APPENDIX U
Stormwater Pollution Prevention Plan

Appendix U

Stormwater Pollution Prevention Plan

Mountain Valley Pipeline Project

Prepared by:

Mountain Valley PIPELINE LLC

May 10, 2023

Storm Water Pollution Prevention Plan (SWPPP)

Version 2.1

Consistent with:

General VPDES Permit for Discharges of Stormwater From Construction Activities, Permit No. VAR10 Virginia Stormwater Management Program (VSMP) as Detailed in Appendix 2.

Mountain Valley Pipeline Project

Plan Pending Approval

Prepared for:

Mountain Valley Pipeline, LLC
555 Southpointe Blvd Suite 200
Canonsburg, PA 15317
May 2017

Storm Water Pollution Prevention Plan (SWPPP)

In compliance with:

Applicable Portions of the General VPDES Permit for Discharges of Stormwater From Construction Activities, Permit No. VAR10

Virginia Stormwater Management Program (VSMP)

Mountain Valley Pipeline

SWPPP Coordinator:

_____
(Name of Person)

_____
(Title)

_____
(Company)

_____
(Phone #)

Delegation of Authority:

_____
(Name of Person or Company)

"I certify that the **SWPPP coordinator** named above is my duly authorized representative for this Project; and that the **delegated authority** has the right to modify the SWPPP and sign inspection reports in accordance with Part II A 7 of the Permit".

Signature: Date:

Name: _____
Title: _____
Legal Entity: _____

Mountain Valley
Pipeline

Stormwater Pollution Prevention Plan (SWPPP)

Mountain Valley Pipeline
Virginia Department of Environmental Quality, Plan Pending Approval

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Mountain Valley Pipeline Spread 8

I Introduction

A) Overall Project Summary

The Mountain Valley Pipeline Project H-600 (Project) installation will extend from the existing Equitrans, L.P. transmission system and other natural gas facilities in Wetzel County, West Virginia to Transcontinental Gas Pipe Line Company, LLC's (Transco) Zone 5 Compressor Station 165 in Pittsylvania County, Virginia. In addition to the pipeline, the Project will include approximately 171,600 horsepower (hp) of compression at three compressor stations currently planned along the route, as well as measurement, regulation, and other ancillary facilities required for the safe and reliable operation of the pipeline. The pipeline is designed to transport up to 2.0 million dekatherms per day of natural gas. A project location map is provided in Appendix 11.

Project Name:	Mountain Valley Pipeline Project
Project Start (in VA):	Lat: 37º 24' 9", Long: -80º 41' 24"
Project End:	Lat: 36º 50' 1", Long: -79º 20' 14"
Counties:	Giles, Craig, Montgomery, Roanoke, Franklin, and Pittsylvania

MVP Proposed Pipeline by County		
Approximate Milepost	**County, State**	**Length (Miles)**
196.3 - 216.8	Giles, VA	20.5
216.8 - 218.5	Craig, VA	1.7
218.5 - 238.1	Montgomery, VA	19.6
238.1 - 246.4	Roanoke, VA	8.3
246.4 - 283.9	Franklin, VA	37.5
283.9 - 303.5	Pittsylvania, VA	19.5
Total		**107.1**

Spread 8 specifically is located entirely in Giles County and portions of the work will be in Jefferson National Forest. The construction Limits of Disturbance (LOD) for the project area will be 125 feet wide. Fifty feet will be maintained as the permanent Right of Way (ROW). This area is required to provide a safe non-congested work area. The additional temporary right-of-way will be necessary for the safe travel of construction and maintenance vehicles and equipment as well as stockpiling any additional material that may be encountered during trenching. At a majority of the wetland and stream crossings, the LOD has been reduced to 75 feet in an effort to reduce adverse impacts to these aquatic resources. Additional Temporary Workspaces (ATWS) are also provided within the LOD to provide areas for

vehicle parking, material storage, turning radius along access roads, staging areas, and support areas for stream and wetland crossings. MVP will employ special construction techniques where the slopes typically exceed 20 percent, which may also require expanded workspace areas.

Additional ancillary aboveground facilities will ultimately include pig launcher and receiver sites at the beginning and end of the pipeline and meter station, along with mainline block valve (MLV) sites within the pipeline permanent right-of-way. There will be a one meter (interconnect) station for receipt or delivery with other pipelines. Permanent above ground facilities for this station (Transco) will be addressed under a separate SWPPP.

Site Access

Field investigations identified the availability of previously used roads and other existing roads that will be sufficient to provide access to most work areas for the pipeline installation. In most instances, temporary access roads are already in existence and would only be used during the construction phase of the project. Once construction is complete, the use and ownership of the temporary access roads will be returned to the private landowner. The permanent access roads are necessary for safe operation/maintenance of the pipeline. Through landowner agreements, MVP will be responsible for permanent access road maintenance.

The attached Erosion and Sediment Control Plans Construction Sheets (Appendix 8) identify both the permanent and temporary access roads as either being "Maintained" or "Graded and Maintained". A "Maintained" access road will only require crushed stone placement and appropriate smoothing if rutting or roadway degradation. The sheet flow along the "Maintained" roadway will be controlled using the existing drainage infrastructure. Additional BMPs will be installed as necessary to prevent any off-site movement of sediments. A "Graded and Maintained" roadway may require widening, grading, and/or crushed stone placement. The sheet flow along these roadways will be controlled with drainage channels, broad based dips, and waterbars. Additional BMPs will be installed as necessary to prevent any off-site movement of sediments.

New access roads are proposed in limited areas. Streams, wetlands, or other aquatic features along the existing access roads will be crossed according to the appropriate detail on the Plan Sheets. Culverts to be replaced or constructed were sized using the Rational Formula for a 24-hr 10-year storm and Manning's Equation. In areas with unexpected drainage, culverts will be appropriately sized and installed according to meet or exceed the requirements in the Virginia Erosion and Sediment Control Management Handbook Third edition 1992.

B) Applicability of General VPDES Permit for Discharges of Stormwater from Construction Activities

Discharges of uncontaminated stormwater associated with the construction of natural gas transmission pipelines and certain associated facilities are not subject to a permitting requirement under the Clean Water Act, 33 U.S.C. § 1342(l)(2); 40 C.F.R. § 122.26(a)(2), or State Water Control Law, 9VAC25-870-380.A.2. For this reason, the Project will not be covered by the General VPDES Permit for Discharges of Stormwater from Construction Activities, 9VAC25-880-70 (General Permit).

Nevertheless, the State Water Control Law provides that projects covered under annual standards and specifications should be "consistent with" the General Permit, including its requirements for a SWPPP. Va. Code § 62.1-44.15:31. Accordingly, this Plan has been prepared to implement all relevant and applicable conditions of the General Permit. Relevant provisions of the General Permit are cited in this Plan where appropriate and are thereby incorporated by reference. A complete list of the incorporated provisions of the General Permit can be found in Appendix 2.

C) Plan Purpose

The purpose of this Plan is to:

1) Identify potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from the construction site, and,

2) To describe and ensure the implementation of practices that will be used to reduce pollutants in stormwater discharges from the construction site and to assure compliance with the applicable conditions of the General Permit.

Implementation of the components of this Plan is required as a condition of the Project Specific Standards and Specifications (Appendix 1). Prior to any construction, the project design plans and Project Specific Standards and Specifications must be approved by the Virginia Department of Environmental Quality.

II Plan Requirements

A) General Requirements

1) Project Design Plan Approval

The Project Design Plan shall be prepared and submitted to DEQ for approval. It shall provide compliance with the applicable terms and schedule of the General Permit beginning with the initiation of construction activities.

2) Incorporation of Other Plans

The SWPPP Plan requirements of the General Permit are satisfied by incorporating by reference other plans developed for this construction activity, *provided that the other plans meet or exceed the requirements of Part II.D. of the General Permit*. The construction plans developed for this project, will have been approved by DEQ. The construction plans meet current DEQ requirements regarding erosion and sediment control and stormwater management, and also comply with state regulatory requirements as presented in the Virginia Erosion and Sediment Control Handbook, Third Edition. The above referenced plan(s) will be hereby referred to as the "Project Design Plans". The Stormwater Pollution Prevention Plan (SWPPP) is referred to as the "Plan."

3) Plan Administration

The Plan shall be certified in accordance with the applicable conditions of the General Permit (the certification statement is presented in the beginning of this Plan). Copies of the Plan shall be kept on-site and be made available to the Department, or other regulatory agencies having authority, upon request. The Plan must also be available to all operators identified as having responsibilities to carry out provisions contained in the Plan.

The Plan must be made available to the agencies listed in the Section II.C.2 of the General Permit at the time of on-site inspections. The Plan must be maintained on-site when no personnel are present – if no such location exists on-site, notice of the SWPPP's location must be posted in accordance with the Section II.C. Furthermore, a sign or some form of notice must be posted near the entrance of the construction site (Section II.C.). Additionally, the Plan must be made available to the public either electronically or by hard copy per Section II.C.3. A Record of Public Availability is located within Appendix 9.

4) Plan Updates & Modifications

The Plan shall be amended whenever there is a change in design, construction, operation, or maintenance of the construction site that has a significant effect on the potential for the discharge of pollutants to surface waters and that has not been addressed in the normal implementation of the Plan. The Plan shall also be updated whenever it is found to be ineffective in meeting the applicable requirements of the General Permit. If approval by the Virginia Erosion and Sediment Control Program (VESCP) authority, VSMP authority, or department is necessary for the control measure, revisions shall be completed no later than seven calendar days following approval.

Modifications to the Plan as well as dates of major land disturbance, stabilization, and activity will be noted within the "Record of Land Disturbance and SWPPP Modifications" document found within Appendix 3. If modification or amended activities cannot be adequately described within Appendix 3, additional documentation will be included within the Plan.

B) Specific Requirements

1) Stormwater Pollution Prevention Plan

Many of the applicable items required by the General Permit (Part II A., Appendix 2) can be found in the Project Design Plans, which are incorporated by reference into this Plan. A summary of the required elements is provided in Table 1, with a reference to the sheet number in the design plans where the required element can be located.

Table 1. Site Description Elements
Please refer to the referenced location (i.e. Plan Sheet #) in the Project Design Plans or as referenced elsewhere.

General Permit Part II A.1…	***REQUIRED ELEMENT***	***Location*** [1] *Spread 8 Plan (Pending Approval)*
c.	A copy of the VPDES Construction General Permit.	See Appendix 2
d.	Description of construction activity.	SHEETS 0.16 & 0.17
e.	A legible site plan, to include the following:	-
e.(1)	Directions of stormwater flow and approximate slopes anticipated after major grading activities.	SHEETS 12.02PC– 12.34PC
e.(2)	Limits of land disturbance including steep slopes and natural buffers around surface waters that will not be disturbed.	SHEETS 12.02 – 12.34
e.(3)	Location of major structural and nonstructural control measures.	SHEETS 12.02 – 12.34
e.(4)	Locations of surface waters.	See Exhibit 3B, Appendix 11
e.(5)	Locations where concentrated stormwater is discharged.	SHEETS 12.02 – 12.34
e.(6)	Locations of support activities, when applicable and when required by the VSMP authority (vehicle washing areas, storage areas, concrete wash out areas, fueling areas, sanitary waste facilities, etc)	See onsite map
e.(7)	The location of the on-site rain gauge or methodology established in consultation with the VSMP authority.	See Appendix 4 (Inspection Forms)
-	***ADDITIONAL INFORMATION***	-
	A legible general location map	See Appendix 11
	Description of construction sequence of soil disturbing activities.	SHEETS 0.16 & 0.17
	Record of dates when major grading activities occur.	See Appendix 3
	Receiving and impaired waters information.	See Sect. II.B.6 & 7 below
	Description of other potential pollution sources, including vehicle fueling, chemical storage areas, sanitary waste facilities, construction debris, litter, etc.	See Sect. 5 below & Appendix 10

[1] *[Attach to this Plan any required elements that are not found in the design plans.]*

2) Controls and Measures

The General Permit requires the use of various types of controls and measures that are implemented to control pollutants in stormwater discharges from the project site. The General Permit conditions specifically require the implementation of erosion and sediment control practices (both structural and non-structural), stormwater management practices, and specific other controls to reduce pollutants. All E&S and SWM/BMP controls employed in this project were selected to meet and/or exceed state and local requirements and are detailed in the Project Design Plan(s).

3) Erosion and Sediment Control Plan

The Project Design Plans for this project contain detailed information regarding erosion and sediment controls used in this project. Specifically, E&S control measures can be found on the project design plans; Sheets #12.02 -12.34 (also located within Appendix 8). The project design plans, Project Specific Standards and Specifications and General Permit include conditions which are detailed below.

General stabilization and structural controls will be used in sediment and erosion control practices to 1) divert stormwater flows away from exposed areas, 2) convey runoff, 3) prevent sediments from moving off-site, and 4) reduce the erosive forces of runoff waters.

Limits of Clearing

Clearing limits will be staked and visibly flagged prior to construction. Adjacent sensitive areas and no-access roads will be demarcated by signage and/or orange construction fence.

Construction Access Establishment

The majority of access to the site will be via existing roads. Construction entrances will be installed on site access roads to remove sediment prior to exiting the site. Construction entrances will follow VESCH STD & SPEC 3.02. In instances where there are private residential driveways along the access roads, the construction entrance has been moved past the residential driveways. This was done to prevent the residences from driving over the construction entrances.

Erosion and Sediment Control Installation

The E&SC Plan utilizes several best management practices throughout the Project area to prevent sediment from leaving the site. As depicted on the plans, controls will be placed along the boundary of sensitive areas, at stream and wetland crossings, downslope of all stockpiles, and where the potential exists for off-site sediment transport. The BMPs to be used throughout this project include:

- Safety Fence (VESCH STD & SPEC 3.01)
- Construction Entrance (VESCH STD & SPEC 3.02)
- Sediment Barriers (VESCH STD & SPEC 3.04, 3.05, 3.06, and 3.27), as well as Belted Silt Retention Fence (see detail MVP-ES9) and Compost Filter Sock (see detail MVP-ES3)

- Temporary Diversion Dike (VESCH STD & SPEC 3.09)
- Temporary Slope Breakers/Temporary Right-of-Way Diversion (VESCH STD & SPEC 3.11)
- Temporary Stream Crossing (Equipment Crossing) (VESCH STD & SPEC 3.24)
- Dewatering Structure (VESCH STD & SPEC 3.26)
- Rock Check Dam (VESCH STD & SPEC 3.20)
- Outlet Protection (VESCH STD & SPEC 3.18)
- Soil Stabilization Blankets & Matting (VESCH STD & SPEC 3.36), as well as hydraulically applied soil stabilization blankets and matting such as Earthguard, Flexterra, or equivalent (see details MVP-ES40 and MVP-ES40.1)
- Vegetative Streambank Stabilization (VESCH STD & SPEC 3.22)
- Trench Plugs/Breakers (see detail MVP-20)
- Pumped Water Filter Bag (see detail MVP-ES2)

Instream BMPs

Procedures for stream crossings include the following:

- Minimize clearing and grubbing of vegetation adjacent to streams
- Only that area which is required for pipeline installation shall be disturbed within the proposed LOD or right-of-way at stream crossings;
- Locating staging areas 50 feet away from the stream, where possible;
- Storing chemicals, storing equipment, washing equipment, or refueling equipment must be done in areas that are greater than 100 feet away from stream;
- Spoil placement and BMPs will be monitored at all times during stream crossing procedures; once work within a stream area is started, it will be conducted continuously to completion, emphasis will be placed on minimizing time of disturbance;
- Spoils from stream crossings must be placed at least 10 feet from the water's edge; and
- Construction equipment will not be allowed in the stream channel when excavation can be done from either side of a temporary crossing while working at the stream crossing.

The following sections describe stream crossing techniques that may be used during pipeline relocation/installation activities. Refer to the detail sheets and approved Project Standards and Specifications for additional information.

Dry Crossing Techniques

These techniques will be used to perform pipeline work in a relatively dry working condition and include pump around, flume pipe and cofferdam (Porta-dam) crossing methods. The deciding factors selecting the crossing technique for a given crossing are stream size, flow, and water depth. Directional boring is also a technique that can be utilized however none are

planned for this Project. E&S control measures will be installed prior to any earth disturbance and addressed if necessary immediately after disturbance of the waterbody.

- Flume Pipe Method: This procedure involves constructing two bulkheads using earthen structures, sandbags or plastic dams, to direct the stream flow through a flume pipe placed over the trench prior to excavation where it discharges to the stream below the second bulkhead. The flume shall be aligned as to prevent bank erosion and bed scour. The flume will not be removed during trenching, pipe laying, or backfilling. Please see detail sheets for more information on the flume pipe method.

- Pump Around Method: This procedure involves constructing two bulkheads, using earthen structures, sandbags or plastic dams. The upstream dam will cause the water to pond where it can be pumped around the work area and be discharged behind the downstream bulkhead. Pumps of sufficient size to transmit the flow downstream will be used. Backup pumps must be on-site. Pump intakes must be screened. Pump discharges must not cause scour. Please see the detail sheets and for more information on the pump around method.

- Cofferdam (Porta-dam) Method – Please see the detail sheets for more information on the cofferdam (porta-dam) method. This procedure may be used for crossing channels 10 feet or wider, and involves constructing a cofferdam within the construction ROW (using cofferdam products, etc.), enclosing approximately 60% of the streambed in a semi-circle. The cofferdam should seal tightly to the streambed to minimize water from entering the construction area. Pumps will be needed to keep water out of excavations. All earth disturbance will occur in the dry area behind the cofferdam. The pipe will be installed and the disturbed area backfilled and stabilized. Sediment barriers at the waterline should be in good working order before the cofferdam is removed. Stabilization will be with either riprap or vegetation. The cofferdam is then set up from the opposite bank and extends far enough to include the tie-in point in mid-stream. The remainder of the pipe is installed and the tie-in weld is made. Clean up follows the same procedures described above.

Temporary Road Crossings

Temporary road crossings, consisting of bridges of timber mats or clean rock fill and flume(s), will be installed to cross minor or intermediate streams. Timber mats shall be used to cross smaller streams where the span of the mat will stretch from bank to bank. Clean rock fill and flumed crossings will be utilized where it is not feasible to utilize timber mats. As an alternative, portable bridges may be used instead for small crossings. Equipment will not be allowed to ford flowing streams during construction activities. Temporary road crossings of streams must maintain adequate flow downstream.

Stream Bank Stabilization

Permanent stabilization shall occur immediately upon installation, backfilling, and grading at each stream crossing. Stream banks will be restored by vegetative stabilization (VESCH STD & SPEC 3.22) where site conditions warrant or by riprap (VESCH STD & SPEC 3.19) where

bank slopes are 3h:1v or steeper. Vegetative stabilization generally includes planting a perennial conservation seed mix from VESCH STD & SPEC 3.32 Table 3.32-B.

Stabilize Soils

Topsoil will be segregated in all areas of the Project including pastureland, residential areas, meadowlands, wetlands without standing water or saturated soil, areas requested by the landowner, or where directed by the environmental inspector. The topsoil will be stored separately from trench subsoil and replaced on top of the subgrade during final grading. Topsoil will be stored along the edge of the temporary LOD, maintaining a minimum 10-foot setback from waterbody and wetland boundaries. In non-saturated/non-standing water wetland areas, the top 12 inches of wetland soil will be segregated from the trench line during trenching activities to be used during restoration.

In agricultural lands and upland forested areas, topsoil will be stripped from either the full LOD (using additional temporary ROW to store the topsoil in this case) or from the trench line and subsoil storage area. During construction, topsoil storage piles shall be stabilized or protected with sediment trapping measures.

At least 12 inches of topsoil (where available) will be segregated in deep soils. Where soils are shallow, every effort will be made to segregate the entire topsoil layer. In residential areas, topsoil replacement (i.e., importation of topsoil) is an acceptable alternative to topsoil segregation. Topsoil may not be used to fill sandbags or to pad the pipe.

Backfilling follows pipe installation and generally consists of replacing the material excavated from the trench. In areas where topsoil has been segregated, the subsoil will be replaced first, and the topsoil will be replaced during final grading. Backfilled trench material will be compacted to stabilize the trench. Trench breakers (see detail MVP-20) will also be installed to prevent the backfill from sliding or washing on sloping ground.

During final grading, the ROW will be cleared of construction debris, re-graded to pre-construction contours, and topsoil will be replaced. ROW diversions will be installed in accordance with VESCH STD & SPEC 3.11. All temporary ESC barriers will remain in place until replaced by permanent ESC measures or when uniform ground cover is mature enough to survive, and will inhibit erosion. The typical 125-foot wide pipeline construction corridor within the site area will be restored as follows in accordance with MVP's planned maintenance and restoration activities detailed above as well as Appendix E of the Project Specific Standards and Specifications for Virginia:

- 75-foot temporary construction ROW will be restored to pre-development conditions.

- If forested, post-development condition will be brush consisting of woody species (seeded and allowed to naturally return to forest condition subject to landowner actions).
- If agricultural land, post-development condition will return the temporary ROW to agricultural use.
- If pre-development conditions included any impervious cover, such as asphalt or gravel access roads, these impervious surfaces will remain in the post-development condition.
- Other pre-development conditions such as meadow, wetland, lawn, etc. will be restored to pre-development conditions.

- 50-foot permanent ROW will be seeded and restored to meadow conditions.

  - Mowing and general maintenance will be consistent with the Forest & Open Space practices listed in the Virginia Runoff Reduction Method (VRRM) Compliance Spreadsheet User's Guide & Documentation (April 2016) Table 1. Land Cover Guidance for VRRM Compliance Spreadsheets.
  - The full width permanent ROW will not be mowed any more frequently than once every three (3) years.
  - A corridor not exceeding 10 feet in width located directly over the pipeline will be mowed annually for inspection purposes in accordance with FERC PLAN and PROCEDURES. These documents can be found in Appendix 12 of the SWPPP.

Permanent above ground facilities for the Transco interconnect site will be addressed under a separate SWPPP.

For additional details, please refer to Appendix C of the Annual Standards & Specifications, which provides guidelines for seed mixes and erosion control seeding techniques to be used in reclamation and restoration of disturbed soils associated with pipeline installations and repairs/maintenance on the Monongahela and George Washington-Jefferson National Forests.

Protect Slopes

MVP will employ special construction techniques within areas considered as steep slope conditions as discussed in Section 1.3.

The E&SC Plan shows the placement of steep slope erosion controls on all slopes greater than 30-percent. These slopes will be stabilized with steep slope soil stabilization blankets and matting techniques in accordance with VESCH STD & SPEC 3.36. In addition to VESCH STD & SPEC 3.36, MVP may utilize hydraulically applied soil stabilization blankets and matting (i.e., Earthguard, Flexterra or equivalent) as an alternative to rolled erosion and sediment control blanket material. Information regarding the hydraulically applied blankets is provided in details MVP-ES40 and MVP-ES40.1.

Permanent and temporary ROW Diversions/Waterbars are depicted on the plans and are placed along the pipeline following the spacing specified in detail MVP-17. ROW Diversions/Waterbars are intended to reduce runoff velocity and divert water off the construction ROW to prevent slope erosion.

Convey Stormwater in a Non-Erosive Manner

Stormwater from the site will be managed as needed in order to satisfy the 9VAC25-870-66 water quantity requirements. Details pertaining to stormwater runoff considerations, stormwater BMP designs and associated calculations are provided in Project Standard and Specifications Sections 4.0 and 5.0.

Permanent above ground facilities for the Transco interconnect site will be addressed under a separate SWPPP.

Control Other Pollutants

Sediment removed from BMPs will either be spread in a protected area to dry and then recycled as fill material or disposed of at an approved waste disposal site. Used pumped water filter bags will be disposed of at an authorized waste facility. The contractor will not illegally bury, dump, or discharge building material or wastes at the site.

Control Dewatering

The trench will be cleared of debris and dewatered prior to lowering in pipe or equipment. Water from dewatering operations will be filtered through an approved filter bag that will comply with manufacturer's recommendations for inspection and maintenance, passed through a VADEQ standard dewatering structure, and discharged in a manner that does not result in accelerated erosion or adversely affect off-site property. Trench dewatering will be conducted through a filter bag (see detail MVP-ES2) and placed within a dewatering structure in accordance with VESCH STD & SPEC 3.26. Pumped Water Filter Bags should be replaced as often as necessary to maintain function and prevent a failure of the filter bag.

Pumps used in the dewatering activity will be placed in a secondary containment to prevent spills of fuel or oil to the ground surface in accordance with the SPCC Plan. Dewatering structures will be constructed in a well vegetated stabilized area away from waterbodies and wetlands and sized according to the intended use. Discharge will be monitored and controlled to prevent erosion and sedimentation from occurring to adjacent areas as well as to prevent over pumping of the dewatering structure. The discharge will be directed away from any waterbody, wetland or other sensitive environmental resources. The discharge point will be monitored during the activity to ensure that the discharge is thoroughly filtered and no erosion or sedimentation occurs at the discharge point.

Maintain BMPs

Temporary and permanent E&S control BMPs shall be maintained and repaired as needed to assure continued performance of their intended function. Maintenance and repair shall be conducted in accordance with the corresponding VESCH Standard and Specification as well as the approved Project Standard and Specification.

Inspection of all E&S control BMPs within disturbed areas will be performed as specified in the S&S and as follows:

- Immediately following initial installation of erosion and sediment controls;
- At least once in every two-week period;
- Within 48 hours following any measurable storm event 0.25 inches of rain;
- And at the completion of the project prior to the release of any performance bonds;

Repairs or maintenance shall be performed immediately to BMPs. All public and private roads adjacent to a construction entrance must be inspected and cleaned of debris originated from the construction site as necessary.

Manage the Project

A copy of the E&SC Plans and appropriate inspection/maintenance logs are to be kept on site at all times during active construction.

The project will be generally maintained in accordance with the following:

- Coordination with Utilities – Notify VA One Call by calling 811 or 1-800-552-7001 at least 3 days prior to construction.
- Inspection and Monitoring – E&SC BMPs will be inspected as discussed in the previous section. Temporary and permanent E&S BMPs will be maintained and repaired as needed.
- Reporting – The E&S plan holder will notify the VADEQ of any spill/discharge of pollutants within 24 hours.
- Equipment Maintenance – Maintenance of equipment will be performed using generally accepted practices, including plastic mats, drip pans, etc.

Stabilization: Temporary Seeding

When acceptable final grade cannot be achieved (e.g., during winter or early spring construction), when permanent seeding cannot be applied due to adverse soil and weather conditions, or any time a denuded area will remain idle for more than 14 calendar days, temporary seeding (VESCH STD & SPEC 3.31) will be applied to the rough graded area in accordance with the table below. ESC measures will be monitored and maintained until conditions improve and final cleanup can be completed in the next recommended planting window.

Acceptable Temporary Seeding Plant Materials		
Planting Dates	**Species**	**Rate (lbs./acre)**
Sept. 1 – Feb. 15	50/50 Mix of Annual Ryegrass (Lolium multi-florum) & Cereal (Winter Rye (Secale cereal)	50 - 100
Feb. 16 – Apr. 30	Annual Ryegrass (Lolium multi-florum)	60 - 100
May 1 – Aug. 31	German Millet (Setaria italica)	50

Stabilization: Permanent Seeding

The goals of permanent seeding are to establish a dense, self-propagating, low maintenance ground cover that will minimize erosion and sedimentation while providing wildlife habitat benefits. To achieve these goals requires attention to detail in selecting the seed mix and preparing the seedbed.

MVP will request a variance in regard to VESCH STD & SPEC 3.32 (Permanent Seeding) with each ESC and SWM plan submission to VADEQ for review and approval. MVP is partnering with the Wildlife Habitat Council (WHC), a nonprofit organization dedicated to assisting corporations, conservation organizations, and individuals with restoration and enhancement of wildlife habitat. The WHC is working with MVP on their commitment toward restoration of the Project ROW and establishment of perennial vegetation using native seed mixes created in collaboration with local seed supplier, Ernst Conservation Seeds, Inc. State-specific seed mixes recommended for MVP are summarized in details MVP-ES11.1 through 11.7. These seed mixes incorporate recommendations received from the US Fish and Wildlife Service (USFWS), US Forest Service, VA Department of Conservation and Recreation, Wildlife Habitat Council and MVP's threatened and endangered species consultant will be applied along the Project's ROW except where landowners request a specific seed mix and on state or federal land where agencies request specific seed mixes. In areas where a specific mitigation seed mix is not required, MVP will implement VESCH STD & SPEC 3.32 Table 3.32-C (Site Specific Seeding Mixtures for Appalachian/Mountain Area).

For the Project's crossing of US Forest Service (National Forest) Lands, MVP will utilize seed mixes specified in their document *Suggested Seed Mixes For Pipeline Rights-Of-Ways And Associated Disturbances On The Monongahela And George Washington-Jefferson National Forests* (November 2016). Seed mixes for the National Forest Lands are provided in details MVP-ES12.1 through 12.3.

The low-maintenance seed mix appropriate for the region of the state where the Project is located (see VESCH STD & SPEC 3.32 Table 3.32-C) will be the default unless otherwise specified in the applicable permit conditions, mitigation specifications or landowner agreements. Certified seed will be used whenever possible, and will be applied to the ROW within 12 months of the testing date. Legume seed will be treated with an inoculant specific to the species. Slopes steeper than 33% will be seeded immediately after final grading, weather

permitting. All disturbed soils will be seeded within seven (7) working days of final grading, weather and soil conditions permitting.

Seedbed preparation includes adding lime and fertilizer, and tilling or discing the top 4-6 inches of the soil, or soil roughening if tilling cannot be accomplished. When hydro seeding is to be used, the seedbed will be scarified to facilitate lodging and germination of the seed. Unless site-specific recommendations are received from the land owners or land management agencies, MVP will incorporate 4,000 lbs./acre of pulverized agricultural grade lime and 1,000 lbs./acre of 10-20-10 fertilizer into the soil. Soil pH modifier and fertilizer will be incorporated into the top two (2) inches of soil as soon as possible after application. Other fertilizer formulations, including slow-release sources of nitrogen (preferred from a water quality standpoint), may be used provided they can supply the same amounts and proportions of plant nutrients). PCB-free hydro seed will be used if available.

Seeding rates will be based on pure live seed and used within 12 months of seed testing. Seed will be uniformly applied using a broadcast seeder, drill, culti-packer seeder or hydroseeder. When dry seeding, the seeding depth should be ¼ to ½ inch. During hydroseeding, it is recommended to add 50% more seed to the tank if a machinery breakdown occurs. If the breakdown exceeds two (2) hours, a full rate of new seed may be necessary. Asphalt binders will not be used when hydroseeding near wetlands or water bodies. Twice the supplier's recommended rate of inoculant will be used on dry seeding, five times the recommended rate if hydroseeded.

The upland seed mix should not be applied within wetlands boundaries. Seeding and mulching in cultivated cropland will conform to the adjacent off ROW area unless otherwise requested by the landowner in writing.

Seeding of permanent vegetation will be performed within the recommended seeding dates in the VESCH. If seeding cannot be done within those dates, appropriate temporary erosion control measures will be used and seeding of permanent vegetation will be performed at the beginning of the next recommended seeding season. Permanent seed may be applied out of the recommended window in addition to temporary seeding; however, the contractor must be prepared to return during the next recommended seeding window to reseed any areas that did not develop adequate permanent cover. Lawns may be seeded on a schedule established with the landowner.

Mulching

Following seed application, mulch will be applied to help the seed stay in place, to hide the seed from animals, and to retain soil moisture. Mulch can consist of straw, erosion control fabric, or some functional equivalent. Mulch will be free of noxious weeds. Hay shall not be used as mulch.

Recommended Loose Mulch and Materials and Application Rates		
Mulch Application	**Rate (lbs./acre)**	**Notes**
Straw	4000	Free from weeds and coarse matter. Must be anchored. Spread with mulch blower or by hand.
Fiber Mulch	1500	Do not use as mulch for winter cover or during hot, dry periods. Apply as slurry.
Corn Stalks	8000-12,000	Cut or shredded in 4-6" lengths. Air-dried. Do not use in fine turf areas. Apply with mulch blower or by hand.
Wood Chips	8000-12,000	Free of coarse matter. Air-dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand. Apply additional 12 lbs. slow-release nitrogen/ton of wood chips.
Bark Chips or Shredded Bark	50-70 cu. Yds.	Free of coarse matter. Air-dried. Do not use in fine turf areas. Apply with mulch blower, chip handler, or by hand.

