spill by stopping or diverting flow to the oil and/or fuel tank.
- If the release exceeds the containment system capacity, immediately construct additional containment using sandbags or fill material. Every effort must be made to prevent the seepage of oil into soils and waterways.
- If a release occurs into a facility drain or nearby watercourse, immediately pump any floating layer into drums. For high-velocity watercourses, place ~~oil~~soil booms or hay bales between the release area and the site boundary and downstream of [the](#) affected area. As soon as possible, excavate contaminated soils and sediments.
- After all recoverable oil has been collected and drummed, place contaminated soils and articles in containers.
- For larger quantities of soils, construct temporary waste piles using plastic liners and place the contaminated soils on top of the plastic and covered by plastic. Plastic-lined, roll-off bins should be leased for storing this material as soon as feasible.
- Label the drum following the procedures outlined in the [Amendment](#) Project's Environmental SOPs.
- Move drum to [a](#) secure staging or storage area.
- Document and report clean-up activities of the [Amendment](#) Project EC as soon as feasible.
- If environmentally sensitive resources (e.g., wetlands, waterbodies) exist in the area, ensure that BMPs, as described in the [Amendment](#) Project-specific E&~~S~~CPSC Plan, are used to minimize impact to these resources.

5.4.2 Hazardous Substance Releases

- Ensure no immediate threat to surrounding landowners or [the](#) environment.
- Identify the material and quantity released.
- Block off drains and containment areas to limit the extent of the spill. Never wash down a spill with water.
- Ensure that PPE and containers are compatible with the substance.
- Collect and reclaim as much of the spill as possible using a hand pump or similar device. Containerize contaminated soils in an appropriate Department-of-Transportation-approved container in accordance with the [Amendment](#) Project's Environmental SOPs. (Note: Environmental ~~SOP's~~SOPs are located in all division and area offices and kept by all engineering teams.) Never place incompatible materials in ~~the~~ materials in the same drum.
- Sample the substances for analysis and waste profiling.
- Decontaminate all equipment in a contained area and collect fluids in drums.

- Label the drum.
- Move the drum to [a](#) secure staging or storage area.
- Document and report activities to the [Amendment](#) Project EC as soon as feasible.
- If environmentally sensitive resources (wetlands, waterbodies) exist in the area, then ensure that BMPs, as described in the [Amendment](#) Project-specific E&[SCPSC Plan](#), are used to minimize impacts to these resources.

5.4.3 Unanticipated Release of Hydrostatic Test Water

- Ensure no immediate threat to surrounding landowners or [the](#) environment.
- If environmentally sensitive resources (wetlands, waterbodies) exist in the area, then ensure that BMPs, as described in the [Amendment](#) Project-specific E&[SCPSC Plan](#), are used to minimize impacts to these resources.

5.5 DISPOSAL OF CONTAMINATED MATERIALS AND/OR SOILS

- The Contractor shall work with the [SouthgateAmendment](#) Project EC to characterize waste generated during this project. All wastes generated as a result of spill response activities shall be analyzed to determine if hazardous or if PCBs are greater than 1 ppm. Knowledge of the contaminant(s) might be applied to classify the waste and spill materials as determined by the [Amendment](#) Project EC.
- The Contractor is responsible for properly disposing of wastes generated during this project that ~~is~~[are](#) determined by the [Amendment](#) Project EC to be ~~nonhazardous~~[non-hazardous](#) and to contain PCBs less than 1 ppm; this includes obtaining applicable authorizations and registrations for waste disposal.
- The [Amendment](#) Project EC is responsible for properly disposing of hazardous and PCB-containing wastes containing greater than 1 ppm generated during this project, including obtaining applicable U.S. Environmental Protection Agency ID numbers.
- Hazardous and PCB-containing waste shall be stored in a secured location (i.e., fenced, locked) until the material is transported off-site.

5.6 EQUIPMENT CLEANING/STORAGE

Upon completion of remedial activities, the Contractor shall decontaminate emergency response equipment used to remediate a spill resulting from its operations. ~~The Southgate Project~~ [Mountain Valley](#) shall be responsible if the spill is [a](#) hazardous material.

- The Contractor shall be responsible for disposing of any contaminated waste or non-PCB containing waste generated as a result of the decontamination process.

~~The Project~~[Mountain Valley](#) shall be responsible for disposing of any contaminated Hazardous Waste or PCB Containing Material generated as a result of the decontamination process.

- The Contractor shall replace all spent emergency response equipment prior to resuming construction activities if [a](#) spill resulted from their operations.
- The Contractor shall test and inventory reusable PPE prior to being placed back into service.

6.0 REGULATORY COMPLIANCE

This section provides the reader with a high-level overview of the regulatory requirements addressed in this SPCC Plan. This section is arranged by activity, in typical order or occurrence by job, with the corresponding regulation.

Regulatory Compliance by Activity			
Activity Type	Federal Regulation Citation	State Regulation Citation	SPCC Plan Section
General Applicability			
Is facility under purview of regulations?	40 CFR Part 112	9 VAC 25- 91 911 NC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	
Does facility comply with applicable regulations?	40 CFR Part 112	9 VAC 25- 91 911 NC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	
Materials Storage and Handling			
Material and Waste Inventory	40 CFR Part 112	9 VAC 25-911 NC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	Spill Plan (Section 3)
Material Transport and Disposal	40 CFR Part 112	9 VAC 25-911 NC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	Contingency Plan (Section 5)
Spill Prevention and Containment			
Emergency Response Contacts	40 CFR Part 112	9 VAC 25-911 NC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	Spill Plan (Section 3)
Training	40 CFR Part 112	9 VAC 25-911 NC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	
Security	40 CFR Part 112	9 VAC 25-911 NC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	
Prevention and Preparedness	40 CFR Part 112	9 VAC 25-911 eNC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	
Facility Information	40 CFR Part 112	9 VAC 25-911 NC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	
Facility Drainage and Routes of Flow	40 CFR Part 112	9 VAC 25-911 NC Building Code, Chapter 22 National Fire Protection Association	

		Standard 30 and 30A (NFPA 30 and NFPA 30A)	
Inspections and Reporting			
Emergency Response Contacts	40 CFR Part 112	9 VAC 25-911 NC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	Spill Plan (Section 3) Contingency Plan (Section 5)
Inspections, Tests, and Records	40 CFR Part 112	9 VAC 25-911 NC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	
Discharge Reporting	40 CFR Part 112	9 VAC 25-911 NC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	
Spills and Response			
Emergency Procedures and Response	40 CFR Part 112	9 VAC 25-911 NC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	Spill Plan (Section 3) Contingency Plan (Section 5)
Discharge Notification	40 CFR Part 112	9 VAC 25- 91 911 NC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	
Clean-up	40 CFR Part 112	9 VAC 25-911 NC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	
Wastewater Discharge			
Facility Drainage	40 CFR Part 112	9 VAC 25-911 NC Building Code, Chapter 22 National Fire Protection Association Standard 30 and 30A (NFPA 30 and NFPA 30A)	Spill Plan (Section 3)
1 if an oil discharge contingency plan is required			

APPENDIX A

UNANTICIPATED DISCOVERY OF CONTAMINATION PLAN

Unanticipated Discovery of Contamination Plan Introduction

The purpose of this Unanticipated Discovery of Contamination Plan (“Plan”) is to provide work, investigation, and reporting procedures for responding to the unanticipated discovery of contamination in soil, groundwater, or sediment during excavation, construction, or maintenance activities associated with [the](#) construction of the [SouthgateAmendment](#) Project.

Consistent with this purpose, the objectives of this Plan are to protect the health and safety of [the](#) [Amendment](#) Project personnel and the environment and to prevent the spread of contamination during and after an unanticipated discovery of contamination.

The greatest potential for the discovery of unanticipated contamination will occur during the excavation of the pipeline trench and horizontal boring procedures. The following response plan will be executed if any [Amendment](#) Project personnel detects potential contamination such as:

- Odor;
- Visible staining on soil;
- Sheen on ground or purge water;
- Unidentified underground service tank; or
- Potential cultural resources, including human remains.

Unanticipated Discovery Response Plan

Stage 1 – Suspend Work Activities

All construction and/or maintenance work in the immediate area of the discovery shall stop. Personnel shall move to upwind areas as necessary.

Stage 2 – Identify Immediate Threats

If an immediate threat is detected, emergency response (i.e., 911) shall be notified. The area shall be evacuated.

Stage 3 – Identify and Secure Area

If safe to do so, the area immediately around the potential contamination shall be secured with safety fencing or flagging. Site personnel shall remain on-site to restrict access as appropriate.

Stage 4 – Conduct Notifications

Appropriate [SouthgateAmendment](#) Project environmental professionals and officials shall be notified of the potential contamination. It shall be the decision of the [Amendment](#) Project environmental professional (To Be Determined) [\[“TBD”\]](#) to determine environmental agency or public official notification requirements.

Primary points of contact are:

MVP Southgate Amendment Project: ~~This should be~~

[Ms. Megan Neylon, Permitting Manager, 304-841-2086](#)

[Mr. Cory Chalmers and Megan Stahl. Their information is in the HDD contingency plan., Environmental Permitting Specialist, 304-627-8173](#)

[VADEQ: Virginia: ~~DEQ: VA~~ Department of Emergency Management Watch Center, 800-468-8892](#)

[North Carolina: ~~DEQ~~NCDEQ: 24-hour Emergency Response, 800-858-0368](#)

Stage 5 – Discovery Documentation Protocol

An appropriate Amendment Project employee or designee will document the unanticipated contamination utilizing the attached Worksheet 1. Worksheet 1 includes instructions for the appropriate Amendment Project employee or designee to record the site name, locations, and how suspected contamination was determined. The Amendment Project employee or designee will coordinate with the construction contractor(s) who identified the contamination to assist in completing Worksheet 1.

Stage 6 – Remedial Action Planning

An ~~onsite~~on-site meeting (if appropriate) will be conducted among site personnel, Amendment Project environmental professionals, and any appropriate contamination response contractors to determine remediation requirements and methodologies. If remediation activity is appropriate, an environmental consultant (if appropriate) should be contacted to assist with the remedial activity. Remedial activities should be conducted according to the following general sequence of events. This is a general plan and is not meant to apply to all contamination situations. A more robust, site-specific remedial action plan should be completed by an environmental consultant prior to completing remedial activities.

Step 1: Sampling – Representative samples should be collected and submitted to an environmental laboratory for analysis and/or waste classification. Results The results of this analysis may dictate notification requirements. An environmental consultant can assist in the determination of these requirements.

Step 2: Remedial Action Determination – Following laboratory analysis, the Amendment Project environmental professional and/or the environmental consultant will evaluate the analysis results and, if appropriate, identify the type of remediation (in-situ, removal, etc.) to be completed.

Step 3: Remedial Action – The Amendment Project will mobilize an appropriate contractor and remediation activities will be conducted. Any soil and/or groundwater suspected of containing contamination will be segregated from clean soil and/or water using plastic sheets, fractionation tanks, or other appropriate methodologies. Containers will be clearly labeled. Known hazardous wastes will be labeled and separated with orange construction fencing.

Step 4: Disposal – Wastes will be disposed of properly at a permitted facility. The [Amendment](#) Project environmental professional or its environmental consultant will determine disposal requirements.

Stage 7 – Record Keeping

A record of the sequence of events from the beginning (unanticipated discovery) to the end (disposal) of the incident will be recorded and kept on file with the [Amendment](#) Project environmental professional in accordance with all mandated record-keeping requirements.

Worksheet 1 – Unanticipated Discovery of Contamination Documentation Worksheet

Instructions: Complete this worksheet to document an unanticipated discovery of [a](#) contamination event. Use a separate sheet (copy) for each occurrence.

A. Site Name, Physical Location, and Milepost

B. How Suspected Contamination was Determined (odor, stain, sheen, etc.). Include photographs as appropriate.

C. List dates, times, and officials notified

Environmental Response Contact Sheet

Primary points of contact are: MVP Southgate [Amendment](#) Project: TBD
Environmental Permitting Supervisor, TBD

Virginia DEQ: Virginia Department of Emergency Management, 800-468-8892

Additional points of contact may be identified prior to construction.

North Carolina: DEQ: 24-hour Emergency Response, 800-858-0368

Additional points of contact may be identified prior to construction.

APPENDIX B

KEY EMERGENCY CONTACTS

The following are the key personnel who shall be contacted in the event of an emergency or spill incident.

<u>Contact Name</u>	<u>Phone Number</u>
---------------------	---------------------

1. MVP Southgate Amendment Project Emergency Contacts

MVP Southgate Amendment Project Emergency Coordinator:

To be provided prior to construction (within 15 minutes of incident)

2. Contractor Emergency Contact

Contractor Emergency Coordinator: To be provided prior to construction

3. Local Authorities (as necessary)

~~Local Police~~ State Police

Local Police

Local Fire Department *To be provided prior to construction*

Hospital

Ambulance

4. Environmental Agencies

Notification to be made by an Amendment Project representative.

~~Local Fire~~ Virginia Department of Emergency Management Watch Center (24 hours)

North Carolina 24-hour Emergency Response

5. Potential Environmental Remedial Service Contractors

(verify before issuing project-specific SPCC Plan)

To be provided prior to construction

~~4. Environmental Agencies~~

~~Notification to be made by a Project representative.~~

~~Virginia Department of Emergency Management Watch Center (800) 468-8892 (24 hours)~~

APPENDIX C

PETROLEUM AND HAZARDOUS MATERIAL SPILL REPORT

~~North Carolina 24-hour Emergency Response, 800-858-0368~~

~~5. **Potential Environmental Remedial Service Contractors** (verify before issuing project-specific SPCC Plan)~~

~~Clean Harbors Environmental Services, Inc.: 800-645-8265 Safety Kleen (FS), Inc.: Edward A. Mitchell, 713-750-5800~~

~~U.S.A. Environment: Cesar Garcia, 713-425-6925 or 832-473-5354 (cell phone) WRS Infrastructure and Environment, Inc.: Steve Maxwell, 281-731-0886~~

Appendix C – Petroleum and Hazardous Material Spill Report

The Contractor must complete this for any petroleum or hazardous material spill regardless of size, and submit the form to the [Amendment](#) Project EC within 48 hours of the occurrence.

Date of spill _____ Incident No. _____ Date of spill discovery _____

Time of spill _____ Time of spill recovery _____

Location Name _____ Spread _____ County _____

Section _____ Township _____ Range _____

Name and title of discoverer _____

Type of material spilled and product name _____

Manufacturer's name _____

Legal description of spill location _____

Directions from nearest community _____

Estimated volume of spill _____

Weather conditions _____

Topography and surface conditions of spill site _____

Spill medium (e.g., pavement, sandy soil, water) _____

Proximity of spill to surface waters or wetland _____

Did the spill reach a watercourse? ☐ Yes ☐ No If so, was a sheen present? ☐ Yes ☐ No

Direction and time of travel (if in watercourse) _____

Name and telephone number of responsible party _____

Causes and circumstances resulting in the spill _____

Extent of observed contamination, both horizontal and vertical (e.g., spill-stained soil in a 5-inch radius to a depth of 1 inch) _____

Potentially affected resources and installations _____

Potential impact on human health _____

Immediate spill control and/or clean-up methods used and implementation schedule _____

Current status of clean-up actions _____

Name, company, address, and telephone number for the following:

Construction Superintendent _____

Spill Coordinator _____

Person who reported the spill _____

Environmental Inspector _____

On-Scene Agency Coordinator (where applicable) _____

Form completed by _____

Date _____

Traffic and Transportation Management Plan



MVP Southgate Amendment Project

Traffic and Transportation Management Plan

Revision 2

May 2020

Revised February 2025

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ATTACHMENTS

Attachment A Virginia Traffic Control Plan (MVPPL-VAR-200)

Attachment B North Carolina Traffic Control Plan (MVPPL-NCR-200B)

1.0 INTRODUCTION

Mountain Valley Pipeline, LLC (~~“Company Mountain Valley”~~) has developed this *Traffic and Transportation Management Plan* to describe the measures ~~the MVP Southgate (“Project”)~~ Mountain Valley and ~~their~~ its Contractors (“Contractor”) will take to minimize potential impacts on state and local roadways during the construction of the ~~Project MVP Southgate Amendment Project (“Amendment Project”)~~. This plan outlines traffic impact minimization measures, noxious weed control measures, and dust control methods that will be used on the ~~Amendment~~ Project to reduce impacts during construction.

