

**ATTACHMENT B**

**HARRISON COUNTY**

**WETLAND SWVM FORMS/WETLAND DELINEATION  
FORM/PHOTOS**

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.436246	Lon.	-80.474973
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-B55, Timber Mat Crossing				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-B55	Emergent	0.0054	Emergent					
Total Impact		0.0054						
PART II - Unit Scores								
Wetland Classification			Replacement Unit(s)					
Total Emergent			0.0054					
Total Scrub-Shrub			0					
Total Forested			0					
Total Open Water			0					

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$324.00

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 05/30/2015  
 Applicant/Owner: MVP State: WV Sampling Point: W-B55  
 Investigator(s): C. Ansari, M. Whitten, M. Brice Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR or MLRA): LRRN Lat: 39.436264 Long: -80.474942 Datum: NAD 83  
 Soil Map Unit Name: Vandalia silty clay loam, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks:

Cowardin Code: PEM

HGM: Riverine

WT: RPWWD

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

### Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):             
 Water Table Present? Yes ☐ No ☒ Depth (inches):             
 Saturation Present? Yes ☒ No ☐ Depth (inches): 8  
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland location is a heavily grazed pasture. The soils are compacted from the heavy cattle use.

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-B55

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <b>None</b>				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2.				
3.				
4.				
5.				
6.				
7.				
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. <b>None</b>				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <b>Poa trivialis</b>	<u>15</u>		<u>FACW</u>	
2. <b>Carex lurida</b>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <b>Agrostis stolonifera</b>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
4. <b>Impatiens capensis</b>	<u>10</u>		<u>FACW</u>	
5. <b>Lythrum sp</b>	<u>5</u>		<u>ND</u>	
6. <b>Daucus carota</b>	<u>5</u>		<u>UPL</u>	
7.				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
8.				
9.				
10.				
11.				
<u>85</u> = Total Cover 50% of total cover: <u>42.5</u> 20% of total cover: <u>17</u>				
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1.				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
2.				
3.				
4.				
5.				
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
6.				

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: W-B55

[illegible]

## Wetland Photograph Page

Wetland ID W-B55 Date 05/30/2015



Photograph Direction NW

Comments:

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP City/County: Harrison Sampling Date: 05/30/2015  
Applicant/Owner: MVP State: WV Sampling Point: W-B55-UP  
Investigator(s): C. Ansari, M. Whitten, M. Brice Section, Township, Range: N/A  
Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): None Slope (%): 2  
Subregion (LRR or MLRA): LRRN Lat: 39.436206 Long: -80.474926 Datum: NAD 83  
Soil Map Unit Name: Vandalia silty clay loam, 15 to 25 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks:

Upland

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<u>Secondary Indicators (minimum of two required)</u>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Upland plot

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-B55-UP

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>None</u>				Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. _____				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
5. _____				
6. _____				
7. _____				
<div style="text-align: right;"> <math>\frac{0}{50\% \text{ of total cover: } 0} = \text{Total Cover}</math>  <math>\frac{0}{20\% \text{ of total cover: } 0}</math> </div>				
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>None</u>				
2. _____				
3. _____				
4. _____				
5. _____				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6. _____				
7. _____				
8. _____				
9. _____				
<div style="text-align: right;"> <math>\frac{0}{50\% \text{ of total cover: } 0} = \text{Total Cover}</math>  <math>\frac{0}{20\% \text{ of total cover: } 0}</math> </div>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <u>Verbesina alternifolia</u>	<u>10</u>		<u>FAC</u>	
2. <u>Daucus carota</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Rumex crispus</u>	<u>5</u>		<u>FAC</u>	
4. <u>Plantago major</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
5. <u>Poa compressa</u>	<u>5</u>		<u>FACU</u>	
6. <u>Solidago sp</u>	<u>10</u>		<u>ND</u>	
7. _____				
8. _____				
<div style="text-align: right;"> <math>\frac{90}{50\% \text{ of total cover: } 45} = \text{Total Cover}</math>  <math>\frac{18}{20\% \text{ of total cover: } 18}</math> </div>				
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
<div style="text-align: right;"> <math>\frac{0}{50\% \text{ of total cover: } 0} = \text{Total Cover}</math>  <math>\frac{0}{20\% \text{ of total cover: } 0}</math> </div>				
Remarks: (Include photo numbers here or on a separate sheet.)				

## SOIL

Sampling Point: W-B55-UP

[illegible]

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.391614	Lon.	-80.477085
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-J32-PEM-1, Temporary Access Road				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-J32-PEM-1	Emergent	0.0417	Emergent					
Total Impact		0.0417						
PART II - Unit Scores								
Wetland Classification			Replacement Unit(s)					
Total Emergent			0.0417					
Total Scrub-Shrub			0					
Total Forested			0					
Total Open Water			0					

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$2,502.00

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP City/County: Harrison Sampling Date: 05/29/2015  
Applicant/Owner: MVP State: WV Sampling Point: W-J32-PEM-1  
Investigator(s): P. Johnson, C. Weber, N. Katsiasicas Section, Township, Range: N/A  
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 3  
Subregion (LRR or MLRA): LRRN Lat: 39.391602 Long: -80.477012 Datum: NAD 83  
Soil Map Unit Name: Udifluvents and Fluvaquents NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks:

Cowardin Code: PEM HGM: Slope WT: RPWWD

Information listed on this form represents the data collected in 2015. The wetland was revisited on 09/17/2019. The presence of wetland hydrology, hydrophytic vegetation, and hydric soils was unable to be confirmed because the wetland was obstructed by timber matting.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches):           
Water Table Present? Yes ☐ No ☒ Depth (inches):           
Saturation Present? Yes ☒ No ☐ Depth (inches): 6  
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-J32-PEM-1

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <b>Juncus effusus</b>	40	✓	FACW	
2. <b>Carex vulpinoidea</b>	20	✓	OBL	
3. <b>Carex lurida</b>	30	✓	OBL	
4. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>90</u> = Total Cover 50% of total cover: <u>45</u> 20% of total cover: <u>18</u>				<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	<b>Remarks:</b> (Include photo numbers here or on a separate sheet.)
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				

## SOIL

Sampling Point: W-J32-PEM-1

[illegible]

## Wetland Photograph Page

Wetland ID W-J32-PEM-1 Cowardin Code PEM



Photograph Direction South

Date: 05/29/2015

Comments: 2015 wetland delineation.



Photograph Direction South

Date: 09/17/19

Comments: 2019 wetland delineation confirmation.

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Lewis Sampling Date: 05/28/2015  
 Applicant/Owner: MVP State: WV Sampling Point: W-J32 UP  
 Investigator(s): P Johnson Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR or MLRA): LRRN Lat: 39.391649 Long: -80.476980 Datum: NAD 83  
 Soil Map Unit Name: Vandalia silty clay loam, 8 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: Upland	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-J32 UP

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Prevalence Index worksheet:</b> <u>        </u> Total % Cover of: <u>        </u> Multiply by: OBL species <u>        </u> x 1 = <u>        </u> FACW species <u>        </u> x 2 = <u>        </u> FAC species <u>        </u> x 3 = <u>        </u> FACU species <u>        </u> x 4 = <u>        </u> UPL species <u>        </u> x 5 = <u>        </u> Column Totals: <u>        </u> (A) <u>        </u> (B)  Prevalence Index = B/A = <u>        </u>
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <u>Plantago lanceolata</u>	<u>30</u>	<u>✓</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <u>        </u> 1 - Rapid Test for Hydrophytic Vegetation <u>        </u> 2 - Dominance Test is >50% <u>        </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>        </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>        </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Trifolium repens</u>	<u>30</u>	<u>✓</u>	<u>UPL</u>	
3. <u>Trifolium pratense</u>	<u>20</u>	<u>✓</u>	<u>UPL</u>	
4. <u>Plantago major</u>	<u>10</u>	_____	<u>FACU</u>	
5. <u>Leucanthemum vulgare</u>	<u>10</u>	_____	<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>100</u> = Total Cover 50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>				<b>Hydrophytic Vegetation Present?</b> Yes <u>        </u> No <u>✓</u>

## SOIL

Sampling Point: W-J32 UP

[illegible]

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.369569	Lon.	-80.485054
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-A10a, Timber Mat Crossing				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-A10a	Emergent	0.0153	Emergent					
Total Impact		0.0153						
PART II - Unit Scores								
Wetland Classification			Replacement Unit(s)					
Total Emergent			0.0153					
Total Scrub-Shrub			0					
Total Forested			0					
Total Open Water			0					

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$918.00

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 10/22/2014  
 Applicant/Owner: MVP State: WV Sampling Point: W-A10a  
 Investigator(s): E. Strohmaier, D. McCullough, M. Whitten Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 3  
 Subregion (LRR or MLRA): LRRN Lat: 39.369624 Long: -80.484933 Datum: NAD 83  
 Soil Map Unit Name: Philo silt loam NWI classification: -

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydic Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Cowardin Code: PEM HGM: Riverine WT: RPWWD			

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> FAC-Neutral Test (D5)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>          </u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>10</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks: Surface water was present in the wetland ditch portion of W-A10, but not in the sample plot location.  Wetland consists of a linear ditch/stream system that is dominated by hydrophytes and functions more as a wetland than a free flowing stream channel, and the wetland extends into an associated portion of an adjacent pasture. The sample plot was taken in the pasture portion of the wetland. Recent cattle grazing in the pasture resulted in grass and Carex sp. in the sample plot to be unidentifiable to the species level.		

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-A10a

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species <u>45</u> x 2 = <u>90</u> FAC species _____ x 3 = _____ FACU species <u>30</u> x 4 = <u>120</u> UPL species _____ x 5 = _____ Column Totals: <u>75</u> (A) <u>210</u> (B)  Prevalence Index = B/A = <u>2.8</u>
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u>)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____				
_____ = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Herb Stratum (Plot size: <u>5'</u>)</b> 1. <b>Cyperus odoratus</b> <u>40</u> <input checked="" type="checkbox"/> FACW 2. <b>Trifolium pratense</b> <u>30</u> <input checked="" type="checkbox"/> FACU 3. <b>Scirpus cyperinus</b> <u>5</u> FACW 4. <b>Carex sp</b> <u>20</u> <input checked="" type="checkbox"/> ND 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____				
_____ = Total Cover 50% of total cover: <u>47.5</u> 20% of total cover: <u>19</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
<b>Woody Vine Stratum (Plot size: <u>30'</u>)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____				
_____ = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
_____ = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Remarks:</b> (Include photo numbers here or on a separate sheet.) Carex sp. (20%) and grass sp. (5%) were observed in the herbaceous stratum but were not identified to the species level; therefore, they were not included in the percent cover calculations.  Although the vegetation does not meet the dominance test, based on landscape context, positive hydrology and soils indicators, and the likelihood that the unidentified Carex sp. is a hydrophytic species, it is assumed that the plot meets the wetland vegetation parameter. Additionally, the plot does meet the prevalence index test.				

## SOIL

Sampling Point: W-A10a

[illegible]

## Wetland Photograph Page

Wetland ID W-A10a Date 10/22/2014



Photograph Direction SW

Comments:

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Mountain Valley Pipeline City/County: Harrison Sampling Date: 10/22/2014  
Applicant/Owner: MVP State: WV Sampling Point: W-A10-UP  
Investigator(s): ES, DM, MW Section, Township, Range: N/A  
Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): convex Slope (%): 3  
Subregion (LRR or MLRA): LRRN Lat: 39.36965691 Long: -80.48493228 Datum: NAD 83  
Soil Map Unit Name: Philo silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks:

Upland plot W-A10-UP1 is located ~10 feet north of wetland plot W-A10-WP1.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

### Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):   
Water Table Present? Yes ☐ No ☒ Depth (inches):   
Saturation Present? Yes ☐ No ☒ Depth (inches):   
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-A10-UP

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
<b>Herb Stratum</b> (Plot size: <u>5'</u> )				
1. <u>Trifolium pratense</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Digitaria ischaemum</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	
3. <u>Taraxicum officinale</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
4. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	<b>Woody Vine Stratum</b> (Plot size: <u>30'</u> )
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>70</u> = Total Cover 50% of total cover: <u>35</u> 20% of total cover: <u>14</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30'</u> )				
1. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: (Include photo numbers here or on a separate sheet.)  Poa sp. (30%) was observed in the herbaceous stratum but was not identified to the species level; therefore, it was not included in the percent cover calculations.  See photo W-A10-P1.				