Erosion control fabric, such as jute thatching or bonded fiber blankets, at a minimum, will be installed on waterbody banks at the time of final bank re-contouring. The erosion control fabric will be anchored with staples or other appropriate devices. Fiber matrix or polyacrylamide based erosion control products (see details MVP-ES40 and MVP-ES40-1) will be substituted for erosion control blanket in agricultural areas.

Mulch will be spread uniformly over the area to cover at least 75 percent of the ground surface at a rate of 2 tons/acre of straw or hay or its equivalent. If wood chips are used as mulch, the application rate will not exceed 6 tons/acre and the equivalent of 12 lbs./acre available nitrogen per ton will be added.

Application of liquid mulch binders and tackifiers may be used in place of mechanical crimping/anchoring. Heaviest application will occur on crest of ridges and steep slope areas (including spoil piles) to prevent mulch displacement. MVP will monitor mulch application and function throughout the Project duration. If MVP determines mulch coverage to be sparse due to wind or other factors, reapplication will be conducted as needed.

Mulch will be anchored to minimize loss by wind and water. When anchoring by mechanical means, a mulch-anchoring tool will be used to properly crimp the mulch to a depth of 2 to 3 inches. When anchoring with liquid mulch binders, rates recommended by the manufacturer will be used. Liquid mulch binders will not be used within 100 feet of wetlands or water bodies.

Bare Root Sapling and Shrub Planting

Planting of bare-root saplings and shrubs will occur within select areas of the Project (see details MVP-ES11.8 and MVP-ES11.9). The purpose of these plantings is to establish target native tree species comparable to the region, site characteristics (e.g., topography; soil characteristics; adjacent vegetation), and adjacent forest composition in order to encourage the timely reestablishment of habitat removed during Project construction.

For small mammals and birds, adequate spacing of planted shrubs can form a large clump or thicket and provide excellent cover, refuge, or brood-rearing habitat often absent in open landscapes. Furthermore, planting a diverse array of native shrubs and saplings with varying blooming periods will provide reliable sources of pollen and nectar for pollinator species during spring, summer, and autumn.

All species planted will be native to the area, and the seed source or ecotype of the saplings and shrubs will be as local as possible with preference given to within-state, then mountainous regions of an adjacent state, followed by within the Appalachian Mountain range.

4) Stormwater Management Plan

Stormwater management plans ensure the implementation and maintenance of post-development stormwater management controls to minimize pollutants in stormwater discharges from the site after final stabilization. Stormwater management controls that mitigate changes to pre-development runoff characteristics assist in protecting and maintaining the physical and biological characteristics of receiving streams and wetlands. Therefore, SWPPPs must include an approved stormwater management plan for new construction activities, a stormwater management plan compliant with the requirements of 9VAC25-870-93 through 9VAC25-870-99 of the VSMP Regulation for existing construction activities, or a stormwater management plan prepared in accordance with department-approved Project Specific Standards and Specifications.

The project design plans contain detailed information regarding stormwater management for this project. Specifically, elements required by 9VAC25-870 can be found in the completed plan set once submitted/approved.

5) Pollution Prevention Plan

The following Pollution Prevention Plan (Table 2) addresses potential pollution generating activities that may be expected to affect the quality of stormwater discharges from construction and related support activities. Specific locations of potential pollutants can be found on the updated project design plans or as referenced elsewhere. The person responsible for implementing the pollution prevention plan is the Lead Environmental Inspector. All necessary personnel must be familiar with practices involved in: prevention, stopping, containing, clean up, and reporting any potential pollutant.

Further detail can be found in Appendix 10: Spill Prevention Control and Countermeasure Plan.

Table 2. Pollution Prevention Plan

Prevention - Stopping - Containing - Cleanup - Reporting A spill is reportable if it; causes a sheen (the sheen rule), creates discoloration/emulsion on surface waters, or reaches storm drains. Any Fish Kills must be reported. Reporting information regarding specific substances can be found below.		
Potential Pollution Generating Activities:		***Prevention/Response Quick Reference Chart***
Hazardous Materials	Fuels, Hydraulic Oils and Vehicle Maintenance	Vehicle refueling and maintenance operations will be conducted in a dedicated location away from surface waters. Secondary containment (berms), readily available spill kits and cover will be provided where appropriate. For additional information, see Section 5.b below.
	Soaps, Solvents, Detergents & Wash Water	Chemicals will be safely stored in sealed containers when not in use. Clean-up and disposal will be done in a manner to prevent contact with stormwater, utilizing; tarps, buckets, and proper disposal techniques. For additional information, see Section 5.c below.
	Hazardous or Toxic Chemicals	Chemicals will be stored in sealed containers in a safe location. Likely chemicals on site include: asphalt sealants, adhesives, concrete admixtures, pesticides, herbicides, insecticides, fertilizers, pressurized gasses, welding rods and landscape materials. For additional information, see Section 5.c below.
	Fertilizers	Fertilizers will be applied per manufactures recommendations and not during rainfall events. For additional information, see section 5.c below.
	Sanitary Wastes	On site portable lavatories must be located away from surface waters and storm drains. Any spills must be cleaned according to federal, state and local regulations. For additional information, see section 5.d below.
Non-Stormwater Discharges *(Examples listed in Sect 2. B. 10)*	Wash Water without Soaps	Wash water will be directed to sediment basins or traps, using filtration devices such as filter bags or sand filters, or similarly effective controls.
	Site Excavation Dewatering	Must pass through a sediment trapping device and be released onto a stabilized surface. Conveyance channels must be stabilized.
	Utility Flushing	Energy from clean water releases must be appropriately dissipated in a stabilized area. For additional information, see Section 5.f below.
Managing Waste	Concrete Waste & Wash Water	Concrete wash water will be directed into a leak-proof settling basin or container. The container or basin shall be designed so that no overflows can occur due to inadequate sizing or precipitation. Hardened concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wastes. Liquid concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wash waters and shall not be discharged to surface waters. For additional information, see Section 5.e below.
	Solid Waste	All solid waste and debris must be deposited in dumpsters and kept out of surface waters.
Other		

The following points serve as a reference; for additional information, refer to Appendix 10: SPCC

a) Spills

Oil, chemical or other hazardous substance spills that exceed the reportable threshold, will be reported to the Department in accordance with Part III G. of the General Permit as soon as the discharge is discovered, but no later than 24 hours. A reportable quantity of oil is defined by the EPA as a discharge to surface waters that causes a sheen, discoloration, and/or an emulsion. Reports will be made to the following:

1) **Virginia DEQ Central Office**
   Phone: (804) 698-4000
   For reports outside normal working hours, leave a message.

2) **Virginia Department of Emergency Management**
   Emergency Operations Center (EOC)
   Phone: 1-(800) 468-8892

Materials and equipment necessary for oil or chemical spill cleanup will be kept in the temporary material storage trailer onsite. Equipment will include, but not be limited to, brooms, dust pans, mops, rags, gloves, goggles, universal absorbents, sand, saw dust, and plastic and metal trash containers.

All oil or other chemical spills will be cleaned up immediately upon discovery. Spills large enough to reach the storm sewers will be reported to the National Response Center at 1-800-424-8802.

In the event of a hazardous spill contact: 9-1-1

Other primary points of contact:

1) **Megan Neylon - Environmental Permitting Supervisor -MVP**
   Phone: (724) 873-3645

2) **Virginia Department of Emergency Management**
   Emergency Operations Center (EOC)
   Phone: 1-(800) 468-8892

b) Fuels and Oils

(i) The State Code of Virginia §62.1-44.34:19, states that discharges that may be reasonably expected to enter state waters, lands or storm drains must be reported. In the event of a spill, it will be cleaned up immediately and the material, including any

contaminated soil, will be disposed of according to all federal, state, and local regulations.

(ii) Any on-site storage tanks will have a means of secondary containment.

(iii) All vehicles on site will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage.

(iv) Petroleum products will be stored in labeled, sealed containers.

(v) Spill kits will be included with all fueling sources and maintenance activities.

c) Hazardous and Toxic Chemicals

(i) Spills of hazardous or toxic chemicals that exceed the reportable quantity threshold must be reported as stated above in Section II.B.5.a. The EPA lists reportable quantity thresholds under 40CFR Part 110, 40 CFR part 117or 40 CFR part 302.

(ii) All paint containers and curing compounds will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewers, but will be properly disposed according to the manufacturer's instructions. Spray guns will be cleaned on a removable tarp.

(iii) Chemicals used on-site are kept in small quantities and stored in closed containers undercover and kept out of direct contact with stormwater. As with fuels and oils, any inadvertent spills will be cleaned up immediately and disposed of according to federal, state, and local regulations.

(iv) Fertilizers will be applied only in the minimum amounts recommended by the manufacturer.

(v) Fertilizers will be worked into the soil to limit exposure to stormwater.

(vi) Fertilizers will be stored under cover and partially used bags will be transferred to a sealable bin to avoid spills.

d) Sanitary Waste

Portable lavatories are located on-site and are serviced on a regular basis by a contractor. They will be located in upland areas away from direct contact with surface waters. Any spills occurring during servicing will be cleaned up immediately, including any contaminated soils, and disposed of according to all federal, state, and local regulations.

e) Concrete

(i) Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site, except in a specially designated concrete washout area which contains all wash water resulting from washout activities.

(ii) Form release oil used for decorative stone work will be applied over a pallet covered with an absorbent material to collect excess fluid. The absorbent material will be replaced and disposed of properly when saturated.

f) Water Testing

When testing/cleaning of water supply lines, the discharge from the tested pipe will be collected and conveyed to a completed stormwater pipe system for ultimate discharge into a sedimentation basin or SWM/BMP facility.

g) Spill Reporting Forms and Guidelines can be found in Appendix 10 - SPCC

6) Receiving Waters

The receiving waters for the Spread 8 site are Stony Creek (050500020305), Clendennin Creek-Bluestone Lake (050500020602), Trout Creek-Craig Creek (020802011001) and Dry Run-North Fork Roanoke River (030101010201). The USGS Quad map and National Wetlands Inventory (NWI) map can be found within Appendix 11. Portions of the receiving waters for this project are impaired. Factsheets for waters identified as impaired in the 2014 § 305(b)/303(d) Water Quality Assessment Integrated Report (along with any associated documentation) can be found in Appendix 11. Note: these Factsheets are limited to the areas included in the Spread 8 Plan submitted for review.

Impaired Watersheds

As noted in the tables below, there is not a TMDL or impaired water classification for sediment or nutrients in Spread 8. MVP has reviewed federal, state and local regulations applicable to the six (6) counties within the Project for impaired waterbodies that have an established Total Maximum Daily Loads (TMDL) for certain pollutants. The pollutants of potential concern are nutrients, including nitrogen and phosphorous, (during post-construction) and sediment (during construction and post-construction). The Project traverses the watersheds of impaired waterbodies with TMDLs as shown in Attachment 11 and noted in the table below.

7) Total Maximum Daily Load (TMDL) Limitations & Impaired Waters

TMDL Waterbodies			
County	**Basin Name**	**Waterbody Name**	**Pollutant(s)**
Craig	N/A	N/A	N/A
Giles	N/A	N/A	N/A
Montgomery	Roanoke River	Upper Roanoke River	Sediment
Roanoke	Roanoke River	Upper Roanoke River	Sediment
Franklin	Roanoke River	North Fork Blackwater River Upper Blackwater River	Sediment, Total Phosphorous Sediment
Pittsylvania	N/A	N/A	N/A

The total point source wasteload allocation (WLA) for the impaired waterbodies can be found in the table below.

Total Wasteload Allocations						
Stream Name	**TMDL Title**	**City/ County**	**WBID[1]**	**Pollutant**	**WLA**	**Units**
North Fork Blackwater River	Total Maximum Daily Load (TMDL) Development for the Upper Blackwater River Watershed	Franklin	L08R	Sediment	N/A	T/YR
North Fork Blackwater River	Total Maximum Daily Load (TMDL) Development for the Upper Blackwater River Watershed	Franklin	L08R	Phosphorus	N/A	T/YR
Upper Blackwater River	Total Maximum Daily Load (TMDL) Development for the Upper Blackwater River Watershed	Franklin	L08R	Sediment	0.526	T/YR
Roanoke River	Benthic TMDL Development for the Roanoke River, Virginia	Roanoke, Montgomery	L04R	Sediment	5,189	T/YR

[1]WBID = Waterbody Identification Number

For all work performed within the boundaries of the impaired waters listed above, the measures listed below will be implemented. These measures are intended to ensure that sediment and nutrient load increases in these watersheds, if any, are maintained at or below the minimum levels.

- The impaired water(s), approved TMDL(s), and pollutant(s) of concern, when applicable, are contained in Appendix 11;
- Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site, soil and weather conditions permitting;

- Fertilizers shall be applied in accordance with the manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events; and
- The applicable SWPPP inspection requirements specified in Part II F 2 shall be amended as follows:

  Inspections shall be conducted at a frequency of (i) at least once every four business days or (ii) at least once every five business days and no later than 48 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 48 hours between business days, the inspection shall be conducted on the next business day. Additional more stringent inspection requirements can be found in the Inspection Section (9) below.

DEQ will determine if the land disturbing activity will discharge to additional TMDL water bodies and identify any additional measures needed to address the TMDL.

Discharges of stormwater from construction activities to surface waters identified as impaired in the 2012 § 305(b)/303(d) Water Quality Assessment Integrated Report or for which a TMDL wasteload allocation has been established and approved prior to Project Design Plan approval for a sediment-related parameter will require the development, implementation, and maintenance of a SWPPP that minimizes the pollutants of concern and, when applicable, is consistent with the assumptions and requirements of the approved TMDL wasteload allocations.

In accordance with Section I.B.4., control measures shall be protective of water quality standards for impaired waters identified as having impairments for pollutants that may be discharged from the construction activity in the 2012 § 305(b)/303(d) Water Quality Assessment Integrated Report. Factsheets for waters identified as impaired (along with any associated documentation) can be found in Appendix 11.

8) Maintenance

Maintenance of the erosion and sediment controls and the stormwater management/BMP facilities incorporated into this project must be maintained on a regular basis to assure their continued effectiveness. This includes repairs to all erosion and sediment controls, including cleanout of all sediment basins and stormwater management facilities at the required intervals. Those controls found to be ineffective during routine inspections (as described in the following section) shall be repaired **before the next anticipated storm event or as soon as practicable**. A more detailed description of the maintenance procedures is contained in the project design plans, Sheets 0.16 and 0.17, and is incorporated in this Plan by reference.

a) Stabilization

Ensure that stabilization of disturbed areas that will be initiated immediately whenever any clearing, grading, excavating, or other land-disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 days. Local TMDLs and jurisdictions may have more stringent guidelines (i.e. 7 days) regarding stabilization requirements.

b) Areas of Concern/High Risk Areas/Critical Areas

In response to Standard and Specification comments by DEQ dates 6/8/2017, this section is in the process of being amended to include the items copied below.

a. A description of areas on the site that have potentially serious erosion problems or that are sensitive to sediment impacts. Extra attention shall be paid to these areas and as a result additional erosion and sediment control measures may be warranted. Note all areas on the plans.
b. Steep Slopes:
    i. Ranges of slope gradient erodibility:
        1. 0-7% = Low erosion hazard
        2. 7-15% = Moderate erosion hazard
        3. ≥ 15% = High erosion hazard
    ii. Erosion hazard becomes greater as the slopes length increases. Erosion hazard will become critical if the slope exceeds:
        1. 0-7% = 300 feet
        2. 7-15% = 150 feet
        3. >15% = 75 feet
c. Areas with high erodibility, high reactivity of soils, etc…
    i. 0.23 and lower = low erodibility
    ii. 0.23 to 0.36 = moderate erodibility
    iii. ≥ 0.36 = high erodibility
    iv. Soil pH
d. Areas that flow to environmentally sensitive areas (e.g. State waters including wetlands, the Chesapeake Bay
e. Areas that require Virginia Wetland Protection permits
f. Areas containing threatened or endangered species or their habitat, etc…
g. Sink holes, wet weather/underground springs, karst areas, etc…
h. Sensitive agricultural soils
i. Critical areas –
    i. Fragipans
    ii. Lacustrine soils
    iii. Dense basal tills
    iv. Soils with seasonally high water table
    v. Soils with less than 5 feet of depth to bedrock
    vi. Subsurface drainage areas
    vii. Open ditches
    viii. Diversions
    ix. Diversion terraces
x. Buried utility lines (for farmstead consumptive use)
xi. Water sources (developed springs, wells, etc…)
xii. Grassed waterways
xiii. Water impoundment structures (dams and ponds)
xiv. Unnamed water flows

Closely monitor areas on site that are at high risk of erosion and implement additional controls as needed. Any additional controls installed or changes made to the approved site plan should be redlined within the onsite E&S plans, within Appendix 8 and included in the "Record of Land Disturbance and SWPPP Modifications Log" in Appendix 3 of this document. Examples of critical areas and some plausible design concerns are listed below:

Steep Slope Areas

Steep slopes are defined differently for each of the six counties within the Project, detailed in the table below;

Steep Slope Definition for Each County Within the Project			
County	**Steep Slope Definition**	**Source**	**Notes**
Craig	Not defined	N/A	**No local definitions found**
Giles	> 20%	Giles Co. 2012 Comp Plan	Revision adopted 2012; Natural Resources-Slope
Montgomery	> 25%	Montgomery Co. 2025 Comp Plan	Adopted 2004, revised 2011; Planning and Land Use Policies, PLU 1.2; also mentioned in Co. Code Sec 10-39(h)4
Roanoke	> 33%	Roanoke Co. Code	Sec. 8.1.3 – Definitions; Chapter 12 Stormwater Design Manual
Franklin	> 25%	Franklin Co. 2025 Comp Plan	Adopted 2007; also mentioned in Co. Code Sec 25-189(f)(4) in regards to required open space for residential cluster development
Pittsylvania	> 25%	Pittsylvania Co. 2010 Comp Plan	Chapter 2 -Natural and Cultural Environment

Construction activities within areas considered as steep slope conditions will be conducted in accordance with the BMPs presented in MVP's steep slope typical details and the Project's Landslide Mitigation Plan (see Appendices B and F, respectively, in the Project Specific Standards and Specifications for Virginia).

Landslide Prone Areas

Many portions of the Project route are located in landslide susceptible areas. Landslides in the Project area occur primarily in weathered bedrock or colluvial soil and within old landslide debris located on steep slopes. MVP developed the Landslide Mitigation Plan (LMP) to address areas of concern identified prior to construction and present mitigation strategies that may be implemented at other areas during construction. The LMP areas were identified by reviewing available historic aerial photographs, soils data, and topographic maps. Construction operations will be staffed with geotechnical personnel who will identify additional areas in which the LMP mitigation measures will be implemented (and additional mitigation measures, as necessary). A

copy of the LMP is located in Appendix F of the Project Specific Standards and Specifications for Virginia.

MVP will employ special construction techniques within areas considered as steep slope conditions as discussed in Section 1.3.

The E&SC Plan shows the placement of steep slope erosion controls on all slopes greater than 30-percent (or as specified in the table above). These slopes will be stabilized with steep slope soil stabilization blankets and matting techniques in accordance with VESCH STD & SPEC 3.36. In addition to VESCH STD & SPEC 3.36, MVP may utilize hydraulically applied soil stabilization blankets and matting (i.e., Earthguard, Flexterra or equivalent) as an alternative to rolled erosion and sediment control blanket material. Information regarding the hydraulically applied blankets is provided in details MVP-ES40 and MVP-ES40.1.

Permanent and temporary ROW Diversions/Waterbars are depicted on the plans and are placed along the pipeline following the spacing specified in detail MVP-17. ROW Diversions/Waterbars are intended to reduce runoff velocity and divert water off the construction ROW to prevent slope erosion.

Wetlands and Waterbodies

To minimize impacts to waterbody and wetland crossings, they will be treated as separate construction entities, except during clearing activities, and efforts will be made to cross these areas during low flow. Once grubbing and grading starts at a waterbody or wetland crossing it will be actively conducted for consecutive days until the crossing is completed and the work area restored. Crossings will be constructed as close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit. If the pipeline parallels a waterbody, at least 15 feet of undisturbed vegetation will be maintained between the waterbody and the right-of-way, if possible, except at the crossing location. Where waterbodies meander or have multiple channels, the pipeline will be routed to minimize the number of waterbody crossings.

Although generalized construction sequences are provided in Section 2.0 for stream and wetland crossings, and a generalized list of procedures that will be followed at stream crossings is provided in Section 3.3, procedures of special emphasis are discussed in more detail below. The methods described below will be employed unless incompatible or more stringent requirements are imposed by the U.S. Army Corps of Engineers, Department of Environmental Quality, Virginia Marine Resources Commission, or other appropriate federal or state authority.

The principal methods of crossing waterbodies in the Commonwealth will be open-cut dry-ditch. These methods include Flume Pipe Crossing, Cofferdam (Porta-dam) Crossing, and Dam and Pump. For more information on these dry crossing techniques refer to Section 3.3. MVP does not propose to conduct any waterbody crossings via directional drill methods. In the event a directional drill method is needed, the crossing would be conducted in accordance with these details following approval of necessary federal and state permitting requirements.

For crossings of all state-designated fisheries as well as waterbodies with sensitive species concerns, all construction equipment will cross the waterbody on an equipment bridge. Equipment bridges are not required at minor waterbodies that do not have a state-designated fishery classification (for example, agricultural or intermittent drainage ditches).

Waterbody and wetland crossings will be clearly marked in the field prior to the start of tree clearing activities. Care will be taken during clearing operations not to deposit mud in open water, and to minimize rutting of the right-of-way. All woody debris will be removed from within the waterbody or wetland crossing for disposal. Vegetation will be cut off at ground level, leaving existing root systems in place, and removed from the wetland for disposal. Timber riprap may be employed to stabilize the equipment work area provided all timber is obtained from within the approved construction work area. All timber riprap must be installed to facilitate removal upon completion of construction. Any disturbed soil will be mulched before the clearing crew leaves the waterbody or wetland crossing. MVP reduced the construction LOD at wetland crossings from 125 feet to 75 feet to minimize impacts. Clearing activities within wetland areas will be restricted to the 75-foot temporary construction LOD.

Before grading begins and as grubbing progresses, sediment barriers (staked bales or silt fence, compost filter socks, etc.) will be installed across the construction area at the edge of the water or the edge of the wetland, and along the sides of the construction work area as needed to prevent the flow of spoil into the waterbody or wetland. Stump removal, topsoil segregation, and excavation would be limited to the area immediately over the trench line within the 50-foot permanent ROW easement per NWP12 Regional Condition 3.b.iii, FERC PROCEDURES and Project's FERC Certificate conditions. Trees located within 15 feet of the pipeline with roots that could compromise the integrity of the pipeline coating may be selectively cut and removed from the permanent ROW. A limited amount of stump removal and grading may be conducted within the permanent ROW easement in wetlands to ensure a safe working environment. In wetlands, very little grading is expected, as topography is generally flat and low-lying. Temporary ROW diversions (interceptor diversions) will be installed at the ends of the waterbody or wetland crossing.

Sediment barriers will be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Sediment barriers will be installed across the entire construction right-of-way at all waterbody crossings. Where waterbodies are adjacent to the construction right-of-way, sediment barriers will be installed along the edge of the construction right-of-way as necessary to contain spoil and sediment within the ROW. Trench plugs will be used at all non-flumed waterbody crossings to prevent diversion of water into upland portions of the pipeline trench and to keep any accumulated trench water out of the waterbody. Trench plugs will be of sufficient size to withstand upslope water pressure. Final grading will begin promptly after backfilling is completed. If final grade is reached on any portion of the site, vegetation will be established to prevent erosion. Temporary seeding will be applied if any portion of the site will remain dormant for more than 14 days (or 7 days as required by a TMDL or locality) to prevent erosion. Disturbed areas will be restored to pre-

construction contours, and in wetlands, topsoil will be replaced preserving the native seed bank which will enable restoration with native plant species. Sediment barriers at the edge of the wetland or edge of the water will be repaired or replaced as necessary. Permanent ROW diversions (interceptor diversions) will be installed at the edge of the 50-foot buffer area or base of the slope nearest the waterbody and wetland. All materials used to stabilize the equipment work area will be removed (e.g. timber riprap or timber mats). Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site. If soil and weather conditions prevent final grade to be established (e.g. if the permit specified a winter construction window), a temporary approximate grade will be established. ESC measures will be restored or replaced as needed, and temporary stabilization will be applied.

Restoration will begin immediately after final grade is established. Stream banks will be restored by vegetative stabilization (VESCH STD & SPEC 3.22) where site conditions warrant or by riprap (VESCH STD & SPEC 3.19) where bank slopes are 3h:1v or steeper. Vegetative stabilization generally includes planting a perennial conservation seed mix from VESCH STD & SPEC 3.32 Table 3.32-B. If grubbing has not been extensive, then native shrub and tree species are expected to sprout and regenerate naturally. Seed will be applied before mulch is applied to the area. Rock, soil from outside the wetland, tree stumps, or brush riprap will not be used to stabilize the right-of-way in wetlands. A sediment barrier will be maintained at the edge of the water until revegetation is successful. Wetlands will be seeded in accordance with VESCH STD & SPEC 3.31 Table 3.31-B and mulched with clean straw. A sediment barrier will be maintained around the restored area until revegetation is successful. The buffers will be restored using the procedures for upland areas. For all affected forested wetlands, restoration activities will be conducted in accordance with the Project's approved permit conditions and mitigation requirements.

Acidic Soils Areas

Areas of acidic soils are known to occur within portions of the Project area in Virginia. In order to identify and mitigate potential impacts should these soils be encountered, MVP developed an Acid Forming Materials Identification and Testing Work (AFM) Plan for implementation during Project activities. The AFM Plan is provided in Appendix G of the Project Specific Standards and Specifications for Virginia.

Karst Areas

Portions of the Project route are located in areas containing karst and features within ¼-mile (generally termed the secondary karst buffer) and within 150 feet (corresponding to the construction easement) of the proposed route were identified through desktop review of public and proprietary data. Field confirmation was completed on properties where landowners allowed access in order to verify the desktop review results and identify previously unmapped karst features.
MVP prepared a Karst Hazards Assessment that described construction methods to mitigate or eliminate potential impacts (see Appendix H of the Project Specific Standards and

Specifications for Virginia) for karst features that cannot be avoided through minor variations within the construction easement. MVP will deploy Karst Specialist inspection teams during construction to monitor karst features and provide recommendations for avoidance or mitigation.

9) Inspections

Inspection Staff Requirements.

The Project will have one Lead Environmental Inspector (LEI) and at least one Environmental Inspector (EI) per construction spread. Inspection staff requirements will be determined by MVP based on the construction activities being undertaken and accessibility to the active areas while providing appropriate coverage to maintain environmental compliance. The LEI and EI will be required to be knowledgeable of environmental permit compliance requirements, be experienced in ESC and SWM BMP installation, operation and maintenance requirements, Project permit conditions and experienced with the FERC's Plan and Procedures. The LEI/EI will review the implementation of the Standards and Specifications and any applicable environmental permits, resolve apparent conflicts between permits and this Standards and Specifications, and coordinate with the Construction Supervisor about additional measures which may be needed to address erosion and sedimentation. The LEI will also keep a daily log of activity documenting Project activities related to environmental permit compliance and corrective measures implemented, site visitors (i.e. non-project staff), waterbody and wetland crossing log and ESC installation and maintenance activities.

The Environmental inspection staff's responsibilities include:

- Ensuring compliance with the requirements of these Standards and Specification Document;
- Ensuring compliance with all other federal and state permitting conditions relating to environmental compliance related to ESC, SWM, NWP12 and 401WQC;
- Ensuring compliance with the FERC's PLAN and PROCEDURES, the environmental conditions of the FERC's Project specific CERTIFICATE, the environmental mitigation measures proposed by MVP in the application submitted to FERC, and other environmental permits and approvals issued to MVP;
- Verifying that the limits of authorized construction work areas and locations of access roads are properly marked before clearing activities commence;
- Verifying the location of drainage and irrigation systems;
- Identifying stabilization needs in all areas;
- Locating dewatering structures and slope breakers to ensure they will not direct runoff into waterbodies or wetlands, known cultural resource sites or sensitive species habitat;
- Verifying that trench dewatering activities do not result in the deposition of sand, silt, and/or sediment near the point of discharge into a wetland or waterbody. If such deposition is discovered, the dewatering activity shall be stopped and the design of the discharge shall be changed to prevent reoccurrence;

- Testing subsoil and topsoil in agricultural and residential areas as necessary to measure compaction and determine the need for corrective action;
- Advising the Inspector when conditions (such as wet weather) make it advisable to restrict construction activities;
- Ensuring restoration of contours and topsoil;
- Approving imported soils for use in agricultural and residential areas;
- Ensuring that temporary erosion controls are properly installed, inspected and maintained;
- Inspecting temporary ESC measures and SWM BMPs at least:
- Immediately following initial installation of ESCs;

    - on a daily basis in areas of active construction or equipment operation;
    - at least once in every two-week period;
    - revegetation requirements are being met.
    - within 48-hours of a measurable rainfall event producing 0.25 inches of rain or greater over 24 hours; and
    - at the completion of the Project prior to the release of any performance bonds;

- Ensuring compliance with any more stringent plan requirements during construction activities within the Total Maximum Daily Loads (TMDL) watersheds of impaired waters located in Montgomery, Roanoke and Franklin Counties.
- Ensuring the repair of all ineffective temporary ESC measures within 24 hours of identification, or as soon as conditions allow if compliance with this time frame would result in greater environmental impacts; 011705/P 5.
- Keeping records of compliance with the environmental conditions, and the mitigation measures required by Federal or state environmental permits during active construction and restoration; and
- Establishing a program to monitor the success of restoration. Implementation of this program may be transferred to the company's operating section upon completion of construction and restoration activities.

MVP will provide weekly e-reporting, via email to the VADEQ linear projects inbox LinearProjects@deq.gov which will then be directed to the appropriate VADEQ representatives and/or applicable regional office. Inspection reports will be submitted based on MVP's construction spread break basis and identified as such. MVP intends to utilize four (4) construction spreads for Project construction activities in the Commonwealth. Weekly reports will be submitted the week following the inspections and will include the weekly inspection report per spread as well as the post-rainfall event inspections that occur during the reporting week. The reports shall include the following:

- Inspection reports;
- Pictures;
- Complaint logs and complaint responses; and

- Other compliance documents.

The name, phone number, and qualifications of the qualified personnel conducting inspections required by the General Permit can be found in the Record of Inspector Certification document within Appendix 6.

If as a result of the inspection, the site conditions and/or control measures are found to have changed, the Plan shall be updated within a period of 7 calendar days. If control measures need to be modified to assure effectiveness or if additional measures are determined to be necessary, implementation shall be completed prior to the next anticipated storm event or as soon as practicable. The operator shall implement any corrective action(s) identified as a result of an inspection as soon as practicable but no later than 7 days after discovery or a longer period as approved by the VSMP authority.

A report summarizing the inspections and the subsequent maintenance activities must be completed and maintained as part of the Plan. The inspection forms are included in Appendix 4. Required elements include major observations (including information on control measure performance and incidents of non-compliance), and information on the inspecting personnel. If an inspection does not identify any incidents of non-compliance, then the certification statement contained in the inspection form will apply. The inspection report(s) and any actions taken in accordance with Part II must be retained by the operator as part of the SWPPP for at least three years from the date project is complete.

The Project will also have a FERC third party inspector as required. This inspector will have peer status with all other activity inspectors and shall have the authority to stop activities that violate the environmental conditions of the FERC certificate or other authorizations and order corrective action once approval has been granted by the MVP Project Manager.