Operations and maintenance activities will be conducted with light vehicles ~~at on~~ very few occasions that should have no impact ~~to on~~ roadways and traffic once the ~~Amendment~~ Project is in-service.

1.1 Traffic Impacts

Prior to construction, ~~the—Company Mountain Valley~~ will obtain applicable ~~Federal, State/Commonwealth~~ federal, state/commonwealth, and local road use and crossing permits, as required. ~~The Company Mountain Valley~~ and Contractor personnel will comply with all permit requirements and conditions to provide for public safety and minimize impacts on public roads. Copies of this *Traffic and Transportation Management Plan* and applicable road use and crossing permits will be provided to the appropriate personnel and maintained at each ~~Contractors’ Contractor’s~~ field office.

Increased temporary traffic from ~~Amendment~~ Project-related activities will include transportation for construction workers in light and heavy-duty trucks, construction equipment (e.g., tractor-trailers hauling machinery and materials), and truck deliveries. Prior to construction, ~~the Company Mountain Valley~~ and Contractor will work together to determine the number of workers’ cars, equipment, and trucks that would use local roads and commuting periods. ~~The Company Mountain Valley~~ will establish routes to and from the ~~Amendment~~ Project work areas to ensure that traffic impacts are minimized. These established routes will be provided to the ~~Contractors’ Contractors~~ and utilized during construction. The ~~contractor Contractor~~ will develop an appropriate work zone plan to ensure the safe and efficient travel of vehicles during the construction phase. ~~The Company Mountain Valley~~ shall coordinate with the following transportation districts to obtain the required permits or agreements for any operations within a state right-of-way:

- Virginia Department of Transportation (~~“VDOT”~~) Lynchburg District (VDOT Land Use permit for any operations within the VDOT ~~Rightright~~-of-way).
- North Carolina Department of Transportation (~~“NCDOT”~~) District 1 (Rockingham ~~County~~) and ~~District 3 (Alamance~~ County) (encroachment agreement for construction or utility installation within the limits of the NCDOT right-of-way).

~~The Company~~

~~Mountain Valley~~ will consult with State and local agencies regarding detour routes, speed/load limits, and other use limitations, conditions, or restrictions on the roads that will be utilized during construction. Before the start of construction, ~~the Company Mountain Valley~~ will work with these agencies to obtain the most up-to-date traffic information for the roadways in the ~~Amendment~~ Project area as well as ongoing road reconstruction or improvement projects in the vicinity of the pipeline route and facilities area. At this time, no conflict is anticipated. Currently, no active Six-Year Improvement Projects (~~SYIP~~) ~~overlap overlap~~ or ~~falls fall~~ adjacent to the proposed ~~Amendment~~ Project. The Contractor shall monitor the VDOT paving schedule website map for any updates during ~~the~~ construction of the ~~Amendment~~ Project and update ~~the~~

~~Company~~ Mountain Valley weekly. (<https://vdot.maps.aregis.com/apps/webappviewer/index.html?id=fbf86e85fdeb43e482432f41d4bb51e7>). (<https://www.virginiaroads.org/maps/da2af092937e491b9da1601f6f278d16/explore?location=36.596305%2C-79.485207%2C10.49>). The Pavement Status Map Application is updated to indicate new paving projects annually. The ~~contractor~~ Contractor shall also monitor the NCDOT State Improvement Program (STIP). (<https://www.ncdot.gov/initiatives-policies/Transportation/stip/development/Pages/default.aspx>) (<https://www.ncdot.gov/initiatives-policies/Transportation/stip/Pages/default.aspx>).

Where local, private roadways will be affected, ~~the Company~~ Mountain Valley will coordinate with landowners and lessees of properties to mitigate potential impacts on those roads. Similarly, where roads on public lands will be affected, ~~the Company~~ Mountain Valley will coordinate with the appropriate managing agency to mitigate potential impacts on roads or implement required traffic and transportation procedures. As discussed further in the following sections, the Contractor will place and maintain traffic control measures, such as flag persons, warning signs, lights, and/or barriers, as appropriate, to ensure the safety of construction workers and the public and to minimize traffic congestion. The Contractor will maintain traffic flow and emergency vehicle access on roadways with traffic control personnel or detour signs, where necessary. Please refer to Drawing Number MVPPL- VAR-200 ([Attachment A](#)) for traffic control guidelines in Virginia and Drawing Number MVPPL-NCR-200B ([Attachment B](#)) for traffic control guidelines in North Carolina. ~~The Company~~ Mountain Valley will ensure coordination with local law enforcement, fire departments, and emergency medical services to coordinate access for effective emergency response during construction. Contractors will be directed to comply with local weight limitations and restrictions on area roadways.

~~The Company~~ Mountain Valley strives to mitigate the increase in construction-related truck traffic on local roads shared with community and school buses in suburban and more densely populated rural areas. Key components ~~to of~~ a successful community partnership include:

Central point of command for construction traffic route plan. ~~The Company~~ Mountain Valley will have a Coordinator responsible for maintaining traffic-related plans, procedures, records, and documents.

School bus curfews. Often ~~times~~, construction vehicles can pose a concern when school buses are traveling their established routes. The community expects that their children will have safe and timely travel to and from school. ~~The Company~~ Mountain Valley will ensure coordination with the governing School Districts or the School Transportation Department in the [Amendment](#) Project area to identify the bus routes and times. To the extent practicable, construction traffic will be limited or refrained during the bus route times with a published school bus route curfew time period.

Speed enforcement. In more rural areas, law enforcement is often not staffed to handle a sudden increase in traffic. ~~Company~~ Mountain Valley will ensure monitoring of the speed of the route. This not only keeps ~~contractor~~ the Contractor and the public safe but lends accountability to the [Amendment](#) Project. Inevitably, contractors will end up off of approved routes. The Traffic Coordinator will be able to actively monitor these issues and reduce unapproved travel that can become costly if damage occurs. The Coordinator can also be useful in diffusing potential hostile situations with neighbors and landowners.

All impacts shall be within the guidelines of all applicable agencies, as well as approval from landowners. A list of state and county contacts is provided in the table below. Once construction is complete, ~~the~~

~~Company~~Mountain Valley will ensure all roads are restored ~~back~~ to their original level of service or better, unless ~~the Company~~Mountain Valley is directed otherwise in writing by the landowner or regulatory agency. Pre-construction video will be used to document the roadway condition prior to ~~the Amendment~~ Project usage.

Virginia County, / State Requirements			
	Phone	Website	Contact Name/Position
<i>State Agency</i>			
Virginia Department of Transportation (VDOT)	(540) 381- 7194	http://www.virginiadot.org/	Paul Brown, Area Land Use Engineer
<i>Virginia County</i>			
Pittsylvania	(434) 432- 7974	http://pittsylvaniacountyva.gov/	Greg Sides, Assistant County Administrator
North Carolina County / State Requirements			
North Carolina County, State Requirements			
	Phone	Website	Contact Name/Position
<i>State Agency</i>			
North Carolina Department of Transportation (NCDOT)	(919) 707- 2500 (336) 487- 0000	https://www.ncdot.gov/Pages/default.aspx	Chief Engineer, Tim M. Little, PE. Mike Mills, PE, Division 7 Engineer
<i>North Carolina County</i>			
Rockingham	(336) 342- 8101	https://www.co.rockingham.nc.us/	Lance L. Metzler, County Manager
Alamance	(336) 228- 1312	https://www.alamance-nc.com/	Bryan Hageed, County Manager

2.0 PIPELINE ROAD CROSSINGS

~~The Company~~Mountain Valley will ensure ~~the~~ construction of road and highway crossings ~~are~~is in accordance with the permit requirements and the construction drawings for the crossing. No work on any such crossing shall be started before obtaining all applicable permits from the regulatory agencies. The Contractor will strive to maintain single-lane traffic on all roads and shall provide flagmen, road signs, and all other signaling required by the governing authority to supervise the flow of traffic. In the event ~~that~~ a roadway needs to be closed and traffic detoured, ~~the Company~~Mountain Valley will ensure coordination with all applicable agencies and expediting of all work to mitigate inconveniences to the public. The Contractor will provide barricades, warning signs, flares, lanterns, flagmen, and ~~such~~ other ~~such~~ protective measures required to maintain traffic and ~~to~~ safeguard the public at all times.

Any damage to paved or blacktop roads shall be repaired per specifications provided by the regulatory agencies. Road surfaces other than hard surface roads (e.g., paved, blacktop, or concrete) shall be backfilled in well-tamped 6-inch layers and shall be finished with a well-tamped surface matching the existing road. If flowable fill is used, it will be in accordance with the appropriate mix per agency specifications. For all types of crossings, additional or other limitations may be provided by the governing municipality and must prevail.

At the end of each workday, the Contractor will make passable any open-cut driveways for ingress and egress. This may be accomplished by using steel plates. Any and all steel plates used for such purposes shall be properly pinned (i.e., secured in place) and ramped on each end to allow traffic flow. The backfilling road crossings shall be performed immediately after the pipe is installed and in accordance with requirements established by the applicable permit.

3.0 CONSTRUCTION TRAFFIC AND BUSSING PLAN

An increase in traffic to local and state roads will be expected throughout the day between the hours of 6:00 a.m. and 7:00 p.m. or sunset, whichever is later. Emergencies or other designated construction activities may necessitate nighttime work. The temporary traffic will include transportation for construction workers in light and heavy-duty trucks, as well as tractor-trailers hauling machinery and materials. Prior to construction, the Contractor will determine locations of commuting workers' collection points (it is anticipated the majority of the worker collection points will be the permitted Contractor Yards), and bus routes and associated traffic impacts. Large work crews will meet at the identified collection points and take a bus to the construction right-of-way. Smaller crews will use vans or will car-pool with the foreman or straw boss. Impacts are expected to be minor and short-term because construction spreads and personnel will be geographically dispersed, and personnel will commute to and from work areas in the early morning and late evening during nonpeak traffic hours. Traffic will be entering and leaving off-site locations such as laydown yards, right-of-way, and additional temporary workspace for the purpose of pipeline construction, hauling material, and roadway maintenance. Once the material and heavy equipment are placed on the right-of-way, construction equipment will move in a linear manner along the right-of-way as work progresses, minimizing traffic on local roads. The amount of equipment moved by hauling from site to site will be reduced due to the accessibility created by the construction right-of-way.

The Company Mountain Valley may arrange to have road improvements performed at areas that are not conducive to heavy hauling and large traffic volume, in addition to having all approved roads maintained during construction, and finally returning the roads back to their original or better level of service, meaning their original width and length, unless the Company Mountain Valley is directed otherwise in writing by the landowner or state agency.

4.0 NOXIOUS WEEDS

To prevent noxious weeds from transporting along roadways, the Company Mountain Valley developed the following measures:

- The prompt seeding and revegetation of areas of disturbed soils with certified weed-free seed.
- Encourage the cleaning of equipment and vehicles prior to entering or leaving each management area. (Pressure (pressure wash in a designated area only-)).
- Minimize soil disturbance, where possible.
- Use certified weed-free mulch/straw for erosion control.

5.0 FUGITIVE DUST CONTROL

Dirt and gravel during construction periods in dry weather can create an inhospitable environment for neighbors and workers. ~~The Company~~ Mountain Valley developed the following fugitive dust control measures to address this issue.

- Implementation of construction and restoration best management practices and operational controls will be used to mitigate fugitive dust emissions.
- The [Amendment](#) Project's earth disturbance permit will outline specific practices that control fugitive dust, including a construction sequence; use of rock construction entrances; and temporary soil stabilization methods.
- Operational controls are also implemented, including the use of a reduced speed limit on unpaved access roads as well as sweeping/vacuuming paved roadways when [Amendment](#) Project-related soils are tracked out onto paved surfaces.
- Wet suppression, using water, is the predominate method of suppressing fugitive dust on unpaved roads and gravel pads as it causes finer materials to adhere into larger particles.
 - Increasing the moisture content of the finer materials may be accomplished either naturally or mechanically.
 - Moisture content of unpaved road surfaces can be naturally increased through rainfall.
 - Moisture content can also be increased mechanically through the application of water.
 - The amount of water required to sufficiently control fugitive dust emissions is dependent on the characteristics of materials (e.g., surface moisture content), ambient conditions (e.g., rainfall, humidity, temperature), and activities occurring in the area (e.g., vehicle traffic, vehicle weight, speeds).

The following measures will be taken to reduce fugitive dust from operations:

- Fugitive dust emissions from vegetation removal, clearing and grading, cutting and filling, topsoil removal, trenching, backfilling, and stockpile storage will be controlled to a great extent by following the construction sequencing and disturbing limited areas at a time;
- Fugitive dust emissions generated by motorized equipment and miscellaneous vehicle traffic will be controlled by wet suppression as necessary;
- Fugitive dust emissions from paved roads will be controlled with a combination of water trucks, power washers, sweeping, and/or vacuuming. If necessary, additional potential sources of water for dust control may include other municipal systems, groundwater supply wells, and/or approved surface waters;
- Track out of loose materials will be controlled using rock construction entrances on access roads that begin at a junction with paved roads; and
- When environmental conditions are dry, [an](#) inspection of dust control measures will be conducted daily.

6.0 INSPECTION, MONITORING, AND RECORD KEEPING

The Contractor will implement the dust control measures specified in this plan. All construction personnel will be informed of the measures in this plan. ~~Company~~ Mountain Valley will have primary responsibility for monitoring and enforcing the implementation of dust control measures by the Contractor. ~~The Company~~

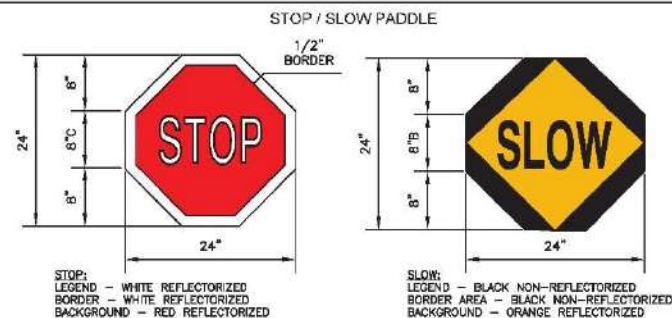
[Mountain Valley](#) will also be responsible for ensuring that these measures are effective and [that](#) proper documentation is maintained. When environmental conditions are dry, inspection of dust control measures will be conducted daily, and ~~the Company~~[Mountain Valley](#) will be responsible for recording the following information on a daily basis:

- weather conditions, including temperature, wind speed, and wind direction;
- number of water trucks in use;
- incidents where dust concentration is such that special abatement measures must be implemented;
- condition of soils (e.g., damp, crusted, unstable) on the right-of-way and other construction sites;
- condition of soils (e.g., damp, crusted, unstable) on access roads;
- condition of track-out pads;
- overall status of dust control compliance.