## SOIL

Sampling Point: W-A10-UP

[illegible]

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.360192	Lon.	-80.492766
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-B1a, Pipeline ROW				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-B1a	Emergent	0.0119	Emergent					
Total Impact		0.0119						
PART II - Unit Scores								
Wetland Classification			Replacement Unit(s)					
Total Emergent			0.0119					
Total Scrub-Shrub			0					
Total Forested			0					
Total Open Water			0					

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$714.00

# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:	Mountain Valley Pipeline		City/County:	Harrison		Sampling Date:	October 21, 2014		
Applicant/ Owner:	MVP		State:	WV	Sampling Point:	W-B1a-WP1			
Investigator(s)	SR CM KL				Section, Township, Range:	N/A			
Landform (hillslope, terrace, etc.):	Terrace		Local Relief (concave, convex, none):	Concave		Slope (%):	35		
Subregion:	LRR	Lat:	39.360092		Long:	-80.492534		Datum:	NAD83
Soil Map Unit Name:	Gilpin-Upshur complex, 35 to 70 percent slopes, severely eroded				NWI classification:	PEM			

Are climatic/hydrologic conditions on the site typical for this time of year?: ☒ Yes ☐ No (If no, explain in Remarks.)

Are ☐ Vegetation, ☐ Soil, or ☐ Hydrology significantly disturbed?

Are "Normal Circumstances" present?: ☒ Yes ☐ No

Are ☐ Vegetation, ☐ Soil, or ☐ Hydrology naturally problematic?

(If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?: ☒ Yes ☐ No

Hydric Soil Present?: ☒ Yes ☐ No

Is the Sampled Area within a Wetland?: ☒ Yes ☐ No

Wetland Hydrology Present?: ☒ Yes ☐ No

Remarks:

Plot I

## HYDROLOGY

### Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1)             | <input type="checkbox"/> True Aquatic Plants (B14)                  |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Iron Deposits (B5)                        |   |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |   |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |
| <input type="checkbox"/> Aquatic Fauna (B13)                       |   |

Secondary Indicators (minimum of two required)

- |  |
|--|
| <input type="checkbox"/> Soil Surface Cracks (B6)                  |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Moss Trim Lines (B16)                     |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input checked="" type="checkbox"/> Geomorphic Position (D2)       |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Microtopographic Relief (D4)              |
| <input checked="" type="checkbox"/> FAC-Neutral Test (D5)          |

### Field Observations:

Surface Water Present?: ☒ Yes ☐ No Depth (inches):

1

Water Table Present?: ☐ Yes ☒ No Depth (inches):

Wetland Hydrology Present?: ☒ Yes ☐ No

Saturation Present?: ☐ Yes ☒ No Depth (inches):

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# VEGETATION (Five Strata) - Use scientific names of plants.

Tree Stratum					Plot size: 30 ft		Absolute % Cover		Dominant Species?		Indicator Status	
1:												
2:												
3:												
4:												
5:												
6:												
Total Cover:					0	50% of total cover:		0	20% of total cover:		0	

  

Sapling Stratum					Plot size: 15 ft		Absolute % Cover		Dominant Species?		Indicator Status	
1:												
2:												
3:												
4:												
5:												
6:												
Total Cover:					0	50% of total cover:		0	20% of total cover:		0	

  

Shrub Stratum					Plot size: 15 ft		Absolute % Cover		Dominant Species?		Indicator Status	
1:												
2:												
3:												
4:												
5:												
6:												
Total Cover:					0	50% of total cover:		0	20% of total cover:		0	

  

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC:  (A)

Total Number of Dominant Species Across All Strata:  (B)

Percent of Dominant Species That Are OBL, FACW, or FAC:  (A/B)

**Prevalence Index worksheet:**

Total % Cover of:  Multiply by:

OBL species:  x1 =:

FACW species:  x2 =:

FAC species:  x3 =:

FACU species:  x4 =:

UPL species:  x5 =:

Column Totals:  (A)  (B)

Prevalence Index = B/A =:

  

**Hydrophytic Vegetation Indicators:**

☒ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0\*

☐ 4 - Morphological Adaptations\* (Provide supporting data in Remarks)

☐ Problematic Hydrophytic Vegetation\* (Explain)

\*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

  

**Definitions of Five Vegetation Strata:**

**Tree** - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

**Sapling** - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

**Shrub** - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

**Herb** - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

**Woody Vine** - All woody vines, regardless of height.

  

**Hydrophytic Vegetation Present?:**

☒ Yes

☐ No

(Strata continued on next page.)

VEGETATION (Five Strata) - Use scientific names of plants. (continued)

Herb Stratum		Plot size:	5 ft	Absolute % Cover	Dominant Species?	Indicator Status
1:	Arthraxon hispidus			55	Yes	FAC
2:	Symphyotrichum racemosum			25	Yes	FACW
3:	Microstegium vimineum			20	No	FAC
4:	Scirpus cyperinus			10	No	FACW
5:	Verbesina alternifolia			5	No	FAC
6:					—	—
7:					—	—
8:					—	—
9:					—	—
1					—	—
11					—	—
Total Cover:				115	50% of total cover:	57.5
					20% of total cover:	23
Woody Vine Stratum		Plot size:	30 ft			
1:					—	—
2:					—	—
3:					—	—
4:					—	—
5:					—	—
Total Cover:				0	50% of total cover:	0
					20% of total cover:	0

Remarks:  
(Include photo numbers here or on a separate sheet.)

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)		Lithology	Color (moist)			
			Hue	Value	Chroma	%
0-12	Matrix:	Silty Clay Loam	10YR	5	2	80
	Redox Feature:	ConcentrationMatrix	7.5YR	4	6	20
	Redox Feature:	—	—	—	—	
	Matrix:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Matrix:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Matrix:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Redox Feature:	—	—	—	—	

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)

☐ Dark Surface (S7)☐ Polyvalue Below Surface (S8) (MLRA 147, 148)☐ Thin Dark Surface (S9) (MLRA 147, 148)☐ Loamy Gleyed Matrix (F2)☒ Depleted Matrix (F3)☐ Redox Dark Surface (F6)☐ Depleted Dark Surface (F7)☐ Redox Depressions (F8)☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)☐ Umbric Surface (F13) (MLRA 136, 122)☐ Piedmont Floodplain Soils (F19) (MLRA 148)☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils\*\*:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Other (Explain in Remarks)
- ☐ Very Shallow Dark Surface (TF12)

\*\*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:	Gravel fill
Depth (inches):	12

Hydric Soil Present?: ☒ Yes ☐ No

Remarks: Plot located on old logging road.

## Wetland Photograph Page

Wetland ID W-B1a Date 10/21/14



Photograph Direction WNW

Comments:

# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:	Mountain Valley Pipeline	City/County:	Harrison	Sampling Date:	October 21, 2014		
Applicant/ Owner:	MVP	State:	WV	Sampling Point:	W-B1a-UP1		
Investigator(s)	SR CM KL	Section, Township, Range:	N/A				
Landform (hillslope, terrace, etc.):	Hillslope	Local Relief (concave, convex, none):	Slope	Slope (%):	35		
Subregion:	LRR	Lat:	39.360075	Long:	-80.492453	Datum:	NAD 83
Soil Map Unit Name:	Gilpin-Upshur complex, 35 to 70 percent slopes, severely eroded		NWI classification:	N/A			

Are climatic/hydrologic conditions on the site typical for this time of year?: ☒ Yes ☐ No (If no, explain in Remarks.)

Are ☐ Vegetation, ☐ Soil, or ☐ Hydrology significantly disturbed?

Are "Normal Circumstances" present?: ☒ Yes ☐ No

Are ☐ Vegetation, ☐ Soil, or ☐ Hydrology naturally problematic?

(If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?: ☐ Yes ☒ No

Hydric Soil Present?: ☐ Yes ☒ No

Wetland Hydrology Present?: ☐ Yes ☒ No

Is the Sampled Area within  
a Wetland?: ☐ Yes ☒ No

Remarks:

## HYDROLOGY

### Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> True Aquatic Plants (B14)                  |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Iron Deposits (B5)                        |   |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |   |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |
| <input type="checkbox"/> Aquatic Fauna (B13)                       |   |

Secondary Indicators (minimum of two required)

- |  |
|--|
| <input type="checkbox"/> Soil Surface Cracks (B6)                  |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Moss Trim Lines (B16)                     |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Microtopographic Relief (D4)              |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |

### Field Observations:

Surface Water Present?: ☐ Yes ☒ No Depth (inches):

Water Table Present?: ☐ Yes ☒ No Depth (inches):

Saturation Present?: ☐ Yes ☒ No Depth (inches):  
(includes capillary fringe)

Wetland Hydrology  
Present?: ☐ Yes ☒ No

Describe Recorded Data (stream gauge, monitoring well,  
aerial photos, previous inspections), if available:

Remarks:

# VEGETATION (Five Strata) - Use scientific names of plants.

Tree Stratum					Plot size: 30 ft		Absolute % Cover		Dominant Species?		Indicator Status	
1:	Acer rubrum		35	Yes	FAC							
2:	Quercus alba		30	Yes	FACU							
3:	Acer saccharum		15	No	FACU							
4:	Prunus serotina		10	No	FACU							
5:	Cornus alternifolia		5	No	FAC							
6:				—	—							
Total Cover:			95	50% of total cover:	47.5							
				20% of total cover:	19							

  

Sapling Stratum					Plot size: 15 ft		Absolute % Cover		Dominant Species?		Indicator Status	
1:				—	—							
2:				—	—							
3:				—	—							
4:				—	—							
5:				—	—							
6:				—	—							
Total Cover:			0	50% of total cover:	0							
				20% of total cover:	0							

  

Shrub Stratum					Plot size: 15 ft		Absolute % Cover		Dominant Species?		Indicator Status	
1:	Quercus rubra		3	No	FACU							
2:				—	—							
3:				—	—							
4:				—	—							
5:				—	—							
6:				—	—							
Total Cover:			3	50% of total cover:	1.5							
				20% of total cover:	0.6							

  

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC:  (A)  
  
 Total Number of Dominant Species Across All Strata:  (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC:  (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
  
 OBL species:  x1 =:   
 FACW species:  x2 =:   
 FAC species:  x3 =:   
 FACU species:  x4 =:   
 UPL species:  x5 =:   
 Column Totals:  (A)  (B)  
 Prevalence Index = B/A =:

  

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0\*  
☐ 4 - Morphological Adaptations\* (Provide supporting data in Remarks)  
☐ Problematic Hydrophytic Vegetation\* (Explain)  
 \*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

  

**Definitions of Five Vegetation Strata:**  
**Tree** - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  
**Sapling** - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  
**Shrub** - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  
**Herb** - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  
**Woody Vine** - All woody vines, regardless of height.

  

☐ Yes  
**Hydrophytic Vegetation Present?:**  
☒ No

(Strata continued on next page.)