10) Non-Storm Water Discharges

The following table (Table 3) displays non-stormwater discharges from construction activities that are authorized when discharged in compliance with the General Permit:

Table 3. Authorized Non-Stormwater Discharges

A	Discharges from firefighting activities and/or fire hydrant flushings.
B	Waters used to wash vehicles or equipment. [1]
C	Landscape irrigation, or water used to control dust. [1]
D	Uncontaminated waterline flushings, air conditioning/compressor condensate, and ground or spring
E	Potable water sources, including uncontaminated waterline flushings.
F	Routine external building wash down. [1]
G	Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (or where all spilled or leaked material has been removed prior to washing). [1]
H	Foundation or footing drains where flows are not contaminated with process materials such as solvents.
I	Uncontaminated excavation dewatering, including dewatering of trenches and excavations. [1]

[1] Where soaps, solvents, or detergents have not been used; and where the wash water has been filtered, settled, or similarly treated prior to discharge.

REFERENCES

Project Specific Standards and Specifications for Virginia April 2017 developed for Mountain Valley Pipeline and pending approval by VA DEQ.

U.S. Department of Environmental Quality. *Virginia Environmental Geographic Informational Systems: 2014 Impaired Waters Database GIS Applications.* Impaired waters data retrieved from http://www.deq.virginia.gov/mapper_ext/?service=public/2014_adb_aquaticlife on May 5th, 2017.

Virginia Department of Conservation and Recreation. *Virginia Erosion and Sediment Control Handbook.* Third Edition, 1992.

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APPENDIX 1

Project Specific Standards and

Specifications Narrative (pending approval)

The Project Standards and Specifications for this project will be included once approved by VADEQ.

APPENDIX 2

Storm Water Construction General Permit No. VAR10

General VPDES Permit for Discharges of Stormwater from Construction Activities
General Permit No.: VAR10

As Mentioned on page 6 of the SWPPP, discharges of uncontaminated stormwater associated with the construction of natural gas transmission pipelines and certain associated facilities are not subject to a permitting requirement under the Clean Water Act, 33 U.S.C. § 1342(l)(2); 40 C.F.R. § 122.26(a)(2), or State Water Control Law, 9VAC25-870-380.A.2. For this reason, the Project will not be covered by the General VPDES Permit for Discharges of Stormwater from Construction Activities, 9VAC25-880-70 (General Permit).

Nevertheless, the State Water Control Law provides that projects covered under annual standards and specifications should be "consistent with" the General Permit, including its requirements for a SWPPP. Va. Code § 62.1-44.15:31. Accordingly, this Plan has been prepared to implement all relevant and applicable conditions of the General Permit. Relevant provisions of the General Permit are cited in this Plan where appropriate and are thereby incorporated by reference. The following is a complete list of incorporated provisions of the General Permit.

General Permit Part I, Sections B, C, D, E, & G
General Permit Part II Sections A1. d & e, A.2 –G
General Permit Part III Sections A-J, L, & N-W

COMMONWEALTH of VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY

General Permit No.: VAR10

Effective Date: July 1, 2014

Expiration Date: June 30, 2019

GENERAL VPDES PERMIT FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITIES

AUTHORIZATION TO DISCHARGE UNDER THE VIRGINIA STORMWATER MANAGEMENT PROGRAM AND THE VIRGINIA STORMWATER MANAGEMENT ACT

In compliance with the provisions of the Clean Water Act, as amended, and pursuant to the Virginia Stormwater Management Act and regulations adopted pursuant thereto, operators of construction activities are authorized to discharge to surface waters within the boundaries of the Commonwealth of Virginia, except those specifically named in State Water Control Board regulations that prohibit such discharges.

The authorized discharge shall be in accordance with this cover page, Part I - Discharge Authorization and Special Conditions, Part II - Stormwater Pollution Prevention Plan, and Part III - Conditions Applicable to All VPDES Permits as set forth herein.

PART I

DISCHARGE AUTHORIZATION AND SPECIAL CONDITIONS

A. Coverage under this general permit.

1. During the period beginning with the date of coverage under this general permit and lasting until the general permit's expiration date, the operator is authorized to discharge stormwater from construction activities.

2. This general permit also authorizes stormwater discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) located on-site or off-site provided that:

   a. The support activity is directly related to the construction activity that is required to have general permit coverage for discharges of stormwater from construction activities;

   b. The support activity is not a commercial operation, nor does it serve multiple unrelated construction activities by different operators;

   c. The support activity does not operate beyond the completion of the last construction activity it supports;

   d. The support activity is identified in the registration statement at the time of general permit coverage;

   e. Appropriate control measures are identified in a stormwater pollution prevention plan and implemented to address the discharges from the support activity areas; and

   f. All applicable state, federal, and local approvals are obtained for the support activity.

B. Limitations on coverage.

1. Post-construction discharges. This general permit does not authorize stormwater discharges that originate from the site after construction activities have been completed and the site, including any support activity sites covered under the general permit registration, has undergone final stabilization. Post-construction industrial stormwater discharges may need to be covered by a separate VPDES permit.

2. Discharges mixed with nonstormwater. This general permit does not authorize discharges that are mixed with sources of nonstormwater, other than those discharges that are identified in Part I E (Authorized nonstormwater discharges) and are in compliance with this general permit.

3. Discharges covered by another state permit. This general permit does not authorize discharges of stormwater from construction activities that have been covered under an individual permit or required to obtain coverage under an alternative general permit.

4. Impaired waters and TMDL limitation. Discharges of stormwater from construction activities to surface waters identified as impaired in the 2012 § 305(b)/303(d) Water Quality Assessment Integrated Report or for which a TMDL wasteload allocation has been established and approved prior to the term of this general permit for (i) sediment or a sediment-related parameter (i.e., total suspended solids or turbidity) or (ii) nutrients (i.e., nitrogen or phosphorus) are not eligible for coverage under this general permit unless the operator develops, implements, and maintains a SWPPP that minimizes the pollutants of concern and, when applicable, is consistent with the assumptions and requirements of the approved TMDL wasteload allocations. In addition, the operator shall implement the following items:

a. The impaired water(s), approved TMDL(s), and pollutant(s) of concern, when applicable, shall be identified in the SWPPP;

b. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site;

c. Nutrients shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events; and

d. The applicable SWPPP inspection requirements specified in Part II F 2 shall be amended as follows:

(1) Inspections shall be conducted at a frequency of (i) at least once every four business days or (ii) at least once every five business days and no later than 48 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 48 hours between business days, the inspection shall be conducted on the next business day; and

(2) Representative inspections used by utility line installation, pipeline construction, or other similar linear construction activities shall inspect all outfalls discharging to surface waters identified as impaired or for which a TMDL wasteload allocation has been established and approved prior to the term of this general permit.

5. Exceptional waters limitation. Discharges of stormwater from construction activities not previously covered under the general permit issued in 2009 to exceptional waters identified in 9VAC25-260-30 A 3 c are not eligible for coverage under this general permit unless the operator implements the following:

a. The exceptional water(s) shall be identified in the SWPPP;

b. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site;

c. Nutrients shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events; and

d. The applicable SWPPP inspection requirements specified in Part II F 2 shall be amended as follows:

(1) Inspections shall be conducted at a frequency of (i) at least once every four business days or (ii) at least once every five business days and no later than 48 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 48 hours between business days, the inspection shall be conducted on the next business day; and

(2) Representative inspections used by utility line installation, pipeline construction, or other similar linear construction activities shall inspect all outfalls discharging to exceptional waters.

6. There shall be no discharge of floating solids or visible foam in other than trace amounts.

C. Commingled discharges. Discharges authorized by this general permit may be commingled with other sources of stormwater that are not required to be covered under a state permit, so long as the commingled discharge is in compliance with this general permit. Discharges authorized by a separate state or VPDES permit may be commingled with discharges authorized by this general permit so long as all such discharges comply with all applicable state and VPDES permit requirements.

D. Prohibition of nonstormwater discharges. Except as provided in Parts I A 2, I C, and I E, all discharges covered by this general permit shall be composed entirely of stormwater associated with construction activities. All other discharges including the following are prohibited:

1. Wastewater from washout of concrete;

2. Wastewater from the washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;

3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;

4. Oils, toxic substances, or hazardous substances from spills or other releases; and

5. Soaps, solvents, or detergents used in equipment and vehicle washing.

E. Authorized nonstormwater discharges. The following nonstormwater discharges from construction activities are authorized by this general permit when discharged in compliance with this general permit:

1. Discharges from firefighting activities;

2. Fire hydrant flushings;

3. Waters used to wash vehicles or equipment where soaps, solvents, or detergents have not been used and the wash water has been filtered, settled, or similarly treated prior to discharge;

4. Water used to control dust that has been filtered, settled, or similarly treated prior to discharge;

5. Potable water sources, including uncontaminated waterline flushings;

6. Routine external building wash down where soaps, solvents or detergents have not been used and the wash water has been filtered, settled, or similarly treated prior to discharge;

7. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (or where all spilled or leaked material has been removed prior to washing); where soaps, solvents, or detergents have not been used; and where the wash water has been filtered, settled, or similarly treated prior to discharge;

8. Uncontaminated air conditioning or compressor condensate;

9. Uncontaminated ground water or spring water;

10. Foundation or footing drains where flows are not contaminated with process materials such as solvents;

11. Uncontaminated excavation dewatering, including dewatering of trenches and excavations that have been filtered, settled, or similarly treated prior to discharge; and

12. Landscape irrigation.

F. Termination of general permit coverage.

1. The operator of the construction activity shall submit a notice of termination in accordance with 9VAC25-880-60 to the VSMP authority after one or more of the following conditions have been met:

a. Necessary permanent control measures included in the SWPPP for the site are in place and functioning effectively and final stabilization has been achieved on all portions of the site for which the operator is responsible. When applicable, long term responsibility and maintenance requirements shall be recorded in the local land records prior to the submission of a notice of termination;

b. Another operator has assumed control over all areas of the site that have not been finally stabilized and obtained coverage for the ongoing discharge;

c. Coverage under an alternative VPDES or state permit has been obtained; or

d. For residential construction only, temporary soil stabilization has been completed and the residence has been transferred to the homeowner.

2. The notice of termination should be submitted no later than 30 days after one of the above conditions in subdivision 1 of this subsection is met. Authorization to discharge terminates at midnight on the date that the notice of termination is submitted for the conditions set forth in subdivisions 1 b through 1 d of this subsection. Termination of authorizations to discharge for the conditions set forth in subdivision 1 a of this subsection shall be effective upon notification from the department that the provisions of subdivision 1 a of this subsection have been met or 60 days after submittal of the notice of termination, whichever occurs first.

3. The notice of termination shall be signed in accordance with Part III K of this general permit.

G. Water quality protection.

1. The operator must select, install, implement and maintain control measures as identified in the SWPPP at the construction site that minimize pollutants in the discharge as necessary to ensure that the operator's discharge does not cause or contribute to an excursion above any applicable water quality standard.

2. If it is determined by the department that the operator's discharges are causing, have reasonable potential to cause, or are contributing to an excursion above any applicable water quality standard, the department, in consultation with the VSMP authority, may take appropriate enforcement action and require the operator to:

a. Modify or implement additional control measures in accordance with Part II B to adequately address the identified water quality concerns;

b. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or

c. Submit an individual permit application in accordance with 9VAC25-870-410 B 3.

All written responses required under this chapter must include a signed certification consistent with Part III K.

PART II

STORMWATER POLLUTION PREVENTION PLAN

A stormwater pollution prevention plan (SWPPP) shall be developed prior to the submission of a registration statement and implemented for the construction activity, including any support activity, covered by this general permit. SWPPPs shall be prepared in accordance with good engineering practices. Construction activities that are part of a larger common plan of development or sale and disturb less than one acre may utilize a SWPPP template provided by the department and need not provide a separate stormwater management plan if one has been prepared and implemented for the larger common plan of development or sale.

The SWPPP requirements of this general permit may be fulfilled by incorporating by reference other plans such as a spill prevention control and countermeasure (SPCC) plan developed for the site under § 311 of the federal Clean Water Act or best management practices (BMP) programs otherwise required for the facility provided that the incorporated plan meets or exceeds the SWPPP requirements of Part II A. All plans incorporated by reference into the SWPPP become enforceable under this general permit. If a plan incorporated by reference does not contain all of the required elements of the SWPPP, the operator must develop the missing elements and include them in the SWPPP.

Any operator that was authorized to discharge under the general permit issued in 2009, and that intends to continue coverage under this general permit, shall update its stormwater pollution prevention plan to comply with the requirements of this general permit no later than 60 days after the date of coverage under this general permit.

A. Stormwater pollution prevention plan contents. The SWPPP shall include the following items:

1. General information.

   a. A signed copy of the registration statement, if required, for coverage under the general VPDES permit for discharges of stormwater from construction activities;

   b. Upon receipt, a copy of the notice of coverage under the general VPDES permit for discharges of stormwater from construction activities (i.e., notice of coverage letter);

   c. Upon receipt, a copy of the general VPDES permit for discharges of stormwater from construction activities;

   d. A narrative description of the nature of the construction activity, including the function of the project (e.g., low density residential, shopping mall, highway, etc.);

   e. A legible site plan identifying:

      (1) Directions of stormwater flow and approximate slopes anticipated after major grading activities;

      (2) Limits of land disturbance including steep slopes and natural buffers around surface waters that will not be disturbed;

      (3) Locations of major structural and nonstructural control measures, including sediment basins and traps, perimeter dikes, sediment barriers, and other measures intended to filter, settle, or similarly treat sediment, that will be installed between disturbed areas and the undisturbed vegetated areas in order to increase sediment removal and maximize stormwater infiltration;

      (4) Locations of surface waters;

(5) Locations where concentrated stormwater is discharged;

(6) Locations of support activities, when applicable and when required by the VSMP authority, including but not limited to (i) areas where equipment and vehicle washing, wheel wash water, and other wash water is to occur; (ii) storage areas for chemicals such as acids, fuels, fertilizers, and other lawn care chemicals; (iii) concrete wash out areas; (iv) vehicle fueling and maintenance areas; (v) sanitary waste facilities, including those temporarily placed on the construction site; and (vi) construction waste storage; and

(7) When applicable, the location of the on-site rain gauge or the methodology established in consultation with the VSMP authority used to identify measurable storm events for inspection purposes.

2. Erosion and sediment control plan.

a. An erosion and sediment control plan approved by the VESCP authority as authorized under the Erosion and Sediment Control Regulations (9VAC25-840), an "agreement in lieu of a plan" as defined in 9VAC25-840-10 from the VESCP authority, or an erosion and sediment control plan prepared in accordance with annual standards and specifications approved by the department. Any operator proposing a new stormwater discharge from construction activities that is not required to obtain erosion and sediment control plan approval from a VESCP authority or does not adopt department-approved annual standards and specifications shall submit the erosion and sediment control plan to the department for review and approval.

b. All erosion and sediment control plans shall include a statement describing the maintenance responsibilities required for the erosion and sediment controls used.

c. A properly implemented approved erosion and sediment control plan, "agreement in lieu of a plan," or erosion and sediment control plan prepared in accordance with department-approved annual standards and specifications, adequately:

(1) Controls the volume and velocity of stormwater runoff within the site to minimize soil erosion;

(2) Controls stormwater discharges, including peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion;

(3) Minimizes the amount of soil exposed during the construction activity;

(4) Minimizes the disturbance of steep slopes;

(5) Minimizes sediment discharges from the site in a manner that addresses (i) the amount, frequency, intensity, and duration of precipitation; (ii) the nature of resulting stormwater runoff; and (iii) soil characteristics, including the range of soil particle sizes present on the site;

(6) Provides and maintains natural buffers around surface waters, directs stormwater to vegetated areas to increase sediment removal, and maximizes stormwater infiltration, unless infeasible;

(7) Minimizes soil compaction and, unless infeasible, preserves topsoil;

(8) Ensures that stabilization of disturbed areas will be initiated immediately whenever any clearing, grading, excavating, or other land-disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 days; and

(9) Utilizes outlet structures that withdraw stormwater from the surface (i.e., above the permanent pool or wet storage water surface elevation), unless infeasible, when discharging from sediment basins or sediment traps.

3. Stormwater management plan.

a. New construction activities. A stormwater management plan approved by the VSMP authority as authorized under the Virginia Stormwater Management Program (VSMP) Regulation (9VAC25-870), or an "agreement in lieu of a stormwater management plan" as defined in 9VAC25-870-10 from the VSMP authority, or a stormwater management plan prepared in accordance with annual standards and specifications approved by the department. Any operator proposing a new stormwater discharge from construction activities that is not required to obtain stormwater management plan approval from a VSMP authority or does not adopt department-approved annual standards and specifications shall submit the stormwater management plan to the department for review and approval.

b. Existing construction activities. Any operator that was authorized to discharge under the general permit issued in 2009, and that intends to continue coverage under this general permit, shall ensure compliance with the requirements of 9VAC25-870-93 through 9VAC25-870-99 of the VSMP Regulation, including but not limited to the water quality and quantity requirements. The SWPPP shall include a description of, and all necessary calculations supporting, all post-construction stormwater management measures that will be installed prior to the completion of the construction process to control pollutants in stormwater discharges after construction operations have been completed. Structural measures should be placed on upland soils to the degree possible. Such measures must be designed and installed in accordance with applicable VESCP authority, VSMP authority, state, and federal requirements, and any necessary permits must be obtained.

4. Pollution prevention plan. A pollution prevention plan that addresses potential pollutant-generating activities that may reasonably be expected to affect the quality of stormwater discharges from the construction activity, including any support activity. The pollution prevention plan shall:

a. Identify the potential pollutant-generating activities and the pollutant that is expected to be exposed to stormwater;

b. Describe the location where the potential pollutant-generating activities will occur, or if identified on the site plan, reference the site plan;

c. Identify all nonstormwater discharges, as authorized in Part I E of this general permit, that are or will be commingled with stormwater discharges from the construction activity, including any applicable support activity;

d. Identify the person responsible for implementing the pollution prevention practice or practices for each pollutant-generating activity (if other than the person listed as the qualified personnel);

e. Describe the pollution prevention practices and procedures that will be implemented to:

(1) Prevent and respond to leaks, spills, and other releases including (i) procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases; and (ii) procedures for reporting leaks, spills, and other releases in accordance with Part III G;

(2) Prevent the discharge of spilled and leaked fuels and chemicals from vehicle fueling and maintenance activities (e.g., providing secondary containment such as spill berms, decks, spill containment pallets, providing cover where appropriate, and having spill kits readily available);

(3) Prevent the discharge of soaps, solvents, detergents, and wash water from construction materials, including the clean-up of stucco, paint, form release oils, and curing compounds (e.g., providing (i) cover (e.g., plastic sheeting or temporary roofs) to prevent contact with stormwater; (ii) collection and proper disposal in a manner to prevent contact with stormwater; and (iii) a similarly effective means designed to prevent discharge of these pollutants);

(4) Minimize the discharge of pollutants from vehicle and equipment washing, wheel wash water, and other types of washing (e.g., locating activities away from surface waters and stormwater inlets or conveyance and directing wash waters to sediment basins or traps, using filtration devices such as filter bags or sand filters, or using similarly effective controls);

(5) Direct concrete wash water into a leak-proof container or leak-proof settling basin. The container or basin shall be designed so that no overflows can occur due to inadequate sizing or precipitation. Hardened concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wastes. Liquid concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wash waters and shall not be discharged to surface waters;

(6) Minimize the discharge of pollutants from storage, handling, and disposal of construction products, materials, and wastes including (i) building products such as asphalt sealants, copper flashing, roofing materials, adhesives, and concrete admixtures; (ii) pesticides, herbicides, insecticides, fertilizers, and landscape materials; and (iii) construction and domestic wastes such as packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, Styrofoam, concrete, and other trash or building materials;

(7) Prevent the discharge of fuels, oils, and other petroleum products, hazardous or toxic wastes, and sanitary wastes; and

(8) Address any other discharge from the potential pollutant-generating activities not addressed above; and

f. Describe procedures for providing pollution prevention awareness of all applicable wastes, including any wash water, disposal practices, and applicable disposal locations of such wastes, to personnel in order to comply with the conditions of this general permit. The operator shall implement the procedures described in the SWPPP.

5. SWPPP requirements for discharges to impaired waters, surface waters with an applicable TMDL wasteload allocation established and approved prior to the term of this general permit, and exceptional waters. The SWPPP shall:

a. Identify the impaired water(s), approved TMDL(s), pollutant(s) of concern, and exceptional waters identified in 9VAC25-260-30 A 3 c, when applicable;

b. Provide clear direction that:

(1) Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site;

(2) Nutrients shall be applied in accordance with manufacturer's recommendations or an approved nutrient management plan and shall not be applied during rainfall events; and

(3) A modified inspection schedule shall be implemented in accordance with Part I B 4 or Part I B 5.

6. Qualified personnel. The name, phone number, and qualifications of the qualified personnel conducting inspections required by this general permit.

7. Delegation of authority. The individuals or positions with delegated authority, in accordance with Part III K, to sign inspection reports or modify the SWPPP.

8. SWPPP signature. The SWPPP shall be signed and dated in accordance with Part III K.

B. SWPPP amendments, modification, and updates.

1. The operator shall amend the SWPPP whenever there is a change in the design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants to surface waters and that has not been previously addressed in the SWPPP.

2. The SWPPP must be amended if, during inspections or investigations by the operator's qualified personnel, or by local, state, or federal officials, it is determined that the existing control measures are ineffective in minimizing pollutants in discharges from the construction activity. Revisions to the SWPPP shall include additional or modified control measures designed and implemented to correct problems identified. If approval by the VESCP authority, VSMP authority, or department is necessary for the control measure, revisions to the SWPPP shall be completed no later than seven calendar days following approval. Implementation of these additional or modified control measures must be accomplished as described in Part II G.

3. The SWPPP must clearly identify the contractor(s) that will implement and maintain each control measure identified in the SWPPP. The SWPPP shall be amended to identify any new contractor that will implement and maintain a control measure.

4. The operator shall update the SWPPP no later than seven days following any modification to its implementation. All modifications or updates to the SWPPP shall be noted and shall include the following items:

   a. A record of dates when:

      (1) Major grading activities occur;

      (2) Construction activities temporarily or permanently cease on a portion of the site; and

      (3) Stabilization measures are initiated;

   b. Documentation of replaced or modified controls where periodic inspections or other information have indicated that the controls have been used inappropriately or incorrectly and where modified as soon as possible;

   c. Areas that have reached final stabilization and where no further SWPPP or inspection requirements apply;

   d. All properties that are no longer under the legal control of the operator and the dates on which the operator no longer had legal control over each property;

   e. The date of any prohibited discharges, the discharge volume released, and what actions were taken to minimize the impact of the release;

   f. Measures taken to prevent the reoccurrence of any prohibited discharge; and

   g. Measures taken to address any evidence identified as a result of an inspection required under Part II F.

5. Amendments, modifications, or updates to the SWPPP shall be signed in accordance with Part III K.

C. Public Notification. Upon commencement of land disturbance, the operator shall post conspicuously a copy of the notice of coverage letter near the main entrance of the construction activity. For linear projects, the operator shall post the notice of coverage letter at a publicly accessible location near an active part of the construction project (e.g., where a pipeline crosses a public road). The operator shall maintain the posted information until termination of general permit coverage as specified in Part I F.

D. SWPPP availability.

1. Operators with day-to-day operational control over SWPPP implementation shall have a copy of the SWPPP available at a central location on-site for use by those identified as having responsibilities under the SWPPP whenever they are on the construction site.

2. The operator shall make the SWPPP and all amendments, modifications, and updates available upon request to the department, the VSMP authority, the EPA, the VESCP authority, local government officials, or the operator of a municipal separate storm sewer system receiving discharges from the construction activity. If an on-site location is unavailable to store the SWPPP when no personnel are present, notice of the SWPPP's location must be posted near the main entrance of the construction site.

3. The operator shall make the SWPPP available for public review in an electronic format or in hard copy. Information for public access to the SWPPP shall be posted and maintained in accordance with Part II C. If not provided electronically, public access to the SWPPP may be arranged upon request at a time and at a publicly accessible location convenient to the operator or his designee but shall be no less than once per month and shall be during normal business hours. Information not required to be contained within the SWPPP by this general permit is not required to be released.

E. SWPPP implementation. The operator shall implement the SWPPP and subsequent amendments, modifications, and updates from commencement of land disturbance until termination of general permit coverage as specified in Part I F.

1. All control measures must be properly maintained in effective operating condition in accordance with good engineering practices and, where applicable, manufacturer specifications. If a site inspection required by Part II F identifies a control measure that is not operating effectively, corrective action(s) shall be completed as soon as practicable, but no later than seven days after discovery or a longer period as established by the VSMP authority, to maintain the continued effectiveness of the control measures.

2. If site inspections required by Part II F identify an existing control measure that needs to be modified or if an additional control measure is necessary for any reason, implementation shall be completed prior to the next anticipated measurable storm event. If implementation prior to the next anticipated measurable storm event is impracticable, then alternative control measures shall be implemented as soon as practicable, but no later than seven days after discovery or a longer period as established by the VSMP authority.

F. SWPPP Inspections.

1. Personnel responsible for on-site and off-site inspections. Inspections required by this general permit shall be conducted by the qualified personnel identified by the operator in the SWPPP. The operator is responsible for insuring that the qualified personnel conduct the inspection.

2. Inspection schedule.

    a. Inspections shall be conducted at a frequency of:

(1) At least once every five business days; or

(2) At least once every 10 business days and no later than 48 hours following a measurable storm event. In the event that a measurable storm event occurs when there are more than 48 hours between business days, the inspection shall be conducted no later than the next business day.

b. Where areas have been temporarily stabilized or land-disturbing activities will be suspended due to continuous frozen ground conditions and stormwater discharges are unlikely, the inspection frequency may be reduced to once per month. If weather conditions (such as above freezing temperatures or rain or snow events) make discharges likely, the operator shall immediately resume the regular inspection frequency.

c. Representative inspections may be utilized for utility line installation, pipeline construction, or other similar linear construction activities provided that:

(1) Temporary or permanent soil stabilization has been installed and vehicle access may compromise the temporary or permanent soil stabilization and potentially cause additional land disturbance increasing the potential for erosion;

(2) Inspections occur on the same frequency as other construction activities;

(3) Control measures are inspected along the construction site 0.25 miles above and below each access point (i.e., where a roadway, undisturbed right-of-way, or other similar feature intersects the construction activity and access does not compromise temporary or permanent soil stabilization); and

(4) Inspection locations are provided in the report required by Part II F.

3. Inspection requirements.

a. As part of the inspection, the qualified personnel shall:

(1) Record the date and time of the inspection and when applicable the date and rainfall amount of the last measurable storm event;

(2) Record the information and a description of any discharges occurring at the time of the inspection;

(3) Record any land-disturbing activities that have occurred outside of the approved erosion and sediment control plan;

(4) Inspect the following for installation in accordance with the approved erosion and sediment control plan, identification of any maintenance needs, and evaluation of effectiveness in minimizing sediment discharge, including whether the control has been inappropriately or incorrectly used:

(a) All perimeter erosion and sediment controls, such as silt fence;

(b) Soil stockpiles, when applicable, and borrow areas for stabilization or sediment trapping measures;

(c) Completed earthen structures, such as dams, dikes, ditches, and diversions for stabilization;

(d) Cut and fill slopes;

(e) Sediment basins and traps, sediment barriers, and other measures installed to control sediment discharge from stormwater;

(f) Temporary or permanent channel, flume, or other slope drain structures installed to convey concentrated runoff down cut and fill slopes;

(g) Storm inlets that have been made operational to ensure that sediment laden stormwater does not enter without first being filtered or similarly treated; and

(h) Construction vehicle access routes that intersect or access paved roads for minimizing sediment tracking;

(5) Inspect areas that have reached final grade or that will remain dormant for more than 14 days for initiation of stabilization activities;

(6) Inspect areas that have reached final grade or that will remain dormant for more than 14 days for completion of stabilization activities within seven days of reaching grade or stopping work;

(7) Inspect for evidence that the approved erosion and sediment control plan, "agreement in lieu of a plan," or erosion and sediment control plan prepared in accordance with department-approved annual standards and specifications has not been properly implemented. This includes but is not limited to:

(a) Concentrated flows of stormwater in conveyances such as rills, rivulets or channels that have not been filtered, settled, or similarly treated prior to discharge, or evidence thereof;

(b) Sediment laden or turbid flows of stormwater that have not been filtered or settled to remove sediments prior to discharge;

(c) Sediment deposition in areas that drain to unprotected stormwater inlets or catch basins that discharge to surface waters. Inlets and catch basins with failing sediments controls due to improper installation, lack of maintenance, or inadequate design are considered unprotected;

(d) Sediment deposition on any property (including public and private streets) outside of the construction activity covered by this general permit;

(e) Required stabilization has not been initiated or completed on portions of the site;

(f) Sediment basins without adequate wet or dry storage volume or sediment basins that allow the discharge of stormwater from below the surface of the wet storage portion of the basin;

(g) Sediment traps without adequate wet or dry storage or sediment traps that allow the discharge of stormwater from below the surface of the wet storage portion of the trap; and

(h) Land disturbance outside of the approved area to be disturbed;

(8) Inspect pollutant generating activities identified in the pollution prevention plan for the proper implementation, maintenance and effectiveness of the procedures and practices;

(9) Identify any pollutant generating activities not identified in the pollution prevention plan; and

(10) Identify and document the presence of any evidence of the discharge of pollutants prohibited by this general permit.

4. Inspection report. Each inspection report shall include the following items:

   a. The date and time of the inspection and when applicable, the date and rainfall amount of the last measurable storm event;

   b. Summarized findings of the inspection;

   c. The location(s) of prohibited discharges;

   d. The location(s) of control measures that require maintenance;

   e. The location(s) of control measures that failed to operate as designed or proved inadequate or inappropriate for a particular location;

   f. The location(s) where any evidence identified under Part II F 3 a (7) exists;

   g. The location(s) where any additional control measure is needed that did not exist at the time of inspection;

   h. A list of corrective actions required (including any changes to the SWPPP that are necessary) as a result of the inspection or to maintain permit compliance;

   i. Documentation of any corrective actions required from a previous inspection that have not been implemented; and

   j. The date and signature of the qualified personnel and the operator or its duly authorized representative.

The inspection report and any actions taken in accordance with Part II must be retained by the operator as part of the SWPPP for at least three years from the date that general permit coverage expires or is terminated. The inspection report shall identify any incidents of noncompliance. Where an inspection report does not identify any incidents of noncompliance, the report shall contain a certification that the construction activity is in compliance with the SWPPP and this general permit. The report shall be signed in accordance with Part III K of this general permit.

G. Corrective actions.

1. The operator shall implement the corrective action(s) identified as a result of an inspection as soon as practicable but no later than seven days after discovery or a longer period as approved by the VSMP authority. If approval of a corrective action by a regulatory authority (e.g., VSMP authority, VESCP authority, or the department) is necessary, additional control measures shall be implemented to minimize pollutants in stormwater discharges until such approvals can be obtained.

2. The operator may be required to remove accumulated sediment deposits located outside of the construction activity covered by this general permit as soon as practicable in order to minimize environmental impacts. The operator shall notify the VSMP authority and the department as well as obtain all applicable federal, state, and local authorizations, approvals, and permits prior to the removal of sediments accumulated in surface waters including wetlands.

PART III

CONDITIONS APPLICABLE TO ALL VPDES PERMITS

NOTE: Discharge monitoring is not required for this general permit. If the operator chooses to monitor stormwater discharges or control measures, the operator must comply with the requirements of subsections A, B, and C, as appropriate.

A. Monitoring.

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitoring activity.

2. Monitoring shall be conducted according to procedures approved under 40 CFR Part 136 or alternative methods approved by the U.S. Environmental Protection Agency, unless other procedures have been specified in this general permit. Analyses performed according to test procedures approved under 40 CFR Part 136 shall be performed by an environmental laboratory certified under regulations adopted by the Department of General Services (1VAC30-45 or 1VAC30-46).