This information will be incorporated into ~~Company~~[Mountain Valley](#) documentation, and significant instances of non-compliance with the plan will be reported to ~~the Company~~[Mountain Valley](#) as soon as they are discovered.

Attachment A

**Virginia Traffic Control Plan
(MVPPL-VAR-200)**



1. FOR OPERATIONS THAT ARE RESTRICTED TO DAYLIGHT HOURS ONLY, USE NON-REFLECTORIZED LEGENDS, BORDERS AND BACKGROUNDS.
2. FOR OPERATIONS THAT EXTEND INTO NIGHTTIME, RETROREFLECTIVE AND/OR ILLUMINATE DEVICES SHALL BE USED.

1. ENSURE ALL SIGNS ARE INSTALLED PRIOR TO PERFORMING FLAGGING OPERATIONS.
2. BE ALERT AND ATTENTIVE AT ALL TIMES.
3. THE FLAGGER SHALL STAND ALONE, NEVER PERMITTING A GROUP OF WORKERS TO CONGREGATE AROUND THE FLAGGER STATION OR ALLOW WORK VEHICLES NEAR THE FLAGGER STATION.
4. ALWAYS STAND WHILE WAITING FOR TRAFFIC.
5. HAVE AN AVENUE OF ESCAPE IF APPROACHED BY AN ERRANT VEHICLE.
6. USE PROPER HAND SIGNALS WITH THE STOP/SLOW PADDLE.
7. MAKE EYE CONTACT WITH MOTORISTS.
8. DO NOT LEAVE YOUR POST UNTIL YOU ARE PROPERLY RELIEVED.
9. COORDINATE WITH OTHER FLAGGERS.
10. HAVE YOUR CERTIFICATION CARD IN YOUR POSSESSION WHILE PERFORMING FLAGGING DUTIES.

1. HARD HAT.
2. RETROREFLECTIVE HIGHLY-VISIBILITY SAFETY APPAREL MEETING ANSI/ISEA 107-2010 CLASS 3 RISK EXPOSURE FOR DAYTIME AND NIGHTTIME ANSI/ISEA 107-2010 CLASS 3 RISK EXPOSURE SHALL INCLUDE TYPE E TROUSERS.
3. PROTECTIVE FOOTWEAR MUST COMPLY WITH ANSI Z41-1999, ASTM F-2412-2005, ASTM F-2413-2005 (OR MORE CURRENT ASTM).
4. SHIRT WITH SLEEVES AND LONG PANTS (REMOVAL OF SHIRT IS PROHIBITED).

1. STAND WHERE YOU CAN SEE AND BE SEEN BY APPROACHING TRAFFIC. CLEAR SIGHT DISTANCE FROM THE GRAPHIC FLAGGER SIGN TO THE FLAGGER STATION SHOULD BE 350' TO 500' WHERE THE POSTED SPEED LIMIT IS 45 MPH OR 500' TO 800' WHERE THE POSTED SPEED LIMIT IS GREATER THAN 45 MPH.
2. STAND FACING TRAFFIC EITHER ON THE EDGE OF THE SHOULDER OF THE ROAD OR NEAR THE EDGE OF PAVEMENT.
3. FLAGGER STATIONS SHOULD BE LOCATED SUCH THAT AN ERRANT VEHICLE HAS ADDITIONAL SPACE TO STOP WITHOUT ENTERING THE WORK AREA. THE DISTANCE FROM THE FLAGGER STATION TO THE WORK AREA SHOULD BE AS SHOWN IN THE TABLE BELOW:

SPACING FOR TEMPORARY SIGNS IN SERIES
(STATIONARY OR PORTABLE SIGNS)

DISTANCE TO 4TH SIGN
(REPEAT FOR ANY
CONSECUTIVE SIGNS)

DISTANCE TO 3RD SIGN

DISTANCE TO 2ND SIGN

DISTANCE TO 1ST SIGN

REFERENCE
POINT

(C) (C) (B) (A)

1. APPLY THE ADVANCE WARNING SIGNS SPACING CHART WHERE A SERIES OF 2 OR MORE SIGNS ARE USED. ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS VARIOUS CONDITIONS OCCUR, SUCH AS ADDITIONAL REACTION TIME FOR A CONDITION, LIMITED SIGHT DISTANCE, ETC.

1. FLAGGING STATIONS SHALL BE PRECEDED BY PROPER ADVANCE WARNING SIGNS. SIGNS SHALL BE REMOVED WHEN THE FLAGGER IS NO LONGER AT THEIR STATION.
2. SIGNS MUST BE RETROREFLECTIVE AND MADE FROM VDOT APPROVED MATERIALS. MESH SIGNS ARE NOT ALLOWED.
3. SIGNS SHALL BE LOCATED ON THE RIGHT SIDE OF THE ROADWAY.
4. ALL SIGNS MAY BE PORTABLE MOUNTED.
5. USE PROPER BALLAST SUCH AS SAND BAGS ON PORTABLE SIGN STAND LEGS TO PREVENT OVERTURNING OR USE STATIONARY MOUNTED SIGNS IN HIGH WIND AREAS.
6. SIGNS SHOULD BE POSITIONED SO THE SIGN FACE IS TURNED SLIGHTLY AWAY FROM THE TRAVEL LANE TO REDUCE SUN AND HEADLIGHT GLARE.
7. SIGNS SHOULD USE MESSAGES THAT ARE CLEARLY UNDERSTANDABLE BY THE MOTORIST, CLEAN AND LEGIBLE FROM AT LEAST THE DISTANCE REQUIRED IN THE ADVANCE WARNING SIGN SPACING CHART SHOWN ABOVE.

1. TRAFFIC CONTROL MEASURES SHALL BE IN ACCORDANCE WITH PREVAILING FEDERAL, STATE, LOCAL, AND VDOT POLICIES, STANDARDS AND PROCEDURES. THESE POLICIES, STANDARDS, AND PROCEDURES INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING: (1) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), (2) VIRGINIA WORK AREA PROTECTION MANUAL, AND (3) VIRGINIA ROAD AND BRIDGE SPECIFICATIONS.

1. STAND ON THE SHOULDER OF THE ROADWAY FACING TRAFFIC.
2. HOLD THE STOP SIGN PADDLE IN A STATIONARY POSITION. LOOK DIRECTLY AT THE APPROACHING TRAFFIC. RAISE YOUR FREE HAND WITH PALM EXPOSED TO APPROACHING DRIVER AND MAKE EYE CONTACT WITH THE DRIVER.
3. IF TIME PERMITS, DRIVERS MAY BE INFORMED CONCERNING THE REASON FOR THE DELAY. SPEAKING IN ENGLISH BE COURTEOUS AND BRIEF.

1. BEFORE RELEASING TRAFFIC THE FLAGGER WILL RETURN TO THE NORMAL FLAGGING LOCATION. KEEP YOUR PADDLE ON STOP UNTIL YOU ARE SAFE ON THE SHOULDER OF THE ROADWAY.
2. STAND FACING TRAFFIC. HOLD THE SLOW SIGN PADDLE IN A STATIONARY POSITION WITH THE PADDLE FACING THE ROAD USER. WITH YOUR FREE ARM SIGNAL THE DRIVERS TO PROCEED INTO THE OPEN LANE.
3. WHERE TRAFFIC IS STOPPED TEMPORARILY IN ONE LANE, RELEASE TRAFFIC BY TURNING THE PADDLE A QUARTER TURN SO THAT THE WORD "STOP" FACES YOU AND IS PARALLEL TO THE ROADWAY. WITH YOUR FREE ARM SIGNAL THE DRIVERS TO PROCEED INTO THE OPEN LANE.

1. STAND FACING TRAFFIC.
2. HOLD THE SLOW SIGN PADDLE IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. FOR ADDED EMPHASIS, THE FLAGGER MAY RAISE AND LOWER THE FREE HAND WITH THE PALM DOWN.

ISSUED FOR
VIRGINIA
LAND USE PERMIT

LAST REVISED: 07-15-2018

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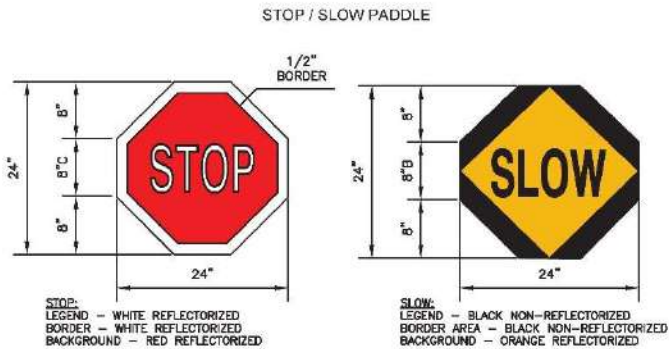
Mountain Valley
PIPELINE

TEMPORARY TRAFFIC CONTROL PLAN
TYPICAL
24" 11.250 MPD CONTIGUATE PIPELINE

PITTSBURGH COUNTY					VIRGINIA	
DATE	SCALE	DRAWN BY	APP'D	PROJECT NUMBER	SHEET NO.	TOTAL
06-08-19	N/A	TCB	DP	MVPPL-VAR-200	25	A

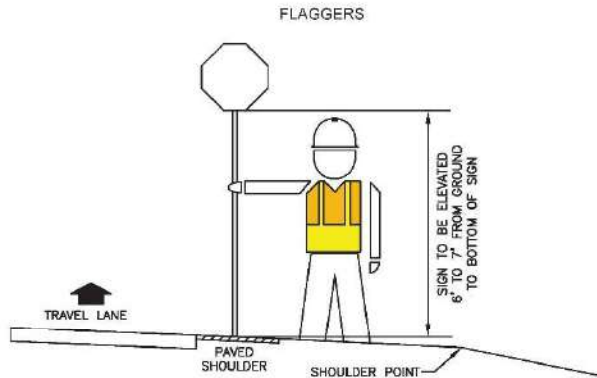
Attachment B

North Carolina Traffic Control Plan (MVPPL-NCR-200B)



STOP / SLOW PADDLE NOTE:

- FOR OPERATIONS THAT ARE RESTRICTED TO DAYLIGHT HOURS ONLY, USE NON-REFLECTORIZED LEGENDS, BORDERS AND BACKGROUNDS.



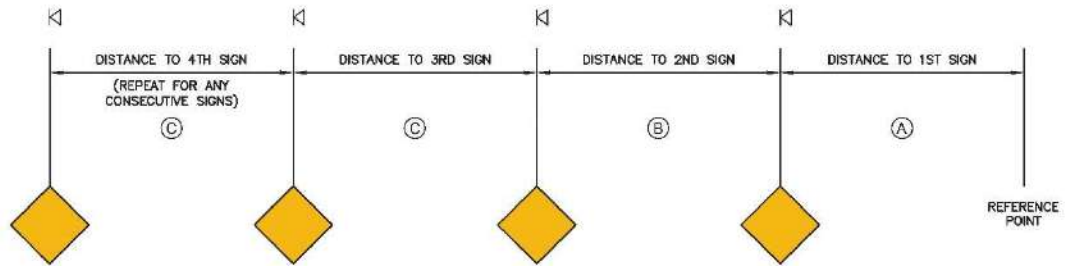
FLAGGER NOTES:

- FLAGGERS ARE REQUIRED TO BE QUALIFIED THRU AN NCDOT APPROVED FLAGGER TRAINING COURSE.
- ALWAYS SELECT A LEAD FLAGGER TO COORDINATE THE FLAGGING OPERATION.
- LOCATION OF THE FLAGGER- ALWAYS START ON GRASS SIDE OF WHITE EDGE LINE.
- HAND SIGNALS- STOP (PALM OUT AT 90 DEGREES PERPENDICULAR), PROCEED (USE HAND FINGERS AND ARM TO SWEEP ACROSS BODY TOWARD OPEN LANE FOR TRAVEL), SLOW ("PAT THE DOG" WITH PALM DOWN AND MOVE PALM UP AND DOWN).
- FACE TRAFFIC. NEVER TURN YOUR BACK ON MOVING TRAFFIC. NEVER STOP TRAFFIC FROM IN THE ROADWAY. NEVER RELEASE TRAFFIC FROM IN THE ROADWAY.
- RADIO COMMUNICATION BETWEEN FLAGGERS IS RECOMMENDED.
- ALWAYS HAVE AN ESCAPE ROUTE PLANNED.
- NEVER USE CONES OR OTHER DEVICES AS A "FLAGGER STATION".
- AT A MINIMUM, WEAR ANSI CLASS II SAFETY VEST. RECOMMEND WEARING ORANGE HARD HAT OR ORANGE HARD HAT COVER DURING FLAGGING OPERATIONS.
- PREPARE FOR EMERGENCIES BY CARRYING "STOP AND SLOW" PADDLES WITH TELESOPING OR SECTIONED STAFFS THAT REACH 7 FEET AND LIGHTS TO ILLUMINATE THE FLAGGER AT NIGHT.
- WHEN WORKERS STOP TRAFFIC TO ALLOW WORK VEHICLES TO DELIVER MATERIALS OR UNLOAD EQUIPMENT THEY MUST USE ADVANCE WARNING SIGNS AND "STOP AND SLOW" PADDLES.
- ROTATE FLAGGERS EVERY 2 TO 3 HOURS TO GIVE THEM BREAKS TO KEEP THEM FRESH AND ALERT.
- ALTERNATE TRAFFIC FLOW EVERY 2 TO 3 MINUTES UNDER HEAVY TRAFFIC CONDITIONS.
- LOCATE FLAGGER POSITION TO PROVIDE STOPPING SIGHT DISTANCE AS A MINIMUM VIEWING DISTANCE FROM MOTORIST TO FLAGGER (SEE ADVANCE WARNING SIGN SPACING CHART).
- ILLUMINATE FLAGGER STATIONS DURING NIGHT OPERATIONS.



10-28-2019

SPACING FOR TEMPORARY SIGNS IN SERIES
(STATIONARY OR PORTABLE SIGNS)



ADVANCE WARNING SIGN SPACING CHART			
POSTED SPEED LIMIT (MPH)	RECOMMENDED DISTANCE BETWEEN SIGNS (FEET ±)		
	(A)	(B)	(C)
≤35	200	200	200
40-50	350	350	350
55	500	500	500
CONTROLLED ACCESS ROAD ≥55	1000	1500	2700

SPACING OF TEMPORARY SIGNS NOTE:

- APPLY THE ADVANCE WARNING SIGN SPACING CHART WHERE A SERIES OF 2 OR MORE SIGNS ARE USED. ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS VARIOUS CONDITIONS OCCUR, SUCH AS LIMITED SIGHT DISTANCE, OBSTRUCTION INTERFERENCE, ETC.