VEGETATION (Five Strata) - Use scientific names of plants. (continued)

Herb Stratum		Plot size:	5 ft	Absolute % Cover	Dominant Species?	Indicator Status
1:				—	—	
2:				—	—	
3:				—	—	
4:				—	—	
5:				—	—	
6:				—	—	
7:				—	—	
8:				—	—	
9:				—	—	
1				—	—	
11				—	—	
Total Cover:		0	50% of total cover:	0		
			20% of total cover:	0		
Woody Vine Stratum		Plot size:	30 ft			
1:	Smilax rotundifolia	20	Yes	FAC		
2:			—	—		
3:			—	—		
4:			—	—		
5:			—	—		
Total Cover:		20	50% of total cover:	10		
			20% of total cover:	4		

Remarks:  
(Include photo numbers here or on a separate sheet.)

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)		Lithology	Color (moist)			
			Hue	Value	Chroma	%
0-2	Matrix:	Silt Loam	10YR	4	4	100
	Redox Feature:	—	—	—	—	
	Redox Feature:	—	—	—	—	
2-20	Matrix:	Silt Loam	7.5YR	4	4	100
	Redox Feature:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Matrix:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Matrix:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Redox Feature:	—	—	—	—	

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)

☐ Dark Surface (S7)☐ Polyvalue Below Surface (S8) (MLRA 147, 148)☐ Thin Dark Surface (S9) (MLRA 147, 148)☐ Loamy Gleyed Matrix (F2)☐ Depleted Matrix (F3)☐ Redox Dark Surface (F6)☐ Depleted Dark Surface (F7)☐ Redox Depressions (F8)☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)☐ Umbric Surface (F13) (MLRA 136, 122)☐ Piedmont Floodplain Soils (F19) (MLRA 148)☐ Red Parent Material (F21) (MLRA 127, 147)☐ 2 cm Muck (A10) (MLRA 147)☐ Coast Prairie Redox (A16) (MLRA 147, 148)☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)☐ Other (Explain in Remarks)☐ Very Shallow Dark Surface (TF12)

\*\*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?: ☐ Yes ☒ No

Remarks:

# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:	Mountain Valley Pipeline	City/County:	Harrison	Sampling Date:	October 21, 2014		
Applicant/ Owner:	MVP	State:	WV	Sampling Point:	W-B1a-UP1		
Investigator(s)	SR CM KL	Section, Township, Range:	N/A				
Landform (hillslope, terrace, etc.):	Hillslope	Local Relief (concave, convex, none):	Slope	Slope (%):	35		
Subregion:	LRR	Lat:	39.360075	Long:	-80.492453	Datum:	NAD 83
Soil Map Unit Name:	Gilpin-Upshur complex, 35 to 70 percent slopes, severely eroded		NWI classification:	N/A			

Are climatic/hydrologic conditions on the site typical for this time of year?: ☒ Yes ☐ No (If no, explain in Remarks.)

Are ☐ Vegetation, ☐ Soil, or ☐ Hydrology significantly disturbed?

Are "Normal Circumstances" present?: ☒ Yes ☐ No

Are ☐ Vegetation, ☐ Soil, or ☐ Hydrology naturally problematic?

(If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?: ☐ Yes ☒ No

Hydric Soil Present?: ☐ Yes ☒ No

Wetland Hydrology Present?: ☐ Yes ☒ No

Is the Sampled Area within  
a Wetland?: ☐ Yes ☒ No

Remarks:

## HYDROLOGY

### Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> True Aquatic Plants (B14)                  |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Iron Deposits (B5)                        |   |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |   |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |
| <input type="checkbox"/> Aquatic Fauna (B13)                       |   |

Secondary Indicators (minimum of two required)

- |  |
|--|
| <input type="checkbox"/> Soil Surface Cracks (B6)                  |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Moss Trim Lines (B16)                     |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Microtopographic Relief (D4)              |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |

### Field Observations:

Surface Water Present?: ☐ Yes ☒ No Depth (inches):

Water Table Present?: ☐ Yes ☒ No Depth (inches):

Saturation Present?: ☐ Yes ☒ No Depth (inches):

Wetland Hydrology  
Present?: ☐ Yes ☒ No

Describe Recorded Data (stream gauge, monitoring well,  
aerial photos, previous inspections), if available:

Remarks:

# VEGETATION (Five Strata) - Use scientific names of plants.

Tree Stratum					Plot size: 30 ft		Absolute % Cover		Dominant Species?		Indicator Status	
1:	Acer rubrum		35	Yes	FAC							
2:	Quercus alba		30	Yes	FACU							
3:	Acer saccharum		15	No	FACU							
4:	Prunus serotina		10	No	FACU							
5:	Cornus alternifolia		5	No	FAC							
6:				—	—							
Total Cover:			95	50% of total cover:	47.5							
				20% of total cover:	19							

  

Sapling Stratum					Plot size: 15 ft		Absolute % Cover		Dominant Species?		Indicator Status	
1:				—	—							
2:				—	—							
3:				—	—							
4:				—	—							
5:				—	—							
6:				—	—							
Total Cover:			0	50% of total cover:	0							
				20% of total cover:	0							

  

Shrub Stratum					Plot size: 15 ft		Absolute % Cover		Dominant Species?		Indicator Status	
1:	Quercus rubra		3	No	FACU							
2:				—	—							
3:				—	—							
4:				—	—							
5:				—	—							
6:				—	—							
Total Cover:			3	50% of total cover:	1.5							
				20% of total cover:	0.6							

  

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC:  (A)  
  
 Total Number of Dominant Species Across All Strata:  (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC:  (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_  
  
 OBL species:  x1 =:   
 FACW species:  x2 =:   
 FAC species:  x3 =:   
 FACU species:  x4 =:   
 UPL species:  x5 =:   
  
 Column Totals:  (A)  (B)  
  
 Prevalence Index = B/A =:

  

**Hydrophytic Vegetation Indicators:**  
☐ 1 - Rapid Test for Hydrophytic Vegetation  
☐ 2 - Dominance Test is >50%  
☐ 3 - Prevalence Index is ≤3.0\*  
☐ 4 - Morphological Adaptations\* (Provide supporting data in Remarks)  
☐ Problematic Hydrophytic Vegetation\* (Explain)  
  
 \*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

  

**Definitions of Five Vegetation Strata:**  
**Tree** - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  
**Sapling** - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  
**Shrub** - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  
**Herb** - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  
**Woody Vine** - All woody vines, regardless of height.

  

☐ Yes  
**Hydrophytic Vegetation Present?:**  
☒ No

(Strata continued on next page.)

VEGETATION (Five Strata) - Use scientific names of plants. (continued)

Herb Stratum		Plot size:	5 ft	Absolute % Cover	Dominant Species?	Indicator Status
1:				—	—	
2:				—	—	
3:				—	—	
4:				—	—	
5:				—	—	
6:				—	—	
7:				—	—	
8:				—	—	
9:				—	—	
1				—	—	
11				—	—	
Total Cover:		0	50% of total cover:	0		
			20% of total cover:	0		
Woody Vine Stratum		Plot size:	30 ft			
1:	Smilax rotundifolia	20	Yes	FAC		
2:			—	—		
3:			—	—		
4:			—	—		
5:			—	—		
Total Cover:		20	50% of total cover:	10		
			20% of total cover:	4		

Remarks:  
(Include photo numbers here or on a separate sheet.)

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)		Lithology	Color (moist)			
			Hue	Value	Chroma	%
0-2	Matrix:	Silt Loam	10YR	4	4	100
	Redox Feature:	—	—	—	—	
	Redox Feature:	—	—	—	—	
2-20	Matrix:	Silt Loam	7.5YR	4	4	100
	Redox Feature:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Matrix:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Matrix:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Redox Feature:	—	—	—	—	

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)

☐ Dark Surface (S7)☐ Polyvalue Below Surface (S8) (MLRA 147, 148)☐ Thin Dark Surface (S9) (MLRA 147, 148)☐ Loamy Gleyed Matrix (F2)☐ Depleted Matrix (F3)☐ Redox Dark Surface (F6)☐ Depleted Dark Surface (F7)☐ Redox Depressions (F8)☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)☐ Umbric Surface (F13) (MLRA 136, 122)☐ Piedmont Floodplain Soils (F19) (MLRA 148)☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils\*\*:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Other (Explain in Remarks)
- ☐ Very Shallow Dark Surface (TF12)

\*\*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?: ☐ Yes ☒ No

Remarks:

# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:	Mountain Valley Pipeline		City/County:	Harrison		Sampling Date:	October 21, 2014		
Applicant/ Owner:	MVP		State:	WV	Sampling Point:	W-B1a-WP1			
Investigator(s)	SR CM KL				Section, Township, Range:	N/A			
Landform (hillslope, terrace, etc.):	Terrace		Local Relief (concave, convex, none):	Concave		Slope (%):	35		
Subregion:	LRR	Lat:	39.360092		Long:	-80.492534		Datum:	NAD83
Soil Map Unit Name:	Gilpin-Upshur complex, 35 to 70 percent slopes, severely eroded				NWI classification:	PEM			

Are climatic/hydrologic conditions on the site typical for this time of year?: ☒ Yes ☐ No (If no, explain in Remarks.)

Are ☐ Vegetation, ☐ Soil, or ☐ Hydrology significantly disturbed?

Are "Normal Circumstances" present?: ☒ Yes ☐ No

Are ☐ Vegetation, ☐ Soil, or ☐ Hydrology naturally problematic?

(If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?: ☒ Yes ☐ No

Hydric Soil Present?: ☒ Yes ☐ No

Is the Sampled Area within a Wetland?: ☒ Yes ☐ No

Wetland Hydrology Present?: ☒ Yes ☐ No

Remarks:

Plot I

## HYDROLOGY

### Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1)             | <input type="checkbox"/> True Aquatic Plants (B14)                  |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Iron Deposits (B5)                        |   |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |   |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |
| <input type="checkbox"/> Aquatic Fauna (B13)                       |   |

Secondary Indicators (minimum of two required)

- |  |
|--|
| <input type="checkbox"/> Soil Surface Cracks (B6)                  |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Moss Trim Lines (B16)                     |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input checked="" type="checkbox"/> Geomorphic Position (D2)       |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Microtopographic Relief (D4)              |
| <input checked="" type="checkbox"/> FAC-Neutral Test (D5)          |

### Field Observations:

Surface Water Present?: ☒ Yes ☐ No Depth (inches):

1

Water Table Present?: ☐ Yes ☒ No Depth (inches):

Wetland Hydrology Present?: ☒ Yes ☐ No

Saturation Present?: ☐ Yes ☒ No Depth (inches):

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# VEGETATION (Five Strata) - Use scientific names of plants.

Tree Stratum					Plot size: 30 ft		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1:							—	—	Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)		
2:							—	—	Total Number of Dominant Species Across All Strata: 2 (B)		
3:							—	—	Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)		
4:							—	—			
5:							—	—			
6:							—	—			
Total Cover:					0	50% of total cover:	0				
						20% of total cover:	0				
Sapling Stratum					Plot size: 15 ft		Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:	
1:							—	—	Total % Cover of: Multiply by:		
2:							—	—	OBL species: 0 x1 = 0		
3:							—	—	FACW species: 0 x2 = 0		
4:							—	—	FAC species: 0 x3 = 0		
5:							—	—	FACU species: 0 x4 = 0		
6:							—	—	UPL species: 0 x5 = 0		
Total Cover:					0	50% of total cover:	0	Column Totals: 0 (A) 0 (B)			
						20% of total cover:	0	Prevalence Index = B/A =: 0			
Shrub Stratum					Plot size: 15 ft		Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1:							—	—	<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0* <input type="checkbox"/> 4 - Morphological Adaptations* (Provide supporting data in Remarks) <input type="checkbox"/> Problematic Hydrophytic Vegetation* (Explain)		
2:							—	—	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
3:							—	—			
4:							—	—			
5:							—	—			
6:							—	—			
Total Cover:					0	50% of total cover:	0	Definitions of Five Vegetation Strata:			
						20% of total cover:	0	<b>Tree -</b> Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). <b>Sapling -</b> Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. <b>Shrub -</b> Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. <b>Herb -</b> All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. <b>Woody Vine -</b> All woody vines, regardless of height.			
Total Cover:					0	50% of total cover:	0	<input checked="" type="checkbox"/> Yes <b>Hydrophytic Vegetation Present?:</b> <input type="checkbox"/> No			
						20% of total cover:	0				

(Strata continued on next page.)

