ATTACHMENT H

GREENBRIER COUNTY

WETLAND SWVM FORMS/WETLAND DELINEATION FORM/PHOTOS

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	38.061194	Lon.	-80.720732
STREAM/SITE ID AND SITE DESCR	RIPTION:					W-M18, Timber Mat Crossing		
(% stream slope, watershed size {a	creage}, unaltered	or impairments)						
FORM OF MITIGATION:								
DATE:	8/10	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-M18	Emergent	0.0364	Emergent					
						PART III - Advanced	Mitigatio	n
						Sustainable Determination Made on Advanced Mitigation (Y or N)		Υ
Total Impact		0.0364						
Water		Jnit Scores				Estimated		
	lassification		Replacement Unit(s)			ILF Costs		
Total Emergent Total Scrub-Shrub			0.0364			\$2.494.00		
Total Forested			0			\$2,184.00		
			0	-				
Гotal Open Water			U	1				

Project/Site: MVP		City/C	ounty: Greenbrier		Sampling Date: 04/22/2015			
Applicant/Owner: MVP		State: WV Sampling Point: W-M1						
Investigator(s): A. Jennrich, J. Kovacs, M. Shaffer Section, Township, Range: N/A								
Landform (hillslope, terrace, etc					Slope (%): 1			
Subregion (LRR or MLRA): LI		Datum: NAD83						
Soil Map Unit Name: GPE - Gilpin channery silt loam, 15 - 25% slopes, very stony NWI classification: None								
Are climatic / hydrologic conditi								
· · · · · ·		·			resent? Yes No			
Are Vegetation, Soil								
_					, important features, etc.			
			, 3 p	,	,,			
Hydrophytic Vegetation Prese	ent? Yes		Is the Sampled Area					
Hydric Soil Present? Wetland Hydrology Present?	· · · · · · · · · · · · · · · · · · ·		within a Wetland?	Yes	No			
Remarks:	Tes	No						
Cowardin Code: PEM H	GM: Depression	al WT: NRPWW						
	-		2015 The wetland	d was revisited	on 10/17/2019. Presence			
of wetland hydrology, hy	•							
Supplement delineation		ation, and mydrio sone	was committed asi	ing the borton	Livii regional			
HYDROLOGY	<u></u>							
Wetland Hydrology Indicato	ors:			Secondary Indica	tors (minimum of two required)			
Primary Indicators (minimum		heck all that apply)		Surface Soil (
Surface Water (A1)	<u> </u>	True Aquatic Plants (314)	Sparsely Vegetated Concave Surface (B8)				
High Water Table (A2)		Hydrogen Sulfide Odd		Drainage Pat				
Saturation (A3)	Moss Trim Lines (B16)							
Water Marks (B1)		Oxidized RhizospherePresence of Reduced	-	Moss Hill Ellies (B10) Dry-Season Water Table (C2)				
Sediment Deposits (B2)		Recent Iron Reduction		Crayfish Burr				
Drift Deposits (B3)		Thin Muck Surface (C		Saturation Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)		Other (Explain in Rem			ressed Plants (D1)			
Iron Deposits (B5)				<u>✓</u> Geomorphic	Position (D2)			
Inundation Visible on Aer	ial Imagery (B7)			Shallow Aquitard (D3)				
Water-Stained Leaves (B	9)			Microtopographic Relief (D4)				
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)			
Field Observations:								
Surface Water Present?		Ворит (шолоо)	3					
Water Table Present?	Yes No	Depth (inches):	0					
Saturation Present?	Yes No	Depth (inches):	0 Wetland H	lydrology Presen	t? Yes 🗸 No			
(includes capillary fringe) Describe Recorded Data (stre	eam gauge monitori	ng well aerial photos, prev	/ious inspections) if ava	ilahle:				
Dooring Noorland Bala (oliv	ram gaago, moniton	ng won, donar priotos, pro	riodo mopositorio,, ii dva	masio.				
Remarks:								

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

/EGETATION (Four Strata) – Use scientific	names of	plants.		Sampling Point: W-M18
20'	Absolute			Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species That Are OBL, FACW, or FAC:2 (A)
2				
3				Total Number of Dominant Species Across All Strata: 2 (B)
4				(b)
5			·	Percent of Dominant Species That Are OBL FACW or FAC: 100 (A/B)
				That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
1	0	= Total Cov		Total % Cover of: Multiply by:
50% of total cover:				OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')	20 /0 01	total cover		FACW species x 2 =
				FAC species x 3 =
** 				FACU species x 4 =
2				UPL species x 5 =
3			· ——	Column Totals: (A) (B)
4	_			Column rotals (rt) (b)
5	_		·	Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8		-		2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
		= Total Cov	_	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover:0	20% of	total cover	:0	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')				Problematic Hydrophytic Vegetation¹ (Explain)
1. Juncus effusus	15		F <u>ACW</u>	1 Toblematic Trydrophytic Vegetation (Explain)
2. Rumex obtusifolius	_ 3		F <u>ACU</u>	¹ Indicators of hydric coil and wotland hydrology must
3. Packera aurea	3		F <u>ACW</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Solidago gigantea	20		F <u>ACW</u>	Definitions of Four Vegetation Strata:
_{5.} Grass spp	2		ND	
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7	_			more in diameter at breast height (DBH), regardless of height.
8				
9.				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11.				Howle All howle against (against all and a regardless
	43	= Total Cov	/er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>21</u>				
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines greater than 3.28 ft in height.
1				Holght.
2				
3				
4				
5			·	Hydrophytic Vegetation
o	^	= Total Cov	· · · · · · · · · · · · · · · · · · ·	Present? Yes V No
50% of total cover:		total cover	_	
Remarks: (Include photo numbers here or on a separate		10101 00101	·	
remarks. (include prioto numbers here of on a separate	Silect.)			

Sampling Point: W-M18

Profile Desc	ription: (Describe t	o the dept	h needed to docun	nent the i	ndicator	or confirm	m the absen	ce of indicators.)
Depth	Matrix			x Feature				
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	-
0-2	10YR 3/1	100					L	Gravel present
2-7	10YR 4/6	80	10YR 5/4	20	С	M	CL	
·					<u> </u>	171		
							. 	
					•			
						- ——	-	
							· -	
¹ Type: C=Co	oncentration, D=Depl	etion, RM=	Reduced Matrix, MS	S=Masked	Sand G	rains.		PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:						Inc	licators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	(S7)				2 cm Muck (A10) (MLRA 147)
Histic Ep	pipedon (A2)		Polyvalue Be	low Surfa	ce (S8) (I	MLRA 147	', 148) <u> </u>	Coast Prairie Redox (A16)
Black Hi	stic (A3)		Thin Dark Su	rface (S9)	(MLRA	147, 148)		(MLRA 147, 148)
Hydroge	n Sulfide (A4)		Loamy Gleye	d Matrix (F2)			Piedmont Floodplain Soils (F19)
Stratified	Layers (A5)		Depleted Mat	trix (F3)				(MLRA 136, 147)
2 cm Mu	ick (A10) (LRR N)		Redox Dark S	Surface (F	- 6)		_	Very Shallow Dark Surface (TF12)
	d Below Dark Surface	e (A11)	Depleted Dar					Other (Explain in Remarks)
	ark Surface (A12)		Redox Depre					
	lucky Mineral (S1) (L	RR N,	Iron-Mangan		es (F12)	(LRR N,		
	A 147, 148)		MLRA 13	-			2	
	lleyed Matrix (S4)		Umbric Surfa					Indicators of hydrophytic vegetation and
-	edox (S5)		Piedmont Flo					wetland hydrology must be present,
	Matrix (S6)		Red Parent N	/laterial (F	21) (MLF	RA 127, 14	7)	unless disturbed or problematic.
	ayer (if observed):							
туре: <u>В</u> є			<u></u>					
Depth (inc	ches): <u>7</u>						Hydric S	oil Present? Yes 🖊 No
Remarks:								

SOIL

Wetland Photograph Page

Wetland ID W-M18



Photograph Direction NE

Date: 04/22/2015

Comments: 2015 wetland delineation.



Photograph Direction NE

Date: 10/17/19

Comments: 2019 wetland delineation confirmation.

Project/Site: MVP	City/County: Green	nbrier	_ Sampling Date: 04/22/2015					
Applicant/Owner: MVP		State: WV	Sampling Point: W-M18 UP					
Investigator(s): A. Jennrich, J. Kovacs, M. Shaffer Section, Township, Range: N/A								
Landform (hillslope, terrace, etc.): Hillslope	•	_	Slope (%): 2					
Subregion (LRR or MLRA): LRRN			Datum: NAD83					
Soil Map Unit Name: GpE - Gilpin channery		-						
Are climatic / hydrologic conditions on the site typi								
Are Vegetation, Soil, or Hydrology			present? Yes <u>√</u> No					
Are Vegetation, Soil, or Hydrology	· ·	needed, explain any answe	•					
SUMMARY OF FINDINGS – Attach sit								
SOMMARY OF FINDINGS - Attach Si		t locations, transects	s, important leatures, etc.					
	No ✓ Is the Sample	led Area						
	—— No ✓ within a Wet		No <u> </u>					
	No ✓							
Remarks:								
Upland								
LIVEROLOGY								
HYDROLOGY Wetland Hydrology Indicators:		Socondary Indic	ators (minimum of two required)					
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required;	chack all that apply)		·					
	· · ·		Cracks (B6)					
Surface Water (A1) True Aquatic Plants (B14) Sparsely Vegetated Concave Surface								
 High Water Table (A2) Saturation (A3) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Moss Trim Lines (B16) 								
Saturation (A3) Water Marks (B1)	Presence of Reduced Iron (C4)		Moss Trim Lines (B16)					
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soil:		Dry-Season Water Table (C2) C6) Crayfish Burrows (C8)					
Drift Deposits (B3)	Thin Muck Surface (C7)		/isible on Aerial Imagery (C9)					
Algal Mat or Crust (B4)	Other (Explain in Remarks)		Stressed Plants (D1)					
Iron Deposits (B5)	<u> </u>		Position (D2)					
Inundation Visible on Aerial Imagery (B7)		Shallow Aqu						
Water-Stained Leaves (B9)			aphic Relief (D4)					
Aquatic Fauna (B13)		FAC-Neutra						
Field Observations:								
	Depth (inches):							
	✓ Depth (inches):							
	✓ Depth (inches):	Wetland Hydrology Prese	nt? Yes No✓					
(includes capillary fringe) Describe Recorded Data (stream gauge, monitor		ons), if available:						
		 ,						
Remarks:								

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

Sampling Point: W-M18 UPL

Tree Stratum (Plot size: 30')	Absolute	Dominant		Dominance Test worksheet:	
Tree Stratum (1 lot 312c.	% Cover	Species?	<u>Status</u>	Number of Dominant Species	
1,				That Are OBL, FACW, or FAC:0	(A)
2				Total Number of Dominant	
3				Species Across All Strata: 2	(B)
4				Percent of Dominant Species	
5				That Are OBL, FACW, or FAC:	(A/B)
6					
7				Prevalence Index worksheet:	
	0	= Total Cov	ver	Total % Cover of: Multiply	<u>by:</u>
50% of total cover:0		total cover		OBL species x 1 =	
Sapling/Shrub Stratum (Plot size: 15'				FACW species x 2 =	
1. Acer pensylvanicum	2		FACU	FAC species x 3 =	
·· ·				FACU species x 4 =	
2				UPL species x 5 =	
3				Column Totals: (A)	
4				Column rotals (r)	(b)
5				Prevalence Index = B/A =	
6				Hydrophytic Vegetation Indicators:	
7				1 - Rapid Test for Hydrophytic Vegetat	ion
8				2 - Dominance Test is >50%	1011
9					
	_	= Total Cov	ver	3 - Prevalence Index is ≤3.0¹	
50% of total cover: 1	20% of	total cover	: 0.4	4 - Morphological Adaptations ¹ (Provid	
Herb Stratum (Plot size: 5')				data in Remarks or on a separate s	-
1. Taraxacum officinale	35	✓	FACU	Problematic Hydrophytic Vegetation ¹ (I	Explain)
2. Achillea millefolium	15		FACU_		
3. Tussilago farfara	20		FACU_	¹ Indicators of hydric soil and wetland hydro	logy must
4. Panicum virgatum	5			be present, unless disturbed or problemation	3.
	10		FAC	Definitions of Four Vegetation Strata:	
5. Trifolium repens		-	FACU_	Tree – Woody plants, excluding vines, 3 in.	(7.6 cm) or
6. Grass spp	5		ND	more in diameter at breast height (DBH), re	
7. Packera aurea	2		_F <u>ACW_</u>	height.	J
8				Sapling/Shrub – Woody plants, excluding	vinos loss
9				than 3 in. DBH and greater than or equal to	
10				m) tall.	,
11				Herb – All herbaceous (non-woody) plants,	rogardloss
	92	= Total Cov	ver	of size, and woody plants less than 3.28 ft	
50% of total cover: 46		total cover			
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines greater than	າ 3.28 ft in
				height.	
1,					
2					
3					
4				Hydrophytic	
5				Vegetation	,
_		= Total Cov	_	Present? Yes No	<u> </u>
50% of total cover:0	20% of	total cover	:0		
Remarks: (Include photo numbers here or on a separate sl	heet.)			•	

SOIL Sampling Point: W-M18 UPL

Profile Desc	ription: (Describe t	o the depth	needed to docur	nent the i	ndicator	or confirm	the absence	ce of indicators.)
Depth	Matrix			x Features				
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-2	10 yr 4/2	_100_					Loam	
2-6	10 yr 5/4	75	10 yr 5/8	15			Clay Loa	an
	10 yr 4/2	10						
								_
								_
								_
								_
								_
	oncentration, D=Depl	etion, RM=F	Reduced Matrix, MS	S=Masked	Sand Gra	nins.		PL=Pore Lining, M=Matrix.
Hydric Soil I								icators for Problematic Hydric Soils ³ :
Histosol			Dark Surface		(00) (5)	u D s - : -		2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be				148)	Coast Prairie Redox (A16)
Black Hi	stic (A3) n Sulfide (A4)		Thin Dark Su Loamy Gleye			47, 148)		(MLRA 147, 148) Piedmont Floodplain Soils (F19)
	l Layers (A5)		Depleted Mar		1 <i>L)</i>			(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark S		6)			Very Shallow Dark Surface (TF12)
	d Below Dark Surface	(A11)	Depleted Dar				_	Other (Explain in Remarks)
	ark Surface (A12)		Redox Depre					
-	lucky Mineral (S1) (L	RR N,	Iron-Mangan		es (F12) (I	_RR N,		
	\ 147, 148)		MLRA 13				3.	
	leyed Matrix (S4) ledox (S5)		Umbric Surfa Piedmont Flo					ndicators of hydrophytic vegetation and wetland hydrology must be present,
-	Matrix (S6)		Red Parent N					unless disturbed or problematic.
	_ayer (if observed):		red r drene n	naterial (i	Z I) (IIILIX		1	unless distarbed or problematic.
Type: Be								
Depth (inc			_				Hydric So	oil Present? Yes No
Remarks:							J	
T to mainto								

	W-M20, Pipeline ROW PRECIPITATION PAST 48 HRS:		
	PRECIPITATION PAST 48 HRS:		
	PRECIPITATION PAST 48 HRS:		
			n
	Sustainable Determination Made on Advanced Mitigation (Y or N)	1	Y
-			
-	ILF Costs		
	\$196.00		
	\$100.00		
		Sustainable Determination Made or Advanced Mitigation (Y or N)	(Y or N) Estimated ILF Costs

Project/Site: MVP	City/Co	ounty: Greenbrier		Sampling Date: 04/23/2015			
Applicant/Owner: MVP		<i></i>		Sampling Point: W-M20			
Investigator(s): A. Jennrich, J. Kovacs, M.	Shaffer Section	n, Township, Range: N/		_			
Landform (hillslope, terrace, etc.): Depression				Slope (%): 1			
Subregion (LRR or MLRA): LRRN				Datum: NAD83			
Soil Map Unit Name: GpC - Gilpin channer							
Are climatic / hydrologic conditions on the site typ							
Are Vegetation, Soil, or Hydrolog	,		•	present? Yes No			
Are Vegetation, Soil, or Hydrolog			explain any answe				
SUMMARY OF FINDINGS – Attach s	-						
	,						
Hydrophytic Vegetation Present? Yes _ Hydric Soil Present? Yes _	✓ No ✓ No	Is the Sampled Area	,				
Wetland Hydrology Present? Yes _		within a Wetland?	Yes	No			
Remarks:							
Cowardin Code: PEM HGM: Depression	onal WT: NRPWW						
Information listed on this form represer		2015. The wetland	l was revisited	on 10/17/2019. Presence			
of wetland hydrology, hydrophytic vege							
Supplement delineation methodology.	•		_				
HYDROLOGY							
Wetland Hydrology Indicators:			Secondary Indica	itors (minimum of two required)			
Primary Indicators (minimum of one is required;	check all that apply)	_	Surface Soil	Cracks (B6)			
✓ Surface Water (A1) True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B							
✓ High Water Table (A2)	Hydrogen Sulfide Odd	or (C1)	Drainage Pat	tterns (B10)			
✓ Saturation (A3)	Oxidized Rhizosphere	s on Living Roots (C3)	Moss Trim Li	ines (B16)			
Water Marks (B1)	Presence of Reduced	Iron (C4)	Dry-Season	Water Table (C2)			
Sediment Deposits (B2)	Recent Iron Reduction	n in Tilled Soils (C6)	Crayfish Buri	rows (C8)			
Drift Deposits (B3)	Thin Muck Surface (C	7)	Saturation Vi	isible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)	Other (Explain in Rem	arks)		tressed Plants (D1)			
Iron Deposits (B5)			✓ Geomorphic				
Inundation Visible on Aerial Imagery (B7)			✓ Shallow Aquitard (D3)				
✓ Water-Stained Leaves (B9)			Microtopographic Relief (D4)				
Aquatic Fauna (B13)			FAC-Neutral	Test (D5)			
Field Observations:	5 11 (* 1 .)	3					
	Deptit (inches)	0					
			lydrology Presen	42 Yes of No			
(includes capillary fringe)	Depth (inches):	welland H	iyarology Presen	nt? Yes <u> </u>			
Describe Recorded Data (stream gauge, monito	oring well, aerial photos, prev	vious inspections), if ava	ilable:				
Remarks:							

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

/EGETATION (Four Strata) – Use scientific na	ames of	plants.		Sampling Point: W-M20
201				Dominance Test worksheet:
Tree Stratum (Plot size:) 1)	% Cover	Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)
2				
3			·	Total Number of Dominant Species Across All Strata: 1 (B)
				Species Across Air Strata (b)
4				Percent of Dominant Species That Are OBL FACW or FAC: 100 (A/B)
5			·	That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
7	0			Total % Cover of: Multiply by:
50% of total cover: 0		= Total Cov	_	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')	20 /6 01	total cover		FACW species x 2 =
				FAC species x 3 =
1				FACU species x 4 =
2				UPL species x 5 =
3			·	Column Totals: (A) (B)
4				Column rotals (A) (B)
5				Prevalence Index = B/A =
6			·	Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
•		= Total Cov	_	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 0	20% of	total cover	:0	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')		,		Problematic Hydrophytic Vegetation ¹ (Explain)
1. Juncus effusus	60		F <u>ACW</u>	Problematic Plyarophytic Vegetation (Explain)
2. Solidago gigantea	10		F <u>ACW</u>	¹ Indicators of hydric soil and wetland hydrology must
3. Viola spp	5		ND	be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8				Continue/Charle Was devaluate analystic and as less
9				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	75	= Total Cov	ver	of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>37.5</u>	5 20% of	total cover	15	We advising All woods visco greater their 2.20 ft in
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines greater than 3.28 ft in height.
1				,
2				
3				
4				1 hadronia dia
5.				Hydrophytic Vegetation
	0	= Total Cov	er	Present? Yes No
50% of total cover:0	20% of	total cover	: 0	
Remarks: (Include photo numbers here or on a separate s	heet.)			
Moss percent cover is 15.				
•				

Sampling Point: W-M20

Profile Desc	ription: (Describe t	o the dept	h needed to docum	nent the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redox	x Feature	S			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	<u>Remarks</u>
0-1	10YR 3/3	100					L	
1-4	10YR 6/2	95	10YR 4/6	5	С	PL	CL	
4-7	10YR 5/1	95	10YR 4/6		C		CL	
4-7	101K 3/1	95	10114/0	5	<u>U</u>	<u>PL</u>		
1 _{Type: C-C}	oncentration, D=Depl	otion DM-	——————————————————————————————————————			oine	² Location: DI	
Hydric Soil I		euon, Rivi=	Reduced Mailix, MS	= Wasket	i Sariu Gi	all is.		tors for Problematic Hydric Soils ³ :
•			Dork Curtons	(C7)				-
Histosol	oipedon (A2)		Dark Surface Polyvalue Be		co (S9) (1	/II D \ 1.47		cm Muck (A10) (MLRA 147) past Prairie Redox (A16)
Black Hi			Folyvalde Bel					(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye			147, 140)		edmont Floodplain Soils (F19)
	l Layers (A5)		✓ Depleted Mat		,1 2)			(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark S		·6)			ery Shallow Dark Surface (TF12)
	d Below Dark Surface	(A11)	Depleted Dar					ther (Explain in Remarks)
	ark Surface (A12)	, (, , , , ,	Redox Depre				0.	(Explain in Normanio)
	lucky Mineral (S1) (L	RR N.	Iron-Mangane			LRR N.		
	\ 147, 148)	,	MLRA 136					
	leyed Matrix (S4)		Umbric Surfa	•	(MLRA 13	36, 122)	³ Indi	cators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo					land hydrology must be present,
-	Matrix (S6)		Red Parent M					ess disturbed or problematic.
	ayer (if observed):							
_{Туре:} <u>В</u> е	edrock							
Depth (inc			<u></u>				Hydric Soil	Present? Yes ✓ No
Remarks:							1.7	
Kemarks.								

Wetland Photograph Page

Wetland ID W-M20



Photograph Direction North

Date: 04/23/2015

Comments: 2015 wetland delineation.



Photograph Direction NW

Date: 10/17/19

Comments: 2019 wetland delineation confirmation.

Project/Site: MVP	City/0	County: Greenbrier		Sampling Date: 04/23/2015			
Applicant/Owner: MVP		J		Sampling Point: W-M20, M21 UPL			
Investigator(s): A. Jennrich, J. Kovacs,	M. Shaffer Secti	on, Township, Range: N					
Landform (hillslope, terrace, etc.): Hillslope		• •		ntly conve: Slope (%): 5			
Subregion (LRR or MLRA): LRRN				Datum: NAD83			
Soil Map Unit Name: GpC - Gilpin chann		_					
Are climatic / hydrologic conditions on the site		,					
Are Vegetation, Soil, or Hydro	3.		•	resent? Yes No			
			•				
Are Vegetation, Soil, or Hydro			explain any answer				
SUMMARY OF FINDINGS – Attach	n site map snowing sar	npling point locatio	ons, transects,	, important features, etc.			
Hydrophytic Vegetation Present? Ye	es <u> </u>	Is the Sampled Area					
Hydric Soil Present? Ye	es No	within a Wetland?	Yes	No <u> </u>			
3 63	es No						
Remarks:							
Upland							
HYDROLOGY							
Wetland Hydrology Indicators:			=	tors (minimum of two required)			
Primary Indicators (minimum of one is requir			 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) 				
Surface Water (A1)	True Aquatic Plants						
High Water Table (A2)	Hydrogen Sulfide Oc		-				
Saturation (A3)		•	Moss Trim Li				
Water Marks (B1)	Presence of Reduce		Dry-Season Water Table (C2) Crayfish Burrows (C8)				
Sediment Deposits (B2) Drift Deposits (B3)	Recent from Reduction	on in Tilled Soils (C6)	-	sible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)	Other (Explain in Re			tressed Plants (D1)			
Iron Deposits (B5)	Other (Explain in Re	mantoj	Geomorphic				
Inundation Visible on Aerial Imagery (B7	7)		Shallow Aqui				
Water-Stained Leaves (B9)				phic Relief (D4)			
Aquatic Fauna (B13)			FAC-Neutral	Test (D5)			
Field Observations:							
Surface Water Present? Yes 1	No <u>✓</u> Depth (inches):						
Water Table Present? Yes 1	No Depth (inches):						
	No <u>✓</u> Depth (inches):	Wetland H	Hydrology Presen	t? Yes No √			
(includes capillary fringe) Describe Recorded Data (stream gauge, mo	onitoring well, aerial photos, pre	evious inspections), if ava	nilable:				
	······g ······ p···· p···· p···	- · · · - · · · · · · · · · · · · · · ·					
Remarks:							

Sampling Point: V	/-M20,	M21	UPL
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	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC:3 (A)
2				
				Total Number of Dominant Species Across All Strata: 5 (B)
3		-		Species Across All Strata:5 (B)
4		-		Percent of Dominant Species
5				That Are OBL, FACW, or FAC:60 (A/B)
6				Prevalence Index worksheet:
7				
	0	= Total Cov	er	Total % Cover of: Multiply by:
50% of total cover: 0	20% of	total cover	0	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15'				FACW species x 2 =
1. Fagus grandifolia	20	✓	FACU	FAC species x 3 =
2 Acer rubrum	10		FAC	FACU species x 4 =
			1	UPL species x 5 =
3				Column Totals: (A) (B)
4				Column rotals (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				
8				1 - Rapid Test for Hydrophytic Vegetation
0				✓ 2 - Dominance Test is >50%
9	30			3 - Prevalence Index is ≤3.0 ¹
500/ () 15		= Total Cov	_	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 15	20% of	total cover	6	data in Remarks or on a separate sheet)
TICID Stratum (Flot Size)		,		Problematic Hydrophytic Vegetation ¹ (Explain)
1. Juncus effusus	55		F <u>ACW</u>	1 Toblematic Trydrophytic Vegetation (Explain)
2. Rubus occidentalis	2		<u>UPL</u>	1
3. Viola spp	10		ND	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Solidago gigantea	20	<u> </u>	FACW_	
5. Rubus allegheniensis	25		FACU	Definitions of Four Vegetation Strata:
	2			Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6. Panicum virgatum		-	F <u>AC</u>	more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10.				m) tall.
11				
	114	= Total Cov		Herb – All herbaceous (non-woody) plants, regardless
50% of total cover: 57		total cover		of size, and woody plants less than 3.28 ft tall.
451	20% 01	total cover		Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15')				height.
1				
2				
3				
4.				
5				Hydrophytic
J	0			Vegetation Present? Yes ✓ No
500/ 51.1.1		= Total Cov	_	11036/K1 103 <u>-v</u> 110 <u></u>
50% of total cover: 0		total cover		
Remarks: (Include photo numbers here or on a separate s	heet.)			
Saplings are closer to edge of plot.				

Sampling Point: W-M20, M21 UP

SOIL

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Loath Indicators
10 yr 3/3 100 Loam Loa
4-6 10 yr 3/2 99 10 yr 3/6 1 C PL Loam 6-10 10 yr 4/4 100 Loam Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Hydric Soil Indicators: Histosol (A1) Dark Surface (S7) Dark Surface (S7) Loam L
6-10 10 yr 4/4 100 Loam Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Hydric Soil Indicators: Histosol (A1) Dark Surface (S7) Loam
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Place of the control of the cont
Hydric Soil Indicators: Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 147)
Hydric Soil Indicators: Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 147)
Hydric Soil Indicators: Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 147)
Hydric Soil Indicators: Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 147)
Hydric Soil Indicators: Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 147)
Hydric Soil Indicators: Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 147)
Hydric Soil Indicators: Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 147)
Hydric Soil Indicators: Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 147)
Hydric Soil Indicators: Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 147)
Hydric Soil Indicators: Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 147)
Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 147)
<u> </u>
Black Histic (A3) Thin Dark Surface (S9) (MLRA 147, 148) (MLRA 147, 148)
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19)
Stratified Layers (A5) Depleted Matrix (F3) (MLRA 136, 147)
2 cm Muck (A10) (LRR N) Redox Dark Surface (F6) Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Other (Explain in Remarks)
Thick Dark Surface (A12) Redox Depressions (F8)
Sandy Mucky Mineral (S1) (LRR N, Iron-Manganese Masses (F12) (LRR N, MLRA 147, 148) MLRA 136)
Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) 3Indicators of hydrophytic vegetation and
Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) wetland hydrology must be present,
Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) unless disturbed or problematic.
Restrictive Layer (if observed):
Type: Bedrock
Depth (inches): 10 Hydric Soil Present? Yes No ✓
Remarks:

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	38.060683	Lon.	-80.722348
STREAM/SITE ID AND SITE DESCR	RIPTION:					W-M23, Pipeline ROW		
(% stream slope, watershed size {a	creage}, unaltered	or impairments)						
FORM OF MITIGATION:								
DATE:	8/10	0/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-M23	Emergent	0.0616	Emergent					
						PART III - Advanced		n
						Sustainable Determination Made on Advanced Mitigation (Y or N)		Y
Total Impact		0.0616						
		Unit Scores				Estimated		
	Classification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0616			¢2.000.00		
Total Scrub-Shrub			0			\$3,696.00		
Total Forested			0					
Total Open Water			0	_				

Project/Site: MVP	City/C	county: Greenbrier	Sampling Date: 04/23/2015				
Applicant/Owner: MVP	Sampling Point: W-M23						
Investigator(s): A. Jennrich, J. Kovacs	, M. Shaffer Section	on, Township, Range: N/A					
Landform (hillslope, terrace, etc.): Hillslope		-	ghtly conca Slope (%): 3				
Subregion (LRR or MLRA): LRRN		Long: -80.722404					
Soil Map Unit Name: Gilpin channery si							
Are climatic / hydrologic conditions on the sit	te typical for this time of year? Y	res No (If no, explain in	Remarks.)				
Are Vegetation, Soil, or Hydr							
Are Vegetation, Soil, or Hydr							
SUMMARY OF FINDINGS – Attac							
Hydrophytic Vegetation Present?	Yes No						
, , ,	Yes No	Is the Sampled Area					
	Yes No	within a Wetland? Yes	No				
Remarks:							
Cowardin Code: PEM							
HGM: Slope							
WT: NRPWW							
HYDROLOGY							
Wetland Hydrology Indicators:		Secondary Ind	cators (minimum of two required)				
Primary Indicators (minimum of one is requ	uired; check all that apply)	Surface So	oil Cracks (B6)				
Surface Water (A1)	True Aquatic Plants (egetated Concave Surface (B8)				
High Water Table (A2)	Hydrogen Sulfide Odd		Patterns (B10)				
Saturation (A3)	Oxidized Rhizosphere	-	Lines (B16)				
Water Marks (B1)	Presence of Reduced		n Water Table (C2)				
Sediment Deposits (B2)	Recent Iron Reductio	• •					
Drift Deposits (B3)	Thin Muck Surface (C	C7) Saturation	Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	Other (Explain in Ren	narks) Stunted or	Stressed Plants (D1)				
Iron Deposits (B5)		Geomorph	ic Position (D2)				
Inundation Visible on Aerial Imagery (E	B7)	Shallow A	quitard (D3)				
Water-Stained Leaves (B9)		Microtopo	graphic Relief (D4)				
Aquatic Fauna (B13)		FAC-Neut	ral Test (D5)				
Field Observations:							
	No Depth (inches):	4					
Water Table Present? Yes	No Depth (inches):	1					
		0 Wetland Hydrology Pres	ent? Yes <u> </u>				
(includes capillary fringe)		views increasions) if a velicible.					
Describe Recorded Data (stream gauge, m	nonitoring well, aerial photos, pre	vious inspections), if available:					
Remarks:							
This plot shares an upland plot with	n W-M22 Up.						
	•						

VEGETATION (Four Strata) – Use scientific names

EGETATION (Four Strata) – Use scientific n	Absolute	-	Indicator	Sampling Poi	<u>'</u>
ee Stratum (Plot size: 30')	% Cover	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC:	1 (A)
				Total Number of Dominant Species Across All Strata:	1 (B)
			 	Percent of Dominant Species That Are OBL, FACW, or FAC:	100 (A/E
				Prevalence Index worksheet:	
	0			Total % Cover of:	Multiply by:
EON/ of total agrees		= Total Cor f total cover		OBL species x	
151	20% 01	r total cover	r:	FACW species x 2	
ping/ornub otratum (1 lot size)				FAC species x :	<u> </u>
				FACU species x	
		·		UPL species x	
	-			Column Totals: (A)	· · · · · · · · · · · · · · · · · · ·
				Column rotals (A)	(5)
				Prevalence Index = B/A =	
				Hydrophytic Vegetation Indicate	tors:
				1 - Rapid Test for Hydrophyt	ic Vegetation
		· ——		✓ 2 - Dominance Test is >50%	
				3 - Prevalence Index is ≤3.0	1
50% of total cover: 0		= Total Co	_	4 - Morphological Adaptation	ns ¹ (Provide supportin
F!	20% 01	i total covel		data in Remarks or on a s	separate sheet)
erb Stratum (Plot size: 5 Juncus effusus	55	/	FACW	Problematic Hydrophytic Veg	getation ¹ (Explain)
Solidago gigantea	15	· <u> </u>	FACW		
Impatiens capensis	10		FACW FACW	¹ Indicators of hydric soil and wetl	
· · · · · · · · · · · · · · · · · · ·				be present, unless disturbed or p	
				Definitions of Four Vegetation	Strata:
				Tree – Woody plants, excluding v	vines, 3 in. (7.6 cm) c
				more in diameter at breast height	t (DBH), regardless o
		· -		height.	
				Sapling/Shrub – Woody plants,	excluding vines, less
				than 3 in. DBH and greater than on the m) tall.	or equal to 3.28 ft (1
)		·		iii) taii.	
:	80			Herb – All herbaceous (non-woo	
50% of total cover:40	20% of	= Total Cor f total cover	ver _r . 16	of size, and woody plants less that	an 3.26 it tall.
oody Vine Stratum (Plot size: 15')	2070 01	i total covci		Woody vine – All woody vines g	reater than 3.28 ft in
				height.	
				Hydrophytic	
	0	Total Ca		Vegetation Present? Yes ✓	No
50% of total cover: 0		= Total Cor f total cover	^		
50% of total cover: U	∠∪% 01	ı ıdıal covel	ı. <u> </u>		

Sampling Point: W-M23

	Matrix	%	Redo	x Feature	S1	Loc²	Tarrituma	Demonto
(inches) 0-9	Color (moist) 10YR 4/2	94	Color (moist) 10YR 3/6	<u>%</u> 6	Type ¹	PL	<u>Texture</u>	Remarks
					-			
9-12	10YR 4/2	90	10YR 3/6	10	<u>C</u>	M/PL	L	
12-17	10YR 4/2	85	10YR 3/6	15	С	M/PL	CL	
						_		
						-		
	-							
Гуре: С=С	oncentration, D=Dep	letion, RM=	Reduced Matrix, M	S=Masked	d Sand Gi	ains.	² Location: PL	.=Pore Lining, M=Matrix.
lydric Soil I	ndicators:						Indica	tors for Problematic Hydric Soils ³ :
_ Histosol			Dark Surface					cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be				148) Co	past Prairie Redox (A16)
Black Hi	stic (A3) n Sulfide (A4)		Thin Dark Su Loamy Gleye			147, 148)	D:	(MLRA 147, 148) edmont Floodplain Soils (F19)
	I Layers (A5)		Depleted Ma		(FZ)			(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark	. ,	- 6)		Ve	ery Shallow Dark Surface (TF12)
	Below Dark Surfac	e (A11)	Depleted Da	,	•			ther (Explain in Remarks)
	ark Surface (A12)		Redox Depre					
	lucky Mineral (S1) (I	_RR N,	Iron-Mangan		es (F12)	LRR N,		
	147, 148)		MLRA 13	•	(84) D.A. 4	20. 400)	31	and an afficient of a constation and
	leyed Matrix (S4) edox (S5)		Umbric Surfa Piedmont Flo					cators of hydrophytic vegetation and land hydrology must be present,
	Matrix (S6)		Red Parent I					ess disturbed or problematic.
	_ayer (if observed):			(-	, (, , , , , , , , , , , , , , , , , , , ,	, 	
Type: Be	drock							
Depth (inc	ches): <u>17</u>						Hydric Soil	Present? Yes 🗸 No
							-	
temarks:								
temarks:								
emarks:								
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Photograph Direction North

Comments:

Project/Site: MVP		City/0	Sampling Date: 04	/23/2015				
Applicant/Owner: MVP			3		Sampling Point:			
Investigator(s): A. Jennrich, J.	Kovacs, M. Sha	affer _{Secti}	ion, Township, Range: N		_			
Landform (hillslope, terrace, etc.): _					htly conve: Slope	(%): 10		
Subregion (LRR or MLRA): LRRN			Long: -80					
Soil Map Unit Name: Gilpin char								
Are climatic / hydrologic conditions				<u>-</u>	-			
	• •	· ·		·		NI -		
Are Vegetation, Soil					oresent? Yes <u>√</u>	NO		
Are Vegetation, Soil		- '		explain any answe				
SUMMARY OF FINDINGS	- Attach site r	nap showing sar	npling point location	ons, transects	, important feat	ures, etc.		
Hydrophytic Vegetation Present?	Yes	No. ✓						
Hydric Soil Present?	Yes		Is the Sampled Area	Voc	No <u></u> ✓			
Wetland Hydrology Present?	Yes	,	within a Wetland?	res	NO <u>*</u>			
Remarks: Upland								
Opidita								
HYDROLOGY								
Wetland Hydrology Indicators:				Secondary Indica	ators (minimum of tw	o required)		
Primary Indicators (minimum of o	ne is required; che	ck all that apply)		Surface Soil				
Surface Water (A1)	•	True Aquatic Plants	(B14)		getated Concave Su	rface (B8)		
High Water Table (A2)		- Hydrogen Sulfide Od		Drainage Pa	-			
Saturation (A3)		Oxidized Rhizospher	res on Living Roots (C3)	Moss Trim L	ines (B16)			
Water Marks (B1)		Presence of Reduce	d Iron (C4)	Dry-Season Water Table (C2)				
Sediment Deposits (B2)		Recent Iron Reduction	on in Tilled Soils (C6)	Crayfish Bur	rows (C8)			
Drift Deposits (B3)		Thin Muck Surface (isible on Aerial Imag	ery (C9)		
Algal Mat or Crust (B4)		Other (Explain in Re	marks)		tressed Plants (D1)			
Iron Deposits (B5)	(- -)				Position (D2)			
Inundation Visible on Aerial I	magery (B7)			Shallow Aqu				
Water-Stained Leaves (B9) Aquatic Fauna (B13)				Microtopogra	aphic Relief (D4)			
Field Observations:				FAC-Neutral	Test (D5)			
	es No ✓	_ Depth (inches):						
		_ Depth (inches):						
		_ Depth (inches):		Hydrology Preser	nt? Yes I	No ✓		
(includes capillary fringe)		•		, 0,	. 103			
Describe Recorded Data (stream	gauge, monitoring	well, aerial photos, pre	evious inspections), if ava	ailable:				
Remarks:								

Sampling Point:	W-M22,	M23	UP
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	Abcoluto	Dominont	Indicator	Dominanas Tast warkshoot.
Tree Stratum (Plot size:)		Dominant Species?		Dominance Test worksheet:
	70 COVCI	орескоз:	Status	Number of Dominant Species That Are OBL FACW or FAC: 0 (A)
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: 2* (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
				That Are Obl., I ACW, OF FAC.
6				Prevalence Index worksheet:
<i>I</i>				Total % Cover of: Multiply by:
•		= Total Co	_	
50% of total cover: 0	20% of	f total cover	:0	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15'				FACW species x 2 =
1. Prunus spp	15	✓	ND	FAC species x 3 =
2				FACU species x 4 =
				UPL species x 5 =
3				Column Totals: (A) (B)
4				Column rotals (A) (B)
5				Prevalence Index = B/A =
6				
7.	_			Hydrophytic Vegetation Indicators:
0				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
		= Total Co	ver	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: <u>7.5</u>	20% of	f total cover	: <u> 3 </u>	
Herb Stratum (Plot size: 5')				data in Remarks or on a separate sheet)
1. Potentilla canadensis	15	✓	UPL	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Panax trifolius	10			
		-	<u>UPL</u>	¹ Indicators of hydric soil and wetland hydrology must
3. Solidago rugosa	3		_ F <u>AC</u>	be present, unless disturbed or problematic.
4. Panicum virgatum	3		_ F <u>AC</u>	Definitions of Four Vegetation Strata:
_{5.} Fragaria spp	2		ND	
6. Viola spp	5		ND	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7. Rubus allegheniensis	40		FACU_	more in diameter at breast height (DBH), regardless of
	15			height.
8. Geum spp			ND	Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11.				Heat All leads a confidence of the confidence of
· · ·	93	= Total Co		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover: 46.				of size, and woody plants less than 3.20 it tall.
4 = 1	<u>J</u> 20% 0	total cover	10.0	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size:15')				height.
1				
2				
3				
4		· ———		Hydrophytic
5				Vegetation
		= Total Co		Present? Yes No
50% of total cover:0	20% o	f total cover	: <u> </u>	
Remarks: (Include photo numbers here or on a separate s ND - Not Determined	heet.)			
*Vegetation not identified down to species not in	ncluded i	n the don	ninance te	est.

Sampling Point: W-M22, M23 UP

SOIL

Profile Desc	ription: (Describe t	o the dept	h needed to docun	nent the i	ndicator o	or confirm	the abse	nce of indicators.)
Depth	Matrix	•		k Features				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Textur</u>	e Remarks
0-7	10 yr 4/3	100					Loan	1
7-9	10 yr 3/3	100					Loan	1
9-11	10 yr 4/4	_100_					Loan	n
11-13	10 yr 4/6	100					Loan	1
							-	
1Type: C-C	oncentration, D=Depl	etion RM-	Reduced Matrix MS	———— S–Masked	Sand Gra	ins	² Location	n: PL=Pore Lining, M=Matrix.
Hydric Soil		Cuon, Rivi-	Reduced Matrix, M.S.	-iviaskeu	Sand Gra	11113.		ndicators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(\$7)			••	_ 2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be		re (S8) (M	I RA 147	148)	Coast Prairie Redox (A16)
Black Hi			Thin Dark Su				, _	(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye				_	Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Mat					(MLRA 136, 147)
2 cm Mu	ck (A10) (LRR N)		Redox Dark S	Surface (F	6)		_	_ Very Shallow Dark Surface (TF12)
	l Below Dark Surface	e (A11)	Depleted Dar				_	_ Other (Explain in Remarks)
	rk Surface (A12)		Redox Depre					
	lucky Mineral (S1) (L	RR N,	Iron-Mangane		es (F12) (L	RR N,		
	147, 148)		MLRA 136		MIDA 12	2 122)		³ Indicators of hydrophytic vegetation and
-	leyed Matrix (S4) edox (S5)		Umbric Surfa Piedmont Flo				IS)	wetland hydrology must be present,
-	Matrix (S6)		Red Parent M	•				unless disturbed or problematic.
	ayer (if observed):		rtou r dront iv	iatoriai (i	_ · / (,	,	arriess distalled or presidentiale.
Type: Be								
Depth (inc							Hydric	Soil Present? Yes No _✓_
Remarks:			<u> </u>				J	
remarks.								

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	38.029124	Lon.	-80.742585
STREAM/SITE ID AND SITE DESCR	IPTION:				W	-ST27, Temporary Access Road		
(% stream slope, watershed size {a	creage}, unaltered	l or impairments)						
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-ST27	Emergent	0.0075	Emergent					
					ĺ	PART III - Advanced	Mitigatio	on
						Sustainable Determination Made on Advanced Mitigation (Y or N)		Υ
					·			
Total Impact		0.0075			ı	F-V		
Motland C	PART II - I	Unit Scores	Donlars wort Unit(a)			Estimated ILF Costs		
Total Emergent	iassilication		Replacement Unit(s) 0.0075			ILF Costs		
Total Scrub-Shrub			0.0075	-		\$450.00		
Total Forested			0	-	Į.	Ψ-30.00		
Total Open Water			0	-				

Project/Site: MVP	City/County: Greenbrier		Sampling Date: 07/26/2016
Applicant/Owner: MVP	, , _		Sampling Point: W-ST27
• •	Section, Township, Range: N/A		
Landform (hillslope, terrace, etc.): Floodplain			Slone (%): 0-3
Subregion (LRR or MLRA): LRR N	Lat: 38.029068 Long: -80.		
	3 to 15 percent slopes, very stony		
	cal for this time of year? Yes No (I		
Are Vegetation, Soil, or Hydrology	significantly disturbed? Are "Normal	Circumstances" p	resent? Yes No
Are Vegetation, Soil, or Hydrology	naturally problematic? (If needed, ex	xplain any answer	s in Remarks.)
SUMMARY OF FINDINGS – Attach si	te map showing sampling point location	ns, transects,	, important features, etc.
Hydrophytic Vegetation Present? Yes	✓ No.		
Hydrophytic Vegetation Present? Yes _ Hydric Soil Present? Yes _	No Is the Sampled Area		
Wetland Hydrology Present? Yes _	✓ No within a Wetland?	Yes	No
Remarks: Cowardin Code: PEM	HGM: Depressional Water Type: N		
	TIGIVI. Depressional Water Type. I	NICE VVVV	
Old road bed			
HYDROLOGY			
Wetland Hydrology Indicators:	!	Secondary Indicat	tors (minimum of two required)
Primary Indicators (minimum of one is required;	check all that apply)	Surface Soil (, ,
Surface Water (A1)	True Aquatic Plants (B14)		etated Concave Surface (B8)
High Water Table (A2)		✓ Drainage Pate	
Saturation (A3)	✓ Oxidized Rhizospheres on Living Roots (C3)	Moss Trim Lir	
Water Marks (B1)	Presence of Reduced Iron (C4)	-	Vater Table (C2)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burr	
Drift Deposits (B3)	Thin Muck Surface (C7)		sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Remarks)		ressed Plants (D1)
Iron Deposits (B5)		Geomorphic I	
Inundation Visible on Aerial Imagery (B7)		Shallow Aquit	
Water-Stained Leaves (B9) Aquatic Fauna (B13)		✓ FAC-Neutral	phic Relief (D4)
Field Observations:		FAC-Neuliai	Test (D5)
	Depth (inches):		
Water Table Present? Yes No _	Depth (inches):		
		udralagu Pracan	t? Yes 🗸 No
Saturation Present? Yes No _ (includes capillary fringe)	Depth (inches) wetland h	/arology Present	tr res <u> </u>
Describe Recorded Data (stream gauge, monito	ring well, aerial photos, previous inspections), if avail	able:	
Remarks:			

		1 A I		
Sampling	Daint	w	>	1フ/
Sambilliu	PUIIII.		_	

20'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC:4 (A)
2				Total Number of Deminant
3				Total Number of Dominant Species Across All Strata: 4 (B)
4				(b)
		-		Percent of Dominant Species
5				That Are OBL, FACW, or FAC:100 (A/B)
6				Prevalence Index worksheet:
7				
		= Total Cov		
50% of total cover:0	20% of	total cover:	0	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2 =
1				FAC species x 3 =
2				FACU species x 4 =
		-		UPL species x 5 =
3				Column Totals: (A) (B)
4				(A)(B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				
8				1 - Rapid Test for Hydrophytic Vegetation
9				✓ 2 - Dominance Test is >50%
ə	0 .	Total Cau		3 - Prevalence Index is ≤3.0 ¹
50% of total cover: 0		= Total Cov		4 - Morphological Adaptations ¹ (Provide supporting
E !	20% 01	total cover:		data in Remarks or on a separate sheet)
Tiero Stratum (Fiot Size)	00			Problematic Hydrophytic Vegetation ¹ (Explain)
1. Carex lurida	20		OBL	: ::::::::::::::::::::::::::::::
2. Microstegium virminium	20		F <u>AC</u>	The disease of booking on the education of booking on the
3. Juncus effusus	25		FACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Scirpus atrovirens	20	~	OBL	
5 Solidago altissima	15		FACU	Definitions of Four Vegetation Strata:
v		-		Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6		-		more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11.				Harb All harbassaya (nan waadu) nlanta ragardlaga
	100	= Total Cov	or	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover: 50		total cover:		or orze, and weedy plante loos than orze it tall
Woody Vine Stratum (Plot size: 15')	2070 01	total oover.		Woody vine – All woody vines greater than 3.28 ft in
, voody vine Stratum (1 lot size.				height.
1				
2				
3				
4				Hudronbusia
5.				Hydrophytic Vegetation
	0 .	= Total Cov		Present? Yes V No No
50% of total cover: 0		total cover:	_	
		total cover.		
Remarks: (Include photo numbers here or on a separate si	neet.)			