TEMPORARY TRAFFIC CONTROL ZONE SIGN NOTES:

- SIGNS MUST BE RETROREFLECTIVE AND MADE FROM NCDOT APPROVED MATERIALS. MESH SIGNS ARE NOT ALLOWED.
- ROAD WORK AHEAD OR BEGIN WORK ZONE SIGNS ARE REQUIRED IF THE WORK AREA IS NOT INSIDE A LARGER LONG TERM STATIONARY WORK ZONE THAT HAS THESE SIGNS ALREADY IN PLACE, AND THAT WILL REMAIN IN EFFECT OVERNIGHT.
- ALL SIGNS MAY BE PORTABLE MOUNTED.
- SIGNS SHOULD USE MESSAGES THAT ARE CLEARLY UNDERSTANDABLE BY THE MOTORIST, CLEAN AND LEGIBLE FROM AT LEAST THE DISTANCE REQUIRED IN THE ADVANCE WARNING SIGN SPACING CHART SHOWN ABOVE.
- SIGNS SHOULD BE POSITIONED SO THE SIGN FACE IS TURNED SLIGHTLY AWAY FROM THE TRAVEL LANE TO REDUCE SUN AND HEADLIGHT GLARE.
- USE PROPER BALLAST SUCH AS SAND BAGS ON PORTABLE SIGN STAND LEGS TO PREVENT OVERTURNING OR USE STATIONARY MOUNTED SIGNS IN HIGH WIND AREAS.
- DURING PERIODS OF CONSTRUCTION INACTIVITY (LONGER THAN 30 MINUTES) SIGNS SHOULD BE REMOVED AND TURNED AWAY FROM THE MOTORIST'S VIEW (OR LAID DOWN TO REMOVE THE SIGN FROM THE MOTORIST'S VIEW).

MISCELLANEOUS NOTE:

- TRAFFIC CONTROL MEASURES SHALL BE IN ACCORDANCE WITH PREVAILING FEDERAL, STATE, LOCAL, AND NCDOT POLICIES, STANDARDS AND PROCEDURES. THESE POLICIES, STANDARDS, AND PROCEDURES INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING: (1) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), (2) NCDOT MAINTENANCE/UTILITY TRAFFIC CONTROL GUIDELINES, AND (3) NCDOT ROADWAY STANDARD DRAWINGS.

ISSUED FOR
NORTH CAROLINA
UTILITY ENCROACHMENT
AGREEMENT

LAST REVISED: 01/23/2019

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PIPELINE INC.

BY: FLUKE
N/A



MVP SOUTHGATE

TEMPORARY TRAFFIC CONTROL PLAN
TYPICAL
16" H-650 MVP SOUTHGATE PIPELINE

ROCKINGHAM COUNTY				NORTH CAROLINA	
DATE	REV.	DESCRIPTION	APPROVED	SHEET NO.	TOTAL
06-21-19	N/A	NGK	DP	MVPPL-NCR-200B	12

Unanticipated Plan for Paleontological Resources

Appendix 6-G



MVP Southgate Amendment Project

Unanticipated Discovery Plan for Paleontological Resources

MVP Southgate Project

FERC Docket No. CP19-XX-000

November 2018

Revised February 2025

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1.0 INTRODUCTION

Mountain Valley Pipeline, LLC (“Mountain Valley”) plans to construct an approximately ~~7331.3~~-mile-long natural gas pipeline (“~~Southgate Project~~” or “Amendment Project”) and associated aboveground facilities in Pittsylvania County, Virginia and Rockingham ~~and Alamance counties~~County, North Carolina. The Amendment Project is entirely situated in the Piedmont Uplands Section of the Piedmont Physiographic Province. Most of the Piedmont bedrock is composed of igneous and metamorphic rocks, which are generally buried under a thick (6 to 65 feet) blanket of weathered rock that has formed clay-rich soils, and outcrops are commonly restricted to stream valleys where the soil layer has been removed by erosion.

Although fossils are generally rare in the Piedmont, fossils of dinosaur footprints, freshwater fish, and insects are found in Triassic period rift basin deposits. Areas where fossils might be encountered along the ~~pipeline alignment~~Amendment Project route include shallow areas of Triassic-age sedimentary rock, which are generally present from ~~approximate~~approximately milepost (“MP”) 0.0 to MP 0.6 and MP ~~14.915.3~~ to ~~18.719.1~~ in Pittsylvania County, Virginia and from approximately MP ~~approximate~~MP 24.725.4 to MP 31.236 at the border of Pittsylvania County, Virginia and Rockingham County, North Carolina. The igneous to metamorphic rocks found elsewhere along the Amendment Project are not expected to contain fossils.

This *Unanticipated Discovery Plan for Paleontological Resources* (“Plan”) has been developed to establish procedures in the event of unanticipated discoveries of paleontological resources, and summarizes the efforts Mountain Valley will employ to recognize and manage any significant fossils that may be encountered during construction.

2.0 STATE AND FEDERAL PALEONTOLOGICAL LAWS

No state or federal paleontological laws are governing this plan. The Amendment Project does not cross ~~State~~state or ~~Federal~~federal lands, and neither ~~Federal~~federal (The Paleontological Resources Preservation Act [16 U.S.C. § 470~~)))~~), North Carolina (<https://www.ncleg.net/gascripts/statutes/Statutes.asp>), nor Virginia (<https://law.lis.virginia.gov/vacode>) laws govern the discovery of fossils on private lands.

3.0 UNANTICIPATED DISCOVERIES OF PALEONTOLOGICAL RESOURCES

Mountain Valley is aware that fossil remains may be encountered during the construction of the Amendment Project facilities. Prior to construction, ~~the Southgate Project~~Mountain Valley will address paleontological resources as part of the environmental training provided to all Mountain Valley personnel. This training will address the nature of paleontological resources and best management practices if paleontological materials are inadvertently discovered during construction. Amendment Project personnel will be trained to notify the Environmental Inspector (“EI”) if an unanticipated discovery occurs. In addition, the training will include a discussion of the policy prohibiting the collection of paleontological resources.

The following steps will ~~to be~~ followed in the event an unanticipated discovery of paleontological materials is made during ~~Project~~the construction of the Amendment Project:

- (1) The Contractor will immediately notify the Lead ~~Environmental Inspector~~ (“EI”) (or Chief Inspector; if the EI is not immediately available) of an unanticipated discovery.
- (2) In the event of a discovery of non-vertebrate fossils, all activities can continue in and around the discovery site while notification is made. In the event of an unanticipated discovery of vertebrate fossils (including bones, teeth, or footprints), the Lead EI or Chief Inspector will issue a Stop Task Order to the Contractor’s Site Foreman to ensure that the activity within 100 feet of the unanticipated discovery ceases.
- (3) The SouthgateAmendment Project Environmental Manager, Lead EI, or a representative designated by these individuals will then notify an on-call professional paleontologist retained by Mountain Valley; within 24 hours. The paleontologist will examine the find, evaluate its significance, and determine if additional mitigation (collection and curation) are applicable.
- (4) If, based on that inspection, the paleontologist determines that the discovery is not of scientific significance, the paleontologist will report that determination to the Lead EI. The Lead EI will document that determination and notify the Chief Inspector to resume work.
- (5) If the paleontologist determines that the find is of scientific significance, ~~he/she/they~~ will inform the SouthgateAmendment Project, the Lead EI, and the Chief Inspector of that determination.
- (6) Within 24 hours of that determination, ~~the Project~~Mountain Valley will notify the Federal Energy Regulatory Commission (“FERC”) of that determination. Work within the flagged or fenced-off discovery location will not resume until authorized by the FERC.
- (7) In consultation with staff of the Virginia Division of Geology and Mineral Resources or the North Carolina Museum of Natural Sciences, as appropriate, the paleontologist shall then develop an appropriate plan for documentation and recovery of the find. Upon authorization by the FERC, ~~the Project~~Mountain Valley will implement the documentation and recovery plan.
- (8) All paleontological materials of scientific significance discovered during construction will be recorded using methods consistent with modern professional paleontology standards, and scientifically significant vertebrate fossils will be collected and curated into an approved museum or academic repository. Notwithstanding, if paleontological resources are in imminent danger of destruction, ~~the Project~~Mountain Valley will, without delay, apply prudent methods to preserve as much paleontological information as possible. Such salvage activities will follow standard paleontological procedures ~~as much as possible~~to the extent practical, but human safety concerns or the immediacy of the threat to the paleontological resource may require less exact methods of material extraction, including rapid shovel excavation or use of backhoes or other heavy equipment.
- (9) At the conclusion of the work, a meeting or site visit may be held with the FERC, ~~the Project~~Mountain Valley, the paleontologist, and the relevant state professional staff to review the results of the work accomplished.
 - a. Upon receiving authorization from the FERC, the Lead EI and Chief Inspector will grant clearance to the construction team to resume work.

4.0 CONTACTS

Federal Agency Contact
Federal Energy Regulatory Commission Amanda Mardiney Terry Turpin Director , Office of Energy Projects (OEP) 888 First Street, NE Washington D.C. 20426 RM 62-30 Route Code PJ-11.2 Washington, D.C. 20426-0002 Tel: (202)-502-8081 Email: amardiney@ferc.gov 8700
State Agency Contacts
Virginia Virginia Department of Mines, Minerals, and Energy Division of Geology and Mineral Resources 900 Natural Resources Drive, Ste. Suite 500 Charlottesville, VA 22903 Tel: (434)-951-6344 6340 Email: dgmrinfo@dmme.virginia.gov Email: geologymineralresources@energy.virginia.gov
North Carolina North Carolina Museum of Natural Sciences Paleontology Research Laboratory 121 W. Jones Street Raleigh, NC 27601 Tel: (919)-707-8279 Email: lindsay.zanno@naturalsciences.org

Upland, Erosion Control and Revegetation and Maintenance Plan



MVP ~~SOUTHGATE PROJECT~~ Southgate Amendment Project

**Upland Erosion Control, Revegetation,
and Maintenance Plan**

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UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN (~~“PLAN”~~)

I. APPLICABILITY

- A. The intent of this Plan is to assist ~~project sponsors~~ Mountain Valley Pipeline, LLC (“Mountain Valley”) with the MVP Southgate Amendment Project (“Amendment Project”) by identifying baseline mitigation measures for minimizing erosion and enhancing revegetation. ~~Project sponsors~~ Mountain Valley shall specify in their applications for a new Federal Energy Regulatory Commission (“FERC”) authorization and in prior notice and advance notice filings, any individual measures in this Plan they consider unnecessary, technically infeasible, or unsuitable due to local conditions and fully describe any alternative measures they would use. ~~Project sponsors~~ Mountain Valley shall also explain how those alternative measures would achieve a comparable level of mitigation.
- B. Once a project is authorized, ~~project sponsors~~ Mountain Valley can request further changes as variances to the measures in this Plan (or the applicant’s approved plan). The Director of the Office of Energy Projects (~~“Director”~~) will consider approval of variances upon ~~the project sponsor’s~~ Mountain Valley’s written request if the Director agrees that a variance:
1. Provides equal or better environmental protection;
 2. Is necessary because a portion of ~~this Plan~~ these Plans is infeasible or unworkable based on project-specific conditions; or
 3. Is specifically required in writing by another federal, state, or Native American land management agency for the portion of the ~~project~~ Amendment Project on its land or under its jurisdiction.

Alternative Measures to the FERC Upland Erosion Control, Revegetation, and Maintenance Plan requested by the Mountain Valley for the Amendment Project are summarized in the table below.

Table 1				
<u>Alternative Measures to the FERC Plan Requested by Mountain Valley for the Amendment Project</u>				
FERC Plan Section	FERC Measure	Alternative Measure	Justification	<u>Previously Approved by FERC</u>
II.B.13. b.	Inspecting and ensuring the maintenance of temporary erosion control measures at least: on a weekly basis in areas with no construction or equipment operation.	Inspecting and ensuring the maintenance of temporary erosion control measures at least in non-(total maximum daily load) TMDL watersheds: on a weekly basis in areas with no construction or equipment operation; in TMDL watersheds: enhanced inspection frequency per State requirements.	The enhanced frequency in TMDL watersheds is more protective than the FERC Plan.	<u>Yes</u> <u>(Docket No. CP19-14)</u>

Table 1 Alternative Measures to the FERC Plan Requested by Mountain Valley for the Amendment Project				
FERC Plan Section	FERC Measure	Alternative Measure	Justification	Previously Approved by FERC
IV.F.1.b.	Temporary slope breakers must be installed on slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody, wetland, and road crossings at the following spacing (closer spacing shall be used if necessary): Slope % Spacing (feet) 5-15 — 300 >15-30 — 200 >30 — 100	Temporary slope breakers must be installed on slopes greater than 2 percent where the base of the slope is less than 25 feet from a waterbody, wetland, and road crossings at the following spacing (see Section IV.F.1.b below):	The Project spacing is more protective than the FERC Plan.	
VII.A.5	In no case shall routine vegetation mowing or clearing occur during the migratory bird nesting season between April 15 and August 1 of any year unless specifically approved in writing by the responsible land management agency or the U.S. Fish and Wildlife Service.	In no case shall routine vegetation mowing or clearing occur during the migratory bird nesting season between April 1 and October 14 of any year unless specifically approved in writing by the responsible land management agency or the U.S. Fish and Wildlife Service.	The adjusted routine mowing timing restriction provides equal protection to migratory bird nesting per agency consultation.	

Sponsors of projects planned for construction under the automatic authorization provisions in the FERC's regulations must receive written approval for any variances in advance of construction.

Amendment Project-related impacts on wetland and waterbody systems are addressed in the staff's Wetland and Waterbody Construction and Mitigation Procedures (~~("Procedures")~~).

II. SUPERVISION AND INSPECTION

A. ENVIRONMENTAL INSPECTION

- At least one Environmental Inspector is required for each construction spread during construction and restoration (as defined by section V). The number and experience of Environmental Inspectors assigned to each construction spread shall be appropriate for the length of the construction spread and the number/significance of resources affected.
- Environmental Inspectors shall have peer status with all other activity inspectors.

3. Environmental Inspectors shall have the authority to stop activities that violate the environmental conditions of the FERC's Orders, stipulations of other environmental permits or approvals, or landowner easement agreements, and to order appropriate corrective action.

B. RESPONSIBILITIES OF ENVIRONMENTAL INSPECTORS

At a minimum, the Environmental Inspector(s) shall be responsible for:

1. Inspecting construction activities for compliance with the requirements of this Plan, the Procedures, the environmental conditions of the FERC's Orders, the mitigation measures proposed by ~~the project sponsor~~ Mountain Valley (as approved and/or modified by the Order), other environmental permits and approvals, and environmental requirements in landowner easement agreements.
2. Identifying, documenting, and overseeing corrective actions, as necessary to bring an activity back into compliance;
3. Verifying that the limits of authorized construction work areas and locations of access roads are visibly marked before clearing, and maintained throughout construction;
4. Verifying the location of signs and highly visible flagging marking the boundaries of sensitive resource areas, waterbodies, wetlands, or areas with special requirements along the construction work area;
5. Identifying erosion/sediment control and soil stabilization needs in all areas;
6. Ensuring that the design of slope breakers will not cause erosion or direct water into sensitive environmental resource areas, including cultural resource sites, wetlands, waterbodies, and sensitive species habitats;
7. Verifying that dewatering activities are properly monitored and do not result in the deposition of sand, silt, and/or sediment into sensitive environmental resource areas, including wetlands, waterbodies, cultural resource sites, and sensitive species habitats; stopping dewatering activities if such deposition is occurring and ensuring the design of the discharge is changed to prevent reoccurrence; and verifying that dewatering structures are removed after completion of dewatering activities;
8. Ensuring that subsoil and topsoil are tested in agricultural and residential areas to measure compaction and determine the need for corrective action;
9. Advising the Chief Construction Inspector when environmental conditions (such as wet weather or frozen soils) make it advisable to restrict or delay construction activities to avoid topsoil mixing or excessive compaction;
10. Ensuring restoration of contours and topsoil;
11. Verifying that the soils imported for agricultural or residential use are certified as free of noxious weeds and soil pests unless otherwise approved by the landowner;
12. Ensuring that erosion control devices are properly installed to prevent sediment flow into sensitive environmental resource areas (e.g., wetlands, waterbodies, cultural resource sites, and sensitive species habitats) and onto roads, and determining the need for additional erosion control devices;

13. **Mountain Valley** is requesting FERC to approve Alternative Measures to Section II.B.13.b of the FERC (2013) Plan as identified below.