VEGETATION (Five Strata) - Use scientific names of plants. (continued)

Herb Stratum		Plot size:	5 ft	Absolute % Cover	Dominant Species?	Indicator Status
1:	Arthraxon hispidus			55	Yes	FAC
2:	Symphyotrichum racemosum			25	Yes	FACW
3:	Microstegium vimineum			20	No	FAC
4:	Scirpus cyperinus			10	No	FACW
5:	Verbesina alternifolia			5	No	FAC
6:					—	—
7:					—	—
8:					—	—
9:					—	—
1					—	—
11					—	—
Total Cover:				115	50% of total cover:	57.5
					20% of total cover:	23
Woody Vine Stratum		Plot size:	30 ft			
1:					—	—
2:					—	—
3:					—	—
4:					—	—
5:					—	—
Total Cover:				0	50% of total cover:	0
					20% of total cover:	0

Remarks:  
(Include photo numbers here or on a separate sheet.)

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)		Lithology	Color (moist)			
			Hue	Value	Chroma	%
0-12	Matrix:	Silty Clay Loam	10YR	5	2	80
	Redox Feature:	ConcentrationMatrix	7.5YR	4	6	20
	Redox Feature:	—	—	—	—	
	Matrix:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Matrix:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Matrix:	—	—	—	—	
	Redox Feature:	—	—	—	—	
	Redox Feature:	—	—	—	—	

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils\*\*:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16) (MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ☐ Other (Explain in Remarks)
- ☐ Very Shallow Dark Surface (TF12)

\*\*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:	Gravel fill
Depth (inches):	12

Hydric Soil Present?: ☒ Yes ☐ No

Remarks: Plot located on old logging road.

## Wetland Photograph Page

Wetland ID W-B1a Date 10/21/14



Photograph Direction WNW

Comments:

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.358924	Lon.	-80.493367
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-A40, Pipeline ROW/ATWS				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-A40	Emergent	0.3111	Emergent					
Total Impact		0.3111						
PART II - Unit Scores								
Wetland Classification			Replacement Unit(s)					
Total Emergent			0.3111					
Total Scrub-Shrub			0					
Total Forested			0					
Total Open Water			0					

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$18,666.00

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 06/05/2015  
 Applicant/Owner: MVP State: WV Sampling Point: W-A40  
 Investigator(s): S. Yarbrough, R. Sparhawk, W. Shattenber Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0  
 Subregion (LRR or MLRA): LRRN Lat: 39.359037 Long: -80.493546 Datum: NAD 83  
 Soil Map Unit Name: Philo silt loam (Ph) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydic Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Cowardin Code: PEM HGM: DEPRESSIONAL WT: RPWWN Wetland extended in a 2018 survey.			

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-A40

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <b>Carex scoparia</b>	20	✓	FACW	
2. <b>Juncus effusus</b>	20	✓	FACW	
3. <b>Carex frankii</b>	20	✓	OBL	
4. <b>Carex vulpinoidea</b>	20	✓	OBL	
5. <b>Eleocharis obtusa</b>	15		OBL	
6. <b>Phalaris arundinacea</b>	15		FACW	
7. <b>Poa pratensis</b>	5		FACU	
8. _____	_____	_____	_____	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>115</u> = Total Cover 50% of total cover: <u>57.5</u> 20% of total cover: <u>23</u>				
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> No _____
Remarks: (Include photo numbers here or on a separate sheet.)  Wet meadow depression				

## SOIL

Sampling Point: W-A40

[illegible]

## Wetland Photograph Page

Wetland ID W-A40 Date 06/05/2015



Photograph Direction SE

Comments:

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 06/05/2015  
 Applicant/Owner: MVP State: WV Sampling Point: W-A40/A41 UP  
 Investigator(s): S. Yarbrough, R. Sparhawk, W. Shattenbei Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2  
 Subregion (LRR or MLRA): LRRN Lat: 39.359191 Long: -80.493446 Datum: NAD 83  
 Soil Map Unit Name: Philo silt loam (Ph) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <b>UPLAND</b>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/>		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <b>No indicators for wetland hydrology.</b>		

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-A40/A41 UP

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
0 = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		
Sapling/Shrub Stratum (Plot size: <u>15'</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
0 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		
Herb Stratum (Plot size: <u>5'</u> )				
1. Plantago lanceolata	20	✓	UPL	
2. Poa pratensis	20	✓	FACU	
3. Trifolium pratense	20	✓	FACU	
4. Bromus sp.	15		ND	
5. Dactylis glomerata	15		FACU	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
90 = Total Cover				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
50% of total cover: <u>45</u>		20% of total cover: <u>18</u>		
Woody Vine Stratum (Plot size: <u>15'</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
0 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>✓</u>
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		

Remarks: (Include photo numbers here or on a separate sheet.)  
 ND - Not Determined.

## SOIL

Sampling Point: W-A40/A41 UP

[illegible]

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.358865	Lon.	-80.490797
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-A39, Permanent Access Road				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-A39	Emergent	0.028	Emergent					
Total Impact		0.028						
PART II - Unit Scores								
Wetland Classification		Replacement Unit(s)						
Total Emergent		0.028						
Total Scrub-Shrub		0						
Total Forested		0						
Total Open Water		0						

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$1,680.00

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 06/05/2015  
 Applicant/Owner: MVP State: WV Sampling Point: W-A39  
 Investigator(s): S. Yarbrough, R. Sparhawk, W. Shattenber Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): Concave Slope (%): 2-5%  
 Subregion (LRR or MLRA): LRRN Lat: 39.358846 Long: -80.490747 Datum: NAD 83  
 Soil Map Unit Name: Gilpin-Upshur complex, 8 to 15 percent slopes (GuC) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☒, Soil ☒, or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks: Cowardin Code: PEM HGM: Slope WT: RPWWN	
Information listed on this form represents the data collected in 2015. The wetland was revisited on 09/17/2019. The presence of wetland hydrology, hydrophytic vegetation, and hydric soils was unable to be confirmed because the wetland was obstructed by timber matting.	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input checked="" type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b>		
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (includes capillary fringe)	Depth (inches): _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Old access road.		

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-A39

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83.30%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <b>Ulmus americana</b>	<u>10</u>	<input checked="" type="checkbox"/>	FACW	
2. <b>Liriodendron tulipifera</b>	<u>5</u>	<input checked="" type="checkbox"/>	FACU	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>15</u> = Total Cover 50% of total cover: <u>7.5</u> 20% of total cover: <u>3</u>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <b>Osmundastrum cinnamomeum</b>	<u>50</u>	<input checked="" type="checkbox"/>	FACW	
2. <b>Carex lurida</b>	<u>30</u>	<input checked="" type="checkbox"/>	OBL	
3. <b>Microstegium vimineum</b>	<u>20</u>	<input checked="" type="checkbox"/>	FAC	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>100</u> = Total Cover 50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft in height.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: (Include photo numbers here or on a separate sheet.) Called this a PEM because the red maple is in an upland position with dry soils. The maples merely overhang the wetland; they are not rooted in the delineated wetland area.				

## SOIL

Sampling Point: W-A39

[illegible]

## Wetland Photograph Page

Wetland ID W-A39

Cowardin Code PEM



Photograph Direction SSE

Date: 06/05/2015

Comments: 2015 wetland delineation.



Photograph Direction North

Date: 09/17/2019

Comments: 2019 wetland delineation confirmation.

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP City/County: Harrison Sampling Date: 06/05/2015  
Applicant/Owner: MVP State: WV Sampling Point: W-A39 UP  
Investigator(s): S. Yarbrough, R. Sparhawk, W. Shattenberg, K. Lugo Section, Township, Range: N/A  
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 2-5  
Subregion (LRR or MLRA): LRRN Lat: 39.35893 Long: -80.490688 Datum: NAD 83  
Soil Map Unit Name: Gilpin-Upshur complex, 8 to 15 percent slopes (GuC) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks:

UPLAND

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<u>Secondary Indicators (minimum of two required)</u>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of wetland hydrology.

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-A39 UP

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Acer rubrum</u>	<u>85</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>6*</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
2. <u>Populus grandidentata</u>	<u>15</u>		<u>FACU</u>	
3. _____				
4. _____				
5. _____				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
6. _____				
7. _____				
8. _____				
100 = Total Cover 50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> )				
1. <u>Ulmus americana</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. _____				
3. _____				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. _____				
5. _____				
6. _____				
7. _____				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft in height.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
8. _____				
9. _____				
10. _____				
20 = Total Cover 50% of total cover: <u>10</u> 20% of total cover: <u>4</u>				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
<b>Herb Stratum</b> (Plot size: <u>5'</u> )				
1. <u>Fragaria virginiana</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Quercus rubra</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Carya ovata</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
4. <u>Panicum sp.</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>ND</u>	
5. _____				
6. _____				
7. _____				<b>Woody Vine Stratum</b> (Plot size: <u>15'</u> )
8. _____				
9. _____				
10. _____				
11. _____				40 = Total Cover 50% of total cover: <u>20</u> 20% of total cover: <u>8</u>
<b>Woody Vine Stratum</b> (Plot size: <u>15'</u> )				
1. <u>Smilax rotundifolia</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. _____				
3. _____				10 = Total Cover 50% of total cover: <u>5</u> 20% of total cover: <u>2</u>
4. _____				
5. _____				
6. _____				

Remarks: (Include photo numbers here or on a separate sheet.)  
 ND - Not Determined.  
  
 \* Vegetation not ID'd to species level not included in dominance test.

## SOIL

Sampling Point: W-A39 UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1								Leaf litter
1-12	10YR 5/4	100					CL	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.							<sup>2</sup> Location: PL=Pore Lining, M=Matrix.	
<b>Hydric Soil Indicators:</b>						<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Dark Surface (S7)			<input type="checkbox"/> 2 cm Muck (A10) ( <b>MLRA 147</b> )		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> )			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> )			<input type="checkbox"/> ( <b>MLRA 147, 148</b> )		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Piedmont Floodplain Soils (F19)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> ( <b>MLRA 136, 147</b> )		
<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Depressions (F8)					
<input type="checkbox"/> Sandy Mucky Mineral (S1) ( <b>LRR N,</b> <b>MLRA 147, 148</b> )			<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N,</b> <b>MLRA 136</b> )					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 136, 122</b> )			<sup>3</sup> Indicators of hydrophytic vegetation and		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> )			wetland hydrology must be present,		
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (F21) ( <b>MLRA 127, 147</b> )			unless disturbed or problematic.		
<b>Restrictive Layer (if observed):</b>								
Type: _____								
Depth (inches): _____							Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: No evidence of a hydric soil here.								