Sampling Point: W-ST27

SOIL

Profile Desc	cription: (Describe to	o the depth	needed to docun	nent the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redox	k Features	31	. 2	_	
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	<u>Remarks</u>
0-2	10YR 4/2	95	7.5 YR 4/6	5	С	M/PL	SIC	
2-18	10YR 5/1	80	7.5 YR 5/6	20_	С	M/PL	SICL	
			_		'	· <u></u>		
					-			
								. <u></u>
			_					
¹ Type: C=C	oncentration, D=Deple	etion RM-F	Reduced Matrix MS	 S-Masked	Sand Gr	ains	² Location: P	L=Pore Lining, M=Matrix.
Hydric Soil		ouon, ruvi–r	Coddoca Matrix, Mc	J-Maskea	Oana Oi	airio.		ators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(S7)				cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be		ce (S8) (N	ILRA 147,		Coast Prairie Redox (A16)
	stic (A3)		Thin Dark Su				, <u> </u>	(MLRA 147, 148)
Hydroge	en Sulfide (A4)		Loamy Gleye	d Matrix (I	F2)		P	Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Mat					(MLRA 136, 147)
	uck (A10) (LRR N)		Redox Dark S	•	,			/ery Shallow Dark Surface (TF12)
	d Below Dark Surface	(A11)	Depleted Dar				c	Other (Explain in Remarks)
	ark Surface (A12) /lucky Mineral (S1) (L l	DD N	Redox Depre Iron-Mangane			IDDN		
	A 147, 148)	IXIX I V ,	MLRA 136		55 (1 12) (LIXIX IV,		
	Gleyed Matrix (S4)		Umbric Surfa		MLRA 13	6, 122)	³ Ind	licators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo					etland hydrology must be present,
Stripped	Matrix (S6)		Red Parent M	faterial (F	21) (MLR	A 127, 147	') un	less disturbed or problematic.
Restrictive	Layer (if observed):							
Type:								
Depth (in	ches):		<u> </u>				Hydric Soil	Present? Yes No
Remarks:								



Photograph Direction North

Comments:		

Project/Site: MVP				City/Cou	_{ınty:} Greenbrier		Sampling Date: 07/26/2016	
Applicant/Owner: MVP					,		Sampling Point: W-ST27,28UPI	
Investigator(s): J. Mcguirk				Section	. Township, Range: N			
Landform (hillslope, terrace, e							Slope (%): 0-1	
							Datum: NAD 83	
Soil Map Unit Name: Gilpin								
Are climatic / hydrologic cond								
· -				-				
Are Vegetation, Soil _							present? Yes No	
Are Vegetation, Soil _		-				explain any answ		
SUMMARY OF FINDIN	IGS – Att	tach si	te m	ap showing samp	ling point location	ons, transect	s, important features, etc.	
Hydrophytic Vegetation Pre	ohytic Vegetation Present? Yes No V							
Hydric Soil Present?				No	s the Sampled Area within a Wetland?	Vos	No	
Wetland Hydrology Present	?	Yes _		No	vitilii a vvetialiu:	163		
Remarks: Cowardin (Code: UPI	AND		HGM:	Water Type:			
HYDROLOGY								
Wetland Hydrology Indica	tors:					Secondary Indic	ators (minimum of two required)	
Primary Indicators (minimur	n of one is r	equired;	chec	call that apply)		Surface Soi	l Cracks (B6)	
Surface Water (A1)				True Aquatic Plants (B	14)	Sparsely Ve	egetated Concave Surface (B8)	
High Water Table (A2)				Hydrogen Sulfide Odor			atterns (B10)	
Saturation (A3)			_	Oxidized Rhizospheres		Moss Trim I		
Water Marks (B1)				Presence of Reduced I	ron (C4)	Dry-Season	Water Table (C2)	
Sediment Deposits (B2))			Recent Iron Reduction	in Tilled Soils (C6)	Crayfish Burrows (C8)		
Drift Deposits (B3)				Thin Muck Surface (C7)	Saturation \	/isible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)			_	Other (Explain in Rema	irks)	Stunted or S	Stressed Plants (D1)	
Iron Deposits (B5)							c Position (D2)	
Inundation Visible on A	_	y (B7)				Shallow Aqı		
Water-Stained Leaves	(B9)						raphic Relief (D4)	
Aquatic Fauna (B13)					T	FAC-Neutra	II Test (D5)	
Field Observations: Surface Water Present?	Voc	No	~	Depth (inches):				
Water Table Present?				Depth (inches):				
Saturation Present?				Depth (inches):		Hydrology Proce	nt? Yes No	
(includes capillary fringe)							ntr resNo	
Describe Recorded Data (st	ream gauge	e, monito	ring v	vell, aerial photos, previ	ous inspections), if ava	ailable:		
Remarks:								
Remarks.								

Sampling	Point:	W-S	Γ27.	,28L	JPL
Sambiind	Point:	VV-3	121,	,200	ᇨᆫ

Troo Stratum (Plot size: 30'	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tiee Stratum (Flot Size)		Species?		Number of Dominant Species
1. Liriodendron tulipifera	50		<u>FACU</u>	That Are OBL, FACW, or FAC: 2 (A)
2. Gleditsia triacanthos	30		FAC	Total Number of Dominant
3				Species Across All Strata: 4 (B)
4				
5				Percent of Dominant Species That Are OBL FACW or FAC: 50 (A/B)
			·	That Are OBL, FACW, or FAC: 50 (A/B)
6		-	· ——	Prevalence Index worksheet:
7	80	T-1-1-0		Total % Cover of: Multiply by:
500% of total covers 40	20% of	= Total Cov		OBL species x 1 =
4.51	20% 01	total cover	10	FACW species x 2 =
Caping/Ornab Ottatam (1 lot 3/26				FAC species x 3 =
1,		-		
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				
8				1 - Rapid Test for Hydrophytic Vegetation
9.		'		2 - Dominance Test is >50%
	0	= Total Cov	/er	3 - Prevalence Index is ≤3.0¹
50% of total cover:0			_	4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5')				data in Remarks or on a separate sheet)
1. Solidago altissima	30	✓	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Microstegium vimineum	50		FAC	
3. Thelypteris noveboracensis	15		FAC	¹ Indicators of hydric soil and wetland hydrology must
4 Dichanthelium clandestium	10	-	FAC	be present, unless disturbed or problematic.
·· <u>·</u>			r <u>AC</u>	Definitions of Four Vegetation Strata:
5			· ——	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6				more in diameter at breast height (DBH), regardless of
7		-		height.
8			·	Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	105	= Total Cov	/er	of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>52.5</u>				Weeds sine All weeds since greater than 2.29 ft in
Woody Vine Stratum (Plot size:15')				Woody vine – All woody vines greater than 3.28 ft in height.
1				
2.				
3				
	-			
4		-	· ——	Hydrophytic
5	0		· ——	Vegetation Present? Yes No ✔
50% of total cover: 0		= Total Cover	_	· · · · · · · · · · · · · · · · · · ·
		total cover		
Remarks: (Include photo numbers here or on a separate s	neet.)			
				l l

Profile Desc	ription: (Describe to	the depth	needed to docum	ent the i	ndicator	or confirm	the absence	of indicators.)	
Depth	Matrix		Redox	Features	3	-			
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Remarks	
0-10	10YR 4/2	90	7.5YR 4/6	10	С	M	GSIL		
					-				
								-	
					-				
									_
					-				
									-
									_
¹ Type: C=Co	oncentration, D=Deple	etion, RM=R	Reduced Matrix, MS	=Masked	Sand Gr	ains.		L=Pore Lining, M=Matrix.	
Hydric Soil I	ndicators:						Indica	ators for Problematic Hyd	dric Soils³:
Histosol	(A1)		Dark Surface	(S7)			2	cm Muck (A10) (MLRA 14	7)
Histic Ep	ipedon (A2)		Polyvalue Bel	low Surfac	ce (S8) (N	ILRA 147,	148) C	Coast Prairie Redox (A16)	
Black Hi			Thin Dark Su			47, 148)		(MLRA 147, 148)	
	n Sulfide (A4)		Loamy Gleye		F2)		P	riedmont Floodplain Soils (I	F19)
	Layers (A5)		Depleted Mat		۵)			(MLRA 136, 147)	(TE 10)
	ck (A10) (LRR N) I Below Dark Surface	(/11)	Redox Dark S Depleted Dar					ery Shallow Dark Surface (Other (Explain in Remarks)	(TF12)
	irk Surface (A12)	(A11)	Redox Depre		. ,		0	Milei (Explain in Nemarks)	
	lucky Mineral (S1) (Li	RR N.	Iron-Mangane			LRR N.			
	147, 148)	,	MLRA 136		, ,	,			
	leyed Matrix (S4)		Umbric Surfa		MLRA 13	6, 122)	³ Ind	icators of hydrophytic vege	etation and
Sandy R	edox (S5)		Piedmont Flo	odplain So	oils (F19)	(MLRA 14	8) we	etland hydrology must be pr	resent,
	Matrix (S6)		Red Parent M	laterial (F	21) (MLR	A 127, 147	') unl	less disturbed or problema	tic.
	ayer (if observed):								
	urse fragments		<u>—</u>						
Depth (inc	_{ches):} <u>10</u>		<u>—</u>				Hydric Soil	Present? Yes	No
Remarks:							•		

Mountain Valley Pipeline			COORDINATES:	Lat.	38.02906	Lon.	-80.736807
IPTION:				W	/-KL40, Temporary Access Road		
creage}, unaltered	or impairments)						
8/10/	2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
PART I - Wetla	and Indicators						
Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
Emergent	0.0312	Emergent					
							on
					Advanced Mitigation (Y or N)		Υ
	0.0312			,	F-th-to-d		
	Init Scores	Danie a mand Hawa					
assification					ILF Costs		
			_		\$1 872 00		
					φ1,072.00		
		·					
	PART I - Wetland Classification Emergent	PTION: creage}, unaltered or impairments) 8/10/2015 PART I - Wetland Indicators Impact Wetland Classification Emergent 0.0312 0.0312 PART II - Unit Scores	PTION: creage}, unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Emergent 0.0312 Emergent 0.0312 PART II - Unit Scores	PTION: Creage}, unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Emergent 0.0312 Emergent 0.0312 PART II - Unit Scores assification Replacement Unit(s) 0 0 0	PTION: Creage), unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact	PTION: creage), unaltered or impairments) ### W-KL40, Temporary Access Road ### PRECIPITATION PAST 48 HRS: ### PART III - Advanced ### Sustainable Determination Made on Advanced Mitigation ### (Y or N) ### DATE III - Advanced ### Sustainable Determination Made on Advanced Mitigation ### (Y or N) ### DATE III - Advanced ### Sustainable Determination Made on Advanced Mitigation ### (Y or N) ### DATE III - Advanced ### Sustainable Determination Made on Advanced Mitigation ### (Y or N) ### DATE III - Advanced Mitigation ### DATE III - Advanced Mitigation ### (Y or N) ### DATE III - Advanced Mitigation ### (P or N) ### DATE III - Advanced Mitigation ### (P or N) ### DATE III - Advanced Mitigation ### (P or N) ### DATE III - Advanced Mitigation ### DATE III - Advanced Mitigation ### (P or N) ### (P or N) ### DATE III - Advanced Mitigation ### (P or N) ### (P or	PTION: creage), unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Impacts (acreage) Wetland Classification Emergent 0.0312 Emergent Emergent 0.0312 Emergent 0.0312 PART II - Unit Scores assification Replacement Unit(s) 0.0312 1.1,872.00

Project/Site: MVP	City/County: Greenbrier		Sampling Date: 09/13/2016	
Applicant/Owner: MVP	· · · · ·	State: WV	Sampling Point: W-KL40	
• •	rkildson Section, Township, Range: N	<u> </u>	_	
• , ,	nal Local relief (concave, convex, no		Slope (%)· 1	
Subregion (LRR or MLRA): LRR N				
	plex, 35 to 55 percent slopes, very stony			
	oical for this time of year? Yes No			
	y significantly disturbed? Are "Normal	I Circumstances" p	oresent? Yes No	
Are Vegetation, Soil, or Hydrology	/ naturally problematic? (If needed, e	explain any answe	rs in Remarks.)	
SUMMARY OF FINDINGS – Attach s	ite map showing sampling point locatio	ons, transects	, important features, etc.	
Hydrophytic Vegetation Present? Yes _				
Hydric Soil Present? Yes _	is the Sampled Area	Yes 🗸	Al -	
Wetland Hydrology Present? Yes _	within a wetland?	res	No	
Remarks: Cowardin Code: PEM	HGM: Depressional Water Type:	DD/W/W/D		
	,	UL MAMO		
Flows into W-KL39 and W-IJ58,	through a road culvert.			
HYDROLOGY				
Wetland Hydrology Indicators:		Secondary Indica	tors (minimum of two required)	
Primary Indicators (minimum of one is required;	check all that apply)	Surface Soil		
Surface Water (A1)	True Aquatic Plants (B14)		getated Concave Surface (B8)	
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainage Pat		
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	Moss Trim Li		
Water Marks (B1)	Presence of Reduced Iron (C4)		Water Table (C2)	
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)		
Drift Deposits (B3)	Thin Muck Surface (C7)	Saturation Vi	sible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Stunted or St	tressed Plants (D1)	
Iron Deposits (B5)		Geomorphic	Position (D2)	
Inundation Visible on Aerial Imagery (B7)		Shallow Aqui	tard (D3)	
Water-Stained Leaves (B9)			phic Relief (D4)	
Aquatic Fauna (B13)		FAC-Neutral	Test (D5)	
Field Observations:				
	Depth (inches): 8			
	Doptii (inches)			
Saturation Present? Yes No _ (includes capillary fringe)	Depth (inches): 0 Wetland F	lydrology Presen	t? Yes <u>/</u> No	
	oring well, aerial photos, previous inspections), if ava	nilable:		
Remarks: None				
Notice				

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

/EGETATION (Four Strata) – Use scientific na	ames of	plants.		Sampling Point: W-KL40
20'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC:2 (A)
2				Total Number of Dominant
3				Species Across All Strata: 3 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC:66 (A/B)
6				
7				Prevalence Index worksheet:
		= Total Cov		Total % Cover of: Multiply by:
50% of total cover: 0	20% of	total cover	:0	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2 =
1. Rubus allegheniensis	5		<u>FACU</u>	FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Dravalance Index D/A
6				Prevalence Index = B/A =
7				Hydrophytic Vegetation Indicators:
8				1 - Rapid Test for Hydrophytic Vegetation
9				✓ 2 - Dominance Test is >50% 1
·	_	= Total Cov	/er	3 - Prevalence Index is ≤3.0 ¹
50% of total cover: <u>2.5</u>				4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5')				data in Remarks or on a separate sheet)
1. Sparganium americanum	30	~	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Impatiens capensis	10		FACW	
3. Eutrochium fistulosum	15		FACW	¹ Indicators of hydric soil and wetland hydrology must
4. Scirpus cyperinus	30		FACW	be present, unless disturbed or problematic.
5. Solidago gigantea	10		FACW	Definitions of Four Vegetation Strata:
6. Cicuta maculata	10		OBL	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
•			OBL	more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub - Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
10		· -		m) tan.
11	105			Herb – All herbaceous (non-woody) plants, regardless
50% of total cover: <u>52.5</u>		= Total Cov		of size, and woody plants less than 3.28 ft tall.
	<u>) </u>	iolai covei		Woody vine - All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15')				height.
1				
2				
3				
4			-	Hydrophytic
5	_			Vegetation Present? Yes ✓ No
		= Total Cov	_	riesent? Tes No
50% of total cover:0		total cover	:0	
Remarks: (Include photo numbers here or on a separate s	heet.)			

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Histic Epipedon (A2) Black Histic (A3) Thin Dark Surface (S9) (MLRA 147, 148) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Stratified Layers (A5) Depleted Matrix (F3) Depleted Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N) MLRA 147, 148) Mura 136) Sandy Gleyed Matrix (S4) Sandy Gleyed Matrix (S4) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) MIRA 147, 148) Sandy Redox (S5) Setriped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) Reds Dark Surface (F19) (MLRA 148) Sandy Gleyed Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) Type: Type:	SL Fill, fibric, high organic SL Fill, fibric, high organic and Grains. 2Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils³: 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) F12) (LRR N, RA 136, 122) (F19) (MLRA 148) 3Indicators of hydrophytic vegetation and wetland hydrology must be present,
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. **Location: PL=Pore Lining, M=Matrix.** Hydric Soil Indicators: Indicators for Problematic Hydr	and Grains. 2 Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils³: 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) F12) (LRR N, RA 136, 122) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present,
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Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) unless disturbed or problematic estrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes emarks:	
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Type: Depth (inches): Hydric Soil Present? Yes emarks:	
Depth (inches): Hydric Soil Present? Yes emarks:	
emarks:	Hydric Soil Present? Yes ✓ No
	Tryano con ricoche. Teo No



Photograph Direction North

Comments:		

Project/Site: MVP		City/C	ounty: Greenbrier		Sampling Date: 09/12/2016			
Applicant/Owner: MVP			,		Sampling Point: W-KL40-UI			
Investigator(s): E. Foster, K. Pulver,	M. Whitten	Section	on, Township, Range: N/					
Landform (hillslope, terrace, etc.): Hills					Slope (%): 5-10			
Subregion (LRR or MLRA): LRR N								
Soil Map Unit Name: MeF-Macove-Gilp								
Are climatic / hydrologic conditions on the								
Are Vegetation, Soil, or H	lydrology	significantly disturb	oed? Are "Normal	Circumstances" p	present? Yes No			
Are Vegetation, Soil, or H	lydrology	naturally problema	itic? (If needed, e	explain any answe	rs in Remarks.)			
SUMMARY OF FINDINGS – At	tach site m	ap showing sam	pling point location	ns, transects	, important features, etc.			
Hydrophytic Vegetation Present?	Yes	No. 🗸						
Hydric Soil Present?	Yes		Is the Sampled Area	V = =	No 🗸			
Wetland Hydrology Present?		No 🗸	within a Wetland?	Yes	No			
Remarks: Cowardin Code: UPI			Water Type:					
Sewaram Seas. Of 1		110111.	water type.					
HYDROLOGY								
Wetland Hydrology Indicators:				Secondary Indica	ators (minimum of two required)			
Primary Indicators (minimum of one is r	equired; check	all that apply)		Surface Soil				
Surface Water (A1)		True Aquatic Plants (I			getated Concave Surface (B8)			
High Water Table (A2)		Hydrogen Sulfide Odd		Drainage Pa				
Saturation (A3) Oxidized Rhizospheres on Living Roo				Moss Trim L				
Water Marks (B1)		-		Water Table (C2)				
Sediment Deposits (B2)								
Drift Deposits (B3)		Thin Muck Surface (C			isible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)		Other (Explain in Ren			tressed Plants (D1)			
Iron Deposits (B5)		` '	,		Position (D2)			
Inundation Visible on Aerial Imager	y (B7)			Shallow Aqu				
Water-Stained Leaves (B9)	,				aphic Relief (D4)			
Aquatic Fauna (B13)				FAC-Neutral	. , ,			
Field Observations:								
Surface Water Present? Yes	No	Depth (inches):						
Water Table Present? Yes	No	Depth (inches):						
		Depth (inches):		lydrology Preser	nt? Yes No			
(includes capillary fringe) Describe Recorded Data (stream gauge		vall parial photos pro	vious inspections) if ave	ilabla				
Describe Recorded Data (stream gauge	s, monitoring w	reli, aeriai priotos, pre	vious irispections), ii ava	liable.				
Remarks:								

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

Sampling Point: W-KL40-UP

30'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species
1. Tsuga canadensis	25		<u>FACU</u>	That Are OBL, FACW, or FAC:0 (A)
2. Fagus grandifolia	25		FACU_	Total Number of Dominant
3				Species Across All Strata: 7 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC:0 (A/B)
6				
7				Prevalence Index worksheet:
		= Total Cov		Total % Cover of: Multiply by:
50% of total cover: 25	20% of	total cover:	10	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2 =
1. Oxydendron arboreum	5		FACU_	FAC species x 3 =
2. Fagus grandifolia	20		F <u>ACU</u>	FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				
6				Prevalence Index = B/A =
7				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
8		-		2 - Dominance Test is >50%
9	25	Tatal Cau		3 - Prevalence Index is ≤3.0 ¹
50% of total cover: <u>12.5</u>		= Total Cov		4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5')	20 / 01	total cover.		data in Remarks or on a separate sheet)
1. Rubus trivialis	10	~	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Solidago canadensis	10		FACU	
3. Andropogon virginicus	5		FACU	¹ Indicators of hydric soil and wetland hydrology must
			FACU	be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6				more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
		= Total Cov		of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>12.5</u>	20% of	total cover:	5	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15')				height.
1,				
2				
3				
4				Hydrophytic
5				Vegetation
	0	= Total Cov	er	Present? Yes No
50% of total cover:0	20% of	total cover:	0	
Remarks: (Include photo numbers here or on a separate si	heet.)			

Depth	Matrix		needed to document the indicator or c Redox Features				
(inches)	Color (moist)	%	Color (moist) % Type ¹ L		ture	Remarks	
0-6	10yr 4/4	100		S	<u>iL</u>		
		etion, RM=Re	educed Matrix, MS=Masked Sand Grains	. ² Loca	tion: PL=Pore Lin	ing, M=Matrix	
ydric Soil I	ndicators:				Indicators for P	roblematic H	ydric Soils³:
Histosol	(A1)		Dark Surface (S7)		2 cm Muck (A10) (MLRA	147)
_ Histic Ep	pipedon (A2)		Polyvalue Below Surface (S8) (MLR	A 147, 148)	Coast Prairie	Redox (A16))
Black Hi	stic (A3)		Thin Dark Surface (S9) (MLRA 147,	148)	(MLRA 14	17, 148)	
Hydroge	n Sulfide (A4)		Loamy Gleyed Matrix (F2)		Piedmont Flo	oodplain Soils	s (F19)
_ Stratified	l Layers (A5)		Depleted Matrix (F3)		(MLRA 13	86, 147)	
	ck (A10) (LRR N)		Redox Dark Surface (F6)			v Dark Surfac	
	Below Dark Surface	e (A11)	Depleted Dark Surface (F7)		Other (Expla	in in Remarks	s)
	ark Surface (A12)		Redox Depressions (F8)				
	lucky Mineral (S1) (L	.RR N,	Iron-Manganese Masses (F12) (LRF	RN,			
	\ 147, 148)		MLRA 136)				
	leyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 1		³ Indicators of h		
	edox (S5)		Piedmont Floodplain Soils (F19) (ML		wetland hydro		
	Matrix (S6)		Red Parent Material (F21) (MLRA 12	27, 147)	unless disturb	ed or problen	natic.
	ayer (if observed):						
Type: Re	efusal, coarse fra	gments	_				
Depth (inc	ches): <u>6</u>		<u>_</u>	Hydr	ic Soil Present?	Yes	_ No <u> </u>
emarks:				<u> </u>			

USACE FILE NO./Project Name:		Mountain	Valley Pipeline	COORDINATES:	Lat.	38.0288	Lon.	-80.743155
STREAM/SITE ID AND SITE DESCR	IPTION:				W	-ST28, Temporary Access Road		
(% stream slope, watershed size {a	creage}, unaltered	or impairments)						
FORM OF MITIGATION:								
DATE:	8/10	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-ST28	Emergent	0.031	Emergent					
						PART III - Advanced		n
						Sustainable Determination Made on Advanced Mitigation (Y or N)		Y
Total Impact		0.031						
W		Jnit Scores				Estimated		
	lassification		Replacement Unit(s)			ILF Costs		
Total Emergent Total Scrub-Shrub			0.031			¢4 960 00		
Total Scrub-Shrub Total Forested			0	-		\$1,860.00		
Total Open Water			0	1				

Project/Site: MVP	City/County: Greenbriar		Sampling Date: 07/26/2016
Applicant/Owner: MVP	, ,		Sampling Point: W-ST28
	Section, Township, Range: N		_ ,
Landform (hillslope, terrace, etc.): Flat			Slone (%)· 0-3
Subregion (LRR or MLRA): LRR N			
Soil Map Unit Name: Gilpin channery silt loam, 3			
Are climatic / hydrologic conditions on the site typic	-		
Are Vegetation, Soil, or Hydrology _		Circumstances" p	oresent? Yes No
Are Vegetation, Soil, or Hydrology _	naturally problematic? (If needed, e	explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site	e map showing sampling point location	ons, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes	No Is the Sampled Area		
Hydric Soil Present? Yes	/ N. Is the Sampled Area	Yes 🗸	Al -
Wetland Hydrology Present? Yes	No within a Wetland?	Yes	No
Remarks: Cowardin Code: PEM	HGM: Depressional Water Type:	NRPWW	
Old road bed	Trown Depressional Water Type.	14101 7777	
Old Toad bed			
HYDROLOGY			
Wetland Hydrology Indicators:			tors (minimum of two required)
Primary Indicators (minimum of one is required; cl		Surface Soil	` '
Surface Water (A1)	True Aquatic Plants (B14)		getated Concave Surface (B8)
High Water Table (A2)	✓ Hydrogen Sulfide Odor (C1)✓ Oxidized Rhizospheres on Living Roots (C3)	✓ Drainage Pat	
	Moss Trim Li	Water Table (C2)	
Sediment Deposits (B2)	Presence of Reduced Iron (C4)Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burr	
Occument Deposits (B2) Drift Deposits (B3)	Thin Muck Surface (C7)		sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Remarks)		tressed Plants (D1)
Iron Deposits (B5)		Geomorphic	
Inundation Visible on Aerial Imagery (B7)		Shallow Aqui	
Water-Stained Leaves (B9)		Microtopogra	phic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutral	Test (D5)
Field Observations:			
Surface Water Present? Yes No	Depth (inches):		
Water Table Present? Yes No	Pepth (inches):		
	Depth (inches): Wetland H	Hydrology Presen	t? Yes / No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring)	l ng well, aerial photos, previous inspections), if ava	ailable:	
Remarks:			

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001	Absolute	Dominant	Indicator	Dominance Test worksheet:	
ree Stratum (Plot size: 30')	% Cover	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC:	3(/
			-	Total Number of Dominant Species Across All Strata:	3 _{(I}
				Percent of Dominant Species	400
				That Are OBL, FACW, or FAC:	100(/
	0			Prevalence Index worksheet: Total % Cover of:	Multiply by:
50% of total cover: 0		= Total Cov		OBL species x 1	l =
	20% 01	total cover	:	FACW species x 2	
apling/Shrub Stratum (Plot size: 15')					
•		·		FAC species x 3	
				FACU species x 4	· =
<u> </u>				UPL species x 5	ó =
				Column Totals: (A)	
			-	Prevalence Index = B/A =	
•				Hydrophytic Vegetation Indicat	ors:
				1 - Rapid Test for Hydrophyti	c Vegetation
·				✓ 2 - Dominance Test is >50%	
				3 - Prevalence Index is ≤3.0 ¹	
_		= Total Cov	_	4 - Morphological Adaptation:	
50% of total cover:0	20% of	total cover:	:0	data in Remarks or on a s	
Herb Stratum (Plot size: 5')					•
Carex lurida	10		OBL	Problematic Hydrophytic Veg	etation (Explain)
. Microstegium virmineum	10		FAC		
Juncus effusus	25	V	FACW	¹ Indicators of hydric soil and wetla	
Scirpus cyperinus	35		OBL	be present, unless disturbed or pr	
Scirpus atrovirens	20		OBL	Definitions of Four Vegetation S	Strata:
Solidago altissima	10		FACU	Tree - Woody plants, excluding v	ines, 3 in. (7.6 cm
Euthamia graminifolia	10	-		more in diameter at breast height	(DBH), regardles
Dichanthelium clandestium	10		FAC	height.	
Dichanthelium dandestium		· 	FAC	Sapling/Shrub – Woody plants, e	excluding vines, le
)		·		than 3 in. DBH and greater than c	
0				m) tall.	
1				Herb – All herbaceous (non-wood	dv) plants, regardl
	130	= Total Cov	/er	of size, and woody plants less that	
50% of total cover: 65 Voody Vine Stratum (Plot size: 15')	20% of	total cover	:26	Woody vine – All woody vines gr height.	eater than 3.28 ft
				neight.	
3					
h				Hydrophytic	
i		·		Vegetation	
		= Total Cov		Present? Yes	No
50% of total cover:0	20% of	total cover	:0		
Remarks: (Include photo numbers here or on a separate sl	neet.)				

Sampling Point: W-ST28

SOIL

Profile Desc	ription: (Describe t	o the depth	needed to docum	ent the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redox	Features	3	-		
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-10	10YR 4/2	70	7.5YR 5/6	10	<u>C</u>	M/PL	SIC	
	7.5YR 4/4	20						
					-			
					-			
¹ Type: C=Ce	oncentration, D=Depl	etion, RM=R	Reduced Matrix, MS	=Masked	Sand Gr	ains.	² Location: Pl	L=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indica	ators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	(S7)			2	cm Muck (A10) (MLRA 147)
Histic Ep	oipedon (A2)		Polyvalue Bel	ow Surfac	ce (S8) (N	ILRA 147,	148) C	Coast Prairie Redox (A16)
Black Hi			Thin Dark Su			47, 148)		(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye		F2)		P	Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Mat		0)			(MLRA 136, 147)
	ick (A10) (LRR N) d Below Dark Surface	(/11)	Redox Dark S Depleted Dar					ery Shallow Dark Surface (TF12) Other (Explain in Remarks)
	ark Surface (A12)	(Д11)	Redox Depre		. ,			otter (Explain in Nemarks)
	lucky Mineral (S1) (L	RR N,	Iron-Mangane			LRR N,		
	A 147, 148)	,	MLRA 136		, ,	,		
	Bleyed Matrix (S4)		Umbric Surfa		MLRA 13	6, 122)	³ Ind	licators of hydrophytic vegetation and
Sandy R	Redox (S5)		Piedmont Flo	odplain So	oils (F19)	(MLRA 14	8) we	etland hydrology must be present,
	Matrix (S6)		Red Parent M	laterial (F	21) (MLR	A 127, 147	') un	less disturbed or problematic.
	Layer (if observed):							
	ourse fragments							
Depth (in	ches): <u>10</u>		<u> </u>				Hydric Soil	Present? Yes V No No
Remarks:								



Photograph Direction South

Comments:			

Project/Site: MVP				City/Cou	_{ınty:} Greenbrier		Sampling Date: 07/26/2016
Applicant/Owner: MVP					,		Sampling Point: W-ST27,28UPI
Investigator(s): J. Mcguirk				Section	. Township, Range: N		
Landform (hillslope, terrace, e							Slope (%): 0-1
							Datum: NAD 83
Soil Map Unit Name: Gilpin							
Are climatic / hydrologic cond							
· -				-			
Are Vegetation, Soil _							present? Yes No
Are Vegetation, Soil _		-				explain any answ	
SUMMARY OF FINDIN	IGS – Att	tach si	te m	ap showing samp	ling point location	ons, transect	s, important features, etc.
Hydrophytic Vegetation Pre	sent?	Yes		_ No_ 🗸 .			
Hydric Soil Present?				No	s the Sampled Area within a Wetland?	Vos	No
Wetland Hydrology Present	?	Yes _		No	vitilii a vvetialiu:	163	
Remarks: Cowardin (Code: UPI	AND		HGM:	Water Type:		
HYDROLOGY							
Wetland Hydrology Indica	tors:					Secondary Indic	ators (minimum of two required)
Primary Indicators (minimur	n of one is r	equired;	chec	call that apply)		Surface Soi	l Cracks (B6)
Surface Water (A1)				True Aquatic Plants (B	14)	Sparsely Ve	egetated Concave Surface (B8)
High Water Table (A2)				Hydrogen Sulfide Odor			atterns (B10)
Saturation (A3)			_	Oxidized Rhizospheres		Moss Trim I	
Water Marks (B1)				Presence of Reduced I	ron (C4)	Dry-Season	Water Table (C2)
Sediment Deposits (B2))			Recent Iron Reduction	in Tilled Soils (C6)	Crayfish Bu	rrows (C8)
Drift Deposits (B3)				Thin Muck Surface (C7)	Saturation \	/isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)			_	Other (Explain in Rema	irks)	Stunted or S	Stressed Plants (D1)
Iron Deposits (B5)							c Position (D2)
Inundation Visible on A	_	y (B7)				Shallow Aqı	
Water-Stained Leaves	(B9)						raphic Relief (D4)
Aquatic Fauna (B13)					T	FAC-Neutra	II Test (D5)
Field Observations: Surface Water Present?	Voc	No	~	Depth (inches):			
Water Table Present?				Depth (inches):			
Saturation Present?				Depth (inches):		Hydrology Proce	nt? Yes No
(includes capillary fringe)							ntr resNo
Describe Recorded Data (st	ream gauge	e, monito	ring v	vell, aerial photos, previ	ous inspections), if ava	ailable:	
Remarks:							
Remarks.							

Sampling	Point:	W-S	Γ27.	,28L	JPL
Sambiind	Point:	VV-3	121,	,200	ᇨᆫ

Troo Stratum (Plot size: 30'	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tiee Stratum (Flot Size)		Species?		Number of Dominant Species
1. Liriodendron tulipifera	50		<u>FACU</u>	That Are OBL, FACW, or FAC: 2 (A)
2. Gleditsia triacanthos	30		FAC	Total Number of Dominant
3				Species Across All Strata: 4 (B)
4				
5				Percent of Dominant Species That Are OBL FACW or FAC: 50 (A/B)
			·	That Are OBL, FACW, or FAC: 50 (A/B)
6		-	· ——	Prevalence Index worksheet:
7	80	T-1-1-0		Total % Cover of: Multiply by:
500% of total covers 40	20% of	= Total Cov		OBL species x 1 =
4.51	20% 01	total cover	10	FACW species x 2 =
Caping/Ornab Ottatam (1 lot 3/26				FAC species x 3 =
1,		-		
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				
8				1 - Rapid Test for Hydrophytic Vegetation
9.		'		2 - Dominance Test is >50%
	0	= Total Cov	/er	3 - Prevalence Index is ≤3.0¹
50% of total cover:0			_	4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5')				data in Remarks or on a separate sheet)
1. Solidago altissima	30	✓	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Microstegium vimineum	50		FAC	
3. Thelypteris noveboracensis	15		FAC	¹ Indicators of hydric soil and wetland hydrology must
4 Dichanthelium clandestium	10	-	FAC	be present, unless disturbed or problematic.
·· <u>·</u>			r <u>AC</u>	Definitions of Four Vegetation Strata:
5			· ——	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6				more in diameter at breast height (DBH), regardless of
7		-		height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	105	= Total Cov	/er	of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>52.5</u>				Weeds sine All weeds since greater than 2.29 ft in
Woody Vine Stratum (Plot size:15')				Woody vine – All woody vines greater than 3.28 ft in height.
1				
2.				
3				
	-			
4		-	· ——	Hydrophytic
5	0		· ——	Vegetation Present? Yes No ✔
50% of total cover: 0		= Total Cover	_	· · · · · · · · · · · · · · · · · · ·
		total cover		
Remarks: (Include photo numbers here or on a separate s	neet.)			
				l l

Profile Desc	ription: (Describe to	the depth	needed to docum	ent the ii	ndicator	or confirm	the absence	of indicators.)	
Depth	Matrix		Redox	Features	3	-			
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Remarks	
0-10	10YR 4/2	90	7.5YR 4/6	10	С	M	GSIL		
					-				
								-	
					-				
									_
					-				
									-
									_
¹ Type: C=Co	oncentration, D=Deple	etion, RM=R	Reduced Matrix, MS	=Masked	Sand Gr	ains.		L=Pore Lining, M=Matrix.	
Hydric Soil I	ndicators:						Indica	ators for Problematic Hyd	dric Soils³:
Histosol	(A1)		Dark Surface	(S7)			2	cm Muck (A10) (MLRA 14	7)
Histic Ep	ipedon (A2)		Polyvalue Bel	low Surfac	ce (S8) (N	ILRA 147,	148) C	Coast Prairie Redox (A16)	
Black Hi			Thin Dark Su			47, 148)		(MLRA 147, 148)	
	n Sulfide (A4)		Loamy Gleye		F2)		P	riedmont Floodplain Soils (I	F19)
	Layers (A5)		Depleted Mat		۵)			(MLRA 136, 147)	(TE 10)
	ck (A10) (LRR N) I Below Dark Surface	(/11)	Redox Dark S Depleted Dar					ery Shallow Dark Surface (Other (Explain in Remarks)	(TF12)
	irk Surface (A12)	(A11)	Redox Depre		. ,		_ 0	Milei (Explain in Nemarks)	
	lucky Mineral (S1) (Li	RR N.	Iron-Mangane			LRR N.			
	147, 148)	,	MLRA 136		, ,	,			
	leyed Matrix (S4)		Umbric Surfa		MLRA 13	6, 122)	³ Ind	icators of hydrophytic vege	etation and
Sandy R	edox (S5)		Piedmont Flo	odplain So	oils (F19)	(MLRA 14	8) we	etland hydrology must be pr	resent,
	Matrix (S6)		Red Parent M	laterial (F	21) (MLR	A 127, 147	') unl	less disturbed or problema	tic.
	ayer (if observed):								
	urse fragments		<u>—</u>						
Depth (inc	_{ches):} <u>10</u>		<u>—</u>				Hydric Soil	Present? Yes	No
Remarks:							•		

USACE FILE NO./Project Name:		Valley Pipeline	COORDINATES:	Lat.	38.024335	Lon.	-80.739643	
STREAM/SITE ID AND SITE DESCR	RIPTION:				V	V-IJ60, Temporary Access Road		
(% stream slope, watershed size {a	acreage}, unaltered	or impairments)						
FORM OF MITIGATION:								
DATE:	8/10	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-IJ60	Emergent	0.0174	Emergent					
						PART III - Advanced I Sustainable Determination Made on		on
						Advanced Mitigation (Y or N)		Y
Total Impact		0.0174						
		Init Scores				Estimated		
	lassification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0174			\$1,044,00		
Total Scrub-Shrub			0			\$1,044.00		
Total Forested			0					
Total Open Water			0	<u></u>				

Project/Site: MVP	City/C	ounty: Greenbrier		Sampling Date: 09/12/2016			
Applicant/Owner: MVP							
Investigator(s): E. Foster, K. Pulver, M. Whitten Section, Township, Range: N/A							
Landform (hillslope, terrace, etc.): Hillslope				Slone (%): 0-2			
Subregion (LRR or MLRA): LRR N				Datum: NAD 83			
Soil Map Unit Name: EsC-Ernest silt loam,							
•				<u> </u>			
Are climatic / hydrologic conditions on the site							
Are Vegetation, Soil, or Hydrol			Circumstances" p	resent? Yes No			
Are Vegetation, Soil, or Hydrol	ogy naturally problema	atic? (If needed, e.	xplain any answe	rs in Remarks.)			
SUMMARY OF FINDINGS – Attach	site map showing sam	pling point locatio	ns, transects	, important features, etc.			
Hydrophytic Vegetation Present? Ye	s No						
	s / No	Is the Sampled Area	v V	No			
'	No	within a Wetland?	Yes	NO			
Remarks: Cowardin Code: PEM	HGM: Slope	Water Type: F	RPWWN				
Seep fed wetland on hillslope	•			round flow to W-I I58-PSS			
under road. No culverts found.	. I lows approximately iv	and possibly connec	ots via uridergi	Tourid flow to VV-1030-1 33			
HADBOLOGA							
HYDROLOGY Western Hydrology Indicators			Cocondon, Indico	toro (minimum of two required)			
Wetland Hydrology Indicators:	ad: aback all that apply)		•	tors (minimum of two required)			
Primary Indicators (minimum of one is requir Surface Water (A1)			Surface Soil	getated Concave Surface (B8)			
High Water Table (A2)	True Aquatic Plants (I Hydrogen Sulfide Odd		Sparsely veg				
Saturation (A3)		es on Living Roots (C3)	Moss Trim Li				
Water Marks (B1)	Presence of Reduced	-	Dry-Season				
Sediment Deposits (B2)	Recent Iron Reduction		Crayfish Buri	, ,			
Drift Deposits (B3)	Thin Muck Surface (C			sible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)	Other (Explain in Rem			tressed Plants (D1)			
Iron Deposits (B5)			Geomorphic				
Inundation Visible on Aerial Imagery (B7	·)		Shallow Aqui				
Water-Stained Leaves (B9)	,		Microtopographic Relief (D4)				
Aquatic Fauna (B13)			FAC-Neutral Test (D5)				
Field Observations:							
Surface Water Present? Yes N	No Depth (inches):	1					
Water Table Present? Yes N		0					
		0 Wetland H	ydrology Presen	t? Yes 🗸 No			
(includes capillary fringe)							
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, pre	vious inspections), if avai	lable:				
Remarks:							

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

over er: 0 FACW FACW OBL OBL	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A) Total Number of Dominant Species Across All Strata: 2 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B) Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species x 1 = FACW species x 2 = FACW species x 3 = FACU species x 4 = UPL species x 4 = UPL species x 4 = UPL species x 5 = 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 ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of
over er: 0 FACW FACW OBL	That Are OBL, FACW, or FAC:
over er: 0 FACW FACW OBL	Total Number of Dominant Species Across All Strata: Percent of Dominant Species That Are OBL, FACW, or FAC: Total % Cover of: Multiply by: OBL species FACW species FAC species FACU species FACU species Column Totals: Mydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Prevalence Index is ≤3.0¹ A - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation functions of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
over er: 0 FACW FACW OBL	Percent of Dominant Species That Are OBL, FACW, or FAC:
over er: 0 FACW FACW OBL	Percent of Dominant Species That Are OBL, FACW, or FAC: Total % Cover of: Multiply by:
over er: 0 FACW FACW OBL	That Are OBL, FACW, or FAC:
over er: 0 FACW FACW OBL	Prevalence Index worksheet:
over er: 0 FACW FACW OBL	Total % Cover of: OBL species
over er: 0 FACW FACW OBL	OBL species
over er: 0 FACW FACW OBL	FACW species x 2 =
over er: 0 FACW FACW FACW OBL	FAC species x 3 =
over er: 0 FACW FACW FACW OBL	FACU species x 4 =
over er: 0 FACW FACW FACW OBL	UPL species x 5 = (A) (B) Prevalence Index = B/A = Hydrophytic Vegetation Indicators: ✓ 1 - Rapid Test for Hydrophytic Vegetation ✓ 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
over er: 0 FACW FACW FACW OBL	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 ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
over er: 0 FACW FACW FACW OBL	Prevalence Index = B/A =
over er: 0 FACW FACW FACW OBL	Hydrophytic Vegetation Indicators: ✓ 1 - Rapid Test for Hydrophytic Vegetation ✓ 2 - Dominance Test is >50% — 3 - Prevalence Index is ≤3.0¹ — 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
over er: 0 FACW FACW FACW OBL	Hydrophytic Vegetation Indicators: ✓ 1 - Rapid Test for Hydrophytic Vegetation ✓ 2 - Dominance Test is >50% — 3 - Prevalence Index is ≤3.0¹ — 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
over er: 0 FACW FACW FACW OBL	1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
FACW FACW FACW OBL	2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
FACW FACW FACW OBL	3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
FACW FACW FACW OBL	4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
FACW FACW FACW OBL	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
FACW FACW OBL	Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
FACW FACW OBL	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
FACW OBL	be present, unless disturbed or problematic.
OBL	be present, unless disturbed or problematic.
_	
OBL	Definitions of Four Vegetation Strata:
<u>FACW</u>	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
	height.
	Sapling/Shrub – Woody plants, excluding vines, less
	than 3 in. DBH and greater than or equal to 3.28 ft (1
	m) tall.
	Herb – All herbaceous (non-woody) plants, regardless
	of size, and woody plants less than 3.28 ft tall.
er: <u> </u>	Woody vine – All woody vines greater than 3.28 ft in
	height.
	Hydrophytic
	Vegetation Present? Yes V No
_	
JI	· <u> </u>
	Cover 11 Cover co

Depth	Matrix		Redox Features	2 -	
(inches)	Color (moist)	%	Color (moist) % Type ¹ Loc		Remarks
0-18	10yr 3/1	100		Mucky Sa	High organics, greasy
					
		· — — —			
		· — — —			
•					
					-
		<u> </u>			
Гуре: C=Co	oncentration, D=Dep	letion, RM=Re	educed Matrix, MS=Masked Sand Grains.	² Location: F	PL=Pore Lining, M=Matrix.
ydric Soil I		•	,		cators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface (S7)	2	2 cm Muck (A10) (MLRA 147)
	ipedon (A2)		Polyvalue Below Surface (S8) (MLRA		Coast Prairie Redox (A16)
Black His	stic (A3)		Thin Dark Surface (S9) (MLRA 147, 14	48)	(MLRA 147, 148)
Hydroge	n Sulfide (A4)		Loamy Gleyed Matrix (F2)		Piedmont Floodplain Soils (F19)
_ Stratified	Layers (A5)		Depleted Matrix (F3)		(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark Surface (F6)		Very Shallow Dark Surface (TF12)
	Below Dark Surface	e (A11)	Depleted Dark Surface (F7)	_ (Other (Explain in Remarks)
	rk Surface (A12)		Redox Depressions (F8)		
	lucky Mineral (S1) (L	_RR N,	Iron-Manganese Masses (F12) (LRR N	١,	
	147, 148)		MLRA 136)	. 3.	
	leyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122		dicators of hydrophytic vegetation and
-	edox (S5)		Piedmont Floodplain Soils (F19) (MLR		etland hydrology must be present,
	Matrix (S6)		Red Parent Material (F21) (MLRA 127	, 14 /) ur	nless disturbed or problematic.
	.ayer (if observed):				
Type:			_ ,		
	ches):		<u> </u>	Hydric Soi	il Present? Yes 🔽 No
temarks:					



Photograph Direction South

Comments:			

Project/Site: MVP		City/Co	_{unty:} Greenbrier		_ Sampling Date: 09/12/2016_
Applicant/Owner: MVP			,	State: WV	Sampling Point: W-IJ59,60-UP
Investigator(s): E. Foster, I	K. Pulver, M. Wh	itten Section	Township, Range: N		
• ,,		<u> </u>			Slope (%): 10
Subregion (LRR or MLRA): L		Lat: 38.022033	Long: <u>-80</u>	.743111	Datum: NAD 83
Soil Map Unit Name: EsC-Er					
Are climatic / hydrologic condi					
·	• •	•		•	present? Yes No
Are Vegetation, Soil _	-				vers in Remarks.)
SUMMARY OF FINDIN	IGS – Attach sit	e map showing samp	oling point location	ons, transect	s, important features, etc.
Hydrophytic Vegetation Pres	sent? Yes	No	s the Sampled Area		
Hydric Soil Present?	Yes	No.	within a Wetland?	Yes	No
Wetland Hydrology Present?	? Yes				
Remarks: Cowardin C	Code: UPLAND	HGM:	Water Type:		
LIVERGLOGY					
HYDROLOGY	force			Cocondon, India	cotors (minimum of two required)
Wetland Hydrology Indicat Primary Indicators (minimum		shook all that apply)			cators (minimum of two required)
	i or one is required, o		14)	Surface So	` '
Surface Water (A1) High Water Table (A2)		True Aquatic Plants (BHydrogen Sulfide Odor			egetated Concave Surface (B8) atterns (B10)
Saturation (A3)		Oxidized Rhizospheres		_	Lines (B16)
Water Marks (B1)		Presence of Reduced I	-		n Water Table (C2)
Sediment Deposits (B2)	1	Recent Iron Reduction			urrows (C8)
Drift Deposits (B3)		Thin Muck Surface (C7		-	Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		Other (Explain in Rema			Stressed Plants (D1)
Iron Deposits (B5)				Geomorphi	c Position (D2)
Inundation Visible on Ae	erial Imagery (B7)			Shallow Aq	uitard (D3)
Water-Stained Leaves (B9)			Microtopog	raphic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutra	al Test (D5)
Field Observations:					
Surface Water Present?		Depth (inches):			
Water Table Present?		Depth (inches):			
Saturation Present? (includes capillary fringe)	Yes No _	Depth (inches):	Wetland H	Hydrology Prese	ent? Yes No
Describe Recorded Data (str	ream gauge, monitor	ing well, aerial photos, previ	ous inspections), if ava	nilable:	
Remarks:					
1					

Sampling Point: W-IJ59,60-UP

30'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species
1. Fagus grandifolia	30		<u>FACU</u>	That Are OBL, FACW, or FAC:1 (A)
2. Tsuga canadensis	20		FACU_	Total Number of Dominant
3				Species Across All Strata:5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 20 (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
0.5		= Total Cov		OBL species x 1 =
50% of total cover: 25 Sapling/Shrub Stratum (Plot size: 15'	20% of	total cover	:10	FACW species x 2 =
Japhing/Siliub Stratum (Flot Size)				FAC species x 3 =
1,		-		
2		-		FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5		-		Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
_		= Total Cov	_	4 - Morphological Adaptations¹ (Provide supporting
50% of total cover:0	20% of	total cover	:0	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')	_			Problematic Hydrophytic Vegetation¹ (Explain)
1. Parathelypteris noveboracensis	5		F <u>AC</u>	1 robiematic riyarophytic vegetation (Explain)
2. Mitchella repens	2		F <u>ACU</u>	¹ Indicators of hydric soil and wetland hydrology must
3. Oxydendron arboreum	10		FACU_	be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10		-	<u> </u>	m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	17	= Total Cov	/er	of size, and woody plants less than 3.28 ft tall.
50% of total cover: 8.5	20% of	total cover	<u>: 3.4 </u>	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15')				height.
1				
2				
3				
4				Hydrophytic
5				Vegetation
	0 ,	= Total Cov	/er	Present? Yes No
50% of total cover:0	20% of	total cover	<u> 0 </u>	
Remarks: (Include photo numbers here or on a separate s	heet.)			•