Inspecting and ensuring the maintenance of temporary erosion control measures at least:

- a. On a daily basis in areas of active construction or equipment operation;
 - b. In non-TMDL watersheds: on a weekly basis in areas with no construction or equipment operation;
 - c. In TMDL watersheds: enhanced inspection frequency per State requirements
 - d. Within 24 hours of each 0.5 inch of rainfall;
14. Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification or as soon as conditions allow if compliance with this time frame would result in greater environmental impacts;
15. Keeping records of compliance with the environmental conditions of the FERC's Orders and the mitigation measures proposed by ~~the project sponsor~~ Mountain Valley in the application submitted to the FERC and other federal or state environmental permits during active construction and restoration;
16. Identifying areas that should be given special attention to ensure stabilization and restoration after the construction phase; and
17. Verifying that locations for any disposal of excess construction materials for beneficial reuse comply with section III.E.

III. **PRECONSTRUCTION PLANNING**

Mountain Valley shall do the following before construction:

A. CONSTRUCTION WORK AREAS

1. Identify all construction work areas (e.g., construction right-of-way, extra workspace areas, pipe storage and contractor yards, borrow and disposal areas, and access roads) that would be needed for safe construction. ~~The project sponsor~~ Mountain Valley must ensure that appropriate cultural resources and biological surveys are conducted, as determined necessary by the appropriate federal and state agencies.
2. ~~Project sponsors are~~ Mountain Valley is encouraged to consider expanding any required cultural resources and endangered species surveys in anticipation of the need for activities outside of authorized work areas.
3. Plan construction sequencing to limit the amount and duration of open trench sections, as necessary, to prevent excessive erosion or sediment flow into sensitive environmental resource areas.

B. DRAIN TILE AND IRRIGATION SYSTEMS

1. Attempt to locate existing drain tiles and irrigation systems.
2. Contact landowners and local soil conservation authorities to determine the locations of future drain tiles that are likely to be installed within 3 years of the authorized construction.

3. Develop procedures for constructing through drain-tiled areas, maintaining irrigation systems during construction, and repairing drain tiles and irrigation systems after construction.
4. Engage qualified drain tile specialists, as needed, to conduct or monitor repairs to drain tile systems affected by construction. Use drain tile specialists from the [project Amendment Project](#) area, if available.

C. GRAZING DEFERMENT

Develop grazing deferment plans with willing landowners, grazing permittees, and land management agencies to minimize grazing disturbance of revegetation efforts.

D. ROAD CROSSINGS AND ACCESS POINTS

Plan for safe and accessible conditions at all roadway crossings and access points during construction and restoration.

E. DISPOSAL PLANNING

Determine methods and locations for the regular collection, containment, and disposal of excess construction materials and debris (e.g., timber, slash, mats, garbage, drill cuttings and fluids, [and](#) excess rock) throughout the construction process. Disposal of materials for beneficial reuse must not result in adverse environmental impact and is subject to compliance with all applicable survey, landowner or land management agency approval, and permit requirements.

F. AGENCY COORDINATION

Mountain Valley must coordinate with the appropriate local, state, and federal agencies as outlined in this Plan and/or required by the FERC's Orders.

1. Obtain written recommendations from the local soil conservation authorities or land management agencies regarding permanent erosion control and revegetation specifications.
2. Develop specific procedures in coordination with the appropriate agencies to prevent the introduction or spread of invasive species, noxious weeds, and soil pests resulting from construction and restoration activities.
3. Develop specific procedures in coordination with the appropriate agencies and landowners, as necessary, to allow for livestock and wildlife movement and protection during construction.
4. Develop specific blasting procedures in coordination with the appropriate agencies that address pre- and post-blast inspections, advanced public notification, and mitigation measures for building foundations, groundwater wells, and springs. Use appropriate methods (e.g., blasting mats) to prevent damage to nearby structures and to prevent debris from entering sensitive environmental resource areas.

G. SPILL PREVENTION AND RESPONSE PROCEDURES

Mountain Valley shall develop project-specific Spill Prevention and Response Procedures, as specified in section IV of the staff's Procedures. A copy must be filed with the Secretary of the FERC ~~("Secretary")~~ prior to construction and made available in the field on each construction spread. The filing requirement does not apply to projects constructed under the automatic authorization provisions in the FERC's regulations.

H. RESIDENTIAL CONSTRUCTION

For all properties with residences located within 50 feet of construction work areas, ~~project sponsors~~Mountain Valley shall avoid removal of mature trees and landscaping within the construction work area unless necessary for ~~the~~ safe operation of construction equipment or as specified in landowner agreements; fence the edge of the construction work area for a distance of 100 feet on either side of the residence; and restore all lawn areas and landscaping immediately following clean up operations, or as specified in landowner agreements. If seasonal or other weather conditions prevent compliance with these time frames, maintain and monitor temporary erosion controls (sediment barriers and mulch) until conditions allow completion of restoration.

I. WINTER CONSTRUCTION PLANS

If construction is planned to occur during winter weather conditions, ~~project sponsors~~Mountain Valley shall develop and file ~~a project~~an Amendment Project-specific winter construction plan with the FERC application. This filing requirement does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations.

The plan shall address:

1. winter construction procedures (e.g., snow handling and removal, access road construction and maintenance, soil handling under saturated or frozen conditions, topsoil stripping);
2. stabilization and monitoring procedures if ground conditions will delay restoration until the following spring (e.g., mulching and erosion controls, inspection and reporting, stormwater control during spring thaw conditions); and
3. final restoration procedures (e.g., subsidence and compaction repair, topsoil replacement, seeding).

IV. INSTALLATION

A. APPROVED AREAS OF DISTURBANCE

1. Project-related ground disturbance shall be limited to the construction right-of-way, extra workspace areas, pipe storage yards, borrow and disposal areas, access roads, and other areas approved in the FERC's Orders. Any ~~project-Amendment Project~~-related ground-disturbing activities outside these areas will require prior Director approval. This requirement does not apply to activities needed to comply with the Plan and Procedures (i.e., slope breakers, energy-dissipating devices, dewatering structures, drain tile system repairs) or minor field realignments and workspace shifts per landowner needs and requirements that do not affect other landowners or sensitive environmental resource areas. All construction or restoration activities outside of authorized areas are subject to all applicable survey and permit requirements, and landowner easement agreements.

2. The typical construction right-of-way width for the [Amendment](#) Project shall not exceed 100 feet or that described in the FERC application unless otherwise modified by a FERC Order. However, in limited, non-wetland areas, this construction right-of-way width may be expanded by up to 25 feet without Director approval to accommodate full construction right-of-way topsoil segregation and to ensure safe construction where topographic conditions (e.g., side-slopes) or soil limitations require it. Twenty-five feet of extra construction right-of-way width may also be used in limited, non-wetland, or non-forested areas for truck turnarounds where no reasonable alternative access exists.

Project use of these additional limited areas is subject to landowner or land management agency approval and compliance with all applicable survey and permit requirements. When additional areas are used, each one shall be identified and the need explained in the weekly or biweekly construction reports to the FERC, if required. The following material shall be included in the reports:

- a. the location of each additional area by station number and reference to previously filed alignment sheets or updated alignment sheets showing the additional areas;
- b. identification of the filing at FERC containing evidence that the additional areas were previously surveyed; and
- c. a statement that landowner approval has been obtained and is available in project files.

Prior written approval of the Director is required when the authorized construction right-of-way width would be expanded by more than 25 feet.

B. TOPSOIL SEGREGATION

1. Unless the landowner or land management agency specifically approves otherwise, prevent the mixing of topsoil with subsoil by stripping topsoil from either the full work area or from the trench and subsoil storage area (ditch plus spoil side method) in:
 - a. cultivated or rotated croplands and managed pastures;
 - b. residential areas;
 - c. hayfields; and
 - d. other areas at the landowner's or land managing agency's request.
2. In residential areas, [the](#) importation of topsoil is an acceptable alternative to topsoil segregation.
3. Where topsoil segregation is required, ~~the project sponsor~~ [Mountain Valley](#) must:
 - a. segregate at least 12 inches of topsoil in deep soils (more than 12 inches of topsoil); and
 - b. make every effort to segregate the entire topsoil layer in soils with less than 12 inches of topsoil.
4. Maintain separation of salvaged topsoil and subsoil throughout all construction activities.
5. Segregated topsoil may not be used for padding the pipe, constructing temporary slope breakers or trench plugs, improving or maintaining roads, or as a fill material.

6. Stabilize topsoil piles and minimize loss due to wind and water erosion with the use of sediment barriers, mulch, temporary seeding, tackifiers, or functional equivalents, where necessary.

C. DRAIN TILES

1. Mark locations of drain tiles damaged during construction.
2. Probe all drainage tile systems within the area of disturbance to check for damage.
3. Repair damaged drain tiles to their original or better condition. Do not use filter-covered drain tiles unless the local soil conservation authorities and the landowner agree. Use qualified specialists for testing and repairs.
4. For new pipelines in areas where drain tiles exist or are planned, ensure that the depth of cover over the pipeline is sufficient to avoid interference with drain tile systems. For adjacent pipeline loops in agricultural areas, install the new pipeline with at least the same depth of cover as the existing pipeline(s).

D. IRRIGATION

Maintain water flow in crop irrigation systems unless shutoff is coordinated with affected parties.

E. ROAD CROSSINGS AND ACCESS POINTS

1. Maintain safe and accessible conditions at all road crossings and access points during construction.
2. If crushed stone access pads are used in residential or agricultural areas, place the stone on synthetic fabric to facilitate removal.
3. Minimize the use of tracked equipment on public roadways. Remove any soil or gravel spilled or tracked onto roadways daily or more frequently as necessary to maintain safe road conditions. Repair any damages to roadway surfaces, shoulders, and bar ditches.

F. TEMPORARY EROSION CONTROL

Install temporary erosion controls immediately after the initial disturbance of the soil. Temporary erosion controls must be properly maintained throughout construction (on a daily basis) and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration is complete.

1. Temporary Slope Breakers

- a. Temporary slope breakers are intended to reduce runoff velocity and divert water off the construction right-of-way. Temporary slope breakers may be constructed of materials such as soil, silt fence, staked hay or straw bales, or sandbags.

~~b. The Project is requesting FERC to approve Alternative Measures to Section IV.F.1.b of the FERC (2013) Plan as identified below:~~

Install temporary slope breakers on all disturbed areas, as necessary, to avoid excessive erosion. Temporary slope breakers must be installed on slopes greater than 25 percent where the base of the slope is less than 2550 feet from waterbody,

wetland, and road crossings at the following spacing (closer spacing shall be used if necessary):

PROPOSED MINIMUM SPACING FOR TEMPORARY WATER BARS	
PIPELINE GRADE	DISTANCE (FEET)
<2%	— ^{1,2}
2–5%	400
6–15%	200
16–30%	100
>31%	50 ³

(1) TEMPORARY RIGHT-OF-WAY DIVERSIONS WILL BE INSTALLED AS NEEDED BASED ON FIELD CONDITIONS.

(2) TEMPORARY RIGHT-OF-WAY DIVERSIONS WILL BE INSTALLED 25 FEET FROM EACH WATER BODY BOUNDARY REGARDLESS OF SLOPE CONDITIONS.

(3) SLOPES GREATER THAN 65% MAY REQUIRE SITE SPECIFIC STABILIZATION MEASURES BASED ON FIELD CONDITIONS AS APPROVED BY SOUTHGATE DESIGN ENGINEERING AND SOUTHGATE ENVIRONMENTAL INSPECTOR.

Slope (%)	Spacing (feet)
5-15	300
>15-30	200
>30	100

e.b. Direct the outfall of each temporary slope breaker to a stable, well-vegetated area or construct an energy-dissipating device at the end of the slope breaker and off the construction right-of-way.

d.c. Position the outfall of each temporary slope breaker to prevent sediment discharge into wetlands, waterbodies, or other sensitive environmental resource areas.

2. Temporary Trench Plugs

Temporary trench plugs are intended to segment a continuous open trench prior to backfill.

- Temporary trench plugs may consist of unexcavated portions of the trench, compacted subsoil, sandbags, or some functional equivalent.
- Position temporary trench plugs, as necessary, to reduce trench line erosion and minimize the volume and velocity of trench water flow at the base of slopes.

3. Sediment Barriers

Sediment barriers are intended to stop the flow of sediments and to prevent the deposition of sediments beyond approved workspaces or into sensitive resources.

- a. Sediment barriers may be constructed of materials such as silt fence, staked hay or straw bales, compacted earth (e.g., drivable berms across travelways), sandbags, or other appropriate materials.
- b. At a minimum, install and maintain temporary sediment barriers across the entire construction right-of-way at the base of slopes greater than 2 percent where the base of the slope is less than 25 feet from a waterbody, wetland, or road crossing until revegetation is successful as defined in this Plan. Leave adequate room between the base of the slope and the sediment barrier to accommodate ponding of water and sediment deposition.
- c. Where wetlands or waterbodies are adjacent to and downslope of construction work areas, install sediment barriers along the edge of these areas, as necessary, to prevent sediment flow into the wetland or waterbody.

4. Mulch

- a. Apply mulch on all slopes (except in cultivated cropland) concurrent with or immediately after seeding, where necessary, to stabilize the soil surface and to reduce wind and water erosion. Spread mulch uniformly over the area to cover at least 75 percent of the ground surface at a rate of 2 tons/acre of straw or its equivalent unless the local soil conservation authority, landowner, or land managing agency approves otherwise in writing.
- b. Mulch can consist of weed-free straw or hay, wood fiber hydromulch, erosion control fabric, or some functional equivalent.
- c. Mulch all disturbed upland areas (except cultivated cropland) before seeding if:
 - (1) final grading and installation of permanent erosion control measures will not be completed in an area within 20 days after the trench in that area is backfilled (10 days in residential areas), as required in section V.A.1; or
 - (2) construction or restoration activity is interrupted for extended periods, such as when seeding cannot be completed due to seeding period restrictions.
- d. If mulching before seeding, increase mulch application on all slopes within 100 feet of waterbodies and wetlands to a rate of 3 tons/acre of straw or equivalent.
- e. If wood chips are used as mulch, do not use more than 1 ton/acre and add the equivalent of ~~11 lbs~~ 14.
- e.f. 1 lb/acre available nitrogen (at least 50 percent of which is slow release).
- f.g. Ensure that mulch is adequately anchored to minimize loss due to wind and water.
- g.h. When anchoring with liquid mulch binders, use rates recommended by the manufacturer. Do not use liquid mulch binders within 100 feet of wetlands or waterbodies except where the product is certified environmentally non-toxic by the appropriate state or federal agency or independent standards-setting organization.
- h.i. Do not use synthetic monofilament mesh/netted erosion control materials in areas designated as sensitive wildlife habitat unless the product is specifically designed

to minimize harm to wildlife. Anchor erosion control fabric with staples or other appropriate devices.