3. The operator shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals that will ensure accuracy of measurements.

B. Records.

1. Monitoring records and reports shall include:

   a. The date, exact place, and time of sampling or measurements;

   b. The individual(s) who performed the sampling or measurements;

   c. The date(s) and time(s) analyses were performed;

   d. The individual(s) who performed the analyses;

   e. The analytical techniques or methods used; and

   f. The results of such analyses.

2. The operator shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this general permit, and records of all data used to complete the registration statement for this general permit, for a period of at least three years from the date of the sample, measurement, report or request for coverage. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the operator, or as requested by the board.

C. Reporting monitoring results.

1. The operator shall update the SWPPP to include the results of the monitoring as may be performed in accordance with this general permit, unless another reporting schedule is specified elsewhere in this general permit.

2. Monitoring results shall be reported on a discharge monitoring report (DMR); on forms provided, approved or specified by the department; or in any format provided that the date, location, parameter, method, and result of the monitoring activity are included.

3. If the operator monitors any pollutant specifically addressed by this general permit more frequently than required by this general permit using test procedures approved under 40 CFR Part 136 or using other test procedures approved by the U.S. Environmental Protection Agency or using procedures specified in this general permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or reporting form specified by the department.

4. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this general permit.

D. Duty to provide information. The operator shall furnish, within a reasonable time, any information which the board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this general permit or to determine compliance with this general permit. The board, department, EPA, or VSMP authority may require the operator to furnish, upon request, such plans, specifications, and other pertinent information as may be necessary to determine the effect of the wastes from his discharge on the quality of surface waters, or such other information as may be necessary to accomplish the purposes of the CWA and the Virginia Stormwater Management Act. The operator shall also furnish to the board, department, EPA, or VSMP authority, upon request, copies of records required to be kept by this general permit.

E. Compliance schedule reports. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this general permit shall be submitted no later than 14 days following each schedule date.

F. Unauthorized stormwater discharges. Pursuant to § 62.1-44.5 of the Code of Virginia, except in compliance with a state permit issued by the department, it shall be unlawful to cause a stormwater discharge from a construction activity.

G. Reports of unauthorized discharges. Any operator who discharges or causes or allows a discharge of sewage, industrial waste, other wastes or any noxious or deleterious substance or a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, 40 CFR Part 302, or § 62.1-44.34:19 of the Code of Virginia that occurs during a 24-hour period into or upon surface waters or who discharges or causes or allows a discharge that may reasonably be expected to enter surface waters, shall notify the Department of Environmental Quality of the discharge immediately upon discovery of the discharge, but in no case later than within 24 hours after said discovery. A written report of the unauthorized discharge shall be submitted to the department and the VSMP authority within five days of discovery of the discharge. The written report shall contain:

1. A description of the nature and location of the discharge;

2. The cause of the discharge;

3. The date on which the discharge occurred;

4. The length of time that the discharge continued;

5. The volume of the discharge;

6. If the discharge is continuing, how long it is expected to continue;

7. If the discharge is continuing, what the expected total volume of the discharge will be; and

8. Any steps planned or taken to reduce, eliminate and prevent a recurrence of the present discharge or any future discharges not authorized by this general permit.

Discharges reportable to the department and the VSMP authority under the immediate reporting requirements of other regulations are exempted from this requirement.

H. Reports of unusual or extraordinary discharges. If any unusual or extraordinary discharge including a "bypass" or "upset," as defined herein, should occur from a facility and the discharge enters or could be expected to enter surface waters, the operator shall promptly notify, in no case later than within 24 hours, the department and the VSMP authority by telephone after the discovery of the discharge. This notification shall provide all available details of the incident, including any adverse effects on aquatic life and the known number of fish killed. The operator shall reduce the report to writing and shall submit it to the department and the VSMP authority within five days of discovery of the discharge in accordance with Part III I 2. Unusual and extraordinary discharges include but are not limited to any discharge resulting from:

1. Unusual spillage of materials resulting directly or indirectly from processing operations;

2. Breakdown of processing or accessory equipment;

3. Failure or taking out of service of some or all of the facilities; and

4. Flooding or other acts of nature.

I. Reports of noncompliance. The operator shall report any noncompliance which may adversely affect surface waters or may endanger public health.

1. An oral report to the department and the VSMP authority shall be provided within 24 hours from the time the operator becomes aware of the circumstances. The following shall be included as information that shall be reported within 24 hours under this subdivision:

   a. Any unanticipated bypass; and

   b. Any upset that causes a discharge to surface waters.

2. A written report shall be submitted within five days and shall contain:

   a. A description of the noncompliance and its cause;

   b. The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and

   c. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

   The department may waive the written report on a case-by-case basis for reports of noncompliance under Part III I if the oral report has been received within 24 hours and no adverse impact on surface waters has been reported.

3. The operator shall report all instances of noncompliance not reported under Part III I 1 or 2 in writing as part of the SWPPP. The reports shall contain the information listed in Part III I 2.

NOTE: The reports required in Part III G, H and I shall be made to the department and the VSMP authority. Reports may be made by telephone, email, or by fax. For reports outside normal working hours, leaving a recorded message shall fulfill the immediate reporting requirement. For emergencies, the Virginia Department of Emergency Management maintains a 24-hour telephone service at 1-800-468-8892.

4. Where the operator becomes aware of a failure to submit any relevant facts, or submittal of incorrect information in any report, including a registration statement, to the department or the VSMP authority, the operator shall promptly submit such facts or correct information.

J. Notice of planned changes.

1. The operator shall give notice to the department and the VSMP authority as soon as possible of any planned physical alterations or additions to the permitted facility or activity. Notice is required only when:

   a. The operator plans an alteration or addition to any building, structure, facility, or installation that may meet one of the criteria for determining whether a facility is a new source in 9VAC25-870-420;

   b. The operator plans an alteration or addition that would significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this general permit; or

2. The operator shall give advance notice to the department and VSMP authority of any planned changes in the permitted facility or activity, which may result in noncompliance with state permit requirements.

K. Signatory requirements.

1. Registration statement. All registration statements shall be signed as follows:

   a. For a corporation: by a responsible corporate officer. For the purpose of this chapter, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-making or decision-making functions for the corporation; or (ii) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for state permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

   b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

   c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this chapter, a principal executive officer of a public agency includes: (i) the chief executive officer of the agency or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

2. Reports, etc. All reports required by this general permit, including SWPPPs, and other information requested by the board or the department shall be signed by a person described in Part III K 1 or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described in Part III K 1;

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the operator. (A duly authorized

representative may thus be either a named individual or any individual occupying a named position); and

c. The signed and dated written authorization is included in the SWPPP. A copy must be provided to the department and VSMP authority, if requested.

3. Changes to authorization. If an authorization under Part III K 2 is no longer accurate because a different individual or position has responsibility for the overall operation of the construction activity, a new authorization satisfying the requirements of Part III K 2 shall be submitted to the VSMP authority as the administering entity for the board prior to or together with any reports or information to be signed by an authorized representative.

4. Certification. Any person signing a document under Part III K 1 or 2 shall make the following certification:

"I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

L. Duty to comply. The operator shall comply with all conditions of this general permit. Any state permit noncompliance constitutes a violation of the Virginia Stormwater Management Act and the Clean Water Act, except that noncompliance with certain provisions of this general permit may constitute a violation of the Virginia Stormwater Management Act but not the Clean Water Act. Permit noncompliance is grounds for enforcement action; for state permit termination, revocation and reissuance, or modification; or denial of a state permit renewal application.
The operator shall comply with effluent standards or prohibitions established under § 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if this general permit has not yet been modified to incorporate the requirement.

M. Duty to reapply. If the operator wishes to continue an activity regulated by this general permit after the expiration date of this general permit, the operator shall submit a new registration statement at least 90 days before the expiration date of the existing general permit, unless permission for a later date has been granted by the board. The board shall not grant permission for registration statements to be submitted later than the expiration date of the existing general permit.

N. Effect of a state permit. This general permit does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorize any injury to private property or invasion of personal rights, or any infringement of federal, state or local law or regulations.

O. State law. Nothing in this general permit shall be construed to preclude the institution of any legal action under, or relieve the operator from any responsibilities, liabilities, or penalties established pursuant to any other state law or regulation or under authority preserved by § 510 of the Clean Water Act. Except as provided in general permit conditions on "bypassing" (Part III U) and "upset" (Part III V), nothing in this general permit shall be construed to relieve the operator from civil and criminal penalties for noncompliance.

P. Oil and hazardous substance liability. Nothing in this general permit shall be construed to preclude the institution of any legal action or relieve the operator from any responsibilities, liabilities, or penalties to which the operator is or may be subject under §§ 62.1-44.34:14 through 62.1-44.34:23 of the State Water Control Law or § 311 of the Clean Water Act.

Q. Proper operation and maintenance. The operator shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances), which are installed or used by the operator to achieve compliance with the conditions of this general permit. Proper operation and maintenance also includes effective plant performance, adequate funding, adequate staffing, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems, which are installed by the operator only when the operation is necessary to achieve compliance with the conditions of this general permit.

R. Disposal of solids or sludges. Solids, sludges or other pollutants removed in the course of treatment or management of pollutants shall be disposed of in a manner so as to prevent any pollutant from such materials from entering surface waters and in compliance with all applicable state and federal laws and regulations.

S. Duty to mitigate. The operator shall take all steps to minimize or prevent any discharge in violation of this general permit that has a reasonable likelihood of adversely affecting human health or the environment.

T. Need to halt or reduce activity not a defense. It shall not be a defense for an operator in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this general permit.

U. Bypass.

1. "Bypass," as defined in 9VAC25-870-10, means the intentional diversion of waste streams from any portion of a treatment facility. The operator may allow any bypass to occur that does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to ensure efficient operation. These bypasses are not subject to the provisions of Part III U 2 and 3.

2. Notice.

    a. Anticipated bypass. If the operator knows in advance of the need for a bypass, the operator shall submit prior notice to the department, if possible at least 10 days before the date of the bypass.

    b. Unanticipated bypass. The operator shall submit notice of an unanticipated bypass as required in Part III I.

3. Prohibition of bypass.

    a. Except as provided in Part III U 1, bypass is prohibited, and the board or department may take enforcement action against an operator for bypass unless:

        (1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage. Severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production;

        (2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and

        (3) The operator submitted notices as required under Part III U 2.

b. The department may approve an anticipated bypass, after considering its adverse effects, if the department determines that it will meet the three conditions listed in Part III U 3 a.

V. Upset.

1. An "upset," as defined in 9VAC25-870-10, means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based state permit effluent limitations because of factors beyond the reasonable control of the operator. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

2. An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based state permit effluent limitations if the requirements of Part III V 4 are met. A determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is not a final administrative action subject to judicial review.

3. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

4. An operator who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that:

   a. An upset occurred and that the operator can identify the cause(s) of the upset;

   b. The permitted facility was at the time being properly operated;

   c. The operator submitted notice of the upset as required in Part III I; and

   d. The operator complied with any remedial measures required under Part III S.

5. In any enforcement proceeding, the operator seeking to establish the occurrence of an upset has the burden of proof.

W. Inspection and entry. The operator shall allow the department as the board's designee, the VSMP authority, EPA, or an authorized representative of either entity (including an authorized contractor), upon presentation of credentials and other documents as may be required by law to:

1. Enter upon the operator's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this general permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this general permit;

3. Inspect and photograph at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this general permit; and

4. Sample or monitor at reasonable times, for the purposes of ensuring state permit compliance or as otherwise authorized by the Clean Water Act or the Virginia Stormwater Management Act, any substances or parameters at any location.

For purposes of this section, the time for inspection shall be deemed reasonable during regular business hours, and whenever the facility is discharging. Nothing contained herein shall make an inspection unreasonable during an emergency.

X. State permit actions. State permits may be modified, revoked and reissued, or terminated for cause. The filing of a request by the operator for a state permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any state permit condition.

Y. Transfer of state permits.

1. State permits are not transferable to any person except after notice to the department. Except as provided in Part III Y 2, a state permit may be transferred by the operator to a new operator only if the state permit has been modified or revoked and reissued, or a minor modification made, to identify the new operator and incorporate such other requirements as may be necessary under the Virginia Stormwater Management Act and the Clean Water Act.

2. As an alternative to transfers under Part III Y 1, this state permit may be automatically transferred to a new operator if:

    a. The current operator notifies the department at least 30 days in advance of the proposed transfer of the title to the facility or property;

    b. The notice includes a written agreement between the existing and new operators containing a specific date for transfer of state permit responsibility, coverage, and liability between them; and

    c. The department does not notify the existing operator and the proposed new operator of its intent to modify or revoke and reissue the state permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in Part III Y 2 b.

3. For ongoing construction activity involving a change of operator, the new operator shall accept and maintain the existing SWPPP, or prepare and implement a new SWPPP prior to taking over operations at the site.

Z. Severability. The provisions of this general permit are severable, and if any provision of this general permit or the application of any provision of this state permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this general permit shall not be affected thereby.

DEFINITIONS

"Business day" means Monday through Friday excluding state holidays.

"Commencement of land disturbance" means the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities (e.g., stockpiling of fill material).

"Construction site" means the land where any land-disturbing activity is physically located or conducted, including any adjacent land used or preserved in connection with the land-disturbing activity.

"Final stabilization" means that one of the following situations has occurred:

1. All soil disturbing activities at the site have been completed and a permanent vegetative cover has been established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform (e.g., evenly distributed), mature enough to survive, and will inhibit erosion.

2. For individual lots in residential construction, final stabilization can occur by either:

    a. The homebuilder completing final stabilization as specified in subdivision 1 of this definition; or

    b. The homebuilder establishing temporary soil stabilization, including perimeter controls for an individual lot prior to occupation of the home by the homeowner, and informing the homeowner of the need for, and benefits of, final stabilization.

3. For construction projects on land used for agricultural purposes, final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to surface waters, and areas that are not being returned to their preconstruction agricultural use must meet the final stabilization criteria specified in subdivision 1 or 2 of this definition.

"Immediately" means as soon as practicable, but no later than the end of the next business day, following the day when the land-disturbing activities have temporarily or permanently ceased. In the context of this general permit, "immediately" is used to define the deadline for initiating stabilization measures.

"Impaired waters" means surface waters identified as impaired on the 2012 § 305(b)/303(d) Water Quality Assessment Integrated Report.

"Infeasible" means not technologically possible or not economically practicable and achievable in light of best industry practices.

"Initiation of stabilization activities" means:

1. Prepping the soil for vegetative or nonvegetative stabilization;

2. Applying mulch or other nonvegetative product to the exposed area;

3. Seeding or planting the exposed area;

4. Starting any of the above activities on a portion of the area to be stabilized, but not on the entire area; or

5. Finalizing arrangements to have the stabilization product fully installed in compliance with the applicable deadline for completing stabilization.

This list is not exhaustive.

"Measurable storm event" means a rainfall event producing 0.25 inches of rain or greater over 24 hours.

"Stabilized" means land that has been treated to withstand normal exposure to natural forces without incurring erosion damage.

APPENDIX 3

Record of Land Disturbance

& SWPPP Modifications (Major Revisions)

Major Revisions

Major revisions that exit the permitted LOD will be submitted to VADEQ for review and approval prior to implementation of the change. Major revisions include (but are not limited to) the following:

- **Reroutes;**
- **Proposed access road additions; and**
- **Proposed additional temporary workspace (ATWS) areas.**

The revision log documenting redline changes as well as the redline markup of ESC/SWM drawings will be located in each construction spread permit mailbox.

Record of Land Disturbance and SWPPP Modifications

The operator (or designee) shall update the SWPPP no later than seven days following any modification to its implementation. All modifications or updates to the SWPPP shall be noted and shall include the following items:

1. A record of dates when:
    a. Major grading activities occur;
    b. Construction activities temporarily or permanently cease on a portion of the site; and
    c. Stabilization measures are initiated;
2. Documentation of replaced or modified controls that have been used inappropriately or incorrectly and where modified as soon as possible;
3. Areas that have reached final stabilization and where no further SWPPP or inspection requirements apply;
4. All properties that are no longer under the legal control of the operator, and dates of which operator no longer had legal control;
5. The date of any prohibited discharges, the discharge volume released, and what actions were taken to minimize the impact of the release;
6. Measures taken to prevent the reoccurrence of any prohibited discharge; and
7. Measures taken to address any evidence identified as a result of an inspection required under Part II F.

By initialing a SWPPP modification below, you are making the certification found in Part III K of the Permit.

Action and Location	*Start Date / End Date*	*Initial*
Started mass clearing and grading in Section 1 of site.	*7/1/14 - 10/1/14*	*KG*
Installed perimeter controls in Sections 1-5.	*7/1/14*	*KG*
Started mass clearing and grading in Section 3 of site.	*8/13/14*	*KG*
Installed Sediment Basin #1	*8/3/14*	*JT*
Construction activity done in Section 1 – temporary stabilized. No further inspections needed.	*10/1/14*	*JT*
Temporarily stabilized stockpile in NE corner of site.	*10/12/14*	*DF*
Section 7 of project transferred legal control – as of: 10/15/14	*10/15/14*	*RH*
Replaced concrete washout near site trailer.	*11/28/14*	*RH*
Installed perimeter controls in Sections 4-5	*1/12/15*	*JG*

Record of Land Disturbance and SWPPP Modifications

The operator (or designee) shall update the SWPPP no later than seven days following any modification to its implementation. All modifications or updates to the SWPPP shall be noted and shall include the following items:

1. A record of dates when:
    a. Major grading activities occur;
    b. Construction activities temporarily or permanently cease on a portion of the site; and
    c. Stabilization measures are initiated;
2. Documentation of replaced or modified controls that have been used inappropriately or incorrectly and where modified as soon as possible;
3. Areas that have reached final stabilization and where no further SWPPP or inspection requirements apply;
4. All properties that are no longer under the legal control of the operator, and dates of which operator no longer had legal control;
5. The date of any prohibited discharges, the discharge volume released, and what actions were taken to minimize the impact of the release;
6. Measures taken to prevent the reoccurrence of any prohibited discharge; and
7. Measures taken to address any evidence identified as a result of an inspection required under Part II F.

By initialing a SWPPP modification below, you are making the certification found in Part III K of the Permit.

Action and Location	*Start Date / End Date*	*Initials*

Action and Location	*Start Date / End Date*	*Initial*

APPENDIX 4

Record of Site Inspections

Project Name: New School/111222 WSSI #: XXXXX.XX Date: 03/01/2017

Permittee: New School Public School Contractor: XYZ Contracting Time: 1:00 PM

Location: New Town, Virginia Weather: Sunny, 70's Weekly Rainfall (in.): 0.75"

Item #	Inspection Questions	N/A[1]	YES[2]	NO
1.	Have all denuded areas requiring temporary or permanent stabilization been stabilized?	☐	☒	☐
2.	Have disposal/borrow and soil stockpiles (on-site and off-site) been stabilized with seeding and/or protected with sediment trapping measures? Are off-site areas included in the E&S plans?	☐	☒	☐
3.	Does permanent vegetation provide adequate stabilization for completed project areas?	☒	☐	☐
4.	Have perimeter controls been constructed as a first step in land disturbing activities (includes clearing OR grubbing)?	☐	☒	☐
5.	Are perimeter and other erosion and sediment control structures and systems being maintained, inspected and repaired to ensure functionality?	☐	☐	☒
6.	Have earthen structures, such as dams, dikes, and diversions, been immediately stabilized?	☐	☒	☐
7.	Have sediment basins and traps been constructed according to plans, specifications, and/or standards?	☐	☒	☐
8.	Are finished cut and fill slopes adequately stabilized?	☒	☐	☐
9.	Is concentrated water flowing through adequate slope drains, flumes, or non-erodible channels on cut or fill slopes?	☐	☒	☐
10.	Do slope faces have drainage or protection from water seeps?	☒	☐	☐
11.	Do all operational storm sewer and culvert inlets have inlet protection in accordance with plans, specifications, and/or standards?	☐	☐	☒
12.	Are stormwater conveyance channels stabilized with channel lining and/or outlet protection?	☐	☒	☐
13.	Is in-stream construction conducted using measures to minimize channel damage?	☒	☐	☐
14.	Are temporary stream crossings of non-erodible material installed where construction equipment crosses?	☒	☐	☐
15.	Are all DEQ water quality permit requirements being adhered to?	☐	☒	☐
16.	Are material/equipment handling/storage areas clean and free of spills, leaks, or other deleterious materials and are related protective measures adequate?	☐	☐	☒
17.	Is re-stabilization of in-stream construction complete before leaving the area?	☒	☐	☐
18.	Are utility trenches stabilized properly according to the specifications?	☐	☒	☐
19.	Is effluent from dewatering operations being filtered (including in-stream structure dewatering)?	☐	☒	☐
20.	Are construction entrances adequately protected, being maintained, and paved roadways kept clean from soil and mud?	☐	☐	☒
21.	Have all temporary control structures that are no longer needed been removed and such areas been stabilized?	☒	☐	☐
22.	Are properties and waterways adjacent to development adequately protected from pollutant discharge, erosion, flooding, and sedimentation? Has encroachment outside of the project limits been prevented?	☐	☒	☐
23.	When necessary, are dust control measures being properly implemented?	☒	☐	☐
24.	Have all deficiencies from previous reports been addressed?	☐	☒	☐

1 – N/A: not applicable ; 2 – YES: All items related to contract requirements, plans, specifications, standards, and permits are being satisfied

If a box is checked 'NO' please see the attached sheet for issue of non-compliance and corrective action necessary to regain VPDES compliance.

This report was written by	Joe Inspector		03/01/2017
	Print Name	*Signature*	*Date*

Project Name: New School/111222 WSSI #: XXXXX.XX Date: 03/01/2017

Item # (See sheet 1)	Description of problem, location, and corrective action	Date corrected/ Initials
5	Silt fence needs to be cleaned out and repaired when sediment reaches half the height of the barrier.	
11	Inlet protection needs to be cleaned out and repaired when sediment reaches half the height of the barrier.	
16	Concrete washout must be contained within an impervious area where it can cure and dry preventing wash from contaminating surrounding soil.	
20	Sediment is being tracked onto roadway. Re-work construction entrance and sweep roadway as needed.	
*	Continue to monitor and maintain all E&S controls for proper function.	
	VSMP inspections occur every four business days, following the Commonwealth of Virginia holiday schedule.	
	Weather Underground - Station Name (Station ID) - XXXft. Elev. | Lat., Long.	

APPENDIX 5

Record of Contractor Certification

Contractor Certification

Contractors noted below have been trained in pollution prevention practices and are familiar with the procedures and information contained within this SWPPP.

Site: Mountain Valley Pipeline Project

SWPPP Measure	Company Name	Contact Name	Business Address	Phone Number
General Contractor				
General Contractor				
General Contractor				
E&S Controls				
Portable Toilets				
Trash Containers				
Concrete				

APPENDIX 6

Record of Inspector Certification

Inspector Certification

Site: Mountain Valley Pipeline Project

Name:	_____
Qualifications:	_____
Company:	_____
Telephone:	_____
Email:	_____

Name:	_____
Qualifications:	_____
Company:	_____
Telephone:	_____
Email:	_____

Name:	_____
Qualifications:	_____
Company:	_____
Telephone:	_____
Email:	_____

APPENDIX 7

Temporary BMP Location Tracking Table (Minor Revisions)

Minor field-approved revisions that do not increase the LOD or that will increase the effectiveness of ESC and SWM BMPs will be "redlined" on a set of plans that will remain on site for the duration of the Project to allow MVP and VADEQ to ensure compliance with the approved plan and applicable regulatory requirements. MVP will maintain a log documenting all red-line changes per construction spread. The log will be presented to the VADEQ Inspector during project inspections for signoff. Minor redline revisions include (but are not limited to) the following:

- Adjustment of BMP orientation to ensure proper function and protection of the adjacent resources;
- Implementation of additional measures to meet changing site conditions or to address areas of potential concern;
- Adjusting the location of the pipeline centerline within the permitted LOD;
- Adjusting/lengthening the Temporary Stone Construction Entrance to address weather conditions; and
- Additional reduction of LOD where necessary.

Temporary BMP Location Tracking

Each time a temporary BMP (concrete washout, porta-john, dumpsters, fuel storage, etc.) is relocated on site, the current location should be listed on this document.
*BMP locations may also be tracked on a site map/plan located with SWPPP

BMP (type)	Location	Date Moved

APPENDIX 8

E&S Control Plans (pending approval)

The E&S plan excerpts have not been included for Spread 8 since they are already included as part of the submission package.

The living SWPPP would include the General Set including Construction Sequence/E&S narrative, and the Erosion and Sediment Control Plan sheets.

APPENDIX 9

Record of Public Availability

Record of Public Viewing

Site: Mountain Valley Pipeline Project

Date Requested	Requested By	Location of Viewing	Date of Viewing	Comments	Initials

APPENDIX 10

Spill Prevention Control and

Countermeasure Plan (SPCC)

Spill Prevention, Control, and Countermeasure (SPCC) Plan
and
Unanticipated Discovery of Contamination Plan
for Construction Activities in Virginia

Submitted By:

Mountain Valley Pipeline, LLC
555 Southpointe Boulevard, Suite 200
Canonsburg, PA 15317

By means of this certification , this Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of 40 CFR §112.3(d)

Contents

Tables

Attachments

Acronyms and Abbreviations

A	acceptable
ABACT	anti-degradation best available combination of technologies
BMP	best management practice
CFR	Code of Federal Regulations
DEQ	Virginia Department of Environmental Quality
EC	Emergency Coordinator
EPA	U.S. Environmental Protection Agency
MVP	Mountain Valley Pipeline, LLC
ESCP	Erosion and Sediment Control Plan
HDD	Horizontally Directional Drilling
ID	Identification
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
Project	MVP Pipeline Project
ROW	right-of-way
SDS	Safety Data Sheet
SOP	standard operation procedure
SPCC	Spill Prevention Control and Countermeasures
SPRP	Spill Prevention and Response Plan
U	unacceptable

1.0 OVERVIEW

Mountain Valley Pipeline, LLC (MVP), a joint venture between EQT Midstream Partners, LP and affiliates of NextEra Energy, Inc.; Con Edison Gas Midstream LLC; WGL Holdings, Inc.; and RGC Midstream, LLC (collectively referred to as MVP), is seeking a Certificate of Public Convenience and Necessity (Certificate) from the Federal Energy Regulatory Commission (FERC) pursuant to Section 7(c) of the Natural Gas Act authorizing it to construct and operate the proposed Mountain Valley Pipeline Project (Project) located in 17 counties in West Virginia and Virginia. MVP plans to construct an approximately 303-mile, 42-inch-diameter natural gas pipeline to provide timely, cost-effective access to the growing demand for natural gas for use by local distribution companies, industrial users, and power generation in the Mid-Atlantic and southeastern markets, as well as potential markets in the Appalachian region. Construction is anticipated to begin in 2017 and conclude in the fourth quarter of 2018. Construction on National Forest System lands will occur in 2018.

The proposed pipeline will extend from the existing Equitrans, L.P. transmission system and other natural gas facilities in Wetzel County, West Virginia to Transcontinental Gas Pipe Line Company, LLC's (Transco) Zone 5 compressor station 165 in Pittsylvania County, Virginia. In addition to the pipeline, the Project will include approximately 171,600 horsepower of compression at three compressor stations currently planned along the route, as well as measurement, regulation, and other ancillary facilities required for the safe and reliable operation of the pipeline. The pipeline is designed to transport up to 2.0 million dekatherms per day of natural gas.

A 3.5-mile long segment of the Project will cross portions of the Jefferson National Forest (JNF) in Monroe County in southern West Virginia and in Giles, Craig, and Montgomery counties in southwestern Virginia. The JNF is managed by the U.S. Forest Service (USFS) of the U.S. Department of Agriculture. Another 60-foot segment of the Project will cross the Weston and Gauley Bridge Turnpike Trail (Weston and Gauley Turnpike) in Braxton County, West Virginia, which is administered by the U.S. Army Corps of Engineers (USACE). Approval to cross land managed by two or more federal agencies is the responsibility of the U.S. Department of the Interior, Bureau of Land Management (BLM) through issuance of a right-of-way grant. Project-wide construction environmental compliance will be the responsibility of the FERC. The USFS and USACE will also ensure compliance across lands managed or administered by those agencies. Because the majority of federal lands crossed are managed by the USFS, this plan focuses on the JNF, noting any additional or different requirements that are specific to the crossing of the Weston and Gauley Turnpike.

The USFS will be responsible for enforcement of the terms and conditions of the BLM's right-of-way grant on National Forest System lands during the term of the right-of-way grant for the Project. Compliance will be monitored on the JNF portion of this Project by the USFS Project Manager and the Authorized Officer's designated compliance monitors. USFS will have stop-work authority per terms outlined in the BLM right-of-way grant. USFS will also have stop-work authority if unsafe work conditions are encountered during construction.

The FERC will utilize a third-party Compliance Inspection Contractor (CIC) contracted to MVP to act on behalf of the agency to provide 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 (NHPA), the Endangered Species Act (ESA), and other applicable laws and regulations. The Project will adhere to all federal, state, and local permits. The CIC will coordinate with the USFS Project Manager and designated compliance monitors.

The Project has 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 Project.

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 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 2-1 to 2-4 below and will, depending on the specific circumstances of the planned construction activity, include the following:

- Nutrients, such as fertilizers 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, and acids for cleaning;
- Petroleum products, such as fuels and lubricants; and
- Other materials, including concrete wash from mixers and explosives.

The list must include oils and fuels, commercial chemicals, hazardous and nonhazardous wastes, and incompatible materials to be used or stored on site during construction.

TABLE 2-1
List of Oil and Fuel to be Used or Stored On-Site During Construction

Type	Quantity	Containment Method	Location
Notes: A Safety Data Sheet (SDS) for all hazardous substances listed in the above tables shall be provided by the contractor. All containers shall have secondary containment.			

TABLE 2-2
List of Commercial Chemicals to be Used or Stored On-Site during Construction

Type	Quantity	Containment Method	Location

Notes:
A SDS for all hazardous substances listed in the above tables shall be provided by the contractor. All containers shall have secondary containment.

TABLE 2-3
List of Hazardous and Nonhazardous Wastes to be Used or Stored On-Site during Construction

Type	Quantity	Containment Method	Location

Notes:
A SDS for all hazardous substances listed in the above tables shall be provided by the contractor. All containers shall have secondary containment.

TABLE 2-4
List of Incompatible Materials to be Used or Stored On-Site during Construction

Type	Quantity	Containment Method	Location

Notes:
A SDS for all hazardous substances listed in the above tables shall be provided by the contractor. All containers shall have 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 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 Code of Federal Regulations, 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

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: All containers shall have secondary containment.						

TABLE 2-5B
List of Large Spill Sources

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: All containers shall have 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 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 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 Waste Areas

A/U

- ☐ No litter in 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 MVP 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 MVP Chief Inspector, and the MVP Environmental Inspector or their designated representative on the job site. The MVP EC shall maintain training verification.

Prior to construction, all Project Chief and Environmental Inspectors 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 and the Preparedness, Prevention, and Contingency Plan. Regular training briefings shall be conducted on an as-required basis by the Contractor Superintendent and the MVP 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

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 exceeds 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 DEQ State Water Control Board within 24 hours in the following cases (Virginia Water Control Law, Article 11, 62.1-44.34:19):

- Spill or overfill 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:

- Only those tanks for fuel and material storage that meet MVP'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 is 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 (50 ppm or greater) storage tanks shall be double-walled or have secondary containment that will hold 200 percent of the tank capacity.
- Elevated tanks shall be a maximum of two feet above grade.
- 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 MVP's EC and the 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 an MVP yard and no immediate specific same service use is scheduled.
- If a tank contains hazardous material, then the MVP EC shall be contacted, and transportation shall follow the steps outlined in MVP's Environmental SOP regarding Waste Transportation.