Profile Desc	ription: (Describe t	o the depth	needed to docun	ent the ind	licator o	r confirm	the absence	ce of indicate	ors.)	
Depth	Matrix		Redox	<u>Features</u>	- 1					
(inches)	Color (moist)	%	Color (moist)	<u></u> %	Type ¹	Loc ²	<u>Texture</u>		Remarks	
0-3	7.5yr 3/2	100					SiL			
3-12	10yr 5/8	100					SiL			
										_
								_		
							-			
							-			
¹ Type: C=Co	oncentration, D=Depl	etion, RM=R	educed Matrix, MS	=Masked S	and Gra	ins.			ng, M=Matrix	
Hydric Soil	Indicators:						Indi	icators for P	roblematic H	ydric Soils³:
Histosol	(A1)		Dark Surface	(S7)				2 cm Muck (A10) (MLRA	147)
Histic Ep	oipedon (A2)		Polyvalue Be		. , .		148)	Coast Prairie	Redox (A16))
Black Hi			Thin Dark Su	, , ,		47, 148)		(MLRA 14		
	n Sulfide (A4)		Loamy Gleye		2)				oodplain Soils	s (F19)
	d Layers (A5)		Depleted Mat					(MLRA 13		· (TE40)
	ick (A10) (LRR N) d Below Dark Surface	(/11)	Redox Dark S Depleted Dar						Dark Surface in in Remarks	
	ark Surface (A12)	(Д11)	Redox Depre		,,			Other (Expla	III III Nemark	>)
	lucky Mineral (S1) (L	RR N.	Iron-Mangane		(F12) (L	.RR N.				
	A 147, 148)	,	MLRA 130		· / ·	,				
Sandy G	Sleyed Matrix (S4)		Umbric Surfa	ce (F13) (M I	LRA 130	6, 122)	³ lr	ndicators of h	ydrophytic ve	getation and
Sandy R	Redox (S5)		Piedmont Flo	odplain Soil	s (F19)	MLRA 14	8) v	wetland hydro	logy must be	present,
	Matrix (S6)		Red Parent M	laterial (F21) (MLR	127, 147) ι	unless disturb	ed or problen	natic.
	Layer (if observed):									
	efusal , gravel		_							
Depth (inc	_{ches):} <u>12</u>		_				Hydric Sc	oil Present?	Yes	_ No <u> </u>
Remarks:							•			

Mountain Valley Pipeline			COORDINATES:	Lat.	38.022031	Lon.	-80.743027
IPTION:				٧	V-IJ59, Temporary Access Road		
(% stream slope, watershed size {acreage}, unaltered or impairments)							
8/10	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
PART I - Wetland Indicators							
Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
Emergent	0.0024	Emergent					
							n
					Sustainable Determination Made on Advanced Mitigation (Y or N)		Υ
	0.0024						
	Jnit Scores						
assification					ILF Costs		
					¢1// 00		
			-		\$144.00		
			+				
	Region (Classification Emergent (Classificatio	IPTION: creage}, unaltered or impairments) 8/10/2015 PART I - Wetland Indicators Impact Wetland Classification Emergent 0.0024 0.0024 PART II - Unit Scores	IPTION: creage}, unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Emergent 0.0024 Emergent 0.0024 PART II - Unit Scores	IPTION: creage}, unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Emergent 0.0024 Emergent 0.0024 PART II - Unit Scores assification Replacement Unit(s) 0 0024 0 0	IPTION: creage}, unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland Classification Classification Emergent 0.0024 Emergent 0.0024 PART II - Unit Scores assification Replacement Unit(s) 0.0024 0 0	PTION: creage), unaltered or impairments) ### WIJ59, Temporary Access Road ### WIJ59, Temporary Access Road ### WIJ59, Temporary Access Road #### PRECIPITATION PAST 48 HRS: ### PART I - Wetland Indicators ### Wetland Impacts	PTION: creage), unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Impacts (acreage) Wetland Classification Emergent 0.0024 Emergent Description of the impact of the im

Project/Site: MVP		City/C	ounty: Greenbrier		Sampling Date: 09/12/2016		
Applicant/Owner: MVP							
Investigator(s): E. Foster, K. Pulver, M. Whitten Section, Township, Range: N/A							
Landform (hillslope, terrace, et					Slope (%): 0-2		
Subregion (LRR or MLRA): L					Datum: NAD 83		
Soil Map Unit Name: EsC-Err							
Are climatic / hydrologic condit			4				
		-					
					resent? Yes No		
Are Vegetation, Soil				explain any answer			
SUMMARY OF FINDING	GS – Attach site r	nap showing sam	ipling point location	ons, transects,	important features, etc.		
Hydrophytic Vegetation Prese	ent? Yes 🗸	No	Is the Sampled Area				
Hydric Soil Present?		No	within a Wetland?	Yes 🗸	No		
Wetland Hydrology Present?	Yes	No					
Remarks: Cowardin Co	ode: PEM	HGM: Slope	Water Type:	RPWWN			
Sparsely vegetate around fringe. Appears to culverts, they might either	o at one time beer	n hydrologically cor			nergent hydrophytes ad), but cannot find any		
HYDROLOGY							
Wetland Hydrology Indicate	ors:			Secondary Indicat	ors (minimum of two required)		
Primary Indicators (minimum	of one is required; che	ck all that apply)		Surface Soil 0	Cracks (B6)		
Surface Water (A1)	_	_ True Aquatic Plants (B14)	Sparsely Veg	etated Concave Surface (B8)		
High Water Table (A2)	<u> </u>	_ Hydrogen Sulfide Ode	or (C1)	Drainage Patt	terns (B10)		
Saturation (A3)			es on Living Roots (C3)	Moss Trim Lir			
Water Marks (B1)		Presence of Reduced		✓ Dry-Season V	Vater Table (C2)		
Sediment Deposits (B2)		Recent Iron Reductio		Crayfish Burro			
Drift Deposits (B3)		Thin Muck Surface (C			sible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)	_	Other (Explain in Ren	narks)		ressed Plants (D1)		
Iron Deposits (B5)				Geomorphic Position (D2)			
Inundation Visible on Aer				Shallow Aquitard (D3)			
Water-Stained Leaves (E	(9)				phic Relief (D4)		
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)		
Field Observations:			1				
Surface Water Present?	Yes No		0				
Water Table Present?	Yes No No		-				
Saturation Present? (includes capillary fringe)	Yes No	Depth (inches):	0 Wetland F	lydrology Present	t? Yes V No		
Describe Recorded Data (stre	eam gauge, monitoring	well, aerial photos, pre	vious inspections), if ava	ilable:			
Remarks:							

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

/EGETATION (Four Strata) – Use scientific n	ames of p	olants.		Sampling Point: W-IJ59
30,		Dominant Ir		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:)		Species?	<u>Status</u>	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC:100 (A/B)
6	· 			Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
50% of total cover: 0		Total Cover		OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')	20% 011	lotal cover		FACW species x 2 =
				FAC species x 3 =
1				FACU species x 4 =
2				UPL species x 5 =
3				Column Totals: (A) (B)
4				(A)(D)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				✓ 1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
50% (***)		Total Cove		4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 0 Herb Stratum (Plot size: 5')	20% of t	total cover:		data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5) 1. Chelone glabra	5	./ .	ND!	Problematic Hydrophytic Vegetation ¹ (Explain)
	2)BL	
2. Lycopus virginicus	· ——)BL	¹ Indicators of hydric soil and wetland hydrology must
3				be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6				more in diameter at breast height (DBH), regardless of
7	·			height.
8	·			Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
		Total Cover		of size, and woody plants less than 3.28 ft tall.
50% of total cover: 3.5	20% of t	total cover:	1.4	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size:15')				height.
1				
2				
3				
4				Hydrophytic
5				Vegetation No. 1
		Total Cove	_	Present? Yes V No
50% of total cover: 0		total cover:_	0	
Remarks: (Include photo numbers here or on a separate s	sheet.)			
Very sparse vegetation.				

(inches) 0-18	Matrix Color (moist)	%	Redox Features Color (moist) % Type¹ Lo	oc ² Texture	Remarks
	10yr 3/1	100	Color (moist) /0 Type LC	mucky	
	10 y 1 0/ 1				areasy texture, riight organic
_					
		· -			
		· <u></u> -			
		· 			
		· -			<u> </u>
		letion, RM=Re	educed Matrix, MS=Masked Sand Grains.	² Location:	PL=Pore Lining, M=Matrix.
lydric Soil Ir				Inc	dicators for Problematic Hydric Soils ³ :
Histosol (,	Dark Surface (S7)		2 cm Muck (A10) (MLRA 147)
	pedon (A2)		Polyvalue Below Surface (S8) (MLRA		Coast Prairie Redox (A16)
Black His	นิต (A3) า Sulfide (A4)		Thin Dark Surface (S9) (MLRA 147, 1Loamy Gleyed Matrix (F2)		(MLRA 147, 148) Piedmont Floodplain Soils (F19)
	Layers (A5)	,	Depleted Matrix (F3)		(MLRA 136, 147)
	ck (A10) (LRR N)	•	Redox Dark Surface (F6)		Very Shallow Dark Surface (TF12)
	Below Dark Surface	e (A11)	Depleted Dark Surface (F7)		Other (Explain in Remarks)
	k Surface (A12)		Redox Depressions (F8)		· · ·
✓ Sandy Mı	ucky Mineral (S1) (L	.RR N,	Iron-Manganese Masses (F12) (LRR	N,	
	147, 148)		MLRA 136)		
	eyed Matrix (S4)	;	Umbric Surface (F13) (MLRA 136, 12		Indicators of hydrophytic vegetation and
Sandy Re		,	Piedmont Floodplain Soils (F19) (ML		wetland hydrology must be present,
	Matrix (S6)		Red Parent Material (F21) (MLRA 12	7, 147)	unless disturbed or problematic.
	ayer (if observed):				
Type:			_		4
Depth (incl	nes):		_	Hydric S	Soil Present? Yes No
Remarks:					



Photograph Direction NW

Comments:		

Project/Site: MVP		City/Co	_{unty:} Greenbrier		_ Sampling Date: 09/12/2016_	
Applicant/Owner: MVP			,	State: WV	Sampling Point: W-IJ59,60-UP	
Investigator(s): E. Foster, I	K. Pulver, M. Wh	itten Section	Township, Range: N			
• ,,		<u> </u>			Slope (%): 10	
Subregion (LRR or MLRA): L		Lat: 38.022033	Long: <u>-80</u>	.743111	Datum: NAD 83	
Soil Map Unit Name: EsC-Er						
Are climatic / hydrologic condi						
·	• •	•		•	present? Yes No	
Are Vegetation, Soil _	-				vers in Remarks.)	
SUMMARY OF FINDIN	IGS – Attach sit	e map showing samp	oling point location	ons, transect	s, important features, etc.	
Hydrophytic Vegetation Pres	sent? Yes	No	s the Sampled Area			
Hydric Soil Present?	Yes	No.	within a Wetland?	Yes	No	
Wetland Hydrology Present?	? Yes					
Remarks: Cowardin C	Code: UPLAND	HGM:	Water Type:			
LIVERGLOGY						
HYDROLOGY	force			Cocondon, India	cotors (minimum of two required)	
Wetland Hydrology Indicat Primary Indicators (minimum		shook all that apply)			cators (minimum of two required)	
	i or one is required, (14)	Surface So	` '	
Surface Water (A1) High Water Table (A2)		True Aquatic Plants (BHydrogen Sulfide Odor		Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)		
Saturation (A3)		Oxidized Rhizospheres		_	Lines (B16)	
Water Marks (B1)		Presence of Reduced I	-		n Water Table (C2)	
Sediment Deposits (B2)	1	Recent Iron Reduction			urrows (C8)	
Drift Deposits (B3)		Thin Muck Surface (C7		-	Visible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)		Other (Explain in Rema			Stressed Plants (D1)	
Iron Deposits (B5)				Geomorphi	c Position (D2)	
Inundation Visible on Ae	erial Imagery (B7)			Shallow Aq	uitard (D3)	
Water-Stained Leaves (B9)			Microtopog	raphic Relief (D4)	
Aquatic Fauna (B13)				FAC-Neutra	al Test (D5)	
Field Observations:						
Surface Water Present?		Depth (inches):				
Water Table Present?		Depth (inches):				
Saturation Present? (includes capillary fringe)	Yes No _	Depth (inches):	Wetland H	Hydrology Prese	ent? Yes No	
Describe Recorded Data (str	ream gauge, monitor	ing well, aerial photos, previ	ous inspections), if ava	nilable:		
Remarks:						
1						

Sampling Point: W-IJ59,60-UP

30'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species
1. Fagus grandifolia	30		<u>FACU</u>	That Are OBL, FACW, or FAC:1 (A)
2. Tsuga canadensis	20		FACU_	Total Number of Dominant
3				Species Across All Strata:5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 20 (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
0.5		= Total Cov		OBL species x 1 =
50% of total cover: 25 Sapling/Shrub Stratum (Plot size: 15'	20% of	total cover	:10	FACW species x 2 =
Japhing/Siliub Stratum (Flot Size)				FAC species x 3 =
1,		-		
2		-		FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5		-		Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
_		= Total Cov	_	4 - Morphological Adaptations¹ (Provide supporting
50% of total cover:0	20% of	total cover	:0	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')	_			Problematic Hydrophytic Vegetation¹ (Explain)
1. Parathelypteris noveboracensis	5		F <u>AC</u>	1 robicinate riyarophytic vegetation (Explain)
2. Mitchella repens	2		F <u>ACU</u>	¹ Indicators of hydric soil and wetland hydrology must
3. Oxydendron arboreum	10		FACU_	be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10		-	<u> </u>	m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	17	= Total Cov	/er	of size, and woody plants less than 3.28 ft tall.
50% of total cover: 8.5	20% of	total cover	<u>: 3.4 </u>	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15')				height.
1				
2				
3				
4				Hydrophytic
5				Vegetation
	0 ,	= Total Cov	/er	Present? Yes No
50% of total cover:0	20% of	total cover	<u> 0 </u>	
Remarks: (Include photo numbers here or on a separate s	heet.)			•

Profile Desc	ription: (Describe t	o the depth	needed to docun	ent the ind	licator o	r confirm	the absence	ce of indicate	ors.)	
Depth	Matrix		Redox	<u>Features</u>	- 1					
(inches)	Color (moist)	%	Color (moist)	<u></u> %	Type ¹	Loc ²	<u>Texture</u>		Remarks	
0-3	7.5yr 3/2	100					SiL			
3-12	10yr 5/8	100					SiL			
										_
								_		
							-			
							-			
¹ Type: C=Co	oncentration, D=Depl	etion, RM=R	educed Matrix, MS	=Masked S	and Gra	ins.			ng, M=Matrix	
Hydric Soil	Indicators:						Indi	icators for P	roblematic H	ydric Soils³:
Histosol	(A1)		Dark Surface	(S7)				2 cm Muck (A10) (MLRA	147)
Histic Ep	oipedon (A2)		Polyvalue Be		. , .		148)	Coast Prairie	Redox (A16))
Black Hi			Thin Dark Su	, , ,		47, 148)		(MLRA 14		
	n Sulfide (A4)		Loamy Gleye		2)				oodplain Soils	s (F19)
	d Layers (A5)		Depleted Mat					(MLRA 13		· (TE40)
	ick (A10) (LRR N) d Below Dark Surface	(/11)	Redox Dark S Depleted Dar						Dark Surface in in Remarks	
	ark Surface (A12)	(Д11)	Redox Depre		,,			Other (Expla	III III Nemark	>)
	lucky Mineral (S1) (L	RR N.	Iron-Mangane		(F12) (L	.RR N.				
	A 147, 148)	,	MLRA 130		· / ·	,				
Sandy G	Sleyed Matrix (S4)		Umbric Surfa	ce (F13) (M I	LRA 130	6, 122)	³ lr	ndicators of h	ydrophytic ve	getation and
Sandy R	Redox (S5)		Piedmont Flo	odplain Soil	s (F19)	MLRA 14	8) v	wetland hydro	logy must be	present,
	Matrix (S6)		Red Parent M	laterial (F21) (MLR	127, 147) ι	unless disturb	ed or problen	natic.
	Layer (if observed):									
	efusal , gravel		_							
Depth (inc	_{ches):} <u>12</u>		_				Hydric Sc	oil Present?	Yes	_ No <u> </u>
Remarks:							•			

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	38.021808	Lon.	-80.743351
STREAM/SITE ID AND SITE DESCRI	IPTION:				W-IJ	58-PEM-3, Temporary Access Road		
(% stream slope, watershed size {a	creage}, unaltered	d or impairments)						
FORM OF MITIGATION:								
DATE:	8/10)/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-IJ58-PEM-3	Emergent	0.0056	Emergent					
				_		PART III - Advanced	Mitigatio	n
						Sustainable Determination Made on Advanced Mitigation (Y or N)		Y
Total Impact		0.0056						
		Unit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0056			¢226.00		
Total Scrub-Shrub Total Forested			0	_		\$336.00		
				-				
otal Open Water			0					

Project/Site: MVP	City/County: Greenbr	rier	Sampling Date: 09/23/2016			
Applicant/Owner: MVP		State: WV	Sampling Point: W-IJ58-PSS-1/PEM-1/PEM-3-U			
Investigator(s): D Hadersbeck J Niergarth C Wiem						
Landform (hillslope, terrace, etc.): Slope		-	Slope (%): 2-4			
Subregion (LRR or MLRA): LRR N Lat: _38						
Soil Map Unit Name: AN-Atkins-Philo-Potomac complex		NWI classific				
Are climatic / hydrologic conditions on the site typical for thi		(If no, explain in R				
Are Vegetation, Soil, or Hydrologys			present? Yes No			
Are Vegetation, Soil, or Hydrology r		eded, explain any answe				
SUMMARY OF FINDINGS – Attach site map	• •					
Hydrophytic Vegetation Present? Yes N						
Hydric Soil Present? Yes N	is the Sampleu		No			
Wetland Hydrology Present? Yes N	, which a restrain	id? Yes	No			
Remarks: Cowardin Code: UPLAND HG	GM: Water 1	Гуре:				
Field ID: W-IJ58-PSS-A, PEM-C-UP						
HYDROLOGY						
Wetland Hydrology Indicators:			ators (minimum of two required)			
Primary Indicators (minimum of one is required; check all	• • • • • • • • • • • • • • • • • • • •	Surface Soil	` '			
	e Aquatic Plants (B14)		Sparsely Vegetated Concave Surface (B8)			
	Irogen Sulfide Odor (C1) dized Rhizospheres on Living Roots		Drainage Patterns (B10)			
	sence of Reduced Iron (C4)		Water Table (C2)			
	cent Iron Reduction in Tilled Soils (C					
	n Muck Surface (C7)		sible on Aerial Imagery (C9)			
Algal Mat or Crust (B4) Oth	er (Explain in Remarks)	Stunted or S	tressed Plants (D1)			
Iron Deposits (B5)		Geomorphic				
Inundation Visible on Aerial Imagery (B7)		Shallow Aqu				
Water-Stained Leaves (B9)		Microtopogra				
Aquatic Fauna (B13)		FAC-Neutral	Test (D5)			
Field Observations: Surface Water Present? Yes No De	nth (inches):					
Surface Water Present? Yes No De Water Table Present? Yes No De						
Saturation Present? Yes No De		tland Hydrology Preser	nt? Yes No			
(includes capillary fringe)	pur (inches)	tiana riyarology r reser	it: lesNo			
Describe Recorded Data (stream gauge, monitoring well,	aerial photos, previous inspections), if available:				
Remarks:						
Remarks.						

Sampling Point: W-IJ58-PSS-1/PEM-1/PEM-3-UF

	Absolute	• Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species
1. Ulmus rubra	30		FAC	That Are OBL, FACW, or FAC:2 (A)
2				Tetal New horse (Description
3				Total Number of Dominant Species Across All Strata:5 (B)
4				
5				Percent of Dominant Species That Are OBL FACW or FAC: 40 (A/B)
				That Are OBL, FACW, or FAC: 40 (A/B)
6	•			Prevalence Index worksheet:
	30	Tatal Car		Total % Cover of: Multiply by:
50% of total cover: 15		= Total Cov		OBL species x 1 =
451	20% 01	iolai covei		FACW species x 2 =
Sapling/Shrub Stratum (Plot size: 15) 1. Hamamelis virginiana	25	~	FACIL	FAC species x 3 =
	60	· 	FACU_	FACU species x 4 =
2. Fagus grandifolia			FACU_	
3		. <u></u>		UPL species x 5 =
4	-			Column Totals: (A) (B)
5				Prevalence Index = B/A =
6				
7				Hydrophytic Vegetation Indicators:
8				1 - Rapid Test for Hydrophytic Vegetation
9.				2 - Dominance Test is >50%
<u> </u>	85	= Total Cov	uor.	3 - Prevalence Index is ≤3.0 ¹
50% of total cover: 42.5				4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5')				data in Remarks or on a separate sheet)
1. Fagus grandifolia	30	~	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Acer rubrum	10	<u> </u>	FAC FAC	
			I <u>AC</u>	¹ Indicators of hydric soil and wetland hydrology must
3	•			be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5		. <u></u>		Tree Mondy plants avaluding vines 2 in (7.6 cm) or
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8				Octobration Westernlands and discourse lead
9				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11.				
	40	= Total Cov		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover: 20		total cover		or size, and woody plants loss than 6.20 it tall.
Woody Vine Stratum (Plot size: 15')	2070 01	10101 00101	•	Woody vine – All woody vines greater than 3.28 ft in
				height.
1				
2				
3	-			
4				Hydrophytic
5				Vegetation
	0	= Total Cov	_	Present? Yes No
50% of total cover:0	20% of	total cover	:0	
Remarks: (Include photo numbers here or on a separate si	neet.)			

Profile Desc	ription: (Describe t	o the depth	needed to docun	nent the in	dicator o	or confirm	the absence	e of indicat	ors.)		
Depth	Matrix		Redox	k Features							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remark	KS	
0-1	7.5yr 4/2	100					SiL	· ·			
1-18	10 yr 4/4	100	_	-	_	_	SiL			·	
			-								
								-			
								<u> </u>			
¹ Type: C=Co	oncentration, D=Depl	etion, RM=F	Reduced Matrix, MS	=Masked	Sand Gra	ins.	² Location: F				
Hydric Soil	Indicators:						Indic	ators for P	roblematic	Hydric Soi	ls³:
Histosol	(A1)		Dark Surface	(S7)			:	2 cm Muck ((A10) (MLR	A 147)	
	oipedon (A2)		Polyvalue Be		e (S8) (M	LRA 147,	· · · · · · · · · · · · · · · · · · ·		e Redox (A1	•	
Black Hi			Thin Dark Su					(MLRA 1	•		
	en Sulfide (A4)		Loamy Gleye				!		loodplain So	oils (F19)	
Stratified	d Layers (A5)		Depleted Mat					(MLRA 1			
	ıck (A10) (LRR N)		Redox Dark S					•	w Dark Surfa	, ,	
	d Below Dark Surface	(A11)	Depleted Dar					Other (Expla	ain in Remai	rks)	
	ark Surface (A12)		Redox Depre								
	lucky Mineral (S1) (L	RR N,	Iron-Mangane		s (F12) (l	_RR N,					
	A 147, 148)		MLRA 130				2.				
	Gleyed Matrix (S4)		Umbric Surfa						nydrophytic y	-	and
	Redox (S5)		Piedmont Flo					-	ology must b		
	Matrix (S6)		Red Parent M	laterial (F2	21) (MLR /	A 127, 147	') ui	nless disturb	ped or proble	ematic.	
Restrictive I	Layer (if observed):										
Type:											
Depth (inc	ches):		_				Hydric So	il Present?	Yes	No	<u> </u>
Remarks:							I				

Project/Site: MVP	City/County: Greenbrier		Sampling Date: 09/23/2016		
Applicant/Owner: MVP		_ State: WV	_ Sampling Point: W-IJ58-PEM-3		
Investigator(s): D Hadersbeck J Niergarth C Wie					
Landform (hillslope, terrace, etc.): Floodplain	Local relief (concave, convex, no	one): Concave	Slope (%): 0-2		
Subregion (LRR or MLRA): LRR N Lat:	38.021756 Long: -80).743348	_{Datum:} NAD 83		
Soil Map Unit Name: EsC-Ernest silt loam, moist, 3 to	15 percent slopes, extremely stony	NWI classifica			
Are climatic / hydrologic conditions on the site typical for t	his time of year? Yes No	(If no, explain in Re	emarks.)		
Are Vegetation, Soil, or Hydrology	_ significantly disturbed?	al Circumstances" p	resent? Yes No		
Are Vegetation, Soil, or Hydrology		explain any answer			
SUMMARY OF FINDINGS – Attach site ma					
Hydrophytic Vegetation Present? Yes	No				
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes	Is the Sampled Area	4			
Wetland Hydrology Present?	No within a Wetland?	Yes	No		
Demode	IGM: Riverine Water Type:	DDWWD			
field ID: W-IJ58-PEM-C					
HYDROLOGY					
Wetland Hydrology Indicators:	H that and A		tors (minimum of two required)		
Primary Indicators (minimum of one is required; check a		Surface Soil (` '		
	rue Aquatic Plants (B14) ydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)Drainage Patterns (B10)Moss Trim Lines (B16)			
	resence of Reduced Iron (C4)	Dry-Season V			
	ecent Iron Reduction in Tilled Soils (C6)	Crayfish Burr			
Drift Deposits (B3)	nin Muck Surface (C7)	Saturation Vis	sible on Aerial Imagery (C9)		
Algal Mat or Crust (B4) O	ther (Explain in Remarks)		ressed Plants (D1)		
Iron Deposits (B5)		Geomorphic I			
Inundation Visible on Aerial Imagery (B7)		Shallow Aquit			
Water-Stained Leaves (B9)Aquatic Fauna (B13)		FAC-Neutral	phic Relief (D4)		
Field Observations:		- 1 AC-Neutral	1651 (153)		
Surface Water Present? Yes No [Depth (inches):				
<u>a</u>	Depth (inches): 4				
Saturation Present? Yes No [_	Hydrology Presen	t? Yes No		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well	l parial photos, provious inspections) if av	ailabla:			
Describe Recorded Data (Stream gauge, monitoring we	i, aeriai priotos, previous irispections), ii ava	aliable.			
Remarks:					
			I I		

Sampling Point: W-IJ58-PEM-3

0.01	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC:3 (A)
2				Total Number of Dominant
3				Species Across All Strata: 3 (B)
4				` ,
5				Percent of Dominant Species That Are OBL FACW or FAC: 100 (A/B)
6				That Are OBL, FACW, or FAC:(A/B)
			·	Prevalence Index worksheet:
7	0	Tatal Car		Total % Cover of: Multiply by:
50% of total cover: 0		= Total Cov		OBL species x 1 =
	20% 01	total cover		FACW species x 2 =
Sapling/Shrub Stratum (Plot size: 15')				FAC species x 3 =
1				FACU species x 4 =
2		-		-
3		-		UPL species x 5 =
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				
8				1 - Rapid Test for Hydrophytic Vegetation
9.				✓ 2 - Dominance Test is >50%
v	0	= Total Cov	or .	3 - Prevalence Index is ≤3.0¹
50% of total cover: 0		total cover	_	4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5')	2070 01	total cover		data in Remarks or on a separate sheet)
1. Glyceria striata	35	~	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Viola sororia	30		FAC	
	5			¹ Indicators of hydric soil and wetland hydrology must
3. Osmundastrum cinnamomeum			FACW	be present, unless disturbed or problematic.
4. Impatiens capensis	20		FACW_	Definitions of Four Vegetation Strata:
5			<u> </u>	
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7		-		height.
8				
9.				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1
10.				m) tall.
11				, '
· · ·	90	Tatal Car		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover: 45		= Total Cover total cover		or size, and woody plants less than 3.20 it tall.
Woody Vine Stratum (Plot size: 15')	20 /6 01	total cover		Woody vine - All woody vines greater than 3.28 ft in
, voody vine Stratum (Flot Size)				height.
1			· -	
2				
3			·	
4			<u> </u>	Hydrophytic
5				Vegetation
	0	= Total Cov	er er	Present? Yes No
50% of total cover:0	20% of	total cover	0	
Remarks: (Include photo numbers here or on a separate s	heet.)			

Sampling Point: W-IJ58-PEM-3

SOIL

Profile Desc	ription: (Describe to	the depth	needed to docum	ent the ir	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix			Features		. 2		
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type'	Loc ²	<u>Texture</u>	Remarks
0-18	10 yr 4/2	85	5 yr 4/6	15_	<u>C</u>	M/PL	SaL	
					-			
	-							
							-	
1					-		2	
	oncentration, D=Deple	etion, RM=R	educed Matrix, MS	=Masked	Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil			D = = 1 = 0 = = 1 = = =	(07)				ators for Problematic Hydric Soils ³ :
Histosol	(A1) pipedon (A2)		Dark Surface Polyvalue Bel		o (SS) (N	NI DA 147		cm Muck (A10) (MLRA 147) oast Prairie Redox (A16)
Black Hi			Thin Dark Sur				0	(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye			147, 140)	Pi	iedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Mat		,			(MLRA 136, 147)
	ıck (A10) (LRR N)		Redox Dark S					ery Shallow Dark Surface (TF12)
	d Below Dark Surface	(A11)	Depleted Dari				0	ther (Explain in Remarks)
	ark Surface (A12)	DD 11	Redox Depres			. DD N		
	lucky Mineral (S1) (L l \ 147, 148)	KK N,	Iron-Mangane		es (F12) (LKK N,		
	Gleyed Matrix (S4)		Umbric Surfac	•	MIRA 13	6. 122)	³ Indi	icators of hydrophytic vegetation and
	ledox (S5)		Piedmont Flor					tland hydrology must be present,
	Matrix (S6)		Red Parent M					ess disturbed or problematic.
Restrictive I	_ayer (if observed):							
Type:			_					
Depth (inc	ches):		<u> </u>				Hydric Soil	Present? Yes V No No
Remarks:								

Wetland Photograph Page

Wetland ID $\underline{\text{W-IJ58-PEM}}_{\text{Date}} \underline{\text{09/23/2016}}$



Photograph Direction East

Comments:	

USACE FILE NO./Project Name:		Valley Pipeline	COORDINATES:	Lat.	37.993269	Lon.	-80.756363	
STREAM/SITE ID AND SITE DESCR		1	W-V6, Temporary Access Road					
(% stream slope, watershed size {a	creage}, unaltered	l or impairments)						
FORM OF MITIGATION:								
DATE:	8/10	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-V6	Emergent	0.0422	Emergent					
						PART III - Advanced I Sustainable Determination Made on		on
						Advanced Mitigation (Y or N)		Y
Total Impact		0.0422						
		Unit Scores				Estimated		
	lassification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0422			¢0 500 00		
Total Scrub-Shrub Total Forested			0	-		\$2,532.00		
			0	-				
Total Open Water			U	1				

Project/Site: MVP		City/County: Greenbrier Sampling Date: 06/29/20							
Applicant/Owner: MVP		State: WV Sampling Point: W-\							
	Cowell, A Lands	Section, Township, Range: N/A							
Landform (hillslope, terrace, etc.):	Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0								
Subregion (LRR or MLRA): LRF	RN Lat:	37.993256	Long: -80	756365	Datum: NAD 83				
Soil Map Unit Name: Macove-0									
Are climatic / hydrologic condition	s on the site typical for	this time of year? Ye	es ✓ No	—— (If no, explain in R	emarks.)				
Are Vegetation, Soil	•,	•		·	oresent? Yes <u>√</u> No				
Are Vegetation, Soil ✓				explain any answe					
				, ,	, important features, etc.				
Hydrophytic Vegetation Present		No	· · · · · · · · · · · · · · · · · · ·						
Hydric Soil Present?	Yes		Is the Sampled Area	V 1	No				
Wetland Hydrology Present?	Yes 🗸	No	within a Wetland?	Yes <u> </u>	NO				
Remarks:		I							
Cowardin Code: PEM HGI	M: Slope WT: RPV	VWN							
Information listed on this for									
of wetland hydrology, hydr		, and hydric soils	was confirmed usi	ng the USACE	EMP Regional				
Supplement delineation m	ethodology.								
HYDROLOGY									
Wetland Hydrology Indicators	::			Secondary Indica	ntors (minimum of two required)				
Primary Indicators (minimum of	one is required; check	all that apply)		Surface Soil	Cracks (B6)				
✓ Surface Water (A1)	1	rue Aquatic Plants (E	314)	Sparsely Ve	Sparsely Vegetated Concave Surface (B8)				
✓ High Water Table (A2)		Hydrogen Sulfide Odd		Drainage Pa	tterns (B10)				
✓ Saturation (A3)	(Oxidized Rhizosphere	es on Living Roots (C3)	Moss Trim L	ines (B16)				
Water Marks (B1)	F	Presence of Reduced	Iron (C4)	Dry-Season	Water Table (C2)				
Sediment Deposits (B2)	F	Recent Iron Reduction	n in Tilled Soils (C6)	Crayfish Bur	rows (C8)				
Drift Deposits (B3)		hin Muck Surface (C		Saturation V	isible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	(Other (Explain in Rem	narks)		tressed Plants (D1)				
Iron Deposits (B5)				•	Position (D2)				
Inundation Visible on Aerial				Shallow Aqu					
Water-Stained Leaves (B9)					aphic Relief (D4)				
Aquatic Fauna (B13)				✓ FAC-Neutral	Test (D5)				
Field Observations: Surface Water Present?	Yes ✓ No	Depth (inches): >0	.25						
	Yes Vo		0						
	Yes <u> </u>			lydrology Preser	nt? Yes ✓ No				
(includes capillary fringe)		·	- Wetland		it: res NO				
Describe Recorded Data (strear	n gauge, monitoring we	ell, aerial photos, prev	vious inspections), if ava	ilable:					
Remarks:									
Soils problematic due to ex	xcessive organic n	naterial (wood an	d plant debris) in so	oil throughout	wetland. Soil and				
vegetation sampling sites		•	'	Ü					

VEGETATION (Four Strata) - Use scientific names of plants.

__)

50% of total cover: ___0

50% of total cover: __ 5

50% of total cover:

% Cover Species? Status

_ = Total Cover

__ 20% of total cover:___0

10 = Total Cover

20% of total cover:

100 = Total Cover

0 = Total Cover

50 20% of total cover: 20

10

20

5

10

5

5

5

50% of total cover: 0 20% of total cover:

OBL

OBL

OBL

FACU

FAC

OBL

OBL

FAC

10 <u>√</u> OBL

30'

Sapling/Shrub Stratum (Plot size: 15')

6._____ ___ ___

Tree Stratum (Plot size: __

_{1.} Salix nigra

Herb Stratum (Plot size: _

1. Typha angustifolia

2. Scirpus cyperinus

3. Scirpus atrovirens

6. Juncus effusus

7. Carex arctata

8. Carex lurida

4. Solidago canadensis

5. Eutrochium purpureum

9. Dichanthelium clandestinum

Sampling Point: W-V6 Absolute Dominant Indicator Dominance Test worksheet: **Number of Dominant Species** 3 __ (A) That Are OBL, FACW, or FAC: **Total Number of Dominant** Species Across All Strata: (B) Percent of Dominant Species 75 (A/B) That Are OBL, FACW, or FAC: Prevalence Index worksheet: 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 = _____ Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ✓ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. **Definitions of Four Vegetation Strata:** Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or F<u>ACW</u> more in diameter at breast height (DBH), regardless of height. Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. **Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine - All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Yes <u>√</u> No ____ Present?

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

Woody Vine Stratum (Plot size: 15')

SOIL Sampling Point: W-V6

Profile Descriptio	n: (Describe to	the depth n	eeded to docu	ment the in	dicator or confirm	n the ab	sence of indicators.)
Depth	Matrix			ox Features			
	olor (moist)	<u>%</u> (Color (moist)	%	Type ¹ Loc ²	<u>Tex</u>	ture Remarks LC
				·		-	
				·			
¹ Type: C=Concent Hydric Soil Indica		tion, RM=Red	duced Matrix, M	IS=Masked	Sand Grains.	² Locat	tion: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
•	ws.		Danle Confor	~ (C7)			_
Histosol (A1)	- (A2)	-	Dark Surfac		~ (CO) (BALDA 147	140)	2 cm Muck (A10) (MLRA 147)
Histic EpipedoBlack Histic (A		_			e (S8) (MLRA 147	, 148)	Coast Prairie Redox (A16)
Hydrogen Sulf		_	Thin Dark S Loamy Gley		(MLRA 147, 148)		(MLRA 147, 148) Piedmont Floodplain Soils (F19)
Stratified Laye		_	Depleted M.		۷)		(MLRA 136, 147)
2 cm Muck (A		_	Redox Dark		5)		Very Shallow Dark Surface (TF12)
	w Dark Surface ((A11)	Depleted Da				Other (Explain in Remarks)
Thick Dark Su		`	 Redox Depi				
Sandy Mucky	Mineral (S1) (LR	RR N,			s (F12) (LRR N,		
MLRA 147,	148)		MLRA 1	36)			
Sandy Gleyed		_			/ILRA 136, 122)		³ Indicators of hydrophytic vegetation and
Sandy Redox		_		•	ils (F19) (MLRA 1 4		wetland hydrology must be present,
Stripped Matrix		_	_ Red Parent	Material (F2	(1) (MLRA 127, 14	7)	unless disturbed or problematic.
Restrictive Layer							
Type: Wood o							
Depth (inches):	8					Hydr	ric Soil Present? Yes No _✓
Remarks:						•	
Soils problemat	ic due to resti	rictive laye	r of wood de	ebris and o	other coarse or	ganic r	matter.



Photograph Direction NW

Date: 06/29/2015

Comments: 2015 wetland delineation.



Photograph Direction South

Date: 11/23/19

 $\label{eq:comments:2019} \mbox{ Comments: } 2019 \mbox{ wetland delineation confirmation.}$

Project/Site: MVP City/County: Greenbrier	Sampling Date: 06/29/2015			
Applicant/Owner: MVP State: WV				
Investigator(s): R Meeker, S Cowell, A Lands Section, Township, Range: N/A	_ 1 3			
Landform (hillslope, terrace, etc.): Hill Slope Local relief (concave, convex, none): Linear	Slope (%): 3-8			
Subregion (LRR or MLRA): LRRN Lat: _37.993153 Long: -80.756034	· · · · · · · · · · · · · · · · · · ·			
Soil Map Unit Name: Macove-Gilpin complex, 35 to 55 percent slopes, very stony (MeF) NWI classification	•			
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Re				
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" pr				
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answer				
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects,				
, ,				
Hydrophytic Vegetation Present? Yes No Is the Sampled Area				
Hydric Soil Present? Yes No ✓ within a Wetland? Yes	No <u></u>			
Remarks:				
Upland				
- Opining				
HYDROLOGY				
	tors (minimum of two required)			
Primary Indicators (minimum of one is required; check all that apply) Surface Soil (•			
	etated Concave Surface (B8)			
Surface Water (A1) High Water Table (A2) Hydrogen Sulfide Odor (C1) Drainage Pat				
Saturation (A3) Oxidized Rhizospheres on Living Roots (C3) Moss Trim Liu				
· · · · · · · · · · · · · · · · · · ·	Dry-Season Water Table (C2)			
	C6) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)			
	ressed Plants (D1)			
Iron Deposits (B5) Geomorphic l				
Inundation Visible on Aerial Imagery (B7) Shallow Aquit				
	phic Relief (D4)			
Aquatic Fauna (B13) FAC-Neutral	-			
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	t? Yes No✓			
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				
Remarks:				

/EGETATION (Four Strata) – Use scientific na	ames or	piants.		Sampling Point	:: VV-VO OF	
Troo Stratum (Plot size: 30')	Absolute	Dominant		Dominance Test worksheet:		
<u>Tree Stratum</u> (Plot size:30') 1	% Cover	Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
2				Total Number of Dominant		
3				Species Across All Strata:	3	(B)
4				Description of Constitution		
5				Percent of Dominant Species That Are OBL, FACW, or FAC:	33	(A/B)
6				matrice obe, triow, of trio.		(700)
7				Prevalence Index worksheet:		
·	0	= Total Cov		Total % Cover of:	Multiply by:	
50% of total cover:0		total cover:	_	OBL species x 1 =	=	
Sapling/Shrub Stratum (Plot size: 15')		10141 00101		FACW species x 2 =	=	
1. Eleagnus angustifolia	5	✓	FACU	FAC species x 3 =		
2. Gleditsia tricanthos	5		FAC	FACU species x 4 =		
			r <u>AC</u>	UPL species x 5 =		
3				Column Totals: (A)		
4				Column Fotals (7)		_ (D)
5				Prevalence Index = B/A =		
6				Hydrophytic Vegetation Indicator		
7				1 - Rapid Test for Hydrophytic		
8				2 - Dominance Test is >50%	rogotation	
9				3 - Prevalence Index is ≤3.0 ¹		
	10	= Total Cov	er		Dravida aun	norting
50% of total cover: 5	20% of	total cover:	2	4 - Morphological Adaptations ¹	•	porting
Herb Stratum (Plot size:)				data in Remarks or on a sep	•	
1. Solidago canadensis	80	✓	FACU	Problematic Hydrophytic Veget	tation' (Explai	in)
2 Dichanthelium clandestinum	10		FAC			
3. Euthamia graminifolia	10		FACU	¹ Indicators of hydric soil and wetlan	nd hydrology r	nust
				be present, unless disturbed or pro		
4				Definitions of Four Vegetation St	rata:	
5				Tree – Woody plants, excluding vin	nes, 3 in. (7.6	cm) or
6				more in diameter at breast height (I		
7				height.		
8				Sapling/Shrub – Woody plants, ex	cluding vines	, less
9				than 3 in. DBH and greater than or	equal to 3.28	ft (1
10				m) tall.		
11		·		Herb – All herbaceous (non-woody) plants, rega	rdless
		= Total Cov		of size, and woody plants less than		
50% of total cover:50	20% of	total cover:	20	Woody vine – All woody vines grea	ator than 2 29	tft in
Woody Vine Stratum (Plot size: 15')				height.	ater than 5.20	11 111
1						
2						
3.						
4						
5				Hydrophytic Vegetation		
o	0	= Total Cov			No √	
50% of total cover: 0		total cover:	_			
Remarks: (Include photo numbers here or on a separate s		total cover.				
Remarks. (include prioto numbers here or on a separate s	neet.)					

SOIL Sampling Point: W-V6 UP

Profile Description: (Describe to the depth	needed to document the indicator or confirm	the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹ Loc ²	Texture Remarks
0-5 7.5yr3/2		SIL
¹ Type: C=Concentration, D=Depletion, RM=F	Poducod Matrix MS-Masked Sand Grains	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:	Reduced Matrix, MO-Masked Salid Glatils.	Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Dark Surface (S7)	-
	Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
Histic Epipedon (A2)	Polyvalue Below Surface (S8) (MLRA 147,	
Black Histic (A3)	Thin Dark Surface (S9) (MLRA 147, 148)	(MLRA 147, 148)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
Stratified Layers (A5)	Depleted Matrix (F3)	(MLRA 136, 147)
2 cm Muck (A10) (LRR N)	Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
Depleted Below Dark Surface (A11)Thick Dark Surface (A12)	Depleted Dark Surface (F7)Redox Depressions (F8)	Other (Explain in Remarks)
Sandy Mucky Mineral (S1) (LRR N,	Iron-Manganese Masses (F12) (LRR N,	
MLRA 147, 148)	MLRA 136)	
Sandy Gleyed Matrix (S4)	Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
Sandy Gleyed Matrix (34) Sandy Redox (S5)	Piedmont Floodplain Soils (F19) (MLRA 148	
Stripped Matrix (S6)	Red Parent Material (F21) (MLRA 127, 147)	
Restrictive Layer (if observed):	Red i dient Material (i 21) (MERA 121, 141)	
Type: Rock		
j	_	
Depth (inches): 5	<u> </u>	Hydric Soil Present? Yes No _✓
Remarks:		

	Valley Pipeline	COORDINATES:	Lat.	37.983212	Lon.	-80.756099	
IPTION:		V	V-QR2,	Pipeline ROW/Temporary Access Ro	ad		
creage}, unaltered	or impairments)						
8/10/	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
PART I - Wetl	and Indicators						
Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
Emergent	0.2435	Emergent					
							n
					Sustainable Determination Made on Advanced Mitigation (Y or N)		Υ
	0.2435						
	Init Scores						
assification					ILF Costs		
					\$14 640 00		
			_		\$14,610.00	1	
			-				
	PART I - Wetl Impact Wetland Classification Emergent	PTION: creage}, unaltered or impairments) 8/10/2015 PART I - Wetland Indicators Impact Wetland Classification Emergent 0.2435 0.2435 PART II - Unit Scores	8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Emergent 0.2435 Emergent 0.2435 PART II - Unit Scores	PTION: creage}, unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Emergent 0.2435 Emergent 0.2435 PART II - Unit Scores assification Replacement Unit(s) 0 0 0	PTION: creage), unaltered or impairments) ### RECONDITIONS: ### PART I - Wetland Indicators Impact Impacts (acreage) Wetland Classification Emergent 0.2435 Emergent	PTION: creage), unaltered or impairments) ### W-QR2, Pipeline ROW/Temporary Access Ro ### Row PRECIPITATION PAST 48 HRS: ### PART I - Wetland Indicators Impact	PTION: creage), unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact (acreage) Wetland Classification Emergent 0.2435 Emergent DATE II - Unit Scores PART II - Unit Scores 10 0.2435 PART II - Unit Scores 11 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Project/Site: MVP	City/C	county: Greenbrier		Sampling Date: 04/20/2016			
Applicant/Owner: MVP				Sampling Point: W-QR2			
Investigator(s): D Hadersbeck, J McGuirk, C Sapusek Section, Township, Range: N/A							
Landform (hillslope, terrace, etc.): Slope				Slone (%): 5			
Subregion (LRR or MLRA): LRR N				Slope (76) Datum:_NAD 83			
		-					
Soil Map Unit Name: Po - Pope fine sandy				·			
Are climatic / hydrologic conditions on the site							
Are Vegetation, Soil, or Hydro	ology significantly distur	bed? Are "Normal	Circumstances" p	present? Yes V No No			
Are Vegetation, Soil, or Hydro	ology naturally problema	atic? (If needed, e	explain any answe	rs in Remarks.)			
SUMMARY OF FINDINGS – Attacl	h site map showing san	npling point location	ons, transects	, important features, etc.			
Hadarahadia Vanadadian Basasado	V						
7 7	es No es No	Is the Sampled Area					
,	es No No	within a Wetland?	Yes	No			
Demarks		Motor Typo	DDWWD				
Cowardin Code. PEM	HGM: Slope	Water Type:	RPWWD				
Abuts S-I29.							
HYDROLOGY							
Wetland Hydrology Indicators:			Secondary Indica	ators (minimum of two required)			
Primary Indicators (minimum of one is requi	red; check all that apply)		Surface Soil	Cracks (B6)			
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely Ve	getated Concave Surface (B8)			
High Water Table (A2)	Hydrogen Sulfide Od		✓ Drainage Pa	tterns (B10)			
Saturation (A3)	Oxidized Rhizosphere	es on Living Roots (C3)	Moss Trim L	ines (B16)			
Water Marks (B1)	Presence of Reduced	d Iron (C4)	Dry-Season	Water Table (C2)			
Sediment Deposits (B2)	Recent Iron Reduction	n in Tilled Soils (C6)	Crayfish Bur	rows (C8)			
Drift Deposits (B3)	Thin Muck Surface (0	27)	Saturation V	isible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)	Other (Explain in Rer	narks)	Stunted or S	tressed Plants (D1)			
Iron Deposits (B5)			Geomorphic	Position (D2)			
Inundation Visible on Aerial Imagery (B	7)		Shallow Aquitard (D3)				
Water-Stained Leaves (B9)			Microtopographic Relief (D4)				
Aquatic Fauna (B13)			FAC-Neutral	Test (D5)			
Field Observations:							
Surface Water Present? Yes	No Depth (inches):						
	No Depth (inches):						
Saturation Present? Yes (includes capillary fringe)	No Depth (inches):	Wetland F	lydrology Preser	nt? Yes / No			
Describe Recorded Data (stream gauge, mo	onitoring well, aerial photos, pre	vious inspections), if ava	ilable:				
Remarks:							

VEGETATION (Four Strata) - Use scientific names of plants.

__)

50% of total cover: ___0

50% of total cover: __ 2

30'

Sapling/Shrub Stratum (Plot size: 15')

3. Verbesina alternifolia

Woody Vine Stratum (Plot size: 15')

5. Juncus effusus

Tree Stratum (Plot size: _

1. Rosa multiflora

Herb Stratum (Plot size: _

4. Carex sp.

1. Packera aurea

2. Viola sp.

Absolute Dominant Indicator

% Cover Species? Status

= Total Cover

__ 20% of total cover:___ 0

4 = Total Cover

95 = Total Cover

0 = Total Cover

20% of total cover:

5

15

50% of total cover: 47.5 20% of total cover: 19

20% of total cover: 0.8

FACW

ND

FAC

ND

FACW

Sampling Point: W-QR2 **Dominance Test worksheet: Number of Dominant Species** 1____(A) That Are OBL, FACW, or FAC: **Total Number of Dominant** 1 (B) Species Across All Strata: Percent of Dominant Species 100 (A/B) That Are OBL, FACW, or FAC: Prevalence Index worksheet: 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 = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation ✓ 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.01 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. **Definitions of Four Vegetation Strata:** Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine - All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Yes V No ____ Present?