V. RESTORATION

A. CLEANUP

1. Commence cleanup operations immediately following backfill operations. Complete final grading, topsoil replacement, and installation of permanent erosion control structures within 20 days after backfilling the trench (10 days in residential areas). If seasonal or other weather conditions prevent compliance with these time frames, maintain temporary erosion controls (i.e., temporary slope breakers, sediment barriers, and mulch) until conditions allow completion of cleanup.

If construction or restoration unexpectedly continues into the winter season when conditions could delay successful decompaction, topsoil replacement, or seeding until the following spring, file with the Secretary for the review and written approval of the Director, a winter construction plan (as specified in section III.I). This filing requirement does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations.

2. A travel lane may be left open temporarily to allow access by construction traffic if the temporary erosion control structures are installed as specified in section IV.F. and inspected and maintained as specified in sections II.B.12 through 14. When access is no longer required the travel lane must be removed and the right-of-way restored.
3. Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Rock that is not returned to the trench shall be considered construction debris, unless approved for use as mulch or for some other use on the construction work areas by the landowner or land managing agency.
4. Remove excess rock from at least the top 12 inches of soil in all cultivated or rotated cropland, managed pastures, hayfields, and residential areas, as well as other areas at the landowner's request. The size, density, and distribution of rock on the construction work area shall be similar to adjacent areas not disturbed by construction. The landowner or land management agency may approve other provisions in writing.
5. Grade the construction right-of-way to restore preconstruction contours and leave the soil in the proper condition for planting.
6. Remove construction debris from all construction work areas unless the landowner or land managing agency approves leaving materials onsite for beneficial reuse, stabilization, or habitat restoration.
7. Remove temporary sediment barriers when replaced by permanent erosion control measures or when revegetation is successful.

B. PERMANENT EROSION CONTROL DEVICES

1. Trench Breakers

- a. Trench breakers are intended to slow the flow of subsurface water along the trench. Trench breakers may be constructed of materials such as sandbags or polyurethane foam. Do not use topsoil in trench breakers.
- b. An engineer or similarly qualified professional shall determine the need for and spacing of trench breakers. Otherwise, trench breakers shall be installed at the same spacing as and upslope of permanent slope breakers.
- c. In agricultural fields and residential areas where slope breakers are not typically required, install trench breakers at the same spacing as if permanent slope breakers were required.
- d. At a minimum, install a trench breaker at the base of slopes greater than 2 percent where the base of the slope is less than 25 feet from a waterbody or wetland and where needed to avoid draining a waterbody or wetland. Install trench breakers at wetland boundaries, as specified in the Procedures. Do not install trench breakers within a wetland.

2. Permanent Slope Breakers

- a. Permanent slope breakers are intended to reduce runoff velocity, divert water off the construction right-of-way, and prevent sediment deposition into sensitive resources. Permanent slope breakers may be constructed of materials such as soil, stone, or some functional equivalent.
- b. Construct and maintain permanent slope breakers in all areas, except cultivated areas and lawns, unless requested by the landowner, using spacing recommendations obtained from the local soil conservation authority or land managing agency.

In the absence of written recommendations, use the following spacing unless closer spacing is necessary to avoid excessive erosion on the construction right-of-way:

RECOMMENDED MINIMUM SPACING FOR PERMANENT SLOPE BREAKERS	
PIPELINE GRADE	DISTANCE (FEET)
<2%	12
2-5%	400
6-15%	200
16-30%	100
>31%	50 ³

1. PERMANENT SLOPE BREAKERS WILL BE INSTALLED AS NEEDED BASED ON FIELD CONDITIONS.
2. PERMANENT SLOPE BREAKERS WILL BE INSTALLED 25 FEET FROM EACH WATERBODY BOUNDARY REGARDLESS OF SLOPE CONDITIONS.
3. SLOPES GREATER THAN 65% MAY REQUIRE SITE SPECIFIC STABILIZATION MEASURES BASED ON FIELD CONDITIONS AS APPROVED BY MVP DESIGN ENGINEERING AND MVP ENVIRONMENTAL INSPECTOR.

Slope (%)	Spacing (feet)
5-15	300

>15-30	200
>30	100

- c. Construct slope breakers to divert surface flow to a stable area without causing water to pool or erode behind the breaker. In the absence of a stable area, construct appropriate energy-dissipating devices at the end of the breaker.
- d. Slope breakers may extend slightly (about 4 feet) beyond the edge of the construction right-of-way to effectively drain water off the disturbed area. Where slope breakers extend beyond the edge of the construction right-of-way, they are subject to compliance with all applicable survey requirements.

C. SOIL COMPACTION MITIGATION

1. Test topsoil and subsoil for compaction at regular intervals in agricultural and residential areas disturbed by construction activities. Conduct tests on the same soil type under similar moisture conditions in undisturbed areas to approximate preconstruction conditions. Use penetrometers or other appropriate devices to conduct tests.
2. Plow severely compacted agricultural areas with a paraplow or other deep tillage implement. In areas where topsoil has been segregated, plow the subsoil before replacing the segregated topsoil.

If subsequent construction and cleanup activities result in further compaction, conduct additional tilling.

3. Perform appropriate soil compaction mitigation in severely compacted residential areas.

D. REVEGETATION

1. General

- a. ~~The project sponsor~~Mountain Valley is responsible for ensuring successful revegetation of soils disturbed by project-related activities, except as noted in section V.D.1.b.
- b. Restore all turf, ornamental shrubs, and specialized landscaping in accordance with the landowner's request or compensate the landowner. Restoration work must be performed by personnel familiar with local horticultural and turf establishment practices.

2. Soil Additives

Fertilize and add soil pH modifiers in accordance with written recommendations obtained from the local soil conservation authority, land management agencies, or landowner. Incorporate recommended soil pH modifier and fertilizer into the top 2 inches of soil as soon as practicable after application.

3. Seeding Requirements

- a. Prepare a seedbed in disturbed areas to a depth of 3 to 4 inches using appropriate equipment to provide a firm seedbed. When hydroseeding, scarify the seedbed to facilitate lodging and germination of seed.

- b. Seed disturbed areas in accordance with written recommendations for seed mixes, rates, and dates obtained from the local soil conservation authority or [at](#) the request of the landowner or land management agency. Seeding is not required in cultivated croplands unless requested by the landowner.
- c. Perform seeding of permanent vegetation within the recommended seeding dates. If seeding cannot be done within those dates, use appropriate temporary erosion control measures discussed in section IV.F and perform seeding of permanent vegetation at the beginning of the next recommended seeding season. Dormant seeding or temporary seeding of annual species may also be used, if necessary, to establish cover, as approved by the Environmental Inspector. Lawns may be seeded on a schedule established with the landowner.
- d. In the absence of written recommendations from the local soil conservation authorities, seed all disturbed soils within [6six](#) working days of final grading, weather and soil conditions permitting, subject to the specifications in section V.D.3.a through V.D.3.c.
- e. Base seeding rates on Pure Live Seed. Use seed within 12 months of seed testing.
- f. Treat legume seed with an inoculant specific to the species using the manufacturer's recommended rate of inoculant appropriate for the seeding method (broadcast, drill, or hydro).
- g. In the absence of written recommendations from the local soil conservation authorities, landowner, or land managing agency, to the contrary, a seed drill equipped with a cultipacker is preferred for seed application.

Broadcast or hydroseeding can be used in lieu of drilling at double the recommended seeding rates. Where seed is broadcast, firm the seedbed with a cultipacker or roller after seeding. In rocky soils or where site conditions may limit the effectiveness of this equipment, other alternatives may be appropriate (e.g., use of a chain drag) to lightly cover seed after application, as approved by the Environmental Inspector.

VI. OFF-ROAD VEHICLE CONTROL

To each owner or manager of forested lands, offer to install and maintain measures to control unauthorized vehicle access to the right-of-way. These measures may include:

- A. signs;
- B. fences with locking gates;
- C. slash and timber barriers, pipe barriers, or a line of boulders across the right-of-way; and
- D. conifers or other appropriate trees or shrubs across the right-of-way.

VII. POST-CONSTRUCTION ACTIVITIES AND REPORTING

A. MONITORING AND MAINTENANCE

- 1. Conduct follow-up inspections of all disturbed areas, as necessary, to determine the success of revegetation and address landowner concerns. At a minimum, conduct inspections after the first and second growing seasons.

2. Revegetation in non-agricultural areas shall be considered successful if, upon visual survey, the density and cover of non-nuisance vegetation are similar in density and cover to adjacent undisturbed lands. In agricultural areas, revegetation shall be considered successful when, upon visual survey, crop growth and vigor are similar to adjacent undisturbed portions of the same field unless the easement agreement specifies otherwise. Continue revegetation efforts until revegetation is successful.
3. Monitor and correct problems with drainage and irrigation systems resulting from pipeline construction in agricultural areas until restoration is successful.
4. Restoration shall be considered successful if the right-of-way surface condition is similar to adjacent undisturbed lands, construction debris is removed (unless otherwise approved by the landowner or land managing agency per section V.A.6), revegetation is successful, and proper drainage has been restored.

~~5. The Project is requesting FERC to approve Alternative Measures to Section VII.A.5 of the FERC (2013) Plan as identified below:~~

- ~~6.5.~~ Routine vegetation mowing or clearing over the full width of the permanent right-of-way in uplands shall not be done more frequently than every 3 years. However, to facilitate periodic corrosion/leak surveys, a corridor not exceeding 10 feet in width centered on the pipeline may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In no case shall routine vegetation mowing or clearing occur during the migratory bird nesting season between April ~~15~~ and ~~October 14~~ August 1 of any year unless specifically approved in writing by the responsible land management agency or the U.S. Fish and Wildlife Service.
- ~~7.6.~~ Efforts to control unauthorized off-road vehicle use, in cooperation with the landowner, shall continue throughout the life of the project ~~Amendment Project~~. Maintain signs, gates, and permanent access roads, as necessary.

B. REPORTING

1. Mountain Valley shall maintain records that identify by milepost:
 - a. method of application, application rate, ~~and~~ type of fertilizer, pH modifying agent, seed, and mulch used;
 - b. acreage treated;
 - c. dates of backfilling and seeding;
 - d. names of landowners requesting special seeding treatment and a description of the follow-up actions;
 - e. the location of any subsurface drainage repairs or improvements made during restoration; and
 - f. any problem areas and how they were addressed.
2. ~~The project sponsor~~ Mountain Valley shall file with the Secretary quarterly activity reports documenting the results of follow-up inspections required by section VII.A.1; any problem areas, including those identified by the landowner; and corrective actions taken for at least

2 years following construction.

The requirement to file quarterly activity reports with the Secretary does not apply to projects constructed under the automatic authorization, prior notice, or advanced notice provisions in the FERC's regulations.

Water Resources Identification and Testing Plan



MVP Southgate Amendment Project

Water Resources Identification and Testing Plan

~~Revision 1~~

~~March 2019~~

Revised February 2025

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APPENDICES

Appendix A	Information to be Collected from Water Supply Owners
Appendix B	Private Well Yield Testing Protocol

1.0 WATER RESOURCES IDENTIFICATION AND TESTING PLAN

Mountain Valley Pipeline, LLC (“Mountain Valley”) prepared and will execute the terms of this *Water Resources Identification and Testing Plan* (“Plan”) to document ~~pre-construction~~preconstruction (baseline) and post-construction water quality and quantity of privately-owned water supply systems.

This Plan summarizes protocols for identifying and assessing water supplies in the vicinity of the Amendment Project and related components. ~~The Project~~ Mountain Valley documented locations and characteristics of private water supplies within 150 feet of the construction workspaces. ~~The Project~~Mountain Valley will offer pre- and post-construction quality and yield testing for all water wells and water ~~supplies~~supply springs located within, or that could potentially be within 150 feet of, construction workspaces.

This Plan discusses the outreach methodology that will be followed by ~~the Project~~Mountain Valley and the general plan for testing and for resources that may be influenced by construction activities.

Private water resources identified for water quality and quantity testing within 150 feet of the construction workspace are summarized in Table 1. Prior to construction, the private water supply owners will be contacted by ~~the Project~~Mountain Valley via certified mail to confirm the location and characteristics of water resource(s) on the owner’s property and to request permission for ~~the Project~~Mountain Valley to conduct water quality and quantity sampling.

Field confirmation of private water sources has ~~not been yet to be~~ completed on ~~some~~several parcels because property access permission has not been granted. Therefore, this Plan ~~is subject to change~~may be updated following the completion of field environmental investigations.

2.0 IDENTIFYING WATER RESOURCES

2.1 Private Wells and Springs

~~1—Mountain Valley has obtained 97 percent of the easements required to construct the Amendment Project.~~ Private wells and springs located within 150 feet of the construction workspace ~~will behave been~~ identified ~~by route alignment civil surveying, as well as desktop review and through~~ field ~~observation (where property access was granted).~~ ~~The private water supply surveys and landowner negotiations for easements along the Amendment Project.~~ Locations of these water sources will be confirmed through pre-construction water supply testing ~~(see Table 1)~~as described in this Plan.

~~As part of the desktop review for potential drinking water sources an indirect method was employed to supplement the civil survey to identify potential private wells. GIS data taken from the various counties No springs were used to identify if a structure was present on identified within 150 feet of the parcel. To maximize the potential for identifying private water resources all structures were assumed to have one or more private wells~~Amendment Project workspaces.

As discussed in this Plan, the property owners ~~identified by civil survey, and desktop review,~~ along the Amendment Project route will be contacted by ~~the Project~~Mountain Valley prior to construction via certified mail to confirm ~~drinking~~ water sources on the identified property and to request permission to

conduct water quality and quantity testing. If a private property owner does not respond to the certified mail request for information within approximately four (4) weeks of submittal by ~~the Project~~ Mountain Valley a second request will be sent. If no response is provided to ~~the Project~~ Mountain Valley through the second submittal, no further ~~contacts~~ contact will be initiated with the property owner regarding water ~~resources~~ resource testing and this will be documented in the Amendment Project records.

Private well and spring locations identified to date, as described above, are listed in Table 1. Appendix A provides a list of information that will be requested from the water supply owners during the initial contact, along with a request for permission to sample the water supply.

2.2 Public Water Supplies

Public water suppliers in Virginia and North Carolina were identified from publicly available data sources (~~VDEQ, 2018; North Carolina Department of Environmental Quality [“NCDEQ, 2018.”]~~ 2023; ~~Virginia Department of Environmental Quality [“VADEQ”]~~ 2023, 2024; ~~Virginia Department of Energy~~ 2024). Specific locations and conditions of the water supply sources (wells, springs, or surface water intakes) will be confirmed through ~~contacts~~ contact with the public supply owner or operator.

3.0 WATER RESOURCE EVALUATION

The following discussion outlines ~~protocols~~ the water supply testing ~~activities~~ protocols. The testing results will be documented by ~~the Southgate Project~~ Mountain Valley and provided ~~directly~~ to the water supply owner.