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 MVP's Environmental SOPs; MVP EC shall 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, Tables 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 a MVP 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 MVP's Environmental SOPs regarding Waste Transportation.
- 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 3-2.
- All container storage and containment areas shall be used to store waste or products according to the guidelines described in MVP'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; MVP 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 Inspector 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, and this kit, at a minimum, must include the following:
  - 25 pounds of granular oil absorbent
  - Ten 48-inch x 3-inch oil socks
  - Five 17-inch x 17-inch oil pillows
  - One 10-inch x 4-inch oil boom
  - Twenty 24-inch x 24-inch x 3/8-inch oil mats
  - Garden-size, 6-millimeter polyethylene bags
  - Ten) pair of latex gloves
  - One 55-gallon polyethylene open-head drum

In addition, a smaller chemical response kit shall be available that contains the following:

- One bag of loose chemical pulp
- Two to three (2 to 3) 17-inch x 17-inch chemical pillows
- Two 48-inch x 3-inch chemical socks
- Five 18-inch x 18-inch x 3/8-inch absorbent mats
- Garden-size, 6-millimeter, polyethylene bags
- Ten pair of latex gloves
- One 30-gallon polyethylene open-head drum
- Hazardous waste 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 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 MVP 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, and repaired prior to returning to service. All inspections shall be documented on a daily leak report submitted to MVP.

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, 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 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 disposal. Container storage areas shall be maintained in a neat and orderly manner.

4.0 KARST AREA EROSION AND SEDIMENTATION CONTROL

The following discussion outlines erosion and sediment control (ESC) measures to support MVP construction in karst terrain. Karst terrain underlies portions of the proposed MVP route from West Virginia/Virginia State line into Roanoke County, Virginia. Karst terrain is a landscape formed from the dissolution of soluble rocks. It is characterized by underground drainage systems with sinkholes, dolines, and caves.

MVP completed a Karst Hazards Assessment that identifies karst features in the vicinity of the Project. MVP also completed a Karst Mitigation Plan that serves as a guidance document for protecting and mitigating karst features during MVP construction. Karst-specific ESC measures are a critical component for protecting karst features and local water bodies during construction and after land reclamation for post-pipeline installation.

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 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, the Project will not result in large swaths of impervious land, or large swaths of altered grade. The Project is primarily a relatively narrow linear subsurface construction project that will be regraded to pre-construction 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 practices will be supplemented with enhanced BMPs, and implemented by MVP and its contractors, to accomplish the following objectives:

- Minimize the volume of stormwater and other construction-related surface water run-off;
- 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 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 to karst features;
- Prevent blockage or filling of karst features;

- Do not construct artificial storm water structures within karst features;
- Prevent disposal of materials into a karst feature that will degrade the quality of water entering the subsurface through karst feature;
- Install double lines of sediment control fencing and straw bales upslope of a water body or karst feature;
- Stock pile 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);
- 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 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 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;

- Clay dams or breakers 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 project to guide responses to fires, explosions, releases of oils or hazardous waste to the air, land, or waters of the state regardless of the quantity involved in the incident. For unanticipated release of hydrostatic test waters, MVP shall utilize best management practices (BMPs), as described in the Erosion and Sediment Control Plan (E&SCP) as soon as possible after the release.

5.1 Responsibilities of MVP and Contractor Personnel

If notification is given that an evacuation is necessary, all personnel shall evacuate the construction area via the primary evacuation route (site-specific map with evacuation route to be attached for plant projects) 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 MVP 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 Emergency Coordinator for the Contractor. The Chief Inspector shall act as the Emergency Coordinator for MVP. The responsibilities of the Emergency Coordinator 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 MVP EC.

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 source, character, amount, and extent of release.
4. Determine if hazardous substances are involved.
5. Inform the MVP 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 MVP EC Responsibilities

The MVP Emergency Coordinator shall coordinate 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 MVP EC shall be responsible for the following:

1. Assess situation for potential threat to human health, 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 emergency area, if spilled material is flammable.
9. Minimize affected area 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 MVP Environmental SOPs.
12. Label and store containers in accordance with the MVP 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 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 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 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 an MVP representative notifies the municipal manager and/or mayor, as required.

5.3 Emergency Equipment

The construction site and r 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 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 oils booms or hay bales between the release area and the site boundary and downstream of 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 MVP's Environmental SOPs.
- Move drum to secure staging or storage area.
- Document and report clean-up activities of the MVP EC as soon as feasible.
- If environmentally sensitive resources (e.g., wetlands, waterbodies) exist in the area, ensure that BMPs as described in the ESCP are used to minimize impact to these resources.

5.4.2 Hazardous Substance Releases

- Ensure no immediate threat to surrounding landowners or 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 MVP's Environmental SOPs. (Note: Environmental SOP's 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 secure staging or storage area.
- Document and report activities to the MVP EC as soon as feasible.
- If environmentally sensitive resources (wetlands, waterbodies) exist in the area, then ensure that BMPs as described in the ESCP 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 environment.
- If environmentally sensitive resources (wetlands, waterbodies) exist in the area, then ensure that BMPs as described in the ESCP are used to minimize impacts to these resources.

5.5 Disposal of Contaminated Materials and/or Soils

- The Contractor shall work with the MVP 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 MVP EC.
- The Contractor is responsible for properly disposing of wastes generated during this project that is determined by the MVP EC to be nonhazardous and to contain PCBs less than 1 ppm; this includes obtaining applicable authorizations and registrations for waste disposal.
- The MVP 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. At no time shall hazardous waste be stored for more than 90 days or a waste containing PCBs with more than 50 ppm be stored for more than 30 days.

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. MVP shall be responsible if the spill is 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.
- MVP 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 spill resulted from their operations.
- The Contractor shall test and inventory reusable PPE prior to being placed back into service.

6.1 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	
Does facility comply with applicable regulations?	40 CFR Part 112	9 VAC 25-91	
Materials Storage and Handling			
Material and Waste Inventory	40 CFR Part 112	9 VAC 25-91[1]	Spill Plan (Section 3)Waste Management (Section 2)
Material Transport and Disposal	40 CFR Part 112	9 VAC 25-91[1]	Contingency Plan (Section 5)
Spill Prevention and Containment			
Emergency Response Contacts	40 CFR Part 112	9 VAC 25-91[1]	Spill Plan (Section 3)
Training	40 CFR Part 112	9 VAC 25-91[1]	
Security	40 CFR Part 112	9 VAC 25-91[1]	
Prevention and Preparedness	40 CFR Part 112	9 VAC 25-91[1]	
Facility Information	40 CFR Part 112	9 VAC 25-91[1]	
Facility Drainage and Routes of Flow	40 CFR Part 112	9 VAC 25-91[1]	
Inspections and Reporting			
Emergency Response Contacts	40 CFR Part 112	9 VAC 25-91[1]	Spill Plan (Section 3) Contingency Plan (Section 5)
Inspections, Tests, and Records	40 CFR Part 112	9 VAC 25-91[1]	
Discharge Reporting	40 CFR Part 112	9 VAC 25-91[1]	

Regulatory Compliance by Activity			
Activity Type	**Federal Regulation Citation**	**State Regulation Citation**	**Plan Section**
Spills and Response			
Emergency Procedures and Response	40 CFR Part 112	9 VAC 25-91[1]	Spill Plan (Section 3) Contingency Plan (Section 5)
Discharge Notification	40 CFR Part 112	9 VAC 25-91	
Clean-up	40 CFR Part 112	9 VAC 25-91[1]	
Wastewater Discharge			
Facility Drainage	40 CFR Part 112	9 VAC 25-91[1]	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 construction of the MVP Pipeline Project.

Consistent with this purpose, the objectives of this Plan are to protect the health and safety of 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 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 MVP environmental professionals and officials shall be notified of the potential contamination. It shall be the decision of the MVP environmental professional (TBD) to determine environmental agency or public official notification requirements. Primary points of contact are:

MVP: Megan Neylon, Environmental Permitting Supervisor, 724-873-3645

Virginia DEQ:VA Department of Emergency Management Watch Center, 800-468-8892USFS : Jefferson National Forest Supervisor, 540-265-5118

Stage 5 – Discovery Documentation Protocol

An appropriate MVP employee or designee will document the unanticipated contamination utilizing the attached Worksheet 1. Worksheet 1 includes instructions for the appropriate MVP employee or designee to record the site name, locations, and how suspected contamination was determined. The MVP 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 meeting (if appropriate) will be conducted among site personnel, MVP 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 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 MVP 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 – MVP 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. MVP 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 MVP 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 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:	Megan Neylon, Environmental Permitting Supervisor, 724-873-3645
Virginia DEQ:	Virginia Department of Emergency Management, 800-468-8892

Additional points of contact may be identified prior to construction

Appendix B
Key Emergency Contacts

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

		Contact Name	Phone Number
1.	**MVP Emergency Contacts**		
	MVP Emergency Coordinator (within 15 minutes of incident)	To be provided prior to construction	
2.	**Contractor Emergency Contact**		
	Contractor Emergency Coordinator	To be provided prior to construction	
3.	**Local Authorities (as necessary)**		
	State Police Local Police Local Fire Department Hospital Ambulance	To be provided prior to construction	
4.	**Environmental Agencies** Notification to be made by an MVP representative.		
	Virginia Department of Emergency Management Watch Center (800)-468-8892 (24 hours)		

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 MVP 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 _____

APPENDIX 11

Miscellaneous [i.e. Maps, Impaired Waters Fact Sheets, Jefferson National Forest Documents, etc.]

Exhibit 1A

MVP SWPPP - Spread 8
Vicinity Map

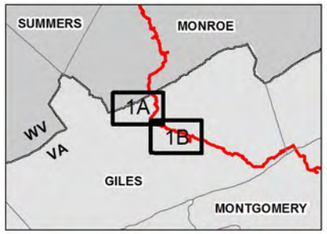
MVP Pipeline Limits of Disturbance

MVP Mile Marker

NORTH

0 0.25 0.5 Miles

Basemap Source: ESRI ArcGIS Online. World Street Map
Boundary Source: Tetra-Tech. May 15, 2017.



Mountain Valley PIPELINE

196.4 196.5 196.6 196.7 196.8 196.9 197.0 197.1 197.2 197.3 197.4 197.5 197.6 197.7 197.8 197.9 198.0 198.1 198.2 198.3 198.4 198.5 198.6 198.7 198.8 198.9 199.0 199.1 199.2 199.3 199.4 199.5 199.6 199.7 199.8 199.9 200.0 200.1 200.2 200.3 200.4 200.5

Matchline - Exhibit 1B

Appalachian Trl
CR 219/24
Crooked Creek
Rich Creek
Kimballton Branch
Curve Branch
WEST VIRGINIA
VIRGINIA
Clendennin Creek
Jefferson National Forest
Gravely Hill Rd
Aces Rd
Goldbond
Kimballton
Rogers Rd
Big Stony Creek Rd
Bridge Rd
CLC Plant 1 Ln
Norfolk Southern Railroad
Snidertown Rd
Nuttross Rd
Darnell Mountain Rd
635

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Matchline - Exhibit 1A

Exhibit 1B

MVP SWPPP - Spread 8
Vicinity Map

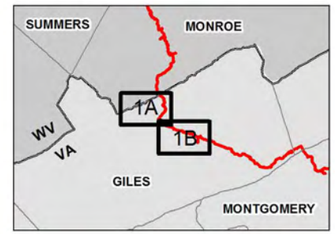
MVP Pipeline Limits of Disturbance

MVP Mile Marker

NORTH

0 0.25 0.5 Miles

Basemap Source: ESRI ArcGIS Online. World Street Map
Boundary Source: Tetra-Tech. May 15, 2017.



Mountain Valley PIPELINE

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Exhibit 2A

MVP SWPPP - Spread 8
USGS Quadrangle Map

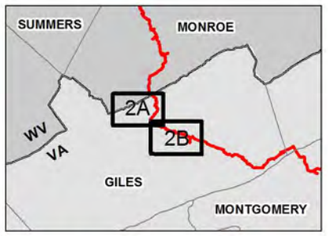
MVP Pipeline Limits of Disturbance

MVP Mile Marker

NORTH

0 0.25 0.5 Miles

Basemap Source: ESRI ArcGIS Online. US Topo.
Boundary Source: Tetra-Tech. May 15, 2017.



Mountain Valley PIPELINE

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Matchline - Exhibit 2A

Exhibit 2B

MVP SWPPP - Spread 8
USGS Quadrangle Map

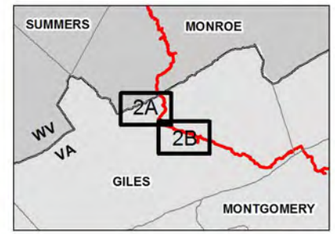
MVP Pipeline Limits of Disturbance

MVP Mile Marker

NORTH

0 0.25 0.5 Miles

Basemap Source: ESRI ArcGIS Online. US Topo.
Boundary Source: Tetra-Tech. May 15, 2017.



Mountain Valley PIPELINE

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Exhibit 3A

MVP SWPPP - Spread 8 - National Wetlands Inventory Map

MVP Pipeline Limits of Disturbance

MVP Mile Marker

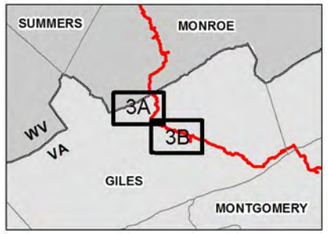
NWI Wetland Type

- Open Water
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Other Wetland

0 0.25 0.5 Miles

NORTH

NWI Data Updated: May 2016. www.fws.gov/wetlands/Data/State-Downloads.html
Boundary Source: Tetra-Tech. May 15, 2017.
Aerial: Summer 2016. NAIP



Mountain Valley PIPELINE

PUBHh
R4SBC
R5UBH
R2UBH
R3UBH
PUBHx
196.4
196.5
196.6
196.7
196.8
196.9
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199.4
199.5
199.6
199.7
199.8
199.9
200.0
200.1
200.2
200.3
200.4
200.5
Appalachian Trl
Pocahontas Rd
State Rte 641
Clendennin Rd
Gravely Hill Rd
State Rte 664
Gravely Hill Rd
Nargrove Rd
A.F.C Plant Ln
Matchline - Exhibit 3B

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Exhibit 3B

MVP SWPPP - Spread 8 - National Wetlands Inventory Map

- MVP Pipeline Limits of Disturbance
- MVP Mile Marker

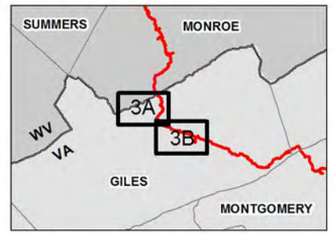
NWI Wetland Type

- Open Water
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Other Wetland

0 0.25 0.5 Miles

NORTH

NWI Data Updated: May 2016. www.fws.gov/wetlands/Data/State-Downloads.html
Boundary Source: Tetra-Tech. May 15, 2017.
Aerial: Summer 2016. NAIP



Mountain Valley PIPELINE

Matchline - Exhibit 3A

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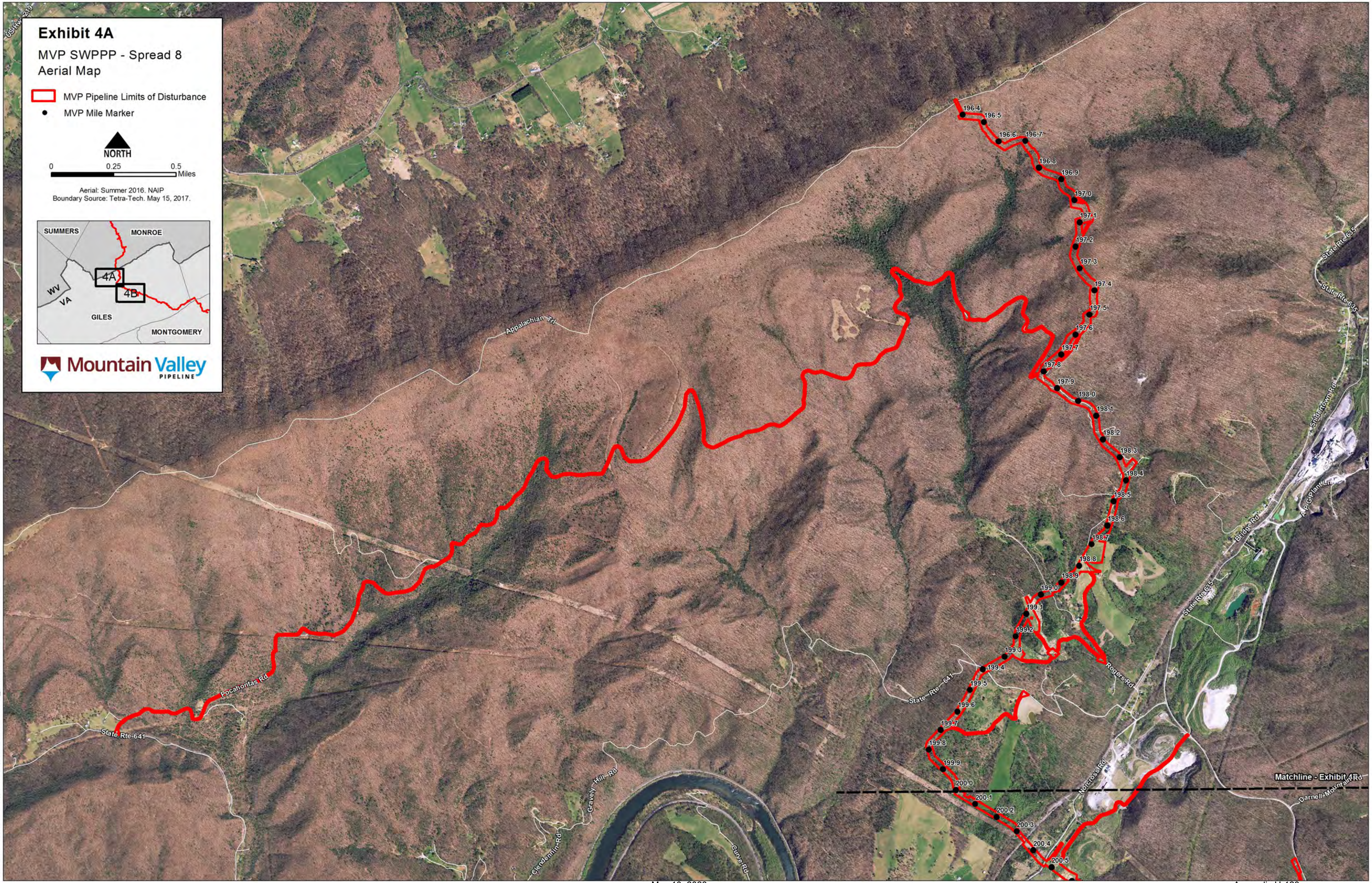


Exhibit 4A
MVP SWPPP - Spread 8
Aerial Map
MVP Pipeline Limits of Disturbance
MVP Mile Marker
NORTH
0
0.25
0.5
Miles
Aerial: Summer 2016. NAIP
Boundary Source: Tetra-Tech. May 15, 2017.
SUMMERS
MONROE
WV
VA
GILES
MONTGOMERY
4A
4B
Mountain Valley
PIPELINE
Appalachian Trl
Pocahontas Rd
State Rte 641
Rogers Rd
Matchline - Exhibit 4B

Exhibit 4B

MVP SWPPP - Spread 8
Aerial Map

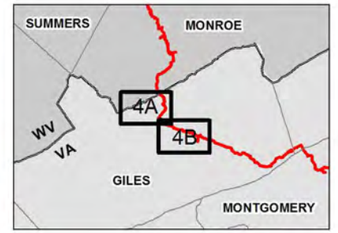
MVP Pipeline Limits of Disturbance

MVP Mile Marker

NORTH

0 0.25 0.5 Miles

Aerial: Summer 2016. NAIP.
Boundary Source: Tetra-Tech. May 15, 2017.



Mountain Valley PIPELINE

Matchline - Exhibit 1A

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Pipeline Route Soil Map Units and Descriptions in Virginia by Milepost

Milepost	Symbol	Soil Name	Farmland Type	Slope	Ground Cover	Ground Cover	Hydric	Drainage Class - Dominant Condition	Drainage Class - Wettest	Particle Size	Depth to Bedrock	Hydrologic Soil Group	Erodibility Factor (Whole Soil)	Erodibility Classification (Whole Soil)	Erodibility Factor (Rock Free)	Erodibility Classification (Rock Free)
196.4	23F	Lily sandy loam, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	loamy-skeletal	76	B	0.1	Low	0.15	Low
196.5	27F	Lily-Bailegap complex, very stony, 35 to 65 percent slopes	Not prime farmland	50	-	-	No	Well drained	Well drained	fine-loamy	91	B	0.05	Low	0.15	Low
196.6	27F	Lily-Bailegap complex, very stony, 35 to 65 percent slopes	Not prime farmland	50	-	-	No	Well drained	Well drained	fine-loamy	91	B	0.05	Low	0.15	Low
196.7	27F	Lily-Bailegap complex, very stony, 35 to 65 percent slopes	Not prime farmland	50	-	-	No	Well drained	Well drained	fine-loamy	91	B	0.05	Low	0.15	Low
196.8	27F	Lily-Bailegap complex, very stony, 35 to 65 percent slopes	Not prime farmland	50	-	-	No	Well drained	Well drained	fine-loamy	91	B	0.05	Low	0.15	Low
196.9	27F	Lily-Bailegap complex, very stony, 35 to 65 percent slopes	Not prime farmland	50	-	-	No	Well drained	Well drained	fine-loamy	91	B	0.05	Low	0.15	Low
197	27F	Lily-Bailegap complex, very stony, 35 to 65 percent slopes	Not prime farmland	50	-	-	No	Well drained	Well drained	fine-loamy	91	B	0.05	Low	0.15	Low
197.1	27F	Lily-Bailegap complex, very stony, 35 to 65 percent slopes	Not prime farmland	50	-	-	No	Well drained	Well drained	fine-loamy	91	B	0.05	Low	0.15	Low
197.2	27F	Lily-Bailegap complex, very stony, 35 to 65 percent slopes	Not prime farmland	50	-	-	No	Well drained	Well drained	fine-loamy	91	B	0.05	Low	0.15	Low
197.3	27E	Gilpin channery silt loam, 25 to 35 percent slopes, stony	Not prime farmland	30	-	-	No	Well drained	Well drained	fine-loamy	66	C	0.24	Moderate	0.49	High
197.4	27E	Gilpin channery silt loam, 25 to 35 percent slopes, stony	Not prime farmland	30	-	-	No	Well drained	Well drained	fine-loamy	66	C	0.24	Moderate	0.49	High
197.5	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
197.6	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
197.7	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
197.8	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
197.9	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
198	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
198.1	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
198.2	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
198.3	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
198.4	30D	Tankerville and Philomont soils, 15 to 25 percent slopes	Farmland of statewide importance	20	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
198.5	30D	Tankerville and Philomont soils, 15 to 25 percent slopes	Farmland of statewide importance	20	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
198.6	30D	Tankerville and Philomont soils, 15 to 25 percent slopes	Farmland of statewide importance	20	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
198.7	29C	Myersville-Catoctin very stony silt loams, 8 to 15 percent slopes	Not prime farmland	12	-	-	No	Well drained	Well drained	fine-loamy	76	B	0.32	Moderate	0.32	Moderate
198.8	30D	Tankerville and Philomont soils, 15 to 25 percent slopes	Farmland of statewide importance	20	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
198.9	30D	Tankerville and Philomont soils, 15 to 25 percent slopes	Farmland of statewide importance	20	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
199	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
199.1	30C	Tankerville and Philomont soils, 7 to 15 percent slopes	Farmland of statewide importance	11	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
199.2	30D	Tankerville and Philomont soils, 15 to 25 percent slopes	Farmland of statewide importance	20	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
199.3	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
199.4	15D	Frederick-Poplimento very gravelly loams, 15 to 25 percent slopes	Not prime farmland	20	-	-	No	Well drained	Well drained	fine	-	B	0.2	Low	0.37	High
199.5	15D	Frederick-Poplimento very gravelly loams, 15 to 25 percent slopes	Not prime farmland	20	-	-	No	Well drained	Well drained	fine	-	B	0.2	Low	0.37	High
199.6	15D	Frederick-Poplimento very gravelly loams, 15 to 25 percent slopes	Not prime farmland	20	-	-	No	Well drained	Well drained	fine	-	B	0.2	Low	0.37	High
199.7	15D	Frederick-Poplimento very gravelly loams, 15 to 25 percent slopes	Not prime farmland	20	-	-	No	Well drained	Well drained	fine	-	B	0.2	Low	0.37	High
199.8	15E	Frederick-Poplimento very gravelly loams, 25 to 60 percent slopes	Not prime farmland	43	-	-	No	Well drained	Well drained	fine	-	B	0.2	Low	0.37	High
199.9	15E	Frederick-Poplimento very gravelly loams, 25 to 60 percent slopes	Not prime farmland	43	-	-	No	Well drained	Well drained	fine	-	B	0.2	Low	0.37	High
200	15E	Frederick-Poplimento very gravelly loams, 25 to 60 percent slopes	Not prime farmland	43	-	-	No	Well drained	Well drained	fine	-	B	0.2	Low	0.37	High
200.1	15C	Frederick-Poplimento very gravelly loams, 7 to 15 percent slopes	Not prime farmland	11	-	-	No	Well drained	Well drained	fine	-	B	0.2	Low	0.37	High
200.2	15E	Frederick-Poplimento very gravelly loams, 25 to 60 percent slopes	Not prime farmland	43	-	-	No	Well drained	Well drained	fine	-	B	0.2	Low	0.37	High
200.3	9	Chagrin fine sandy loam, 0 to 2 percent slopes, frequently flooded	Not prime farmland	1	-	-	No	Well drained	Well drained	coarse-loamy	-	B	0.15	Low	0.15	Low
200.4	9	Chagrin fine sandy loam, 0 to 2 percent slopes, frequently flooded	Not prime farmland	1	-	-	No	Well drained	Well drained	coarse-loamy	-	B	0.15	Low	0.15	Low
200.5	1B	Berks channery silt loam, 3 to 8 percent slopes	Not prime farmland	6	-	-	No	Well drained	Well drained	fine-loamy	91	B	0.24	Moderate	0.24	Moderate
200.6	10B	Mongle silt loam, 0 to 7 percent slopes, frequently flooded	Not prime farmland	4	-	-	No	Somewhat poorly drained	Somewhat poorly drained	fine-loamy	-	B/D	0.28	Moderate	0.28	Moderate
200.7	6F	Berks-Weikert complex, 55 to 80 percent slopes	Not prime farmland	63	-	-	No	Well drained	Well drained	very-fine	41	B	0.37	High	0.37	High
200.8	6F	Berks-Weikert complex, 55 to 80 percent slopes	Not prime farmland	63	-	-	No	Well drained	Well drained	very-fine	41	B	0.37	High	0.37	High
200.9	4D	Barkers Crossroads-Nathalie complex, 15 to 25 percent slopes	Not prime farmland	20	-	-	No	Well drained	Well drained	fine	-	C	0.17	Low	0.17	Low
201	4E	Ashe loam, 25 to 45 percent slopes	Not prime farmland	35	-	-	No	Somewhat excessively drained	Somewhat excessively drained	fine	61	B	0.17	Low	0.17	Low
201.1	4E	Ashe loam, 25 to 45 percent slopes	Not prime farmland	35	-	-	No	Somewhat excessively drained	Somewhat excessively drained	fine	61	B	0.17	Low	0.17	Low
201.2	4D	Barkers Crossroads-Nathalie complex, 15 to 25 percent slopes	Not prime farmland	20	-	-	No	Well drained	Well drained	fine	-	C	0.17	Low	0.17	Low
201.3	4C	Buchanan very stony sandy loam, 7 to 15 percent slopes	Not prime farmland	11	-	-	No	Somewhat poorly drained	Somewhat poorly drained	fine	-	C/D	0.2	Low	0.2	Low
201.4	4C	Buchanan very stony sandy loam, 7 to 15 percent slopes	Not prime farmland	11	-	-	No	Somewhat poorly drained	Somewhat poorly drained	fine	-	C/D	0.2	Low	0.2	Low
201.5	4C	Buchanan very stony sandy loam, 7 to 15 percent slopes	Not prime farmland	11	-	-	No	Somewhat poorly drained	Somewhat poorly drained	fine	-	C/D	0.2	Low	0.2	Low
201.6	4E	Ashe loam, 25 to 45 percent slopes	Not prime farmland	35	-	-	No	Somewhat excessively drained	Somewhat excessively drained	fine	61	B	0.17	Low	0.17	Low
201.7	6F	Berks-Weikert complex, 55 to 80 percent slopes	Not prime farmland	63	-	-	No	Well drained	Well drained	very-fine	41	B	0.37	High	0.37	High
201.8	5D	Barkers Crossroads-Rhodhiss complex, 15 to 25 percent slopes	Not prime farmland	20	-	-	No	Well drained	Well drained	very-fine	-	C	0.37	High	0.37	High
201.9	5D	Barkers Crossroads-Rhodhiss complex, 15 to 25 percent slopes	Not prime farmland	20	-	-	No	Well drained	Well drained	very-fine	-	C	0.37	High	0.37	High
202	6F	Berks-Weikert complex, 55 to 80 percent slopes	Not prime farmland	63	-	-	No	Well drained	Well drained	very-fine	41	B	0.37	High	0.37	High
202.1	6F	Berks-Weikert complex, 55 to 80 percent slopes	Not prime farmland	63	-	-	No	Well drained	Well drained	very-fine	41	B	0.37	High	0.37	High
202.2	5C	Carbo silt loam, 7 to 15 percent slopes	Farmland of statewide importance	11	-	-	No	Well drained	Well drained	very-fine	66	D	0.37	High	0.37	High
202.3	30C	Tankerville and Philomont soils, 7 to 15 percent slopes	Farmland of statewide importance	11	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
202.4	6F	Berks-Weikert complex, 55 to 80 percent slopes	Not prime farmland	63	-	-	No	Well drained	Well drained	very-fine	41	B	0.37	High	0.37	High
202.5	11D	Chilhowie silty clay loam, 15 to 25 percent slopes	Not prime farmland	20	-	-	No	Well drained	Well drained	fine	89	D	0.32	Moderate	0.32	Moderate
202.6	11F	Dekalb-Alticrest complex, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Excessively drained	Well drained	fine	76	A	0.32	Moderate	0.32	Moderate
202.7	11D	Chilhowie silty clay loam, 15 to 25 percent slopes	Not prime farmland	20	-	-	No	Well drained	Well drained	fine	89	D	0.32	Moderate	0.32	Moderate
202.8	11D	Chilhowie silty clay loam, 15 to 25 percent slopes	Not prime farmland	20	-	-	No	Well drained	Well drained	fine	89	D	0.32	Moderate	0.32	Moderate
202.9	30C	Tankerville and Philomont soils, 7 to 15 percent slopes	Farmland of statewide importance	11	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
203	30D	Tankerville and Philomont soils, 15 to 25 percent slopes	Farmland of statewide importance	20	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
203.1	31C	Jefferson sandy loam, 7 to 15 percent slopes	Farmland of statewide importance	11	-	-	No	Well drained	Well drained	fine	-	A	0.37	High	0.37	High
203.2	30C	Tankerville and Philomont soils, 7 to 15 percent slopes	Farmland of statewide importance	11	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
203.3	30C	Tankerville and Philomont soils, 7 to 15 percent slopes	Farmland of statewide importance	11	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
203.4	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
203.5	30D	Tankerville and Philomont soils, 15 to 25 percent slopes	Farmland of statewide importance	20	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
203.6	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
203.7	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
203.8	30D	Tankerville and Philomont soils, 15 to 25 percent slopes	Farmland of statewide importance	20	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
203.9	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
204	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
204.1	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low
204.2	30C	Tankerville and Philomont soils, 7 to 15 percent slopes	Farmland of statewide importance	11	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
204.3	30C	Tankerville and Philomont soils, 7 to 15 percent slopes	Farmland of statewide importance	11	-	-	No	Well drained	Well drained	fine-loamy	89	B	0.1	Low	0.17	Low
204.4	11F	Dekalb-Alticrest complex, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Excessively drained	Well drained	fine	76	A	0.32	Moderate	0.32	Moderate

Pipeline Route Soil Map Units and Descriptions in Virginia by Milepost

Milepost	Symbol	Soil Name	Farmland Type	Slope	Ground Cover	Ground Cover	Hydric	Drainage Class - Dominant Condition	Drainage Class - Wettest	Particle Size	Depth to Bedrock	Hydrologic Soil Group	Erodibility Factor (Whole Soil)	Erodibility Classification (Whole Soil)	Erodibility Factor (Rock Free)	Erodibility Classification (Rock Free)
204.5	11F	Dekalb-Alticrest complex, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Excessively drained	Well drained	fine	76	A	0.32	Moderate	0.32	Moderate
204.6	11F	Dekalb-Alticrest complex, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Excessively drained	Well drained	fine	76	A	0.32	Moderate	0.32	Moderate
204.7	6F	Berks-Weikert complex, 55 to 80 percent slopes	Not prime farmland	63	-	-	No	Well drained	Well drained	very-fine	41	B	0.37	High	0.37	High
204.8	6F	Berks-Weikert complex, 55 to 80 percent slopes	Not prime farmland	63	-	-	No	Well drained	Well drained	very-fine	41	B	0.37	High	0.37	High
204.9	11F	Dekalb-Alticrest complex, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Excessively drained	Well drained	fine	76	A	0.32	Moderate	0.32	Moderate
205	11F	Dekalb-Alticrest complex, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Excessively drained	Well drained	fine	76	A	0.32	Moderate	0.32	Moderate
205.1	6F	Berks-Weikert complex, 55 to 80 percent slopes	Not prime farmland	63	-	-	No	Well drained	Well drained	very-fine	41	B	0.37	High	0.37	High
205.2	6F	Berks-Weikert complex, 55 to 80 percent slopes	Not prime farmland	63	-	-	No	Well drained	Well drained	very-fine	41	B	0.37	High	0.37	High
205.3	6F	Berks-Weikert complex, 55 to 80 percent slopes	Not prime farmland	63	-	-	No	Well drained	Well drained	very-fine	41	B	0.37	High	0.37	High
205.4	6F	Berks-Weikert complex, 55 to 80 percent slopes	Not prime farmland	63	-	-	No	Well drained	Well drained	very-fine	41	B	0.37	High	0.37	High
205.5	15E	Frederick-Poplimento very gravelly loams, 25 to 60 percent slopes	Not prime farmland	43	-	-	No	Well drained	Well drained	fine	-	B	0.2	Low	0.37	High
205.6	15E	Frederick-Poplimento very gravelly loams, 25 to 60 percent slopes	Not prime farmland	43	-	-	No	Well drained	Well drained	fine	-	B	0.2	Low	0.37	High
205.7	15D	Frederick-Poplimento very gravelly loams, 15 to 25 percent slopes	Not prime farmland	20	-	-	No	Well drained	Well drained	fine	-	B	0.2	Low	0.37	High
205.8	30F	Macove channery silt loam, cool, 35 to 55 percent slopes, very stony	Not prime farmland	45	-	-	No	Well drained	Well drained	fine-loamy	-	A	0.1	Low	0.17	Low

2014 Impaired Waters

Category 4 & 5 by Impaired Area ID*

New River Basin

Cause Group Code: N22R-02-BAC - Stroubles Creek

Location:	The upstream end is at the Duck Pond dam on the southwest end of the VPI&SU campus on the Blacksburg Quad. The downstream end is at the Walls Branch mouth on Stroubles Creek.
City/County	Montgomery Co.
Use(s):	Recreation
Cause(s) / VA Category:	Escherichia coli / 5A

Fecal coliform (FC) bacteria exceedances of the former 1000 cfu/100 ml WQS instantaneous criterion in 2002 cause impairment of the Recreational Use. Three of 23 observations exceed the former criterion at station 9-STE002.41
Rt. 705 Bridge (Coal Hollow Road). The 2004 IR at 9-STE002.41 records four exceedances from 35 samples in excess of the current 400 cfu/100 ml WQS instantaneous criterion. Escherichia coli (E.coli) bacteria replaced fecal coliform (FC) in 2006 as the indicator as required by Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters]. 2008 results find E.coli exceedances at 9-STE002.41 are three of 31 samples and resulted in 2.11 miles delisted with the 2008 IR. This 2.11 mile delisted portion (partial - length) returned with the 2010 303(d) Listing.