Remarks:	(Include photo	numbers h	ere or on	a separate s	heet.)
----------	----------------	-----------	-----------	--------------	--------

No trees rooted in wetland

ND - Indicator Status Not Determined

Plants not identified to species were not used in the dominance test

50% of total cover: 0

Sampling Point: W-QR2

SOIL

Profile Desc	ription: (Describe to	o the depth	needed to docum	nent the in	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redox	K Features	<u> </u>	. 2	_	
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-12	10YR 4/1	85	7.5YR 5/6	15_	<u>C</u>	M/PL	CIL	
							-	
¹ Type: C=Co	oncentration, D=Deple	etion, RM=R	educed Matrix, MS	=Masked	Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:						Indica	ators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	(S7)			2	cm Muck (A10) (MLRA 147)
Histic Ep	ipedon (A2)		Polyvalue Bel	low Surfac	ce (S8) (N	ILRA 147,	148) C	coast Prairie Redox (A16)
Black Hi			Thin Dark Su			47, 148)		(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye		- 2)		P	riedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Mat		0)			(MLRA 136, 147)
	ck (A10) (LRR N) Below Dark Surface	(/11)	Redox Dark S Depleted Dar	,	,			ery Shallow Dark Surface (TF12) Other (Explain in Remarks)
	ark Surface (A12)	(Д11)	Redox Depre				0	otter (Explain in Nemarks)
	lucky Mineral (S1) (Li	RR N.	Iron-Mangane			LRR N.		
	147, 148)	,	MLRA 136		, ,	,		
Sandy G	leyed Matrix (S4)		Umbric Surfa	ce (F13) (I	MLRA 13	6, 122)	³ Ind	icators of hydrophytic vegetation and
Sandy R	edox (S5)		Piedmont Flo	odplain So	oils (F19)	(MLRA 14	8) we	etland hydrology must be present,
	Matrix (S6)		Red Parent M	laterial (F2	21) (MLR	A 127, 147) un	less disturbed or problematic.
Restrictive I	ayer (if observed):							
Type:			<u> </u>					
Depth (inc	ches):		_				Hydric Soil	Present? Yes No
Remarks:								



Photograph Direction West

Comments:		

Project/Site: MVP		City/	County: Greenbrier		Sampling Date: 04/20/2016			
Applicant/Owner: MVP					Sampling Point: WV-QR2-UP			
Investigator(s): D Hadersbeck, J M	lcGuirk, C S	apusek _{Seci}	tion, Township, Range: N					
Landform (hillslope, terrace, etc.): Swe					Slope (%): 4			
Subregion (LRR or MLRA): LRR N					Datum: NAD 83			
Soil Map Unit Name: Po - Pope fine sa								
Are climatic / hydrologic conditions on th					<u></u>			
Are Vegetation, Soil, or I								
Are Vegetation, Soil, or I								
SUMMARY OF FINDINGS – A	ttach site m	nap snowing sa		ons, transects	s, important reatures, etc.			
Hydrophytic Vegetation Present?	Yes	No	Is the Sampled Area					
Hydric Soil Present?	Yes		within a Wetland?	Yes	No 🗸			
Wetland Hydrology Present?	Yes	No						
Remarks: Cowardin Code: UP	PLAND	HGM:	Water Type:					
HADBOLOCA								
HYDROLOGY Wetland Hydrology Indicators:				Secondary Indic	ators (minimum of two required)			
Primary Indicators (minimum of one is	required: check	k all that apply)		Surface Soil				
Surface Water (A1)	-	True Aquatic Plants	(B14)		getated Concave Surface (B8)			
High Water Table (A2)		Hydrogen Sulfide O		Drainage Patterns (B10)				
Saturation (A3)			eres on Living Roots (C3)	_				
Water Marks (B1)		Presence of Reduce	- · · · · · · · · · · · · · · · · · · ·		Water Table (C2)			
Sediment Deposits (B2)			on in Tilled Soils (C6)	Crayfish Bu				
Drift Deposits (B3)		Thin Muck Surface	(C7)	Saturation V	isible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)		Other (Explain in Re	emarks)	Stunted or S	Stressed Plants (D1)			
Iron Deposits (B5)				Geomorphic				
Inundation Visible on Aerial Image	ery (B7)			Shallow Aqu				
Water-Stained Leaves (B9)					aphic Relief (D4)			
Aquatic Fauna (B13)			I	FAC-Neutra	Test (D5)			
Field Observations:	🗸	5 (1						
		Depth (inches):						
		Depth (inches):						
Saturation Present? Yes (includes capillary fringe)	No	Depth (inches):	Wetland F	Hydrology Prese	nt? Yes No			
Describe Recorded Data (stream gaug	ge, monitoring v	vell, aerial photos, pi	evious inspections), if ava	ailable:				
Remarks:								
İ					l l			

Sampling Point: WV-QR2-U	-QR2-UP
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30'	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species
1. Liriodendron tulipifera	10		<u>FACU</u>	That Are OBL, FACW, or FAC:1 (A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				Percent of Dominant Species
5		<u> </u>		That Are OBL, FACW, or FAC:50 (A/B)
6				December of the december of
7				Prevalence Index worksheet:
_		= Total Cov		Total % Cover of: Multiply by:
50% of total cover: 5	20% of	f total cover:	2	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2 =
1				FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
	0	= Total Cov	er	
50% of total cover:0	20% of	f total cover:	0	4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5')				data in Remarks or on a separate sheet)
1. Packera aurea	25		FACW_	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Viola sp.	3		ND	1
3. Phleum pratense	5		FACU_	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Plantago lanceolata	3		UPL	Definitions of Four Vegetation Strata:
5. Fragaria virginiana	3		FACU_	Deminions of Four Vegetation Strata.
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7				more in diameter at breast height (DBH), regardless of height.
8				
9.				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1
10.				m) tall.
11.				Heater All beaters and Annual Districts and an annual least
	39	= Total Cov	er	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover:19.				
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines greater than 3.28 ft in height.
1				noight.
2.				
3				
4.				
5		•		Hydrophytic Vegetation
<u> </u>	^	= Total Cov		Present? Yes No
50% of total cover: 0		f total cover:	_	
Remarks: (Include photo numbers here or on a separate s				
ND - Indicator Status Not Determined	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
THE Indicator States Not Determined				
Plants not identified to species were not used in	the dom	inanco to	ct	
Plants not identified to species were not used in	i iiie uuili	mance le	υι	

(inches)	Matrix Color (moist)	%	Redo Color (moist)	x Features %	Type ¹	Loc ²	Texture		Remark	40	
0-1	7.5YR4/2	95	7.5YR4/6		C	M	SiL		Keman	7.5	
			7.51114/0			IVI					
1-12	7.5YR4/3	100					SiL				
								-			
			Dadwaad Matrix M				21	Dana Lini	NA NA-4-		
lydric Soil I	ncentration, D=Depl	etion, Rivi=	Reduced Matrix, Mi	S=IVIasked S	sand Gra	ins.	² Location: P	terore Lini			nils ³ .
Histosol (Dark Surface	(97)				cm Muck (-	
	ipedon (A2)		Polyvalue Be		e (S8) (M	RA 147.		oast Prairie	, .	•	
Black His			Thin Dark Su				140, 0	(MLRA 14	•	10)	
	n Sulfide (A4)		Loamy Gleye	, , ,		, ,	P	iedmont Flo		oils (F19)	
	Layers (A5)		Depleted Ma		,			(MLRA 13		` ,	
	ck (A10) (LRR N)		Redox Dark					ery Shallow)
	Below Dark Surface	e (A11)	Depleted Dar				c	ther (Expla	in in Rema	rks)	
	rk Surface (A12)		Redox Depre								
-	ucky Mineral (S1) (L	RR N,	Iron-Mangan		s (F12) (L	RR N,					
	147, 148) leyed Matrix (S4)		MLRA 13 Umbric Surfa	•	II D A 126	: 122\	³ Ind	icators of h	vdrophytic y	vogotation	and
	edox (S5)		Piedmont Flo					tland hydro		-	
	Matrix (S6)		Red Parent N					less disturb			,
	ayer (if observed):				, .		<u>, </u>				
	mpacted										
,	10						Hydric Soil	Present?	Yes	No	•
Depth (inc	hes): 12										
Depth (inc	:hes): 12										
Remarks:											
Remarks:											
emarks:											
emarks:											
Remarks:											
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Remarks:											
Depth (inc Remarks: Compacted											
Remarks:											
Remarks:											
Remarks:											

USACE FILE NO./Project Name:	Mountain Valley Pipeline		COORDINATES:	Lat.	37.980653	Lon.	-80.754908	
STREAM/SITE ID AND SITE DESCR	RIPTION:					W-L16, Pipeline ROW		
(% stream slope, watershed size {a	creage}, unaltered	l or impairments)						
FORM OF MITIGATION:								
DATE:	8/10	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-L16	Emergent	0.0247	Emergent					
					ĺ	PART III - Advanced	Mitigatio	nn .
						Sustainable Determination Made on		/ 11
						Advanced Mitigation (Y or N)		Y
Total Impact		0.0247			ı			
W # 10		Unit Scores				Estimated		
	lassification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0247			£4 492 00		
Total Scrub-Shrub Total Forested			0			\$1,482.00		
			0					
Total Open Water			0					

Project/Site: MVP	City/C	County: Greenbrier	_ Sampling Date: 04/19/2015
Applicant/Owner: MVP		State: WV	
Investigator(s): C. Vileno, B. Schrotenbo			. •
Landform (hillslope, terrace, etc.): Valley			Slope (%): 0-10
Subregion (LRR or MLRA): LRRN		Long: -80.754892	
Soil Map Unit Name: Zoar silt loam, 0 to		NWI classif	
Are climatic / hydrologic conditions on the site	typical for this time of year? Y	'es No (If no, explain in	Remarks.)
Are Vegetation, Soil, or Hydrol	ogy significantly distur	bed? Are "Normal Circumstances"	present? Yes No
Are Vegetation, Soil, or Hydrol			
SUMMARY OF FINDINGS – Attach			
Hydrophytic Vegetation Present? Ye	s_ ✓ No		
3 , 3 3	s No	Is the Sampled Area within a Wetland? Yes✓	, No
	s No	within a wettand:	
Remarks:			
Cowardin Code: PEM HGM: Riverin Information listed on this form repres of wetland hydrology, hydrophytic ve Supplement delineation methodology	ents the data collected in getation, and hydric soils		
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indic	cators (minimum of two required)
Primary Indicators (minimum of one is require	ed; check all that apply)	Surface So	il Cracks (B6)
✓ Surface Water (A1)	True Aquatic Plants ((B14) Sparsely Ve	egetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Od	-	atterns (B10)
✓ Saturation (A3)	Oxidized Rhizospher	•	
Water Marks (B1)	Presence of Reduced		Water Table (C2)
Sediment Deposits (B2) Drift Deposits (B3)	Recent Iron Reductio Thin Muck Surface (0		Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Rer		Stressed Plants (D1)
Iron Deposits (B5)	outer (Explain in real	✓ Geomorphi	
Inundation Visible on Aerial Imagery (B7)	Shallow Aq	
Water-Stained Leaves (B9)			raphic Relief (D4)
Aquatic Fauna (B13)		✓ FAC-Neutra	al Test (D5)
Field Observations:		_	
	Io Depth (inches):	2	
	ю beptit (inches)	0	,
	lo Depth (inches):	0 Wetland Hydrology Prese	ent? Yes <u>√</u> No
(includes capillary fringe) Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, pre	evious inspections), if available:	
Remarks:			

VEGETATION (Four Strata) - Use scientific names of plants.

___)

5._____ ___ ___ ____

6.______ ____ ____

Sapling/Shrub Stratum (Plot size: 10'

2. Impatiens capensis

3. Equisetum arvense

Woody Vine Stratum (Plot size: 15')

50% of total cover: 0 20% of total cover: 0

50% of total cover: 0 = 20% of total cover: 0 = 20%

50% of total cover: <u>27.5</u> 20% of total cover: <u>11</u>

50% of total cover: 0 20% of total cover: 0

nes or	plants.		Sampling	Point:_	VV-L16	
bsolute			Dominance Test worksheet	:		
6 Cover	Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC		2	_ (A)
			Total Number of Dominant Species Across All Strata:		2	_ (B)
			Percent of Dominant Species That Are OBL, FACW, or FAC		100	_ (A/B
			Prevalence Index workshee	et:		
0	Total Cov		Total % Cover of:	M	ultiply by:	
	total cover:		OBL species	x 1 =		
2070 01	total oover		FACW species	x 2 =		
			FAC species	x 3 =		
			FACU species	x 4 =		
			UPL species	x 5 =		
			Column Totals:	(A)		— (B)
			Column Fotals.	(71)		(D
	-		Prevalence Index = B/A	A =		_
			Hydrophytic Vegetation Ind	icators	:	
			✓ 1 - Rapid Test for Hydrop	hytic V	egetation	
			✓ 2 - Dominance Test is >5	60%		
			3 - Prevalence Index is ≤	3.0^{1}		
	= Total Cov	_	4 - Morphological Adapta	itions ¹ (Provide su	pportir
20% of	total cover:		data in Remarks or or	n a sepa	arate sheet)
20	/	EA C\A/	Problematic Hydrophytic	Vegeta	tion ¹ (Expla	ain)
15		F <u>ACW</u>		Ü	•	
10		FACW FAC	¹ Indicators of hydric soil and v	wetland	hydrology	must
10			be present, unless disturbed	or probl	ematic.	
		F <u>ACW</u>	Definitions of Four Vegetati	ion Stra	nta:	
			Tree – Woody plants, excludi more in diameter at breast he height.	ng vine eight (DI	s, 3 in. (7.6 3H), regard	6 cm) c dless c
		<u> </u>	Sapling/Shrub – Woody plar than 3 in. DBH and greater th m) tall.			
	= Total Cov total cover:	4.4	Herb – All herbaceous (non-vof size, and woody plants less			ardless
			Woody vine – All woody vine height.	es great	er than 3.2	8 ft in
	= Total Cov	^	Hydrophytic Vegetation Present? Yes <u>√</u>	<u>′</u> N	o	

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

Herb Stratum (Plot size: __ 1. Packera aurea

4. Poa trivialis

SOIL Sampling Point: W-L16

Profile Description: (Describe to the dep	th needed to docun	nent the i	ndicator	or confirm	the absence	e of indicators.)
Depth <u>Matrix</u>		x Features				
(inches) Color (moist) %	Color (moist)	%	Type'	<u>Loc²</u>	<u>Texture</u>	<u>Remarks</u>
0-12 10YR 3/2 90	7.5YR 4/3	10	С	<u>M</u>	SiL	with gravel disturbed
						·
						·
¹ Type: C=Concentration, D=Depletion, RM:	Reduced Matrix, MS	S=Masked	Sand Gr	ains.	² Location: F	PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:						cators for Problematic Hydric Soils ³ :
Histosol (A1)	Dark Surface	(S7)				2 cm Muck (A10) (MLRA 147)
Histic Epipedon (A2)	Polyvalue Be		ce (S8) (I	MLRA 147		Coast Prairie Redox (A16)
Black Histic (A3)	Thin Dark Su					(MLRA 147, 148)
Hydrogen Sulfide (A4)	Loamy Gleye			, ,	ı	Piedmont Floodplain Soils (F19)
Stratified Layers (A5)	Depleted Mar		,		 ·	(MLRA 136, 147)
2 cm Muck (A10) (LRR N)	✓ Redox Dark :		6)		,	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11)	Depleted Dar					Other (Explain in Remarks)
Thick Dark Surface (A12)	Redox Depre					,
Sandy Mucky Mineral (S1) (LRR N,	Iron-Mangan			(LRR N,		
MLRA 147, 148)	MLRA 13			•		
Sandy Gleyed Matrix (S4)	Umbric Surfa	ice (F13) (MLRA 1	36, 122)	³ In	dicators of hydrophytic vegetation and
Sandy Redox (S5)	Piedmont Flo	odplain S	oils (F19)	(MLRA 14	(8) w	etland hydrology must be present,
Stripped Matrix (S6)	Red Parent N	лaterial (F	21) (MLF	RA 127, 147	7) ur	nless disturbed or problematic.
Restrictive Layer (if observed):						
Type:						
Depth (inches):					Hvdric Soi	Il Present? Yes <u>√</u> No
Remarks:						
. temanie.						

Wetland Photograph Page

Wetland ID W-L16



Photograph Direction SE

Date: 04/19/2015

Comments: 2015 wetland delineation.



Photograph Direction NE

Date: 10/18/19

 $\label{eq:comments:2019} \mbox{ Comments: } 2019 \mbox{ wetland delineation confirmation.}$

Project/Site: MVP	City/County: Gre	enbrier	Sampling Date: 04/19/2015
Applicant/Owner: MVP		State: WV	Sampling Point: W-L16 UP
Investigator(s): C. Vileno, B. Schrotenboer, C. Soro			
Landform (hillslope, terrace, etc.): Floodplain	•	•	Slana (%): 0
Subregion (LRR or MLRA): LRRN Lat: 37	98063	-80 754792	Datum: NAD 83
Soil Map Unit Name: Zoar silt loam, 0 to 3 percent s		Long: 00.704732	Datum: 147 D 00
•		NWI classific	
Are climatic / hydrologic conditions on the site typical for this			
Are Vegetation, Soil, or Hydrologys	significantly disturbed?	Are "Normal Circumstances" إ	oresent? Yes <u></u> ✓ No
Are Vegetation, Soil, or Hydrology r	naturally problematic?	(If needed, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing sampling poi	int locations, transects	s, important features, etc.
Lludrophytic Vegetation Present? Ves N			
Hydrophytic Vegetation Present? Yes N Hydric Soil Present? Yes N			
Wetland Hydrology Present? Yes N	within a W	etland? Yes	No <u> </u>
Remarks:			
Upland			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one is required; check all	that apply)	Surface Soil	
Surface Water (A1) True	e Aquatic Plants (B14)		getated Concave Surface (B8)
High Water Table (A2) Hyd	rogen Sulfide Odor (C1)	Drainage Pa	
Saturation (A3) Oxid	dized Rhizospheres on Living	Roots (C3) Moss Trim L	ines (B16)
Water Marks (B1) Pres	sence of Reduced Iron (C4)	Dry-Season	Water Table (C2)
Sediment Deposits (B2) Rec	ent Iron Reduction in Tilled So	•	
·	n Muck Surface (C7)		isible on Aerial Imagery (C9)
	er (Explain in Remarks)		stressed Plants (D1)
Iron Deposits (B5)		 -	Position (D2)
Inundation Visible on Aerial Imagery (B7)		Shallow Aqu	
Water-Stained Leaves (B9) Aquatic Fauna (B13)		Microtopogra	aphic Relief (D4)
Field Observations:		TAC-Neutral	1 Test (D3)
Surface Water Present? Yes No ✓ De	nth (inches)		
Water Table Present? Yes No ✓ De			
Saturation Present? Yes No ✓ De		Wetland Hydrology Presei	nt? Yes No_ ✓
(includes capillary fringe)			II: 163 NO
Describe Recorded Data (stream gauge, monitoring well,	aerial photos, previous inspec	tions), if available:	
Remarks:			

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

Sampling Point: W-L16 UP

Tree Stratum (Plot size: 30')	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Flot Size.		Species?		Number of Dominant Species
1. Quercus rubra	15	√	FACU_	That Are OBL, FACW, or FAC:1 (A)
2. Acer rubrum	15		FAC	Total Number of Dominant
3				Species Across All Strata: 5 (B)
4				
				Percent of Dominant Species That Are OBL FACW or FAC: 20 (A/B)
5				That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
7				
		= Total Cov		
50% of total cover: <u>15</u>	20% of	total cover:	6	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15'				FACW species x 2 =
1. Fagus grandifolia	20	✓	FACU	FAC species x 3 =
2 Kalmia latifolia	10	<u></u>	FACU_	FACU species x 4 =
			1 <u>ACU</u>	UPL species x 5 =
3				
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6				
7				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
		= Total Cov		4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 15	20% of	total cover:	6	
Herb Stratum (Plot size: 5'				data in Remarks or on a separate sheet)
1. Lycopodium digitatum	30	✓	UPL	Problematic Hydrophytic Vegetation ¹ (Explain)
2 Viola pubescens	5		F <u>ACU</u>	
				¹ Indicators of hydric soil and wetland hydrology must
3				be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7				more in diameter at breast height (DBH), regardless of height.
				Holght.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	35 .	= Total Cov	er	of size, and woody plants less than 3.28 ft tall.
50% of total cover:17.5				
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines greater than 3.28 ft in
				height.
1,				
2				
3				
4				Hydrophytic
5.				Vegetation
	0	Total Cov		Present? Yes No✓
50% of total cover:0		total cover:	_	
		total cover.		
Remarks: (Include photo numbers here or on a separate si	neet.)			

Sampling Point: W-L16 UP

SOIL

Profile Desc	ription: (Describe t	o the dept	h needed to docur	nent the i	ndicator	or confirm	n the absence o	of indicators.)
Depth	Matrix		Redo	x Feature	S			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	<u>Loc²</u>	Texture	Remarks
0-4	10YR 5/4	100					GrSaLo	
4-7	10 YR 5/6	95	10YR 5/8	5	С	M	GrSaLo	
7-13	10YR 6/6	90	5Y 6/2	_30_	D	<u>M</u>	SiCILo	
13-20	10YR 6/6	80	10YR 5/8	_10	С	<u>M</u>	SiCILo	
			5Y 6/2	_10	D	<u>M</u>		
							 .	
								
1 _{Type:} C-C	oncentration, D=Depl	otion DM-	——————————————————————————————————————	———— S_Mackoo			² Location: DL	- Doro Liping M-Matrix
Hydric Soil		euon, Rivi=	Reduced Matrix, M.	S=Wasket	ı Sanu Gi	airis.		=Pore Lining, M=Matrix. tors for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(\$7)				cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be		ce (S8) (1	/II RA 147		past Prairie Redox (A16)
Black Hi	•		Thin Dark Su					(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye			,		edmont Floodplain Soils (F19)
	Layers (A5)		Depleted Ma		,			(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark		⁻ 6)			ry Shallow Dark Surface (TF12)
Depleted	l Below Dark Surface	e (A11)	Depleted Da	rk Surface	e (F7)		Otl	her (Explain in Remarks)
Thick Da	rk Surface (A12)		Redox Depre	essions (F	8)			
	lucky Mineral (S1) (L	RR N,	Iron-Mangan	ese Mass	es (F12) (LRR N,		
	\ 147, 148)		MLRA 13					
	leyed Matrix (S4)		Umbric Surfa					cators of hydrophytic vegetation and
-	edox (S5)		Piedmont Flo					land hydrology must be present,
	Matrix (S6)		Red Parent N	Material (F	21) (MLR	A 127, 14	7) unle	ess disturbed or problematic.
Restrictive I	ayer (if observed):							
Type:								
Depth (inc	ches):						Hydric Soil F	Present? Yes No <u>√</u>
Remarks:							-	
Layer from	13-20 contains b	oth cond	entrations and	depletio	ns.			

USACE FILE NO./Project Name:		Mountain Valley Pipeline		COORDINATES:	Lat.	37.95425	Lon.	-80.739757
STREAM/SITE ID AND SITE DESCR	IPTION:			V	V-L19,	Pipeline ROW/Temporary Access Roa	ad	
(% stream slope, watershed size {a	creage}, unaltered	or impairments)						
FORM OF MITIGATION:								
DATE:	8/10	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-L19	Emergent	0.106	Emergent					
						PART III - Advanced I	Mitigatio	n
						Sustainable Determination Made on Advanced Mitigation (Y or N)		Υ
Total Impact		0.106				Fatimated		
Motland Cl		Jnit Scores	Douboomont Unit(o)			Estimated		
Total Emergent	lassification		Replacement Unit(s) 0.106			ILF Costs		
Total Emergent Total Scrub-Shrub			0.106			\$6,360.00		
Total Forested			0			Ψ0,300.00		
Total Open Water			0					

Project/Site: MVP	City/County: Greenbrier Sampling Date: 04/20/20					
Applicant/Owner: MVP	- / /		_ Sampling Point: W-L19			
Investigator(s): C. Vileno, B. Schrotenboer,						
Landform (hillslope, terrace, etc.): Floodplain			Slope (%): 0			
Subregion (LRR or MLRA): LRRN	Lat: 37.954168 Long: -8	0.739594	Datum: NAD83			
Soil Map Unit Name: Lobdell silt loam						
Are climatic / hydrologic conditions on the site typic						
Are Vegetation, Soil, or Hydrology	significantly disturbed? Are "Norm	al Circumstances" pr	resent? Yes V No			
Are Vegetation, Soil, or Hydrology		explain any answers				
SUMMARY OF FINDINGS – Attach sit						
Hydrophytic Vegetation Present? Yes	No Is the Sampled Area					
Hydric Soil Present? Yes	No.		No			
Wetland Hydrology Present? Yes	No within a Wetland?	Yes	No			
Remarks: Cowardin Code: PEM HGM: Depression Information listed on this form represent again on 07/23/2020. Presence of wetla USACE EMP Regional Supplement deli	s the data collected in 2015. The wetlar	nd was revisited nd hydric soils w	on 10/19/2019, then as confirmed using the			
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indicat	ors (minimum of two required)			
Primary Indicators (minimum of one is required; of	check all that apply)	Surface Soil C	Cracks (B6)			
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)				
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)				
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	Moss Trim Lines (B16)				
Water Marks (B1)	Presence of Reduced Iron (C4)		Vater Table (C2)			
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	 ,	Crayfish Burrows (C8)			
Drift Deposits (B3)	Thin Muck Surface (C7)		Saturation Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)	Other (Explain in Remarks)		ressed Plants (D1)			
Iron Deposits (B5)		Geomorphic F	, ,			
Inundation Visible on Aerial Imagery (B7)		Shallow Aquit				
Water-Stained Leaves (B9)		✓ FAC-Neutral	ohic Relief (D4)			
Aquatic Fauna (B13)		FAC-Neutral	Test (D5)			
Field Observations: Surface Water Present? Yes No	Depth (inches): 0.25					
	Depth (inches): 0					
	•	Hydrology Present	No. Voc. V			
(includes capillary fringe)	Depth (inches) wetland	nydrology Present	? Yes V No			
Describe Recorded Data (stream gauge, monitor	ing well, aerial photos, previous inspections), if av	railable:				
Remarks:						

Sampling	Point:	W-L	.19

	Absolute		Indicator	Dominance Test worksheet:		
Tree Stratum (Plot size: 15')	% Cover			Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
1						. (八)
3				Total Number of Dominant Species Across All Strata:	2	(B)
4						(-)
5				Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)
6						, (- ,
7				Prevalence Index worksheet:	Multiplyby	
		= Total Co		Total % Cover of:	Multiply by:	
50% of total cover: 0	20% of	total cover	: <u> </u>	OBL species x 1 FACW species x 2		
<u>Japinig/Onlab Otlatani</u> (1 lot 3i2c				FAC species x 3		
1				FACU species x 4		
2				UPL species x 5		
3				Column Totals: (A)		
4						
6				Prevalence Index = B/A =		_
7				Hydrophytic Vegetation Indicate		
8				1 - Rapid Test for Hydrophytic 2 - Dominance Test is >50%	c Vegetation	
9				2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹		
		= Total Co		4 - Morphological Adaptations	s ¹ (Provide sur	norting
50% of total cover: 0	20% of	total cover	r: <u> </u>	data in Remarks or on a s		
Herb Stratum (Plot size: 5')	00			Problematic Hydrophytic Veg	. ,	
1. Carex stricta	<u>60</u> 20		OBL		(=	,
2. Juncus effusus 3. Juncus tenuis	5		FACW	¹ Indicators of hydric soil and wetla		must
		-	F <u>AC</u>	be present, unless disturbed or pr		
4				Definitions of Four Vegetation S	Strata:	
5				Tree – Woody plants, excluding v		
7				more in diameter at breast height height.	(DBH), regard	less of
8						
9				Sapling/Shrub – Woody plants, ethan 3 in. DBH and greater than o	excluding vines	s, less R ft (1
10				m) tall.	1 04001 10 0.20	,,,,,,
11				Herb – All herbaceous (non-wood	lv) plants, rega	ardless
		= Total Co		of size, and woody plants less that		4.000
50% of total cover: <u>42.</u>	5_ 20% of	total cover	r: <u>17</u>	Woody vine – All woody vines gr	eater than 3.28	3 ft in
Woody Vine Stratum (Plot size: 15')				height.		
1,						
2						
3						
5.				Hydrophytic		
5		= Total Co	ver	Vegetation Present? Yes <u>✓</u>	No	
50% of total cover: 0		total cover	_			
Remarks: (Include photo numbers here or on a separate s						

SOIL Sampling Point: W-L19

Profile Desc	ription: (Describe t	o the dept	h needed to docur	nent the	indicator	or confirm	n the absence	e of indicators.)
Depth	Matrix		Redo	x Feature	s			
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	Remarks
0-8	10YR 4/2	70	10YR 5/8	15	С	M	SiLo	
			10YR 4/1	15	D	M		
8-20	7.5YR 4/1	70	7.5YR 4/6	30	C	M	SiLo	
0-20	7.5111 4/1		7.5111 4/0		<u> </u>	IVI	- OILO	
¹ Type: C=Ce	oncentration, D=Depl	etion. RM=	Reduced Matrix. MS	S=Masked	d Sand Gr	ains.	² Location: I	PL=Pore Lining, M=Matrix.
Hydric Soil		ouo,	Todassa mann, m	<u> </u>	<u> </u>	<u> </u>		cators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	e (S7)				2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be		ice (S8) (l	/ILRA 147		Coast Prairie Redox (A16)
	stic (A3)		Thin Dark Su				· · · —	(MLRA 147, 148)
Hydroge	en Sulfide (A4)		Loamy Gleye	ed Matrix	(F2)			Piedmont Floodplain Soils (F19)
Stratified	d Layers (A5)		Depleted Ma	trix (F3)				(MLRA 136, 147)
	ıck (A10) (LRR N)		Redox Dark					Very Shallow Dark Surface (TF12)
	d Below Dark Surface	(A11)	Depleted Da					Other (Explain in Remarks)
	ark Surface (A12)	DD 11	Redox Depre			1 DD N		
	Mucky Mineral (S1) (L	RR N,	Iron-Mangan		ses (F12) (LRR N,		
	A 147, 148) Gleyed Matrix (S4)		MLRA 13 Umbric Surfa	•	/MI D A 14	26 122\	³ ln	dicators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo					retland hydrology must be present,
	Matrix (S6)		Red Parent N					nless disturbed or problematic.
	Layer (if observed):		rtou r uront r	viatoriai (i	, (_		1	nicee distances of problematic.
Type:								
	ches):						Hydric So	il Present? Yes No
							Tiyunic oo	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Remarks:	er has both cond	contration	e and depletion	10				
Surface lay	er nas both conc	enilalion	s and depletion	15.				

Wetland Photograph Page

Wetland ID W-L19



Photograph Direction East

Date: 04/20/2015

Comments: 2015 wetland delineation.



Photograph Direction South

Date: 10/19/19

Comments: 2019 wetland delineation confirmation.

Wetland Photograph Page

Wetland ID W-L19



Photograph Direction West

Date: 07/23/2020

Comments:

Comments: 2020 wetland delineation confirmation.

Photograph Direction
Date:

Project/Site: MVP	City/County: Greenb	rier	Sampling Date: 04/20/2015			
Applicant/Owner: MVP						
Investigator(s): C. Vileno, B. Schrotenboer,						
Landform (hillslope, terrace, etc.): Floodplain	•	-	Slane (%): 0			
Subregion (LRR or MLRA): LRRN			Datum: NAD83			
Soil Map Unit Name: Lobdell silt loam						
		NWI classifi				
Are climatic / hydrologic conditions on the site typic						
Are Vegetation, Soil, or Hydrology _	significantly disturbed? Are	"Normal Circumstances"	present? Yes <u> </u> No			
Are Vegetation, Soil, or Hydrology _	naturally problematic? (If ne	eeded, explain any answe	ers in Remarks.)			
SUMMARY OF FINDINGS – Attach site	e map showing sampling point l	ocations, transects	s, important features, etc.			
Lludrophytic Vocatation Present?	No. 🗸					
	No V Is the Sampled within a Wetlan					
Wetland Hydrology Present? Yes	No V within a Wetlan	nd? Yes	No <u> </u>			
Remarks:						
Upland						
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indica	ators (minimum of two required)			
Primary Indicators (minimum of one is required; cl	neck all that apply)	Surface Soil	Cracks (B6)			
Surface Water (A1)	True Aquatic Plants (B14)		getated Concave Surface (B8)			
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainage Pa				
Saturation (A3)	Oxidized Rhizospheres on Living Room					
Water Marks (B1)	Presence of Reduced Iron (C4)		Water Table (C2)			
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (•				
Drift Deposits (B3)	Thin Muck Surface (C7)		risible on Aerial Imagery (C9)			
	Other (Explain in Remarks)	<pre> Stunted or Stressed Plants (D1) Geomorphic Position (D2)</pre>				
Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7)		·				
Water-Stained Leaves (B9)		Shallow Aquitard (D3) Microtopographic Relief (D4)				
Aquatic Fauna (B13)		FAC-Neutra	·			
Field Observations:						
Surface Water Present? Yes No	✓ Depth (inches):					
	Depth (inches):					
		etland Hydrology Prese	nt? Yes No_ ✓			
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring)		s) if available:	·			
Describe Recorded Data (Stream gauge, monitorii	ig weil, aeriai priotos, previous irispections	s), ii avallable:				
Remarks:						

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

Sampling Point: W-L19 UP Absolute Dominant Indicator Dominance Test worksheet:

30'		Dominani		Dominance rest worksneet.		
<u>Tree Stratum</u> (Plot size:30') 1		Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
				mat Are OBE, I AGW, OF I AG.	-	_ (/-()
2				Total Number of Dominant Species Across All Strata:	2	(B)
4				'		- (/
5				Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)
6						_ (/
7.				Prevalence Index worksheet:		
	0	= Total Co	ver	Total % Cover of:	Multiply by:	
50% of total cover: 0				OBL species x	1 =	
Sapling/Shrub Stratum (Plot size: 15'				FACW species x	2 =	
1				FAC species x	3 =	
				FACU species x		
2				UPL species x		
3				Column Totals: (A		
4				Column Fotals (//	,	(B)
5				Prevalence Index = B/A =		
6				Hydrophytic Vegetation Indica	tors:	
7				1 - Rapid Test for Hydrophyl		
8				2 - Dominance Test is >50%	_	
9				3 - Prevalence Index is ≤3.0		
	0	= Total Co	ver			
50% of total cover:0	20% of	total cover	r: <u> </u>	4 - Morphological Adaptation		-
Herb Stratum (Plot size:)				data in Remarks or on a	•	
1. Andropogon virginicus	30	✓	FACU	Problematic Hydrophytic Ve	getation' (Expla	ain)
2 Phleum pratense	20	$\overline{\hspace{1em}}$	F <u>ACU</u>			
3. Trifolium repens	10		F <u>ACU</u>	¹ Indicators of hydric soil and wet	land hydrology	must
4. Achillea millefolium	5		F <u>ACU</u>	be present, unless disturbed or p		
5. Dichanthelium clandestinum	5		FACO FAC	Definitions of Four Vegetation	Strata:	
·		-		Tree – Woody plants, excluding	vines, 3 in. (7.6	cm) or
6				more in diameter at breast heigh	t (DBH), regard	lless of
7				height.		
8				Sapling/Shrub – Woody plants,	excluding vines	s, less
9				than 3 in. DBH and greater than	or equal to 3.28	8 ft (1
10				m) tall.		
11				Herb – All herbaceous (non-woo	ody) plants, req	ardless
		= Total Co		of size, and woody plants less th	an 3.28 ft tall.	
50% of total cover: 35	20% of	total cover	r: <u> 14 </u>	Woody vine – All woody vines g	roator than 2.2	0 ft in
Woody Vine Stratum (Plot size:)				height.	jreater triair 3.2	0 11 111
1				- J		
2						
3						
4						
5.				Hydrophytic		
5	0			Vegetation Present? Yes	No √	
50% of total cover: 0		 Total Co total cover 	_			
		total covel				
Remarks: (Include photo numbers here or on a separate si	neet.)					

SOIL Sampling Point: W-L19 UP

Profile Desc	ription: (Describe t	o the dept	n needed to docun	nent the i	ndicator	or confirm	the ab	sence of indicators.)
Depth	Matrix		Redo	x Feature:	s			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	<u>Loc</u> ²		<u>ure</u> <u>Remarks</u>
0-4	10YR 4/3	90	10YR 4/6	10			Fine	SL
4-14	7.5YR 5/6	_100_					Fine	SL_
14-20	7.5YR 5/6	90	7.5YR 5/2	10	D	M	Fine	SL
								
	-							
	-							
1			Darland Barris Bar				21	in Discounting Manager
Hydric Soil I	oncentration, D=Depl	etion, RIVI=	Reduced Matrix, MS	s=IVIasked	i Sand Gra	ains.	Locat	ion: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(\$7)				2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Dark Surface Polyvalue Be		ce (S8) (N	II RΔ 147	148)	Coast Prairie Redox (A16)
Black His			Thin Dark Su				140,	(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye			, ,		Piedmont Floodplain Soils (F19)
	l Layers (A5)		Depleted Ma	trix (F3)				(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark S					Very Shallow Dark Surface (TF12)
	Below Dark Surface	e (A11)	Depleted Dar					Other (Explain in Remarks)
	ark Surface (A12)	DD N	Redox Depre			DD N		
	lucky Mineral (S1) (L \ 147, 148)	KK N,	Iron-Mangan MLRA 13		es (F12) (LKK N,		
	ileyed Matrix (S4)		Umbric Surfa	•	(MLRA 13	6. 122)		³ Indicators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo				8)	wetland hydrology must be present,
-	Matrix (S6)		Red Parent N	•				unless disturbed or problematic.
Restrictive L	_ayer (if observed):							
Туре:								
Depth (inc	ches):						Hydri	ic Soil Present? Yes No _✓
Remarks:								

Mountain Valley Pipeline			COORDINATES:	Lat.	37.953825	Lon.	-80.740037
IPTION:					W-L13, Pipeline ROW		
creage}, unaltered	or impairments)						
8/10	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
PART I - Wetl	and Indicators						
Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
Emergent	0.0316	Emergent					
							n
					Sustainable Determination Made or Advanced Mitigation (Y or N)		Υ
	0.0316				-		
	Jnit Scores						
assification					ILF Costs		
					\$4 906 00		
		The state of the s			\$1,050.00		
		-					
	8/10 PART I - Wetl Impact Wetland Classification Emergent	RIPTION: acreage}, unaltered or impairments) 8/10/2015 PART I - Wetland Indicators Impact Wetland Classification Emergent 0.0316 PART II - Unit Scores	RIPTION: acreage}, unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Emergent 0.0316 Emergent 0.0316 PART II - Unit Scores	RIPTION: Increage}, unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Impacts Wetland Classification Emergent 0.0316 Emergent 0.0316 PART II - Unit Scores Iassification Replacement Unit(s) 0.0316 0 0	RIPTION: Increage}, unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland Classification Emergent 0.0316 Emergent 0.0316 PART II - Unit Scores lassification Replacement Unit(s) 0 0 0	BPTION: Creage}, unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Impacts (acreage) Wetland Classification Emergent 0.0316 Emergent D.0316 Emergent O.0316 Emergent O.0316 Emergent O.0316 Emergent FART III - Advanced Mitigation (Y or N) PART III - Lunit Scores assification Replacement Unit(s) 0.0316 0 0 \$1,896.00	BPTION: Creage), unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Impacts (acreage) Wetland Classification Emergent 0.0316 Emergent PART II - Milityation Made on Advanced Mitigation (Y or N) PART II - Init Scores assification Replacement Unit(s) 0.0316 0 0 \$1,896.00

Project/Site: MVP		City/0	Sampling Date: 04/19/2015					
Applicant/Owner: MVP		Sampling Point: W-L13						
Investigator(s): C. Vileno, E	Schrotenboe				_ ,			
Landform (hillslope, terrace, et					Slope (%): 0			
Subregion (LRR or MLRA): L								
Soil Map Unit Name: Lobdel	silt loam							
Are climatic / hydrologic condit	ions on the site typ							
Are Vegetation , Soil	, or Hydrolog	y significantly distu	rbed? Are "Normal	Circumstances" p	oresent? Yes No			
Are Vegetation, Soil				· explain any answe				
_					, important features, etc.			
Hydrophytic Vegetation Prese	ent? Yes	✓ No						
Hydric Soil Present?		✓ No	Is the Sampled Area	V	No			
Wetland Hydrology Present?	_		within a Wetland?	res	NO			
Cowardin Code: PEM H Information listed on this again on 07/23/2020. Pr USACE EMP Regional S	s form represer	nts the data collected i	in 2015. The wetland phytic vegetation, an /.	d was revisited d hydric soils v	on 10/19/2019, then was confirmed using the			
HYDROLOGY								
Wetland Hydrology Indicate				-	tors (minimum of two required)			
Primary Indicators (minimum	of one is required:			Surface Soil Cracks (B6)				
Surface Water (A1)		True Aquatic Plants		Sparsely Vegetated Concave Surface (B8)				
High Water Table (A2)		Hydrogen Sulfide Oc		Drainage Patterns (B10)				
Saturation (A3)		Oxidized Rhizospher	• , ,	• •				
Water Marks (B1)		Presence of Reduce Recent Iron Reduction			Water Table (C2)			
Sediment Deposits (B2) Drift Deposits (B3)		Thin Muck Surface (Crayfish Burn	sible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)		Other (Explain in Re			tressed Plants (D1)			
Iron Deposits (B5)		Office (Explain in No.	marks)		` '			
Inundation Visible on Ae	rial Imagery (B7)			✓ Geomorphic Position (D2)✓ Shallow Aquitard (D3)				
✓ Water-Stained Leaves (E)			Microtopographic Relief (D4)					
Aquatic Fauna (B13)	,			FAC-Neutral Test (D5)				
Field Observations:								
Surface Water Present?	Yes No	Depth (inches):	5					
Water Table Present?	Yes _ 🗸 No	Depth (inches):	0					
Saturation Present?		Depth (inches):	0 Wetland H	lydrology Preser	nt? Yes 🗸 No			
(includes capillary fringe) Describe Recorded Data (stre			vieve increations) if ave	ilahla				
Describe Recorded Data (Str	sam gauge, monit	oning well, aerial photos, pre	evious irispections), ii ava	illable.				
Remarks:								

Sampling	Point.	W-L	_13

Tree Stratum (Plot size: 30'	Absolute	Dominant		Dominance Test worksheet:		
Tiec otratum (Flot size.	% Cover			Number of Dominant Species	3	
1				That Are OBL, FACW, or FAC:		(A)
2				Total Number of Dominant		
3				Species Across All Strata:	3	(B)
4				Percent of Dominant Species		
5				That Are OBL, FACW, or FAC:	100	(A/B)
6		-		Prevalence Index worksheet:		
7		-		Total % Cover of:	Multiply by:	
2		= Total Cov		-		
50% of total cover: 0	20% of	total cover	:0	OBL species x 1		
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2		
1				FAC species x 3		
2				FACU species x 4		
3				UPL species x 5		
4				Column Totals: (A)	-	(B)
5				Prevalence Index = B/A =		
6				Hydrophytic Vegetation Indicate		_
7				1 - Rapid Test for Hydrophytic		
8				2 - Dominance Test is >50%	5 vegetation	
9				3 - Prevalence Index is ≤3.0 ¹		
	0 :	= Total Cov	/er		o ¹ (Droyido our	nortina
50% of total cover:0	20% of	total cover	: 0	4 - Morphological Adaptations		
Herb Stratum (Plot size: 5'				data in Remarks or on a s	. ,	
1. Poa trivilais	10		FACW_	Problematic Hydrophytic Veg	etation' (Expla	iin)
2. Dichanthelium clandestinum	5	✓	FAC			
3. Scirpus atrovirens	5	'	FACW	¹ Indicators of hydric soil and wetla be present, unless disturbed or pr		must
4				Definitions of Four Vegetation S		
5				Definitions of Four Vegetation C	Juata.	
6				Tree – Woody plants, excluding v		
7				more in diameter at breast height height.	(DBH), regard	less of
8						
9			-	Sapling/Shrub – Woody plants, ethan 3 in. DBH and greater than o	excluding vines	s, less
10				m) tall.	equal to 3.20	5 11 (1
11.				,		
	20	= Total Cov		Herb – All herbaceous (non-wood of size, and woody plants less that		ırdless
50% of total cover: 10		total cover		or size, and woody plants loss tha	11 0.20 It tail.	
Woody Vine Stratum (Plot size: 15')	2070 01	total cover	•	Woody vine – All woody vines gr	eater than 3.28	3 ft in
1				height.		
_						
2		-				
3						
4				Hydrophytic		
5	0 .			Vegetation Present? Yes ✓	No	
50% of total cover: 0		= Total Cover total cover	_			
		total cover	· <u> </u>			
Remarks: (Include photo numbers here or on a separate s	neet.)					

SOIL Sampling Point: W-L13

Profile Desc	cription: (Describe to	o the dept	h needed to docum	nent the i	ndicator	or confirm	the abse	ence of indicators.)
Depth	Matrix	<u> </u>	Redo	x Feature:	S			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Textur	e Remarks
0-10	10YR 4/2	70	10YR 4/7	30	С	M	SiL	
					-	-	-	
								 -
	·							
	-							
							-	
					С			
¹ Type: C=C	oncentration, D=Deple	etion RM=	Reduced Matrix, MS	S=Masked	Sand Gr	ains.	² l ocation	n: PL=Pore Lining, M=Matrix.
Hydric Soil		o o ,	. roduood mann, m				Ir	ndicators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(S7)				2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be		ce (S8) (N	ILRA 147	148)	Coast Prairie Redox (A16)
	stic (A3)		Thin Dark Su		. , .		0, _	(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye			,,		Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Mar		,		_	(MLRA 136, 147)
	uck (A10) (LRR N)		Redox Dark	. ,	·6)		_	Very Shallow Dark Surface (TF12)
	d Below Dark Surface	(A11)	Depleted Dar					Other (Explain in Remarks)
Thick Da	ark Surface (A12)		Redox Depre	ssions (F	8)			
Sandy N	Mucky Mineral (S1) (L	RR N,	Iron-Mangan	ese Mass	es (F12) (LRR N,		
	A 147, 148)		MLRA 13					
	Sleyed Matrix (S4)		Umbric Surfa					³ Indicators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo					wetland hydrology must be present,
	Matrix (S6)		Red Parent N	/laterial (F	21) (MLR	A 127, 147	7)	unless disturbed or problematic.
Restrictive	Layer (if observed):							
Type:								
Depth (in	ches):						Hydric	Soil Present? Yes No
Remarks:							ı	

Wetland Photograph Page

Wetland ID W-L13



Photograph Direction SW

Date: 04/19/2015

Comments: 2015 wetland delineation.



Photograph Direction NE

Date: 10/19/19

Comments: 2019 wetland delineation confirmation.



Photograph Direction North

Date: 07/23/2020

Comments:

Comments: 2020 wetland delineation confirmation.

Pho	tograph Dire	ction	_		
Date	ə:				

Project/Site: MVP		City/C	County: Greenbrier		Sampling Date: 04/19/2015			
Applicant/Owner: MVP			,		Sampling Point: W-L12/W-L13 UF			
Investigator(s): C. Vileno, B. Sch	rotenboer, C.	Sorden _{Secti}	on. Township, Range: N					
Landform (hillslope, terrace, etc.): Va			· · · · · ·		Slope (%): 0			
Subregion (LRR or MLRA): LRRN					Datum: NAD83			
Soil Map Unit Name: Lobdell silt lo			Long		ation: None			
		41. (1. (2.)	<i>, ,</i> ,,					
Are climatic / hydrologic conditions or		-						
Are Vegetation, Soil,				al Circumstances" p	present? Yes No			
Are Vegetation, Soil,	or Hydrology	naturally problem	atic? (If needed,	explain any answe	rs in Remarks.)			
SUMMARY OF FINDINGS -	Attach site m	nap showing san	npling point location	ons, transects	, important features, etc.			
Hydrophytic Vegetation Present?	Yes	No. V						
Hydric Soil Present?	Yes		Is the Sampled Area		1/			
Wetland Hydrology Present?	Yes	,	within a Wetland?	Yes	No			
Remarks: Upland Information listed on this form on 07/23/2020.	ı represents th	e data collected i	n 2015. The upland	l was revisited o	on 10/18/2019, then again			
HYDROLOGY								
Wetland Hydrology Indicators:				Secondary Indica	tors (minimum of two required)			
Primary Indicators (minimum of one	is required; checl	k all that apply)	_	Surface Soil Cracks (B6)				
Surface Water (A1)		True Aquatic Plants	(B14)	Sparsely Veg	getated Concave Surface (B8)			
High Water Table (A2)		Hydrogen Sulfide Od	lor (C1)	Drainage Patterns (B10)				
Saturation (A3)			-) Moss Trim Lines (B16) Dry-Season Water Table (C2)				
Water Marks (B1)		Presence of Reduce						
Sediment Deposits (B2)		Recent Iron Reduction		Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)				
Drift Deposits (B3)		Thin Muck Surface (0						
Algal Mat or Crust (B4)		Other (Explain in Rei	marks)					
Iron Deposits (B5)	· · (DZ)			Geomorphic				
Inundation Visible on Aerial Ima	igery (b/)			Shallow Aqui				
Water-Stained Leaves (B9) Aquatic Fauna (B13)				FAC-Neutral	aphic Relief (D4)			
Field Observations:				I AO-Neuliai	Test (D3)			
	No 🗸	Depth (inches):						
		Depth (inches):						
		Depth (inches):		Hydrology Presen	it? Yes No			
(includes capillary fringe)	NO	Deptif (inches)	Wetiand	nyurology Fresen	tr resNo			
Describe Recorded Data (stream ga	auge, monitoring v	vell, aerial photos, pre	evious inspections), if ava	ailable:				
Remarks:								

Sampling Point: W-L12/W-L13 UP

20'	Absolute		t Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species'		Number of Dominant Species
1. Acer rubrum	15		<u>FAC</u>	That Are OBL, FACW, or FAC: 2 (A)
2. Juglans nigra	15		<u>FACU</u>	Total Number of Dominant
3				Species Across All Strata: 6 (B)
4			_	
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)
6				(A/B)
7				Prevalence Index worksheet:
<i>-</i>	30	= Total Co		Total % Cover of: Multiply by:
50% of total cover: 15		total cove	_	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')	20 /0 01	total cove		FACW species x 2 =
Acer rubrum	10	~	FAC	FAC species x 3 =
2. Fagus grandifolia	10			FACU species x 4 =
			FACU_	
3				
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6			_	
7				Hydrophytic Vegetation Indicators:
8	-	-		1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
9	20	T / 10		3 - Prevalence Index is ≤3.0 ¹
500/ affectal assume 10		= Total Co		4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 10	20% of	total cove	r:	data in Remarks or on a separate sheet)
TIEID Stratum (1 lot size)	4.5			Problematic Hydrophytic Vegetation ¹ (Explain)
1. Rosa multiflora	15		F <u>ACU</u>	
2. Polystichum acrostichoides	10		FACU_	Indicators of hydric call and watland hydrology must
3	-			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				Definitions of Four Vegetation Strata.
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
				more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	25	= Total Co	ver	of size, and woody plants less than 3.28 ft tall.
50% of total cover: 12.5	20% of	total cove	r: <u> 5 </u>	Weady vine All weady vines greater than 2.20 ft in
Woody Vine Stratum (Plot size:15')				Woody vine – All woody vines greater than 3.28 ft in height.
1				g.m
2				
3				
4		-		Hydrophytic
5				Vegetation Present? Yes No _ ✓
0		= Total Co		riesent: ies No
50% of total cover: 0		total cove	r:U	
Remarks: (Include photo numbers here or on a separate s	heet.)			

Sampling Point: W-L12/W-L13 UP

Profile Desc	ription: (Describe t	o the depth	needed to docun	ent the ir	ndicator o	r confirm	the absence	e of indicate	ors.)		
Depth	Matrix		Redox	c Features	<u> </u>						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	· <u></u>	Remark	(S	
0-2	10YR 3/3	100					SiL				
2-8	10YR 3/4	100					SiL				
8-18	10YR 4/6	100					SiL				_
								· 			
								· ——			
								<u> </u>			
											_
								· ——			
¹ Type: C=Co	oncentration, D=Depl	etion, RM=F	Reduced Matrix, MS	=Masked	Sand Gra	ins.	² Location: F	PL=Pore Lin	ing, M=Matr	ix.	
Hydric Soil	Indicators:						Indic	ators for P	roblematic	Hydric Soi	ls³:
Histosol	(A1)		Dark Surface					2 cm Muck (A10) (MLR	A 147)	
	pipedon (A2)		Polyvalue Be				148) (Coast Prairie		6)	
Black Hi			Thin Dark Su			47, 148)		(MLRA 14			
	en Sulfide (A4)		Loamy Gleye		- 2)		'	Piedmont Fl		ils (F19)	
	d Layers (A5)		Depleted Mat	. ,	0)		,	(MLRA 13		(TE40)	
	ick (A10) (LRR N) d Below Dark Surface	. (Δ11)	Redox Dark S Depleted Dar					Very Shallov Other (Expla			
	ark Surface (A12)	(411)	Redox Depre					Otrici (Expir	iiii iii itteinai	K3)	
	lucky Mineral (S1) (L	RR N,	Iron-Mangane			.RR N,					
	\ 147, 148)	•	MLRA 130		· / ·	,					
	Bleyed Matrix (S4)		Umbric Surfa	ce (F13) (I	MLRA 136	5, 122)	³ In	dicators of h	ydrophytic v	egetation a	and
Sandy R	Redox (S5)		Piedmont Flo	odplain So	oils (F19) (MLRA 14	8) w	etland hydro	ology must b	e present,	
	Matrix (S6)		Red Parent M	laterial (F2	21) (MLR	127, 147	') uı	nless disturb	ed or proble	ematic.	
Restrictive I	Layer (if observed):										
Type:			<u></u>								
Depth (inc	ches):		<u> </u>				Hydric Soi	I Present?	Yes	No	<u> </u>
Remarks:							•				

USACE FILE NO./Project Name:		Mountain Valley Pipeline			Lat.	37.953736	Lon.	-80.739892
STREAM/SITE ID AND SITE DESCR	RIPTION:					W-L12, Pipeline ROW		
(% stream slope, watershed size {a	creage}, unaltered	or impairments)						
FORM OF MITIGATION:								
DATE:	8/10/2015 WE		WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-L12	Emergent	0.0075	Emergent					
						PART III - Advanced	Mitigatio	n
						Sustainable Determination Made or		
						Advanced Mitigation (Y or N)		Y
Total Impact		0.0075						
T	PART II - U	Jnit Scores				Estimated		
Wetland C	lassification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0075					
Total Scrub-Shrub			0			\$450.00		
Total Forested			0					
Total Open Water			0					

Project/Site: MVP		City/C	ounty: Greenbrier		Sampling Date: 04/19/2015	
Applicant/Owner: MVP			,		Sampling Point: W-L12	
Investigator(s): C. Vileno, B	. Schrotenboe					
Landform (hillslope, terrace, etc					Slope (%): 0	
Subregion (LRR or MLRA): LF	RRN	Lat: 37.953719	Long: -80	.739835	Datum: NAD83	
Soil Map Unit Name: Lobdell	silt loam					
Are climatic / hydrologic conditi	ons on the site ty					
Are Vegetation . Soil	. or Hydrolog	av significantly distur	bed? Are "Normal	l Circumstances" p	resent? Yes No	
Are Vegetation, Soil				explain any answer		
-					important features, etc.	
Hydrophytic Vegetation Prese	ent? Yes	✓ No				
Hydric Soil Present?	_	✓ No_	Is the Sampled Area	V V	No	
Wetland Hydrology Present?	=		within a Wetland?	res	NO	
Cowardin Code: PEM He Information listed on this again on 07/23/2020. Pr USACE EMP Regional S	form represe	nts the data collected in	n 2015. The wetland hytic vegetation, an	d was revisited ad hydric soils w	on 10/18/2019, then vas confirmed using the	
HYDROLOGY						
Wetland Hydrology Indicato	rs:			Secondary Indicat	tors (minimum of two required)	
Primary Indicators (minimum	of one is required	d; check all that apply)		Surface Soil (
Surface Water (A1)		B14)	Sparsely Vegetated Concave Surface (B8)			
High Water Table (A2)		Hydrogen Sulfide Ode		Drainage Pat	` '	
Saturation (A3)		Oxidized Rhizosphere				
Water Marks (B1)		Presence of Reduced			Vater Table (C2)	
Sediment Deposits (B2)		Recent Iron Reductio		Crayfish Burr		
Drift Deposits (B3)		Thin Muck Surface (C			sible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)		Other (Explain in Ren	narks)	Geomorphic I	ressed Plants (D1)	
Iron Deposits (B5) Inundation Visible on Aer	ial Imagery (R7)			Shallow Aquit	` '	
✓ Water-Stained Leaves (B					phic Relief (D4)	
Aquatic Fauna (B13)	0)			FAC-Neutral		
Field Observations:						
Surface Water Present?	Yes V No.	Depth (inches):	2			
Water Table Present?			0			
Saturation Present?			0 Wetland H	Hydrology Present	t? Yes ✔ No	
(includes capillary fringe)		Deptir (inches).	- Wetland I		t: res NO	
Describe Recorded Data (stre	am gauge, monit	toring well, aerial photos, pre	vious inspections), if ava	ilable:		
Remarks:						
Nemarks.						

Samo	lina	Point:	W-L	.12

10'	Absolute		Indicator	Dominance Test worksheet:		
Tree Stratum (Plot size: 10'	% Cover			Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
1				That Ale OBL, FACW, of FAC.	_	(A)
3				Total Number of Dominant Species Across All Strata:	2	(B)
4						_ (D)
5				Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)
6						_ (//////
7				Prevalence Index worksheet:		
	0 :	= Total Co	ver	Total % Cover of:	Multiply by:	
50% of total cover:0	20% of	total cover	r: 0	OBL species x 1		
Sapling/Shrub Stratum (Plot size: 10')				FACW species x 2 FAC species x 3		
1				FACU species x 4		
2				UPL species x 5		
3				Column Totals: (A)		
4				Column rotation (74)		(5)
5				Prevalence Index = B/A = _		_
6				Hydrophytic Vegetation Indicate		
8				1 - Rapid Test for Hydrophytic	c Vegetation	
9				2 - Dominance Test is >50%		
	^	= Total Co	ver	3 - Prevalence Index is ≤3.0 ¹	1 (0	
50% of total cover:0	20% of	total cover	r: <u> </u>	4 - Morphological Adaptations data in Remarks or on a se		
Herb Stratum (Plot size: 5'				Problematic Hydrophytic Vege	. ,	
1. Juncus effusus	15		FACW_	i robiematic riyuropriyiic vego	ciation (Expia	all1)
2. Cornus amomum (saplings <3' in height)			FACW_	¹ Indicators of hydric soil and wetla	nd hydrology	must
3. Scirpus atrovirens	<u>5</u>		OBL	be present, unless disturbed or pre-		
4. Rosa multiflora			F <u>ACU</u>	Definitions of Four Vegetation S	Strata:	
5				Tree – Woody plants, excluding vi	ines, 3 in. (7.6	cm) or
6				more in diameter at breast height	(DBH), regard	lless of
7				height.		
9				Sapling/Shrub – Woody plants, e than 3 in. DBH and greater than o	xcluding vines	s, less
10				m) tall.	i equal to 3.20	511 (1
11.				Horb. All borboscus (non wood	v) planta rago	ardloog
	35	= Total Co	ver	Herb – All herbaceous (non-wood of size, and woody plants less tha		aruless
50% of total cover:17.5	20% of	total cover	r: <u>7</u>	Woody vine – All woody vines gre	aatar than 3 2	8 ft in
Woody Vine Stratum (Plot size: 15')				height.	Jaior triair 0.2	0 11 111
1						
2						
3						
4				Hydrophytic		
5		Tatal Car		Vegetation Present? Yes ✓	No	
50% of total cover: 0		= Total Co total cove	^			
Remarks: (Include photo numbers here or on a separate s		10101 00101				
- Committee of the separate of the separate of	- /					

SOIL Sampling Point: W-L12

Donth	•	ine depti	needed to docu			01 001111111	i ilic ab	osinos el maioaterei,
Depth	Matrix r (moist)	<u></u> %	Color (moist)	ox Feature: %	Type ¹	Loc ²	Text	ture Remarks
	/R 4/2	70	10YR 4/7	30	C	M	Si	
						171		-
					-			
						- ———		
					,	· · · · · · · · · · · · · · · · · · ·		
		 -	_					
-								
 -					-	·		
· ·			_			<u> </u>	2	· · · · · · · · · · · · · · · · · · ·
ype: C=Concentrat		ion, RM=F	Reduced Matrix, M	S=Masked	Sand Gr	ains.	² Locat	tion: PL=Pore Lining, M=Matrix.
ydric Soil Indicator	S:			(0-)				Indicators for Problematic Hydric Soils ³ :
_ Histosol (A1)	۸۵)		Dark Surface		(CO) (AL DA 447	4.40\	2 cm Muck (A10) (MLRA 147)
Histic Epipedon (Black Histic (A3)	A2)		Polyvalue Be Thin Dark Se				148)	Coast Prairie Redox (A16) (MLRA 147, 148)
_ Black Histic (A3) _ Hydrogen Sulfide	(Δ4)		Loamy Gley			147, 140)		Piedmont Floodplain Soils (F19)
Stratified Layers			Depleted Ma		1 2)			(MLRA 136, 147)
_ 2 cm Muck (A10)	, ,		Redox Dark		·6)			Very Shallow Dark Surface (TF12)
_ Depleted Below [A11)	Depleted Da					Other (Explain in Remarks)
_ Thick Dark Surfac		•	Redox Depr	essions (F	3)			
_ Sandy Mucky Mir	neral (S1) (LR	R N,	Iron-Mangar	ese Mass	es (F12) (LRR N,		
MLRA 147, 14			MLRA 13					-
Sandy Gleyed Ma			Umbric Surfa					³ Indicators of hydrophytic vegetation and
_ Sandy Redox (S5			Piedmont Fl					wetland hydrology must be present,
_ Stripped Matrix (S			Red Parent	Material (F	21) (MLR	A 127, 147)	unless disturbed or problematic.
estrictive Layer (if	observea):							
Type:			_				l	
Depth (inches):			<u> </u>				Hydr	ic Soil Present? Yes V No
emarks:								

Wetland Photograph Page

Wetland ID W-L12



Photograph Direction East

Date: 04/19/2015

Comments: 2015 wetland delineation.



Photograph Direction South

Date: 10/18/19

Comments: 2019 wetland delineation confirmation.



Photograph Direction North

Date: 07/23/2020

Comments:

Comments: 2020 wetland delineation confirmation.

Pho	tograph Directi	ion		
Date	۵.			

Project/Site: MVP	ject/Site: MVP City/County: Greenbrier				Sampling Date: 04/19/2015		
Applicant/Owner: MVP			,		Sampling Point: W-L12/W-L13 UF		
Investigator(s): C. Vileno, B. Sch	rotenboer, C.	Sorden _{Secti}	on. Township, Range: N				
Landform (hillslope, terrace, etc.): Va			· · · · · ·		Slope (%): 0		
Subregion (LRR or MLRA): LRRN					Datum: NAD83		
Soil Map Unit Name: Lobdell silt lo			Long		ation: None		
		41. (1. (2.)	<i>, ,</i> ,,				
Are climatic / hydrologic conditions or		-					
Are Vegetation, Soil,				al Circumstances" p	present? Yes No		
Are Vegetation, Soil,	or Hydrology	naturally problem	atic? (If needed,	explain any answe	rs in Remarks.)		
SUMMARY OF FINDINGS -	Attach site m	nap showing san	npling point location	ons, transects	, important features, etc.		
Hydrophytic Vegetation Present?	Yes	No. V					
Hydric Soil Present?	Yes		Is the Sampled Area		1/		
Wetland Hydrology Present?	Yes	,	within a Wetland?	Yes	No		
Remarks: Upland Information listed on this form on 07/23/2020.	ı represents th	e data collected i	n 2015. The upland	l was revisited o	on 10/18/2019, then again		
HYDROLOGY							
Wetland Hydrology Indicators:				Secondary Indica	tors (minimum of two required)		
Primary Indicators (minimum of one	is required; checl	k all that apply)	_	Surface Soil	Cracks (B6)		
Surface Water (A1)		True Aquatic Plants	(B14)	Sparsely Veg	getated Concave Surface (B8)		
High Water Table (A2)		Hydrogen Sulfide Od	lor (C1)	Drainage Patterns (B10)			
Saturation (A3)			es on Living Roots (C3)	Moss Trim Li	nes (B16)		
Water Marks (B1)		Presence of Reduce		Dry-Season Water Table (C2)			
Sediment Deposits (B2)		Recent Iron Reduction		Crayfish Burr			
Drift Deposits (B3)		Thin Muck Surface (0			sible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)		Other (Explain in Rei	marks)		tressed Plants (D1)		
Iron Deposits (B5)	· · (DZ)			Geomorphic			
Inundation Visible on Aerial Ima	igery (b/)			Shallow Aqui			
Water-Stained Leaves (B9) Aquatic Fauna (B13)				FAC-Neutral	aphic Relief (D4)		
Field Observations:				I AO-Neuliai	Test (D3)		
	No 🗸	Depth (inches):					
		Depth (inches):					
		Depth (inches):		Hydrology Presen	it? Yes No		
(includes capillary fringe)	NO	Deptif (inches)	Wetiand	nyurology Fresen	tr resNo		
Describe Recorded Data (stream ga	auge, monitoring v	vell, aerial photos, pre	evious inspections), if ava	ailable:			
Remarks:							

Sampling Point: W-L12/W-L13 UP

20'	Absolute		t Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species'		Number of Dominant Species
1. Acer rubrum	15		<u>FAC</u>	That Are OBL, FACW, or FAC: 2 (A)
2. Juglans nigra	15		<u>FACU</u>	Total Number of Dominant
3				Species Across All Strata: 6 (B)
4			_	
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)
6				(A/B)
7				Prevalence Index worksheet:
<i>-</i>	30	= Total Co		Total % Cover of: Multiply by:
50% of total cover: 15		total cove	_	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')	20 /0 01	total cove		FACW species x 2 =
Acer rubrum	10	~	FAC	FAC species x 3 =
2. Fagus grandifolia	10			FACU species x 4 =
			FACU_	
3				
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6			_	
7				Hydrophytic Vegetation Indicators:
8	-	-		1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
9	20	T / 10		3 - Prevalence Index is ≤3.0 ¹
500/ affectal assume 10		= Total Co		4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 10	20% of	total cove	r:	data in Remarks or on a separate sheet)
TIEID Stratum (1 lot size)	4.5			Problematic Hydrophytic Vegetation ¹ (Explain)
1. Rosa multiflora	15		F <u>ACU</u>	
2. Polystichum acrostichoides	10		FACU_	Indicators of hydric call and watland hydrology must
3	-			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				Definitions of Four Vegetation Strata.
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
				more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	25	= Total Co	ver	of size, and woody plants less than 3.28 ft tall.
50% of total cover: 12.5	20% of	total cove	r: <u> 5 </u>	Weady vine All weady vines greater than 2.20 ft in
Woody Vine Stratum (Plot size:15')				Woody vine – All woody vines greater than 3.28 ft in height.
1				g.m
2				
3				
4		-		Hydrophytic
5				Vegetation Present? Yes No _ ✓
0		= Total Co		riesent: ies No
50% of total cover: 0		total cove	r:U	
Remarks: (Include photo numbers here or on a separate s	heet.)			

Sampling Point: W-L12/W-L13 UP

Profile Desc	ription: (Describe t	o the depth	needed to docun	ent the ir	ndicator o	r confirm	the absence	e of indicate	ors.)		
Depth	Matrix		Redox	c Features	<u> </u>						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	· <u></u>	Remark	(S	
0-2	10YR 3/3	100					SiL				
2-8	10YR 3/4	100					SiL				
8-18	10YR 4/6	100					SiL				_
								· 			
								· ——			
								<u> </u>			
											_
								· ——			
¹ Type: C=Co	oncentration, D=Depl	etion, RM=F	Reduced Matrix, MS	=Masked	Sand Gra	ins.	² Location: F	PL=Pore Lin	ing, M=Matr	ix.	
Hydric Soil	Indicators:						Indic	ators for P	roblematic	Hydric Soi	ls³:
Histosol	(A1)		Dark Surface					2 cm Muck (A10) (MLR	A 147)	
	pipedon (A2)		Polyvalue Be				148) (Coast Prairie		6)	
Black Hi			Thin Dark Su			47, 148)		(MLRA 14			
	en Sulfide (A4)		Loamy Gleye		- 2)		'	Piedmont Fl		ils (F19)	
	d Layers (A5)		Depleted Mat	. ,	0)		,	(MLRA 13		(TE40)	
	ick (A10) (LRR N) d Below Dark Surface	(Δ11)	Redox Dark S Depleted Dar					Very Shallov Other (Expla			
	ark Surface (A12)	(411)	Redox Depre					Otrici (Expir	iiii iii itteinai	K3)	
	lucky Mineral (S1) (L	RR N,	Iron-Mangane			.RR N,					
	\ 147, 148)	•	MLRA 130		· / ·	,					
	Bleyed Matrix (S4)		Umbric Surfa	ce (F13) (I	MLRA 136	5, 122)	³ In	dicators of h	ydrophytic v	egetation a	and
Sandy R	Redox (S5)		Piedmont Flo	odplain So	oils (F19) (MLRA 14	8) w	etland hydro	ology must b	e present,	
	Matrix (S6)		Red Parent M	laterial (F2	21) (MLR	127, 147	') uı	nless disturb	ed or proble	ematic.	
Restrictive I	Layer (if observed):										
Type:			<u></u>								
Depth (inc	ches):		<u> </u>				Hydric Soi	I Present?	Yes	No	<u> </u>
Remarks:							•				

USACE FILE NO./Project Name:		Mountain	Valley Pipeline	COORDINATES: Lat. 37.949563 Lon80.74			-80.742715	
STREAM/SITE ID AND SITE DESCR						W-L11 Pipeline ROW		
(% stream slope, watershed size {a	creage}, unaltered	l or impairments)						
FORM OF MITIGATION:								
DATE:	8/10	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-L11	Emergent	0.0194	Emergent					
				_				
					ĺ	PART III - Advanced	Mitigatio	on.
				-		Sustainable Determination Made on		,
						Advanced Mitigation		Υ
						(Y or N)		
Total Impact		0.0194			r			
PART II - Unit Scores						Estimated		
	lassification		Replacement Unit(s)			ILF Costs		
Total Emergent Total Scrub-Shrub			0.0194	-		\$1,164.00		
Total Scrub-Shrub Total Forested			0	-	ļ	φ1,164.00		
				=				
Total Open Water			0					

Project/Site: MVP	county: Greenbrier	Sampling Date: 04/18/2015				
Project/Site: MVP City/County: Greenbrier Applicant/Owner: MVP			Sampling Point: W-L11			
Investigator(s): C. Vileno, B. Schrote	nboer, C. Sorden Section		<u> </u>			
Landform (hillslope, terrace, etc.): Toe of			Slone (%): 0			
Subregion (LRR or MLRA): LRRN		Long: <u>-80.742722</u>				
Soil Map Unit Name: Kaymine-rock ou						
Are climatic / hydrologic conditions on the						
Are Vegetation, Soil, or Hy			" present? Yes No			
Are Vegetation, Soil, or Hy	drology naturally problema	atic? (If needed, explain any answ	vers in Remarks.)			
SUMMARY OF FINDINGS – Atta	ach site map showing sam	npling point locations, transec	ts, important features, etc.			
Hydrophytic Vegetation Present?	Yes No					
Hydric Soil Present?	Yes V No	Is the Sampled Area within a Wetland? Yes	, Na			
Wetland Hydrology Present?	Yes No	within a Wetland? Yes	No			
Remarks:						
Cowardin Code: PEM						
HGM: Riverine						
WT: RPWWD						
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indi	cators (minimum of two required)			
Primary Indicators (minimum of one is re			oil Cracks (B6)			
Surface Water (A1)	True Aquatic Plants (egetated Concave Surface (B8)			
High Water Table (A2)	Hydrogen Sulfide Odd		Patterns (B10)			
Saturation (A3)	Oxidized Knizosphere Presence of Reduced		Lines (B16) n Water Table (C2)			
Water Marks (B1) Sediment Deposits (B2)	Recent Iron Reductio		urrows (C8)			
Octamicni Deposits (B2) Drift Deposits (B3)	Thin Muck Surface (C		Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)	Other (Explain in Ren		Stressed Plants (D1)			
Iron Deposits (B5)		· — ·	ic Position (D2)			
Inundation Visible on Aerial Imagery	(B7)		quitard (D3)			
Water-Stained Leaves (B9)			Microtopographic Relief (D4)			
Aquatic Fauna (B13)		✓ FAC-Neutr	al Test (D5)			
Field Observations:						
	No Depth (inches):	3				
	No Depth (inches):	0	_			
	No Depth (inches):	0 Wetland Hydrology Pres	ent? Yes Vo			
(includes capillary fringe) Describe Recorded Data (stream gauge,	monitoring well, aerial photos, pre	evious inspections), if available:				
Remarks:						

Sampling	Point: W-I	_11

20'	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover Species? Status	Number of Dominant Species
1		That Are OBL, FACW, or FAC: 2 (A)
2		Total Number of Deminent
3		Total Number of Dominant Species Across All Strata: 2 (B)
4		Openies / toross / tir etrata.
		Percent of Dominant Species
5		That Are OBL, FACW, or FAC:100 (A/B)
6		Prevalence Index worksheet:
7		
	0 = Total Cover	Total % Cover of: Multiply by:
50% of total cover: 0	20% of total cover:0	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')		FACW species x 2 =
1		FAC species x 3 =
		FACU species x 4 =
2		UPL species x 5 =
3		
4		Column Totals: (A) (B)
5		Prevalence Index = B/A =
6		Hydrophytic Vegetation Indicators:
7		
8		1 - Rapid Test for Hydrophytic Vegetation
		✓ 2 - Dominance Test is >50%
9	^	3 - Prevalence Index is ≤3.0 ¹
500/ //		4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 0	20% of total cover: 0	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')	_	Problematic Hydrophytic Vegetation ¹ (Explain)
_{1.} Packera aurea		1 Tobiernatic Trydrophytic Vegetation (Explain)
2. Impatiens capensis	5 / FACW	4
3		¹ Indicators of hydric soil and wetland hydrology must
4		be present, unless disturbed or problematic.
		Definitions of Four Vegetation Strata:
5		Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6		more in diameter at breast height (DBH), regardless of
7		height.
8		Conline/Chrush Woody plants evaluating vines less
9		Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1
10		m) tall.
11.		
· · · · · · · · · · · · · · · · · · ·	10 = Total Cover	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
500/ -{		of size, and woody plants less than 3.26 it tall.
50% of total cover: 5	20% of total cover:2	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size:15)		height.
1		
2		
3		
4		
		Hydrophytic
5		Vegetation Present? Yes ✓ No
•	0 = Total Cover	rieseiit: ies NO
50% of total cover:0	20% of total cover:0	
Remarks: (Include photo numbers here or on a separate s	sheet.)	

Sampling Point: W-L11

Depth	Matrix	-	needed to document the indicator or c Redox Features		
(inches)	Color (moist)	%	Color (moist) % Type ¹ L	oc ² Texture	Remarks
0-6	10YR 2/1	100		MuLS	Mucky loamy sand
6-12	2.5Y 2.5/1	100		SL	Sandy Loam
		· — — –			
		letion, RM=R	educed Matrix, MS=Masked Sand Grains		L=Pore Lining, M=Matrix.
Hydric Soil					ators for Problematic Hydric Soils ³ :
Histosol Histic Ep	(A1) pipedon (A2)		Dark Surface (S7)Polyvalue Below Surface (S8) (MLR)		cm Muck (A10) (MLRA 147) coast Prairie Redox (A16)
Black Hi	, ,		Thin Dark Surface (S9) (MLRA 147,		(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleyed Matrix (F2)	P	liedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Matrix (F3)		(MLRA 136, 147)
	ick (A10) (LRR N) d Below Dark Surfac	o (A11)	Redox Dark Surface (F6)Depleted Dark Surface (F7)		ery Shallow Dark Surface (TF12) Other (Explain in Remarks)
	ark Surface (A12)	e (ATT)	Redox Depressions (F8)		oner (Explain in Remarks)
	lucky Mineral (S1) (I	RR N	Iron-Manganese Masses (F12) (LRF	! N.	
	147, 148)	-1111 14,	MLRA 136)	111,	
	Gleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 1	22) 3Ind	icators of hydrophytic vegetation and
	Redox (S5)		Piedmont Floodplain Soils (F19) (ML		etland hydrology must be present,
	Matrix (S6)		Red Parent Material (F21) (MLRA 12		less disturbed or problematic.
	Layer (if observed):	<u> </u>			
Туре:			<u>_</u>		
Depth (in	ches):		_	Hydric Soil	Present? Yes No
Remarks:					



Photograph Direction WNW

Comments:			

Project/Site: MVP	Sampling Date: 04/18/2015					
Applicant/Owner: MVP	City/Count		Sampling Point: W-L11 UP			
Investigator(s): C. Vileno, B. Schrotenboe	r, C. Sorden Section, T		<u> </u>			
Landform (hillslope, terrace, etc.): Toe of Slop		-	Slope (%): 0			
Subregion (LRR or MLRA): LRRN		Long: -80.742578				
Soil Map Unit Name: Kaymine-rock outcrop						
Are climatic / hydrologic conditions on the site type						
Are Vegetation, Soil, or Hydrolog						
Are Vegetation, Soil, or Hydrolog						
SUMMARY OF FINDINGS – Attach s						
	<u> </u>	ng pomi rodanono, nanooo	to, important routaros, otor			
	No V	he Sampled Area				
	No vit	hin a Wetland? Yes	No			
Wetland Hydrology Present? Yes _ Remarks:	NO					
Upland						
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indi	cators (minimum of two required)			
Primary Indicators (minimum of one is required	; check all that apply)	Surface So	oil Cracks (B6)			
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely V	Sparsely Vegetated Concave Surface (B8)			
High Water Table (A2)	Hydrogen Sulfide Odor (C	C1) Drainage F	Patterns (B10)			
Saturation (A3)	Oxidized Rhizospheres or	n Living Roots (C3) Moss Trim	Lines (B16)			
Water Marks (B1)	Presence of Reduced Iron	n (C4) Dry-Seaso	Dry-Season Water Table (C2)			
Sediment Deposits (B2)	Recent Iron Reduction in		Soils (C6) Crayfish Burrows (C8)			
Drift Deposits (B3)	Thin Muck Surface (C7)		Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)	Other (Explain in Remark		Stressed Plants (D1)			
Iron Deposits (B5)		 '	ic Position (D2)			
Inundation Visible on Aerial Imagery (B7)			quitard (D3)			
Water-Stained Leaves (B9)			graphic Relief (D4)			
Aquatic Fauna (B13)		FAC-Neutr	rai Test (D5)			
Field Observations:	Depth (inches):					
	Depth (inches):					
Saturation Present? Yes No (includes capillary fringe)	Depth (inches):	Wetland Hydrology Pres	ent? Yes No			
Describe Recorded Data (stream gauge, monitor	oring well, aerial photos, previou	s inspections), if available:				
Remarks:						
Remarks.						

Sampling	Point:	W-I	11	UP
Sambilliu	r on i.	** -		\circ

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 30')		Species?	Status	Number of Dominant Species
1 Acer rubrum	10	V	FAC	That Are OBL, FACW, or FAC:3 (A)
2. Liriodendron tulipifera	5			That the OBE, 1710W, 011710.
	5		FACU_	Total Number of Dominant
3. Quercus rubra			FACU_	Species Across All Strata: 7 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 42 (A/B)
6				, , ,
7.				Prevalence Index worksheet:
·	20	Tatal Cau		Total % Cover of: Multiply by:
500/ - 11-1-1-1 10		= Total Cov	-	OBL species x 1 =
50% of total cover:10	20% of	total cover:		
Sapling/Shrub Stratum (Plot size: 15'	_			FACW species x 2 =
1. Acer rubrum	5		FAC	FAC species x 3 =
2. Fagus grandifolia	5	~	FACU	FACU species x 4 =
3				UPL species x 5 =
				Column Totals: (A) (B)
4				(1)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				
8				1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
9	10			3 - Prevalence Index is ≤3.0 ¹
-		= Total Cov	_	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 5	20% of	total cover:	2	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')				
1. Polystichum acrostichoides	5		FACU_	Problematic Hydrophytic Vegetation ¹ (Explain)
2 Impatiens capensis	5	V	FACW	
		-	171011	¹ Indicators of hydric soil and wetland hydrology must
3				be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				_ ,,, , , , , , , , , , , , , , , , , ,
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7				more in diameter at breast height (DBH), regardless of height.
				g.m
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	10	= Total Cov	er	of size, and woody plants less than 3.28 ft tall.
50% of total cover: 5		total cover:	_	
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines greater than 3.28 ft in
				height.
1				
2				
3				
4				Hydrophytic
5				Vegetation
	0	= Total Cov		Present? Yes No
50% of total cover: 0		total cover:	_	
Remarks: (Include photo numbers here or on a separate sl		total cover.		
Tremanes. (Include photo numbers here of on a separate si	noon,			

Sampling Point: W-L11 UP

Profile Desc	ription: (Describe t	o the depth	needed to docum	nent the i	ndicator	or confirm	the absence	of indicators.)	
Depth	Matrix		Redo	x Features	3	. 3			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks	
0-17	10YR 2/1	100					Gr Coarse S	Coal parent m	aterial
									_
									_
									_
¹Type: C=Cd	oncentration, D=Depl	etion RM-R	educed Matrix MS	S-Masked	Sand Gra	ains	² Location: P	L=Pore Lining, M=Matrix.	
Hydric Soil		Cuon, rawi–ra	caacca Matrix, Mc	J-IVIASKCU	Cana Cit			ators for Problematic Hy	dric Soils ³ :
Histosol			Dark Surface	(\$7)				cm Muck (A10) (MLRA 1 4	
	pipedon (A2)		Polyvalue Be	. ,	ce (S8) (N	ILRA 147.		Coast Prairie Redox (A16)	•••
Black Hi			Thin Dark Su				=	(MLRA 147, 148)	
	n Sulfide (A4)		Loamy Gleye			, -,	Р	riedmont Floodplain Soils ((F19)
	d Layers (A5)		Depleted Mat		,			(MLRA 136, 147)	` ,
2 cm Mu	ick (A10) (LRR N)		Redox Dark S	Surface (F	6)		V	ery Shallow Dark Surface	(TF12)
	d Below Dark Surface	e (A11)	Depleted Dar				c	other (Explain in Remarks)	
	ark Surface (A12)		Redox Depre						
	lucky Mineral (S1) (L	RR N,	Iron-Mangan		es (F12) (I	LRR N,			
	A 147, 148)		MLRA 13				3		
	Sleyed Matrix (S4)		Umbric Surfa					icators of hydrophytic veg	
	ledox (S5)		Piedmont Flo					etland hydrology must be p	
	Matrix (S6) _ayer (if observed):		Red Parent N	nateriai (F.	21) (WLK	A 127, 147	r) un	less disturbed or problema	auc.
Type: Be									
			_					D 40 W	🗸
	ches): <u>17</u>		_				Hydric Soil	Present? Yes	No
Remarks:									
Dark color	of soil is due to tl	ne shale/c	oal parent mat	erial.					

USACE FILE NO./Project Name:		Mountain	Valley Pipeline	COORDINATES:	Lat.	37.938675	Lon.	-80.746774
STREAM/SITE ID AND SITE DESCR	RIPTION:					W-L4, Pipeline ROW		
(% stream slope, watershed size {a	creage}, unaltered	l or impairments)						
FORM OF MITIGATION:								
DATE:	8/10	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-L4	Emergent	0.0404	Emergent					
						PART III - Advanced	Mitigatio	on
						Sustainable Determination Made on Advanced Mitigation (Y or N)		Υ
					'		•	
Total Impact		0.0404			·			
		Unit Scores				Estimated		
	lassification		Replacement Unit(s)			ILF Costs		
Total Emergent Total Scrub-Shrub			0.0404	-		\$2.424.00		
Total Forested			0	-	ļ	\$2,424.00		
Total Open Water			0	-				
rotal Open water			U	1				

Project/Site: MVP	City/County: Greenb	rier	Sampling Date: 04/17/2015
Applicant/Owner: MVP			_ Sampling Point: W-L4
Investigator(s): C. Vileno, B. Schrotenboer, C. Sc	orden Section, Township, Ra		
Landform (hillslope, terrace, etc.): Hillslope		=	Slope (%): 3-8
Subregion (LRR or MLRA): LRRN Lat: 3			
Soil Map Unit Name: Gilpin channery silt loam, 3 t			
Are climatic / hydrologic conditions on the site typical for t	his time of year? Yes No _	(If no, explain in Re	emarks.)
Are Vegetation, Soil, or Hydrology	significantly disturbed? Are	"Normal Circumstances" pr	resent? Yes No
Are Vegetation, Soil, or Hydrology			
SUMMARY OF FINDINGS – Attach site map			
Hydric Soil Present? Yes	No Is the Sampled within a Wetlan		_ No
Cowardin Code: PEM; HGM: Slope; WT: RP	WWN		
The wetland was revisited on 10/18/2019. Preconfirmed using the USACE EMP Regional S	sence of wetland hydrology,		on, and hydric soils was
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicat	ors (minimum of two required)
✓ High Water Table (A2)	ue Aquatic Plants (B14) rdrogen Sulfide Odor (C1) rdidized Rhizospheres on Living Roof esence of Reduced Iron (C4) ecent Iron Reduction in Tilled Soils (in Muck Surface (C7) her (Explain in Remarks) repth (inches): 5 repth (inches): 0 repth (inches): 0	Drainage Patt ts (C3) Moss Trim Lir Dry-Season V C6) Crayfish Burro Saturation Vis Stunted or Str Geomorphic F Shallow Aquit Microtopograp FAC-Neutral T	etated Concave Surface (B8) erns (B10) hes (B16) Vater Table (C2) hws (C8) hible on Aerial Imagery (C9) ressed Plants (D1) Position (D2) ard (D3) hic Relief (D4) Fest (D5)

Sampling Poi	nt·W-L4
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15!	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 15')	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC:3 (A)
2				Total Number of Descionat
3				Total Number of Dominant Species Across All Strata: 3 (B)
4				Species Advector All Strata.
			· ——	Percent of Dominant Species
5				That Are OBL, FACW, or FAC:100 (A/B)
6				Prevalence Index worksheet:
7				
		= Total Cov		Total % Cover of: Multiply by:
50% of total cover: 0	20% of	total cover	. 0	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2 =
1				FAC species x 3 =
				FACU species x 4 =
2				UPL species x 5 =
3				
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6			_	
7				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
8		-		✓ 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
		= Total Cov		4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover:0	20% of	total cover	:0	
Herb Stratum (Plot size: 5'				data in Remarks or on a separate sheet)
1. Leersia oryzoides	25	✓	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
2 Juncus effusus	10		FACW	
3. Impatiens capensis	10			¹ Indicators of hydric soil and wetland hydrology must
4 Carex lurida	5		F <u>ACW</u>	be present, unless disturbed or problematic.
·· <u> </u>			OBL	Definitions of Four Vegetation Strata:
5				T W
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8				
				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10			· 	m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	50	= Total Cov	er er	of size, and woody plants less than 3.28 ft tall.
50% of total cover: 25	20% of	total cover	10	Manda de la Contra
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines greater than 3.28 ft in height.
1				neight.
2			·	
3				
4				Hydrophytic
			· 	
5				Vegetation
5		= Total Cov	/er	• • •
	0		_	Vegetation
50% of total cover:0	0 20% of	= Total Cover	_	Vegetation
	0 20% of		_	Vegetation
50% of total cover:0	0 20% of		_	Vegetation
50% of total cover:0	0 20% of		_	Vegetation
50% of total cover:0	0 20% of		_	Vegetation
50% of total cover:0	0 20% of		_	Vegetation
50% of total cover:0	0 20% of		_	Vegetation
50% of total cover:0	0 20% of		_	Vegetation
50% of total cover:0	0 20% of		_	Vegetation

SOIL Sampling Point: W-L4

Profile Desc	ription: (Describe t	o the dep	th needed to docur	nent the i	indicator	or confirn	n the absence	e of indicators.)
Depth	Matrix	-		x Feature				,
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	Remarks
0-2	2.5Y 4/2	90	7.5Y 4/6	10	С	M	SiL	
2-10	5Y 5/1	70	7.5Y 4/6	30	С	M	SiL	
10-17	5Y 6/2	50	10YR 5/8	50	С	M	SL	
					<u> </u>	141		
								_
					-		-	
					-		-	
							-	-
	oncentration, D=Depl	etion, RM=	Reduced Matrix, MS	S=Masked	d Sand Gr	ains.		PL=Pore Lining, M=Matrix.
Hydric Soil I			5 10 ((07)				cators for Problematic Hydric Soils ³ :
Histosol	• •		Dark Surface Polyvalue Be		00 (89) (8	II DA 147		2 cm Muck (A10) (MLRA 147)
Black His	pipedon (A2)		Polyvalue Be				140)	Coast Prairie Redox (A16) (MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye			47, 140)		Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Ma		. –,			(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark		- 6)			Very Shallow Dark Surface (TF12)
	Below Dark Surface	e (A11)	Depleted Dar					Other (Explain in Remarks)
	ark Surface (A12)		Redox Depre					
	lucky Mineral (S1) (L	RR N,	Iron-Mangan		es (F12) (LRR N,		
	147, 148) sleyed Matrix (S4)		MLRA 13 Umbric Surfa		(MI DA 12	6 122\	31.	ndicators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo					vetland hydrology must be present,
-	Matrix (S6)		Red Parent N					unless disturbed or problematic.
	ayer (if observed):				, ,		<u>, </u>	, , , , , , , , , , , , , , , , , , ,
Type:								
Depth (inc	ches):						Hydric So	oil Present? Yes 🗸 No
Remarks:							1 -	



Photograph Direction NW

Date: 04/17/2015

Comments: 2015 wetland delineation.



Photograph Direction SE

Date: 10/18/19

Project/Site: MVP		City/County: Gree	enbrier	Sampling Date: 04/17/2015				
Applicant/Owner: MVP			State: WV	Sampling Point: W-L3/W-L4 UP				
Investigator(s): C. Vileno, B. Schr	otenboer, C. Sorden	Section, Township,		<u> </u>				
Landform (hillslope, terrace, etc.): Hill		·		Slone (%): 5-10				
Subregion (LRR or MLRA): LRRN			Long: <u>-80.747236</u>					
Soil Map Unit Name: Gilpin channe								
•								
Are climatic / hydrologic conditions on		-		•				
Are Vegetation, Soil, or	r Hydrology signifi	cantly disturbed? A	are "Normal Circumstances	s" present? Yes No				
Are Vegetation, Soil, or	r Hydrologynatura	ally problematic? (I	f needed, explain any ans	wers in Remarks.)				
SUMMARY OF FINDINGS – A	Attach site map sho	wing sampling poir	nt locations, transec	ts, important features, etc.				
		/						
Hydrophytic Vegetation Present?	Yes No Yes No	./ Is the Samp	oled Area					
Hydric Soil Present? Wetland Hydrology Present?	Yes No	within a We	tland? Yes	No <u> </u>				
Remarks:	NO	<u> </u>						
Upland								
Spiana								
HYDROLOGY								
Wetland Hydrology Indicators:			Secondary Inc	licators (minimum of two required)				
Primary Indicators (minimum of one i	s required; check all that a	ipply)	Surface S	oil Cracks (B6)				
Surface Water (A1)		atic Plants (B14)		Sparsely Vegetated Concave Surface (B8)				
High Water Table (A2)		n Sulfide Odor (C1)	-	Patterns (B10)				
Saturation (A3)		Rhizospheres on Living R		n Lines (B16)				
Water Marks (B1)		e of Reduced Iron (C4)	-	on Water Table (C2)				
Sediment Deposits (B2)		on Reduction in Tilled Soi		Burrows (C8)				
Drift Deposits (B3)		ck Surface (C7)		N Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	Other (E)	xplain in Remarks)	·	r Stressed Plants (D1)				
Iron Deposits (B5) Inundation Visible on Aerial Imag	any (R7)		· ·	nic Position (D2) quitard (D3)				
Water-Stained Leaves (B9)	jery (b7)			graphic Relief (D4)				
Aquatic Fauna (B13)			FAC-Neut	• •				
Field Observations:			1710 11001	and rest (De)				
	No <u>√</u> Depth (i	nches):						
	No ✓ Depth (ii							
	No ✓ Depth (ii		Wetland Hydrology Pres	sent? Yes No ✓				
(includes capillary fringe)	•		5 05	No				
Describe Recorded Data (stream gau	ige, monitoring well, aerial	l photos, previous inspecti	ons), if available:					
Remarks:								
Nomano.								

30'	Absolute Dominant Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:30')	% Cover Species? Status	Number of Dominant Species
1		That Are OBL, FACW, or FAC:0 (A)
2		Total Number of Dominant
3		Species Across All Strata: 2 (B)
4		
5		Percent of Dominant Species That Are OBL FACW or FAC: (A/B)
		That Are OBL, FACW, or FAC: (A/B)
7		Prevalence Index worksheet:
1	0 = Total Cover	Total % Cover of: Multiply by:
500/ ()		OBL species x 1 =
451	20% of total cover: 0	FACW species x 2 =
Sapling/Shrub Stratum (Plot size: 15		
1		FAC species x 3 =
2		FACU species x 4 =
3		UPL species x 5 =
4		Column Totals: (A) (B)
5		
6		Prevalence Index = B/A =
		Hydrophytic Vegetation Indicators:
7		1 - Rapid Test for Hydrophytic Vegetation
8		2 - Dominance Test is >50%
9		3 - Prevalence Index is ≤3.0 ¹
	= Total Cover	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 0	20% of total cover:0	data in Remarks or on a separate sheet)
TIEID Stratum (Flot Size)	40	Problematic Hydrophytic Vegetation ¹ (Explain)
1. Dactylis glomerata		1 Toblematic Trydrophytic Vegetation (Explain)
2. Phleum pratense	30 √ F <u>ACU</u>	The disease of books and to deal and to de
3. Taraxacum officinale	10	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4		Definitions of Four Vegetation Strata:
5		Definitions of Four Vegetation Strata.
6		Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
		more in diameter at breast height (DBH), regardless of
7		height.
8		Sapling/Shrub – Woody plants, excluding vines, less
9		than 3 in. DBH and greater than or equal to 3.28 ft (1
10		m) tall.
11		Herb – All herbaceous (non-woody) plants, regardless
	= Total Cover	of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>40</u>	20% of total cover: 16	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size:15')		height.
1		
2		
3		
4		
5		Hydrophytic Vegetation
<u> </u>	0 = Total Cover	Present? Yes No
50% of total cover: 0	20% of total cover: 0	
Remarks: (Include photo numbers here or on a separate s	_	
Remarks: (include prioto numbers here of on a separate s	neet.)	

Sampling Point: W-L3/W-L4 UP

Profile Desc	ription: (Describe t	o the dept	h needed to docum	ent the ir	ndicator o	or confirm	the absence	of indicato	rs.)		
Depth	Matrix		Redox	(Features	i						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>		Remark	S	
0-2	2.5Y 3/2	_100_					SL				
2-12	2.5Y 4/2	60					SL				
	2.5Y 5/4	40					SL				
12-20	2.5Y 4/6	95	10YR 5/8	5			CL				
								-			
¹Type: C=Co	oncentration, D=Depl	etion, RM=	Reduced Matrix, MS	=Masked	Sand Gra	ins.	² Location: PI	L=Pore Lini	ng, M=Matri	х.	
Hydric Soil I								ators for Pr			oils³:
Histosol	(A1)		Dark Surface	(S7)			2	cm Muck (A	\10) (MLRA	147)	
	ipedon (A2)		Polyvalue Bel				148) C	oast Prairie		6)	
Black His			Thin Dark Sur			47, 148)		(MLRA 14			
	n Sulfide (A4)		Loamy Gleye		-2)		P	iedmont Flo		ls (F19)	
	l Layers (A5) ck (A10) (LRR N)		Depleted Mate Redox Dark S		6)		V	(MLRA 130 ery Shallow		co (TE12)	
	Below Dark Surface	e (A11)	Depleted Dark					ther (Explai			
	ırk Surface (A12)	(Redox Depres				 -	(,	
Sandy M	lucky Mineral (S1) (L	RR N,	Iron-Mangane			₋RR N,					
	147, 148)		MLRA 136								
	leyed Matrix (S4)		Umbric Surfac					icators of hy			
-	edox (S5)		Piedmont Flor	-				tland hydrol			
	Matrix (S6) ayer (if observed):		Red Parent M	iateriai (F	21) (WLR)	4 127, 147	r) uni	less disturbe	ea or proble	matic.	
	ayer (ii observed).										
Type:	:hes):						Hydric Soil	Drocont?	Yes	No _	1
Remarks:	,nes)						riyuric 30ii	rieseii:	165	NO_	
Remarks.											

Mountain Valley Pipeline			COORDINATES:	Lat.	37.938326	Lon.	-80.746878
IPTION:				,	W-L2, Pipeline ROW/TEMP AR		
creage}, unaltered	l or impairments)						
8/10	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
PART I - Wet	land Indicators						
Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
Emergent	0.0393	Emergent					
							on
					Sustainable Determination Made on Advanced Mitigation (Y or N)		Y
	0.0393						
	Unit Scores						
assification					ILF Costs		
					\$2.358.00		
		-	-		φ2,356.00		
		-					
	PART I - Wet Impact Wetland Classification Emergent	RIPTION: acreage}, unaltered or impairments) 8/10/2015 PART I - Wetland Indicators Impact Wetland Classification Emergent 0.0393 PART II - Unit Scores	RIPTION: acreage}, unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Emergent 0.0393 Emergent 0.0393 PART II - Unit Scores	RIPTION: Increage}, unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Impacts Wetland (acreage) Wetland Classification Emergent 0.0393 Emergent 0.0393 PART II - Unit Scores Iassification Replacement Unit(s) 0 0 0	RIPTION: Increage}, unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland Classification Emergent 0.0393 Emergent	### PART III - Advanced	BPTION: Creage), unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Impacts (acreage) Wetland Classification Emergent 0.0393 Emergent Emergent 0.0393 Emergent O.0393 Emergent O.0393 Emergent Sustainable Determination Made on Advanced Mitigation (Y or N) PART II - Int Scores Replacement Unit(s) 0.0393 Estimated ILF Costs \$2,358.00

Project/Site: MVP		City/C	County: Greenbrier	Sampling Date: 04/17/2015				
Applicant/Owner: MVP		•	,	State: WV	Sampling Point: W-L2			
Investigator(s): C. Vileno, B. S.	chrotenboer,							
Landform (hillslope, terrace, etc.):					Slope (%): <u>5-15</u>			
Subregion (LRR or MLRA): LRR	N	Lat: 37.938586	Long: -80	.746058	NAD 83			
Soil Map Unit Name: Gilpin cha								
Are climatic / hydrologic conditions	s on the site typi	ical for this time of year?	∕es _ ✓ No	(If no, explain in R	emarks.)			
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							
Hydric Soil Present?		No	Is the Sampled Area	Yes 🗸	M -			
Wetland Hydrology Present?	Yes		within a Wetland?	Yes	No			
Remarks:								
Cowardin Code: PEM								
HGM: Riverine								
WT: RPWWD								
Located below dam wall.								
HYDROLOGY								
Wetland Hydrology Indicators				Secondary Indica	ators (minimum of two required)			
Primary Indicators (minimum of	one is required;	check all that apply)		Surface Soil Cracks (B6)				
Surface Water (A1)		True Aquatic Plants (Sparsely Vegetated Concave Surface (B8)				
High Water Table (A2)	Hydrogen Sulfide Od		Drainage Patterns (B10)					
✓ Saturation (A3)	Oxidized Rhizospher	Oxidized Rhizospheres on Living Roots (C3) Moss Trim Lines (B16)						
Water Marks (B1)	Presence of Reduce	d Iron (C4)	Dry-Season Water Table (C2)					
Sediment Deposits (B2)	Recent Iron Reduction	on in Tilled Soils (C6)	Crayfish Burrows (C8)					
Drift Deposits (B3)	Thin Muck Surface (0	C7)	Saturation Visible on Aerial Imagery (C9)					
Algal Mat or Crust (B4) Other (Explain in Remarks)				Stunted or Stressed Plants (D1)				
Iron Deposits (B5)				✓ Geomorphic Position (D2)				
Inundation Visible on Aerial	Imagery (B7)		Shallow Aquitard (D3)					
✓ Water-Stained Leaves (B9)				Microtopographic Relief (D4)				
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)			
Field Observations:	. 4		_					
		Depth (inches):	1					
		Depth (inches):	0					
	′es No _	Depth (inches):	0 Wetland H	Hydrology Present? Yes No				
(includes capillary fringe) Describe Recorded Data (stream	n gauge, monitor	ring well, aerial photos, pre	evious inspections), if ava	ilable:				
,			, ,,					
Remarks:								
Fed by pond.								

Sampling Point: W-L2

	Absolute	Dominant	Indicator	Dominance Test worksheet:			
Tree Stratum (Plot size: 15')		Species?		Number of Dominant Species			
1 Acer rubrum	5	/	FAC	That Are OBL, FACW, or FAC: 6 (A)			
		-		That / He OBE, 1 / NOW, 01 1 / NO (//)			
2				Total Number of Dominant _			
3				Species Across All Strata:7 (B)			
4				D			
5				Percent of Dominant Species That Are OBL, FACW, or FAC:86 (A/B)			
				That Ale OBL, FACW, OF FAC. (A/B)			
6	-	-		Prevalence Index worksheet:			
7		-		Total % Cover of: Multiply by:			
		= Total Cov					
50% of total cover: 2.5	20% of	total cover	1	OBL species x 1 =			
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2 =			
1. Acer rubrum	5	✓	FAC	FAC species x 3 =			
2 Betula lenta	5		FACU	FACU species x 4 =			
			1 <u>ACU</u>	UPL species x 5 =			
3	-	-					
4				Column Totals: (A) (B)			
5				Drawalance lades D/A			
6			· · · · · · · · · · · · · · · · · · ·	Prevalence Index = B/A =			
				Hydrophytic Vegetation Indicators:			
7		-		1 - Rapid Test for Hydrophytic Vegetation			
8		-		✓ 2 - Dominance Test is >50%			
9				3 - Prevalence Index is ≤3.0 ¹			
	10	= Total Cov	er				
50% of total cover:5		total cover	_	4 - Morphological Adaptations ¹ (Provide supporting			
Herb Stratum (Plot size: 5')				data in Remarks or on a separate sheet)			
Tiero Stratum (Flot Size)	25	./	ODI	Problematic Hydrophytic Vegetation ¹ (Explain)			
1. Leersia oryzoides	-		OBL				
2. Impatiens capensis	15		FACW_	11. Protection of books and an about the date of books and			
3. Packera aurea	15	✓	FACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
4. Phalaris arundinacea	15		FACW				
5. Juncus effusus	10			Definitions of Four Vegetation Strata:			
		-	F <u>ACW</u>	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or			
6. Scirpus atrovirens	5	-	<u>OBL</u>	more in diameter at breast height (DBH), regardless of			
7				height.			
8							
9				Sapling/Shrub – Woody plants, excluding vines, less			
		-		than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.			
10		-		ini) taii.			
11				Herb – All herbaceous (non-woody) plants, regardless			
		= Total Cov		of size, and woody plants less than 3.28 ft tall.			
50% of total cover: 42.5	20% of	total cover	<u>. 17 </u>	W 1 1 000 61			
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines greater than 3.28 ft in height.			
·				neight.			
1		-					
2		-					
3							
4				Hydrophytic			
5.				Vegetation			
	0	= Total Cov	or	Present? Yes V No			
50% of total cover: 0		total cover					
		total cover	<u> </u>				
Remarks: (Include photo numbers here or on a separate s	heet.)						

Sampling Point: W-L2

Profile Description: (Describe to the de Depth Matrix			Redo		,				
(inches)	Color (moist)	%	Color (moist)	<u>%</u> <u>Typ</u>	e ¹ Loc ²	<u>Texture</u>		Remarks	
0-5	Gley 10Y 4/1	100				SL			
5-10	2.5Y 4/2	95	2.5Y 5/6	5 <u>C</u>	<u>M</u>	SL		Fine gravel	5%
						·			
	oncentration, D=Depl	etion, RM=	=Reduced Matrix, MS	S=Masked Sanc	l Grains.			ing, M=Matrix.	
Hydric Soil	Indicators:					Indica	itors for Pi	roblematic Hy	dric Soils ³ :
Black Hi	pipedon (A2) stic (A3)		Thin Dark Su	elow Surface (S8 urface (S9) (MLF	, .	7, 148) C	oast Prairie (MLRA 14		
	en Sulfide (A4)			ed Matrix (F2)		Pi		oodplain Soils ((F19)
	d Layers (A5)		Depleted Mar	. ,			(MLRA 13		(TE40)
	ick (A10) (LRR N) d Below Dark Surface	. (Δ11)	Redox Dark	rk Surface (F6)				v Dark Surface in in Remarks)	
	ark Surface (A12)	<i>(</i> (\(\))	Redox Depre			0	tilei (Expia	iii iii Keiliaiks)	
	/lucky Mineral (S1) (L	RR N.		ese Masses (F1	2) (LRR N,				
	A 147, 148)	,	MLRA 13		, ,				
	Gleyed Matrix (S4)			ice (F13) (MLR	A 136, 122)	³ Indi	icators of h	ydrophytic veg	etation and
	Redox (S5)			odplain Soils (F				logy must be p	
Stripped	Matrix (S6)		Red Parent N	Material (F21) (N	ILRA 127, 14	7) unl	ess disturb	ed or problema	atic.
Restrictive I	Layer (if observed):								
Type:								4/	
Depth (in	ches):					Hydric Soil	Present?	Yes	No
Remarks:									



Photograph Direction West

Comments:	

Project/Site: MVP	City/County: Gree	enbrier	Sampling Date: 04/17/2015
Applicant/Owner: MVP		State: WV	Sampling Point: W-L5 and W-L2 U
Investigator(s): C. Vileno, B. Schrotenboer, C. Schrotenb			
Landform (hillslope, terrace, etc.): Hill Slope	Local relief (concave.	convex. none): Linear	Slope (%): 3-8
Subregion (LRR or MLRA): LRRN Lat: 3		· ·	Datum: NAD 83
Soil Map Unit Name: Macove-Gilpin complex, 35 t			
Are climatic / hydrologic conditions on the site typical for t	this time of year? Yes N	lo (If no, explain in F	Remarks.)
Are Vegetation, Soil, or Hydrology			present? Yes No
Are Vegetation, Soil, or Hydrology		If needed, explain any answe	
SUMMARY OF FINDINGS – Attach site ma			
Hydrophytic Vegetation Present? Yes	No V		
Hydric Soil Present? Yes	. I IS LITE SAILLI		No 🗸
Wetland Hydrology Present? Yes	, , , , , , , , , , , , , , , , , , , ,	etiano? res	No
Upland			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indic	ators (minimum of two required)
Primary Indicators (minimum of one is required; check a	ıll that apply)	Surface Soil	` '
	rue Aquatic Plants (B14)		egetated Concave Surface (B8)
	ydrogen Sulfide Odor (C1)	Drainage Pa	
	xidized Rhizospheres on Living F		
	resence of Reduced Iron (C4) ecent Iron Reduction in Tilled So		Water Table (C2)
	nin Muck Surface (C7)		/isible on Aerial Imagery (C9)
	ther (Explain in Remarks)		Stressed Plants (D1)
Iron Deposits (B5)			Position (D2)
Inundation Visible on Aerial Imagery (B7)		Shallow Aqu	uitard (D3)
Water-Stained Leaves (B9)		· -	aphic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutra	I Test (D5)
Field Observations:			
	Depth (inches):		
	Depth (inches):		
Saturation Present? Yes No C (includes capillary fringe)	Depth (inches):	Wetland Hydrology Prese	nt? Yes No
Describe Recorded Data (stream gauge, monitoring well	II, aerial photos, previous inspect	ions), if available:	
Remarks:			

201	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30')	% Cover	Species?	Status	Number of Dominant Species	
1				·	A)
2		-		Total Number of Dominant	
3				Species Across All Strata: 2 (E	B)
4		·		,	′
5				Percent of Dominant Species That Are OBL FACW or FAC: 0 (A	۸ /D)
6				That Are OBL, FACW, or FAC: (A	A/B)
				Prevalence Index worksheet:	
7	0	Tatal Car		Total % Cover of: Multiply by:	
50% of total cover: 0		= Total Cov		OBL species x 1 =	
	20 /6 01	total cover		FACW species x 2 =	
Sapling/Shrub Stratum (Plot size: 15')				FAC species x 3 =	
1				FACU species x 4 =	
2					
3				UPL species x 5 =	
4				Column Totals: (A)	(B)
5				Prevalence Index = B/A =	
6				Hydrophytic Vegetation Indicators:	
7					
8				1 - Rapid Test for Hydrophytic Vegetation	
9.				2 - Dominance Test is >50%	
v	0	= Total Cov	or.	3 - Prevalence Index is ≤3.0 ¹	
50% of total cover: 0		total cover	_	4 - Morphological Adaptations ¹ (Provide suppor	rting
Herb Stratum (Plot size: 5')	2070 01	total cover		data in Remarks or on a separate sheet)	
1. Dactylis glomerata	30	~	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)	
2. Phleum pratense	30				
· · · · · · · · · · · · · · · · · · ·	10		FACU	¹ Indicators of hydric soil and wetland hydrology mus	st
3. Trifolium repens			F <u>ACU</u>	be present, unless disturbed or problematic.	
4. Daucus carota	5		U <u>PL</u>	Definitions of Four Vegetation Strata:	
5					,
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless	
7				height.	3 01
8					
9.				Sapling/Shrub – Woody plants, excluding vines, le than 3 in. DBH and greater than or equal to 3.28 ft	
10.				m) tall.	(1
11		-			
· · · · · · · · · · · · · · · · · · ·	75	Tatal Car		Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.	ess
50% of total cover: <u>37.5</u>		= Total Cov		of size, and woody plants less than 3.20 it tall.	
4.51	20 /6 01	total cover		Woody vine – All woody vines greater than 3.28 ft	in
Woody vine Stratum (Flot size)				height.	
1					
2					
3					
4				Hydrophytic	
5				Vegetation	
	0	= Total Cov	er	Present? Yes No	
50% of total cover: 0	20% of	total cover	0		
Remarks: (Include photo numbers here or on a separate s	heet.)				

Sampling Point: W-L5 and W-L2 UP

SOIL

Profile Desc	ription: (Describe t	o the dept	n needed to docun	ent the i	ndicator	or confirm	the absen	ce of indicat	ors.)	
Depth	Matrix		Redox	c Features	3					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>		Remark	(S
0-3	10YR 3/2	100					L			
3-7	10YR 4/3	100					L			
7-10	10YR 5/6	100					SiCL	_		
								_		
	oncentration, D=Depl	etion, RM=l	Reduced Matrix, MS	=Masked	Sand Gra	ins.		PL=Pore Lin		
Hydric Soil	Indicators:						Ind	licators for P	roblematic	Hydric Soils ³ :
Histosol			Dark Surface					2 cm Muck (
	oipedon (A2)		Polyvalue Be				148)	Coast Prairie		6)
	stic (A3)		Thin Dark Su	, ,	•	47, 148)		(MLRA 14		
	en Sulfide (A4)		Loamy Gleye		F2)			Piedmont FI	•	ils (F19)
	d Layers (A5) uck (A10) (LRR N)		Depleted Mat		·e)			(MLRA 13 Very Shallov		200 (TE12)
	d Below Dark Surface	e (A11)	Depleted Dar					Other (Expla		
	ark Surface (A12)	, (, , , ,	Redox Depre					_		,
	lucky Mineral (S1) (L	RR N,	Iron-Mangane			_RR N,				
	A 147, 148)		MLRA 130							
	Gleyed Matrix (S4)		Umbric Surfa							egetation and
	Redox (S5)		Piedmont Flo					wetland hydro		
	Matrix (S6)		Red Parent M	laterial (F	21) (MLR	A 127, 147	7)	unless disturb	ed or proble	ematic.
	Layer (if observed):									
Type:			<u>—</u>							. 4
Depth (in	ches):						Hydric S	oil Present?	Yes	No
Remarks:										

USACE FILE NO./Project Name:		Valley Pipeline	COORDINATES:	Lat.	37.911495	Lon.	-80.72788	
STREAM/SITE ID AND SITE DESCR	IPTION:				1	W-W10, TEMP AR		
(% stream slope, watershed size {a		or impairments)						
FORM OF MITIGATION:								
DATE:	8/10	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-W10	Emergent	0.0488	Emergent					
						PART III - Advanced		on
						Sustainable Determination Made on Advanced Mitigation (Y or N)		Y
				_				
Total Impact		0.0488						
		Unit Scores				Estimated		
Wetland CI	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0488			#0.000.00		
Total Scrub-Shrub			0			\$2,928.00		
Total Forested			0					
Total Open Water			0					

Project/Site: MVP			City/County: Gre	enbrier		Sampling Date: 06/29/2015			
Applicant/Owner: MVP		Sampling Point: W-W10							
	Investigator(s): J. Hart, C. Wharton, A. Carrano Section, Township, Range: N/A								
Landform (hillslope, terrace, et				-	Concave	Slone (%): 1			
Subregion (LRR or MLRA): L	RRN		3			Datum: NAD 83			
Soil Map Unit Name: Gilpin									
•									
Are climatic / hydrologic condit	-								
Are Vegetation, Soil				Are "Normal Circu	umstances" pre	esent? Yes No			
Are Vegetation, Soil	, or Hydrolog	ynaturally p	problematic?	(If needed, explai	n any answers	in Remarks.)			
SUMMARY OF FINDIN	GS – Attach s	ite map showin	ng sampling po	int locations,	transects,	important features, etc.			
Hydrophytic Vegetation Pres	ent? Yes	✓ No							
Hydric Soil Present?	-	✓ No	ls the Sam	-	Yes 🗸				
Wetland Hydrology Present?	_		within a W	etiand?	Yes				
Remarks:	-		<u> </u>						
Cowardin Code:PEM HGM:SI									
Small PEM wetland occurs on Information listed on this form									
wetland hydrology, hydrophyti			The Welland Wae he	7. 4000001D10 101 0	u. 10 y 2010	to recommin the precence of			
HYDROLOGY									
Wetland Hydrology Indicate	ors:			Seco	ondary Indicate	ors (minimum of two required)			
Primary Indicators (minimum	of one is required	; check all that apply	<u>')</u>		Surface Soil C	` '			
Surface Water (A1)		True Aquatic		;	Sparsely Vege	etated Concave Surface (B8)			
High Water Table (A2)		Hydrogen Su			Drainage Patte	erns (B10)			
Saturation (A3)			zospheres on Living		Moss Trim Lin				
Water Marks (B1)			Reduced Iron (C4)		-	ater Table (C2)			
Sediment Deposits (B2)			Reduction in Tilled So		Crayfish Burro				
Drift Deposits (B3)		Thin Muck Su				ible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)		Other (Explai	n in Remarks)			essed Plants (D1)			
Iron Deposits (B5)					Geomorphic P				
Inundation Visible on Ae				· · · · · · · · · · · · · · · · · · ·	Shallow Aquita	` '			
Water-Stained Leaves (E	39)			·		hic Relief (D4)			
Aquatic Fauna (B13)				_	FAC-Neutral T	est (D5)			
Field Observations:		4 5 4 6 4							
Surface Water Present?		Depth (inche							
Water Table Present?		Depth (inche							
Saturation Present? (includes capillary fringe)	Yes V	Depth (inche	es):10	Wetland Hydro	logy Present	? Yes <u>/</u> No			
Describe Recorded Data (str	eam gauge, monit	oring well, aerial pho	otos, previous inspec	ı tions), if available	:				
Remarks:									
Standing water in vicinit	y of plot, recer	it neavy precipita	ation. Heavy clay	soils may pre	event water	table from being visible.			

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

/EGETATION (Four Strata) – Use scientific n	ames of	plants.		Sampling Point: W-W10
30'	Absolute			Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:30') 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
2				
3				Total Number of Dominant Species Across All Strata: (B)
٥ م				Species Across Air Strata (B)
	· 			Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
500/ -1/1-1-1 - 0		= Total Cov	_	OBL species x 1 =
50% of total cover: 0	20% 01	total cover		FACW species x 2 =
Sapling/Shrub Stratum (Plot size: 15')				FAC species x 3 =
1				FACU species x 4 =
2				
3				UPL species x 5 =
4	· 			Column Totals: (A) (B)
5				Prevalence Index = B/A =
6	· -			Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				<u> </u>
	0	= Total Cov	er	3 - Prevalence Index is ≤3.0 ¹
50% of total cover:0	20% of	total cover:	0	4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5')				data in Remarks or on a separate sheet)
1. Epilobium ciliatum	45	✓	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
Poa pratensis	15	V	FAC	
3. Boehmeria cylindrica	5		FACW	¹ Indicators of hydric soil and wetland hydrology must
4. Daucus carota	5		<u>UPL</u>	be present, unless disturbed or problematic.
·· ·	-			Definitions of Four Vegetation Strata:
5				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6		-		more in diameter at breast height (DBH), regardless of
7				height.
8		-		Sapling/Shrub – Woody plants, excluding vines, less
9	· 			than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
-		= Total Cov		of size, and woody plants less than 3.28 ft tall.
50% of total cover:35	20% of	total cover	14	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15')				height.
1				
2				
3	·			
4				Hydrophytia
5.				Hydrophytic Vegetation
	0	= Total Cov	er	Present? Yes V No No
50% of total cover: 0		total cover	_	
Remarks: (Include photo numbers here or on a separate s				
Remaining cover in herb stratum is bare ground				
tomaning sever in here stratem to bare ground	•			

SOIL Sampling Point: W-W10

Profile Desc	cription: (Describe t	o the depth	needed to docum	nent the	indicator	or confirm	n the absenc	e of indicators.)
Depth	Matrix		Redo	x Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	<u>Loc²</u>	Texture	Remarks
0-14	10YR 5/1	75	5YR 4/4	20	С	M	CL	
0-14			5YR 6/8	5	С	M	CL	
				-	. <u></u>			
				-			-	
				·				
				-			-	
¹ Type: C-C	oncentration, D=Deple	etion RM-R	educed Matrix MS	S-Masker	d Sand Gr	aine	² l ocation:	PL=Pore Lining, M=Matrix.
Hydric Soil		euon, Kivi=K	educed Matrix, Mc	5=IVIASKE	a Sand Gi	allis.		cators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(97)				2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be		ice (S8) (I	MI RA 147		Coast Prairie Redox (A16)
	istic (A3)		Thin Dark Su				, 140/	(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye			,,		Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Ma		` ,			(MLRA 136, 147)
2 cm Mu	uck (A10) (LRR N)		Redox Dark	Surface (F	- 6)			Very Shallow Dark Surface (TF12)
	d Below Dark Surface	(A11)	Depleted Dar					Other (Explain in Remarks)
	ark Surface (A12)		Redox Depre					
	Mucky Mineral (S1) (L	RR N,	Iron-Mangan		es (F12) (LRR N,		
	A 147, 148)		MLRA 13	•			3,	
	Gleyed Matrix (S4)		Umbric Surfa					dicators of hydrophytic vegetation and
	Redox (S5) d Matrix (S6)		Piedmont Flo					retland hydrology must be present, nless disturbed or problematic.
	Layer (if observed):		Neu Faientii	nateriai (i	Z1) (WILK	A 121, 14	<i>1</i>) u	niess disturbed of problematic.
Type:	Layer (ii observed).							
	ches):		_				Usalvia Ca	il Present? Yes No
	cnes):						nyuric 30	il Present? Yes No
Remarks:								



Photograph Direction NE

Comments:	

Project/Site: MVP	City/County:	Greenbrier	_ Sampling Date: 06/29/2015				
Applicant/Owner: MVP	State: WV Sampling Point: W-W						
Investigator(s): J. Hart, C. Wharton, A. Carr			. •				
Landform (hillslope, terrace, etc.): Hillslope			Slope (%): 5				
Subregion (LRR or MLRA): LRRN							
Soil Map Unit Name: Gilpin channery silt loa							
Are climatic / hydrologic conditions on the site typic			<u>-</u>				
Are Vegetation, Soil, or Hydrology			ė.				
Are Vegetation, Soil, or Hydrology							
SUMMARY OF FINDINGS – Attach sit							
	,	, pe	9/				
	No. •/	e Sampled Area	,				
	No ✓ withi	in a Wetland? Yes	No				
Remarks:							
Upland							
'							
Upland plot occurs on a hillslope in an a	rea dominated by upland	vegetation adjacent to wetla	nd. Paired with W-W10 UP.				
	· ·						
HYDROLOGY							
Wetland Hydrology Indicators:		Secondary Indic	cators (minimum of two required)				
Primary Indicators (minimum of one is required; of	:heck all that apply)	Surface Soi	il Cracks (B6)				
Surface Water (A1)	True Aquatic Plants (B14)		Sparsely Vegetated Concave Surface (B8)				
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainage Pa	Drainage Patterns (B10)				
Saturation (A3)	Oxidized Rhizospheres on I	_					
Water Marks (B1)	Presence of Reduced Iron (_	n Water Table (C2)				
Sediment Deposits (B2)	Recent Iron Reduction in Ti						
Drift Deposits (B3)	Thin Muck Surface (C7)		Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	Other (Explain in Remarks)		Stressed Plants (D1)				
Iron Deposits (B5)			c Position (D2)				
Inundation Visible on Aerial Imagery (B7)		Shallow Aqu					
Water-Stained Leaves (B9)			raphic Relief (D4)				
Aquatic Fauna (B13)		FAC-Neutra	al Test (D5)				
Field Observations:	/						
	Depth (inches):						
	Depth (inches):						
Saturation Present? Yes No (includes capillary fringe)	✓ Depth (inches):	Wetland Hydrology Prese	ent? Yes No✓				
Describe Recorded Data (stream gauge, monitor	ing well, aerial photos, previous i	nspections), if available:					
Remarks:							
No hydrology							

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

/EGETATION (Four Strata) – Use scientific n	ames of	plants.		Sampling Point: W-W10 UP
30'		Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:) 1		Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC:0 (A)
2				
3				Total Number of Dominant Species Across All Strata: 2 (B)
4.				Species / toross / till ottata.
5		·		Percent of Dominant Species That Are OBL FACW or FAC: 0 (A/B)
				That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
7	0	= Total Cov		Total % Cover of: Multiply by:
50% of total cover:0			_	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15'	20 % 01	total cover.		FACW species x 2 =
				FAC species x 3 =
1				FACU species x 4 =
2				UPL species x 5 =
3		·		Column Totals: (A) (B)
4				Column rotals (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is $\leq 3.0^1$
	0	= Total Cov	er	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover:0	20% of	total cover:	0	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')				Problematic Hydrophytic Vegetation (Explain)
1. Bromus inermis	20		UPL	Problematic Hydrophytic Vegetation (Explain)
2. Vernonia gigantea	15	. _	F <u>ACU</u>	The discourse of levels and so the set levels and be dealers of the set levels.
3. Leucanthemum vulgare	10		<u>UPL</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Trifolium pratense	10		F <u>ACU</u>	Definitions of Four Vegetation Strata:
5. Plantago lanceoleta	10		UPL	Definitions of Four Vegetation Strata.
6. Daucus carota	5		UPL	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7.				more in diameter at breast height (DBH), regardless of height.
8				
9				Sapling/Shrub – Woody plants, excluding vines, less
10				than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
10		· <u></u>		
11	70			Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover: 35		= Total Cov total cover:		of size, and woody plants less than 3.20 it tall.
Woody Vine Stratum (Plot size: 15')	2070 01	total cover.		Woody vine – All woody vines greater than 3.28 ft in
1				height.
2				
2				
3		· 		
4				Hydrophytic
5				Vegetation Present? Yes No _✓
500/ -ft		= Total Cov		11636HC: 163 NO
50% of total cover: 0		total cover:		
Remarks: (Include photo numbers here or on a separate s				
Remaining cover in herb stratum is bare ground	i			

SOIL Sampling Point: W-W10 UP

Profile Desc	cription: (Describe t	o the depth i	needed to docur	nent the i	ndicator	or confirm	the abse	ence of indica	tors.)	
Depth	Matrix			x Features						
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	<u>Loc²</u>	Textur		Remar	ks
0-15	10YR 4/3	100					Clay Lo	am		
			_							
							-	 -		
			_							
	oncentration, D=Depl	etion, RM=Re	educed Matrix, MS	S=Masked	Sand Gra	ains.		n: PL=Pore Li		
Hydric Soil							li			: Hydric Soils³:
Histosol		-	Dark Surface				_		(A10) (MLR	
	oipedon (A2)	-	Polyvalue Be				148) _	_ Coast Prai		16)
	istic (A3)	Ē	Thin Dark Su			47, 148)			147, 148)	
	en Sulfide (A4)		Loamy Gleye		F2)		_		Floodplain So	oils (F19)
	d Layers (A5)	-	Depleted Ma						136, 147)	
	ıck (A10) (LRR N)		Redox Dark				_		ow Dark Surf	
	d Below Dark Surface	(A11) _	Depleted Da				_	Other (Exp	lain in Rema	rks)
	ark Surface (A12)	DD N	Redox Depre			DD N				
	Mucky Mineral (S1) (L	RK N,	Iron-Mangan		es (F12) (1	LKK N,				
	A 147, 148)		MLRA 13 Umbric Surfa		MI DA 12	6 122)		3Indicators of	hydrophytic	vegetation and
	Gleyed Matrix (S4) Redox (S5)	-	Piedmont Flo				10)	wetland hyd		
-	Matrix (S6)		Red Parent N	-				unless distu		•
	Layer (if observed):	-	Red r drent r	nateriai (i	Z I) (IVILIX	A 127, 147	' '	uriless dista	bed of probl	erriatic.
	-									
J			_				l			
	ches):		_				Hydric	Soil Present?	Yes	No <u></u> ✓
Remarks:										
No hydric i	ndicators									

USACE FILE NO./Project Name:		Mountain	Valley Pipeline	COORDINATES:	Lat.	37.8637	Lon.	-80.757095
STREAM/SITE ID AND SITE DESCR	RIPTION:					W-K7(1), Pipeline ROW		
(% stream slope, watershed size {a	acreage}, unaltered	l or impairments)						
FORM OF MITIGATION:								
DATE:	8/10	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-K7(1)	Emergent	0.0078	Emergent					
						PART III - Advanced	Mitigatio	on.
						Sustainable Determination Made or		·
						Advanced Mitigation		Y
						(Y or N)		
Total Impact	DADT	0.0078 Unit Scores				Estimated		
Wotland C	lassification	Unit Scores	Replacement Unit(s)			ILF Costs		
Total Emergent	iassiiicatiUII		0.0078			ILF COSIS		
Total Scrub-Shrub			0.0078			\$468.00		
Total Forested			0			Ψ+00.00		
Total Open Water			0					

USACE FILE NO./Project Name:		Mountain	Valley Pipeline	COORDINATES:	Lat.	37.863527	Lon.	-80.757286
STREAM/SITE ID AND SITE DESCR	RIPTION:					W-K7(2), Pipeline ROW		
(% stream slope, watershed size {a	creage}, unaltered	or impairments)						
FORM OF MITIGATION:								
DATE:	8/10/	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-K7(2)	Emergent	0.3206	Emergent					
						PART III - Advanced		n
						Sustainable Determination Made on Advanced Mitigation (Y or N)		Y
Total Impact		0.3206						
		Jnit Scores				Estimated		
	lassification		Replacement Unit(s)			ILF Costs		
Total Service Shrub			0.3206			¢40.00c.00		
Total Scrub-Shrub Total Forested			0			\$19,236.00)	
			0					
Total Open Water			U					

Applicant/Owner: MVP Investigator(s): J. Hart, B. Czeck, N. Katsiaficas Section, Township, Range: N/A Landform (hillslope, terrace, etc.): Flats Local relief (concave, convex, none): Linear Slope (%): 0 Subregion (LRR or MLRA): LRRN Lat: 37.863636 Soil Map Unit Name: Melvin-Lindside complex Are climatic / hydrologic conditions on the site typical for this time of year? Yes Vegetation None Are Vegetation None, Soil None, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No No None Are Vegetation None, Soil None, or Hydrology naturally problematic? SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, e
Lat: 37.863636 Logal relief (concave, convex, none): Linear Slope (%): 0 Subregion (LRR or MLRA): LRRN Lat: 37.863636 Long: -80.756610 Datum: NAD 83 Soil Map Unit Name: Melvin-Lindside complex 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 (If needed, explain any answers in Remarks.)
Subregion (LRR or MLRA): LRRN Lat: 37.863636 Long: -80.756610 Datum: NAD 83 Soil Map Unit Name: Melvin-Lindside complex NWI classification: None Are climatic / hydrologic conditions on the site typical for this time of year? Yes
Soil Map Unit Name: Melvin-Lindside complex Are climatic / hydrologic conditions on the site typical for this time of year? Yes
Soil Map Unit Name: Melvin-Lindside complex Are climatic / hydrologic conditions on the site typical for this time of year? Yes
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.)
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)
<u> </u>
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, e
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes ✓ No No No Within a Wetland? Yes ✓ No
Remarks: Cowardin Code: PEM HGM: Depressional WT: RPWWN Information listed on this form represents the data collected in 2015. The wetland was revisited on 10/21/2019. Present 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) Surface Water (A1) High Water Table (A2) Hydrogen Sulfide Odor (C1) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Saturation Visible on Aerial Imagery (B7) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Surface Water Present? Yes No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks: Recent precipitation. Standing water in vicinity of plot. S-K25 is tiled subsurface.
W-K7 is adjacent to S-K17 thus being designated RPWWN.

VEGETATION (Four Strata) - Use scientific names of plants.

__)

50% of total cover: ___0

50% of total cover: __ 0

4._____

6._____

3. Carex stricta

% Cover Species? Status

= Total Cover

__ 20% of total cover:___ 0

0 = Total Cover

20% of total cover:

80 = Total Cover

0 = Total Cover

15

10

50% of total cover: 40 20% of total cover: 16

50% of total cover: 0 20% of total cover:

FAC

OBL

____ F<u>ACW</u>

30'

Sapling/Shrub Stratum (Plot size: 15')

Tree Stratum (Plot size: __

Herb Stratum (Plot size: _

1. Arthraxon hispidus

2. Juncus effusus

4. Poa trivialis

Sampling Point: W-K7 Absolute Dominant Indicator Dominance Test worksheet: **Number of Dominant Species** 3 __ (A) That Are OBL, FACW, or FAC: **Total Number of Dominant** 3 _ (B) Species Across All Strata: Percent of Dominant Species 100 That Are OBL, FACW, or FAC: (A/B) Prevalence Index worksheet: 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 = _____ Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ✓ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0¹ ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) **FACW** ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. **Definitions of Four Vegetation Strata:** Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. **Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine - All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Yes <u>√</u> No ____ Present?

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

Remaining cover in herb stratum is thatch.

Woody Vine Stratum (Plot size: 15')

SOIL Sampling Point: W-K7

Profile Desc	ription: (Describe t	o the dept	h needed to docur	nent the	indicator	or confirr	n the absence	of indicators.)
Depth	Matrix		Redo	x Feature	es			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	_Loc ²	<u>Texture</u>	Remarks
0-5	10YR 5/1	95	7.5YR 5/8	5	<u>C</u>	<u> M</u>	L	
5-12	10YR 5/2	85	7.5YR 5/8	_15	<u>C</u>	PL	CL	
12-16	10YR 5/2	70	7.5YR 5/8	30	С	PL	CL	
							·	
				-		-		
1Typo: C-Co	uncontration D_Donl	otion DM-	Poducod Matrix MS		d Sand Cr	oine	² Location: DI	
Hydric Soil I	ncentration, D=Depl	euon, Rivi=	Reduced Matrix, M.	S=IVIASKE	u Sanu Gi	allis.		L=Pore Lining, M=Matrix. ators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(57)				cm Muck (A10) (MLRA 147)
	ipedon (A2)		Polyvalue Be		ace (S8) (I	/II RA 147		oast Prairie Redox (A16)
Black His			Thin Dark Su				, 140, 0	(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye			, ,	Р	iedmont Floodplain Soils (F19)
	Layers (A5)		✓ Depleted Ma		` '			(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark		F6)		V	ery Shallow Dark Surface (TF12)
	Below Dark Surface	e (A11)	Depleted Da	rk Surface	e (F7)			other (Explain in Remarks)
Thick Da	rk Surface (A12)		Redox Depre	essions (F	8)			·
Sandy M	ucky Mineral (S1) (L	RR N,	Iron-Mangan	ese Mass	ses (F12) ((LRR N,		
	. 147, 148)		MLRA 13	6)				
	leyed Matrix (S4)		Umbric Surfa					icators of hydrophytic vegetation and
-	edox (S5)		Piedmont Flo					tland hydrology must be present,
	Matrix (S6)		Red Parent N	Material (F	-21) (MLF	A 127, 14	(7) unl	less disturbed or problematic.
Restrictive L	.ayer (if observed):							
Туре:								
Depth (inc	hes):						Hydric Soil	Present? Yes ✓ No
Remarks:							1	



Photograph Direction NE

Date: 04/17/2015

Comments: 2015 wetland delineation.



Photograph Direction North

Date: 10/21/19

 $\label{eq:comments:comments:} 2019 \ \text{wetland delineation confirmation}.$

Project/Site: MVP		City/C	ounty: Greenbrier		Sampling Date: 04/17/2015
Applicant/Owner: MVP					Sampling Point: W-K7 UP
Investigator(s): J. Hart, B. Czeck,	N. Katsiaficas				
Landform (hillslope, terrace, etc.): Te					Slope (%): 1
Subregion (LRR or MLRA): LRRN					Datum: NAD 83
Soil Map Unit Name: Melvin-Linds					
Are climatic / hydrologic conditions on					
Are Vegetation, Soil, o	* *				
Are Vegetation, Soil, o				xplain any answe	
SUMMARY OF FINDINGS –	-				
	<u> </u>		7 37		, , , , , , , , , , , , , , , , , , , ,
Hydrophytic Vegetation Present?	Yes Yes _✓		Is the Sampled Area		. 1
Hydric Soil Present? Wetland Hydrology Present?		No	within a Wetland?	Yes	No
Remarks:	103	110			
Upland					
Paired plot with W-K7 (1). Slig	htly higher terra	ice ahove wetla	nd		
railed plot with W-R7 (1). Sing	illy higher terra	ice above wella	nu.		
HYDROLOGY					
Wetland Hydrology Indicators:				Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one	is required; check al	II that apply)		Surface Soil	
Surface Water (A1)	-	ue Aquatic Plants (I			getated Concave Surface (B8)
High Water Table (A2)		drogen Sulfide Odo		Drainage Pa	
Saturation (A3)	-	-	es on Living Roots (C3)	Moss Trim Li	
Water Marks (B1)	Pr	esence of Reduced	I Iron (C4)	Dry-Season	Water Table (C2)
Sediment Deposits (B2)	Re	ecent Iron Reduction	n in Tilled Soils (C6)	Crayfish Bur	rows (C8)
Drift Deposits (B3)	Th	in Muck Surface (C	27)	Saturation V	sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Ot	her (Explain in Ren	narks)	Stunted or S	tressed Plants (D1)
Iron Deposits (B5)					Position (D2)
Inundation Visible on Aerial Imag	gery (B7)			Shallow Aqu	
Water-Stained Leaves (B9)					aphic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)
Field Observations:	No. V D	th (:h).			
	No				
			15 Wetland H		
Saturation Present? Yes (includes capillary fringe)	No D	epth (inches):	Wetland H	ydrology Preser	t? Yes No
Describe Recorded Data (stream gar	uge, monitoring well	, aerial photos, pre	vious inspections), if avai	lable:	
Remarks: Precipitation above average for	or coacon				
l recipitation above average to	71 30a3011.				

VEGETATION (Four Strata) - Use scientific names of plants.

30'

Sapling/Shrub Stratum (Plot size: 15')

5. Taraxacum officinale

Woody Vine <u>Stratum</u> (Plot size: ______)

Tree Stratum (Plot size: __

3. Plantago lanceoleta

4. Achillea millefolium

6. Trifolium repens

2. Festuca rubra

___)

50% of total cover: ___0

% Cover Species? Status

= Total Cover

0 _ = Total Cover

10

50% of total cover: 45 20% of total cover: 18

50% of total cover: 0 20% of total cover: 0

10

20% of total cover:_ 0

10 FACU

5 FACU

90 = Total Cover

0 = Total Cover

Present?

✓ FACU

✓ F<u>ACU</u>

____ UPL__

____ FACU

50% of total cover: 0 20% of total cover: 0

	Sampling Po	oint: W-K7 UP	
	Dominance Test worksheet:		
-	Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
	Total Number of Dominant Species Across All Strata:	2	(B)
	Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)
-	Prevalence Index worksheet:		
-	Total % Cover of:	Multiply by:	
-		1 =	
	FACW species x		
	FAC species x	3 =	_
	FACU species x	4 =	_
	UPL species x	5 =	_
	Column Totals: (/	A)	_ (B)
	Prevalence Index = B/A =	·	_
-	Hydrophytic Vegetation Indica	ators:	
-	1 - Rapid Test for Hydrophy	tic Vegetation	
	2 - Dominance Test is >50%	%	
	3 - Prevalence Index is ≤3.0		
	4 - Morphological Adaptation		nortina
	data in Remarks or on a		porting
			: \
-	Problematic Hydrophytic Ve	egetation (Expia	in)
	¹ Indicators of hydric soil and we be present, unless disturbed or		nust
-	Definitions of Four Vegetation	Strata:	
	Tree – Woody plants, excluding more in diameter at breast heigh	vines, 3 in. (7.6 ht (DBH), regardl	cm) or ess of
-	height.		
	Sapling/Shrub – Woody plants than 3 in. DBH and greater than		
	m) tall.	or equal to 3.20	11 (1
-	Herb – All herbaceous (non-wo of size, and woody plants less that		rdless
-	Woody vine – All woody vines height.	greater than 3.28	ft in
-			
-			
-			
_	Hydronhytic		
	Hydrophytic Vegetation	_	

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

Yes ____ No ___

SOIL Sampling Point: W-K7 UP

Profile Desc	ription: (Describe t	o the dept	h needed to docur	nent the i	ndicator	or confirn	n the absence	e of indicators.)
Depth	Matrix		Redo	x Feature	S			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-11	10YR 4/3	100					Loam	
11-18	10YR 5/2	85	7.5YR 5/8	15	С	PL	Loam	
	10111 0/2		7.01110/0		<u> </u>	<u> </u>	Louin	
							-	
		·				·		
					-		-	
¹ Type: C=Co	oncentration, D=Deple	etion, RM=	Reduced Matrix, MS	S=Masked	Sand Gra	ains.	² Location: F	PL=Pore Lining, M=Matrix.
Hydric Soil I							Indic	cators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	e (S7)			:	2 cm Muck (A10) (MLRA 147)
	ipedon (A2)		Polyvalue Be		ce (S8) (N	ILRA 147,		Coast Prairie Redox (A16)
Black Hi			Thin Dark Su				, —	(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye			•	1	Piedmont Floodplain Soils (F19)
Stratified	Layers (A5)		Depleted Ma					(MLRA 136, 147)
2 cm Mu	ck (A10) (LRR N)		Redox Dark	Surface (F	- 6)			Very Shallow Dark Surface (TF12)
Depleted	l Below Dark Surface	(A11)	Depleted Dar	rk Surface	(F7)		(Other (Explain in Remarks)
Thick Da	rk Surface (A12)		Redox Depre					
	lucky Mineral (S1) (L	RR N,	Iron-Mangan		es (F12) (LRR N,		
	147, 148)		MLRA 13	6)				
	leyed Matrix (S4)		Umbric Surfa					dicators of hydrophytic vegetation and
-	edox (S5)		Piedmont Flo					etland hydrology must be present,
	Matrix (S6)		Red Parent N	Material (F	21) (MLR	A 127, 147	7) ui	nless disturbed or problematic.
Restrictive L	.ayer (if observed):							
Type:								_
Depth (inc	ches):						Hydric So	il Present? Yes No
Remarks:							I	
Relict hydri	c soil conditions	from pre	vious hydrologic	: regime	when a	rea was	part of the	floodplain for the large stream to
								eceiving floodplain contributions to
hydrology.								g needplant continue to
, a. o.ogy.								

USACE FILE NO./Project Name:		Mountain	Valley Pipeline	COORDINATES:	Lat.	37.862357	Lon.	-80.757476
STREAM/SITE ID AND SITE DESCR	RIPTION:					W-IJ30, Pipeline ROW		
(% stream slope, watershed size {a	acreage}, unaltered	d or impairments)						
FORM OF MITIGATION:								
DATE:	8/10)/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-IJ30	Emergent	0.3236	Emergent					
					İ	PART III - Advanced	Mitigatio	n
						Sustainable Determination Made on Advanced Mitigation (Y or N)		Y
Total Impact		0.3236						
		Unit Scores				Estimated		
	lassification		Replacement Unit(s)			ILF Costs		
Total Emergent Total Scrub-Shrub			0.3236			¢40,446,00		
Total Forested			0	-	ļ	\$19,416.00	'	
				-				
Total Open Water			0					

Project/Site: MVP		Citv/C	ounty: Greenbrier		Sampling Date: 06/12/2016
Applicant/Owner: MVP				State: WV	Sampling Point: W-IJ30
Investigator(s): E. Foster, C	. Sorden, S. Therki				
Landform (hillslope, terrace, etc					Slope (%): 2
Subregion (LRR or MLRA): L	RR N Lat	37 86238	Long: -80	.757466	Glope (70):
Soil Map Unit Name: Melvin-L			Long		
Are climatic / hydrologic conditi					
· · · · ·		· ·			
					resent? Yes No
Are Vegetation, Soil	, or Hydrology	naturally problema	itic? (If needed, e	explain any answer	s in Remarks.)
SUMMARY OF FINDING	GS – Attach site m	nap showing sam	pling point location	ons, transects,	important features, etc.
Hydrophytic Vegetation Prese	ent? Yes 🗸	No			
Hydric Soil Present?		No	Is the Sampled Area within a Wetland?	Vos V	No
Wetland Hydrology Present?		No	within a Wetland:	163	
Remarks: Cowardin Co	ode: PEM	HGM: Slope	Water Type:	RPWWD	
Similar to W-IJ28. Farml wetlands divided by upla	_	andowner says fie	eld is underlain by te	erra cotta pipinç	g drain, resulting in linear
HYDROLOGY					
Wetland Hydrology Indicato	ors:			Secondary Indicat	ors (minimum of two required)
Primary Indicators (minimum	of one is required; chec	k all that apply)		Surface Soil 0	Cracks (B6)
Surface Water (A1)		True Aquatic Plants (I	B14)	Sparsely Veg	etated Concave Surface (B8)
High Water Table (A2)		Hydrogen Sulfide Odd	or (C1)	✓ Drainage Patt	
Saturation (A3)	<u>~</u>	Oxidized Rhizosphere	es on Living Roots (C3)	Moss Trim Lir	nes (B16)
Water Marks (B1)	_	Presence of Reduced	Iron (C4)		Vater Table (C2)
Sediment Deposits (B2)	_	Recent Iron Reduction	n in Tilled Soils (C6)	Crayfish Burre	ows (C8)
Drift Deposits (B3)		Thin Muck Surface (C			sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	_	Other (Explain in Ren	narks)		ressed Plants (D1)
Iron Deposits (B5)				Geomorphic I	·
Inundation Visible on Aer	• • • •			Shallow Aquit	
Water-Stained Leaves (B	(9)				phic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)
Field Observations:	Vaa Na V	Danth (inch sa)			
Surface Water Present?	Yes No				
Water Table Present?					
Saturation Present? (includes capillary fringe)	Yes No _	Depth (inches):	Wetland F	lydrology Present	t? Yes <u> </u>
Describe Recorded Data (stre	eam gauge, monitoring v	vell, aerial photos, pre	vious inspections), if ava	ilable:	
Remarks:					
Nemarks.					

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

/EGETATION (Four Strata) – Use scientific n	ames of	plants.		Sampling Point: W-IJ30
20'	Absolute			Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:30')	% Cover	Species?	<u>Status</u>	Number of Dominant Species
1				That Are OBL, FACW, or FAC:4 (A)
2		·		Total Number of Dominant
3		·		Species Across All Strata:4 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
•		= Total Cov		
50% of total cover: 0	20% of	f total cover	:0	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2 =
1				FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0¹
		= Total Cov		4 - Morphological Adaptations¹ (Provide supporting
50% of total cover:0	20% of	f total cover	:0	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')		á		Problematic Hydrophytic Vegetation¹ (Explain)
1. Carex scoparia	25		F <u>ACW</u>	1 Toblematic Hydrophytic Vegetation (Explain)
2. Juncus effusus	20		F <u>ACW</u>	¹ Indicators of hydric soil and wetland hydrology must
3. Anthoxanthum odoratum	12		FACU	be present, unless disturbed or problematic.
4. Solidago gigantea	15		FACW	Definitions of Four Vegetation Strata:
5. Oenothera fruticosa	10	. <u> </u>	FAC	The North alexter and all and a control of the cont
6. Scirpus atrovirens	15		OBL	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8		·		Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
		= Total Cov		of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>48.5</u>	<u>5</u> 20% of	f total cover	: <u>19.4</u>	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15')				height.
1				
2				
3				
4				Hydrophytic
5				Vegetation
_		= Total Cov	_	Present? Yes V No No
50% of total cover:0	20% of	f total cover	:0	
Remarks: (Include photo numbers here or on a separate s	heet.)			

Sampling Point: W-IJ30

SOIL

Depth	Matrix			x Features	1 2	_			
(inches)	Color (moist)	<u>%</u>	Color (moist)		ype ¹ Loc ²	<u>Texture</u>		Remarks	
0-18	10YR 5/1	80	7.5YR 5/8	20 (M/PL	SiCL			
	_								
									
							-		
									
vne. C=Co	ncentration, D=Depl	etion RM=	Reduced Matrix MS	S=Masked Sa	and Grains	² Location: P	I =Pore Linir	ng, M=Matrix.	
ydric Soil Ir		ouon, ruvi–	readoca Matrix, Mi	5-Maskea Oc	and Gramo.			oblematic Hy	dric Soils ³ :
_ Histosol (Dark Surface	e (S7)				(10) (MLRA 1 4	
	ipedon (A2)				(S8) (MLRA 147 ,		•	Redox (A16)	,
Black His					ILRA 147, 148)		(MLRA 147		
	n Sulfide (A4)			ed Matrix (F2)		F	•	odplain Soils (F19)
	Layers (A5)		Depleted Ma			· 	(MLRA 136		,
2 cm Mud	ck (A10) (LRR N)		Redox Dark	Surface (F6)		\	ery Shallow	Dark Surface	(TF12)
Depleted	Below Dark Surface	e (A11)	Depleted Date	rk Surface (F	7)	0	Other (Explain	n in Remarks)	
	rk Surface (A12)		Redox Depre						
	ucky Mineral (S1) (L	RR N,			(F12) (LRR N,				
	147, 148)		MLRA 13	•		3.			
	leyed Matrix (S4)				RA 136, 122)			drophytic veg	
Sandy Re	edox (S5)				(F19) (MLRA 1 4			ogy must be p	
000000000000000000000000000000000000000			Red Parent II	viateriai (F21)	(MLRA 127, 147	n un	iless disturbe	ed or problema	atic.
Stripped I			Red r arent r	,	•	1			
Restrictive L	Matrix (S6) ayer (if observed):		Red Falench	,					
estrictive La	ayer (if observed):			,					
Type: Depth (incl				,		Hydric Soil		Yes	No
Type: Depth (incl	ayer (if observed):							Yes	No
Restrictive La Type: Depth (incl	ayer (if observed):							Yes	No
Type: Depth (incl	ayer (if observed):							Yes	No
Type: Depth (incl	ayer (if observed):		Ked i dicili.					Yes	No
Restrictive La Type: Depth (incl	ayer (if observed):		Ked i dicili.					Yes 🗸	No
Type: Depth (incl	ayer (if observed):		Ked i diener					Yes 🗸	No
Type: Depth (incl	ayer (if observed):		Ked i diener					Yes_V	No
Type: Depth (incl	ayer (if observed):		Ked i dielie i					Yes	No
Type: Depth (incl	ayer (if observed):		Ked i dielie i					Yes 🗸	No
Restrictive La Type: Depth (incl	ayer (if observed):		Ked i dielie i					Yes_V	No
Type: Depth (incl	ayer (if observed):		Ked i dielie i					Yes 🗸	No
estrictive La Type: Depth (incl	ayer (if observed):		Ked i dielie i					Yes_V	No
estrictive La Type: Depth (incl	ayer (if observed):							Yes 🗸	No
Type: Depth (incl	ayer (if observed):							Yes 🗸	No
Type: Depth (incl	ayer (if observed):							Yes 🗸	No
Restrictive La Type: Depth (incl	ayer (if observed):							Yes_V	No
Restrictive La Type: Depth (incl	ayer (if observed):							Yes_V	No
Restrictive La	ayer (if observed):							Yes 🗸	No
Restrictive La Type: Depth (incl	ayer (if observed):							Yes_V	No
Restrictive La Type: Depth (incl	ayer (if observed):							Yes_V	No
Restrictive La Type: Depth (incl	ayer (if observed):							Yes 🗸	No
Restrictive La Type: Depth (incl	ayer (if observed):							Yes 🗸	No
Restrictive La Type: Depth (incl	ayer (if observed):							Yes 🗸	No



Photograph Direction NNE

Comments:			

Project/Site: MVP	City/County:	Greenbrier		Sampling Date: 06/11/2016
Applicant/Owner: MVP				Sampling Point: W-IJ28,IJ30-UP
Investigator(s): E. Foster, S. Therkildson, C. S	orden Section Tox			
Landform (hillslope, terrace, etc.): Flat (Fmr Flood			Convex	Slone (%): 2
Subregion (LRR or MLRA): LRR N Lat		Long: -80.75		Datum: NAD 83
Soil Map Unit Name: Melvin-Lindside complex				
Are climatic / hydrologic conditions on the site typical f	•		•	
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Cir	cumstances" pi	resent? Yes No
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, expl	ain any answer	s in Remarks.)
SUMMARY OF FINDINGS – Attach site n	nap showing sampling	g point locations	, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes	No 🗸			
Hydric Soil Present? Yes	No V	Sampled Area	V	No. 1/
Wetland Hydrology Present? Yes		n a Wetland?	res	_ No
Remarks: Cowardin Code: UPLAND	HGM:	Water Type:		
HYDROLOGY				
Wetland Hydrology Indicators:		Se	condary Indicat	ors (minimum of two required)
Primary Indicators (minimum of one is required; chec	k all that apply)		Surface Soil (Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)		Sparsely Veg	etated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	·	Drainage Patt	terns (B10)
Saturation (A3)	Oxidized Rhizospheres on L	iving Roots (C3)	Moss Trim Lir	nes (B16)
Water Marks (B1)	Presence of Reduced Iron (C4)	Dry-Season V	Vater Table (C2)
Sediment Deposits (B2)	Recent Iron Reduction in Til	led Soils (C6)	Crayfish Burre	ows (C8)
Drift Deposits (B3)	Thin Muck Surface (C7)		Saturation Vis	sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	_		ressed Plants (D1)
Iron Deposits (B5)			Geomorphic I	` '
Inundation Visible on Aerial Imagery (B7)			Shallow Aquit	
Water-Stained Leaves (B9)				phic Relief (D4)
Aquatic Fauna (B13)			FAC-Neutral	Test (D5)
Field Observations: Surface Water Present? Yes No	Depth (inches):			
	Depth (inches):			
	Depth (inches):	Wetlered Head	D	No. No. No. No.
Saturation Present? Yes No No	_ Depth (inches):	wetiand Hydi	rology Presem	?? Yes No
Describe Recorded Data (stream gauge, monitoring	well, aerial photos, previous i	nspections), if availab	le:	
Domosto				
Remarks:				

Sampling	Point: W-IJ	128,IJ30-UP
Sambilliu	POILL W	20,1000 01

Tree Stratum (Plot size: 30'	Absolute	Dominant		Dominance Test worksheet:		
Tioc citatam (Flot Size)	% Cover			Number of Dominant Species	1	(4)
1				That Are OBL, FACW, or FAC: _		(A)
2				Total Number of Dominant	4	(5)
3				Species Across All Strata:	4	(B)
4				Percent of Dominant Species	25	
5				That Are OBL, FACW, or FAC: _	25	(A/B)
6		-		Prevalence Index worksheet:		
7	0 :	= Total Cov		Total % Cover of:	Multiply by:	
50% of total cover: 0				OBL species x 1	=	_
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2	=	_
1				FAC species x 3	=	_
2				FACU species x 4	=	_
3				UPL species x 5	=	_
4				Column Totals: (A)		(B)
5						
6				Prevalence Index = B/A = _		_
7				Hydrophytic Vegetation Indicato		
8				1 - Rapid Test for Hydrophytic	Vegetation	
9.				2 - Dominance Test is >50%		
	_	= Total Cov	ver	3 - Prevalence Index is ≤3.0 ¹	1	
50% of total cover:0				4 - Morphological Adaptations		
Herb Stratum (Plot size: 5')	<u></u>			data in Remarks or on a se	. ,	
1. Anthoxanthum odoratum	20	•	FACU	Problematic Hydrophytic Vege	tation' (Expla	iin)
2. Holcus lanatus	10		FAC			
3. Dicanthelium clandestinum	8		FAC	¹ Indicators of hydric soil and wetland be present, unless disturbed or pro		must
4. Trifolium pratense	20	~	FACU	Definitions of Four Vegetation S		
_{5.} Zizia aurea	19	~	FAC	Definitions of Four Vegetation 3	ıraıa.	
6. Achillea millefolium	19	~	FACU	Tree - Woody plants, excluding vii		
7. Trifolium campestre	10		UPL	more in diameter at breast height (height.	DBH), regard	less of
8						
9				Sapling/Shrub – Woody plants, exthan 3 in. DBH and greater than or	xcluding vines	s, less
10				m) tall.	equal to 5.20) 11 (1
11.				Harle All barries assure (resp. ves etc.	.\ _l==t=	
	106	= Total Cov	ver	Herb – All herbaceous (non-woody of size, and woody plants less than		iraless
50% of total cover:53	20% of	total cover	21.2			
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines gre height.	ater than 3.28	3 ft in
1				g		
2						
3						
4				Usalranhistia		
5				Hydrophytic Vegetation		
	0 .	= Total Cov	ver	Present? Yes	No	
50% of total cover:0	20% of	total cover	: <u> </u>			
Remarks: (Include photo numbers here or on a separate s	heet.)					

Profile Desc	ription: (Describe to	o the depth	needed to docun	nent the in	ndicator	or confirm	the absence	e of indicat	ors.)		
Depth	Matrix		Redox	x Features	3						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remark	(S	_
0-18	7.5YR 4/3	100					SiCIL				
											_
								-			-
											_
											_
1							2	 			-
	oncentration, D=Deple	etion, RM=R	educed Matrix, MS	S=Masked	Sand Gra	ins.	² Location: I				
Hydric Soil I	Indicators:						Indio	cators for P	roblematic	Hydric Soils ³ :	
Histosol			Dark Surface	(S7)					(A10) (MLR	•	
Histic Ep	pipedon (A2)		Polyvalue Be	low Surfac	ce (S8) (M	LRA 147,	148)	Coast Prairi	e Redox (A1	16)	
Black Hi	stic (A3)		Thin Dark Su	rface (S9)	(MLRA 1	47, 148)		(MLRA 1	47, 148)		
Hydroge	n Sulfide (A4)		Loamy Gleye	d Matrix (F	- 2)			Piedmont Fl	loodplain So	ils (F19)	
Stratified	d Layers (A5)		Depleted Mat	rix (F3)				(MLRA 1	36, 147)		
2 cm Mu	ick (A10) (LRR N)		Redox Dark S	Surface (F	6)			Very Shallov	w Dark Surfa	ace (TF12)	
	d Below Dark Surface	(A11)	Depleted Dar					Other (Expla	ain in Remai	rks)	
Thick Da	ark Surface (A12)		Redox Depre								
	lucky Mineral (S1) (L l	RR N,	Iron-Mangane		es (F12) (I	₋RR N,					
MLRA	\ 147, 148)		MLRA 130								
Sandy G	Bleyed Matrix (S4)		Umbric Surfa					dicators of h	nydrophytic v	vegetation and	
Sandy R	tedox (S5)		Piedmont Flo	odplain So	oils (F19)	(MLRA 14	8) w	etland hydro	ology must b	oe present,	
Stripped	Matrix (S6)		Red Parent M	faterial (F2	21) (MLR	A 127, 147	') u	nless disturb	oed or proble	ematic.	
Restrictive I	_ayer (if observed):										
Type:											
	ches):		_				Hydric So	il Present?	Yes	No 🗸	
Remarks:			_				,				-
Remarks.											

	Mountain	Valley Pipeline	COORDINATES:	Lat.	37.862309	Lon.	-80.757756
PTION:					W-UV9. Pipeline ROW		
creage}, unaltered	or impairments)				·		
8/10/	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
PART I - Wetl	and Indicators						
Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
Emergent	0.109	Emergent					
							n
					Sustainable Determination Made or Advanced Mitigation (Y or N)		Υ
	0.109			,			
	Init Scores						
assification					ILF Costs		
					\$6 E40 00		
		-		ļ	Φ6,540.00		
	PART I - Wetl Impact Wetland Classification Emergent	PTION: creage}, unaltered or impairments) 8/10/2015 PART I - Wetland Indicators Impact Wetland Classification Emergent 0.109 PART II - Unit Scores	8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Emergent 0.109 Emergent O.109 PART II - Unit Scores	PTION: Preage}, unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Emergent 0.109 Emergent 0.109 PART II - Unit Scores sssification Replacement Unit(s) 0 0 0	PTION: preage), unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact (acreage) Wetland Classification Emergent 0.109 Emergent 0.109 PART II - Unit Scores Impact (acreage) Wetland (acreage) Impact (acr	PTION: Preage), unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Metland (acreage) Wetland Classification Emergent 0.109 Emergent PART II - Unit Scores PART II - Unit Scores Replacement Unit(s) 0.109 \$6,540.00	PTION: Preage), unaltered or impairments) 8/10/2015 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Emergent 0.109 Emergent DATE II - Advanced Mitigation Mitigation Sustainable Determination Made on Advanced Mitigation (Y or N) PART II - Unit Scores Replacement Unit(s) 0.109 9 \$6,540.00

Project/Site: MVP	City/C	ounty: Greenbrier		Sampling Date: 06/12/2016
Applicant/Owner: MVP			State: WV	Sampling Point: W-UV9
Investigator(s): C.Stoliker, L.McCarrell,	. Niergarth Section	on Townshin Range N		<u> </u>
Landform (hillslope, terrace, etc.): Flat				Slone (%): 0-3
Subregion (LRR or MLRA): LRR N				
		_		
Soil Map Unit Name: Melvin-Lindside comple				
Are climatic / hydrologic conditions on the site				
Are Vegetation, Soil, or Hydrold	ogy significantly distur	bed? Are "Normal	I Circumstances"	present? Yes No
Are Vegetation, Soil, or Hydrold	ogy naturally problema	atic? (If needed, e	explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach	site map showing sam	pling point location	ons, transects	s, important features, etc.
Hydrophytic Vegetation Present? Yes	✓ No.			
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes		Is the Sampled Area	4/	
Wetland Hydrology Present?		within a Wetland?	Yes	No
Remarks: Cowardin Code: PEM		Water Type:	DDWWN	
Cowardin Code. PEM	HGM: Slope	Water Type:	RPWWN	
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one is require	d; check all that apply)		Surface Soil	Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely Ve	getated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Ode		✓ Drainage Pa	atterns (B10)
Saturation (A3)	Oxidized Rhizosphere	es on Living Roots (C3)	Moss Trim L	
Water Marks (B1)	Presence of Reduced	I Iron (C4)	Dry-Season	Water Table (C2)
Sediment Deposits (B2)	Recent Iron Reductio		Crayfish Bur	
Drift Deposits (B3)	Thin Muck Surface (C			isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Ren	narks)		Stressed Plants (D1)
Iron Deposits (B5)				Position (D2)
Inundation Visible on Aerial Imagery (B7)			Shallow Aqu	• •
Water-Stained Leaves (B9)				aphic Relief (D4)
Aquatic Fauna (B13)		,	FAC-Neutra	l Test (D5)
Field Observations:	V 5 4 (1)			
Surface Water Present? Yes N	Depth (inches):			
	Depth (inches):			
Saturation Present? Yes N (includes capillary fringe)	o Depth (inches):	Wetland F	Hydrology Prese	nt? Yes <u>/</u> No
Describe Recorded Data (stream gauge, mor	itoring well, aerial photos, pre	vious inspections), if ava	nilable:	
Demodes				
Remarks:				

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

/EGETATION (Four Strata) – Use scientific n	ames of	plants.		Sampling Point: W-UV9
20'	Absolute			Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u>)		Species?		Number of Dominant Species
1		-		That Are OBL, FACW, or FAC: 2 (A)
2		· -	·	Total Number of Dominant Species Across All Strata: 2 (B)
3				Species Across All Strata: (B)
4			·	Percent of Dominant Species That Are OBL_FACW_or FAC: 100% (A/B)
5 6				That Are OBL, FACW, or FAC: 100% (A/B)
7.				Prevalence Index worksheet:
· · · · · · · · · · · · · · · · · · ·	0	= Total Cov	ver	Total % Cover of: Multiply by:
50% of total cover: 0	20% of	total cover	0	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2 =
1				FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6		·	·	Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9	_	Tatal Car		3 - Prevalence Index is ≤3.0 ¹
50% of total cover: 0		= Total Cover		4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5')	2070 01	total cover		data in Remarks or on a separate sheet)
1. Juncus effusus	60	~	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Eleocharis microcarpa	30	~	OBL	
3. Pharlaris arundinacea	18		FACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Carex scoparia	15		FACW	Definitions of Four Vegetation Strata:
5. Scirpus atrovirens	5		OBL	
6. Trifolium pratense	5		FACU_	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10	-			m) tall.
11	422	·	·	Herb – All herbaceous (non-woody) plants, regardless
50% of total cover: <u>66.</u> 5		= Total Cov		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size: 15')	20 / 01	total cover		Woody vine – All woody vines greater than 3.28 ft in
1				height.
2				
3				
4				Hodos dords
5				Hydrophytic Vegetation
		= Total Cov	er	Present? Yes No
50% of total cover:0	20% of	total cover	0	
Remarks: (Include photo numbers here or on a separate s	heet.)			1

Sampling Point: W-UV9

SOIL

Depth	ription: (Describe t Matrix		Redo	x Features					•	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>		Remarks	
0-16	10YR 4/2	70	10YR 5/8	30	С	M/PL	SICL			
								· ·		
								· ·		
										
Type: C-Co	oncentration, D=Depl	etion RM-F	Reduced Matrix MS	S-Maskad	Sand G	raine	² Location: F	PI –Pore I ini	ng, M=Matrix.	
lydric Soil I		Guori, ixivi–i	veduced Matrix, Mc	J-IVIASKEU (Sand G	airis.			oblematic Hy	
Histosol			Dark Surface	(97)					410) (MLRA 1	
	oipedon (A2)		Polyvalue Be		e (S8) (I	MLRA 147.			Redox (A16)	
Black Hi			Thin Dark Su				,	(MLRA 14		
	n Sulfide (A4)		Loamy Gleye			· · · , · · · · ,	1		odplain Soils	(F19)
	Layers (A5)		Depleted Mar		,		_	(MLRA 13		(- /
	ck (A10) (LRR N)		Redox Dark	, ,	6)		\		/ Dark Surface	e (TF12)
Depleted	Below Dark Surface	(A11)	Depleted Dar	rk Surface ((F7)				in in Remarks	
	rk Surface (A12)		Redox Depre	essions (F8))					
	lucky Mineral (S1) (L	RR N,	Iron-Mangan	ese Masse	s (F12)	(LRR N,				
	\ 147, 148)		MLRA 13	•						
	leyed Matrix (S4)		Umbric Surfa						ydrophytic veg	
	edox (S5)		Piedmont Flo					-	logy must be p	
	Matrix (S6)		Red Parent N	Naterial (F2	(1) (MLF	RA 127, 147	') uı	nless disturb	ed or problem	atic.
Restrictive L	ayer (if observed):									
Type:									_	
Depth (inc	ches):						Hydric Soi	I Present?	Yes 🗸	No
Remarks:										



Photograph Direction North

Comments:			

Project/Site: MVP	City/C	County: Greenbrier		Sampling Date: 06/12/2016
Applicant/Owner: MVP	_ ,	,		Sampling Point: W-UV9,10,1
Investigator(s): C.Stoliker, L.McCarrell	, J. Niergarth _{Sectio}	on, Township, Range: N		_ ,
Landform (hillslope, terrace, etc.): Flat (Fr	·			Slope (%): 0-3
Subregion (LRR or MLRA): LRR N				Datum: NAD 83
Soil Map Unit Name: Melvin-Lindside com				
Are climatic / hydrologic conditions on the sit				
Are Vegetation, Soil, or Hydr	ology significantly distur	bed? Are "Normal	Circumstances" p	resent? Yes No
Are Vegetation, Soil, or Hydr	ology naturally problemate	atic? (If needed, e	explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attac	h site map showing san	npling point location	ns, transects	, important features, etc.
Hydrophytic Vegetation Present? Y	′es No			
	′es No✓	Is the Sampled Area	V	No 🗸
	/es No	within a Wetland?	res	NO -
Remarks: Cowardin Code: UPLAI	ND HGM:	Water Type:		
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is requ	uired; check all that apply)		Surface Soil	Cracks (B6)
Surface Water (A1)	True Aquatic Plants ([B14)	Sparsely Veg	getated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Od		Drainage Pat	tterns (B10)
Saturation (A3)		es on Living Roots (C3)	Moss Trim Li	
Water Marks (B1)	Presence of Reduced			Water Table (C2)
Sediment Deposits (B2)	Recent Iron Reduction		Crayfish Burr	
Drift Deposits (B3)	Thin Muck Surface (0			sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Rer	narks)		tressed Plants (D1)
Iron Deposits (B5)Inundation Visible on Aerial Imagery (E	27)		Geomorphic Shallow Aqui	
Water-Stained Leaves (B9)	51)			phic Relief (D4)
Aquatic Fauna (B13)			FAC-Neutral	
Field Observations:				
	No Depth (inches):			
	No Depth (inches):			
	No Depth (inches):		lvdrology Presen	t? Yes No_ 🗸
(includes capillary fringe)				
Describe Recorded Data (stream gauge, m	nonitoring well, aerial photos, pre	evious inspections), if ava	ilable:	
Remarks:				
Nemarks.				

UP

Sampling Point: W-UV9,10,11 UP

30'	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:30') 1		Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)
2				
3				Total Number of Dominant Species Across All Strata: 3 (B)
_				Species Across Air Strata.
· ·		-		Percent of Dominant Species That Are OBL_FACW_or FAC: 33% (A/B)
5				That Are OBL, FACW, or FAC: 33% (A/B)
6				Prevalence Index worksheet:
7	0	Tatal Car		Total % Cover of: Multiply by:
50% of total cover: 0		= Total Cov	_	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')	20 /0 01	total cover.		FACW species x 2 =
Japhing/Siliub Stratum (Flot Size)				FAC species x 3 =
1				FACU species x 4 =
2		-		UPL species x 5 =
3				Column Totals: (A) (B)
4		-		Column Totals (A) (B)
5				Prevalence Index = B/A =
6		-		Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
	0	= Total Cov	er	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover:0	20% of	total cover:	0	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')				• • • • • • • • • • • • • • • • • • • •
1. Rosa multiflora	60		F <u>ACU</u>	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Solidago canadensis	25		F <u>ACU</u>	4
3. Lotus corniculatus	15		FACU	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Trifolium pratense	15		FACU	
5. Solidago speciosa	10		UPL	Definitions of Four Vegetation Strata:
6. Zizia aurea	5		FAC	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7		-		more in diameter at breast height (DBH), regardless of height.
8				noight.
9.				Sapling/Shrub – Woody plants, excluding vines, less
		-		than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
10				
11	130			Herb – All herbaceous (non-woody) plants, regardless
50% of total cover: 65		= Total Cov total cover:		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size: 15')	20 /6 01	total cover.		Woody vine - All woody vines greater than 3.28 ft in
1. Clematis virginiana	15	V	FAC	height.
			170	
2		-		
3				
4				Hydrophytic
5		-		Vegetation Present? Yes No _ ✓
7.5		= Total Cov	_	rieseitt: TesNo
50% of total cover: 7.5		total cover:	3	
Remarks: (Include photo numbers here or on a separate sheet.)				

Profile Desc	ription: (Describe to	o the depth	needed to docum	ent the in	ndicator	or confirm	the absence	of indicators.)	
Depth	Matrix		Redox	(Features	3				
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Rer	narks
0-12	10YR 4/4	85	10YR 5/6	15_	С	M	CL		_
									_
					-				
								-	
									_
									_
			-						_
							-	-	
	oncentration, D=Deple	etion, RM=Re	educed Matrix, MS	=Masked	Sand Gr	ains.		L=Pore Lining, M=I	
Hydric Soil I			5 . 6 .	(0-1)					atic Hydric Soils ³ :
Histosol	, ,		Dark Surface		oo (CO) (B	II D A 447		cm Muck (A10) (M	-
Histic Ep	nipedon (A2)		Polyvalue Bel Thin Dark Sui		. , .		148) C	oast Prairie Redox (MLRA 147, 148)	, ,
	n Sulfide (A4)		Loamy Gleye			47, 140)	Pi	iedmont Floodplair	
	Layers (A5)		Depleted Mat		-/			(MLRA 136, 147)	
2 cm Mu	ck (A10) (LRR N)		Redox Dark S		6)		V	ery Shallow Dark S	
	Below Dark Surface	(A11)	Depleted Dar				0	ther (Explain in Re	emarks)
	ark Surface (A12)		Redox Depre						
	lucky Mineral (S1) (L l	RR N,	Iron-Mangane		es (F12) (LRR N,			
	147, 148) sleyed Matrix (S4)		MLRA 136 Umbric Surface		MI DA 13	6 122)	³ Indi	icators of hydrophy	tic vegetation and
	edox (S5)		Piedmont Flo					tland hydrology mu	_
	Matrix (S6)		Red Parent M					ess disturbed or pr	-
	ayer (if observed):			•				·	
Type:			_						
Depth (inc	ches):		<u> </u>				Hydric Soil	Present? Yes_	No 🗸
Remarks:							I		

USACE FILE NO./Project Name:	Mountain Valley Pipeline		Valley Pipeline	COORDINATES:	Lat.	37.861173	Lon.	-80.757726
STREAM/SITE ID AND SITE DESCR	IPTION:					W-UV11, Pipeline ROW		
(% stream slope, watershed size {a	creage}, unaltered	l or impairments)						
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-UV11	Emergent	0.0285	Emergent					
					ĺ	PART III - Advanced	Mitigatio	n
						Sustainable Determination Made or		
						Advanced Mitigation (Y or N)		Υ
						(1 W.W.		
Total Impact		0.0285			ı	Fabinate d		
Wedendo		Unit Scores	Daylessay (HeW)			Estimated		
	lassification		Replacement Unit(s)			ILF Costs		
Total Emergent Total Scrub-Shrub			0.0285			\$1,710.00		
Total Forested			0			\$1,710.00		
Total Open Water			0					
olai Opeli Walei			U	_				

Project/Site: MVP	City/Co	ounty: Greenbrier		Sampling Date: 06/12/2016			
Applicant/Owner: MVP	,	,	State: WV	Sampling Point: W-UV11			
Investigator(s): C.Stoliker, L.McCarrell, J. Niergarth Section, Township, Range: N/A							
Landform (hillslope, terrace, etc.): Flat				Slone (%): 0-3			
Subregion (LRR or MLRA): LRR N Lat: 37.861172 Long: -80.757731 Datum: NAD 83 Soil Map Unit Name: Melvin-Lindside complex NWI classification: None							
Are climatic / hydrologic conditions on the site ty	•						
Are Vegetation, Soil, or Hydrolog	y significantly disturb	ped? Are "Norma	l Circumstances" ¡	oresent? Yes No			
Are Vegetation, Soil, or Hydrolog	y naturally problema	tic? (If needed, e	explain any answe	ers in Remarks.)			
SUMMARY OF FINDINGS – Attach s	ite map showing sam	pling point location	ons, transects	s, important features, etc.			
Hydrophytic Vegetation Present? Yes	✓ No						
Hydric Soil Present? Yes		Is the Sampled Area	Yes 🗸	N -			
Wetland Hydrology Present? Yes		within a Wetland?	Yes	No			
Remarks: Cowardin Code: PEM	HGM: Slope	Water Type:	RPWWN				
Cowardin Code. FEIVI	HOW. Slope	water Type.	UL AAAAIA				
HYDROLOGY							
Wetland Hydrology Indicators:				ators (minimum of two required)			
Primary Indicators (minimum of one is required			Surface Soil				
Surface Water (A1)	True Aquatic Plants (E			getated Concave Surface (B8)			
High Water Table (A2)	Hydrogen Sulfide Odd	. ,	✓ Drainage Pa				
Saturation (A3)	✓ Oxidized Rhizosphere	• , ,	Moss Trim L				
Water Marks (B1)	Presence of Reduced	, ,	· · · · · · · · · · · · · · · · · · ·				
Sediment Deposits (B2)			n Tilled Soils (C6) Crayfish Burrows (C8)				
Drift Deposits (B3)	Thin Muck Surface (C		isible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	Other (Explain in Rem	narks)		stressed Plants (D1)			
Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7)				nic Position (D2) quitard (D3)			
Water-Stained Leaves (B9)				ographic Relief (D4)			
Aquatic Fauna (B13)				FAC-Neutral Test (D5)			
Field Observations:							
	Depth (inches):						
Water Table Present? Yes No	Depth (inches):						
	Depth (inches):		Hydrology Presei	nt? Yes 🗸 No			
(includes capillary fringe)							
Describe Recorded Data (stream gauge, monit	oring well, aerial photos, prev	vious inspections), if ava	ailable:				
Remarks:							

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

/EGETATION (Four Strata) – Use scientific n	ames of	plants.		Sampling Point: W-UV11
201	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC:2 (A)
2				
3				Total Number of Dominant Species Across All Strata: 2 (B)
4				Species Across Air Strata (B)
5				Percent of Dominant Species That Are ORL FACW or FAC: 100% (A/R)
6				That Are OBL, FACW, or FAC: 100% (A/B)
				Prevalence Index worksheet:
7	0	= Total Cov		Total % Cover of: Multiply by:
50% of total cover: 0				OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')	2070 0.	total covor.		FACW species x 2 =
1				FAC species x 3 =
2				FACU species x 4 =
				UPL species x 5 =
3				Column Totals: (A) (B)
4				(-)
5				Prevalence Index = B/A =
6		-		Hydrophytic Vegetation Indicators:
7		-		1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
50% - (1-1-1		= Total Cov		4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 0 Herb Stratum (Plot size: 5')	20% of	total cover:		data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5') 1 Juncus effusus	60	~	E4 (C) 4/	Problematic Hydrophytic Vegetation ¹ (Explain)
	25		FACW_	
2. Eleocharis microcarpa			OBL	¹ Indicators of hydric soil and wetland hydrology must
3. Pharlaris arundinacea	15	-	FACW	be present, unless disturbed or problematic.
4. Carex scoparia		-	FACW_	Definitions of Four Vegetation Strata:
5. Scirpus atrovirens	5		OBL	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6. Trifolium pratense	5		FACU_	more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
		= Total Cov		of size, and woody plants less than 3.28 ft tall.
50% of total cover: 62.5	20% of	total cover:	25	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15')				height.
1				
2				
3				
4				Hydrophytic
5				Vegetation
	0 _	= Total Cov	er	Present? Yes V No No
50% of total cover: 0	20% of	total cover:	0	
Remarks: (Include photo numbers here or on a separate s	heet.)			1

Sampling Point: W-UV11

SOIL

Profile Desc	ription: (Describe to	o the depth	needed to docum	ent the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redox	K Features	3	. 2	_	
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-16	10YR 4/2	70	10YR 5/8	30	С	M/PL	SICL	
					-			
					-			
					-			
¹ Type: C=Co	oncentration, D=Deple	etion, RM=R	educed Matrix, MS	=Masked	Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:						Indica	ators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	(S7)			2	cm Muck (A10) (MLRA 147)
Histic Ep	ipedon (A2)		Polyvalue Bel	low Surfac	ce (S8) (N	ILRA 147,	148) C	Coast Prairie Redox (A16)
Black Hi			Thin Dark Su			47, 148)		(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye		F2)		P	Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Mat		0)			(MLRA 136, 147)
	ck (A10) (LRR N) Below Dark Surface	(/11)	Redox Dark S Depleted Dar	•	,			ery Shallow Dark Surface (TF12) Other (Explain in Remarks)
	ark Surface (A12)	(Д11)	Redox Depre				_ `	oner (Explain in Nemarks)
	lucky Mineral (S1) (Li	RR N.	Iron-Mangane			LRR N,		
	147, 148)	,	MLRA 136		, ,	,		
Sandy G	leyed Matrix (S4)		Umbric Surfa	ce (F13) (MLRA 13	6, 122)	³ Ind	licators of hydrophytic vegetation and
Sandy R	edox (S5)		Piedmont Flo	odplain So	oils (F19)	(MLRA 14	8) we	etland hydrology must be present,
	Matrix (S6)		Red Parent M	laterial (F	21) (MLR	A 127, 147) un	less disturbed or problematic.
Restrictive I	ayer (if observed):							
Type:			<u> </u>					_
Depth (inc	ches):		_				Hydric Soil	Present? Yes No
Remarks:								



Photograph Direction South

Comments:		

Project/Site: MVP	City/C	County: Greenbrier		Sampling Date: 06/12/2016		
Applicant/Owner: MVP		Sampling Point: W-UV9,10,1				
Investigator(s): C.Stoliker, L.McCarrell	, J. Niergarth _{Sectio}	on, Township, Range: N		_ ,		
Landform (hillslope, terrace, etc.): Flat (Fr	·			Slope (%): 0-3		
Subregion (LRR or MLRA): LRR N				Datum: NAD 83		
Soil Map Unit Name: Melvin-Lindside com						
Are climatic / hydrologic conditions on the sit						
Are Vegetation, Soil, or Hydr	ology significantly distur	bed? Are "Normal	Circumstances" p	resent? Yes No		
Are Vegetation, Soil, or Hydr	ology naturally problemate	atic? (If needed, e	explain any answe	rs in Remarks.)		
SUMMARY OF FINDINGS – Attac	h site map showing san	npling point location	ns, transects	, important features, etc.		
Hydrophytic Vegetation Present? Y	′es No					
	′es No✓	Is the Sampled Area	V	No 🗸		
	′es No	within a Wetland?	res	NO -		
Remarks: Cowardin Code: UPLAI	ND HGM:	Water Type:				
HYDROLOGY						
Wetland Hydrology Indicators:			Secondary Indica	tors (minimum of two required)		
Primary Indicators (minimum of one is requ	uired; check all that apply)		Surface Soil	Cracks (B6)		
Surface Water (A1)	True Aquatic Plants ([B14)	Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)			
High Water Table (A2)	Hydrogen Sulfide Od					
Saturation (A3)		es on Living Roots (C3)	Moss Trim Lines (B16)			
Water Marks (B1)	Presence of Reduced		Dry-Season Water Table (C2)			
Sediment Deposits (B2)	Recent Iron Reduction		1 1			
Drift Deposits (B3)	Thin Muck Surface (0		Saturation Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)	Other (Explain in Rer	narks)				
Iron Deposits (B5)Inundation Visible on Aerial Imagery (E	27)		Shallow Aqui	nic Position (D2)		
Water-Stained Leaves (B9)	51)					
Aquatic Fauna (B13)			Microtopographic Relief (D4) FAC-Neutral Test (D5)			
Field Observations:						
	No Depth (inches):					
	No Depth (inches):					
	No Depth (inches):		lvdrology Presen	t? Yes No_ 🗸		
(includes capillary fringe)						
Describe Recorded Data (stream gauge, m	nonitoring well, aerial photos, pre	evious inspections), if ava	ilable:			
Remarks:						
Nemarks.						

UP

Sampling Point: W-UV9,10,11 UP

30'	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:30') 1		Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)
2				
3				Total Number of Dominant Species Across All Strata: 3 (B)
_				Species Across Air Strata.
· ·		-		Percent of Dominant Species That Are OBL_FACW_or FAC: 33% (A/B)
5				That Are OBL, FACW, or FAC: 33% (A/B)
6				Prevalence Index worksheet:
7	0	Tatal Car		Total % Cover of: Multiply by:
50% of total cover: 0		= Total Cov	_	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')	20 /0 01	total cover.		FACW species x 2 =
Japhing/Siliub Stratum (Flot Size)				FAC species x 3 =
1				FACU species x 4 =
2		-		UPL species x 5 =
3				Column Totals: (A) (B)
4		-		Column Totals (A) (B)
5				Prevalence Index = B/A =
6		-		Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
	0	= Total Cov	er	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover:0	20% of	total cover:	0	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')				• • • • • • • • • • • • • • • • • • • •
1. Rosa multiflora	60		F <u>ACU</u>	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Solidago canadensis	25		F <u>ACU</u>	4
3. Lotus corniculatus	15		FACU	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Trifolium pratense	15		FACU	
5. Solidago speciosa	10		UPL	Definitions of Four Vegetation Strata:
6. Zizia aurea	5		FAC	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7		-		more in diameter at breast height (DBH), regardless of height.
8				noight.
9.				Sapling/Shrub – Woody plants, excluding vines, less
		-		than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
10				
11	130			Herb – All herbaceous (non-woody) plants, regardless
50% of total cover: 65		= Total Cov total cover:		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size: 15')	20 /6 01	total cover.		Woody vine - All woody vines greater than 3.28 ft in
1. Clematis virginiana	15	V	FAC	height.
· · · · · · · · · · · · · · · · · · ·			170	
2		-		
3				
4				Hydrophytic
5		-		Vegetation Present? Yes No _ ✓
7.5		= Total Cov	_	rieseitt: ies No
50% of total cover:		total cover:	3	
Remarks: (Include photo numbers here or on a separate s	heet.)			

Profile Desc	ription: (Describe to	o the depth	needed to docum	ent the in	ndicator	or confirm	the absence	of indicators.)	
Depth	Matrix		Redox	(Features	3				
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Rer	narks
0-12	10YR 4/4	85	10YR 5/6	15_	С	M	CL		_
									_
					-				
								-	
									_
									_
			-						_
							-	-	
	oncentration, D=Deple	etion, RM=Re	educed Matrix, MS	=Masked	Sand Gr	ains.		L=Pore Lining, M=I	
Hydric Soil I			5 . 6 .	(0-1)					atic Hydric Soils ³ :
Histosol	, ,		Dark Surface		oo (CO) (B	II D A 447		cm Muck (A10) (M	-
Histic Ep	nipedon (A2)		Polyvalue Bel Thin Dark Sui		. , .		148) C	oast Prairie Redox (MLRA 147, 148)	, ,
	n Sulfide (A4)		Loamy Gleye			47, 140)	Pi	iedmont Floodplair	
	Layers (A5)		Depleted Mat		_,			(MLRA 136, 147)	
2 cm Mu	ck (A10) (LRR N)		Redox Dark S		6)		V	ery Shallow Dark S	
	Below Dark Surface	(A11)	Depleted Dar				0	ther (Explain in Re	emarks)
	ark Surface (A12)		Redox Depre						
	lucky Mineral (S1) (L l	RR N,	Iron-Mangane		es (F12) (LRR N,			
	147, 148) sleyed Matrix (S4)		MLRA 136 Umbric Surface		MI DA 13	6 122)	³ Indi	icators of hydrophy	tic vegetation and
	edox (S5)		Piedmont Flo					tland hydrology mu	_
	Matrix (S6)		Red Parent M					ess disturbed or pr	-
	ayer (if observed):							·	
Type:			_						
Depth (inc	ches):		<u> </u>				Hydric Soil	Present? Yes_	No 🗸
Remarks:							I		

USACE FILE NO./Project Name:	Mountain Valley Pipeline		Valley Pipeline	COORDINATES:	Lat.	37.861066	Lon.	-80.757954
STREAM/SITE ID AND SITE DESCR	RIPTION:					W-UV10, Pipeline ROW		
(% stream slope, watershed size {acreage}, unaltered or impairments)								
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-UV10	Emergent	0.0035	Emergent					
						PART III - Advanced	Mitigatio	on .
						Sustainable Determination Made or Advanced Mitigation (Y or N)	1	Υ
Total Impact	DART II	0.0035				Estimated		
Wotland C	lassification	Unit Scores	Replacement Unit(s)			ILF Costs		
Total Emergent	านออกเป็นแบบ		0.0035			ILF COStS		
Total Scrub-Shrub			0			\$210.00		
Total Forested			0					
Total Open Water			0					

Project/Site: MVP		City/C	county: Greenbrier		Sampling Date: 06/12/2016			
Applicant/Owner: MVP		,	State: WV Sampling Point: W-U					
Investigator(s): C.Stoliker, L.McCarrell, J. Niergarth Section, Township, Range: N/A								
Landform (hillslope, terrace, etc.): Fla					Slope (%): 0-3			
Subregion (LRR or MLRA): LRR N								
Soil Map Unit Name: Zoar silt loam, 0			Long					
Are climatic / hydrologic conditions on the		· ·						
Are Vegetation, Soil, or				I Circumstances" p	present? Yes No			
Are Vegetation, Soil, or	Hydrology	naturally problema	atic? (If needed, o	explain any answe	ers in Remarks.)			
SUMMARY OF FINDINGS – A	ttach site m	ap showing sam	npling point location	ons, transects	s, 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	within a wettand:	163				
Remarks: Cowardin Code: PE	ΞM	HGM: Slope	Water Type:	RPWWN				
		•						
HYDROLOGY								
Wetland Hydrology Indicators:				Secondary Indica	ators (minimum of two required)			
Primary Indicators (minimum of one is	required; check	call that apply)		Surface Soil	Cracks (B6)			
Surface Water (A1)		B14)	Sparsely Ve	getated Concave Surface (B8)				
High Water Table (A2)		Hydrogen Sulfide Od	or (C1)	✓ Drainage Pa				
Saturation (A3)	<u>~</u>	Oxidized Rhizosphere	es on Living Roots (C3)	Moss Trim L	ines (B16)			
Water Marks (B1)		Presence of Reduced	d Iron (C4)	Dry-Season	Water Table (C2)			
Sediment Deposits (B2)		Recent Iron Reductio	n in Tilled Soils (C6)					
Drift Deposits (B3)		Thin Muck Surface (C	7) Saturation Visible on Aerial Imagery (C9)					
Algal Mat or Crust (B4)		Other (Explain in Rer	narks)		r Stressed Plants (D1)			
Iron Deposits (B5)					omorphic Position (D2)			
Inundation Visible on Aerial Image	ery (B7)				Shallow Aquitard (D3)			
Water-Stained Leaves (B9)				Microtopographic Relief (D4)FAC-Neutral Test (D5)				
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)			
Field Observations:	🗸	5						
Surface Water Present? Yes _	No	Depth (inches):						
		Depth (inches):						
Saturation Present? Yes (includes capillary fringe)	No	Depth (inches):	Wetland I	Hydrology Preser	nt? Yes No			
Describe Recorded Data (stream gaug	ge, monitoring v	vell, aerial photos, pre	vious inspections), if ava	ailable:				
Demodra								
Remarks:								

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

/EGETATION (Four Strata) – Use scientific n	ames of	plants.		Sampling Point: W-UV10
201	Absolute			Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:30') 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100% (A/B)
6				Bassalana Indonesialahari
7				Prevalence Index worksheet:
_		= Total Cov		
50% of total cover: 0	20% of	total cover	:0	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2 =
1				FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
0		= Total Cov		4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 0 Herb Stratum (Plot size: 5')	20% of	total cover	:	data in Remarks or on a separate sheet)
(ist size	50	~	E4 0)4/	Problematic Hydrophytic Vegetation ¹ (Explain)
1. Juncus effusus			FACW_	
2. Eleocharis microcarpa Phorloris prundingens	20		OBL	¹ Indicators of hydric soil and wetland hydrology must
3. Pharlaris arundinacea	15		FACW	be present, unless disturbed or problematic.
4. Carex scoparia	<u>15</u> 5		FACW	Definitions of Four Vegetation Strata:
5. Scirpus atrovirens			OBL	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6. Trifolium pratense			FACU_	more in diameter at breast height (DBH), regardless of
7		· <u></u>		height.
8		· <u></u>		Sapling/Shrub – Woody plants, excluding vines, less
9		· <u></u>		than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11	440	· <u></u>		Herb – All herbaceous (non-woody) plants, regardless
50% of total account		= Total Cov		of size, and woody plants less than 3.28 ft tall.
50% of total cover: 55	20% of	total cover	:	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15')				height.
1				
2				
3				
4				Hydrophytic
5	0			Vegetation Present? Yes ✓ No
50% of total cover: 0		= Total Cover	_	· · · · · · · · · · · · · · · · · · ·
		total cover		
Remarks: (Include photo numbers here or on a separate s	neet.)			

Sampling Point: W-UV10

SOIL

Profile Desc	ription: (Describe to	o the depth	needed to docum	ent the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redox	K Features	3	. 2	_	
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-16	10YR 4/2	70	10YR 5/8	30	С	M/PL	SICL	
					-			
					-			
					-			
¹ Type: C=Co	oncentration, D=Deple	etion, RM=R	educed Matrix, MS	=Masked	Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:						Indica	ators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	(S7)			2	cm Muck (A10) (MLRA 147)
Histic Ep	ipedon (A2)		Polyvalue Bel	low Surfac	ce (S8) (N	ILRA 147,	148) C	Coast Prairie Redox (A16)
Black Hi			Thin Dark Su			47, 148)		(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye		F2)		P	Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Mat		0)			(MLRA 136, 147)
	ck (A10) (LRR N) Below Dark Surface	(/11)	Redox Dark S Depleted Dar	•	,			ery Shallow Dark Surface (TF12) Other (Explain in Remarks)
	ark Surface (A12)	(Д11)	Redox Depre				_ `	oner (Explain in Nemarks)
	lucky Mineral (S1) (Li	RR N.	Iron-Mangane			LRR N,		
	147, 148)	,	MLRA 136		, ,	,		
Sandy G	leyed Matrix (S4)		Umbric Surfa	ce (F13) (MLRA 13	6, 122)	³ Ind	licators of hydrophytic vegetation and
Sandy R	edox (S5)		Piedmont Flo	odplain So	oils (F19)	(MLRA 14	8) we	etland hydrology must be present,
	Matrix (S6)		Red Parent M	laterial (F	21) (MLR	A 127, 147) un	less disturbed or problematic.
Restrictive I	ayer (if observed):							
Type:			<u> </u>					_
Depth (inc	ches):		_				Hydric Soil	Present? Yes No
Remarks:								



Photograph Direction North

Comments:		

Project/Site: MVP	City/C	County: Greenbrier		Sampling Date: 06/12/2016			
Applicant/Owner: MVP	_ ,	,		Sampling Point: W-UV9,10,1			
Investigator(s): C.Stoliker, L.McCarrell	, J. Niergarth _{Sectio}	on, Township, Range: N		_ ,			
Landform (hillslope, terrace, etc.): Flat (Fr	·			Slope (%): 0-3			
Subregion (LRR or MLRA): LRR N				Datum: NAD 83			
Soil Map Unit Name: Melvin-Lindside com							
Are climatic / hydrologic conditions on the sit							
Are Vegetation, Soil, or Hydr	ology significantly distur	bed? Are "Normal	Circumstances" p	resent? Yes No			
Are Vegetation, Soil, or Hydr	ology naturally problemate	atic? (If needed, e	explain any answe	rs in Remarks.)			
SUMMARY OF FINDINGS – Attac	h site map showing san	npling point location	ns, transects	, important features, etc.			
Hydrophytic Vegetation Present? Y	′es No						
	′es No✓	Is the Sampled Area	V	No 🗸			
	′es No	within a Wetland?	res	NO -			
Remarks: Cowardin Code: UPLAI	ND HGM:	Water Type:					
HYDROLOGY							
Wetland Hydrology Indicators:			Secondary Indica	tors (minimum of two required)			
Primary Indicators (minimum of one is requ	uired; check all that apply)		Surface Soil	Cracks (B6)			
Surface Water (A1)	True Aquatic Plants ([B14)	Sparsely Vegetated Concave Surface (B8)				
High Water Table (A2)	Hydrogen Sulfide Od		Drainage Patterns (B10)				
Saturation (A3)		es on Living Roots (C3)	Moss Trim Lines (B16)				
Water Marks (B1)	Presence of Reduced		Dry-Season Water Table (C2)				
Sediment Deposits (B2)	Recent Iron Reduction		Crayfish Burrows (C8)				
Drift Deposits (B3)	Thin Muck Surface (0		Saturation Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	Other (Explain in Rer	narks)	Stunted or Stressed Plants (D1)				
Iron Deposits (B5)Inundation Visible on Aerial Imagery (E	27)		Geomorphic Position (D2) Shallow Aquitard (D3)				
Water-Stained Leaves (B9)	51)		Snallow Aquitard (D3) Microtopographic Relief (D4)				
Aquatic Fauna (B13)			FAC-Neutral Test (D5)				
Field Observations:							
	No Depth (inches):						
	No Depth (inches):						
	No Depth (inches):		lvdrology Presen	t? Yes No_ 🗸			
(includes capillary fringe)							
Describe Recorded Data (stream gauge, m	nonitoring well, aerial photos, pre	evious inspections), if ava	ilable:				
Remarks:							
Nemarks.							

UP

Sampling Point: W-UV9,10,11 UP

30'	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:30') 1		Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)
2				
3				Total Number of Dominant Species Across All Strata: 3 (B)
_				Species Across Air Strata.
· ·		-		Percent of Dominant Species That Are OBL_FACW_or FAC: 33% (A/B)
5				That Are OBL, FACW, or FAC: 33% (A/B)
6				Prevalence Index worksheet:
7	0	Tatal Car		Total % Cover of: Multiply by:
50% of total cover: 0		= Total Cov	_	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')	20 /0 01	total cover.		FACW species x 2 =
Japhing/Siliub Stratum (Flot Size)				FAC species x 3 =
1				FACU species x 4 =
2		-		UPL species x 5 =
3				Column Totals: (A) (B)
4		-		Column Totals (A) (B)
5				Prevalence Index = B/A =
6		-		Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
	0	= Total Cov	er	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover:0	20% of	total cover:	0	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')				• • • • • • • • • • • • • • • • • • • •
1. Rosa multiflora	60		F <u>ACU</u>	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Solidago canadensis	25		F <u>ACU</u>	4
3. Lotus corniculatus	15		FACU	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Trifolium pratense	15		FACU	
5. Solidago speciosa	10		UPL	Definitions of Four Vegetation Strata:
6. Zizia aurea	5		FAC	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7		-		more in diameter at breast height (DBH), regardless of height.
8				noight.
9.				Sapling/Shrub – Woody plants, excluding vines, less
		-		than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
10				
11	130			Herb – All herbaceous (non-woody) plants, regardless
50% of total cover: 65		= Total Cov total cover:		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size: 15')	20 /6 01	total cover.		Woody vine - All woody vines greater than 3.28 ft in
1. Clematis virginiana	15	V	FAC	height.
· · · · · · · · · · · · · · · · · · ·			170	
2		-		
3				
4				Hydrophytic
5		-		Vegetation Present? Yes No _ ✓
7.5		= Total Cov	_	rieseitt: ies No
50% of total cover:		total cover:	3	
Remarks: (Include photo numbers here or on a separate s	heet.)			

Profile Desc	ription: (Describe to	o the depth	needed to docum	ent the in	ndicator	or confirm	the absence	of indicators.)	
Depth	Matrix		Redox	(Features	3				
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Rer	narks
0-12	10YR 4/4	85	10YR 5/6	15_	С	M	CL		_
									_
					-				
								-	
									_
									_
			-						_
							-	-	
	oncentration, D=Deple	etion, RM=Re	educed Matrix, MS	=Masked	Sand Gr	ains.		L=Pore Lining, M=I	
Hydric Soil I			5 . 6 .	(0-1)					atic Hydric Soils ³ :
Histosol	, ,		Dark Surface		oo (CO) (B	II D A 447		cm Muck (A10) (M	-
Histic Ep	nipedon (A2)		Polyvalue Bel Thin Dark Sui		. , .		148) C	oast Prairie Redox (MLRA 147, 148)	, ,
	n Sulfide (A4)		Loamy Gleye			47, 140)	Pi	iedmont Floodplair	
	Layers (A5)		Depleted Mat		_,			(MLRA 136, 147)	
2 cm Mu	ck (A10) (LRR N)		Redox Dark S		6)		V	ery Shallow Dark S	
	Below Dark Surface	(A11)	Depleted Dar				0	ther (Explain in Re	emarks)
	ark Surface (A12)		Redox Depre						
	lucky Mineral (S1) (L l	RR N,	Iron-Mangane		es (F12) (LRR N,			
	147, 148) sleyed Matrix (S4)		MLRA 136 Umbric Surface		MI DA 13	6 122)	³ Indi	icators of hydrophy	tic vegetation and
	edox (S5)		Piedmont Flo					tland hydrology mu	_
	Matrix (S6)		Red Parent M					ess disturbed or pr	-
	ayer (if observed):							·	
Type:			_						
Depth (inc	ches):		<u> </u>				Hydric Soil	Present? Yes_	No 🗸
Remarks:							I		

USACE FILE NO./Project Name:		Mountain	Valley Pipeline	COORDINATES:	Lat.	37.860916	Lon.	-80.757817
STREAM/SITE ID AND SITE DESCR	RIPTION:					W-K9-PEM-1 Pipeline ROW		
(% stream slope, watershed size {a	creage}, unaltered	d or impairments)						
FORM OF MITIGATION:								
DATE:	8/10	0/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-K9-PEM-1	Emergent	0.0354	Emergent					
						PART III - Advanced	Mitigatio	on
						Sustainable Determination Made on Advanced Mitigation (Y or N)		Y
Total Impact		0.0354						
		Unit Scores				Estimated		
	lassification		Replacement Unit(s)			ILF Costs		
Total Serub Shrub			0.0354	-		\$2.424.00		
				-		φ2,124.00		
				-				
Total Scrub-Shrub Total Forested Total Open Water			0 0 0			\$2,124.00		

Project/Site: MVP					City/C	County: Gre	enbrier		Sampling Date:	04/18/2015
Applicant/Owner: MVP					7					int: W-K9-PEM-1
Investigator(s): J. Hart, B. C	Zeck, N.	Katsi	afica	S					_ ' '	
									Slo	ope (%): 3
Landform (hillslope, terrace, etc Subregion (LRR or MLRA): LI	RRN		I at·	37.861618	3	(Long: -80	.756695	Datu	_{Im} . NAD 83
Soil Map Unit Name: Zoar si	It loam. 0	to 3 r	erce	nt slopes				NWI classific		
Are climatic / hydrologic conditi						_				
· · · · · ·										v
Are Vegetation, Soil										No
Are Vegetation, Soil	, or Hy	drology	<i></i>	naturally p	roblema	atic?	(If needed, e	explain any answe	rs in Remarks.)	
SUMMARY OF FINDING	GS – Atta	ich s	ite m	ap showin	g san	npling poi	nt location	ons, transects	, important f	eatures, etc.
Hydrophytic Vegetation Prese	ent?	Yes	•	No						
Hydric Soil Present?		Yes		No	_	Is the Sam	-	Vos V	No	
Wetland Hydrology Present?		Yes		No	_	Willimaw	elialiu :	165	NO	_
Remarks:										
Cowardin: PEM HGM: Slope V	VT: RPWW	D								
Information listed on this form hydrophytic vegetation, and hy										drology,
, ,										
HYDROLOGY										
Wetland Hydrology Indicato								Secondary Indica		of two required)
Primary Indicators (minimum	of one is re	quired;			•			Surface Soil		
Surface Water (A1)				True Aquatic				Sparsely Veg		Surface (B8)
High Water Table (A2)				Hydrogen Sul			D ((00)	Drainage Pa		
Saturation (A3)						_	Roots (C3)	Moss Trim Li		
Water Marks (B1)				Presence of F		, ,	-: - (00)	Dry-Season)
Sediment Deposits (B2)				Recent Iron R			olis (C6)	Crayfish Buri		(00)
Drift Deposits (B3)				Thin Muck Su				Saturation Vi		
Algal Mat or Crust (B4) Iron Deposits (B5)			_	Other (Explain	II III KEI	ilaiks)		Stunted or Si Geomorphic)
Inundation Visible on Aer	rial Imagery	(R7)						Shallow Aqui		
Water-Stained Leaves (B		(51)						Microtopogra		
Aquatic Fauna (B13)	,0)							FAC-Neutral		
Field Observations:										
Surface Water Present?	Yes	No	~	Depth (inche	es):					
Water Table Present?				Depth (inche		13				
Saturation Present?	Yes	No		Depth (inche	es):	7	Wetland H	Hydrology Presen	it? Yes 🔽	No
(includes capillary fringe) Describe Recorded Data (stre	eam gauge.	monito	orina v	vell. aerial pho	otos, pre	evious inspec	tions), if ava	nilable:		
(rann garage,			,	, , , , ,		,,			
Remarks:										
Recent precipitation. We	etland wat	ter so	urce	appears to	be wa	ater drainir	ng laterally	y from hillslope	to south exte	ends to
smaller stream to west (S-K19) ar	nd lar	ger s	tream to no	orth (S	5-K17).				

Trop Strotum (Blot size: 30'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Deminent
3				Total Number of Dominant Species Across All Strata: 3 (B)
4				Cpcolos / toroso / tir ctrata.
		· -		Percent of Dominant Species
5				That Are OBL, FACW, or FAC:67 (A/B)
6				Prevalence Index worksheet:
7				
		= Total Co		
50% of total cover:0	20% of	total cover	: <u> </u>	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2 =
1				FAC species x 3 =
2				FACU species x 4 =
				UPL species x 5 =
3		-		Column Totals: (A) (B)
4				Coldifilit Totals (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				
8				1 - Rapid Test for Hydrophytic Vegetation
				✓ 2 - Dominance Test is >50%
9	_	T		3 - Prevalence Index is ≤3.0 ¹
500/ (1/1)		= Total Co		4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 0	20% 01	total covei	:	data in Remarks or on a separate sheet)
Helb Stratum (Fiot Size)	0.5	,		Problematic Hydrophytic Vegetation ¹ (Explain)
1. Carex stricta	35		OBL	1 Toblematic Trydrophytic Vegetation (Explain)
2. Arthraxon hispidis	25		FAC	1
3. Trifolium repens	10		FACU	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4 Digitaria sanguinalis	10		FACU	
"				Definitions of Four Vegetation Strata:
5				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6				more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11.				
	80	Total Co		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover: 40		= Total Cor total cover		of size, and woody plants less than 3.20 it tall.
451	20% 01	lotal cover		Woody vine - All woody vines greater than 3.28 ft in
violuy vine Stratum (Flot Size)	4.5			height.
1. Rubus trivialis	15		<u>FACU</u>	
2				
3				
4.				
5.				Hydrophytic
J	15	T-1-1-0		Vegetation Present? Yes ✓ No ———
7.5		= Total Co	_	
50% of total cover: 7.5		total cover	: <u> </u>	
Remarks: (Include photo numbers here or on a separate s	heet.)			
Remaining cover in herb stratum is thatch				
-				

SOIL Sampling Point: W-K9-PEM-1

Profile Desc	ription: (Describe t	o the dept	h needed to docur	nent the i	ndicator	or confirn	n the absence	e of indicators.)
Depth	Matrix		Redo	x Feature	S			
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	Remarks Remarks
0-15	10YR 5/2	90	7.5YR 5/8	10	C	<u>PL</u>	Loam	_
15-18	10YR 5/2	80	7.5YR 5/8	20	С	PL	Loam	
							-	
					C			
¹ Type: C=Ce	oncentration, D=Depl	etion, RM=	Reduced Matrix, MS	S=Masked	Sand Gr	ains.	² Location:	PL=Pore Lining, M=Matrix.
Hydric Soil			,					cators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	(S7)				2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be		ce (S8) (N	ILRA 147,		Coast Prairie Redox (A16)
Black Hi	stic (A3)		Thin Dark Su	rface (S9)	(MLRA 1	47, 148)		(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye		F2)			Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Ma					(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark				_	Very Shallow Dark Surface (TF12)
	d Below Dark Surface	(A11)	Depleted Dar				_	Other (Explain in Remarks)
	ark Surface (A12) Mucky Mineral (S1) (L	DD N	Redox Depre			I DD N		
	147, 148)	nn N,	MLRA 13		es (F12) (LKK N,		
	Gleyed Matrix (S4)		Umbric Surfa	-	MLRA 13	6. 122)	3lı	ndicators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo					vetland hydrology must be present,
	Matrix (S6)		Red Parent N					unless disturbed or problematic.
Restrictive I	Layer (if observed):							
Type:								
Depth (in	ches):		<u></u>				Hydric So	oil Present? Yes 🗸 No
Remarks:							1	

Wetland Photograph Page

Wetland ID W-K9-PEM-



Photograph Direction NE

Date: 04/18/2015

Comments: 2015 wetland delineation.



Photograph Direction NE

Date: 10/21/19

Comments: 2019 wetland delineation confirmation.

Project/Site: MVP			City/0	County: Greenbrier		Sampling Date: 04/18/2015
Applicant/Owner: MVP				,		Sampling Point: W-K9 UP (1)
Investigator(s): J. Hart, B. Czecl	k, N. Katsiafica	เร	Secti	on, Township, Range: N		
Landform (hillslope, terrace, etc.): <u>H</u>						Slope (%): 3
Subregion (LRR or MLRA): LRRN						Datum: NAD 83
Soil Map Unit Name: Zoar silt loa						
Are climatic / hydrologic conditions of						
						_
Are Vegetation, Soil,						
Are Vegetation, Soil,					explain any answ	,
SUMMARY OF FINDINGS -	- Attach site n	nap sn	owing san	npling point location	ons, transect	s, important features, etc.
Hydrophytic Vegetation Present?	Yes	No	✓	Is the Sampled Area		
Hydric Soil Present?	Yes	No	<u> </u>	within a Wetland?	Yes	No 🗸
Wetland Hydrology Present?	Yes	No	<u> </u>			
Remarks:						
Upland Upland plot paired with W-K9	0 (1) On drior	nortion	of hillolone	•		
Opiano piot paired with W-Ks	<i>i</i> (1). On their	portion	oi fillisiope	₹		
HYDROLOGY						
Wetland Hydrology Indicators:					Secondary Indic	ators (minimum of two required)
Primary Indicators (minimum of one	e is required: chec	k all that	apply)		Surface Soi	
Surface Water (A1)	-		quatic Plants	(B14)		egetated Concave Surface (B8)
High Water Table (A2)			en Sulfide Od		Drainage Pa	
Saturation (A3)				res on Living Roots (C3)	-	
Water Marks (B1)			ce of Reduce	-		Water Table (C2)
Sediment Deposits (B2)		Recent	Iron Reduction	on in Tilled Soils (C6)	Crayfish Bu	rrows (C8)
Drift Deposits (B3)		Thin Mu	uck Surface (C7)	Saturation \	/isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		Other (I	Explain in Re	marks)	Stunted or S	Stressed Plants (D1)
Iron Deposits (B5)					Geomorphic	
Inundation Visible on Aerial Im	agery (B7)				Shallow Aq	
Water-Stained Leaves (B9)					· -	raphic Relief (D4)
Aquatic Fauna (B13)				-	FAC-Neutra	Il Test (D5)
Field Observations:	🗸	5	<i>(</i> '			
	s No					
	s No					
Saturation Present? Yes (includes capillary fringe)	s No	_ Depth	(inches):	Wetland F	Hydrology Prese	nt? Yes No
Describe Recorded Data (stream g	auge, monitoring	well, aeri	al photos, pre	evious inspections), if ava	ailable:	
Remarks: No hydrology observed.						
l l l l l l l l l l l l l l l l l l l						
İ						

Sampling Po	int: W-K9 UP (⁻	1)
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· ,	Abcoluto	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)		Species?		
1				Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)
				That Ale OBE, I AOW, OIT AO.
2				Total Number of Dominant
3				Species Across All Strata: 4 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 25 (A/B)
6				
7.				Prevalence Index worksheet:
	0	= Total Cov	/er	Total % Cover of: Multiply by:
50% of total cover:0		total cover	_	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')	2070 0.	10101 00101	•	FACW species x 2 =
1 Sambucus nigra	5	~	FAC	FAC species x 3 =
·· <u>·</u>		-	I'AC	FACU species x 4 =
2				
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Dravalance Index: D/A
6				Prevalence Index = B/A =
		· -	<u> </u>	Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
		= Total Cov	er .	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 2.5	20% of	total cover	:1	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')				,
1. Dactylis glomerata	25	~	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Festuca rubra	20	~	FACU	
3. Trifolium repens	10		FACU	¹ Indicators of hydric soil and wetland hydrology must
4. Taraxacum officinale	10			be present, unless disturbed or problematic.
			FACU_	Definitions of Four Vegetation Strata:
5. Arthraxon hispidus	10		F <u>AC</u>	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6. Juncus effusus	5		F <u>ACW</u>	more in diameter at breast height (DBH), regardless of
7. Achillea millefolium	5		FACU_	height.
8				
9				Sapling/Shrub – Woody plants, excluding vines, less
				than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
10				THY Can.
11		· 		Herb – All herbaceous (non-woody) plants, regardless
40.4		= Total Cov		of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>42.</u> 5	20% of	total cover	:1/	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15')				height.
1. Rubus trivialis	5		<u>FACU</u>	
2				
3				
	·	· -	·	
4	-	· 		Hydrophytic
5				Vegetation
		= Total Cov		Present? Yes No
50% of total cover: 2.5	20% of	total cover	:1	
Remarks: (Include photo numbers here or on a separate s Remaining cover in herb stratum is thatch	heet.)			
Tiernaming cover in herb stratum is triatem				

SOIL Sampling Point: W-K9 UP (1)

Profile Desc	ription: (Describe t	o the depth	needed to docun	nent the in	ndicator	or confirm	the ab	sence of indicat	ors.)	
Depth	Matrix		Redo	x Features	3					
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Tex	ture	Remark	S
0-6	10YR 4/3	100					Loa	am		
6-9	2.5Y 5/3	100					Loa	am		_
9-18	10YR 5/6	100					Loa	am		
			_							
								_		_
										_
	-									
			_							
							_			
¹ Type: C=Co	oncentration, D=Deple	etion. RM=R	educed Matrix, MS	= S=Masked	Sand Gra	nins.	² Locat	tion: PL=Pore Lin	ing M=Matri	Χ.
Hydric Soil		ouon, ruvi–ru	ioaaooa marin, me	J-Mached	Ourid Oil		2000	Indicators for P		
Histosol	(A1)		Dark Surface	(S7)				2 cm Muck (-
	oipedon (A2)		Polyvalue Be		ce (S8) (M	LRA 147,	148)	Coast Prairi	. , .	•
Black Hi	stic (A3)		Thin Dark Su			47, 148)		(MLRA 14		
	en Sulfide (A4)		Loamy Gleye	•	=2)			Piedmont FI		ls (F19)
	d Layers (A5)		Depleted Mat		۵)			(MLRA 1:		(TE40)
	ick (A10) (LRR N) d Below Dark Surface	(Δ11)	Redox Dark S Depleted Dar					Very Shallov Other (Expla		
	ark Surface (A12)	(/(///	Redox Depre					Out of (Explo		
	Mucky Mineral (S1) (L	RR N,	Iron-Mangan			RR N,				
	A 147, 148)		MLRA 13	6)						
	Sleyed Matrix (S4)		Umbric Surfa					³ Indicators of h		-
	Redox (S5)		Piedmont Flo					wetland hydro		-
	Matrix (S6)		Red Parent N	faterial (F2	21) (MLR	A 127, 147	7)	unless disturb	ped or proble	matic.
	Layer (if observed):									
Type:							l		v	4
	ches):		<u> </u>				Hydr	ric Soil Present?	Yes	No
Remarks:	oil indicators									
NO Hyunc s	soil indicators									

USACE FILE NO./Project Name:		Mountain	Valley Pipeline	COORDINATES:	Lat.	37.858743	Lon.	-80.755724
STREAM/SITE ID AND SITE DESCR	RIPTION:					W-K10, Pipeline ROW		
(% stream slope, watershed size {a	creage}, unaltered	d or impairments)						
FORM OF MITIGATION:								
DATE:	8/10)/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-K10	Emergent	0.0068	Emergent					
						PART III - Advanced	Mitigatio	n
						Sustainable Determination Made on Advanced Mitigation (Y or N)		Y
Total Impact		0.0068						
		Unit Scores				Estimated		
	lassification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0068	-		£400.00		
Total Scrub-Shrub			0	_		\$408.00		
Total Forested			0	=				
Total Open Water			0	1				

Project/Site: MVP	City/County: Greenb	rier	Sampling Date: 04/19/2015
Applicant/Owner: MVP		State: WV	Sampling Point: W-K10
Investigator(s): J. Hart, B. Czeck, N. Katsiaficas	Section, Township, Rai		
Landform (hillslope, terrace, etc.): Terrace	<u> </u>	·	Slone (%). 0
Subregion (LRR or MLRA): LRRN Lat: 37	7.858745 Lon		Datum: NAD 83
Soil Map Unit Name: Cateache silt loam, 35 to 55 p			
Are climatic / hydrologic conditions on the site typical for the			
· ·	•	•	
Are Vegetation, Soil, or Hydrology			oresent? Yes No
Are Vegetation, Soil, or Hydrology	naturally problematic? (If ne	eded, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing sampling point lo	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes✓	NO Is the Sampled		
	is the Sampleu		No
	NO within a Wetlan	ia? Yes <u> </u>	NO
Remarks:			
Cowardin Code: PEM HGM: Slope WT: RPWWN			
Information listed on this form represents the data collected	d in 2015. The wetland was revisite	d on 10/21/2019. The pre	esence of wetland hydrology.
hydrophytic vegetation, and hydric soils was unable to be			scones of Westana Hydrology,
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one is required; check all	that apply)	Surface Soil	
	e Aquatic Plants (B14)		getated Concave Surface (B8)
	drogen Sulfide Odor (C1)	Drainage Pa	
	dized Rhizospheres on Living Root		
<u> </u>	esence of Reduced Iron (C4)		Water Table (C2)
•	cent Iron Reduction in Tilled Soils (C	•	
	n Muck Surface (C7)		isible on Aerial Imagery (C9)
	ner (Explain in Remarks)		tressed Plants (D1)
Iron Deposits (B5)		•	Position (D2)
Inundation Visible on Aerial Imagery (B7)		Shallow Aqu	
✓ Water-Stained Leaves (B9)			aphic Relief (D4)
Aquatic Fauna (B13)		✓ FAC-Neutral	Test (D5)
Field Observations: Surface Water Present? Yes No ✓ De	onth (inches)		
	epur (inches):		
Saturation Present? Yes No V Do (includes capillary fringe)	eptn (inches): we	tiand Hydrology Preser	nt? Yes <u>√</u> No
Describe Recorded Data (stream gauge, monitoring well,	aerial photos, previous inspections), if available:	
Remarks:			
PEM wetland occurs in old road bed, water so	urce annears to be both pred	rinitation and possib	ly some groundwater
Early season, very sparsely vegetated. Slowly			
Standing water in vicinity of plot. Clay hardpan	perches water but restricts (groundwater visibility	/

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

/EGETATION (Four Strata) – Use scientific n	ames of	plants.		Sampling Point: W-K10
301	Absolute			Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:30') 1)		Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC:3 (A)
2				
3			·	Total Number of Dominant Species Across All Strata: 3 (B)
			·	Species Across All Strata. (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
50% of total cover:0		= Total Cov	_	OBL species x 1 =
	20% 01	total cover		FACW species x 2 =
Sapling/Shrub Stratum (Plot size: 15')				FAC species x 3 =
1				FACU species x 4 =
2				UPL species x 5 =
3				
4		-		Column Totals: (A) (B)
5	· -			Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				✓ 1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0¹
	0	= Total Cov	/er	1 -
50% of total cover:0	20% of	total cover	:0	4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5')				data in Remarks or on a separate sheet)
1. Carex crinita	10	√	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Viola cucculata	5	√	F <u>ACW</u>	
3. Impatiens capensis	5	√	FACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4				
5				Definitions of Four Vegetation Strata:
6	-			Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
				more in diameter at breast height (DBH), regardless of
7				height.
0				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
10	-	-	· ——	my tail.
11				Herb – All herbaceous (non-woody) plants, regardless
500/ 5		= Total Cov		of size, and woody plants less than 3.28 ft tall.
50% of total cover: 10	20% of	total cover	: _4	Woody vine – All woody vines greater than 3.28 ft in
woody vine Stratum (Flot Size)				height.
1,				
2				
3				
4				Hydrophytic
5				Vegetation
		= Total Cov	_	Present? Yes <u>√</u> No
50% of total cover:0	20% of	total cover	:0	
Remarks: (Include photo numbers here or on a separate s	sheet.)			•
Remaining cover in herb stratum is leaf litter/sta	anding wa	ıter		

SOIL Sampling Point: W-K10

Profile Desc	ription: (Describe	to the dept	h needed to docur	ment the i	ndicator	or confirn	n the absend	ce of indicators.)
Depth	Matrix		Redo	x Feature	S			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-4	10YR 5/1	70	7.5YR 5/8	30	С	М	CL	Organics (leaves) 0-2 in
4-10	10YR 5/6	70	10YR 5/1	30	D		CL	
10-12	10YR 5/6	100					CL	Parent material
					-		-	
								_
						<u> </u>		
								_
-							-	
					<u>C</u>			
	oncentration, D=Depl	letion, RM=	Reduced Matrix, MS	S=Masked	d Sand Gr	ains.		PL=Pore Lining, M=Matrix.
Hydric Soil							Ind	icators for Problematic Hydric Soils ³ :
Histosol			Dark Surface					2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be				, 148)	Coast Prairie Redox (A16)
Black Hi			Thin Dark Su			147, 148)		(MLRA 147, 148)
	en Sulfide (A4) d Layers (A5)		✓ Loamy Gleye✓ Depleted Ma		(FZ)			Piedmont Floodplain Soils (F19) (MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark		-6)			Very Shallow Dark Surface (TF12)
	d Below Dark Surface	e (A11)	Depleted Da		•		_	Other (Explain in Remarks)
•	ark Surface (A12)	. (,	Redox Depre					Care (Enplan III viellane)
	lucky Mineral (S1) (L	.RR N,	Iron-Mangan			LRR N,		
_	\ 147, 148)		MLRA 13					
	Gleyed Matrix (S4)		Umbric Surfa					ndicators of hydrophytic vegetation and
-	Redox (S5)		Piedmont Flo	•				wetland hydrology must be present,
	Matrix (S6)		Red Parent N	Material (F	21) (MLR	A 127, 14	7) (unless disturbed or problematic.
	Layer (if observed):							
Туре: <u>12</u>			<u> </u>					,
Depth (in	_{ches):} Hardpan						Hydric So	oil Present? Yes ✓ No
Remarks:							1	
Hard clay I	ayer perches wa	ter but re	stricts groundwa	ater tabl	e visibili	ty.		

Wetland Photograph Page

Wetland ID W-K10



Photograph Direction NE

Date: 04/19/2015

Comments: 2015 wetland delineation.



Photograph Direction SW

Date: 10/21/19

 $\label{eq:comments:comments:} 2019 \ \text{wetland delineation confirmation}.$

Project/Site: MVP	City/County	_{/:} Greenbrier	Sampling Date: 04/19/2015
Applicant/Owner: MVP		State: WV	
Investigator(s): J. Hart, B. Czeck, N. Katsiafi			<u> </u>
Landform (hillslope, terrace, etc.): Hillslope		. •	Slope (%): 8
Subregion (LRR or MLRA): LRRN L		Long: -80.755738	
Soil Map Unit Name: Cateache silt loam, 35 to			
Are climatic / hydrologic conditions on the site typica	al for this time of year? Yes	✓ No (If no, explain in I	Remarks.)
Are Vegetation, Soil, or Hydrology _			
Are Vegetation, Soil, or Hydrology _			
SUMMARY OF FINDINGS – Attach site		· · · · ·	
Hydrophytic Vegetation Present? Yes	No ✓	ne Sampled Area	
	No <u> ✓</u> with		No✓
	No <u> ✓</u>		
Remarks: Upland			
Upland plot located on hillslope above Pt	EM wetland. Early seaso	on, very sparsely vegetated. F	Paired plot with W-K10.
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indic	ators (minimum of two required)
Primary Indicators (minimum of one is required; ch	· · ·		l Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)		egetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1	_	atterns (B10)
Saturation (A3)	Oxidized Rhizospheres on	_	
Water Marks (B1)	Presence of Reduced IronRecent Iron Reduction in T	-	Water Table (C2)
Sediment Deposits (B2) Drift Deposits (B3)	Thin Muck Surface (C7)		/isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Remarks)		Stressed Plants (D1)
Iron Deposits (B5)	Other (Explain in Remarks)		c Position (D2)
Inundation Visible on Aerial Imagery (B7)		Shallow Aqu	
Water-Stained Leaves (B9)			aphic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutra	Test (D5)
Field Observations:			
	Depth (inches):	-	
	Depth (inches):		
Saturation Present? Yes No (includes capillary fringe)	✓_ Depth (inches):	_ Wetland Hydrology Prese	nt? Yes No✓
Describe Recorded Data (stream gauge, monitoring	ng well, aerial photos, previous	inspections), if available:	
Remarks:			
No hydrology			

VEGETATION (Four Strata) - Use scientific names of plants.

Absolute Stratum (Plot size: 30' Absolute Species Status Status Species Status Species Status Status Species Status Species Status Status Status Species Status Status Species Status Status Status Species Status Statu	EGETATION (Four Strata) – Use scientific na	111103 01	•		Sampling Point: W-K10 U	
Quercas montana 30	Tree Stratum (Plot size: 30'					
2 Quercas rubra 2 Q	1 Quercas montana		<u>⊃pccics:</u>			(A)
Total Number of Dominants 9	··-		<u> </u>		That Are OBE, I ACW, OF I AC.	(//)
Acer rubrum			<u> </u>			(D)
Percent of Dominant Species Bolling/Shrub Stratum (Plot size: 15') Fagus grandifolia Acer rubrum Acer rubrum Bolling/Shrub Stratum (Plot size: 15') Fagus grandifolia Acer rubrum Bolling/Shrub Stratum (Plot size: 15') Facus Fa					Species Across All Strata.	(B)
Regular Stratum (Plot size: 15" 15	"			. 1 <u>710</u>		(A /D)
Sapling/Shrub Stratum Plot size: 15" 15 20% of total cover: 16 16 16 20% of total cover: 16 16 20% of total cover: 16 16 20% of total cover: 16 20% of total cover: 16 20% of total cover: 16 20% of total cover: 16 20% of total cover: 16 20% of total cover: 16 20% of total cover: 16 20% of total cover: 16 20% of total cover: 18 20% of total cover: 19 20% of total cover: 20% of total					That are OBL, FACW, or FAC:	(A/B)
Some of total cover					Prevalence Index worksheet:	
50% of total cover: 40 20% of total cover: 16	·· <u> </u>	80	= Total Co	ver	Total % Cover of: Multiply by:	
Fagus grandifolia 15	50% of total cover: 40				OBL species x 1 =	_
1. Fagus grandifolia 2. Acer rubrum 5.	4.51				FACW species x 2 =	
3. Aesculus glabra 5. ✓ FACU 4	_ ,	15	✓	FACU	FAC species x 3 =	
3. Aesculus glabra 4		5	<i>✓</i>		FACU species x 4 =	_
Column Totals:		5	<i>─</i> ✓		UPL species x 5 =	_
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 support data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation 1 - Polygonatum biflorum 10	4.				Column Totals: (A)	(B)
Frederick = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% of total cover: 5					5 50	
Solution Solution						
B						
3 - Prevalence Index is \$3.0¹ 3 - Prevalence Index is \$3.0¹ 4 - Morphological Adaptations¹ (Provide supplata in Remarks or on a separate sheet) 5						
25 = Total Cover 50% of total cover: 12.5 20% of total cover: 5 Herb Stratum (Plot size: 5') 1. Polygonatum biflorum 10 ✓ FACU 2. Viola hastata 5 ✓ UPL 3.					1 	
Sow of total cover: 12.5 20% of total cover: 5 data in Remarks or on a separate sheet) 1. Polygonatum biflorum 10		25	= Total Co	- <u></u>		
Problematic Hydrophytic Vegetation Explain	50% of total cover: 12.5					
2. Viola hastata 5. ✓ UPL Indicators of hydric soil and wetland hydrology in be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 or more in diameter at breast height (DBH), regardle height. Sapling/Shrub – Woody plants, excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Herb – All herbaceous (non-woody) plants, regard of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15′) Smilax rotundifolia 5 ✓ FAC Tree – Woody plants, excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Woody vine – All woody vines greater than 3.28 height.	Herb Stratum (Plot size: 5')					
3	1. Polygonatum biflorum	10		F <u>ACU</u>	Problematic Hydrophytic Vegetation* (Expla	ın)
be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 or more in diameter at breast height (DBH), regardle height. Sapling/Shrub – Woody plants, excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Herb – All herbaceous (non-woody) plants, regard of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15') Smilax rotundifolia 5 ✓ FAC Tree – Woody plants, excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Woody vine – All woody vines greater than 3.28 height.	2. Viola hastata	5	✓	UPL	1	
Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 of more in diameter at breast height (DBH), regardle height. Sapling/Shrub – Woody plants, excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Herb – All herbaceous (non-woody) plants, regardle height. Suppling/Shrub – Woody plants, excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Herb – All herbaceous (non-woody) plants, regardle height. Woody Vine Stratum (Plot size: 15') Suppling/Shrub – Woody plants excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Herb – All herbaceous (non-woody) plants, regardle height. Woody Vine – All woody vines greater than 3.28 height.	3				'Indicators of hydric soil and wetland hydrology	must
Tree – Woody plants, excluding vines, 3 in. (7.6 of more in diameter at breast height (DBH), regardle height. Sapling/Shrub – Woody plants, excluding vines, 3 in. (7.6 of more in diameter at breast height (DBH), regardle height. Sapling/Shrub – Woody plants, excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15') Smilax rotundifolia 5 ✓ FAC Tree – Woody plants, excluding vines, 3 in. (7.6 of more in diameter at breast height (DBH), regardle height. Sapling/Shrub – Woody plants, excluding vines, 3 in. (7.6 of more in diameter at breast height (DBH), regardle height. Sapling/Shrub – All herbaceous (non-woody) plants, regardle height. Woody vine – All woody vines greater than 3.28 height.	4					
more in diameter at breast height (DBH), regardle height. Sapling/Shrub – Woody plants, excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Herb – All herbaceous (non-woody) plants, regardle height. Sapling/Shrub – Woody plants, excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Herb – All herbaceous (non-woody) plants, regardle height. Woody Vine Stratum (Plot size: 15') 1. Smilax rotundifolia 5 ✓ FAC The provided height is provided by the plant of size and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 height.	5				Definitions of Four Vegetation Strata.	
height. Sapling/Shrub – Woody plants, excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Herb – All herbaceous (non-woody) plants, regar of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15') Sapling/Shrub – Woody plants, excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Herb – All herbaceous (non-woody) plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 height.	•				Tree – Woody plants, excluding vines, 3 in. (7.6	cm) or
Sapling/Shrub – Woody plants, excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Sapling/Shrub – Woody plants, excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Herb – All herbaceous (non-woody) plants, regar of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15')	7					iess oi
Saping/shrub – woody plants, excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Herb – All herbaceous (non-woody) plants, regar of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15') Smilax rotundifolia 5 FAC Saping/shrub – woody plants, excluding vines, than 3 in. DBH and greater than or equal to 3.28 m) tall. Woody vine – All herbaceous (non-woody) plants, regar of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 height.	8					
10						
11	10.					, , , (,
15 = Total Cover 50% of total cover: 7.5 20% of total cover: 3 Woody Vine Stratum (Plot size: 15') 1. Smilax rotundifolia 5 ✓ FAC 2					Horb All harbacoous (non woody) plants rogs	ordlocc
50% of total cover: 7.5 20% of total cover: 3 Woody Vine Stratum (Plot size: 15') 1. Smilax rotundifolia 5 ✓ FAC 2		15	= Total Co	/er		ii uiess
Woody Vine Stratum (Plot size:) 1. Smilax rotundifolia 5	50% of total cover:					o 6: :
1. Smilax rotunditolia	Woody Vine Stratum (Plot size:15')					3 ft in
3	- Smilay rotunditalia	5		FAC	no.g. ta	
3	2					
	_					
4	4				Liverantic	
5 Hydrophytic						
5 = Total Cover Present? Yes No _ ✓		5	= Total Co	/er	Present? Yes No _✓	
50% of total cover: 2.5 20% of total cover: 1	50% of total cover: 2.5					

SOIL Sampling Point: W-K10 UP

Profile Desc	ription: (Describe t	o the dep	th needed to docun	nent the i	ndicator	or confirm	the absen	ce of indicators.)	
Depth	Matrix			x Feature					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Rema	
0-4	10YR 5/6	70	10YR 5/1	30	D	<u>M</u>	Loam	Organics (le	eaves) 0-2 in
4-12	10YR 5/6	_100_					Loam	Parent	material
								_	
								_	
					D				
¹ Type: C=Co	oncentration, D=Depl	etion, RM:	Reduced Matrix, MS	S=Masked	l Sand Gra	ains.	² Location:	PL=Pore Lining, M=M	atrix.
Hydric Soil I	ndicators:						Ind	icators for Problemat	ic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	(S7)				2 cm Muck (A10) (ML	RA 147)
	ipedon (A2)		Polyvalue Be				148)	Coast Prairie Redox (A16)
Black His			Thin Dark Su			47, 148)		(MLRA 147, 148)	
	n Sulfide (A4)		Loamy Gleye		(F2)			Piedmont Floodplain	Soils (F19)
	Layers (A5)		Depleted Ma		-0)			(MLRA 136, 147)	(7510)
	ck (A10) (LRR N) I Below Dark Surface	(//11)	Redox Dark S				_	Very Shallow Dark Su Other (Explain in Rem	
	irk Surface (A12)	(A11)	Depleted Dar Redox Depre					Other (Explain in Ren	idiks)
	lucky Mineral (S1) (L	RR N.	Iron-Mangan			LRR N.			
	147, 148)	,	MLRA 13		(· ·-) (
	leyed Matrix (S4)		Umbric Surfa	•	(MLRA 13	6, 122)	³	ndicators of hydrophyti	c vegetation and
	edox (S5)		Piedmont Flo	odplain S	oils (F19)	(MLRA 14	(8)	wetland hydrology mus	t be present,
	Matrix (S6)		Red Parent N	/laterial (F	21) (MLR	A 127, 147	")	unless disturbed or pro	blematic.
	.ayer (if observed):								
Type: <u>12</u>									
	ches): Hardpan						Hydric So	oil Present? Yes	No <u>√</u>
Remarks:	avor rootrioto dia	aina							
naid clay is	ayer restricts dig	girig							

USACE FILE NO./Project Name:		Mountain	Valley Pipeline	COORDINATES:	Lat.	37.85159	Lon.	-80.752937
STREAM/SITE ID AND SITE DESCR	RIPTION:					W-UV8, Pipeline ROW		
(% stream slope, watershed size {a	creage}, unaltered	or impairments)						
FORM OF MITIGATION:								
DATE:	8/10/	/2015	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-UV8	Emergent	0.4913	Emergent					
						PART III - Advanced		on
						Sustainable Determination Made on Advanced Mitigation (Y or N)		Y
Total Impact		0.4913			Ī			
		Jnit Scores				Estimated		
	lassification		Replacement Unit(s)			ILF Costs		
Total Serub Shrub			0.4913	-		¢20.479.00		
Total Scrub-Shrub			0	_		\$29,478.00)	
Total Open Water			0					
Total Open Water			U	_				

Project/Site: MVP	City/County: Gree	nbrier	Sampling Date: 06/12/2016
Applicant/Owner: MVP		State: WV	Sampling Point: W-UV8
Investigator(s): C.Stoliker, L.McCarrell, J.	Niergarth Section, Township.		
Landform (hillslope, terrace, etc.): Basin (Fmr		•	Slone (%): 0-3
Subregion (LRR or MLRA): LRR N			Datum: NAD 83
Soil Map Unit Name: Melvin-Lindside complex			
	_	NWI classific	
Are climatic / hydrologic conditions on the site type	·		
Are Vegetation, Soil, or Hydrology		re "Normal Circumstances"	present? Yes No
Are Vegetation, Soil, or Hydrology	/ naturally problematic? (If	f needed, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach s	te map showing sampling poin	t locations, transects	s, important features, etc.
Hydrophytic Vegetation Present? Yes _	No Is the Samo		
Hydric Soil Present? Yes _	No.		Ma
Wetland Hydrology Present? Yes	William a We	land? Yes	No
Remarks: Cowardin Code: PEM	HGM: Slope Wate	er Type: RPWWD	
Cowardin Code. Elvi	Train. Glope	7 Typo: [[VVVD	
HYDROLOGY		Casandaniladia	-t (:-:
Wetland Hydrology Indicators:	about all that apply)	·	ators (minimum of two required)
Primary Indicators (minimum of one is required;		Surface Soil	` '
Surface Water (A1) High Water Table (A2)	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1)	Sparsely ve	getated Concave Surface (B8)
Saturation (A3)	✓ Oxidized Rhizospheres on Living R		
Water Marks (B1)	Presence of Reduced Iron (C4)		Water Table (C2)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soil	· · · · · · · · · · · · · · · · · · ·	
Drift Deposits (B3)	Thin Muck Surface (C7)		isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Remarks)		Stressed Plants (D1)
Iron Deposits (B5)	<u> </u>		: Position (D2)
Inundation Visible on Aerial Imagery (B7)		Shallow Aqu	
Water-Stained Leaves (B9)			aphic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutra	. ,
Field Observations:		<u> </u>	· ,
Surface Water Present? Yes No	✓ Depth (inches):		
	Depth (inches): 6		
		Wetland Hydrology Prese	nt? Yes 🗸 No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitor	ring well, coriel photos, provious inspectio	one) if available:	
Describe Recorded Data (Stream gauge, monito	ing well, aerial priotos, previous inspection	ons), ii avallable.	
Remarks:		-	

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

/EGETATION (Four Strata) – Use scientific na	allies Oi	piarits.		Sampling Point: W-UV8
30'	Absolute			Dominance Test worksheet:
Tree Stratum (Plot size: 30') 1		Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100% (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
		= Total Cov		
50% of total cover: 0	20% of	total cover	. 0	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2 =
1				FACIl procies x 3 =
2		-		FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
		= Total Cov		4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 0	20% of	total cover	. 0	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')	0.5			Problematic Hydrophytic Vegetation ¹ (Explain)
1. Juncus effusus	35		FACW_	
2. Phalaris arundinacea	25		FACW_	¹ Indicators of hydric soil and wetland hydrology must
3. Dichanthelium clandestinum	20		FAC	be present, unless disturbed or problematic.
4. Carex Iurida	10		OBL	Definitions of Four Vegetation Strata:
5. Carex scoparia	8		FACW_	Tree Woody plants evaluding vines 2 in (7.6 cm) or
6. Solidago canadensis	5		FACU_	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7. Onoclea sensibilis	5		FACW_	height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11		-		Herb – All herbaceous (non-woody) plants, regardless
54		= Total Cov		of size, and woody plants less than 3.28 ft tall.
50% of total cover: 54 Woody Vine Stratum (Plot size: 15')	20% of	total cover	21.6	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15)				height.
/ lot oizo				neight.
/ lot oizo				neight.
1				neight.
1				neight.
1				Hydrophytic
1				Hydrophytic Vegetation
1	0		_	Hydrophytic

Sampling Point: W-UV8

SOIL

Profile Desc	ription: (Describe to	o the depth	needed to docum	ent the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redox	K Features	3	. 2	_	
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-16	10YR 4/2	70	10YR 5/8	30	С	M/PL	SICL	
					-			
					-			
					-			
¹ Type: C=Co	oncentration, D=Deple	etion, RM=R	educed Matrix, MS	=Masked	Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:						Indica	ators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	(S7)			2	cm Muck (A10) (MLRA 147)
Histic Ep	ipedon (A2)		Polyvalue Bel	low Surfac	ce (S8) (N	ILRA 147,	148) C	Coast Prairie Redox (A16)
Black Hi			Thin Dark Su			47, 148)		(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye		F2)		P	Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Mat		0)			(MLRA 136, 147)
	ck (A10) (LRR N) Below Dark Surface	(/11)	Redox Dark S Depleted Dar	•	,			ery Shallow Dark Surface (TF12) Other (Explain in Remarks)
	ark Surface (A12)	(Д11)	Redox Depre				_ `	oner (Explain in Nemarks)
	lucky Mineral (S1) (Li	RR N.	Iron-Mangane			LRR N,		
	147, 148)	,	MLRA 136		, ,	,		
Sandy G	leyed Matrix (S4)		Umbric Surfa	ce (F13) (MLRA 13	6, 122)	³ Ind	licators of hydrophytic vegetation and
Sandy R	edox (S5)		Piedmont Flo	odplain So	oils (F19)	(MLRA 14	8) we	etland hydrology must be present,
	Matrix (S6)		Red Parent M	laterial (F	21) (MLR	A 127, 147) un	less disturbed or problematic.
Restrictive I	ayer (if observed):							
Type:			<u> </u>					_
Depth (inc	ches):		_				Hydric Soil	Present? Yes No
Remarks:								



Photograph Direction South

Comments:			

Project/Site: MVP	City/Co	ounty: Greenbrier		Sampling Date: 06/12/2016
Applicant/Owner: MVP	•	,		Sampling Point: W-UV8 UP
Investigator(s): C.Stoliker, L.McCarrell,	J. Niergarth Section	n Township Range N/	-	<u> </u>
Landform (hillslope, terrace, etc.): Flat (Fm				Slone (%): 0-3
Subregion (LRR or MLRA): LRR N				Datum: NAD 83
Soil Map Unit Name: Melvin-Lindside comp				
		4		
Are climatic / hydrologic conditions on the site				
Are Vegetation, Soil, or Hydrol	ogy significantly disturb	ed? Are "Normal	Circumstances"	present? Yes No
Are Vegetation, Soil, or Hydrol	ogy naturally problema	tic? (If needed, e	explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS – Attach	site map showing sam	pling point locatio	ns, transects	s, important features, etc.
Hydrophytic Vegetation Present? Ye	s No_ 🗸			
	s No	Is the Sampled Area	.,	🗸
Wetland Hydrology Present?	s No	within a Wetland?	Yes	No
Remarks: Cowardin Code: UPLAN		Water Type:		
Cowardin Code. UPLAN	D HGIVI.	Water Type:		
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one is requir	ed: check all that apply)		Surface Soil	
Surface Water (A1)	True Aquatic Plants (E	314)		getated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odd		Drainage Pa	
Saturation (A3)		s on Living Roots (C3)	Moss Trim L	
Water Marks (B1)	Presence of Reduced	Iron (C4)	Dry-Season	Water Table (C2)
Sediment Deposits (B2)	Recent Iron Reduction	n in Tilled Soils (C6)	Crayfish Bur	rows (C8)
Drift Deposits (B3)	Thin Muck Surface (C	7)	Saturation V	isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Rem	arks)	Stunted or S	Stressed Plants (D1)
Iron Deposits (B5)				Position (D2)
Inundation Visible on Aerial Imagery (B7	·)		Shallow Aqu	
Water-Stained Leaves (B9)				aphic Relief (D4)
Aquatic Fauna (B13)			FAC-Neutra	T lest (D5)
Field Observations:				
Surface Water Present? Yes N	No Depth (inches):			
	No Depth (inches):			
Saturation Present? Yes N (includes capillary fringe)	No Depth (inches):	Wetland H	lydrology Presei	nt? Yes No
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, prev	vious inspections), if ava	ilable:	
Demode				
Remarks:				

/EGETATION (Four Strata) – Use scientific na	ames of	plants.		Sampling Point: W-UV8 UP
201	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover	Species?	<u>Status</u>	Number of Dominant Species
1				That Are OBL, FACW, or FAC:1 (A)
2				Total Number of Dominant
3				Species Across All Strata:4 (B)
4		-		Percent of Dominant Species
5		-		That Are OBL, FACW, or FAC: 25% (A/B)
6				Prevalence Index worksheet:
7				
_		= Total Cov	_	
50% of total cover: 0	20% of	total cover:	. 0	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')	00			FACW species x 2 =
1. Rosa multiflora	30		FACU_	FAC species x 3 =
2. Rhamnus cathartica	10		F <u>ACU</u>	FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Provolongo Indox - P/A -
6				Prevalence Index = B/A =
7				Hydrophytic Vegetation Indicators:
8				1 - Rapid Test for Hydrophytic Vegetation
9.				2 - Dominance Test is >50%
<u>. </u>	40	= Total Cov	er	3 - Prevalence Index is ≤3.0 ¹
50% of total cover: 20				4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5')				data in Remarks or on a separate sheet)
1. Anthoxanthum odoratum	60	✓	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Solidago canadensis	20		FACU	
3. Dactylis glomerata	15	-	FACU	¹ Indicators of hydric soil and wetland hydrology must
4. Phalaris arundinacea	10		FACW	be present, unless disturbed or problematic.
5. Dichanthelium clandestinum	8		FAC	Definitions of Four Vegetation Strata:
·· ·				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6				more in diameter at breast height (DBH), regardless of
7				height.
8		-	· ——	Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	113	= Total Cov	er	of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>56.5</u>	20% of	total cover:	22.6	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size:15')				height.
1. Clematis virginiana	15		FAC	
2				
3				
4				Hydrophytic
5				Vegetation
	15	= Total Cov	er	Present? Yes No
50% of total cover: 7.5	20% of	total cover:	3	
Remarks: (Include photo numbers here or on a separate s				I.
	,			

Depth	Matrix	 .		x Features	1 . ?	_			
(inches)	Color (moist)	<u>%</u>	Color (moist)		ype ¹ Loc ²	Texture		Remarks	
0-12	10YR 4/4	85	10YR 5/6	15	<u> </u>	CL			
						-	·		
						-			
<u> </u>					· ·		· ·		
							·		
_		-							
							· ———		
	oncentration, D=Depl	etion, RM=	Reduced Matrix, MS	S=Masked Sa	nd Grains.		PL=Pore Linir		
Hydric Soil I	ndicators:					Indic	ators for Pr	oblematic H	ydric Soils ³ :
Histosol (Dark Surface	, ,			2 cm Muck (A	, .	•
	ipedon (A2)			,	S8) (MLRA 147	, 148) (Coast Prairie)
Black His	, ,				LRA 147, 148)		(MLRA 14		
	n Sulfide (A4)		Loamy Gleye			'	Piedmont Flo		s (F19)
	Layers (A5)		Depleted Ma				(MLRA 13		
	ck (A10) (LRR N)	(* ()	Redox Dark	` ,	-\		Very Shallow		
	Below Dark Surface	(A11)		rk Surface (F7	()	(Other (Explai	n in Remarks	S)
	rk Surface (A12)	DD N	Redox Depre		E40) (I DD N				
	lucky Mineral (S1) (L	KK N,	Iron-Mangan		F12) (LRR N,				
	147, 148)		MLRA 13	•	DA 400 400\	31	d: 4 4 l		
	leyed Matrix (S4)			ace (F13) (ML			dicators of hy		
	edox (S5)				(F19) (MLRA 1		etland hydrol		
	Matrix (S6)		Red Parent N	viateriai (FZ1)	(MLRA 127, 14	- <i>(1)</i> ur	nless disturbe	ea or problen	natic.
7 4 - 1 - 4 - 1 - 1	/:f -								
	ayer (if observed):								
Type: Co	urse fragments		<u> </u>						
	urse fragments		<u></u>			Hydric Soi	il Present?	Yes	No
Type: <u>Co</u> Depth (inc	urse fragments					Hydric Soi	I Present?	Yes	_ No <u> </u>
Type: <u>Co</u> Depth (inc	urse fragments		_			Hydric Soi	I Present?	Yes	No
Type: <u>Co</u> Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	No 🗸
Type: <u>Co</u> Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	_ No <u> </u>
Type: <u>Co</u> Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	_ No <u> </u>
Type: <u>Co</u> Depth (inc	urse fragments					Hydric Soi	Il Present?	Yes	_ No <u> </u>
Type: <u>Co</u> Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	_ No <u> </u>
Type: <u>Co</u> Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	_ No <u> </u>
Type: <u>Co</u> Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	_ No <u> </u>
Type: Co Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	No V
Type: Co Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	No V
Type: Co Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	No V
Type: Co Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	No V
Type: Co Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	No V
Type: Co Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	No V
Type: Co Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	No V
Type: <u>Co</u> Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	No V
Type: <u>Co</u> Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	No V
Type: <u>Co</u> Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	No V
Type: <u>Co</u> Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	No V
_{Туре:} <u>Со</u>	urse fragments					Hydric Soi	il Present?	Yes	No V
Type: <u>Co</u> Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	No V
Type: <u>Co</u> Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	No V
Type: Co Depth (inc	urse fragments					Hydric Soi	il Present?	Yes	No V