3.1 Private Water Supplies

- (1) Mountain Valley will offer pre- and post-construction quality and quantity (yield testing) for all water wells and water ~~supplies~~ supply springs located within 150 feet of construction workspaces. ~~The Project and for resources that may be influenced by construction activities.~~ Mountain Valley proposes to collect one sample approximately six (6) months before construction and a second sample within three (3) months prior to construction and conduct a well yield test (protocol described below).
- (2) All private property owners with a known or suspected water source (see earlier discussion) will be contacted prior to construction as discussed below:
 - a. Send ~~contact~~ request by certified mail to the mailing address listed for the property owner;
 - b. If no response is received within approximately ~~4~~ two (2) weeks of ~~sending~~ receiving proof of delivery for the first letter, a second ~~follow-up~~ certified letter will be sent;
 - c. If no response is ~~provided by property owner~~ received after two (2) attempts, this result will be documented, and ~~the Project~~ Mountain Valley will suspend further ~~contact~~ attempts to contact the property owner regarding water quality testing;
 - d. If a property owner declines permission for ~~the Project~~ Mountain Valley to conduct water quality testing, this will be documented, and ~~the Project~~ Mountain Valley will suspend further ~~contact with~~ attempts to the property owner regarding water quality testing;

- (3) Property and water supply access approval documentation will be secured by ~~the Project~~Mountain Valley before entering the property. The property/supply owner will be notified prior to ~~the Project~~Mountain Valley entering the property for sampling. See Appendix A for information to be collected ~~from the water supply owner~~ during initial and follow-up contact.
- (4) A two-person field crew will be deployed to collect water samples at the identified locations.
- (5) The sampling location coordinates will be collected using GPS (1-meter resolution) and recorded.
- (6) Field testing, sample collection and sample management techniques will be implemented consistent with industry standards and approved guidance (U.S. ~~EPA, Virginia Department of Environmental Quality~~Protection Agency [“USEPA”], VADEQ, and ~~North Carolina Department of Environmental Quality~~NCDEQ).
- (7) For surface water resources, a decontaminated or new one-time-use sample collection device suitable for the surface water resource will be inserted in a flowing portion of the spring or stream, and the water sample will be transferred directly to the appropriate sample container provided by the laboratory.
- (8) A decontaminated field meter will be inserted in a flowing portion of the spring or stream, and the field parameters will be recorded along with the date and time.
- (9) For water well testing, a water sample will be collected from a flowing spigot (after a minimum of 10 minutes purging) upstream of any treatment system (if applicable) in order to collect a raw water sample in the appropriate laboratory-prepared sample bottle with appropriate preservatives. Field parameters will be analyzed at the time of water sample collection.
 - a. If the well does not have a pump installed or does not demonstrate artesian flow, a new, disposable, one-time-use bailer and clean nylon string will be used to collect the water sample. There will be limited ability to purge the well bore of water using the bailer.
- (10) Water samples will be kept cool and transported to the analytical laboratory(ies) under Chain of Custody.
- (11) The target analyte list is comprised of a general water quality analyte suite and pollutant-specific suite (Table 2). The baseline target analyte list includes field parameters, coliform bacteria, major elements, and water quality parameters. The expanded target analyte list adds a full suite of Volatile Organic Compounds and Semivolatile Organic Compounds included in USEPA drinking water testing methods EPA 524.2, and EPA 525.2, respectively, and Total Petroleum Hydrocarbons in EPA SW846 8015C.
 - a. The first pre-construction sampling event will be comprised analysis of the full expanded target analyte list (Table 2). The second pre-construction sampling event will include the baseline water quality (reduced list, Table 2) suite unless there is a concern noted by the property owner or if the Amendment Project ~~observers~~observes a verified detection of a VOC or SVOC or TPH from the first sampling event
 - b. National Environmental Laboratory Accreditation Program (“NELAP”)-accredited laboratories will be utilized for water sample analyses. For samples collected in Virginia, the laboratories will have current Virginia (V)ELAP accreditation. For

samples collected in North Carolina, the laboratories will be certified by the North Carolina Department of Health and Human Services.

- (12) Water resources testing activities (including the condition of the water resource and equipment) will be photo-documented. All field activities and meter calibration for each water resources sampling event will be documented.

~~1.~~—The first pre-construction sampling event ~~provided the Project will provide~~ Mountain Valley with the opportunity to evaluate the condition ~~and integrity~~ of each well, spring or intake, surrounding topography ~~and~~, land characteristics ~~and~~, land use, and ~~generally assess the~~ overall vulnerability of the water ~~supply resource~~ to existing or future sources of impact.

~~(13)~~ ~~The Southgate Project will provide the water supply owner with the water supply~~ ~~This sample may also include yield~~ testing.

~~(13)~~(14) ~~Mountain Valley will provide the laboratory results to the landowner.~~ Concurrent with providing ~~the owner~~ these results, ~~the Project~~ Mountain Valley will discuss with the owner any conditions ~~that~~ observed at the water supply that represent ~~the~~ potential for existing or future sources of impacts.

~~(14)~~(15) ~~The second sampling event will also include well yield testing.~~ The water supply owner will be apprised of the well yield testing procedure, and ~~the Project~~ Mountain Valley will request permission to access the well for the quantity testing at the owner's discretion.

~~(15)~~(16) ~~The Southgate Project~~ Mountain Valley will consult with an owner who appears to have a compromised water supply based on pre-construction sampling results. ~~The Project~~ Mountain Valley will tailor an evaluation protocol for the second round of water quality testing as appropriate to evaluate the integrity of the water supply and ensure a comprehensive pre-construction assessment is completed.

3.2 Public Water Suppliers

~~The Southgate Project~~ Mountain Valley will contact and discuss the ~~Amendment~~ Project with public water suppliers and address specific concerns. ~~The Project~~ Mountain Valley is completing water supply contingency planning efforts for public suppliers that have a surface water intake within three miles down gradient of a pipeline water body crossing. ~~The Project~~ Mountain Valley will communicate directly with the ~~publie~~public suppliers and work directly with specific suppliers for contingency planning.

4.0 POST-CONSTRUCTION BASELINE WATER RESOURCE TESTING

Mountain Valley will conduct post-construction testing of all water supply wells and water supply springs within 150 feet of construction workspaces within properties where the owner has accepted ~~the Project's~~ Mountain Valley 's testing offer. ~~The Project~~ Mountain Valley will follow the same procedures described above for water supply sampling, comprehensive target analyte list laboratory analysis (full expanded target analyte list in Table 2)), and water quantity testing. ~~The Project~~ Mountain Valley will provide the post-construction monitoring results ~~directly~~ to the property owner.

The Project Mountain Valley will maintain water supply contingency planning efforts that are specified in the respective supplier's Contingency Plan through the construction period and until final land reclamation is completed.

5.0 COMPLAINT RESOLUTION PROCESS

The potential for impacts to private water supplies and springs is negligible. However, if a claim of impact is made by a water supply owner, a thorough investigation of the alleged impact will be conducted by qualified groundwater and surface water scientists and engineers using industry-standard hydrogeologic investigative practices. This will include a review of the timing of the claim relative to the construction schedule, a detailed interview with the supply owner, a mechanical evaluation of the water system, possible resampling and analysis of the supply, performance of a hydrogeologic assessment, and other pertinent evaluations. Because each water supply system and hydrogeologic setting is unique, the only means to establish a clear link between a water supply quality or quantity issue and Amendment Project activities is through a comprehensive evaluation leading to complaint resolution.

If the Southgate Project Mountain Valley determines that an impact was related to its pipeline construction, then the investigations described above will provide valuable information concerning the appropriate remedies. Restoration of a water supply could include:

- temporary supplied water until the water quality returns to baseline;
- connection to secondary on-site sources, if available; and/or
- temporary treatment to establish baseline quality (or better).

If the hydrogeologic assessment indicates that a long-term solution is needed, the Project would Mountain Valley will provide the following as appropriate to restore water quality and quantity to pre-construction conditions:

- a permanent treatment system; or
- a new on-site source (new water well), or a combination of source replacement and treatment options.

6.0 REFERENCES

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Tables

Table 1.

Private Water Supplies for Water Quality and Quantity Testing ^{a/}

Project Mile Post State, County MP	Parcel Line List Number	Water Source Status (active, inactive, plugged, etc.)	Latitude Use (irrigation, monitoring, domestic, etc.)	Longitude Distance from Construction Workspace (feet) ^{b/}
Pittsylvania, VA				
4.58	VA-PI-030.000	Active	Domestic	0
6.46	VA-PI-036.000	Active	Ground Water Testing	0
6.47	VA-PI-036.000	Active	Ground Water Testing	0
6.47	VA-PI-036.000	Active	Ground Water Testing	0
6.49	VA-PI-036.000	Active	Ground Water Testing	5
6.5	VA-PI-036.000	Active	Ground Water Testing	0
6.53	VA-PI-036.000	Active	Ground Water Testing	0
6.61	VA-PI-037.000	Active	Ground Water Testing	22
6.61	VA-PI-037.000	Active	Ground Water Testing	127
6.76	VA-PI-037.000	Active	Ground Water Testing	0
6.6	VA-PI-037.000	Active	Ground Water Testing	0
6.76	VA-PI-037.000	Active	Ground Water Testing	86
6.6	VA-PI-037.000	Active	Ground Water Testing	0
6.76	VA-PI-037.000	Active	Ground Water Testing	96
15.25	Pittsylvania, VA	TBD	TBD	113
19.99	VA-PI-140.000	Active	Domestic	12
22.26	VA-PI-167.000	Active	Domestic	99
Note: Mountain Valley has obtained 97 percent of its easements along the Amendment Project route. The status, use, and location of these wells will be confirmed prior to construction. No wells have been identified within 150 feet of the construction workspace in North Carolina. a/ No springs have been identified within 150 feet of the Amendment Project or the construction workspace as of February 2025. b/ Wells with a distance of 0 feet from Amendment Project Construction Workspaces are located within the current construction workspaces. TBD = to be determined				

Table 2.	
Target Analytes for Private Water Supply Testing	
Target Analyte (baseline water quality)	Notes / Rationale for Testing
pH	Field-measured indicator parameter characterizing the relative acid-base nature of water and a major indicator of overall water quality.
Specific conductivity (mS/cm)	Field-measured indicator parameter characterizing the dissolved ion content of water and a major indicator of overall water quality.
Temperature (°C)	Field-measured indicator parameter that is a general water quality descriptor.
Turbidity (turb. units)	Field-measured indicator parameter characterizing the suspended solids content of water.
Total and Fecal coliform bacteria (MPN/100 ml)	Measures bacteria content of water. Indicator of surface water and/or septic field impact to the water well.
Total dissolved solids (TDS) (mg/L)	Measures amount of charged ions that are dissolved in water. Indicative of dissolved mineral content of the water.
Total suspended solids (TSS) (mg/L)	Measures amount of solid material suspended in water. Similar to turbidity field indicator, but provides a quantitative assessment of suspended solids mass.
Hardness (mg/L)	Major water quality indicator. Hardness is commonly used to measure dissolved calcium and magnesium. "Hard" water is high in dissolved minerals. Hardness, TDS, and Specific conductivity are evaluated in common to characterize the relative mineralization of groundwater. Report in CaCO ₃ equivalent (mg/L).
Alkalinity (mg/L)	Measures the ability of water to neutralize acid (buffering capacity) and is part of an overall water quality indicator. Report in CaCO ₃ equivalent (mg/L)
Sulfate (mg/L)	Common major anion (negatively-charged compound) in groundwater and at high concentrations may lead to scaling of plumbing and impart poor taste to potable water. This is also used to evaluate charge balance (balanced anions and cations) of the overall water quality data set for each well.
Chloride (mg/L)	Common major anion (negatively charged) that is an indicator of overall salt content of water. This is also used to evaluate charge balance (balanced anions and cations) of the overall water quality data set for each well.
Nitrate (total) (mg/L)	Common major anion (negatively charged compound) that is typically used as an indicator of surface water or septic influence on groundwater. Nitrate and bacteria analyses are evaluated in tandem to identify potential impacts to groundwater sources. This is also used to evaluate charge balance (balanced anions and cations) of the overall water quality data set for each well.
Bicarbonate (mg/L)	Common major anion (negatively charged compound) used to evaluate charge balance (balanced anions and cations) of the overall water quality data set for each well. Evaluating bicarbonate content along with alkalinity assists in understanding overall water quality.
Calcium and Magnesium (mg/L)	Common major cation (positively charged element) that will assist in characterizing overall water quality and Hardness and will be used to evaluate charge balance (balanced anions and cations) of the overall water quality data set for each well.
Sodium and Potassium (mg/L)	Common major cation (positively charged element) that will assist in characterizing overall water quality and to evaluate charge balance (balanced anions and cations) of the overall water quality data set for each well. High levels of sodium may also have health effects for persons with high blood pressure.
Iron and Manganese (mg/L)	Common major cation (positively charged element) that will assist in characterizing overall water quality and to evaluate charge balance (balanced anions and cations) of the overall water quality data set for each well. These major elements, when dissolved in water at a high enough concentration, can have aesthetic concerns for staining home fixtures or affecting laundry.
Volatile Organic Compounds (VOCs); EPA Method 524.2	Volatile organic compounds such as petroleum products, chlorinated compounds, solvents and degreasers, industrial chemicals, etc.

Table 2.

Target Analytes for Private Water Supply Testing

Target Analyte (baseline water quality)	Notes / Rationale for Testing
Semivolatile Organic Compounds (SVOCs); EPA Method 525.2	Semivolatile organic compounds potentially derived from industrial activity and materials.
Total Petroleum Hydrocarbons (TPH); EPA Method 1664	Range of petroleum products (see Note 1 below)
Note 1: Total Petroleum Hydrocarbon ("TPH") Method 1664 captures a broad range of petroleum-related hydrocarbons (including oil-range, diesel-range, gasoline-range and lighter-range). FERC suggested including Oil and Grease, but Oils and greases will not be analyzed due to the potential that this analysis would capture fatsoils and greases from contained in animals, fry oils, waxes, soapsoaps , etc. There is not a reasonable expectation that these types of substances will be associated with pipeline construction. The target analyte list in Table 32, including EPA Method 1664 (TPH), will provide a comprehensive analysis of potential contaminants in groundwater that would have a reasonably expected potential derivation from pipeline construction.	

Appendix A

Information to be Collected from Water Supply Owners

1. Route Specific Sort Order
2. Parcel Number(s)
3. APN(s)
4. Name (Last, First or Company)
5. Permission to Enter
6. Date on Form
7. Signed
8. Address Line 1
9. Address Line 2
10. City, State, Zip
11. Telephone Number
12. Email Address
13. Preferred Day/Time of Contact
14. Community or Municipal Water
15. Water Wells
16. Drilled or Dug
17. Used for Drinking
18. Well Depth
19. Treatment System or Filter
20. Other Water Wells
21. Number of Other Wells
22. Drilled or Dug
23. Used for Drinking
24. Well Depth
25. Treatment system
26. Springs
27. Number of Springs
28. Used for Livestock/Irrigation
29. Streams
30. Number of Streams
31. Used for Livestock/Irrigation
32. Other Bodies of Water
33. Number of Other Bodies of Water
34. Description
35. Used for Livestock/Irrigation
36. Comments

Appendix B

Private Well Yield Testing Protocol

The following outlines the methodology for measuring pre-construction well yield at private water supply wells. Public water supplies have documented production data, and this will be used for pre-construction baseline data.

Two procedures are presented below. The first is well yield testing when the well is accessible for measuring water level during pumping and recovery. The second is a flow testing protocol when the well is not accessible or the property owner does not authorize the [Amendment](#) Project to access the well but requests a well yield test.

If the property owner accepts the offer from [the Project Mountain Valley](#) to conduct a post-construction well yield test, it is critical that the test be conducted under the same conditions as the pre-construction test, to the extent possible, to provide as accurate a comparison as possible. Since [the](#) pumping rate and the test duration both affect the well yield estimate, these parameters need to be nearly the same to compare [the](#) results of post-construction to pre-construction tests. If possible, the two tests should be conducted during the same season of the year because seasonal variation of well recharge can influence the yield estimate.