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.338239	Lon.	-80.519656
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-ST11, Temporary Acces Road/ATWS				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-ST11	Emergent	0.0228	Emergent					
Total Impact		0.0228						
PART II - Unit Scores								
Wetland Classification			Replacement Unit(s)					
Total Emergent			0.0228					
Total Scrub-Shrub			0					
Total Forested			0					
Total Open Water			0					

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$1,368.00

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 07/14/2016  
 Applicant/Owner: MVP State: WV Sampling Point: W-ST11  
 Investigator(s): JMM DNQ Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Convex Slope (%): 8-10  
 Subregion (LRR or MLRA): LRR N Lat: 39.338198 Long: -80.519693 Datum: NAD 83  
 Soil Map Unit Name: Gilpin-Upshur complex, 25-70 percent slopes, severely eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Cowardin Code: <u>PEM</u> HGM: <u>Slope</u> Water Type: <u>NRPWW</u>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>          </u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Within old roadbed</u>		

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-ST11

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
$\frac{0}{50\% \text{ of total cover: } 0} = \text{Total Cover}$		$\frac{0}{20\% \text{ of total cover: } 0}$		<b>Prevalence Index worksheet:</b> $\frac{\text{Total \% Cover of:}}{\text{Multiply by:}}$ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. <u>Salix nigra</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
$\frac{5}{50\% \text{ of total cover: } 2.5} = \text{Total Cover}$		$\frac{1}{20\% \text{ of total cover: } 1}$		<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is $\leq 3.0^1$ _____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <u>Onoclea sensibilis</u>	<u>15</u>	_____	<u>FACW</u>	
2. <u>Boehmeria cylindrica</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <u>Dichanthelium scabriusculum</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
4. <u>Carex lurida</u>	<u>10</u>	_____	<u>OBL</u>	
5. <u>Carex vulpinoidea</u>	<u>10</u>	_____	<u>OBL</u>	
6. <u>Dichanthelium clandestinum</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
7. <u>Agrimonia parviflora</u>	<u>10</u>	_____	<u>FACW</u>	
8. <u>Microstegium vimineum</u>	<u>10</u>	_____	<u>FAC</u>	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
$\frac{115}{50\% \text{ of total cover: } 57.5} = \text{Total Cover}$		$\frac{23}{20\% \text{ of total cover: } 23}$		<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
$\frac{0}{50\% \text{ of total cover: } 0} = \text{Total Cover}$		$\frac{0}{20\% \text{ of total cover: } 0}$		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: (Include photo numbers here or on a separate sheet.)				

## SOIL

Sampling Point: W-ST11

[illegible]

## Wetland Photograph Page

Wetland ID W-ST11 Date 07/14/2016



Photograph Direction NE

Comments:

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP City/County: Harrison Sampling Date: 07/14/2016  
Applicant/Owner: MVP State: WV Sampling Point: W-ST10 & 11 UP  
Investigator(s): JMM DNQ Section, Township, Range: N/A  
Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Linear Slope (%): 5  
Subregion (LRR or MLRA): LRR N Lat: 39.338046 Long: -80.519844 Datum: NAD 83  
Soil Map Unit Name: Gilpin-Upshur complex, 25 to 35 percent slopes, severely eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks: Cowardin Code: UPLAND HGM:  Water Type:

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<u>Secondary Indicators (minimum of two required)</u>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? Yes ☐ No ☒ Depth (inches):   
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-ST10 & 11 UP

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Liriodendron tulipifera</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>10</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40</u> (A/B)
2. <u>Carya ovata</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Acer rubrum</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
4. _____				
5. _____				
6. _____				
7. _____				
<u>50</u> = Total Cover 50% of total cover: <u>25</u> 20% of total cover: <u>10</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A)    _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. <u>Prunus serotina</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Liriodendron tulipifera</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Rosa multiflora</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
4. <u>Carpinus caroliniana</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
5. _____				
6. _____				
7. _____				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
8. _____				
9. _____				
<u>55</u> = Total Cover 50% of total cover: <u>27.5</u> 20% of total cover: <u>11</u>				
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <u>Parathelypteris noveboracensis</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Dichanthelium clandestinum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Onoclea sensibilis</u>	<u>5</u>		<u>FACW</u>	
4. <u>Rubus allegheniensis</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
5. _____				
6. _____				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
<u>85</u> = Total Cover 50% of total cover: <u>42.5</u> 20% of total cover: <u>17</u>				
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
2. _____				
3. _____				
4. _____				
5. _____				
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				

## SOIL

Sampling Point: W-ST10 & 11 UP

[illegible]

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 10/23/14  
 Applicant/Owner: MVP State: WV Sampling Point: W-B2a  
 Investigator(s): SR, CM, KL Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 5-7  
 Subregion (LRR or MLRA): LRRN Lat: 39.316975 Long: -80.525623 Datum: NAD 83  
 Soil Map Unit Name: UF: Udifluvents and Fluvaquents NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☒, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydic Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Cowardin Code: PEM HGM: Riverine Water Type: RPWWD			
Information listed on this form represents the data collected in 2014. The wetland was revisited on 7/18/2018. Presence of wetland hydrology, hydrophytic vegetation, and hydric soils was confirmed using the USACE EMP Regional Supplement delineation methodology.			

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>1</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>1</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: 2014 remark: Area farmed for hay. Wetland extends off corridor to the east beyond mapped polygon.		

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-B2a

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Indicators:</b> <u>  </u> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <u>  </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>  </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>  </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <u>Phalaris arundinacea</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Carex lurida</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
3. <u>Juncus effusus</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
4. <u>Trifolium pratense</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>105</u> = Total Cover 50% of total cover: <u>52.5</u> 20% of total cover: <u>21</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: (Include photo numbers here or on a separate sheet.)				

## SOIL

Sampling Point: W-B2a

[illegible]

## Photograph Page

Wetland ID W-B2a Cowardin Code PEM Date 10/23/14



Photograph Number 1

Photograph Direction West

Comments: 2014 original delineation



Photograph Number 2

Photograph Direction West

Comments: 2018

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.3168564	Lon.	-80.5253152
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-B2a, ATWS				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-B2a	Emergent	0.1953	Emergent					
Total Impact		0.1953						
PART II - Unit Scores								
Wetland Classification			Replacement Unit(s)					
Total Emergent			0.1953					
Total Scrub-Shrub			0					
Total Forested			0					
Total Open Water			0					

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$11,718.00

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.316784	Lon.	-80.526129
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-B4a, Timber Mat Crossing				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-B4a	Emergent	0.0214	Emergent					
Total Impact		0.0214						
PART II - Unit Scores								
Wetland Classification			Replacement Unit(s)					
Total Emergent			0.0214					
Total Scrub-Shrub			0					
Total Forested			0					
Total Open Water			0					

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$1,284.00

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP City/County: Harrison Sampling Date: 10/23/14  
Applicant/Owner: MVP State: WV Sampling Point: W-B4a  
Investigator(s): SR CM KL Section, Township, Range: N/A  
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 1  
Subregion (LRR or MLRA): LRRN Lat: 39.316837 Long: -80.526047 Datum: NAD 83  
Soil Map Unit Name: Udifulvents and Fluvaquents NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks: Cowardin Code: PEM HGM: Riverine Water Type: RPWWD

Information listed on this form represents the data collected in 2015. The wetland was revisited on 10/02/2019. The wetland is located outside the current construction LOD and 2019 surveys were limited to the LOD. Due to access restrictions, wetland criteria could not be evaluated using USACE Regional Supplement methods; however, the presence of wetland hydrology & hydrophytic vegetation was confirmed visually from within the construction LOD.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches):             
Water Table Present? Yes ☐ No ☒ Depth (inches):             
Saturation Present? Yes ☒ No ☐ Depth (inches): 0  
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-B4a

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Sapling/Shrub Stratum (Plot size: <u>15'</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A)    _____ (B)  Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Herb Stratum (Plot size: <u>5'</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. Phalaris arundinacea	40	✓	FACW	
2. Carex lurida	25	✓	OBL	
3. Trifolium pratense	15		FACU	
4. Polygonum sagittatum	10		OBL	
5. Juncus effusus	10		FACW	
6. Bidens sp.	5		ND	
<u>105</u> = Total Cover 50% of total cover: <u>52.5</u> 20% of total cover: <u>21</u>				
Woody Vine Stratum (Plot size: <u>15'</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____

## SOIL

Sampling Point: W-B4a

[illegible]

## Wetland Photograph Page

Wetland ID W-B4a Cowardin Code PEM



Photograph Direction East

Date: 10/23/14

Comments: 2015 wetland delineation.



Photograph Direction WSW

Date: 10/02/2019

Comments: 2019 wetland delineation confirmation.

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP City/County: Harrison Sampling Date: 10/23/14  
Applicant/Owner: MVP State: WV Sampling Point: W-B4a-UP  
Investigator(s): SR CM KL Section, Township, Range: N/A  
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 1  
Subregion (LRR or MLRA): LRRN Lat: 39.316848 Long: -80.526199 Datum: NAD 83  
Soil Map Unit Name: Udifluvents and Fluvaquents NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks: Cowardin Code: UPLAND HGM:  Water Type:

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<u>Secondary Indicators (minimum of two required)</u>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches):   
Water Table Present? Yes ☐ No ☒ Depth (inches):   
Saturation Present? Yes ☐ No ☒ Depth (inches):   
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-B4a-UP

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. Trifolium pratense	30	✓	FACU	
2. Poa pratensis	25	✓	FACU	
3. Plantago lanceolata	15		UPL	
4. Plantago major	10		FACU	
5. Achillea millefolium	10		FACU	
6. Daucus carota	10		UPL	
7. Setaria sp.	5		ND	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>105</u> = Total Cover 50% of total cover: <u>52.5</u> 20% of total cover: <u>21</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>✓</u>
Remarks: (Include photo numbers here or on a separate sheet.)				

## SOIL

Sampling Point: W-B4a-UP

[illegible]

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.253101	Lon.	-80.540498
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-UU4a, Pipeline ROW/ATWS				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-UU4	Emergent	0.1268	Emergent					
Total Impact		0.1268						
PART II - Unit Scores								
Wetland Classification			Replacement Unit(s)					
Total Emergent			0.1268					
Total Scrub-Shrub			0					
Total Forested			0					
Total Open Water			0					

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$7,608.00

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 09/18/2019  
Applicant/Owner: MVP State: WV Sampling Point: W-UU4a  
Investigator(s): JMM, HS, JL Section, Township, Range: N/A  
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): River terrace Slope (%): 0%  
Subregion (LRR or MLRA): LRRN Lat: 39.253244 Long: -80.540749 Datum: NAV 83  
Soil Map Unit Name: Udifulvents and Fluvaquents NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

### Remarks:

Cowardin Code: PEM HGM: Riverine WT: RPWWN

3 Sections delineated in 2019 from original 2015 surveys due to timbermats and change of land use of surrounding field (grazing to fallow) that allowed wetland to meet criteria.

## HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> True Aquatic Plants (B14)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

### Field Observations:

Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

### Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-UU4a

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <u>Cyperus esculentus</u>	<u>10</u>		<u>FACW</u>	
2. <u>Glyceria striata</u>	<u>10</u>		<u>OBL</u>	
3. <u>Scirpus atrovirens</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
4. <u>Carex vulpinoidea</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
5. <u>Persicaria pensylvanicum</u>	<u>5</u>		<u>OBL</u>	
6. <u>Symphytotrichum ericoides</u>	<u>5</u>		<u>FACU</u>	
7. <u>Carex frankii</u>	<u>10</u>		<u>OBL</u>	
8. <u>Microstegium vimineum</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
9. <u>Carex lurida</u>	<u>10</u>		<u>OBL</u>	
10. <u>Lysimachia nummularia</u>	<u>5</u>		<u>OBL</u>	
11. _____	_____	_____	_____	
<u>100</u> = Total Cover 50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____				
Remarks: (Include photo numbers here or on a separate sheet.)				