9-STE002.41- (Rt. 705 Bridge- Coal Hollow Road) Twelve observations of escherichia coli (E.coli) exceed the 235 cfu/100 ml instantaneous criterion from 36 total samples in 2014. Values in excess of the instantaneous criterion range from 250 to greater than 2000 cfu/100 ml. The 2012 data window finds eight of 36 observations exceeding the 235 cfu/100 ml instantaneous criterion. Exceeding values range from 280 to greater than 2000 cfu/100 ml. 2010 E.coli samples find eight exceed the 235 cfu/100 ml instantaneous criterion from a total of 32 samples with the same range of exceedance.

9-STE007.29 (Rt. 657 Bridge below old B'Burg STP) Escherichia coli (E. coli) samples find eight exceed the 235 cfu/100 ml instantaneous criterion from a total of 24 samples. Exceeding values range from 280 to greater than 2000 cfu/100 ml within the 2014 data window. The 2012 IR reports eight E.coli samples exceed the instantaneous criterion from a total of 33. Exceeding values range from 280 to greater than 2000 cfu/100 ml. 2010 results find eight exceed from a total of 32 samples with the same range of exceedance as 2012. 2008 E.coli results exceed in five of 25 samples. The 2008 exceedance range is from 300 to greater than 2000 cfu/100 ml. 2006 E.coli samples reveal five exceed the instantaneous criterion from a total of 16. Exceeding values range from 490 to greater than 5000 cfu/100 ml.

Assessment Unit	Water name	Location Description	Cause Category	Cause Name	Cycle First Listed	TMDL Schedule	Size
VAW-N22R_STE03A00	Stroubles Creek	These mainstem waters extend from the Slate Branch mouth on Stroubles Creek upstream to the mouth of Walls Branch (NE59).	5A	Escherichia coli	2010	2014	2.11
VAW-N22R_STE04A00	Stroubles Creek	These mainstem waters extend from the Walls Branch mouth upstream to the Duck Pond located on the VPI&SU Campus (NE59).	5A	Escherichia coli	2006	2014	5.08

Stroubles Creek

Impaired area ID: VAW-N22R-01

Recreation

	Estuary (sq. miles)	Reservoir (acres)	River (miles)
Escherichia coli / 5A Total impaired size by water type:			7.19

Sources:

- Discharges from Municipal Separate Storm Sewer Systems (MS4)
- Livestock (Grazing or Feeding Operations)
- Municipal (Urbanized High Density Area)
- Unspecified Domestic Waste
- Wastes from Pets
- Wet Weather Discharges (Non-Point Source)
- Wildlife Other than Waterfowl

* Narrative descriptions, location and city/county describe the entire extent of the impairment. Sizes may not represent the total size of the impairment.

2014 Impaired Waters

Category 4 & 5 by Impaired Area ID*

New River Basin

Cause Group Code: N22R-03-BAC - Back Creek

Location:	The waters extend from 0.70 miles below the Rt. 636 Bridge crossing downstream to Back Creek's mouth on the New River.
City/County	Pulaski Co.
Use(s):	Recreation
Cause(s) / VA Category:	Escherichia coli / 4A

The 1996 303(d) Listed Back Creek Bacteria Total Maximum Daily Load (TMDL) is U.S. EPA approved on 6/21/2004 [Fed ID 24564] and SWCB approval on 12/02/2004. The Bacteria/Benthic Implementation Plan (IP) is SWCB approved 7/31/2008 (formerly VAW-N22R-03). 1996 fecal coliform (FC) exceedances are found in seven of seven observations at 9-BCK009.47; 2002 records 17 of 23 samples exceeding the former fecal coliform bacteria instantaneous criterion of 1000 cfu/100 ml. The 2004 Integrated Report (IR) records 19 of 21 samples exceeding the former WQS fecal coliform bacteria instantaneous criterion of 400 cfu/100 ml at 9-BCK009.47. The excursions range from 900 to >8000 cfu/100 ml. Escherichia coli (E.coli) bacteria replaced fecal coliform in 2006 as the indicator as required by Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters]. The waters remain impaired for 17.53 miles with the 2014 Assessment.

9-BCK015.98 (Rt. 636 Bridge, Black Hollow Road) There are no additional data beyond the 2012 assessment where escherichia coli (E.coli) samples exceed the WQS instantaneous criterion of 235 cfu/100 ml in 24 of 36 total samples. Values in excess of the criterion range from 300 to greater than 2000 cfu/100 ml. 2010 E.coli samples exceed the instantaneous criterion in 25 of 35 samples. Values in excess of the criterion range from 300 to greater than 2000 cfu/100 ml. The 2008 assessment finds E.coli exceeds the instantaneous criterion in 19 of 26 samples. Values in excess of the criterion range from 250 to greater than 2000 cfu/100 ml. In 2006 E.coli samples exceed the instantaneous criterion in 11 of 14 samples with the same exceedance range.

9-BCK009.47 (Rt. 100 Bridge) There are no additional data beyond the 2012 Integrated Report (IR) where E.coli exceeds the 235 cfu/100 ml criterion in 34 of 36 samples. The range of exceedance is from 320 to greater than 2000 cfu/100 ml. 2010 E. coli exceedances of the instantaneous criterion are found in 39 of 42 samples. The range of exceeding values is from 310 cfu/100 ml to 18,000. E.coli exceeds the instantaneous criterion in 32 of 35 samples in 2008. The range of exceeding values is from 310 cfu/100 ml to 18,000. Two of two geometric mean calculations exceed the 126 cfu/100 ml criterion based on the former WQS frequency of collection.. The 2006 assessment found E.coli exceeds the instantaneous criterion in 20 of 21 samples with the same exceedance range.

9-BCK000.74 (Rt. 600 Bridge) There are no additional data beyond the 2012 IR where 20 of 36 E.coli exceedances occur ranging from 250 to greater than 2000 cfu/100 ml. E.coli exceedances are found in 29 of 43 samples within the 2010 data window. Exceedances range from 250 cfu/100 ml to 9000. The 2008 assessment finds E.coli exceeds the instantaneous criterion in 23 of 36 samples with exceedances ranging from 290 cfu/100 ml to greater than 2000. Three of three geometric mean calculations exceed the 126 cfu/100 ml criterion based on the former WQS frequency of collection. The exceedance range in 2006 is the same as 2008 where E.coli exceeds in 15 of 22 samples.

Assessment Unit	Water name	Location Description	Cause Category	Cause Name	Cycle First Listed	TMDL Schedule	Size
VAW-N22R_BCK01A00	Back Creek	Back Creek mainstem waters from the mouth of Shuffle Branch downstream to Back Creek's mouth on the New River (NE61).	4A	Escherichia coli	2006	2010	5.76
VAW-N22R_BCK02A08	Back Creek	Back Creek from 0.70 miles downstream of the Rt. 636 crossing on downstream to the confluence of Shuffle Branch (NE61).	4A	Escherichia coli	2006	2010	11.77

Back Creek

Impaired area ID: VAW-N22R-01

Recreation

	Estuary (sq. miles)	Reservoir (acres)	River (miles)
Escherichia coli / 4A Total impaired size by water type:			17.53

Sources:

- Livestock (Grazing or Feeding Operations)
- On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
- Unspecified Domestic Waste
- Wastes from Pets
- Wet Weather Discharges (Non-Point Source)
- Wildlife Other than Waterfowl

* Narrative descriptions, location and city/county describe the entire extent of the impairment. Sizes may not represent the total size of the impairment.

2014 Impaired Waters

Category 4 & 5 by Impaired Area ID*

New River Basin

Cause Group Code: N29R-01-PCB - New River, Reed Creek, Claytor Lake, Peak Creek, Stony Creek and Walker Creek

Location:	The impairment begins at the I-77 bridge crossing the New River and extends downstream to the VA/WVA State Line and includes the tributaries Peak Creek and Reed Creek as described below.
City/County	Giles Co., Montgomery Co., Pulaski Co., Radford City, Wythe Co.
Use(s):	Fish Consumption
Cause(s) / VA Category:	PCB in Fish Tissue / 5A

The Virginia Department of Health (VDH) issued a fish consumption advisory on August 6, 2001 for polychlorinated biphenyls (PCBs) for the lower portion of the New River (Rt. 114 Bridge downstream to the VA / WVA State Line - 52.0 miles) based on fish tissue collections from Carp. An Advisory extension to Claytor dam was issued 8/06/2003 (11.47 miles) recommends that no carp be consumed in these waters and no more than two meals per month of flathead and channel catfish. The VDH PCB Fish Consumption Advisory was further extended upstream on the New River (13 miles) to the I-77 Bridge to include the lower portions of Peak Creek (4.02 miles), Reed Creek (16.35 miles) and Claytor Lake (4,287 acres) on 12/02/2004. The VDH advises consumption should not exceed two meals per month for carp and smallmouth bass. Stony Creek is a 2010 Integrated Report (IR) addition to the original 2002 303(d) Listing. The VDH level of concern is 50 parts per billion (ppb) in fish tissue.

Water column data from 2010 thru 2012 are listed below where excursions of the WQS water column criterion of 640 pg/L are contravened causing an Observed Effect (OE) or 303(d) Listing for 'PCBs in Water Column'. Water column data collection is in support of TMDL development for PCBs in the New River drainage. Sample collections are made in both wet weather (WW) and dry weather (DW) conditions.

2012 Fish tissue and water column data follow reporting exceedances of the WQS based 20 ppb fish tissue value (TV) (VDH Lower Level of Concern 50 ppb). And excursions of the WQS water column criterion of 640 pg/L. Fish tissue data are in addition to previous years collections. Fish tissue data are reviewed by the VDH in making an advisory determination. A complete listing of fish tissue collection sites and associated fish tissue data are available at http://www.deq.virginia.gov. A more detailed presentation of the data can also be found using an interactive mapping application at http://www.deq.virginia.gov. The VDH Advisory information is also available via the web at http://www.vdh.virginia.gov/Epidemiology/PublicHealthToxicology/Advisories/.

9-RDC009.00 (Near Rt. 619 at Grahams Forge) 2012 two species analyzed - Carp exceeds WQS TV of 20 ppb (5 fish composite [62.6 - 69.4 cm] at 68.24 ppb. Remaining species analyzed Smallmouth Bass (5 fish composite [21.8 - 26.6 cm] at 3.04 ppb.

9-NEW098.32 (Rt. 672 Bridge, Lighthouse) 2012 four species analyzed - Channel Catfish exceeds WQS TV of 20 ppb; (2 fish composite (70.5 - 71.5 cm) at 65.15 ppb. Remaining species analyzed Largemouth Bass (5 fish composite [34.5 - 43.1]) at 7.76 ppb; Spotted Bass (5 fish composite [34.2 - 38.2 cm]) at 11.00 ppb; and Carp (3 fish composite [45.8 - 56.5]) at 6.04 ppb.

9-PKC007.82 (Route 99 Bridge) 2012 three species analyzed - Stoneroller exceeds WQS criterion of 20 ppb (15 fish comp. [14.3 - 16.0 cm] at 33.18 ppb. Remaining species analyzed Rock Bass (5 fish comp. [16.7 - 18.6 cm]); at 10.49 ppb) and Redbreast Sunfish (5 fish comp. [14.3 - 18.1 cm]; at 3.01 ppb).

9-PKC004.65 (Rt. 100 Bridge) 2012 five species analyzed. Channel catfish exceeds WQS criterion of 20 ppb (2 fish composite [63.1 - 69.0 cm] at 33.15 ppb. Remaining species analyzed Largemouth Bass (5 fish composite [33.4 - 40.8 cm]; @2.68 ppb), Carp 2 sizes (4 fish composite [54.6 - 62.0 cm]; @2.32 ppb) and (4 fish composite [54.6 - 62.0 cm]; @9.16 ppb) and Smallmouth Bass (3 fish composite [35.3 - 42.6 cm]; @6.90 ppb).

9-NEW088.86 (New River Claytor Lake at Dam) 2012 six species analyzed - Flathead Catfish exceeds WQS criterion of 20 ppb (2 fish composite [83.0 - 87.5 cm]) at 86.67 ppb. Remaining species analyzed Carp (4 fish composite [56.5 - 67.0 cm] at 2.05 ppb; Channel Catfish (1 fish [58.8 cm]) at 7.43 ppb; Largemouth Bass (5 fish composite [32.5 - 34.5 cm] at 0.36 ppb; Smallmouth Bass (4 fish composite [27.0 - 32.2 cm] at 0.88 ppb and Spotted Bass (3 fish composite [28.8 - 36.8 cm] at 0.00 ppb.

9-NEW085.94 (New River downstream of Claytor Dam) 2012 two species analyzed - Flathead Catfish exceeds WQS criterion of 20 ppb (5 fish composite [57.5 - 70.3 cm]) at 33.74 ppb. Remaining species analyzed Carp (5 fish composite [62.6 - 81.0 cm] at 11.27 ppb.

9-NEW081.72- (Route 11 Bridge - at Radford) 2010 water column PCB WQS criterion of 640 pg/L: Dry Weather (DW) 320 pg/L - 'FS'; Wet Weather (WW) exceeds at 4,739- 'OE'.

9-NEW079.19 (New River below Radford University) 2012 one species two exceeding composites analyzed - Carp exceeds WQS criterion of 20 ppb (2 fish composite [67.5 - 76.5 cm] at 53.28 ppb and Carp exceeding (2 fish composite [76.8 - 83.6 cm] at 94.85 ppb.

9-NEW066.90 (New River at Whitethorne) 2012 one species analyzed exceeds WQS criterion of 20 ppb Carp (1 fish [72.0 cm] at 125.58 ppb.

9-WLK004.34 (Route 622 Bridge - Giles Co.) Water column samples find two excursions of the WQS criterion of 640 pg/L. 2010 Wet Weather (WW) at 1,706 pg/L and 2011 WW at 649 pg/L.

9-NEW050.70 (New River near Pembroke) 2012 three species analyzed Carp exceeds WQS criterion of 20 ppb (2 fish composite [67.5 - 71.6 cm] at 419.87 ppb and Channel Catfish (1 fish [58.1 cm] at 23.26 ppb. Remaining species analyzed Flathead Catfish (1 fish [51.4 cm] at 9.60 ppb.

9-NEW038.71 (New River below Celeanse) 2012 two species analyzed - Each of the following exceed the WQS criterion of 20 ppb. Carp (2 fish composite [68.1 - 69.0 cm] at 355.63 ppb and Flathead Catfish (1 fish [56.0 cm] at 25.39 ppb. 2010 water column PCB DW- 129 pg/L- 'FS; Wet 784 pg/L- 'OE' and
2011 water column PCB Wet- 222 pg/L- 'FS'

9-NEW030.15 (Route 460 Bridge at Glen Lyn) 2012 one species analyzed - Each of the following exceed the WQS criterion of 20 ppb. Carp 1 (1 fish [85.0 cm] at 234.01 ppb; Carp 2 (2 fish composite [72.5 - 74.8 cm]) at 448.15 ppb.

9-NEW031.00 (Above Glen Lyn) 2010 water column PCB DW- 66 pg/L- 'FS'; WW- 841 pg/L- 'OE'.

9-NEW028.95 (New River below Glen Lyn) 2010 water column PCB WW- 710 pg/L- 'OE'. 2011 water column PCB DW- 110 pg/L- 'FS'; WW- 400 pg/l- 'FS'.

Assessment Unit	Water name	Location Description	Cause Category	Cause Name	Cycle First Listed	TMDL Schedule	Size
VAW-N22R_NEW01A00	New River	The New River mainstem from the confluence of Back Creek downstream to the Watershed Boundary at the Montgomery / Giles County Line (NE62).	5A	PCB in Fish Tissue	2002	2014	3.44
VAW-N22R_NEW02A00	New River	New River mainstem from the Radford Army Arsenal Plant downstream intake near Whitethorne downstream to the confluence of Back Creek (NE62).	5A	PCB in Fish Tissue	2002	2014	2.86
VAW-N22R_NEW02B14	New River	New River mainstem from the mouth of Toms Creek downstream to the RAAP downstream intake (NE62).	5A	PCB in Fish Tissue	2002	2014	0.51
VAW-N22R_NEW03A00	New River	New River mainstem from the confluence of Stroubles Creek downstream to the mouth of Toms Creek (NE59).	5A	PCB in Fish Tissue	2002	2014	4.09
VAW-N22R_NEW04A00	New River	New River mainstem from the Radford Army Arsenal Plant upstream intake/Pepper's Ferry Region POTW outfall downstream to the confluence of Stroubles Creek (NE59).	5A	PCB in Fish Tissue	2002	2014	2.32
VAW-N22R_NEW05A00	New River	New River mainstem from the Blacksburg /Christiansburg /VPI Authority intake at Rt. 114 downstream to the Radford Army Arsenal Plant upstream intake / Pepper's Ferry Regional POTW outfall (NE59).	5A	PCB in Fish Tissue	2002	2014	1.76
VAW-N22R_NEW06A00	New River	New River mainstem from the Watershed Boundary at the Crab Creek confluence downstream to the Blacksburg /Christiansburg /VPI Authority intake (NE59).	5A	PCB in Fish Tissue	2006	2018	1.72
VAW-N23R_NEW01A00	New River	New River mainstem from the Giles/Montgomery County Line downstream to the confluence of Sinking Creek (NE63).	5A	PCB in Fish Tissue	2002	2014	5.47

New River, Reed Creek, Claytor Lake, Peak Creek, Stony Creek and Walker Creek

	Estuary (sq. miles)	Reservoir (acres)	River (miles)
Impaired area ID: VAW-N22R-01			
PCB in Fish Tissue / 5A			
Total impaired size by water type:			22.17

Fish Consumption

Sources:

- Source Unknown

* Narrative descriptions, location and city/county describe the entire extent of the impairment. Sizes may not represent the total size of the impairment.

2014 Impaired Waters

Category 4 & 5 by Impaired Area ID*

New River Basin

Cause Group Code: N22R-04-TEMP - Toms Creek

Location:	Toms Creek mainstem waters just below the Poverty Creek confluence upstream to its headwaters.
City/County	Montgomery Co.
Use(s):	Aquatic Life
Cause(s) / VA Category:	Temperature, water / 5C

The initial 2008 5.71 mile impairment is extends upstream 6.13 miles (2012) and downstream 4.56 miles (2014) with data provided by the National Committee for the New River (NCNR). The Aquatic Life Use is impaired for a total of 16.40 miles based on the initial 2008 temperature exceedances and 2012 / 2014 Citizen temperature measurements of the Class V 21°C stockable trout water criterion.

9TOM-1-NCNR (Off Glade Rd. at Heritage Park Trail Lv. 3) Seven temperature measurements exceed the Class V 21°C criterion ranging from at 21.5°C to 26.1°C from 32 measurements within the 2014 data window. Excursions occur during the summer months Lv. 3 [IM]. Two temperature measurements exceed the Class V 21°C criterion at 24.5°C on 7/19/2010 and 24.0°C on 8/19/2010 from 10 measurements for 2012.

9-TOM005.32- (Rt. 725 Bridge upstream of Poverty Creek) Both the 2010 and 2008 IRs find two temperature measurements exceed the Class V 21°C criterion from 13 observations. Exceedances occur on 8/15/2005 at 24.4°C and 21.4 °C on 8/15/2006. There are no additional data beyond the 2008 Integrated Report (IR).

9TOM-2-NCNR (Poverty Creek Rd. Bridge Lv. 3) Seven of 32 temperature measurements exceed the Class V 21°C criterion within the 2014 data window. Excessive values range from 21.5 to 26.1°C occurring in the summer months. The 2012 Integrated Report (IR) finds three temperature exceedances of the Class V 21°C criterion occur on 6/16/2010 at 22°C; 7/19/2010 at 24.0°C and 8/16/2010 at 24.5°C from 11 measurements for 2012.

9TOM-3-NCNR (Whitethorne, Kentland Farm Lv. 3) Seven temperature measurements exceed the Class V 21°C criterion ranging from at 22.0°C to 24.7°C from 32 measurements within the 2014 data window. Excursions occur during the summer months.

Assessment Unit	Water name	Location Description	Cause Category	Cause Name	Cycle First Listed	TMDL Schedule	Size
VAW-N22R_TOM01A00	Toms Creek	These mainstem waters extend from just below the Poverty Creek confluence downstream to the Toms Creek mouth on the New River. These waters are within the WQS five mile public water supply (PWS) designation (NE60).	5C	Temperature, water	2014	2020	4.56
VAW-N22R_TOM02A00	Toms Creek	Toms Creek mainstem waters just below the Poverty Creek confluence upstream to the mouth of Big Run. These waters are not within the WQS public water supply (PWS) designation (NE60).	5C	Temperature, water	2008	2020	5.71
VAW-N22R_TOM03A08	Toms Creek	Toms Creek from the mouth of Big Run upstream to its headwaters (NE60).	5C	Temperature, water	2012	2020	6.13

Toms Creek

Impaired area ID: VAW-N22R-01

Aquatic Life

	Estuary (sq. miles)	Reservoir (acres)	River (miles)
Temperature, water / 5C			
Total impaired size by water type:			16.4

Sources:

- Source Unknown

* Narrative descriptions, location and city/county describe the entire extent of the impairment. Sizes may not represent the total size of the impairment.

2014 Impaired Waters

Category 4 & 5 by Impaired Area ID*

New River Basin

Cause Group Code: N22R-06-BEN - Unnamed Tributaries XEJ and XEH to Slate Branch

Location:	Unnamed Tributary XEH from its mouth on Slate Branch upstream to its headwaters. And Unnamed Tributary XEJ from its mouth on Unnamed Tributary XEH upstream to its headwaters.
City/County	Montgomery Co.
Use(s):	Aquatic Life
Cause(s) / VA Category:	Benthic-Macroinvertebrate Bioassessments / 5A

The 2008 assessment finds the Aquatic Life Use via the General Standard (Benthic) is impaired for a total of 2.51 miles. Unnamed Tributary to Slate Branch- XEH for 1.68 miles and Unnamed Tributary XEJ to XEH for 0.83 miles. There are no additional data beyond the 2008 Integrated Report (IR).

9-XEH000.75- (Downstream of Villages Development at NRV Mall) There are no additional data beyond the 2008 IR. Bio 'IM' Two 2006 Virginia Stream Condition Index (VSCI) surveys with an average score of 23.1. This station was sampled at the request of the WCRO VWP program with the goal of collecting water quality data prior to new development immediately upstream near the New River Valley Mall complex. A crayfish/macro invertebrate kill in January 2006 impacted the stream with the source occurring somewhere above this station. The most noticeable difference between this site and the reference station is the low abundance of organisms collected in the spring sample compared to the reference site. The abundance increased in the fall and is comparable to the reference site (Falling Branch).

9-XEJ000.10- (North of NRV Mall) There are no additional data beyond the 2008 IR. Bio 'IM' Two 2006 VSCI surveys with an average score of 23.8. This station was sampled at the request of the WCRO VWP program with the goal of collecting water quality data prior to new development immediately upstream and north of the New River Valley Mall and above the Huckleberry Tail crossing. The main source of impact appears to be recent development and urban land use resulting in altered hydrology, excessive storm water runoff, sediment deposition, bank erosion, and riparian vegetation removal.

Assessment Unit	Water name	Location Description	Cause Category	Cause Name	Cycle First Listed	TMDL Schedule	Size
VAW-N22R_XEH01A08	Slate Branch, UT (XEH)	Unnamed tributary XEH from its mouth on Slate Branch upstream to its headwaters (NE59).	5A	Benthic-Macroinvertebrate Bioassessments	2008	2020	1.68
VAW-N22R_XEJ01A08	Unnamed Trib. XEJ to XEH	Unnamed Tributary XEJ from its mouth on Unnamed Tributary XEH upstream to its headwaters (NE59).	5A	Benthic-Macroinvertebrate Bioassessments	2008	2020	0.83

Unnamed Tributaries XEJ and XEH to Slate Branch		Estuary (sq. miles)	Reservoir (acres)	River (miles)
Impaired area ID: VAW-N22R-01	Benthic-Macroinvertebrate Bioassessments / 5A			
Aquatic Life	Total impaired size by water type:			2.51

Sources:

- Loss of Riparian Habitat
- Municipal (Urbanized High Density Area)
- Sediment Resuspension (Clean Sediment)
- Streambank Modifications/destabilization

* Narrative descriptions, location and city/county describe the entire extent of the impairment. Sizes may not represent the total size of the impairment.

2014 Impaired Waters

Category 4 & 5 by Impaired Area ID*

New River Basin

Cause Group Code: N22R-02-BEN - Stroubles Creek

Location:	These mainstem waters extend from the Walls Branch mouth upstream to the Duck Pond located on the VPI&SU Campus.
City/County	Montgomery Co.
Use(s):	Aquatic Life
Cause(s) / VA Category:	Benthic-Macroinvertebrate Bioassessments / 4A

The Stroubles Creek General Standard (Benthic- Sediment) Total Maximum Daily Load (TMDL) is U.S. EPA approved on 1/28/2004 [Fed ID: 21904]. The SWCB approved the Study on 6/17/2004. The Benthic (Sediment) Implementation Plan (IP) is SWCB approved (9/27/2006) (formerly VAW-N22R-02). The 1996 original 303(d) Listed waters remain impaired for contravention of the General Standard (Benthic).

9-STE007.29- (Rt. 657 Bridge below old Blacksburg STP) Bio 'IM' Nine Virginia Stream Condition Index (VSCI) surveys (2007-2010 & 2012) with an average score of 46.82. Impairment is found from nine surveys (2006 - 2010) with an average score of 46.82 in 2012. The 2010 assessment found impairment from seven VSCI surveys (2003 & 2006 - 2008) with an average score of 45.6. An average score of 45.6 is also found in 2008 from six VSCI surveys (2001 - 2003 & 2006).

The moderately pollution tolerant caddisfly family Hydropsychidae and fly family Chironomidae were the second most common macroinvertebrates during these surveys. This community indicates the benthic community is exposed to moderate level of pollution, possibly a nutrient source that provides the Hydropsychidae the opportunity to be second most dominant. Thus, this stream reach shows evidence of year long pollution. Habitat condition at this station is suboptimal, impacted by sediment and poor riparian vegetation zones. The mostly open canopy allows for increased water temperatures and primary production resulting in large mats of algae and bacteria on the stream substrate during the summer and fall.

Assessment Unit	Water name	Location Description	Cause Category	Cause Name	Cycle First Listed	TMDL Schedule	Size
VAW-N22R_STE04A00	Stroubles Creek	These mainstem waters extend from the Walls Branch mouth upstream to the Duck Pond located on the VPI&SU Campus (NE59).	4A	Benthic-Macroinvertebrate Bioassessments	1996	2010	5.08

Stroubles Creek		Estuary (sq. miles)	Reservoir (acres)	River (miles)
Impaired area ID: VAW-N22R-01				
Aquatic Life	Benthic-Macroinvertebrate Bioassessments / 4A			5.08
	Total impaired size by water type:			

Sources:

- Discharges from Municipal Separate Storm Sewer Systems (MS4)
- Livestock (Grazing or Feeding Operations)
- Municipal (Urbanized High Density Area)
- Sediment Resuspension (Clean Sediment)

* Narrative descriptions, location and city/county describe the entire extent of the impairment. Sizes may not represent the total size of the impairment.

2014 Impaired Waters

Category 4 & 5 by Impaired Area ID*

New River Basin

Cause Group Code: N22R-03-BEN - Back Creek

Location:	The waters extend from 0.70 miles below the Rt. 636 Bridge crossing downstream to Back Creek's mouth on the New River.
City/County	Pulaski Co.
Use(s):	Aquatic Life
Cause(s) / VA Category:	Benthic-Macroinvertebrate Bioassessments / 4A

The 2002 303(d) Listed Back Creek General Standard (Benthic- Sediment) Total Maximum Daily Load (TMDL) is U.S. EPA approved on 6/21/2004 [Fed ID 24565]. The SWCB approved the Study on 12/02/2004. The Benthic/Bacteria Implementation Plan (IP) is SWCB approved 7/31/2008.