Yield Testing Protocol for Accessible Wells – Specific Capacity

The “specific capacity” of a well is the number of gallons of water produced per minute for each foot of well drawdown.

A test duration of 1 hour at a pumping rate of 5 gallons per minute (“gpm”) will be conducted to estimate well-specific capacity.

Procedure

Request that the well owner not operate the well for as long as practical prior to conducting the test. Record when the owner last used the water system.

Well plumbing fixtures, such as the pressure shutoff switch, sediment filter, and pressure tank, may need to be ~~by-passed~~[bypassed](#) or disconnected to maintain a stable, steady pumping rate.

Ensure that the discharged water is collected or discharged away from the well so that it does not artificially recharge the well.

Measure and record the depth to water from the top of the well casing.

Measure and record the depth to the pump from the top of the well casing, if possible. Record any pump installation data that are available.

Record [the](#) time that flow testing begins.

The following measurements should be taken during the pumping period:

Pumping rate – measure at the start of the test, at five-minute intervals during the initial stages of the test, at 10-minute intervals during the latter stages of the test, and at the conclusion of pumping. Adjust flow controls as necessary to maintain the optimal 5 gpm pumping rate.

Water level – measure at the start of the test, at one or two-minute intervals during the first 10 to 20 minutes, at ~~five~~ 5-minute intervals during the remainder of the pumping period, and at the conclusion of pumping.

Terminate pumping if the water level drops within 5 feet of the pump so the pump is not damaged by running it dry.

Record the time that flow testing ends.

At the conclusion of the pumping test, commence recovery measurements in accordance with the following guidelines:

0–5 minute interval: every 30 seconds

5–10 minute interval: every 60 seconds

10–20 minute interval: every ~~two~~ 2 minutes

20–60 minute interval: every ~~five~~ 5 minutes

If, after one hour, the level of recovery is less than 50% of the depth of drawdown, continue to measure water levels at five-minute intervals until the water level has recovered to 90% of the depth of drawdown or until three hours since the start of recovery, whichever occurs first.

Tabulate pumping rate, drawdown, and recovery data, and prepare a graph of water level vs. time.

Well yield can be calculated from specific capacity by multiplying the available drawdown in the well (the distance between the static water level and the normal pump setting in feet) with the specific capacity (units in gallons per minute per foot of drawdown), the result having the units of gpm. This calculated yield takes into consideration both the storage capacity of the well and the aquifer performance under the limited conditions of the specific capacity test.

$$SC=R/D$$

Where: SC = specific capacity (gpm/ft), R = adjusted discharge rate (gpm), and D = total drawdown (~~ft-)~~).

$$R = (V_t - V_s) / t$$

Where: V_t = total volume of water discharged during test (gallons), V_s = volume of water discharged from borehole storage (gallons), and t = duration of the test (minutes).

$$V_s = 23.5D r^2$$

Where: V_s = volume of water discharged from borehole storage (gallons), D = total drawdown (feet), r = well radius in feet.

(Note: for a standard 6-1/2 inch diameter well, $V_s = 1.72 \text{ gal./ft. } \times D$) Yield (gpm) = AD ~~×~~ SC

Where: AD = available drawdown (ft) = depth to pump intake – static water level – 5 ft.

Well storage may be overemphasized in specific capacity tests. Unlike a long-duration test of a high-performance industrial well, a short-duration test of a low-yielding well, especially a deep well, may result in borehole storage water representing most of the water discharged during the test. A borehole storage

problem becomes significant if the specific capacity is then multiplied by the available drawdown to calculate a yield. A poor-performing, unreliable well can appear to have a relatively good yield when borehole storage is large relative to the specific capacity. Mountain Valley will document both specific capacity from the test and calculated well yield.

Yield Testing Protocol for Inaccessible Wells – Peak Demand Test

The Peak Demand Test (“PDT”) will be used if a well is inaccessible for direct monitoring of the water level during pumping and recovery. The PDT is used to simulate well usage during peak demands and does not provide an actual yield value. It only tests a delivery system’s ability to provide water to the user.

Procedure

The test will be performed by running the water from an outdoor spigot or indoor faucet.

If possible, well plumbing fixtures, such as the pressure shutoff switch, sediment filter, and pressure tank, may need to be ~~by-passed~~bypassed or disconnected to maintain a stable, steady flow rate.

Ensure that the discharged water is collected or discharged away from the well so that it does not artificially recharge the well.

Open spigot or faucet for flow at 5 gpm for 15 minutes and then stop flow for recovery for 15 minutes.

The on/off pumping cycles are repeated for 4 hours or until the well fails, whichever comes first.

Record time at the beginning and end of each cycle.

The discharge rate (flow rate) will be recorded every 5 minutes (three times per pumping cycle).

If the pump intake breaks suction and the discharge rate drops noticeably, record the time when this occurs.

The parameters of the PDT must be carefully recorded. Maintaining a constant discharge rate can be difficult to achieve because an in-place water delivery system for a home can be difficult to control, and the discharge rate may decline as the test advances.

Because the PDT does not require entry to the well bore, liability concerns from well damage are less. The test also provides a means of testing water supplies not physically accessible for water level measurements. A disadvantage of the test is that the PDT takes longer to perform than the short-duration specific capacity test. Because of the on-and-off cycles, the PDT will not adequately test the well if its duration is shortened to less than 4 hours. The PDT should only be allowed where borehole access requires an extraordinary effort or the well owner does not authorize entry.

Winter Construction Plan



MVP Southgate Amendment Project

Winter Construction Plan

November 2018

Revised February 2025

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1.0 INTRODUCTION

Based on the MVP Southgate [Amendment](#) Project (~~“Project” or “SouthgateAmendment~~ Project”) construction schedule, Mountain Valley Pipeline, LLC (“Mountain Valley”) anticipates that standard construction and restoration will continue into and through the ~~2020~~2027 winter ~~seasons~~season. All winter work will be conducted in accordance with the Federal Energy Regulatory ~~Commission’s~~Commission (~~“FERC”~~) *Upland Erosion Control, Revegetation, and Maintenance Plan* (~~“FERC Plan”~~) and *Wetland and Waterbody Construction and Mitigation Procedures* (“Procedures”), as well as the [ProjectAmendment Project’s](#) *National Pollutant Discharge Elimination System* (“NPDES”) *Construction Stormwater General Permits* for Virginia and North Carolina. ~~The Project~~ Mountain Valley has developed this Winter Construction Plan (~~“WCPPlan”~~) to outline the special procedures and best management practices (“BMPs”) that will be implemented during the winter season construction period for ~~the~~ installation of the [Amendment](#) Project facilities. These special procedures and BMPs should be considered additions to the other plans as described above that Mountain Valley has specified for use on the [Amendment](#) Project and will be used in conjunction with those plans, procedures, and BMPs, as applicable. Final restoration and reseedling will occur the following spring.

This [WCPPlan](#) will be considered to be in effect when any of the following conditions occur:

- The ground is frozen, and plating of topsoil occurs;
- Equipment slippage occurs from operating on frozen ground, or vehicles risk sliding outside established right-of-way clearing limits;
- Road crossings cannot be adequately compacted;
- Backfill material freezes to the extent that adequate compaction becomes difficult; and/or
- Topsoil stockpiles are frozen and cannot be uniformly redistributed across disturbed areas or separated from the sub-grade material.

Final restoration and reseedling will occur the following spring.

2.0 STABILIZATION/WINTERIZATION

- The trench will be backfilled to the extent possible using subsoil.
- Slope stabilization and stability of cuts and fills will be restored to the extent possible, and water bars will be installed crossing the right-of-way to divert surface ~~run-off~~runoff away from the construction area.
- Equipment mats will be removed from stream areas where destabilization of installed matting could potentially occur due to any unexpected increase in stream water flow caused by increased snow ~~run-off~~runoff or other natural factors.
- Breaks will be cut into spoil piles and through the berm across the ditch line to allow proper drainage across the right-of-way.
- Wetland areas where mats are removed will be restored to the extent possible.
- Disturbed soils adjacent to streams and wetlands will be mulched where needed.
- Water bars, berms, and erosion/sediment control measures will be installed to minimize erosion along the right-of-way and disposition of sediments beyond the boundaries of the right-of-way.

- In areas where final restoration has not been achieved, the right-of-way will be mulched and left in a roughened condition to reduce [the](#) potential of erosion during times of snow thaw and/or significant rain accumulation.

3.0 EROSION AND SEDIMENT CONTROL MEASURES

- Temporary water bars will be constructed on slopes greater than 5 percent where final clean-up and permanent erosion and sediment control devices have not been installed.
- Mulching will be applied to all slopes (actively cultivated cropland exempt) concurrent with or immediately after seeding, where necessary, to stabilize the soil surface and to reduce wind and water erosion. Mulch will be uniformly dispersed over the area to cover 100 percent of the ground surface at a rate of 2 tons per acre of straw or its accepted equivalent unless the local soil conservation authority, landowner, or land managing agency approval ~~makemakes~~ a formal request of any alternative action to be taken by [the Project Mountain Valley](#) in writing.
- Temporary mulch will be applied to the right-of-way at a rate of 3 tons per acre on slopes greater than 5 percent and within 100 feet of waterbodies and wetlands where final restoration has not been established to the satisfaction of the Environmental Inspector.
- If [the](#) right-of-way is snow-covered, the snow will serve as suitable ground cover. If snow cover recedes, exposed right-of-way will be stabilized utilizing the measures detailed in this plan.
- The Environmental Inspector (“EI”) and/or Agricultural Inspector (“AI”), if required, will suspend final clean-up activities and topsoil placement if topsoil cannot be evenly distributed. If the topsoil is frozen, spreading the topsoil and allowing it to thaw in the sun before spreading may occur. Frozen topsoil will not be returned to the right-of-way if it cannot be graded evenly.
- If topsoil placement is suspended due to frozen conditions, normal temporary right-of-way stabilization procedures will be applied as ground conditions permit. The final clean-up schedule will vary, depending on ground conditions and time of construction. Where final clean-up and restoration have not been completed, the right-of-way will be left in a roughened condition to reduce [the](#) potential for erosion during snowmelt. In upland areas, a slight crown may be left over the pipeline to account for settling as backfilled soils thaw.
- Topsoil piles will be left in a stabilized condition and replaced when weather conditions permit proper de-compaction of the areas.
- Temporary seeding will be applied as necessary to areas where topsoil has not been restored.
- Sediment barriers (i.e., silt fence, straw bales, earthen berms) will be installed and maintained throughout the right-of-way at designated water bodies, wetlands, and paved road crossings. These structures will be inspected per the permit conditions and adequately maintained during the winter construction season to ensure there are zero control failures. Erosion and sedimentation control measures will be installed and repaired as determined by the on-site environmental inspector. Equipment will be utilized as needed to assist with installations in frozen conditions.

4.0 ACCESS ROAD USAGE

- Access roads will be graded where needed and approved by the assigned EI. All-access roads approved for ~~this project~~ [the Amendment Project](#) will remain in use during winter construction. All roads will be monitored and maintained in accordance with applicable permit and landowner requirements.

- Snow removal by equipment will not be performed beyond the road surface to prevent mixing soil with snow.

5.0 RIGHT-OF-WAY SNOW REMOVAL

If a snow event is followed immediately by a period of melting and runoff, the typical erosion and sedimentation control BMPs specified in the ~~Project~~project-specific Erosion and Sediment Control (“E&SC”) Plan for stormwater management will apply, and no special measures will be necessary. If a significant (greater than 6 inches) snowfall event occurs and is followed by an extended period of freeze, the following procedures will be implemented:

- All snow removed from the right-of-way will be in compliance with the footprint laid out for the ~~Southgate~~Amendment Project. No equipment will be permitted beyond the limits of disturbance for the ~~Amendment~~ Project.
- ~~The Project’s~~Mountain Valley’s contractor will work with the ~~Project’s~~Lead EI to designate stockpile areas. Breaks in windrowed snow will be placed at drainage crossings and as requested by the affected landowner.
- Snow will be removed from topsoil or spoil storage areas prior to ~~using~~use.
- The use of snow removal equipment will be restricted to use within the limits of disturbance and approved access roads.
- Snow will only be removed from active work areas at the direction of the EI.
- All snow and ice will be removed from pipe joints prior to being mobilized to position for alignment and welding. Plowing equipment used for snow removal operations will be equipped with 6-inch shoes to ensure blades do not remove topsoil or vegetation.
- Snow removal equipment will consist mainly of plowing equipment, such as bulldozers, loaders, utility trucks, dump trucks, or any construction vehicle that can be equipped with a plow and 6-inch shoes and may include but is not limited to other equipment, such as snow blowers and hand shovels.
- Rather than blade as low as possible, snow removal operators will blade no lower than a height sufficient for construction vehicles to safely navigate the right-of-way.
- Snow removal operators will adjust blade height in areas of slope changes to ensure that contact with the ground is minimized to the greatest extent practical.
- Pickup trucks with front-mounted blades will plow all access roads. Intersections, driveways, and other private roads will not be blocked by plowed or stockpiled snow. Removed snow will not mix with sidecast stored soils. Currently, no additional temporary workspace has been identified for snow storage and will be determined on an as-needed basis.

6.0 SOIL HANDLING

- Frozen topsoil stripping activities will be limited to the equipment capable of accurately stripping variable depths of topsoil; rippers mounted on a machine may be necessary to achieve depth penetration. If segregation of subsoil and topsoil cannot be accomplished without mixing, the topsoil salvage operation will cease until soil conditions improve and segregation requirements can be met.

- ~~The Southgate Project~~Mountain Valley will minimize the amount of open trench to reduce the amount of snow that will have to be removed.
- ~~The Project~~Mountain Valley will install highly visible construction fence around any open trenches in areas where the pipeline intersects known paths used for snowmobiling, hiking, or other such activities.
- The trench may be crowned to allow for more compaction and settling issues to occur in freezing and thawing conditions.

7.0 INSPECTION AND MAINTENANCE

~~The Southgate Project~~Mountain Valley will monitor and maintain erosion and sedimentation controls as specified in the FERC Plan. Erosion and sedimentation controls will be monitored daily in active construction areas and weekly in areas with no construction or equipment operation during the winter period.

- When snow melts or the ground thaws, the frequency of inspections will increase as determined necessary by the ~~environmental inspector~~EI to ~~an~~the extent necessary to confirm the integrity and effectiveness of all ~~erosion and sediment control~~E&SC devices.
- ~~Contractor~~The contractor and ~~the Southgate Project~~Mountain Valley will continuously evaluate the condition of construction areas in an effort to determine if a need exists for additional temporary ~~erosion and sediment control~~E&SC measures and, as conditions allow, where these corrective measures should be taken.
- ~~Contractor~~The contractor shall have the proper equipment available at all times to allow access to the right-of-way under soft soil conditions.

8.0 SPRING AND SUMMER RESTORATION

- ~~The Southgate Project~~Mountain Valley and its contractor will identify any storm or winter damage that may have occurred on the right-of-way.
- ~~Contractor~~The contractor and ~~the Project~~Mountain Valley will evaluate the condition of the right-of-way and will determine if a need exists for additional temporary ~~erosion and sediment control~~E&SC measures.
- Trench compaction will be facilitated by back dragging, walking in backfill material with heavy equipment, and obtaining optimum moisture for the backfill material.
- ~~Contractor~~The contractor will continue final restoration, which may require disking or tilling of the right-of-way to create a ~~seed bed~~seedbed for germination.
- Restoration of topsoil will occur where practicable after both the stockpiled topsoil and exposed subsoil have thawed and the ground has dried following the spring melt.