## SOIL

Sampling Point: W-UU4a

[illegible]

## Wetland Photograph Page

Wetland ID W-UU4a Cowardin Code PEM Date 09/18/2019



Photograph Number 1

Photograph Direction NW

Comments:



Photograph Number 2

Photograph Direction West

Comments:

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 09/18/19  
Applicant/Owner: MVP State: PA Sampling Point: W-UU4a-UPL  
Investigator(s): JMM, HS, JL Section, Township, Range: N/A  
Landform (hillslope, terrace, etc.): Valley Local relief (concave, convex, none): Linear Slope (%): 0%  
Subregion (LRR or MLRA): LRRN Lat: 39.253086 Long: -80.540562 Datum: NAD 83  
Soil Map Unit Name: Udifuvents and Fluvaquents NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks: Cowardin Code: UPLAND HGM:  Water Type:

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)		<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> FAC-Neutral Test (D5)

### Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):   
Water Table Present? Yes ☐ No ☒ Depth (inches):   
Saturation Present? Yes ☐ No ☒ Depth (inches):   
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-UU4a-UPL

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Prevalence Index worksheet:</b> <u>        </u> Total % Cover of: <u>        </u> Multiply by: OBL species <u>        </u> x 1 = <u>        </u> FACW species <u>        </u> x 2 = <u>        </u> FAC species <u>        </u> x 3 = <u>        </u> FACU species <u>        </u> x 4 = <u>        </u> UPL species <u>        </u> x 5 = <u>        </u> Column Totals: <u>        </u> (A) <u>        </u> (B)  Prevalence Index = B/A = <u>        </u>
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Indicators:</b> <u>        </u> 1 - Rapid Test for Hydrophytic Vegetation <u>        </u> 2 - Dominance Test is >50% <u>        </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>        </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>        </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <u>Dactylis glomerata</u>	<u>25</u>	<u>✓</u>	<u>FACU</u>	
2. <u>Trifolium pratense</u>	<u>20</u>	<u>✓</u>	<u>FACU</u>	
3. <u>Microstegium vimineum</u>	<u>15</u>	<u>✓</u>	<u>FAC</u>	
4. <u>Apocynum cannabinum</u>	<u>10</u>	_____	<u>FACU</u>	
5. <u>Solanum carolinense</u>	<u>10</u>	_____	<u>FACU</u>	
6. <u>Taraxicum officinal</u>	<u>5</u>	_____	<u>FACU</u>	
7. <u>Trifolium repens</u>	<u>5</u>	_____	<u>FACU</u>	
8. <u>Symphytotrichum ericoides</u>	<u>5</u>	_____	<u>FACU</u>	
9. <u>Cyperus esculentus</u>	<u>5</u>	_____	<u>FACW</u>	
10. _____	_____	_____	_____	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
<u>100</u> = Total Cover 50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b> Yes <u>        </u> No <u>✓</u>

## SOIL

Sampling Point: W-UU4a-UPL

[illegible]

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.250487	Lon.	-80.551891
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-F52, Temporary Access Road				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-F52	Emergent	0.0625	Emergent					
Total Impact		0.0625						
PART II - Unit Scores								
Wetland Classification		Replacement Unit(s)						
Total Emergent		0.0625						
Total Scrub-Shrub		0						
Total Forested		0						
Total Open Water		0						

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$3,750.00

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 05/30/2015  
 Applicant/Owner: MVP State: WV Sampling Point: W-F52  
 Investigator(s): Ed Strohmaier, Dawn McCullough Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): flat Slope (%): 0-1  
 Subregion (LRR or MLRA): LRRN Lat: 39.250625 Long: -80.551878 Datum: NAD 83  
 Soil Map Unit Name: Gilpin-Upshur complex, 15 to 25 percent slopes (GuD3); Gilpin-Upshur complex, 35 to 70 percent slopes (GuF3) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydic Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Cowardin Code: PEM HGM: Slope WT: NRPWW			
Information listed on this form represents the data collected in 2015. The wetland was revisited on 09/18/2019. The presence of wetland hydrology, hydrophytic vegetation, and hydric soils was unable to be confirmed because the wetland was obstructed by timber matting.			

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input checked="" type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>        </u>	<b>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>	
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>12</u>		
Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (includes capillary fringe)	Depth (inches): <u>4</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-F52

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A)    _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <u>Scirpus cyperinus</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Juncus tenuis</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Microstigium vimineum</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
4. <u>Trifolium repens</u>	<u>10</u>		<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>65</u> = Total Cover 50% of total cover: <u>32.5</u> 20% of total cover: <u>13</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				

**Hydrophytic Vegetation Present?**    Yes ☒    No \_\_\_\_\_

## SOIL

Sampling Point: W-F52

[illegible]

## Wetland Photograph Page

Wetland ID W-F52 Cowardin Code PEM



Photograph Direction SSW

Date: 05/30/2015

Comments: 2015 wetland delineation.



Photograph Direction South

Date: 09/18/2019

Comments: 2019 wetland delineation confirmation.

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 05/30/2015  
 Applicant/Owner: MVP State: WV Sampling Point: W-F52-UP  
 Investigator(s): Ed Strohmaier, Dawn McCullough Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): hillside Local relief (concave, convex, none): Convex Slope (%): \_\_\_\_\_  
 Subregion (LRR or MLRA): LRRN Lat: 39.250621 Long: -80.551803 Datum: NAD 83  
 Soil Map Unit Name: Gilpin-Upshur complex, 35 to 70 percent slopes, severely eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: Upland	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ True Aquatic Plants (B14) _____ High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) _____ Saturation (A3) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Water Marks (B1) _____ Presence of Reduced Iron (C4) _____ Sediment Deposits (B2) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Drift Deposits (B3) _____ Thin Muck Surface (C7) _____ Algal Mat or Crust (B4) _____ Other (Explain in Remarks) _____ Iron Deposits (B5) _____ _____ Inundation Visible on Aerial Imagery (B7) _____ _____ Water-Stained Leaves (B9) _____ _____ Aquatic Fauna (B13) _____		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Sparsely Vegetated Concave Surface (B8) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/></b>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Plot is located on the downhill side of the access road.		

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-F52-UP

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Ailanthus altissima</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
<u>30</u> = Total Cover 50% of total cover: <u>15</u> 20% of total cover: <u>6</u>				<b>Prevalence Index worksheet:</b> <u>        </u> Total % Cover of: <u>        </u> Multiply by: OBL species <u>        </u> x 1 = <u>        </u> FACW species <u>        </u> x 2 = <u>        </u> FAC species <u>        </u> x 3 = <u>        </u> FACU species <u>        </u> x 4 = <u>        </u> UPL species <u>        </u> x 5 = <u>        </u> Column Totals: <u>        </u> (A) <u>        </u> (B)  Prevalence Index = B/A = <u>        </u>
Sapling/Shrub Stratum (Plot size: <u>15'</u> )				
1. <u>Rubus allegheniensis</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
<u>15</u> = Total Cover 50% of total cover: <u>7.5</u> 20% of total cover: <u>3</u>				<b>Hydrophytic Vegetation Indicators:</b> <u>        </u> 1 - Rapid Test for Hydrophytic Vegetation <u>        </u> 2 - Dominance Test is >50% <u>        </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>        </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>        </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>5'</u> )				
1. <u>Microstegium vimineum</u>	<u>80</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
<u>80</u> = Total Cover 50% of total cover: <u>40</u> 20% of total cover: <u>16</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: <u>15'</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Present?</b> Yes <u>        </u> No <u><input checked="" type="checkbox"/></u>
Remarks: (Include photo numbers here or on a separate sheet.)				

## SOIL

Sampling Point: W-F52-UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	5YR 3/3	100					GrC	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) ( <b>MLRA 147</b> )	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> )	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> )	<input type="checkbox"/> <b>(MLRA 147, 148)</b>	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> <b>(MLRA 136, 147)</b>	
<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) ( <b>LRR N,</b>	<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N,</b>		
<input type="checkbox"/> <b>MLRA 147, 148)</b>	<input type="checkbox"/> <b>MLRA 136)</b>		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 136, 122</b> )		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> )		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) ( <b>MLRA 127, 147</b> )		

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present?

Yes \_\_\_\_\_ No ☒

Remarks:

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.24964	Lon.	-80.550121
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-F54, Timber Mat Crossing				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-F54	Emergent	0.0042	Emergent					
Total Impact		0.0042						
PART II - Unit Scores								
Wetland Classification			Replacement Unit(s)					
Total Emergent			0.0042					
Total Scrub-Shrub			0					
Total Forested			0					
Total Open Water			0					

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$252.00

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 05/30/2015  
 Applicant/Owner: MVP State: WV Sampling Point: W-F54  
 Investigator(s): Ed Strohmaier, Dawn McCullough Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): convex Slope (%): 0-1  
 Subregion (LRR or MLRA): LRRN Lat: 39.249656 Long: -80.550112 Datum: NAD 83  
 Soil Map Unit Name: Gilpin-Upshur complex, 25 to 35 percent slopes, severely eroded (GuE3) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Cowardin Code : PEM HGM: Slope WT: NRPWW Information listed on this form represents the data collected in 2015. The wetland was revisited on 09/18/2019. Presence of wetland hydrology, hydrophytic vegetation, and hydric soils was confirmed using the USACE EMP Regional Supplement delineation methodology.	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> FAC-Neutral Test (D5)		<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks: Shared upland plot W-F53-UP.		

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-F54

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Indicators:</b> <u>  </u> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <u>  </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>  </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>  </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <u>Microstegium vimineum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Carex lurida</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
3. <u>Arthraxon hispidis</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
4. <u>Juncus tenuis</u>	<u>5</u>		<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>80</u> = Total Cover 50% of total cover: <u>40</u> 20% of total cover: <u>16</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: (Include photo numbers here or on a separate sheet.) 20% bare ground.				

## SOIL

Sampling Point: W-F54

[illegible]

## Wetland Photograph Page

Wetland ID W-F54 Cowardin Code PEM



Photograph Direction WSW

Date: 05/30/2015

Comments: 2015 wetland delineation.



Photograph Direction ENE

Date: 09/18/2019

Comments: 2019 wetland delineation confirmation.

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 05/30/2015  
 Applicant/Owner: MVP State: WV Sampling Point: W-F53  
 Investigator(s): Ed Strohmaier, Dawn McCullough Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): convex Slope (%): 0-1  
 Subregion (LRR or MLRA): LRRN Lat: 39.249587 Long: -80.55006 Datum: NAD 83  
 Soil Map Unit Name: Gilpin-Upshur complex, 25 to 35 percent slopes, severely eroded (GuE3) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks:

Cowardin Code : PEM HGM: Slope WT: NRPWW

Information listed on this form represents the data collected in 2015. The wetland was revisited on 09/18/2019. The presence of wetland hydrology, hydrophytic vegetation, and hydric soils was unable to be confirmed because the wetland was obstructed by timber matting.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

### Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):             
 Water Table Present? Yes ☐ No ☒ Depth (inches):             
 Saturation Present? Yes ☒ No ☐ Depth (inches): 4  
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation is present within upper 4 inches of soil profile from recent heavy precipitation.

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-F53

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A)    _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <i>Carex lurida</i>	<u>25</u>	<input checked="" type="checkbox"/>	OBL	
2. <i>Juncus effusus</i>	<u>5</u>		FACW	
3. <i>Microstigium vimineum</i>	<u>55</u>	<input checked="" type="checkbox"/>	FAC	
4. <i>Carex vulpinoidea</i>	<u>15</u>		OBL	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>100</u> = Total Cover 50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: (Include photo numbers here or on a separate sheet.)				

## SOIL

Sampling Point: W-F53

[illegible]

## Wetland Photograph Page

Wetland ID W-F53 Cowardin Code PEM



Photograph Direction WSW

Date: 05/30/2015

Comments: 2015 wetland delineation.



Photograph Direction WSW

Date: 09/18/2019

Comments: 2019 wetland delineation confirmation.

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 05/30/2015  
Applicant/Owner: MVP State: WV Sampling Point: W-F53/F54-UP  
Investigator(s): Ed Strohmaier, Dawn McCullough Section, Township, Range: N/A  
Landform (hillslope, terrace, etc.): Hilltop Local relief (concave, convex, none): Convex Slope (%): 5  
Subregion (LRR or MLRA): LRRN Lat: 39.249549 Long: -80.550092 Datum: NAD 83  
Soil Map Unit Name: Gilpin-Upshur complex, 25 to 35 percent slopes, severely eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks:  
upland

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

### Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):   
Water Table Present? Yes ☐ No ☒ Depth (inches):   
Saturation Present? Yes ☐ No ☒ Depth (inches):   
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Upland plot is located SW of the wetland which lies adjacent to and across the existing access road.