The TMDL identifies sediment as the primary stressor for the aquatic life use (benthic) impairment. The 2002 severe RBP II score of 37.50 produces the initial 17.53 mile listing of the benthic impairment. The 2008 assessment finds via station 9-BCK000.74 that a single Virginia Stream Condition Index (VSCI) score indicates full support. A potential delisting could occur for the lower end of Back Creek should additional surveys produce scores at 60 or above in succeeding assessment cycles.

9-BCK015.98- (Rt. 636 Bridge, Black Hollow Road) Bio 'IM' Four Virginia Stream Condition Index (VSCI) surveys (2011-2012) within the 2014 data window produce an average score of 42.9. And two 2006 VSCI surveys with an average score of 42.8 are reported within previous Integrated Reports (IR). The habitat surveys indicate the stream is impacted by sediment deposition, riparian vegetation removal, channel alteration (straightening of the stream), and destabilized stream banks. Additionally, the water in Back Creek is often turbid from cattle disturbance of stream banks and in-stream sediments. These impacts result in stream substrate and water that limits colonization of benthic macroinvertebrates and fish.

9-BCK009.47 (Rt. 100 Bridge) Bio- 'IM'; The 2012 Integrated Report (IR) reveals four VSCI surveys (2006 & 2010) with an average score of 41.0 The remaining two surveys within the 2014 data window produce an average score of 32.6. The benthic community is dominated by taxa that are tolerant of nutrient/organic enrichment. Late summer of 2006 a fish kill occurred that was the probable cause for the decline in the benthic community for the Fall sample. The community recovered between Fall of 2006 and Spring of 2010, however a decline is noted in the Fall 2010 score. NPS pollution from agricultural sources upstream from Rt. 100 has impacted the stream. Habitat at this site has been impacted by the agricultural land use in the watershed, resulting in sedimentation and excessive algal growth on the substrate. The 2008 and 2010 assessments report three VSCI surveys (2003 & 2006) with an average score of 41.0 as well.

9-BCK000.74- (Rt. 600 Bridge) Bio- 'FS' There are no additional surveys beyond the 2006 IR. One fall 2003 VSCI survey scoring 67.2. This AU would be a candidate for delisting should additional surveys find scores above 60. The reach appears to have habitat that would suit a diverse benthic community and was surveyed to determine if it was a recovery zone from upstream impairments. However, this station had a low abundance of sensitive EPTs. The high dominance of Elmidae (53.3%) is possibly due to slight nutrient enrichment and the subsequent abundance of periphyton, which is the predominant food of riffle beetles. This station is slightly impacted by sediment deposition. The banks and riparian zones are impacted by altered hydrology and human activities. However, the substrate size, frequency of riffles, flow, velocity, and channel gradient have a positive effect on the benthic community.

Assessment Unit	Water name	Location Description	Cause Category	Cause Name	Cycle First Listed	TMDL Schedule	Size
VAW-N22R_BCK01A00	Back Creek	Back Creek mainstem waters from the mouth of Shuffle Branch downstream to Back Creek's mouth on the New River (NE61).	4A	Benthic-Macroinvertebrate Bioassessments	2002	2010	5.76
VAW-N22R_BCK02A08	Back Creek	Back Creek from 0.70 miles downstream of the Rt. 636 crossing on downstream to the confluence of Shuffle Branch (NE61).	4A	Benthic-Macroinvertebrate Bioassessments	2002	2010	11.77

Back Creek

Impaired area ID: VAW-N22R-01

Aquatic Life

	Estuary (sq. miles)	Reservoir (acres)	River (miles)
Benthic-Macroinvertebrate Bioassessments / 4A			
Total impaired size by water type:			17.53

Sources:

- Channelization
- Loss of Riparian Habitat
- Sediment Resuspension (Clean Sediment)

* Narrative descriptions, location and city/county describe the entire extent of the impairment. Sizes may not represent the total size of the impairment.

2014 Impaired Waters

Category 4 & 5 by Impaired Area ID*

New River Basin

Cause Group Code: N22R-04-BAC - Toms Creek

Location:	Toms Creek from the mouth of Big Run upstream to its headwaters.
City/County	Montgomery Co.
Use(s):	Recreation
Cause(s) / VA Category:	Escherichia coli / 5A

This initial 2014 Listing is a result of bacteria data showing impairment of the Recreational Use.

9-TOM012.78- (Lower bike path off Deerfield Drive) Three of 12 escherichia coli (E.coli) samples exceed the 235 cfu/100 ml instantaneous criterion. Exceeding values range from 275 to 950 cfu/100 ml.
Note: Level 2 Citizen data indicates the impairment extends downstream to the Toms Creek confluence with the New River.

Assessment Unit	Water name	Location Description	Cause Category	Cause Name	Cycle First Listed	TMDL Schedule	Size
VAW-N22R_TOM03A08	Toms Creek	Toms Creek from the mouth of Big Run upstream to its headwaters (NE60).	5A	Escherichia coli	2014	2026	6.13

Toms Creek

Impaired area ID: VAW-N22R-01

Recreation

	Estuary (sq. miles)	Reservoir (acres)	River (miles)
Escherichia coli / 5A Total impaired size by water type:			6.13

Sources:

- Livestock (Grazing or Feeding Operations)
- Municipal (Urbanized High Density Area)
- Unspecified Domestic Waste
- Wastes from Pets
- Wet Weather Discharges (Non-Point Source)
- Wildlife Other than Waterfowl

* Narrative descriptions, location and city/county describe the entire extent of the impairment. Sizes may not represent the total size of the impairment.

2014 Impaired Waters

Category 4 & 5 by Impaired Area ID*

New River Basin

Cause Group Code: N29R-01-PCB - New River, Reed Creek, Claytor Lake, Peak Creek, Stony Creek and Walker Creek

Location:	The impairment begins at the I-77 bridge crossing the New River and extends downstream to the VA/WVA State Line and includes the tributaries Peak Creek and Reed Creek as described below.
City/County	Giles Co., Montgomery Co., Pulaski Co., Radford City, Wythe Co.
Use(s):	Fish Consumption
Cause(s) / VA Category:	PCB in Fish Tissue / 5A

The Virginia Department of Health (VDH) issued a fish consumption advisory on August 6, 2001 for polychlorinated biphenyls (PCBs) for the lower portion of the New River (Rt. 114 Bridge downstream to the VA / WVA State Line - 52.0 miles) based on fish tissue collections from Carp. An Advisory extension to Claytor dam was issued 8/06/2003 (11.47 miles) recommends that no carp be consumed in these waters and no more than two meals per month of flathead and channel catfish. The VDH PCB Fish Consumption Advisory was further extended upstream on the New River (13 miles) to the I-77 Bridge to include the lower portions of Peak Creek (4.02 miles), Reed Creek (16.35 miles) and Claytor Lake (4,287 acres) on 12/02/2004. The VDH advises consumption should not exceed two meals per month for carp and smallmouth bass. Stony Creek is a 2010 Integrated Report (IR) addition to the original 2002 303(d) Listing. The VDH level of concern is 50 parts per billion (ppb) in fish tissue.

Water column data from 2010 thru 2012 are listed below where excursions of the WQS water column criterion of 640 pg/L are contravened causing an Observed Effect (OE) or 303(d) Listing for 'PCBs in Water Column'. Water column data collection is in support of TMDL development for PCBs in the New River drainage. Sample collections are made in both wet weather (WW) and dry weather (DW) conditions.

2012 Fish tissue and water column data follow reporting exceedances of the WQS based 20 ppb fish tissue value (TV) (VDH Lower Level of Concern 50 ppb). And excursions of the WQS water column criterion of 640 pg/L. Fish tissue data are in addition to previous years collections. Fish tissue data are reviewed by the VDH in making an advisory determination. A complete listing of fish tissue collection sites and associated fish tissue data are available at http://www.deq.virginia.gov. A more detailed presentation of the data can also be found using an interactive mapping application at http://www.deq.virginia.gov. The VDH Advisory information is also available via the web at http://www.vdh.virginia.gov/Epidemiology/PublicHealthToxicology/Advisories/.

9-RDC009.00 (Near Rt. 619 at Grahams Forge) 2012 two species analyzed - Carp exceeds WQS TV of 20 ppb (5 fish composite [62.6 - 69.4 cm] at 68.24 ppb. Remaining species analyzed Smallmouth Bass (5 fish composite [21.8 - 26.6 cm] at 3.04 ppb.

9-NEW098.32 (Rt. 672 Bridge, Lighthouse) 2012 four species analyzed - Channel Catfish exceeds WQS TV of 20 ppb; (2 fish composite (70.5 - 71.5 cm) at 65.15 ppb. Remaining species analyzed Largemouth Bass (5 fish composite [34.5 - 43.1]) at 7.76 ppb; Spotted Bass (5 fish composite [34.2 - 38.2 cm]) at 11.00 ppb; and Carp (3 fish composite [45.8 - 56.5]) at 6.04 ppb.

9-PKC007.82 (Route 99 Bridge) 2012 three species analyzed - Stoneroller exceeds WQS criterion of 20 ppb (15 fish comp. [14.3 - 16.0 cm] at 33.18 ppb. Remaining species analyzed Rock Bass (5 fish comp. [16.7 - 18.6 cm]); at 10.49 ppb) and Redbreast Sunfish (5 fish comp. [14.3 - 18.1 cm]; at 3.01 ppb).

9-PKC004.65 (Rt. 100 Bridge) 2012 five species analyzed. Channel catfish exceeds WQS criterion of 20 ppb (2 fish composite [63.1 - 69.0 cm] at 33.15 ppb. Remaining species analyzed Largemouth Bass (5 fish composite [33.4 - 40.8 cm]; @2.68 ppb), Carp 2 sizes (4 fish composite [54.6 - 62.0 cm]; @2.32 ppb) and (4 fish composite [54.6 - 62.0 cm]; @9.16 ppb) and Smallmouth Bass (3 fish composite [35.3 - 42.6 cm]; @6.90 ppb).

9-NEW088.86 (New River Claytor Lake at Dam) 2012 six species analyzed - Flathead Catfish exceeds WQS criterion of 20 ppb (2 fish composite [83.0 - 87.5 cm]) at 86.67 ppb. Remaining species analyzed Carp (4 fish composite [56.5 - 67.0 cm] at 2.05 ppb; Channel Catfish (1 fish [58.8 cm]) at 7.43 ppb; Largemouth Bass (5 fish composite [32.5 - 34.5 cm] at 0.36 ppb; Smallmouth Bass (4 fish composite [27.0 - 32.2 cm] at 0.88 ppb and Spotted Bass (3 fish composite [28.8 - 36.8 cm] at 0.00 ppb.

9-NEW085.94 (New River downstream of Claytor Dam) 2012 two species analyzed - Flathead Catfish exceeds WQS criterion of 20 ppb (5 fish composite [57.5 - 70.3 cm]) at 33.74 ppb. Remaining species analyzed Carp (5 fish composite [62.6 - 81.0 cm] at 11.27 ppb.

9-NEW081.72- (Route 11 Bridge - at Radford) 2010 water column PCB WQS criterion of 640 pg/L: Dry Weather (DW) 320 pg/L - 'FS'; Wet Weather (WW) exceeds at 4,739- 'OE'.

9-NEW079.19 (New River below Radford University) 2012 one species two exceeding composites analyzed - Carp exceeds WQS criterion of 20 ppb (2 fish composite [67.5 - 76.5 cm] at 53.28 ppb and Carp exceeding (2 fish composite [76.8 - 83.6 cm] at 94.85 ppb.

9-NEW066.90 (New River at Whitethorne) 2012 one species analyzed exceeds WQS criterion of 20 ppb Carp (1 fish [72.0 cm] at 125.58 ppb.

9-WLK004.34 (Route 622 Bridge - Giles Co.) Water column samples find two excursions of the WQS criterion of 640 pg/L. 2010 Wet Weather (WW) at 1,706 pg/L and 2011 WW at 649 pg/L.

9-NEW050.70 (New River near Pembroke) 2012 three species analyzed Carp exceeds WQS criterion of 20 ppb (2 fish composite [67.5 - 71.6 cm] at 419.87 ppb and Channel Catfish (1 fish [58.1 cm] at 23.26 ppb. Remaining species analyzed Flathead Catfish (1 fish [51.4 cm] at 9.60 ppb.

9-NEW038.71 (New River below Celeanse) 2012 two species analyzed - Each of the following exceed the WQS criterion of 20 ppb. Carp (2 fish composite [68.1 - 69.0 cm] at 355.63 ppb and Flathead Catfish (1 fish [56.0 cm] at 25.39 ppb. 2010 water column PCB DW- 129 pg/L- 'FS; Wet 784 pg/L- 'OE' and
2011 water column PCB Wet- 222 pg/L- 'FS'

9-NEW030.15 (Route 460 Bridge at Glen Lyn) 2012 one species analyzed - Each of the following exceed the WQS criterion of 20 ppb. Carp 1 (1 fish [85.0 cm] at 234.01 ppb; Carp 2 (2 fish composite [72.5 - 74.8 cm]) at 448.15 ppb.

9-NEW031.00 (Above Glen Lyn) 2010 water column PCB DW- 66 pg/L- 'FS'; WW- 841 pg/L- 'OE'.

9-NEW028.95 (New River below Glen Lyn) 2010 water column PCB WW- 710 pg/L- 'OE'. 2011 water column PCB DW- 110 pg/L- 'FS'; WW- 400 pg/l- 'FS'.

Assessment Unit	Water name	Location Description	Cause Category	Cause Name	Cycle First Listed	TMDL Schedule	Size
VAW-N28R_SNC01A00	Stony Creek	Stony Creek mainstem waters from its mouth on the New River upstream to Chemical Lime Company's outfall on Stony Creek (NE75).	5A	PCB in Fish Tissue	2010	2014	1.36
VAW-N28R_SNC02A00	Stony Creek	Stony Creek mainstem waters from the Chemical Lime Company outfall on Stony Creek upstream to the Kimballton Branch confluence on Stony Creek (NE75).	5A	PCB in Fish Tissue	2010	2014	0.63
VAW-N28R_SNC03A00	Stony Creek	Stony Creek mainstem waters from the confluence of Kimballton Branch upstream to the mouth of Laurel Branch (NE75).	5A	PCB in Fish Tissue	2010	2014	1.69
VAW-N28R_SNC04A00	Stony Creek	Stony Creek mainstem from the confluence of Laurel Branch upstream to the mouth of Pine Swamp Branch (NE75).	5A	PCB in Fish Tissue	2010	2014	4.69

New River, Reed Creek, Claytor Lake, Peak Creek, Stony Creek and Walker Creek		Estuary (sq. miles)	Reservoir (acres)	River (miles)
Impaired area ID: VAW-N28R-01	PCB in Fish Tissue / 5A Total impaired size by water type:			8.37
Fish Consumption				

Sources:

- Source Unknown

* Narrative descriptions, location and city/county describe the entire extent of the impairment. Sizes may not represent the total size of the impairment.

SUGGESTED SEED MIXES FOR PIPELINE RIGHTS-OF-WAYS AND ASSOCIATED DISTURBANCES ON THE MONONGAHELA AND GEORGE WASHINGTON-JEFFERSON NATIONAL FORESTS

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Introduction

This document is meant to provide direction for assembling seed mixes to be used in reclamation and restoration of disturbed soils associated with pipeline installations and repairs/maintenance on the MNF and GW-Jefferson National Forests. Initially, the primary goal of seeding is to establish a vegetative cover to minimize surface erosion and sedimentation resulting from precipitation and surface flow. The secondary goal of these seeding guidelines is to assist with establishing an assortment of native species beneficial for wildlife and pollinators. All recommended species are commercially available.

Because this area possesses such diverse landscapes and microclimates, it is critical to deploy appropriate seed mixes in appropriate habitats. However, native plants that provide diverse wildlife benefits and structural diversity on the landscape often do not germinate or grow fast enough to provide initial erosion control. Therefore, fast-germinating, non-invasive, annual cover crops are recommended for the first round of seeding to stabilize exposed soil. Once those have established and erosion is no longer an immediate threat, native seed mixes tailored to site-specific conditions should be installed among the erosion control species where possible.

When using native seed, use as local an ecotype as is available, in the following order of preference:

- from within state
- from the mountain regions of an adjoining state
- from within 100 miles, as long as it is within the Appalachian mountain ecosystem

This document contains:

- Species recommendations for both temporary and permanent erosion control mixes
- Species recommendations for native mixes beneficial for wildlife and pollinators
- Site specific species recommendations for special site conditions (upland/high elevation, riparian, wetland, and dry low pH soils). Wetland indicator status codes are used to indicate species' soil moisture preferences. (USDA NRCS)

SPECIES FOR EROSION CONTROL

Temporary erosion control species:
To be applied

- wherever erosion control is needed outside of normal seeding seasons
- concurrent with permanent erosion control, and
- prior to permanent seeding with wildlife mixes, where such follow-up is appropriate.

Select at least two of the following species for temporary mixes, or suggest an existing erosion control seed mix containing at least some of these species but not containing anything that would act invasive at the site. Please describe how seed mixes will be adjusted to accommodate different slope classes (for example, 0-8%, 8-15%, 15-30%, 30-50%, etc.)

Table 1: Temporary erosion control species

Name	**pH preference**	**Wetland Indicator Status**
Annual Ryegrass (Lolium multiflorum (L. perenne var. italicum))	5.0-7.9	NI/moderate
German/Foxtail Millet (Setaria italica)	5.3-6.9	FACU
Cereal Rye (Secale cereale)	52-8.0	NI/damp
Browntop Millet (Panicum ramosum) (introduced in VA & south; possibly ok for WV?)	5.5-6.9	FACU

Permanent erosion control species:
To be applied

- only during normal seeding season in spring and fall
- on slopes too steep or inaccessible for planting equipment, or
- on areas planned to be left not in final grade for more than 1 year.

Select at least 5 of the following species for permanent mixes, or suggest an existing restoration seed mix containing at least some of these species but not containing anything that would act invasive at the site. Please also include at least one species from Table 1 or one non-native from Table 2 to provide quick cover and mulching/organic matter. Please describe how seed mixes will be adjusted to accommodate different slope classes (for example, 0-8%, 8-15%, 15-30%, 30-50%, etc.).

Table 2: Permanent erosion control species

Name	**pH preference**	**Wetland Indicator Status**
Non-native		
Hard Fescue (Festuca ovina var. duriuscula (F. longifolia))	4.5-8.5	NI/dry
Creeping Red Fescue (Festuca rubra)	5.8-8.0	FACU

Chewings Fescue (Festuca rubra ssp. commutata)	acid tol.	FACU
Redtop (Agrostis alba)	4.5-8.0	FACW
Native		
Highly Preferred		
Indiangrass, (Sorghastrum nutans)	5.0-7.8	UPL
Purpletop (Tridens flavus)	4.5-6.5	FACU
Preferred		
Autumn Bentgrass, (Agrostis perennans)	5.5-7.5	FACU
Canada Wildrye (Elymus canadensis)	5.0-7.9	FACU+
Creeping Red Fescue (Festuca rubra)	5.8-8.0	FACU
Deertongue (Dichanthelium clandestinum)	4.0-7.5	FAC+
Marsh (Dense) Blazing Star (Spiked Gayfeather), (Liatris spicata)	5.6-7.5	FAC+
New England Aster, (Aster novae-angliae (Symphyotrichum)	?	FACW
Oxeye Sunflower, (Heliopsis helianthoides)	?	FACU
Panicledleaf Ticktrefoil, (Desmodium paniculatum)	6.0-7.0	FACU
Showy Ticktrefoil, (Desmodium canadense)	wide tol	FAC
Slender Bushclover, (Lespedeza virginica)	acid tol	NI/dry
Slender Mountainmint (Pycnanthemum tenuifolium)	?	FAC-FACW
Virginia Wildrye, (Elymus virginicus)	5.0-7.4	FACW-
Wild Bergamot, (Monarda fistulosa)	6.0-8.0	UPL
Wild Senna (Senna hebecarpa (Cassia h.))	circumn.	FAC
Moderately preferred		
Partridge pea (Chamaecrista fasciculate)	5.5-7.5	FACU
Blackeyed Susan, (Rudbeckia hirta)	6.0-7.0	FACU-
Grain Rye (Secale cereale)	5.2-8.0	NI
Switchgrass (Panicum virgatum)	4.5-8.0	FAC
Ticklegrass (Rough Bentgrass), (Agrostis scabra)	6.0-8.0	FAC

NATIVE SPECIES FOR WILDLIFE AND POLLINATORS

To be installed as permanent vegetation in areas accessible to necessary drill or other planting equipment. (Because native seed mixes need to be drilled or otherwise covered to enhance germination success, only areas accessible to the necessary equipment should be designated for follow-up native seeding.)

For each habitat type, pick at least five species, or suggest an existing restoration seed mix containing at least some of these species but not containing anything not native to the state, or anything that would act invasive at the site. A temporary cover crop will also likely be necessary to stabilize the site and protect overwintering seeds.

As with erosion control mixes, please describe how native seed mixes will be adjusted to accommodate different slope classes (for example, 0-8%, 8-15%, 15-30%, 30-50%, etc.).

Table 3: Native species for wildlife and pollinators (pH and Wetland indicator status left blank for duplicate species)

Name	**pH preference**	**Wetland Indicator Status**
Dry Soils/Upland		
Blackeyed Susan, (Rudbeckia hirta)	6.0-7.0	FACU-
Common Milkweed, (Asclepias syriaca)	calcareous	FACU
Indiangrass, (Sorghastrum nutans)	5.0-7.8	UPL
Oxeye Sunflower, (Heliopsis helianthoides)	?	FACU
Panicledleaf Ticktrefoil, (Desmodium paniculatum)	6.0-7.0	FACU
Partridge Pea, (Chamaecrista fasciculata (Cassia f.))	5.5-7.5	FACU
Showy Ticktrefoil, (Desmodium canadense)	wide tol	FAC
Switchgrass, (Panicum virgatum)	4.5-8.0	FAC
Virginia Wildrye, (Elymus virginicus)	5.0-7.4	FACW-
High Elevation		
Mountain Mint, Pycnanthemum spp.	?	FAC-FACW
Wild Bergamot, (Monarda fistulosa)	6.0-8.0	UPL
Virginia Wildrye, (Elymus virginicus)	5.0-7.4	FACW-
Riparian		
Autumn Bentgrass, (Agrostis perennans)	5.5-7.5	FACU
Big Bluestem, 'Niagara' (Andropogon gerardii, 'Niagara')	6.0-7.5	FAC
Boneset, (Eupatorium perfoliatum)	?	FACW+
Common Sneezeweed, (Helenium autumnale)	4.0-7.5	FACW+
Indiangrass, (Sorghastrum nutans)	5.0-7.8	UPL
Joe Pye Weed, (Eupatorium fistulosum)	4.5-7.0	FAC+
Maryland Senna (Senna marilandica (Cassia m.))	4.0-7.0	FAC+
New York Ironweed, (Vernonia noveboracensis)	4.5-8.0	FACW+
Partridge Pea, (Chamaecrista fasciculata (Cassia f.))	5.5-7.5	FACU
Spotted Joe Pye Weed, (Eupatorium maculatum (Eupatoriadelphus maculatus))	5.5-7.0	FACW
Swamp Milkweed (Asclepias incarnata)	5.0-8.0	OBL
Virginia Wildrye, (Elymus virginicus)	5.0-7.4	FACW-
Wild Senna (Senna hebecarpa (Cassia h.))	circumn.	FAC
Wetland/Wet Soils (pH indicators left blank in this section because the majority of "problem" acid soil sites are dry uplands. Wetland indicators left blank because all plants are appropriate for wetlands)		
Blue False Indigo, (Baptisia australis)		
Bottlebrush Grass, (Elymus hystrix (Hystrix patula))		
Canadian Anemone, (Anemone canadensis)		
Canadian Burnet, (Sanguisorba canadensis)		

Deertongue, 'Tioga' (Panicum clandestinum (Dichanthelium c.), 'Tioga')		
Fringed (Nodding) Sedge, (Carex crinita)		
Great Blue Lobelia, (Lobelia siphilitica)		
New York Ironweed, (Vernonia noveboracensis)		
Path Rush, (Juncus tenuis,)		
Purple Node Joe Pye Weed, (Eupatorium purpureum)		
Redtop Panicgrass, (Panicum rigidulum (P. stipitatum))		
Soft Rush (Juncus effusus)		
Spotted Joe Pye Weed, (Eupatorium maculatum (Eupatoriadelphus maculatus))		
Squarrose Sedge, (Carex squarrosa)		
Swamp Milkweed (Asclepias incarnata)		
Switchgrass, 'Cave-In-Rock' (Panicum virgatum, 'Cave-In-Rock')		
Tussock Sedge, (Carex stricta)		
Wild Senna (Senna hebecarpa (Cassia h.))		
Woolgrass, (Scirpus cyperinus)		

Low pH (acidic) soils

Few of the species listed above would naturally grow well in acidic soils as defined in this project (pH less than 4.8) However, many of the species listed above would persist for several years following a lime addition with the initial seeding of soils. Blackberries and goldenrods do well in sunny, acid, dry soils, and ferns, lycopodiums, and mosses persist as vegetative cover in more shaded areas. The following are some suggestions of upland/dry site perennial species native to WV and VA, and the minimum pHs they can tolerate (all available from Ernst Seeds):

Table 4: Species for low pH soils

Name	**pH preference**	**Wetland Indicator Status**
Purpletop (Tridens flavus)	4.5-6.5	FACU
Purple lovegrass (Eragrostis spectabilis (Pursh) Steud.)	4.0-7.5	UPL
Virginia spiderwort (Tradescantia virginiana)	4.0-8.0	FACU
Common blackberry (Rubus allegheniensis)	4.6-7.5	FACU-
Canada goldenrod, (Solidago Canadensis)	4.8-7.5	FACU
Indian hemp (Apocynum cannabinum)	4.5-7.0	FACU
White avens, (Geum canadense)	4.5-7.5	FACU
Splitbeard bluestem (Andropogon ternarius var. Michx.) (native to VA & KY, & south; a warm season bunchgrass.)	4.0-7.5	FACU
Slender woodoats ((Chasmanthium laxum (Uniola laxa))	4.5-7.0	FAC

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SUGGESTED SEEDING TECHNIQUES FOR PIPELINE RIGHTS-OF-WAYS AND ASSOCIATED DISTURBANCES ON THE MONONGAHELA AND GEORGE WASHINGTON-JEFFERSON NATIONAL FORESTS

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Introduction

This document provides guidelines for erosion control seeding techniques in the reclamation and restoration of disturbed soils associated with pipeline installations and repairs/maintenance on National Forest lands. Erosion is an expected consequence of any soil disturbing activity that crosses variable and severe terrain. Therefore, a variety of short term and long term erosion control measures must be implemented. These include but are not limited to physical measures such as contouring; revegetation measures such as re-seeding and mulching; and follow up monitoring. This document specifically addresses seeding and mulching techniques.

The goal of this document is to assist contractors with designing projects so that projects are consistent with Forest Plan goals and objectives. Because every site is unique, guidelines are meant to be descriptive, not prescriptive. Specific proposals still need Forest Service approval. However, ensuring from the start that project designs are consistent with Forest Plan direction will facilitate both the review and implementation process.

Restoration objectives

The initial goal of seeding is to establish a vegetative cover to minimize surface erosion and sedimentation. The secondary goal of seeding is to assist with establishing an assortment of native species beneficial for wildlife and pollinators. Because native species often do not establish as easily nor spread as readily as species typically used for erosion control, it is important to use them in conjunction with erosion control species, and also to use techniques that maximize germination rates and likelihood of survival. This includes proper initial site stabilization, choosing appropriate site specific seed mixes, and using appropriate seeding techniques once the site has been stabilized. Follow-up monitoring and maintenance are also required so that site problems are dealt with immediately and treatments adjusted as needed.

This document includes guidelines for the following:

1) General erosion control and seeding
2) Seeding seasons
3) Nutrient additions
4) Mulch and binders

GENERAL DIRECTION FOR EROSION CONTROL AND SEEDING

Project plans must specify how each of these guidelines will be met.

- Placement of sequestered topsoil prior to seeding.
- Seed shall be Virginia or West Virginia certified seed (bag tags attached; seed certification shall meet each state's standards for their certified seed classification) or alternative seed sourced from approved distributers.
- USFS approval of treatments outside normal seeding seasons.
- All leguminous seed shall be either be pre-inoculated from a supplier, or mixed with inoculant specified for use on that particular seed according to manufacturer's directions. Inoculants shall be manually applied at double the manufacturer's rate. Inoculant shall be mixed with legume seed prior to mixing with other seeds. For hydro-seeding, use a minimum of five times the dry seeding rate of inoculant. (Flynn, 2015; Monsanto 2015)
- A minimum of 100 lbs/ac of seed will be applied when seeding for permanent erosion control (VA BMP) unless otherwise specified by the seed mix provider.
- A success standard/threshold, such as 70-85% ground cover, must be delineated, and provisions to monitor and report on site conditions. Please describe plans for implementing mitigation measures (in case of planting failures) to ensure planting success.
- Describe how subsoil will be tested for compaction, and loosened prior to topsoil replacement if necessary.
- Dry fertilizer and lime may need to be incorporated into the top 2-5 inches of soil after application, at rates indicated by the results of site-specific soil tests. Please describe plans for doing so. (FERC 2013, Virginia DEQ)
- All seeding must occur promptly after construction halts, either temporarily or permanently. Erosion control seed mixtures must be sufficient to stabilize sites for varying lengths of time, and seed mixes may need to vary depending on that timeframe. Please describe how quickly seeding will occur, and the decision thresholds for applying temporary versus permanent erosion control seed mixtures.
- Areas to be planted with species beneficial for wildlife after pipeline installation will be treated with temporary erosion control mix during a normal seeding season.
- Areas not to be treated with wildlife seed species will be treated with permanent erosion control seeding during a normal seeding season.
- Seeding rates should be doubled when hydroseeding (Steinfeld et. al., 2007)

NORMAL SEEDING SEASONS

Appropriate seasons for seeding can vary dramatically depending on elevation. Spring seeding can be conducted from March 15th – June 1st, and fall seeding can be done from August 15th – October 15th, but neither timeframe is appropriate in its entirety at all elevations.
Please describe the timeframe in which seeding is proposed according to site specific elevations. Seeding windows should allow time for application, germination, and survival.

NUTRIENT ADDITIONS

In the absence of soil chemistry tests, the following guidelines can be used to develop fertilizer and liming rates**. Whenever possible, nutrient additions should be based on soil chemistry data in the interpretations provided with the order 1 soil survey.**

Fertilizer: 600-800 lbs/ac, 10-20-10 (Nitrogen, Phosphorous, Potassium), 400 lbs/ac 15-30-15, 800-1000 lbs/ac 10-10-10.

Lime: 1500-4000 lbs/ac (pelletized or dust), 4000 lbs/ac, Hydro Lime (2.5 gal container is equivalent to 1000 lbs limestone)—5-10 containers /ac.

MULCH AND BINDERS

Use of mulch materials and binders will be needed. Use of hay is prohibited on National Forest land due to invasive species concerns. Below are some guidelines that apply when selecting these materials for various sections of the ROW. Please describe how each of these issues will be addressed. All techniques must be appropriate for the % slope on which they will be applied. Please describe how mulching, seeding, and binding techniques will be adjusted to accommodate different slope classes (for example, 0-8%, 8-15%, 15-30%, 30-50%, etc.)

- Materials must be certified weed free or be accompanied by vendor's test results for noxious weed content.
- Seeded areas can be mulched with weed free straw at a rate of 2-4K lbs/ac, hand spread or blown, fiber mulch hydro-seeded at 1500-2000 lbs/ac., or other appropriate material.
- Natural biodegradable products are preferred. Materials must be demonstrated to be free of invasive species, including but not limited to plants, pests, and pathogens.
- Hydraulic erosion control products (HEPC) must be suitable for wildlife.
- If the use of stabilization netting is required/permitted, wildlife friendly geotextiles must be used. These products must either not contain netting, or netting must be made of 100% biodegradable non-plastic materials such as jute, sisal, or coir fiber. Plastic netting (such as polypropylene, nylon, polyethylene, and polyester), even if advertised as biodegradable, is not an acceptable alternative. Any netting used must also have a loose-weave design with movable joints between horizontal and vertical twines to reduce the chance for wildlife entanglement, injury, or death. (CA Coastal Commission, 2012)
- Avoid the use of silt fences reinforced with metal or plastic mesh.
- When no longer required, (after soils are stable and the vegetative cover is established), temporary erosion control and sediment control products should be promptly removed.
- Any products that require mixing with water need to have a Forest Service-approved water source. The source of water must not be contaminated with non-native invasive organisms that could spread into streams.

Hydroseeding

- Wood-fiber hydraulic mulches are generally short-lived and require a 24-hour period to dry before rainfall occurs.

- Wood fiber naturally has tackifying properties, but fiber alone may not be sufficient on steep slopes. In those cases the addition of a tackifier will help keep the seeds in contact with the soil. Describe plans to assess when this will be necessary, and describe the tackifier and application methods to be used.
- As wood chips, shredded woody materials, and other high-carbon materials decompose, they remove plant nutrients such as nitrogen from the soil. This can reduce soil fertility and make it difficult for grasses to grow. This should be taken into account when planning restoration seeding.

Binders

- The use of hydroseeding with binders will most likely be required in many areas on FS lands due to the steep terrain. Please describe site conditions where this will be used.
- The success of soil binders are somewhat dependent on the soil type present. If soil is compacted or high in clay and silt, soil binders may not penetrate soil surfaces.
- Whether short-life or long-life, soil binders should be non-toxic and organic based, such as guar, psyllium, or pitch and rosin emulsions. Please describe type of binder to be used under what circumstances, and specific application rates and methods.
- Materials or additives used as binders or emulsifiers cannot be toxic to soil organisms or otherwise prevent or inhibit seed germination.

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APPENDIX 12

FERC DOCUMENTS

Federal Energy Regulatory Commission

Office of Energy Projects

May 2013

WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES

Washington, DC 20426

WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES

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WETLAND AND WATERBODY
CONSTRUCTION AND MITIGATION PROCEDURES (PROCEDURES)

I. APPLICABILITY

A. The intent of these Procedures is to assist project sponsors by identifying baseline mitigation measures for minimizing the extent and duration of project-related disturbance on wetlands and waterbodies. Project sponsors shall specify in their applications for a new FERC authorization, and in prior notice and advance notice filings, any individual measures in these Procedures they consider unnecessary, technically infeasible, or unsuitable due to local conditions and fully describe any alternative measures they would use. Project sponsors shall also explain how those alternative measures would achieve a comparable level of mitigation.

Once a project is authorized, project sponsors can request further changes as variances to the measures in these Procedures (or the applicant's approved procedures). The Director of the Office of Energy Projects (Director) will consider approval of variances upon the project sponsor's written request, if the Director agrees that a variance:

1. provides equal or better environmental protection;

2. is necessary because a portion of these Procedures 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 on its land or under its jurisdiction.

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.

Project-related impacts on non-wetland areas are addressed in the staff's Upland Erosion Control, Revegetation, and Maintenance Plan (Plan).

B. DEFINITIONS

1. "Waterbody" includes any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes:

   a. "minor waterbody" includes all waterbodies less than or equal to 10 feet wide at the water's edge at the time of crossing;

   b. "intermediate waterbody" includes all waterbodies greater than 10 feet wide but less than or equal to 100 feet wide at the water's edge at the time of crossing; and

   c. "major waterbody" includes all waterbodies greater than 100 feet wide at the water's edge at the time of crossing.

2. "Wetland" includes any area that is not in actively cultivated or rotated cropland and that satisfies the requirements of the current federal methodology for identifying and delineating wetlands.

II. PRECONSTRUCTION FILING

A. The following information must be filed with the Secretary of the FERC (Secretary) prior to the beginning of construction, for the review and written approval by the Director:

1. site-specific justifications for extra work areas that would be closer than 50 feet from a waterbody or wetland; and

2. site-specific justifications for the use of a construction right-of-way greater than 75-feet-wide in wetlands.

B. The following information must be filed with the Secretary prior to the beginning of construction. These filing requirements do not apply to projects constructed under the automatic authorization provisions in the FERC's regulations:

1. Spill Prevention and Response Procedures specified in section IV.A;

2. a schedule identifying when trenching or blasting will occur within each waterbody greater than 10 feet wide, within any designated coldwater fishery, and within any waterbody identified as habitat for federally-listed threatened or endangered species. The project sponsor will revise the schedule as necessary to provide FERC staff at least 14 days advance notice. Changes within this last 14-day period must provide for at least 48 hours advance notice;

3. plans for horizontal directional drills (HDD) under wetlands or waterbodies, specified in section V.B.6.d;

4. site-specific plans for major waterbody crossings, described in section V.B.9;

5. a wetland delineation report as described in section VI.A.1, if applicable; and

6. the hydrostatic testing information specified in section VII.B.3.

III. ENVIRONMENTAL INSPECTORS

A. At least one Environmental Inspector having knowledge of the wetland and waterbody conditions in the project area is required for each construction spread. 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.

B. The Environmental Inspector's responsibilities are outlined in the Upland Erosion Control, Revegetation, and Maintenance Plan (Plan).

IV. PRECONSTRUCTION PLANNING

A. The project sponsor shall develop project-specific Spill Prevention and Response Procedures that meet applicable requirements of state and federal agencies. A copy must be filed with the Secretary prior to construction and made available in the field on each construction spread. This filing requirement does not apply to projects constructed under the automatic authorization provisions in the FERC's regulations.

1. It shall be the responsibility of the project sponsor and its contractors to structure their operations in a manner that reduces the risk of spills or the accidental exposure of fuels or hazardous materials to waterbodies or wetlands. The project sponsor and its contractors must, at a minimum, ensure that:

a. all employees handling fuels and other hazardous materials are properly trained;

b. all equipment is in good operating order and inspected on a regular basis;

c. fuel trucks transporting fuel to on-site equipment travel only on approved access roads;

d. all equipment is parked overnight and/or fueled at least 100 feet from a waterbody or in an upland area at least 100 feet from a wetland boundary. These activities can occur closer only if the Environmental Inspector determines that there is no reasonable alternative, and the

project sponsor and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill;

e. hazardous materials, including chemicals, fuels, and lubricating oils, are not stored within 100 feet of a wetland, waterbody, or designated municipal watershed area, unless the location is designated for such use by an appropriate governmental authority. This applies to storage of these materials and does not apply to normal operation or use of equipment in these areas;

f. concrete coating activities are not performed within 100 feet of a wetland or waterbody boundary, unless the location is an existing industrial site designated for such use. These activities can occur closer only if the Environmental Inspector determines that there is no reasonable alternative, and the project sponsor and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill;

g. pumps operating within 100 feet of a waterbody or wetland boundary utilize appropriate secondary containment systems to prevent spills; and

h. bulk storage of hazardous materials, including chemicals, fuels, and lubricating oils have appropriate secondary containment systems to prevent spills.

2. The project sponsor and its contractors must structure their operations in a manner that provides for the prompt and effective cleanup of spills of fuel and other hazardous materials. At a minimum, the project sponsor and its contractors must:

a. ensure that each construction crew (including cleanup crews) has on hand sufficient supplies of absorbent and barrier materials to allow the rapid containment and recovery of spilled materials and knows the procedure for reporting spills and unanticipated discoveries of contamination;

b. ensure that each construction crew has on hand sufficient tools and material to stop leaks;

c. know the contact names and telephone numbers for all local, state, and federal agencies (including, if necessary, the U. S. Coast Guard and the National Response Center) that must be notified of a spill; and

d. follow the requirements of those agencies in cleaning up the spill, in excavating and disposing of soils or other materials contaminated by a spill, and in collecting and disposing of waste generated during spill cleanup.

B. AGENCY COORDINATION

The project sponsor must coordinate with the appropriate local, state, and federal agencies as outlined in these Procedures and in the FERC's Orders.

V. WATERBODY CROSSINGS

A. NOTIFICATION PROCEDURES AND PERMITS

1. Apply to the U.S. Army Corps of Engineers (COE), or its delegated agency, for the appropriate wetland and waterbody crossing permits.

2. Provide written notification to authorities responsible for potable surface water supply intakes located within 3 miles downstream of the crossing at least 1 week before beginning work in the waterbody, or as otherwise specified by that authority.

3. Apply for state-issued waterbody crossing permits and obtain individual or generic section 401 water quality certification or waiver.

4. Notify appropriate federal and state authorities at least 48 hours before beginning trenching or blasting within the waterbody, or as specified in applicable permits.

B. INSTALLATION

1. Time Window for Construction

Unless expressly permitted or further restricted by the appropriate federal or state agency in writing on a site-specific basis, instream work, except that required to install or remove equipment bridges, must occur during the following time windows:

a. coldwater fisheries - June 1 through September 30; and

b. coolwater and warmwater fisheries - June 1 through November 30.

2. Extra Work Areas

a. Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water's edge, except where

the adjacent upland consists of cultivated or rotated cropland or other disturbed land.

b. The project sponsor shall file with the Secretary for review and written approval by the Director, site-specific justification for each extra work area with a less than 50-foot setback from the water's edge, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land. The justification must specify the conditions that will not permit a 50-foot setback and measures to ensure the waterbody is adequately protected.

c. Limit the size of extra work areas to the minimum needed to construct the waterbody crossing.

3. General Crossing Procedures

a. Comply with the COE, or its delegated agency, permit terms and conditions.

b. Construct crossings as close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit.

c. Where pipelines parallel a waterbody, maintain at least 15 feet of undisturbed vegetation between the waterbody (and any adjacent wetland) and the construction right-of-way, except where maintaining this offset will result in greater environmental impact.

d. Where waterbodies meander or have multiple channels, route the pipeline to minimize the number of waterbody crossings.

e. Maintain adequate waterbody flow rates to protect aquatic life, and prevent the interruption of existing downstream uses.

f. Waterbody buffers (e.g., extra work area setbacks, refueling restrictions) must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete.

g. Crossing of waterbodies when they are dry or frozen and not flowing may proceed using standard upland construction techniques in accordance with the Plan, provided that the Environmental Inspector verifies that water is unlikely to flow between initial disturbance and final stabilization of the feature. In the event of perceptible flow, the project sponsor must comply with all applicable Procedure requirements for "waterbodies" as defined in section I.B.1.

4. Spoil Pile Placement and Control

   a. All spoil from minor and intermediate waterbody crossings, and upland spoil from major waterbody crossings, must be placed in the construction right-of-way at least 10 feet from the water's edge or in additional extra work areas as described in section V.B.2.

   b. Use sediment barriers to prevent the flow of spoil or silt-laden water into any waterbody.

5. Equipment Bridges

   a. Only clearing equipment and equipment necessary for installation of equipment bridges may cross waterbodies prior to bridge installation. Limit the number of such crossings of each waterbody to one per piece of clearing equipment.

   b. Construct and maintain equipment bridges to allow unrestricted flow and to prevent soil from entering the waterbody. Examples of such bridges include:

      (1) equipment pads and culvert(s);
      (2) equipment pads or railroad car bridges without culverts;
      (3) clean rock fill and culvert(s); and
      (4) flexi-float or portable bridges.

      Additional options for equipment bridges may be utilized that achieve the performance objectives noted above. Do not use soil to construct or stabilize equipment bridges.

   c. Design and maintain each equipment bridge to withstand and pass the highest flow expected to occur while the bridge is in place. Align culverts to prevent bank erosion or streambed scour. If necessary, install energy dissipating devices downstream of the culverts.

   d. Design and maintain equipment bridges to prevent soil from entering the waterbody.

   e. Remove temporary equipment bridges as soon as practicable after permanent seeding.

   f. If there will be more than 1 month between final cleanup and the beginning of permanent seeding and reasonable alternative access to the right-of-way is available, remove temporary equipment bridges as soon as practicable after final cleanup.

g. Obtain any necessary approval from the COE, or the appropriate state agency for permanent bridges.

6. Dry-Ditch Crossing Methods

a. Unless approved otherwise by the appropriate federal or state agency, install the pipeline using one of the dry-ditch methods outlined below for crossings of waterbodies up to 30 feet wide (at the water's edge at the time of construction) that are state-designated as either coldwater or significant coolwater or warmwater fisheries, or federally-designated as critical habitat.

b. Dam and Pump

(1) The dam-and-pump method may be used without prior approval for crossings of waterbodies where pumps can adequately transfer streamflow volumes around the work area, and there are no concerns about sensitive species passage.

(2) Implementation of the dam-and-pump crossing method must meet the following performance criteria:

(i) use sufficient pumps, including on-site backup pumps, to maintain downstream flows;
(ii) construct dams with materials that prevent sediment and other pollutants from entering the waterbody (e.g., sandbags or clean gravel with plastic liner);
(iii) screen pump intakes to minimize entrainment of fish;
(iv) prevent streambed scour at pump discharge; and
(v) continuously monitor the dam and pumps to ensure proper operation throughout the waterbody crossing.

c. Flume Crossing

The flume crossing method requires implementation of the following steps:

(1) install flume pipe after blasting (if necessary), but before any trenching;

(2) use sand bag or sand bag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow through the flume pipe (some modifications to the stream bottom may be required to achieve an effective seal);

(3) properly align flume pipe(s) to prevent bank erosion and streambed scour;

(4) do not remove flume pipe during trenching, pipelaying, or backfilling activities, or initial streambed restoration efforts; and

(5) remove all flume pipes and dams that are not also part of the equipment bridge as soon as final cleanup of the stream bed and bank is complete.

d. Horizontal Directional Drill

For each waterbody or wetland that would be crossed using the HDD method, file with the Secretary for the review and written approval by the Director, a plan that includes:

(1) site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and all areas to be disturbed or cleared for construction;

(2) justification that disturbed areas are limited to the minimum needed to construct the crossing;

(3) identification of any aboveground disturbance or clearing between the HDD entry and exit workspaces during construction;

(4) a description of how an inadvertent release of drilling mud would be contained and cleaned up; and

(5) a contingency plan for crossing the waterbody or wetland in the event the HDD is unsuccessful and how the abandoned drill hole would be sealed, if necessary.

The requirement to file HDD plans does not apply to projects constructed under the automatic authorization provisions in the FERC's regulations.

7. Crossings of Minor Waterbodies

Where a dry-ditch crossing is not required, minor waterbodies may be crossed using the open-cut crossing method, with the following restrictions:

a. except for blasting and other rock breaking measures, complete instream construction activities (including trenching, pipe installation, backfill, and restoration of the streambed contours) within 24 hours.

Streambanks and unconsolidated streambeds may require additional restoration after this period;

b. limit use of equipment operating in the waterbody to that needed to construct the crossing; and

c. equipment bridges are not required at minor waterbodies that do not have a state-designated fishery classification or protected status (e.g., agricultural or intermittent drainage ditches). However, if an equipment bridge is used it must be constructed as described in section V.B.5.

8. Crossings of Intermediate Waterbodies

Where a dry-ditch crossing is not required, intermediate waterbodies may be crossed using the open-cut crossing method, with the following restrictions:

a. complete instream construction activities (not including blasting and other rock breaking measures) within 48 hours, unless site-specific conditions make completion within 48 hours infeasible;

b. limit use of equipment operating in the waterbody to that needed to construct the crossing; and

c. all other construction equipment must cross on an equipment bridge as specified in section V.B.5.

9. Crossings of Major Waterbodies

Before construction, the project sponsor shall file with the Secretary for the review and written approval by the Director a detailed, site-specific construction plan and scaled drawings identifying all areas to be disturbed by construction for each major waterbody crossing (the scaled drawings are not required for any offshore portions of pipeline projects). This plan must be developed in consultation with the appropriate state and federal agencies and shall include extra work areas, spoil storage areas, sediment control structures, etc., as well as mitigation for navigational issues. The requirement to file major waterbody crossing plans does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations.

The Environmental Inspector may adjust the final placement of the erosion and sediment control structures in the field to maximize effectiveness.

10. Temporary Erosion and Sediment Control

Install sediment barriers (as defined in section IV.F.3.a of the Plan) immediately after initial disturbance of the waterbody or adjacent upland.

Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion and sediment control measures are addressed in more detail in the Plan; however, the following specific measures must be implemented at stream crossings:

a. install sediment barriers across the entire construction right-of-way at all waterbody crossings, where necessary to prevent the flow of sediments into the waterbody. Removable sediment barriers (or driveable berms) must be installed across the travel lane. These removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;

b. where waterbodies are adjacent to the construction right-of-way and the right-of-way slopes toward the waterbody, install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil within the construction right-of-way and prevent sediment flow into the waterbody; and

c. use temporary trench plugs at all waterbody crossings, as necessary, to prevent diversion of water into upland portions of the pipeline trench and to keep any accumulated trench water out of the waterbody.

11. Trench Dewatering

Dewater the trench (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in silt-laden water flowing into any waterbody. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.

C. RESTORATION

1. Use clean gravel or native cobbles for the upper 1 foot of trench backfill in all waterbodies that contain coldwater fisheries.

2. For open-cut crossings, stabilize waterbody banks and install temporary sediment barriers within 24 hours of completing instream construction activities. For dry-ditch crossings, complete streambed and bank stabilization before returning flow to the waterbody channel.

3. Return all waterbody banks to preconstruction contours or to a stable angle of repose as approved by the Environmental Inspector.

4. Install erosion control fabric or a functional equivalent on waterbody banks at the time of final bank recontouring. 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.

5. Application of riprap for bank stabilization must comply with COE, or its delegated agency, permit terms and conditions.

6. Unless otherwise specified by state permit, limit the use of riprap to areas where flow conditions preclude effective vegetative stabilization techniques such as seeding and erosion control fabric.

7. Revegetate disturbed riparian areas with native species of conservation grasses, legumes, and woody species, similar in density to adjacent undisturbed lands.

8. Install a permanent slope breaker across the construction right-of-way at the base of slopes greater than 5 percent that are less than 50 feet from the waterbody, or as needed to prevent sediment transport into the waterbody. In addition, install sediment barriers as outlined in the Plan.

   In some areas, with the approval of the Environmental Inspector, an earthen berm may be suitable as a sediment barrier adjacent to the waterbody.

9. Sections V.C.3 through V.C.7 above also apply to those perennial or intermittent streams not flowing at the time of construction.

D. POST-CONSTRUCTION MAINTENANCE

1. Limit routine vegetation mowing or clearing adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the waterbody's mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In addition, trees that are located within 15 feet of the pipeline that have roots that could compromise the integrity of the pipeline coating may be cut and removed from the permanent right-of-way. Do not conduct any routine vegetation mowing or clearing in riparian areas that are between HDD entry and exit points.

2. Do not use herbicides or pesticides in or within 100 feet of a waterbody except as allowed by the appropriate land management or state agency.

3. Time of year restrictions specified in section VII.A.5 of the Plan (April 15 – August 1 of any year) apply to routine mowing and clearing of riparian areas.

VI. WETLAND CROSSINGS

A. GENERAL

1. The project sponsor shall conduct a wetland delineation using the current federal methodology and file a wetland delineation report with the Secretary before construction. The requirement to file a wetland delineation report does not apply to projects constructed under the automatic authorization provisions in the FERC's regulations.

   This report shall identify:

   a. by milepost all wetlands that would be affected;

   b. the National Wetlands Inventory (NWI) classification for each wetland;

   c. the crossing length of each wetland in feet; and

   d. the area of permanent and temporary disturbance that would occur in each wetland by NWI classification type.

   The requirements outlined in this section do not apply to wetlands in actively cultivated or rotated cropland. Standard upland protective measures, including workspace and topsoiling requirements, apply to these agricultural wetlands.

2. Route the pipeline to avoid wetland areas to the maximum extent possible. If a wetland cannot be avoided or crossed by following an existing right-of-way, route the new pipeline in a manner that minimizes disturbance to wetlands. Where looping an existing pipeline, overlap the existing pipeline right-of-way with the new construction right-of-way. In addition, locate the loop line no more than 25 feet away from the existing pipeline unless site-specific constraints would adversely affect the stability of the existing pipeline.

3. Limit the width of the construction right-of-way to 75 feet or less. Prior written approval of the Director is required where topographic conditions or soil limitations require that the construction right-of-way width within the boundaries of a federally delineated wetland be expanded beyond 75 feet. Early in the planning process the project sponsor is encouraged to identify site-specific areas where excessively wide trenches could occur and/or where spoil piles could be difficult to maintain because existing soils lack adequate unconfined compressive strength.

4. Wetland boundaries and buffers must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete.

5. Implement the measures of sections V and VI in the event a waterbody crossing is located within or adjacent to a wetland crossing. If all measures of sections V and VI cannot be met, the project sponsor must file with the Secretary a site-specific crossing plan for review and written approval by the Director before construction. This crossing plan shall address at a minimum:

   a. spoil control;

   b. equipment bridges;

   c. restoration of waterbody banks and wetland hydrology;

   d. timing of the waterbody crossing;

   e. method of crossing; and

   f. size and location of all extra work areas.

6. Do not locate aboveground facilities in any wetland, except where the location of such facilities outside of wetlands would prohibit compliance with U.S. Department of Transportation regulations.

B. INSTALLATION

1. Extra Work Areas and Access Roads

   a. Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from wetland boundaries, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land.

   b. The project sponsor shall file with the Secretary for review and written approval by the Director, site-specific justification for each extra work area with a less than 50-foot setback from wetland boundaries, except where adjacent upland consists of cultivated or rotated cropland or other disturbed land. The justification must specify the site-specific conditions that will not permit a 50-foot setback and measures to ensure the wetland is adequately protected.

   c. The construction right-of-way may be used for access when the wetland soil is firm enough to avoid rutting or the construction right-of-way has been appropriately stabilized to avoid rutting (e.g., with timber riprap, prefabricated equipment mats, or terra mats).

      In wetlands that cannot be appropriately stabilized, all construction equipment other than that needed to install the wetland crossing shall

use access roads located in upland areas. Where access roads in upland areas do not provide reasonable access, limit all other construction equipment to one pass through the wetland using the construction right-of-way.

d. The only access roads, other than the construction right-of-way, that can be used in wetlands are those existing roads that can be used with no modifications or improvements, other than routine repair, and no impact on the wetland.

2. Crossing Procedures

a. Comply with COE, or its delegated agency, permit terms and conditions.

b. Assemble the pipeline in an upland area unless the wetland is dry enough to adequately support skids and pipe.

c. Use "push-pull" or "float" techniques to place the pipe in the trench where water and other site conditions allow.

d. Minimize the length of time that topsoil is segregated and the trench is open. Do not trench the wetland until the pipeline is assembled and ready for lowering in.

e. Limit construction equipment operating in wetland areas to that needed to clear the construction right-of-way, dig the trench, fabricate and install the pipeline, backfill the trench, and restore the construction right-of-way.

f. Cut vegetation just above ground level, leaving existing root systems in place, and remove it from the wetland for disposal.

The project sponsor can burn woody debris in wetlands, if approved by the COE and in accordance with state and local regulations, ensuring that all remaining woody debris is removed for disposal.

g. Limit pulling of tree stumps and grading activities to directly over the trenchline. Do not grade or remove stumps or root systems from the rest of the construction right-of-way in wetlands unless the Chief Inspector and Environmental Inspector determine that safety-related construction constraints require grading or the removal of tree stumps from under the working side of the construction right-of-way.

h. Segregate the top 1 foot of topsoil from the area disturbed by trenching, except in areas where standing water is present or soils are

saturated. Immediately after backfilling is complete, restore the segregated topsoil to its original location.

i. Do not use rock, soil imported from outside the wetland, tree stumps, or brush riprap to support equipment on the construction right-of-way.

j. If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of the topsoil and subsoil in wetlands, use low-ground-weight construction equipment, or operate normal equipment on timber riprap, prefabricated equipment mats, or terra mats.

k. Remove all project-related material used to support equipment on the construction right-of-way upon completion of construction.

3. Temporary Sediment Control

Install sediment barriers (as defined in section IV.F.3.a of the Plan) immediately after initial disturbance of the wetland or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench). Except as noted below in section VI.B.3.c, maintain sediment barriers until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion and sediment control measures are addressed in more detail in the Plan.

a. Install sediment barriers across the entire construction right-of-way immediately upslope of the wetland boundary at all wetland crossings where necessary to prevent sediment flow into the wetland.

b. Where wetlands are adjacent to the construction right-of-way and the right-of-way slopes toward the wetland, install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil within the construction right-of-way and prevent sediment flow into the wetland.

c. Install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way through wetlands. Remove these sediment barriers during right-of-way cleanup.

4. Trench Dewatering

Dewater the trench (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in silt-laden water flowing into any wetland. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.

C. RESTORATION

1. Where the pipeline trench may drain a wetland, construct trench breakers at the wetland boundaries and/or seal the trench bottom as necessary to maintain the original wetland hydrology.

2. Restore pre-construction wetland contours to maintain the original wetland hydrology.

3. For each wetland crossed, install a trench breaker at the base of slopes near the boundary between the wetland and adjacent upland areas. Install a permanent slope breaker across the construction right-of-way at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from the wetland, or as needed to prevent sediment transport into the wetland. In addition, install sediment barriers as outlined in the Plan. In some areas, with the approval of the Environmental Inspector, an earthen berm may be suitable as a sediment barrier adjacent to the wetland.

4. Do not use fertilizer, lime, or mulch unless required in writing by the appropriate federal or state agency.

5. Consult with the appropriate federal or state agencies to develop a project-specific wetland restoration plan. The restoration plan shall include measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of invasive species and noxious weeds (e.g., purple loosestrife and phragmites), and monitoring the success of the revegetation and weed control efforts. Provide this plan to the FERC staff upon request.

6. Until a project-specific wetland restoration plan is developed and/or implemented, temporarily revegetate the construction right-of-way with annual ryegrass at a rate of 40 pounds/acre (unless standing water is present).

7. Ensure that all disturbed areas successfully revegetate with wetland herbaceous and/or woody plant species.

8. Remove temporary sediment barriers located at the boundary between wetland and adjacent upland areas after revegetation and stabilization of adjacent upland areas are judged to be successful as specified in section VII.A.4 of the Plan.

D. POST-CONSTRUCTION MAINTENANCE AND REPORTING

1. Do not conduct routine vegetation mowing or clearing over the full width of the permanent right-of-way in wetlands. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In addition, trees within 15 feet of the pipeline with roots that could compromise the integrity of pipeline coating may be selectively cut and removed from the permanent right-of-way. Do not conduct any routine vegetation mowing or clearing in wetlands that are between HDD entry and exit points.

2. Do not use herbicides or pesticides in or within 100 feet of a wetland, except as allowed by the appropriate federal or state agency.

3. Time of year restrictions specified in section VII.A.5 of the Plan (April 15 – August 1 of any year) apply to routine mowing and clearing of wetland areas.

4. Monitor and record the success of wetland revegetation annually until wetland revegetation is successful.

5. Wetland revegetation shall be considered successful if all of the following criteria are satisfied:

   a. the affected wetland satisfies the current federal definition for a wetland (i.e., soils, hydrology, and vegetation);

   b. vegetation is at least 80 percent of either the cover documented for the wetland prior to construction, or at least 80 percent of the cover in adjacent wetland areas that were not disturbed by construction;

   c. if natural rather than active revegetation was used, the plant species composition is consistent with early successional wetland plant communities in the affected ecoregion; and

   d. invasive species and noxious weeds are absent, unless they are abundant in adjacent areas that were not disturbed by construction.

6. Within 3 years after construction, file a report with the Secretary identifying the status of the wetland revegetation efforts and documenting success as defined in section VI.D.5, above. The requirement to file wetland restoration reports with the Secretary does not apply to projects constructed under the automatic authorization, prior notice, or advance notice provisions in the FERC's regulations.

   For any wetland where revegetation is not successful at the end of 3 years after construction, develop and implement (in consultation with a

professional wetland ecologist) a remedial revegetation plan to actively revegetate wetlands. Continue revegetation efforts and file a report annually documenting progress in these wetlands until wetland revegetation is successful.

VII. HYDROSTATIC TESTING

A. NOTIFICATION PROCEDURES AND PERMITS

1. Apply for state-issued water withdrawal permits, as required.

2. Apply for National Pollutant Discharge Elimination System (NPDES) or state-issued discharge permits, as required.

3. Notify appropriate state agencies of intent to use specific sources at least 48 hours before testing activities unless they waive this requirement in writing.

B. GENERAL

1. Perform 100 percent radiographic inspection of all pipeline section welds or hydrotest the pipeline sections, before installation under waterbodies or wetlands.

2. If pumps used for hydrostatic testing are within 100 feet of any waterbody or wetland, address secondary containment and refueling of these pumps in the project's Spill Prevention and Response Procedures.

3. The project sponsor shall file with the Secretary before construction a list identifying the location of all waterbodies proposed for use as a hydrostatic test water source or discharge location. This filing requirement does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations.

C. INTAKE SOURCE AND RATE

1. Screen the intake hose to minimize the potential for entrainment of fish.

2. Do not use state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate federal, state, and/or local permitting agencies grant written permission.

3. Maintain adequate flow rates to protect aquatic life, provide for all waterbody uses, and provide for downstream withdrawals of water by existing users.

4. Locate hydrostatic test manifolds outside wetlands and riparian areas to the maximum extent practicable.

D. DISCHARGE LOCATION, METHOD, AND RATE

1. Regulate discharge rate, use energy dissipation device(s), and install sediment barriers, as necessary, to prevent erosion, streambed scour, suspension of sediments, or excessive streamflow.

2. Do not discharge into state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate federal, state, and local permitting agencies grant written permission.

Federal Energy Regulatory Commission

UPLAND EROSION CONTROL, REVEGETATION, AND MAINTENANCE PLAN

Washington, DC 20426

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 by identifying baseline mitigation measures for minimizing erosion and enhancing revegetation. Project sponsors shall specify in their applications for a new 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 shall also explain how those alternative measures would achieve a comparable level of mitigation.

Once a project is authorized, project sponsors 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 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 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 on its land or under its jurisdiction.

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.

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

1. 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.

2. 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 (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. 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. on a weekly basis in areas with no construction or equipment operation; and

    c. 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 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

The project sponsor shall do the following before construction:

A. CONSTRUCTION WORK AREAS

1. Identify all construction work areas (e.g., construction right-of-way, extra work space areas, pipe storage and contractor yards, borrow and disposal areas, access roads) that would be needed for safe construction. The project sponsor 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 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 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, 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

The project sponsor 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

The project sponsor 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 shall: avoid removal of mature trees and landscaping within the construction work area unless necessary for 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 shall develop and file a 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 work space areas, pipe storage yards, borrow and disposal areas, access roads, and other areas approved in the FERC's Orders. Any 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 construction right-of-way width for a project shall not exceed 75 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 turn-arounds 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, importation of topsoil is an acceptable alternative to topsoil segregation.

3. Where topsoil segregation is required, the project sponsor 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 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 frequent 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 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 sand bags.

b. Install temporary slope breakers on all disturbed areas, as necessary to avoid excessive erosion. Temporary slope breakers must be installed on slopes greater than 5 percent where the base of the slope is less than 50 feet from 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

c. 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. 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.

a. Temporary trench plugs may consist of unexcavated portions of the trench, compacted subsoil, sandbags, or some functional equivalent.

b. Position temporary trench plugs, as necessary, to reduce trenchline 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., driveable berms across travelways), sand bags, 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 5 percent where the base of the slope is less than 50 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/acre available nitrogen (at least 50 percent of which is slow release).

f. Ensure that mulch is adequately anchored to minimize loss due to wind and water.

g. 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. 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 pre-construction 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 sand bags 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 5 percent where the base of the slope is less than 50 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:

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 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 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 6 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. 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 August 1 of any year unless specifically approved in writing by the responsible land management agency or the U.S. Fish and Wildlife Service.

6. Efforts to control unauthorized off-road vehicle use, in cooperation with the landowner, shall continue throughout the life of the project. Maintain signs, gates, and permanent access roads as necessary.

B. REPORTING

1. The project sponsor 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 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.