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-F53/F54-UP

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Liriodendron tulipifera</u>	<u>70</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. <u>Acer rubrum</u>	<u>15</u>		<u>FAC</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
<u>85</u> = Total Cover 50% of total cover: <u>42.5</u> 20% of total cover: <u>17</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> )				
1. <u>Elaeagnus umbellata</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	
2. _____				
3. _____				
4. _____				
5. _____				
<u>10</u> = Total Cover 50% of total cover: <u>5</u> 20% of total cover: <u>2</u>				
<b>Herb Stratum</b> (Plot size: <u>5'</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Packera aurea</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Microstegium viminium</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. _____				
4. _____				
5. _____				
6. _____				
<u>35</u> = Total Cover 50% of total cover: <u>17.5</u> 20% of total cover: <u>7</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>15'</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Remarks: (Include photo numbers here or on a separate sheet.) <u>Bare ground 15%</u>				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>

## SOIL

Sampling Point: W-F53/F54-UP

[illegible]

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.249629	Lon.	-80.549909
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-F53, Timber Mat Crossing				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-F53	Emergent	0.008	Emergent					
Total Impact		0.008						
PART II - Unit Scores								
Wetland Classification			Replacement Unit(s)					
Total Emergent			0.008					
Total Scrub-Shrub			0					
Total Forested			0					
Total Open Water			0					

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$480.00

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 05/30/2015  
 Applicant/Owner: MVP State: WV Sampling Point: W-F53  
 Investigator(s): Ed Strohmaier, Dawn McCullough Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): convex Slope (%): 0-1  
 Subregion (LRR or MLRA): LRRN Lat: 39.249587 Long: -80.55006 Datum: NAD 83  
 Soil Map Unit Name: Gilpin-Upshur complex, 25 to 35 percent slopes, severely eroded (GuE3) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks:

Cowardin Code : PEM HGM: Slope WT: NRPWW

Information listed on this form represents the data collected in 2015. The wetland was revisited on 09/18/2019. The presence of wetland hydrology, hydrophytic vegetation, and hydric soils was unable to be confirmed because the wetland was obstructed by timber matting.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

### Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):             
 Water Table Present? Yes ☐ No ☒ Depth (inches):             
 Saturation Present? Yes ☒ No ☐ Depth (inches): 4  
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Saturation is present within upper 4 inches of soil profile from recent heavy precipitation.

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-F53

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Sapling/Shrub Stratum (Plot size: <u>15'</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A)    _____ (B)  Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Herb Stratum (Plot size: <u>5'</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Carex lurida</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
2. <u>Juncus effusus</u>	<u>5</u>		<u>FACW</u>	
3. <u>Microstigium vimineum</u>	<u>55</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
4. <u>Carex vulpinoidea</u>	<u>15</u>		<u>OBL</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>100</u> = Total Cover 50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				
Woody Vine Stratum (Plot size: <u>15'</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____

## SOIL

Sampling Point: W-F53

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	7.5 YR 4/2	90	10 YR 3/6	10	C	M	SiCL	
5-12	7.5 YR 4/2	90	10 YR 3/6	5	C	M	SiCL	
			10 GY 4/1	5			SiCL	
13-20	7.5 YR 4/2	100					SiL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

## Hydric Soil Indicators:

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5)  
☐ 2 cm Muck (A10) (**LRR N**)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)  
☐ Sandy Gleyed Matrix (S4)  
☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)  
☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)  
☐ Thin Dark Surface (S9) (**MLRA 147, 148**)  
☐ Loamy Gleyed Matrix (F2)  
☒ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)  
☐ Umbric Surface (F13) (**MLRA 136, 122**)  
☐ Piedmont Floodplain Soils (F19) (**MLRA 148**)  
☐ Red Parent Material (F21) (**MLRA 127, 147**)

Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ 2 cm Muck (A10) (**MLRA 147**)  
☐ Coast Prairie Redox (A16) (**MLRA 147, 148**)  
☐ Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

## Restrictive Layer (if observed):

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ☒ No \_\_\_\_\_

Remarks:

## Wetland Photograph Page

Wetland ID W-F53 Cowardin Code PEM



Photograph Direction WSW

Date: 05/30/2015

Comments: 2015 wetland delineation.



Photograph Direction WSW

Date: 09/18/2019

Comments: 2019 wetland delineation confirmation.

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP City/County: Harrison Sampling Date: 05/30/2015  
Applicant/Owner: MVP State: WV Sampling Point: W-F53/F54-UP  
Investigator(s): Ed Strohmaier, Dawn McCullough Section, Township, Range: N/A  
Landform (hillslope, terrace, etc.): Hilltop Local relief (concave, convex, none): Convex Slope (%): 5  
Subregion (LRR or MLRA): LRRN Lat: 39.249549 Long: -80.550092 Datum: NAD 83  
Soil Map Unit Name: Gilpin-Upshur complex, 25 to 35 percent slopes, severely eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: upland	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of two required)</b>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b>		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Upland plot is located SW of the wetland which lies adjacent to and across the existing access road.		

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-F53/F54-UP

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Liriodendron tulipifera</u>	<u>70</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. <u>Acer rubrum</u>	<u>15</u>		<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____				
5. _____				
6. _____				
7. _____				
<u>85</u> = Total Cover 50% of total cover: <u>42.5</u> 20% of total cover: <u>17</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
<u>10</u> = Total Cover 50% of total cover: <u>5</u> 20% of total cover: <u>2</u>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<u>35</u> = Total Cover 50% of total cover: <u>17.5</u> 20% of total cover: <u>7</u>				
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Remarks:</b> (Include photo numbers here or on a separate sheet.) <u>Bare ground 15%</u>				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>

## SOIL

Sampling Point: W-F53/F54-UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>		
0-12	5YR 4/3	75	2.5 YR 4/6	25			SiCL
13-16	10 YR 4/2	90	5 YR 4/6	5			SiL
			10 YR 6/4	5			SiL

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b>			<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) ( <b>MLRA 147</b> )			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> )	<input type="checkbox"/> Coast Prairie Redox (A16)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> )	<input type="checkbox"/> <b>(MLRA 147, 148)</b>			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)			
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> <b>(MLRA 136, 147)</b>			
<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1) ( <b>LRR N,</b>	<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N,</b>				
<b>MLRA 147, 148</b> )	<b>MLRA 136</b> )				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 136, 122</b> )				
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> )				
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) ( <b>MLRA 127, 147</b> )				

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present?

Yes \_\_\_\_\_ No ☒

Remarks:

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.249464	Lon.	-80.55104
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-F55, Timber Mat Crossing				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-F55	Emergent	0.0173	Emergent					
Total Impact		0.0173						
PART II - Unit Scores								
Wetland Classification			Replacement Unit(s)					
Total Emergent			0.0173					
Total Scrub-Shrub			0					
Total Forested			0					
Total Open Water			0					

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$1,038.00

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 05/30/2015  
 Applicant/Owner: MVP State: WV Sampling Point: W-F55  
 Investigator(s): Ed Strohmaier, Dawn McCullough Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): slope/flat Slope (%): 0-1  
 Subregion (LRR or MLRA): LRRN Lat: 39.249437 Long: -80.55105 Datum: NAD 83  
 Soil Map Unit Name: Gilpin-Upshur complex, 35 to 70 percent slopes, severely eroded (GuF3) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks:

Cowardin Code : PEM HGM: Slope WT: NRPWW

Information listed on this form represents the data collected in 2015. The wetland was revisited on 09/18/2019. The presence of wetland hydrology, hydrophytic vegetation, and hydric soils was unable to be confirmed because the wetland was obstructed by timber matting.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

### Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):             
 Water Table Present? Yes ☐ No ☒ Depth (inches):             
 Saturation Present? Yes ☒ No ☐ Depth (inches): 3  
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland is located on the existing access road surface. Saturated in the upper 3 inches from recent heavy precipitation.

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-F55

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
$\frac{0}{100} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Sapling/Shrub Stratum (Plot size: <u>15'</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A)    _____ (B)  Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
$\frac{0}{100} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Herb Stratum (Plot size: <u>5'</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Microstegium vimineum</u>	<u>75</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Carex lurida</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
3. <u>Juncus effusus</u>	<u>5</u>		<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
$\frac{100}{100} = \text{Total Cover}$ 50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				
Woody Vine Stratum (Plot size: <u>15'</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.   <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
$\frac{0}{100} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				

## SOIL

Sampling Point: W-F55

[illegible]

## Wetland Photograph Page

Wetland ID W-F55

Cowardin Code PEM



Photograph Direction WNW

Date: 05/30/2015

Comments: 2015 wetland delineation.



Photograph Direction NW

Date: 09/18/2019

Comments: 2019 wetland delineation confirmation.

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 05/30/2015  
 Applicant/Owner: MVP State: WV Sampling Point: W-F55-UP  
 Investigator(s): Ed Strohmaier, Dawn McCullough Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): road terrace on hillslope Local relief (concave, convex, none): slope/flat Slope (%): 5  
 Subregion (LRR or MLRA): LRRN Lat: 39.249411 Long: -80.551066 Datum: NAD 83  
 Soil Map Unit Name: Gilpin-Upshur complex, 35 to 70 percent slopes, severely eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks:  
Upland

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (includes capillary fringe)	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Upland plot is located to the south on the forested slope above the wetland.

Sampling Point: W-F55-UP

Tree Stratum (Plot size: 30' )	Absolute % Cover	Dominant Species?	Indicator	
1. <i>Carya tomentosa</i>	75	✓	UPL	
2. <i>Acer rubrum</i>	20	✓	FAC	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
95 = Total Cover				
50% of total cover: 47.5		20% of total cover: 19		
<b>Sapling/Shrub Stratum (Plot size: 15' )</b>				
1. <i>Acer rubrum</i>	25	✓	FAC	
2. <i>Fagus grandifolia</i>	50	✓	FACU	
3. <i>Crataegus crus-galli</i>	5		FACU	
4. <i>Carya tomentosa</i>	5		FACU	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
85 = Total Cover				
50% of total cover: 42.5		20% of total cover: 17		
<b>Herb Stratum (Plot size: 5' )</b>				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
0 = Total Cover				
50% of total cover: 0		20% of total cover: 0		
<b>Woody Vine Stratum (Plot size: 15' )</b>				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
0 = Total Cover				
50% of total cover: 0		20% of total cover: 0		

Remarks: (Include photo numbers here or on a separate sheet.)

<b>Dominance Test worksheet:</b>	
Number of Dominant Species That Are OBL, FACW, or FAC:	2 (A)
Total Number of Dominant Species Across All Strata:	4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0 (A/B)
<b>Prevalence Index worksheet:</b>	
Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____	(A) _____ (B) _____
Prevalence Index = B/A = _____	
<b>Hydrophytic Vegetation Indicators:</b>	
<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<b>Definitions of Four Vegetation Strata:</b>	
<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
<b>Hydrophytic Vegetation Present?</b>	Yes _____ No <input checked="" type="checkbox"/>

## SOIL

Sampling Point: W-F55-UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	7.5YR 4/2	100					SIL	
4-20	5YR 4/4	95	10 YR 6/6	5	C	M	SiCL	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					<sup>2</sup> Location: PL=Pore Lining, M=Matrix.			
<b>Hydric Soil Indicators:</b>					<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>			
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Dark Surface (S7)			<input type="checkbox"/> 2 cm Muck (A10) ( <b>MLRA 147</b> )		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> )			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> )			<input type="checkbox"/> ( <b>MLRA 147, 148</b> )		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Piedmont Floodplain Soils (F19)		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> ( <b>MLRA 136, 147</b> )		
<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Dark Surface (F7)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Depressions (F8)					
<input type="checkbox"/> Sandy Mucky Mineral (S1) ( <b>LRR N,</b>			<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N,</b>					
<input type="checkbox"/> <b>MLRA 147, 148</b> )			<input type="checkbox"/> <b>MLRA 136</b> )					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 136, 122</b> )			<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> )					
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (F21) ( <b>MLRA 127, 147</b> )					
<b>Restrictive Layer (if observed):</b>								
Type: _____						<b>Hydric Soil Present?</b> Yes _____ No <input checked="" type="checkbox"/>		
Depth (inches): _____								
Remarks:								

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.243915	Lon.	-80.553961
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-K43, Pipeline ROW				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-K43	Emergent	0.2086	Emergent					
Total Impact		0.2086						
PART II - Unit Scores								
Wetland Classification			Replacement Unit(s)					
Total Emergent			0.2086					
Total Scrub-Shrub			0					
Total Forested			0					
Total Open Water			0					

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$12,516.00

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 06/01/2015  
 Applicant/Owner: MVP State: WV Sampling Point: W-K43  
 Investigator(s): J. Hart, D. Santillo, J. Potrikus Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): LRRN Lat: 39.244092 Long: -80.554064 Datum: NAD 83  
 Soil Map Unit Name: Vandalia silty clay loam, 8 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks:  
 Cowardin Code: PEM HGM: Riverine WT: RPWWD  
 2015 Notes:  
 Wetland plot paired with W-K43UP. Riverine wetland occurs in floodplain of perennial stream. Sample plot done near wetland boundary, the water table is likely higher closer to the stream (S-K73)

Information listed on this form represents the data collected in 2015. The wetland was revisited on 09/18/2019. Presence of wetland hydrology, hydrophytic vegetation, and hydric soils was confirmed using the USACE EMP Regional Supplement delineation methodology.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (includes capillary fringe)	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-K43

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>6</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
<b>Herb Stratum</b> (Plot size: <u>5'</u> )				
1. <u>Carex lurida</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
2. <u>Juncus effusus</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <u>Carex scoparia</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
4. <u>Poa pratensis</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
5. <u>Persicaria sagittata</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
6. <u>Carex vulpinoidea</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
7. <u>Scirpus cyperinus</u>	<u>5</u>	_____	<u>OBL</u>	
8. <u>Dactylis glomerata</u>	<u>5</u>	_____	<u>FACU</u>	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>90</u> = Total Cover 50% of total cover: <u>45</u> 20% of total cover: <u>18</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>15'</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Remarks: (Include photo numbers here or on a separate sheet.) Remaining cover in herb stratum is bareground				

## SOIL

Sampling Point: W-K43

[illegible]

## Wetland Photograph Page

Wetland ID W-K43 Cowardin Code PEM



Photograph Direction West

Date: 06/01/2015

Comments: 2015 wetland delineation.



Photograph Direction NW

Date: 09/18/2019

Comments: 2019 wetland delineation confirmation.

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP City/County: Harrison Sampling Date: 06/01/2015  
Applicant/Owner: MVP State: WV Sampling Point: W-K43UP  
Investigator(s): J. Hart, D. Santillo, J. Potrikus Section, Township, Range: N/A  
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 4  
Subregion (LRR or MLRA): LRRN Lat: 39.244148 Long: -80.554003 Datum: NAD 83  
Soil Map Unit Name: Vandalia silty clay loam, 8 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks:

Upland

Upland plot paired with W-K43. Occurs on hillside adjacent to wetland in an area dominated by upland vegetation.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-K43UP

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A)    _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <u>Dactylis glomerata</u>	<u>20</u>	<u>✓</u>	<u>FACU</u>	
2. <u>Bromus inermis</u>	<u>20</u>	<u>✓</u>	<u>UPL</u>	
3. <u>Anthoxanthum odoratum</u>	<u>15</u>	<u>✓</u>	<u>FACU</u>	
4. <u>Juncus effusus</u>	<u>10</u>	_____	<u>FACW</u>	
5. <u>Asclepias purpurascens</u>	<u>10</u>	_____	<u>FACU</u>	
6. <u>Oxalis stricta</u>	<u>5</u>	_____	<u>FACU</u>	
7. <u>Carex vulpinoidea</u>	<u>5</u>	_____	<u>OBL</u>	
8. <u>Dicanthelium clandestinum</u>	<u>5</u>	_____	<u>FAC</u>	
9. <u>Daucus carota</u>	<u>5</u>	_____	<u>UPL</u>	
10. <u>Boehmeria cylindrica</u>	<u>5</u>	_____	<u>FACW</u>	
11. _____	_____	_____	_____	
<u>100</u> = Total Cover 50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>✓</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				

## SOIL

Sampling Point: W-K43UP

[illegible]

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.243493	Lon.	-80.554033
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-K44, Pipeline ROW				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-K44	Emergent	0.0671	Emergent					
Total Impact		0.0671						
PART II - Unit Scores								
Wetland Classification			Replacement Unit(s)					
Total Emergent			0.0671					
Total Scrub-Shrub			0					
Total Forested			0					
Total Open Water			0					

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$4,026.00

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 06/01/2015  
 Applicant/Owner: MVP State: WV Sampling Point: W-K44  
 Investigator(s): J. Hart, D. Santillo, J. Potrikus Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): LRRN Lat: 39.243467 Long: -80.554649 Datum: NAD 83  
 Soil Map Unit Name: Udifulvents and Fluvaquents NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

### Remarks:

Cowardin Code: PEM HGM: Slope WT: RPWWD

2015 Notes: Wetland plot paired with W-K44UP. Slope wetland occurs in narrow valley with a shallow groundwater table. Wetland appears to be water source of adjacent pond. While wetland is associated with adjacent intermittent stream S-K75, the primary hydrology source appears to be a shallow groundwater table caused by water moving laterally through the soil column down (NE) the small valley, this is the reason for an HGM classification of slope.

Information listed on this form represents the data collected in 2015. The wetland was revisited on 09/18/2019. Presence of wetland hydrology, hydrophytic vegetation, and hydric soils was confirmed using the USACE EMP Regional Supplement delineation methodology.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

### Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):             
 Water Table Present? Yes ☐ No ☒ Depth (inches):             
 Saturation Present? Yes ☐ No ☒ Depth (inches):             
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

### Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-K44

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
0 = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
0 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		
<b>Herb Stratum (Plot size: <u>5'</u> )</b>				
1. <u>Carex lurida</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
2. <u>Carex scoparia</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
3. <u>Panicum dichotomiflorum</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
4. <u>Dicanthelium clandestinum</u>	<u>10</u>	_____	<u>FAC</u>	
5. <u>Persicaria sagittata</u>	<u>10</u>	_____	<u>OBL</u>	
6. <u>Carex vulpinoidea</u>	<u>10</u>	_____	<u>FAC</u>	
7. <u>Scirpus cyperinus</u>	<u>5</u>	_____	<u>OBL</u>	
8. <u>Mentha spicata</u>	<u>5</u>	_____	<u>FACU</u>	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
100 = Total Cover				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
50% of total cover: <u>50</u>		20% of total cover: <u>20</u>		
<b>Woody Vine Stratum (Plot size: <u>15'</u> )</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
0 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: W-K44

[illegible]

## Wetland Photograph Page

Wetland ID W-K44

Cowardin Code PEM



Photograph Direction NNW

Date: 06/01/2015

Comments: 2015 wetland delineation.



Photograph Direction North

Date: 09/18/2019

Comments: 2019 wetland delineation confirmation.

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: MVP City/County: Doddridge Sampling Date: 06/01/2015  
Applicant/Owner: MVP State: WV Sampling Point: W-K44UP  
Investigator(s): J. Hart, D. Santillo, J. Potrikus Section, Township, Range: N/A  
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 3  
Subregion (LRR or MLRA): LRRN Lat: 39.243352 Long: -80.554632 Datum: NAD 83  
Soil Map Unit Name: Udifluvents and Fluvaquents NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks:

Upland

Upland plot paired with W-K44. Occurs on hillside adjacent to wetland. The sample plot occurs on a north facing slope in mesic forest and as such possesses a hydrophytic vegetation community primarily composed of FAC and FACU species. The sample plot lacked positive indicators for hydric soils and wetland hydrology and was determined not to be a wetland.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Water Table Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
Saturation Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-K44UP

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer saccharum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>9</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
2. <u>Liriodendron tulipifera</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Carpinus caroliniana</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
4. <u>Robinia pseudoacacia</u>	<u>5</u>		<u>FACU</u>	
5. _____				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
6. _____				
7. _____				
8. _____				
50% of total cover: <u>32.5</u> 20% of total cover: <u>13</u>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> )				
1. <u>Acer saccharum</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Carpinus caroliniana</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Lindera benzoin</u>	<u>5</u>		<u>FAC</u>	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. <u>Rosa multiflora</u>	<u>5</u>		<u>FACU</u>	
5. _____				
6. _____				
7. _____				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft in height.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
8. _____				
9. _____				
10. _____				
50% of total cover: <u>25</u> 20% of total cover: <u>10</u>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
<b>Herb Stratum</b> (Plot size: <u>5'</u> )				
1. <u>Microstigeum vinineum</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Athyrium asplenoides</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Verbesina alternifolia</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
4. <u>Dicanthelium clandestinum</u>	<u>10</u>		<u>FAC</u>	
5. <u>Polystichum athrostichoides</u>	<u>10</u>		<u>FAC</u>	
6. <u>Fragaria virginiana</u>	<u>5</u>		<u>FACU</u>	
7. <u>Senecio vulgaris</u>	<u>5</u>		<u>FACU</u>	
8. <u>Agrimonia parviflora</u>	<u>5</u>		<u>FAC</u>	
9. _____				
10. _____				
50% of total cover: <u>45</u> 20% of total cover: <u>18</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>15'</u> )				
1. <u>Toxicodendron radicans</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>				
<b>Remarks:</b> (Include photo numbers here or on a separate sheet.)				

## SOIL

Sampling Point: W-K44UP

[illegible]

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	39.22349	Lon.	-80.548109
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)				W-CV15, Timber Mat Crossing				
FORM OF MITIGATION:								
DATE:	8/10/2015		WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-CV15	Emergent	0.05116	Emergent					
Total Impact		0.05116						
PART II - Unit Scores								
Wetland Classification			Replacement Unit(s)					
Total Emergent			0.05116					
Total Scrub-Shrub			0					
Total Forested			0					
Total Open Water			0					

  

PART III - Advanced Mitigation	
Sustainable Determination Made on Advanced Mitigation (Y or N)	Y

  

Estimated ILF Costs
\$3,069.60

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: MVP City/County: Harrison Sampling Date: 12/19/2017  
 Applicant/Owner: MVP State: WV Sampling Point: W-CV15  
 Investigator(s): CV, KP Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-4  
 Subregion (LRR or MLRA): LRR N Lat: 39.223385 Long: -80.547882 Datum: NAD 83  
 Soil Map Unit Name: Lindside silt loam, 0 to 3 percent slopes, occasionally flooded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Cowardin Code: <u>PEM</u> HGM: <u>Slope</u> Water Type: <u>RPWWD</u>	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION (Four Strata) – Use scientific names of plants.**

 Sampling Point: W-CV15

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species _____ x 5 = _____ Column Totals: <u>90</u> (A) <u>245</u> (B)  Prevalence Index = B/A = <u>2.72</u>
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
<b>Herb Stratum</b> (Plot size: <u>5'</u> )				
1. <u>Dactylis glomerata</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Phalaris arundinacea</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <u>Juncus effusus</u>	<u>15</u>		<u>FACW</u>	
4. <u>Dichanthelium clandestinum</u>	<u>15</u>		<u>FAC</u>	
5. <u>Cyperus esculentus</u>	<u>10</u>		<u>FACW</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: <u>45</u> 20% of total cover: <u>18</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>15'</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Remarks:</b> (Include photo numbers here or on a separate sheet.)				

## SOIL

Sampling Point: W-CV15

[illegible]

## Wetland Photograph Page

Wetland ID W-CV15 Date 12/19/2017



Photograph Direction SW

Comments: