BASELINE ASSESSMENT – WETLAND ATTRIBUTES

ATTACHMENT M ROANOKE COUNTY WETLAND SWVM FORMS/WETLAND DELINEATION FORM/PHOTOS

Wetland ID	Wetland SWVM Form	Delineation Data/Photos
	Provided	
W-EF18	N/A – Permanent Conversion	N/A – Permanent Conversion
W-EF17	N/A – Permanent Conversion	N/A – Permanent Conversion
W-IJ94-PEM	✓	✓
W-IJ96-PEM	✓	✓
W-IJ95-PSS	N/A – Permanent Conversion	N/A – Permanent Conversion
W-IJ102	N/A – Permanent Conversion	N/A – Permanent Conversion
W-KL17	N/A – Permanent Conversion	N/A – Permanent Conversion
W-EF42	✓	✓
W-HS02	✓	✓
W-AB6-PEM-2	✓	✓
W-AB6-PFO-1	N/A – Permanent Conversion	N/A – Permanent Conversion
W-AB6-PEM-1	✓	✓
W-AB6-PSS	N/A – Permanent Conversion	N/A – Permanent Conversion
W-AB5	N/A – Permanent Conversion	N/A – Permanent Conversion
W-AB3-PEM-2	✓	✓
W-EF46	N/A – Permanent Conversion	N/A – Permanent Conversion
W-KL48-PSS-1	N/A – Permanent Conversion	N/A – Permanent Conversion
W-KL48-PEM	✓	✓
W-KL48-PSS-2	N/A – Permanent Conversion	N/A – Permanent Conversion
W-KL50	✓	✓
W-KL49	✓	✓
W-KL51-PEM	✓	✓
W-KL51-PSS	N/A – Permanent Conversion	N/A – Permanent Conversion
W-MN7-PEM	✓	✓
W-EF44	✓	✓
W-IJ36	N/A – Permanent Conversion	N/A – Permanent Conversion
W-Z7	N/A – Permanent Conversion	N/A – Permanent Conversion
W-Z6	N/A – Permanent Conversion	N/A – Permanent Conversion
W-IJ62	✓	✓
W-Y2	✓	✓
W-IJ10	✓	✓
W-Q11	✓	✓
W-KL1	✓	✓
W-B25-PEM-4	✓	✓

BASELINE ASSESSMENT – WETLAND ATTRIBUTES

W-B25-PEM-1	✓	✓
W-B24-PSS	N/A – Permanent Conversion	N/A – Permanent Conversion
W-B24-PEM	✓	✓
W-B25-PSS-2	N/A – Permanent Conversion	N/A – Permanent Conversion
W-B25-PEM-1	✓	✓
W-B25-PEM-2	√	√

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	37.170092	Lon.	-80.138294
STREAM/SITE ID AND SITE DESCRIPTION:				W	-IJ94-PEM, Timber Mat Crossing			
(% stream slope, watershed size {a	creage}, unaltered	d or impairments)						
FORM OF MITIGATION:								
DATE:	9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-IJ94-PEM	Emergent	0.0202	Emergent					
						DADT III. Advanced	NA:4:4: -	
						PART III - Advanced Sustainable Determination Made or		on .
						Advanced Mitigation (Y or N)		Y
						(* 5. 13)	<u> </u>	
Total Impact		0.0202						
		Unit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0202					
Total Scrub-Shrub			0			\$1,212.00		
Total Forested			0					
Total Open Water			0					

Project/Site: MVP	City/County: Roa	noke	Sampling Date: 08/28/2017
Applicant/Owner: MVP		State: VA	Sampling Point: W-IJ94-PEM
Investigator(s): E. Foster, K. Pulver, S. Pilcher			
Landform (hillslope, terrace, etc.): Slope	-	=	e Slope (%): 5
Subregion (LRR or MLRA): LRR N Lat:			
Soil Map Unit Name: 9B - Cotaco loam, 2 to 7 perce		NWI class	
Are climatic / hydrologic conditions on the site typical for			
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circumstances	s" present? Yes No
Are Vegetation, Soil, or Hydrology		(If needed, explain any ans	
SUMMARY OF FINDINGS – Attach site m			
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes ✓ Yes ✓ Yes ✓	No Is the Sam No within a W		✓ No
Remarks: Cowardin Code: PEM		ter Type: RPWWD	
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Ind	licators (minimum of two required)
Primary Indicators (minimum of one is required; check	k all that apply)	Surface S	oil Cracks (B6)
	True Aquatic Plants (B14)		Vegetated Concave Surface (B8)
	Hydrogen Sulfide Odor (C1)		Patterns (B10)
	Oxidized Rhizospheres on Living Presence of Reduced Iron (C4)		on Water Table (C2)
	Recent Iron Reduction in Tilled So		Burrows (C8)
T	Thin Muck Surface (C7)	=	No Visible on Aerial Imagery (C9)
	Other (Explain in Remarks)		r Stressed Plants (D1)
Iron Deposits (B5)		✓ Geomorpl	nic Position (D2)
Inundation Visible on Aerial Imagery (B7)			quitard (D3)
Water-Stained Leaves (B9)			graphic Relief (D4)
Aquatic Fauna (B13)		✓ FAC-Neut	ral Test (D5)
Field Observations: Surface Water Present? Yes No ✓	Depth (inches):		
	Depth (inches):		
	Depth (inches):	Wetland Hydrology Pres	sent? Yes ✓ No
(includes capillary fringe)		3 63	165 <u>-</u> 110
Describe Recorded Data (stream gauge, monitoring v	vell, aerial photos, previous inspec	tions), if available:	
Remarks:			

Sampling	Point-	W-IJ94-PEM
Sambilliu	Pomi:	VV-1054-1 LIVI

30'	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Deminant
3				Total Number of Dominant Species Across All Strata: 2 (B)
				(D)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC:100 (A/B)
6				Prevalence Index worksheet:
7				
		= Total Cove		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 Cove		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. Cicuta maculata	50	\checkmark	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Impatiens capensis	20	√	FACW	
3. Polygonum sagittata	15		OBL	¹ Indicators of hydric soil and wetland hydrology must
4 Osmunda claytoniana				be present, unless disturbed or problematic.
			FAC	Definitions of Four Vegetation Strata:
5. Microstigeum vimineum	5		FAC	Tree Mediumlanta avaluding vince 2 in (7 / arc) ar
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 m) tall.
10				my tan.
11				Herb – All herbaceous (non-woody) plants, regardless
		= Total Cove		of size, and woody plants less than 3.28 ft tall.
50% of total cover: 47.5	20% of	total cover:	19	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15')				height.
1				noight.
2				
3	-			
4				Hydrophytic
5				Vegetation
	0	= Total Cove	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)	·		
Tromains. (molado prioto fidinisors fiere di erra soparate s				

Sampling Point: W-IJ94-PEM

SOIL

Profile Desc	ription: (Describe t	o the deptl	n needed to docum	ent the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redox	(Features	5			
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	Loc ²	Texture	Remarks
0-2	10YR 3/1	100					SiLo	
2-8	10YR 4/2	98	7.5YR 5/6	2	С	M/PL	SaLo	
8-20	10YR 4/1	93	7.5YR 5/8	7	С	M/PL	LoSa	
						-		
								
1				 .			2	
	ncentration, D=Depl	etion, RM=I	Reduced Matrix, MS	=Masked	Sand Gr	ains.		L=Pore Lining, M=Matrix. ators for Problematic Hydric Soils ³ :
Hydric Soil I			Davida Constant	(07)				_
Histosol			Dark Surface		oo (CO) (N	ALDA 147		cm Muck (A10) (MLRA 147)
HISTIC Ep	ipedon (A2)		Polyvalue Bel Thin Dark Sur				148) C	coast Prairie Redox (A16) (MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye			147, 140)	Р	riedmont Floodplain Soils (F19)
	Layers (A5)		✓ Depleted Mat		/		<u> </u>	(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark S		6)		V	'ery Shallow Dark Surface (TF12)
	Below Dark Surface	(A11)	Depleted Dar	k Surface	(F7)			Other (Explain in Remarks)
	rk Surface (A12)		Redox Depre					
	lucky Mineral (S1) (L	RR N,	Iron-Mangane		es (F12) ((LRR N,		
	(147, 148)		MLRA 136				3	
	leyed Matrix (S4)		Umbric Surfac					icators of hydrophytic vegetation and
_	edox (S5) Matrix (S6)		Piedmont Floor Red Parent M					etland hydrology must be present, less disturbed or problematic.
	ayer (if observed):		Red Falentiv	iateriai (i	ZI) (IVILIV	IA 127, 147) un	less disturbed of problematic.
Type:	-							
· ·	thes):						Hydric Soil	Present? Yes ✓ No
Remarks:							1	
I tomano.								

Wetland Photograph Page

Wetland ID $\underline{\text{W-IJ94-PEM}}$ Date $\underline{\text{08/28/201}}$ 7



Photograph Direction South

Comments:			

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	37.169461	Lon.	-80.130376
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)					WIJ-96-PEM			
FORM OF MITIGATION:								
DATE:	9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-IJ96-PEM	Emergent	0.0161	Emergent					
						PART III - Advanced	Mitigatio	on
						Sustainable Determination Made or		
						Advanced Mitigation (Y or N)		Y
Total Impact		0.0161						
		Unit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0161			*		
Total Scrub-Shrub			0			\$966.00		
Total Forested			0					
Total Open Water			0					

Project/Site: MVP	City/County: Roa	noke	Sampling Date: 08/29/2017
Applicant/Owner: MVP		State: VA	Sampling Point: W-IJ96
Investigator(s): E. Foster, K. Pulver, S. Pilcher	Section, Township	Range: N/A	
Landform (hillslope, terrace, etc.): Hillslope			Slope (%): 0-5
Subregion (LRR or MLRA): LRR N La		Long: -80.130305	Datum: NAD 83
Soil Map Unit Name: 16D - Edneyville fine sandy lo			
Are climatic / hydrologic conditions on the site typical			
Are Vegetation, Soil, or Hydrology			
Are Vegetation, Soil, or Hydrology			
SUMMARY OF FINDINGS – Attach site r			
JONIMARY OF THIS INGS - Attach site		Tit locations, transcets	s, important reatures, etc.
	No Is the Sam	pled Area	
	No within a We	etland? Yes <u>√</u>	No
Wetland Hydrology Present? Yes Remarks: Coverdin Code: DEM			
Cowardin Code. PEM		• •	
Wetland transitions from PEM to PS	SS at edge of survey corridor		
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicate	ators (minimum of two required)
Primary Indicators (minimum of one is required; che	ck all that apply)	Surface Soil	Cracks (B6)
-	_ True Aquatic Plants (B14)		getated Concave Surface (B8)
	_ Hydrogen Sulfide Odor (C1)	Drainage Pa	
	Oxidized Rhizospheres on Living F		
	Presence of Reduced Iron (C4)		Water Table (C2)
	Recent Iron Reduction in Tilled So		
	Thin Muck Surface (C7)		'isible on Aerial Imagery (C9)
-	Other (Explain in Remarks)		Stressed Plants (D1)
Iron Deposits (B5)	- ` ` '	✓ Geomorphic	
Inundation Visible on Aerial Imagery (B7)		Shallow Aqu	
Water-Stained Leaves (B9)			aphic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutra	-
Field Observations:			
	Depth (inches):		
Water Table Present? Yes <u>✓</u> No	Depth (inches):		
Saturation Present? Yes ✓ No	Depth (inches):	Wetland Hydrology Preser	nt? Yes ✓ No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring	well, aerial photos, previous inspect	tions), if available:	
	wen, dend, protect, previous mepsel		
Remarks:			
Steady rain during day of survey.			

Sampling	Doint:	W	/_	1,196
Sambilliu	Point:			1000

30'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species
1. Acer rubrum	7	✓	FAC	That Are OBL, FACW, or FAC: 4 (A)
2				Total Number of Dominant
3				Species Across All Strata: 6 (B)
4				
5.				Percent of Dominant Species That Are OBL FACW or FAC: 66.67 (A/B)
				That Are OBL, FACW, or FAC: 66.67 (A/B)
6	-			Prevalence Index worksheet:
1	7	T 0		Total % Cover of: Multiply by:
500% of total account 2.5	2004 - 6	= Total Cov	er 1 1	OBL species x 1 =
50% of total cover: 3.5	20% of	total cover:	1.4	FACW species x 2 =
Japinig/Sindu Shalum (Flot Size)	_	,		
1. Lindera benzoin			FAC	FAC species x 3 =
2. Hammamelis virginiana	5		FACU_	FACU species x 4 =
3. Pinus strobus	5		FACU_	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
7.5		= Total Cov		4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 7.5	20% of	total cover:	3	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')				Problematic Hydrophytic Vegetation ¹ (Explain)
1. Scirpus polyphyllus	15		OBL	Problematic Hydrophytic Vegetation (Explain)
2. Cicuta maculata	40	✓	OBL	1
3. Rudbeckia laciniata	20	√	FACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Symplocus foetidus	10	,	QBL	
5 Urtica dioica	5		FACU	Definitions of Four Vegetation Strata:
<u> </u>			17100	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
	90	= Total Cov	er	of size, and woody plants less than 3.28 ft tall.
50% of total cover: 45		total cover:		
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines greater than 3.28 ft in height.
1				noight.
2.				
3				
4	-			Hydrophytic
5				Vegetation Present? Yes ✓ No
0		= Total Cov	_	Present? Yes <u>√</u> No
50% of total cover:0		total cover:	0	
Remarks: (Include photo numbers here or on a separate s	heet.)			

Sampling Point: W-IJ96

Depth (inches)	Matrix Color (moist)	%	Redox Color (moist)	x Features %	Type ¹	Loc ²	Texture	Remarks
0 - 9	10YR 4/1	97	7.5YR 4/6	3	C	M/PL	SaLo	
9-20	-		7.0111				LoSa	
9-20	2.5Y 5/1	100					Lusa	_
								_
				-				
	oncentration, D=Dep	letion, RM=	Reduced Matrix, MS	S=Masked	Sand G	rains.		PL=Pore Lining, M=Matrix.
	Indicators:		D 10 f	(0.7)				icators for Problematic Hydric Soils ³ :
Histosol	(A1) pipedon (A2)		Dark Surface Polyvalue Be		o (CO) (MI DA 147		2 cm Muck (A10) (MLRA 147) Coast Prairie Redox (A16)
HISTIC E _l Black Hi			Thin Dark Su				140)	(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye			117, 110)		Piedmont Floodplain Soils (F19)
_ , ,	d Layers (A5)		✓ Depleted Mat		•			(MLRA 136, 147)
	ıck (A10) (LRR N)		Redox Dark S				_	Very Shallow Dark Surface (TF12)
	d Below Dark Surface	e (A11)	Depleted Dar					Other (Explain in Remarks)
	ark Surface (A12) ⁄lucky Mineral (S1) (L	DD N	Redox Depre Iron-Mangane			(I DD N		
	A 147, 148)	INN IN,	MLRA 130		5 (112)	(LKK IV,		
	Gleyed Matrix (S4)		Umbric Surfa	-	/ILRA 1	36, 122)	³ lı	ndicators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo					wetland hydrology must be present,
	Matrix (S6)		Red Parent N	laterial (F2	1) (MLF	RA 127, 147	΄) ι	unless disturbed or problematic.
	Layer (if observed):							
Туре:								,
	ches):						Hydric So	oil Present? Yes <u>√</u> No
emarks:								



Photograph Direction South

Comments:			

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	37.157611	Lon.	-80.133722
STREAM/SITE ID AND SITE DESCR						W-EF42, Pipeline ROW		
(% stream slope, watershed size {a	creage}, unaltered	d or impairments)						
FORM OF MITIGATION:								
DATE:	9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-EF42	Emergent	0.0083	Emergent					
						PART III - Advanced Sustainable Determination Made or		n e
						Advanced Mitigation (Y or N)	•	Υ
						(1 31 14)		
Total Impact		0.0083						
		Unit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0083			* 400.00		
Total Scrub-Shrub			0			\$498.00		
Total Forested			0					
Total Open Water			0					

Project/Site: MVP	City/County: Roan	oke	Sampling Date: 08/01/2016				
Applicant/Owner: MVP			Sampling Point: W-EF42				
Investigator(s): D Hadersbeck K Pulver C Sol							
Landform (hillslope, terrace, etc.): Slope	Local relief (concave, c	onvex, none): Concave	Slope (%): 4-6				
Subregion (LRR or MLRA): LRR N La			Datum: NAD 83				
Soil Map Unit Name: 17C-Evard fine sandy loam, 7 to 15 p		=					
Are climatic / hydrologic conditions on the site typical	for this time of year? Yes No	o (If no, explain in R	emarks.)				
Are Vegetation, Soil, or Hydrology	significantly disturbed? Ar	re "Normal Circumstances" p	present? Yes 🗸 No				
Are Vegetation, Soil, or Hydrology	naturally problematic? (If	needed, explain any answe	rs in Remarks.)				
SUMMARY OF FINDINGS – Attach site r	map showing sampling poin	t locations, transects	, important features, etc.				
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes ✓ Yes ✓ Yes ✓	No Is the Sampl No within a Wet		No				
Remarks: Cowardin Code: PEM	HGM: Slope Wate	er Type: RPWWD					
Roadside wetland that drains into creek outside of corridor (2016 survey note). Information listed on this form represents the data collected in 2016. The wetland was revisited on 8/14/2019. Presence of wetland hydrology, hydrophytic vegetation, and hydric soils was confirmed using the USACE EMP Regional Supplement delineation methodology. Additional areas of wetland were identified during the 2019 revisit.							
HYDROLOGY							
Wetland Hydrology Indicators:		Secondary Indica	ators (minimum of two required)				
Primary Indicators (minimum of one is required; cheeds and surface Water (A1) — High Water Table (A2) — Saturation (A3) — Water Marks (B1) — Sediment Deposits (B2) — Drift Deposits (B3) — Algal Mat or Crust (B4) — Iron Deposits (B5) — Inundation Visible on Aerial Imagery (B7) — Water-Stained Leaves (B9) — Aquatic Fauna (B13) Field Observations:	ck all that apply) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) Other (Explain in Remarks)	Surface Soil Sparsely Ve Drainage Pa oots (C3) Moss Trim L Dry-Season S (C6) Saturation V Stunted or S ✓ Geomorphic Shallow Aqu	Cracks (B6) getated Concave Surface (B8) tterns (B10) ines (B16) Water Table (C2) rows (C8) isible on Aerial Imagery (C9) tressed Plants (D1) Position (D2) itard (D3) aphic Relief (D4)				
	Depth (inches):						
	_ Depth (inches):	Wetland Hydrology Preser	nt? Yes <u>√</u> No				
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring	well, aerial photos, previous inspection	ons), if available:					
Remarks:							

Sampling	Point-	W-EF42
Januaniu	I OIIII.	

Tree Stratum (Plot size: 30'	Absolute	Dominant		Dominance Test worksheet:		
Tice Stratam (Flot Size.		Species?	·	Number of Dominant Species	0	
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						
7		-		Prevalence Index worksheet:		
	0	= Total Cov	/er	Total % Cover of:	Multiply by:	
50% of total cover:0				OBL species x 1		l l
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2	2 =	_
1				FAC species x 3		l l
2				FACU species x 4	1 =	_
3				UPL species x 5	ō =	
4			·	Column Totals: (A)		(B)
5				Prevalence Index = B/A =		_
6				Hydrophytic Vegetation Indicat		
7				✓ 1 - Rapid Test for Hydrophyti	c Vegetation	
8				✓ 2 - Dominance Test is >50%		
9				3 - Prevalence Index is ≤3.0 ¹		
0		= Total Cov		4 - Morphological Adaptation	s ¹ (Provide sur	porting
50% of total cover: 0	20% of	total cover	:0	data in Remarks or on a s	eparate sheet)	
Herb Stratum (Piot Size)	00	,		Problematic Hydrophytic Veg	-	
1. Leersia oryzoides	60		OBL		(=:: -::	,
2. Impatiens capensis	25		F <u>ACW</u>	¹ Indicators of hydric soil and wetla	and hydrology	must
3. Vernonia noveboracensis	15		FACW	be present, unless disturbed or pr	roblematic.	illust
4. Carex vulpinoidea	10		OBL	Definitions of Four Vegetation		
5. Carex Iurida	10		OBL			
6. Amphicarpea bracteata	5	-	FAC	Tree – Woody plants, excluding was more in diameter at breast height		
7. Cyperus esculentus	5		FACW	height.	(DBH), regard	1622 01
8. Junius effusus	5		FACW			
9				Sapling/Shrub – Woody plants, of than 3 in. DBH and greater than of	excluding vines	s, less
10				m) tall.	n equal to 5.20) 11 (1
11.			·			
	135	= Total Cov	ıor	Herb – All herbaceous (non-wood of size, and woody plants less that	lly) plants, rega an 3 28 ft tall	ardless
50% of total cover: 67.5						
Woody Vine Stratum (Plot size: 15')		10101 00101		Woody vine – All woody vines gr	eater than 3.28	8 ft in
				height.		
1						
2			· ——			
3						
4				Hydrophytic		
5	_			Vegetation Present? Yes ✓	No	
500/ ()		= Total Cov	_	riesent:	110	
50% of total cover:0		total cover	:			
Remarks: (Include photo numbers here or on a separate s	heet.)					

Sampling Point: W-EF42

SOIL

Profile Desc	ription: (Describe to	o the dept	n needed to docum	nent the in	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redox	K Features	S			
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	Loc ²	Texture	Remarks
0-8	10YR 4/1	85	7.5YR 5/6	15	С	M/PL	SICL	
8-16	7.5YR 6/1	90	7.5YR 5/8	10	С	M/PL	CL	
								
					-	-		
								
					-			
1Typo: C-C	oncentration, D=Deple	otion DM-	Poducod Matrix MS		Sand Cr	raine	² Location: D	L=Pore Lining, M=Matrix.
Hydric Soil I		elion, Rivi=	Reduced Mairix, MS	<u>=iviaskeu</u>	Sand Gi	allis.		ators for Problematic Hydric Soils ³ :
-			Dork Curfoss	(C7)				cm Muck (A10) (MLRA 147)
Histosol	oipedon (A2)		Dark Surface Polyvalue Bel		no (CO) (N	/II D		oast Prairie Redox (A16)
Black Hi	•		Thin Dark Sur				146) C	(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye			147, 140)	D	iedmont Floodplain Soils (F19)
	Layers (A5)		✓ Depleted Mat		1 2)		'	(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark S		6)		V	ery Shallow Dark Surface (TF12)
	Below Dark Surface	(A11)	Depleted Dark					orther (Explain in Remarks)
	rk Surface (A12)	,	Redox Depre					, , ,
	lucky Mineral (S1) (LI	RR N,	Iron-Mangane			(LRR N,		
	147, 148)		MLRA 136		. ,	•		
	leyed Matrix (S4)		Umbric Surfac		MLRA 13	36, 122)	³ Ind	icators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo					tland hydrology must be present,
Stripped	Matrix (S6)		Red Parent M	laterial (F	21) (MLR	A 127, 147) un	less disturbed or problematic.
Restrictive L	ayer (if observed):							
Type:			<u></u>					
	ches):						Hydric Soil	Present? Yes ✓ No
Remarks:	· -						1 3	
r torriar no.								

Photograph Page

Wetland ID W-EF42 Cowardin Code PEM Date 08/01/2016



Photograph Number __1___

Photograph Direction North

Comments: 2016 wetland delineation on 8/1/2016.



Photograph Number 2

Photograph Direction SSW

Comments: 2019 revisit delineation on 8/14/2019.

USACE FILE NO./Project Name:	Mountain Valley Pipeline		COORDINATES:	Lat.	37.157427	Lon.	-80.133413	
STREAM/SITE ID AND SITE DESCR	IPTION:					W-HS02, Pipeline ROW		
(% stream slope, watershed size {ad	creage}, unaltered	d or impairments)						
FORM OF MITIGATION:								
DATE:	9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-HS02	Emergent	0.2893	Emergent					
						PART III - Advanced	Mitigatio	n
						Sustainable Determination Made or Advanced Mitigation (Y or N)		Y
Total Impact		0.2893						
		Unit Scores				Estimated		
Wetland Cla	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.2893			647.050.00		
Total Scrub-Shrub			0	ļ		\$17,358.00		
Total Forested			0					

Total Open Water

Project/Site: MVP	City/County: Roanoke		Sampling Date: 08/14/19
Applicant/Owner: MVP			Sampling Point: W-HS02
Investigator(s): HBS, HM, JL	Section, Township, Range: N	/A	
Landform (hillslope, terrace, etc.): Depression			Slope (%): 3-5
Subregion (LRR or MLRA): LRRN Lat:	37.157399 _{Long:} -80	.133464	Datum: NAD 83
Soil Map Unit Name: 17C - Evard fine sandy loam, 7			
Are climatic / hydrologic conditions on the site typical for	this time of year? Yes No	(If no, explain in Re	marks.)
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Circumstances" pre	esent? Yes No
Are Vegetation, Soil, or Hydrology		explain any answers	
SUMMARY OF FINDINGS – Attach site ma	ap showing sampling point location	ons, transects,	important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes ✓ Yes ✓ Yes ✓	No Is the Sampled Area within a Wetland?	Yes <u>√</u>	_ No
Remarks: Cowardin Code: PEM	HGM: Slope Water Type:	RPWWD	
Depressional slope wetland in early s	uccessional field		
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicate	ors (minimum of two required)
Primary Indicators (minimum of one is required; check	all that apply)	Surface Soil C	racks (B6)
	rue Aquatic Plants (B14)		etated Concave Surface (B8)
	Hydrogen Sulfide Odor (C1) Dxidized Rhizospheres on Living Roots (C3)	Drainage Patte	
	Presence of Reduced Iron (C4)	Moss Trim Line	ater Table (C2)
	Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burro	
1	Thin Muck Surface (C7)	=	ble on Aerial Imagery (C9)
	Other (Explain in Remarks)		essed Plants (D1)
Iron Deposits (B5)		✓ Geomorphic P	osition (D2)
Inundation Visible on Aerial Imagery (B7)		Shallow Aquita	ard (D3)
Water-Stained Leaves (B9)		Microtopograp	
Aquatic Fauna (B13)		✓ FAC-Neutral T	est (D5)
Field Observations: Surface Water Present? Yes No ✓	Double (in choo)		
Surface Water Present? Yes No Water Table Present? Yes No			
Saturation Present? Yes ✓ No	Deptir (inches).	Hydrology Present	? Yes ✓ No
(includes capillary fringe)	vettaria i	3 03	: Tes
Describe Recorded Data (stream gauge, monitoring we	ell, aerial photos, previous inspections), if ava	illable:	
Remarks:			

Sampling	Point-	W-HS02
Sambling	Point:	VV-11002

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:1 (A)
2				Total Number of Dominant
3				Species Across All Strata:1 (B)
4				Descrit of Descinant Charles
5				Percent of Dominant Species That Are OBL, FACW, or FAC:100 (A/B)
6				
7				Prevalence Index worksheet:
	0	= Total Cov	er	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 =
				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
		= 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')		,	0.01	Problematic Hydrophytic Vegetation ¹ (Explain)
1. Leersia oryzoides	70		OBL	Problematic Trydrophytic Vegetation (Explain)
2. Verbena hastata	5		FACW	The disease of booking and continued booking to continue
3. Impatiens capensis	2		FACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Persicaria saggittata	5		OBL	Definitions of Four Vegetation Strata:
5. Carex lurida	2		OBL	Definitions of Four Vegetation Strata.
6. Juncus effusus	2		FACW	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7. Vernonia noveboracensis	10		FACW	more in diameter at breast height (DBH), regardless of height.
8 Holcus lanatus	4		FAC	noight.
•				Sapling/Shrub – Woody plants, excluding vines, less
10				than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
11	100			Herb – All herbaceous (non-woody) plants, regardless
50% of total cover: 50		= Total Cov total cover:		of size, and woody plants less than 3.28 ft tall.
	20 /6 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				Hydrophytic
5				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	heet.)			

Sampling Point: W-HS02

SOIL

Profile Desc	ription: (Describe t	o the deptl	n needed to docum	nent the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redox	κ Features	5			
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	Loc ²	Texture	Remarks
0-9	10YR 4/1	95	7.YR 4/6	5	С	M	CL	
9-16	10YR 4/1	90	7.5YR 4/6	10	С	M/PL	CL	
·					-			
			-					
	-							
	- <u></u> -							
¹ Type: C=Co	oncentration, D=Deple	etion, RM=I	Reduced Matrix, MS	=Masked	Sand Gr	ains.	² Location: P	L=Pore Lining, M=Matrix.
Hydric Soil I			·					ators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	(S7)			2	cm Muck (A10) (MLRA 147)
Histic Ep	pipedon (A2)		Polyvalue Be	low Surfac	ce (S8) (N	MLRA 147,	148) C	oast Prairie Redox (A16)
Black Hi	stic (A3)		Thin Dark Su	rface (S9)	(MLRA	147, 148)		(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye		F2)		P	iedmont Floodplain Soils (F19)
	d Layers (A5)		✓ Depleted Mat					(MLRA 136, 147)
	ick (A10) (LRR N)	(0.11)	Redox Dark S					ery Shallow Dark Surface (TF12)
	d Below Dark Surface ark Surface (A12)	(A11)	Depleted Dar Redox Depre				0	ther (Explain in Remarks)
	fucky Mineral (S1) (L	RR N	Iron-Mangane			I RR N		
	\ 147, 148)	icic iv,	MLRA 136		55 (1 12) ((LIXIXI)		
	Gleyed Matrix (S4)		Umbric Surfa		MLRA 13	36, 122)	³ Ind	icators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo					tland hydrology must be present,
-	Matrix (S6)		Red Parent M					less disturbed or problematic.
Restrictive L	_ayer (if observed):							
Type:								
Depth (inc	ches):						Hydric Soil	Present? Yes No
Remarks:							1	



Photograph Direction SE

Comments:		
Comments.		

	/alley Pipeline	COORDINATES:	Lat.	37.156825	Lon.	-80.131998	
	d or impairments)				W-AB6-PEM-2, Pipeline ROW		
9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
PART I - Wet	land Indicators						
Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
Emergent	0.3271	Emergent					
					PART III - Advanced	Mitigatio	n
					Advanced Mitigation		Υ
					(1 01 14)		
	0.3271						
	Unit Scores						
assification					ILF Costs		
		0.3271			\$40,000,00		
		0.3271 0 0			\$19,626.00)	
	PART I - Wett Impact Wetland Classification Emergent	RIPTION: acreage}, unaltered or impairments) 9/28/2021 PART I - Wetland Indicators Impact (acreage) Classification Emergent 0.3271 0.3271 PART II - Unit Scores	PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Emergent 0.3271 Emergent 0.3271 PART II - Unit Scores Replacement Unit(s)	RIPTION: Icreage}, unaltered or impairments) 9/28/2021 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Unit Scores Wetland Classification Emergent 0.3271 Emergent 0.3271 PART II - Unit Scores Replacement Unit(s)	RIPTION: Icreage}, unaltered or impairments) 9/28/2021 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Emergent 0.3271 Emergent 0.3271 PART II - Unit Scores Replacement Unit(s)	RIPTION: Icreage), unaltered or impairments) 9/28/2021 WEATHER CONDITIONS: PART I - Wetland Indicators Impact	RIPTION: Creage , unaltered or impairments 9/28/2021 WEATHER CONDITIONS: PRECIPITATION PAST 48 HRS:

Project/Site: MVP	City/County: Roanoke		Sampling Date: 06/15/2016
Applicant/Owner: MVP		State: VA	Sampling Point: W-AB6 PEM 2
Investigator(s): J.McGuirk, J.Bittner, C.Weimen	Section, Township, Range:_	N/A	
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, r	none): Linear	Slope (%): 3-5
Subregion (LRR or MLRA): LRR N Lat: 37.15			Datum: NAD 83
Soil Map Unit Name: Alderflats silt loam, 0 to 4 percent slop			
Are climatic / hydrologic conditions on the site typical for this ti	,		
Are Vegetation, Soil, or Hydrology sign	-	·	resent? Yes No
Are Vegetation, Soil, or Hydrology natu		l, explain any answer	
SUMMARY OF FINDINGS – Attach site map sh		-	
, Attach site map si			important reatares, etc.
Hydrophytic Vegetation Present? Yes No	I IS the Sampled Area	a .	
	within a Wetland?		_ No
Wetland Hydrology Present? Yes ✓ No Remarks: Cowardin Codo: DEM			
Remarks: Cowardin Code: PEM HGM	: Slope Water Type	e: RPWWD	
HYDROLOGY			
Wetland Hydrology Indicators:	A complex		ors (minimum of two required)
Primary Indicators (minimum of one is required; check all tha	· · ·	✓ Surface Soil (
	quatic Plants (B14) Ien Sulfide Odor (C1)	Sparsely veg	etated Concave Surface (B8)
	ed Rhizospheres on Living Roots (C3		
	ce of Reduced Iron (C4)		Vater Table (C2)
	Iron Reduction in Tilled Soils (C6)	Crayfish Burro	
	uck Surface (C7)		sible on Aerial Imagery (C9)
	Explain in Remarks)		ressed Plants (D1)
Iron Deposits (B5)		✓ Geomorphic F	
Inundation Visible on Aerial Imagery (B7)		Shallow Aquit ✓ Microtopograp	
Water-Stained Leaves (B9)Aquatic Fauna (B13)		✓ Microlopograp	
Field Observations:		<u>· · · · · · · · · · · · · · · · · · · </u>	1031 (03)
Surface Water Present? Yes No _ ✓ Depth	(inches):		
Water Table Present? Yes No Depth			
Saturation Present? Yes No Depth		d Hydrology Present	? Yes <u>√</u> No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aer		wailabla	
Describe Recorded Data (stream gauge, monitoring well, aer	iai priotos, previous irispectioris), ii a	ivaliable.	
Remarks:			

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species _
_{1.} Fraxinus pennsylvanica	5	\checkmark	FACW	That Are OBL, FACW, or FAC: 5 (A)
2.				
				Total Number of Dominant Species Across All Strata: 6 (B)
3		-		Species Across All Strata: 6 (B)
4	•			Percent of Dominant Species
5	•			That Are OBL, FACW, or FAC: 83.3% (A/B)
6				
7				Prevalence Index worksheet:
	5	= Total Cov	er	Total % Cover of: Multiply by:
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 =
C	15	1	FACW	FAC species x 3 =
·· ·			IACV	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 =
				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
	15	= Total Cov	er	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 7.5	20% of	total cover	3	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5'				•
1. Solidago altissima	30	\checkmark	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
2 Agrimonia parviflora	15	√	FACW	
3. Holcus lanatus	15		FAC	¹ Indicators of hydric soil and wetland hydrology must
4 Toxicodendron radicans	15			be present, unless disturbed or problematic.
··			FAC	Definitions of Four Vegetation Strata:
5. Symplocarpus foetidus	10		OBL	Tree Woody plants evaluding vince 2 in (7 (am) or
{6.} Juncus effusus	10		FACW	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7. Impatiens capensis	5		FACW_	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				my tail.
II. <u> </u>	100			Herb – All herbaceous (non-woody) plants, regardless
		= Total Cov		of size, and woody plants less than 3.28 ft tall.
50% of total cover:50	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				
4				Hydrophytic
5				Vegetation Present? Yes ✓ No
5000 60 11		= Total Cov		11030H: 103
50% of total cover: 0	20% of	total cover		
Remarks: (Include photo numbers here or on a separate s	heet.)			

Sampling Point: W-AB6 PEM 2

Profile Desc	cription: (Describe t	o the depth	needed to docur	ment the ir	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix	0′		x Features		12	Tank	Demonstra
(inches)	Color (moist)	<u>%</u> _	Color (moist)		Type ¹	Loc ²	<u>Texture</u>	Remarks
1-12	7.5YR 4/1	90	7.5YR 5/6	10_	С	M/PL	CL	
			_					
					-			
			_					
						- ——		
								
	oncentration, D=Depl	etion, RM=R	educed Matrix, M	S=Masked	Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil								ators for Problematic Hydric Soils ³ :
Histosol			Dark Surface		(0.0) (1			2 cm Muck (A10) (MLRA 147)
. — .	oipedon (A2)		Polyvalue Be				148) (Coast Prairie Redox (A16)
Black Hi			Thin Dark Su Loamy Gleye			147, 148)	г	(MLRA 147, 148)
	en Sulfide (A4) d Layers (A5)		✓ Depleted Ma		-2)			Piedmont Floodplain Soils (F19) (MLRA 136, 147)
	uck (A10) (LRR N)		Redox Dark		6)		V	/ery Shallow Dark Surface (TF12)
	d Below Dark Surface	(A11)	Depleted Da					Other (Explain in Remarks)
	ark Surface (A12)		Redox Depre					
Sandy N	Mucky Mineral (S1) (L	RR N,	Iron-Mangan		es (F12) ((LRR N,		
	A 147, 148)		MLRA 13				2	
	Gleyed Matrix (S4)		Umbric Surfa					licators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo					etland hydrology must be present,
	Matrix (S6) Layer (if observed):		Red Parent I	viateriai (F2	21) (NILR	A 127, 147) un	lless disturbed or problematic.
	-							
J	-1>						Unadala Call	Donas and A
	ches):		_				Hydric Soil	Present? Yes No
Remarks:								

Wetland Photograph Page

Wetland ID $\underline{\text{W-AB6 PEM}}_{\text{Date}} \underline{\text{06/15/2016}}$



Photograph Direction West

Comments:			

	/alley Pipeline	COORDINATES:	Lat.	37.15617	Lon.	-80.130794	
	d or impairments)				W-AB6-PEM-1, Pipeline ROW		
9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
PART I - Wetl	and Indicators						
Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
Emergent	0.0647	Emergent					
					PART III - Advanced	Mitigatio	n
					Advanced Mitigation (Y or N)		Y
	0.0647						
	Unit Scores						
assification					ILF Costs		
					\$2,000.00		
		U			\$3,882.00		
		0					
	PART I - Wetl Impact Wetland Classification Emergent	PART II - Unit Scores	9/28/2021 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland Classification Emergent 0.0647 Emergent 0.0647 PART II - Unit Scores	PART I - Unit Scores assification 9/28/2021 WEATHER CONDITIONS: WEATHER CONDITIONS: WEATHER CONDITIONS: WEATHER CONDITIONS: Witigation Wetland Classification Classification Emergent 0.0647 PART II - Unit Scores assification Replacement Unit(s) 0.0647	PART I - Unit Scores assification PART II - Unit Scores Replacement Unit(s) O.0647 PART II - Unit Scores Replacement Unit(s) O.0647	PART II - Unit Scores PART II - Unit Scores Replacement Unit(s) PART II - Unit Scores Replacement Unit(s) W-AB6-PEM-1, Pipeline ROW PRECIPITATION PAST 48 HRS: PRECIPITATION PAST 48 HRS: PRECIPITATION PAST 48 HRS: PART III - Advanced Sustainable Determination Made on Advanced Mitigation (Y or N) Estimated ILF Costs	PART II - Unit Scores PART II - Unit Scores assification Replacement Unit(s) O.0647 PART II - Unit Scores Replacement Unit(s) O.0647 Replacement Unit(s)

Project/Site: MVP	_ City/County: Roanoke		Sampling Date: 06/15/2016
Applicant/Owner: MVP	_ , , ,	State: VA	Sampling Point: W-AB6 PEM1
Investigator(s): J.McGuirk, J.Bittner, C.Weimen	Section, Township, Range: N	/A	
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, no	_{ne):} Linear	Slope (%): 3-5
Subregion (LRR or MLRA): LRR N Lat: 37.15581			Datum: NAD 83
Soil Map Unit Name: Edneyville fine sandy loam, 2 to 7 percent			
Are climatic / hydrologic conditions on the site typical for this time of	,		
Are Vegetation, Soil, or Hydrology significan		-	resent? Yes No
Are Vegetation, Soil, or Hydrology naturally	-	explain any answe	
SUMMARY OF FINDINGS – Attach site map showing		•	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes No No No	Is the Sampled Area		No
Remarks: Cowardin Code: PEM HGM: Slo	pe Water Type:	RPWWD	
HYDROLOGY			
Wetland Hydrology Indicators:	A	Secondary Indica ✓ Surface Soil	tors (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply Surface Water (A1) True Aquatic			getated Concave Surface (B8)
	ulfide Odor (C1)	✓ Drainage Pat	eterns (B10)
	zospheres on Living Roots (C3)	Moss Trim Li	
Water Marks (B1) Presence of	Reduced Iron (C4)	Dry-Season	Water Table (C2)
Sediment Deposits (B2) Recent Iron	Reduction in Tilled Soils (C6)	Crayfish Burr	
Drift Deposits (B3) Thin Muck S			sible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Expla	in in Remarks)		ressed Plants (D1)
Iron Deposits (B5)		✓ Geomorphic	
Inundation Visible on Aerial Imagery (B7)		Shallow Aqui	
Water-Stained Leaves (B9) Aquatic Fauna (B13)		✓ Microtopogra✓ FAC-Neutral	•
Field Observations:		Y PAC-Neutral	Test (D3)
Surface Water Present? Yes No ✓ Depth (inch	es):		
Water Table Present? Yes No Depth (inches			
Saturation Present? Yes No Depth (inches		Hydrology Presen	t? Yes <u>√</u> No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial ph	otos, previous inspections), if ava	ailable:	
Remarks:			
Remarks.			

Sampling Point: W-AB6 PEM1

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species
1. Pinus strobus	5	\checkmark	UPL	That Are OBL, FACW, or FAC: 5 (A)
2				
3				Total Number of Dominant Species Across All Strata: 7 (B)
				Species Across All Strata (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 71% (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
0.5		= 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.} Elaeagnus umbellata	5		UPL	FAC species x 3 =
2. Acer rubrum	5		FAC	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	10			3 - Prevalence Index is ≤3.0 ¹
500% of total account 5	2007 - 6	= Total Cov	_	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 5	20% or	total cover		data in Remarks or on a separate sheet)
TICID Stratam (Flot Size.	25	,		Problematic Hydrophytic Vegetation ¹ (Explain)
1. Leersia oryzoides	35		OBL	
2. Juncus effusus	20		F <u>ACW</u>	¹ Indicators of hydric soil and wetland hydrology must
3. Carex Iurida	15		OBL	be present, unless disturbed or problematic.
4. Solidago gigantea	15		FACW_	Definitions of Four Vegetation Strata:
5. Juncus tenuis	10		FAC	
6. Holcus lanatus	10		FAC	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7. Glyceria striata	7		OBL	more in diameter at breast height (DBH), regardless of height.
8 Toxicodendron radicans	7	-	FAC	g
g Carex scoparia	5	-	FACW	Sapling/Shrub – Woody plants, excluding vines, less
10. Carex vulpinoidea	5		OBL	than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
11. Agrimonia parviflora			FACW	
TI. Agrimonia parvinora	12/			Herb – All herbaceous (non-woody) plants, regardless
50% of total cover: 67	200/ of	= Total Cov total cover	er . 26.8	of size, and woody plants less than 3.28 ft tall.
	20% 01	total cover	20.0	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
	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-AB6 PEM1

Profile Desc	cription: (Describe to	o the dept	h needed to docun	nent the ii	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redo:	x Features	S1	1 2	T t	Develop
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture SiL	Remarks
0-12	7.5YR 4/1	85	7.5YR 4/6	15	<u>C</u>	M/PL		
12-16	7.5YR 4/1	80	7.5YR 4/6	20	С	M/PL	CL	
						. <u> </u>		
,					,			
1Type: C-C	oncentration, D=Deple	ation RM-	Peduced Matrix MS	 S-Maskod	Sand Gr	ains	² Location: Pl	L=Pore Lining, M=Matrix.
Hydric Soil		ellori, Kivi=	Reduced Matrix, M.	<u>s=iviaskeu</u>	Sanu Gi	allis.		ators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(S7)				cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be		ce (S8) (N	ЛLRA 147,		oast Prairie Redox (A16)
Black Hi			Thin Dark Su				, <u> </u>	(MLRA 147, 148)
Hydroge	en Sulfide (A4)		Loamy Gleye		F2)		P	iedmont Floodplain Soils (F19)
	d Layers (A5)		✓ Depleted Mat					(MLRA 136, 147)
	ıck (A10) (LRR N)	(0.4.4)	Redox Dark S					ery Shallow Dark Surface (TF12)
	d Below Dark Surface ark Surface (A12)	(A11)	Depleted Dar Redox Depre				_ 0	ther (Explain in Remarks)
	Aucky Mineral (S1) (Li	RR N	Iron-Mangan			I RR N		
	A 147, 148)	icic iv,	MLRA 13		55 (1 12) (LICIT IV,		
	Gleyed Matrix (S4)		Umbric Surfa		MLRA 13	36, 122)	³ Ind	icators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo					tland hydrology must be present,
	Matrix (S6)		Red Parent N	/laterial (F	21) (MLR	A 127, 147	') unl	less disturbed or problematic.
Restrictive	Layer (if observed):							
Type:								
Depth (in	ches):		<u>—</u>				Hydric Soil	Present? Yes No
Remarks:								



Photograph Direction West

Comments:	

Mountain Valley Pipeline			COORDINATES:	Lat.	37.155664	Lon.	-80.129569			
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)					W-AB3-PEM-2, Pipeline ROW					
9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:					
PART I - Wetland Indicators										
Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification								
Emergent	0.1547	Emergent								
					PART III - Advanced	Mitigatio	n			
					Advanced Mitigation (Y or N)		Y			
						_				
	0.1547									
PART II - Unit Scores										
Wetland Classification Total Emergent					ILF Costs					
		• 4-:-								
		0.1547			#0.000.00					
		0.1547 0 0			\$9,282.00					
	PART I - Wet Impact Wetland Classification Emergent	RIPTION: acreage}, unaltered or impairments) 9/28/2021 PART I - Wetland Indicators Impact (acreage) Classification Emergent 0.1547 0.1547 PART II - Unit Scores	RIPTION: acreage}, unaltered or impairments) 9/28/2021 WEATHER CONDITIONS: PART I - Wetland Indicators Impact (acreage) Wetland Classification Emergent 0.1547 Emergent 0.1547 PART II - Unit Scores	RIPTION: coreage}, unaltered or impairments) 9/28/2021 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland Classification Classification Emergent 0.1547 Emergent 0.1547 PART II - Unit Scores	RIPTION: acreage}, unaltered or impairments) 9/28/2021 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Emergent 0.1547 Emergent 0.1547 PART II - Unit Scores	RIPTION: Icreage), unaltered or impairments) 9/28/2021 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Classification Emergent 0.1547 Emergent PART III - Advanced Sustainable Determination Made on Advanced Mitigation (Y or N) 0.1547 PART III - Unit Scores W-AB3-PEM-2, Pipeline ROW W-AB3-PEM-2, Pipeline ROW PRECIPITATION PAST 48 HRS: PRECIPITATION PAST 48 HRS:	RIPTION: Iccreage), unaltered or impairments) 9/28/2021 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Impacts (acreage) Wetland Classification Emergent 0.1547 Emergent PART III - Advanced Mitigation (Y or N) PART III - Unit Scores Estimated			

Project/Site: MVP	City/County: Roanoke		Sampling Date: 04/08/2016		
Applicant/Owner: MVP					
Investigator(s): J. Hart, A. Larson, T. Woods	Section Township Range N		_ Sampling Point: W-AB3-PEM-2		
Landform (hillslope, terrace, etc.): Floodplain			Slone (%): 0		
Subregion (LRR or MLRA): LRR N Lat: 37	.155415 Long: <u>-80</u>).129456	Datum: NAD 83		
Soil Map Unit Name: 16B - Edneyville fine sandy loa					
Are climatic / hydrologic conditions on the site typical for thi	· —		, , , , , , , , , , , , , , , , , , ,		
Are Vegetation, Soil, or Hydrology	significantly disturbed? Are "Norma	al Circumstances" p	resent? Yes No		
Are Vegetation, Soil, or Hydrology	naturally problematic? (If needed,	explain any answer	s in Remarks.)		
SUMMARY OF FINDINGS – Attach site map	showing sampling point location	ons, transects,	important features, etc.		
Hydrophytic Vegetation Present? Yes N	drophytic Vegetation Present? Yes No Is the Sampled Area				
Hydric Soil Present? Yes N	is the bampied Area		No		
	within a Wetland?	res	_ NO		
Remarks: Cowardin Code: PEM HG	GM: Slope Water Type:	RPWWD			
Wetland is in low-lying area where groundwate	•		itside of the corridor		
welland is in low-lying area where groundwate	i is daylighting. Directly abuts site	eani which is ou	itside of the corridor.		
HYDROLOGY					
Wetland Hydrology Indicators:		·	ors (minimum of two required)		
Primary Indicators (minimum of one is required; check all		Surface Soil (, ,		
	e Aquatic Plants (B14)		etated Concave Surface (B8)		
l 4	Irogen Sulfide Odor (C1)	Drainage Pat			
	dized Rhizospheres on Living Roots (C3) sence of Reduced Iron (C4)	Moss Trim Lir			
	cent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2) Crayfish Burrows (C8)			
Drift Deposits (B3) Thin	Crayinal Editows (CO) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2)				
Algal Mat or Crust (B4) Oth					
Iron Deposits (B5)					
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:	_				
Surface Water Present? Yes No De	. , ,				
Water Table Present? Yes No De					
Saturation Present? Yes No De (includes capillary fringe)	pth (inches): 0 Wetland	Hydrology Present	t? Yes <u>/</u> No		
Describe Recorded Data (stream gauge, monitoring well,	aerial photos, previous inspections), if ava	ailable:			
Remarks:					
I and the second se					

Sampling Point: W-AB3-PEM-2

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: (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: 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 =
151	20 /6 01	total cover		FACW species x 2 =
Japinig/Ornab Otratam (1 lot 3126)				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. Poa trivialis	35	~	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Symplocarpus foetidus	20		OBL	
	10			¹ Indicators of hydric soil and wetland hydrology must
3. Impatiens capensis			FACW	be present, unless disturbed or problematic.
4			·	Definitions of Four Vegetation Strata:
5				- 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				
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				
11	65			Herb – All herbaceous (non-woody) plants, regardless
50% of total cover: <u>32.5</u>		= Total Cov		of size, and woody plants less than 3.28 ft tall.
4.51	<u>20%</u> 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				Hydrophytic
5				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	heet.)			1
Remaining cover in herb stratum is bare ground		litter		
riomaning cover in nois chatain le saie greana	and loan			

Sampling Point: W-AB3-PEM-2

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	Matrix		Redox Features			. 2			
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Remarks	
0-5.5	10YR 4/2	95	10YR 5/6	5	<u>C</u>	<u>M</u>	SCL		
5.5-18	10YR 5/1	60	10YR 5/8	40	С	M	Si	Hydrogen sulfide odor	
								-	
					•				
					-	·			
					•				
	oncentration, D=Deple	etion, RM=R	educed Matrix, MS	S=Masked	Sand Gr	ains.		L=Pore Lining, M=Matrix.	
Hydric Soil								ators for Problematic Hydric Soils ³ :	
Histosol			Dark Surface	. ,				cm Muck (A10) (MLRA 147)	
	pipedon (A2)		Polyvalue Bel				148) C	oast Prairie Redox (A16)	
Black Hi	stic (A3) en Sulfide (A4)		Thin Dark Su Loamy Gleye			147, 148)	D	(MLRA 147, 148) iedmont Floodplain Soils (F19)	
	d Layers (A5)		Depleted Mat		2)		「	(MLRA 136, 147)	
	ick (A10) (LRR N)		Redox Dark S		6)		Ve	ery Shallow Dark Surface (TF12)	
	d Below Dark Surface	(A11)	Depleted Dar	•	,			ther (Explain in Remarks)	
	ark Surface (A12)		Redox Depre						
	lucky Mineral (S1) (L l	RR N,	Iron-Mangane		es (F12) (LRR N,			
	A 147, 148)		MLRA 136	-			3, ,,		
	Gleyed Matrix (S4)		Umbric Surfa					icators of hydrophytic vegetation and	
	Redox (S5) Matrix (S6)		Piedmont FloRed Parent M					tland hydrology must be present, ess disturbed or problematic.	
	Layer (if observed):		Ned Falentiv	iateriai (i z	21) (IVILIX	A 121, 141	<u> </u>	ess disturbed of problematic.	
Type:	-ayo: (oboo. roa).								
	ches):						Hydric Soil	Present? Yes / No	
Remarks:							Tiyane con	Tresent: TesNo	
Remarks.									



Photograph Direction South

Comments:		

USACE FILE NO./Project Name:		/alley Pipeline	COORDINATES:	Lat.	37.151965	Lon.	-80.130049	
STREAM/SITE ID AND SITE DESCR	RIPTION:					W-KL48-PEM, Pipeline ROW		
(% stream slope, watershed size {a	creage}, unaltered	d or impairments)						
FORM OF MITIGATION:								
DATE:	9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-KL48-PEM	Emergent	0.0063	Emergent					
						PART III - Advanced		n
						Sustainable Determination Made or	ו	V
						Advanced Mitigation (Y or N)		Y
						(Y OF N)		
Total Impact		0.0063						
		Unit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0063			4070.00		
Total Scrub-Shrub			0			\$378.00		
Total Forested			0					
Total Open Water			0					

Project/Site: MVP	City/County: Roanoke		Sampling Date: 05/15/2017
Applicant/Owner: MVP	_ , ,	State: VA	Sampling Point: W-KL48-PEM
Investigator(s): E. Foster, J. Cook, K. Gracie	Section, Township, Range: N		
Landform (hillslope, terrace, etc.): Slope			Slope (%): 5
Subregion (LRR or MLRA): LRR N Lat: 37.15214			Datum: NAD 83
Soil Map Unit Name: 16c - Edneyville fine sandy loam, 7 to 15			
Are climatic / hydrologic conditions on the site typical for this time of			
Are Vegetation, Soil, or Hydrology significar		Il Circumstances" p	resent? Yes No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed,	explain any answei	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map showi	ng sampling point location	ons, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No			
Hydric Soil Present? Yes V No	is the campica Area	Vac V	No
Wetland Hydrology Present? Yes No	within a Wetland?	res	
Remarks: Cowardin Code: PEM HGM: Riv	rerine Water Type:	RPWWD	
Floodplain wetland associated with Mill Creek.	ornio viator Typo.	111 WWD	
1 loodplain welland associated with Mill Oreck.			
HYDROLOGY			
Wetland Hydrology Indicators:		·	tors (minimum of two required)
Primary Indicators (minimum of one is required; check all that app		Surface Soil	` '
Surface Water (A1) True Aquatio			getated Concave Surface (B8)
1 — 1	ulfide Odor (C1) izospheres on Living Roots (C3)	Drainage Pat	
	Reduced Iron (C4)	Moss Trim Li	
	Reduction in Tilled Soils (C6)	Crayfish Burr	
Drift Deposits (B3) Thin Muck S		-	sible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Expla			ressed Plants (D1)
Iron Deposits (B5)	,	✓ Geomorphic	
Inundation Visible on Aerial Imagery (B7)		Shallow Aqui	
Water-Stained Leaves (B9)			phic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutral	Test (D5)
Field Observations:			
Surface Water Present? Yes No Depth (inch	es):		
Water Table Present? Yes No Depth (inch	,		
Saturation Present? Yes No Depth (inch	es): 0 Wetland I	Hydrology Presen	t? Yes No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial ph	otos, previous inspections), if ava	ailable:	
33	,		
Remarks:			

Sampling Point:	W-	KL	48-	PE	M
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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: (A)
2		-	. <u></u>	Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				
5				Percent of Dominant Species That Are ORL FACW or FAC: 100 (A/R)
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 =
451	20% 01	total cover		FACW species x 2 =
<u>Japinig/Ornab Otratum</u> (1 lot 3126)				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		-	. <u></u>	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 supporting
Herb Stratum (Plot size: 5')	2070 01	total cover		data in Remarks or on a separate sheet)
1. Symplocarpus foetidus	20	~	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Glyceria striata	20			
	12		OBL	¹ Indicators of hydric soil and wetland hydrology must
3. Impatiens capensis			FACW_	be present, unless disturbed or problematic.
4. Persicaria sagittata	12	-	OBL	Definitions of Four Vegetation Strata:
5. Persicaria maculosa	12		FACW	Tara Mandaglada andadan (7.0 an)
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				,
· · ·	76	Tatal Car		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover: 38		Total Cover total cover		of 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				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-KL48-PEM

Profile Desc	ription: (Describe t	o the depti	n needed to docun	nent the i	ndicator	or confirm	the absence	of indicators.)				
Depth	Matrix		Redox	k Features	3							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks				
0-4	10YR 4/2	95	7.5YR 3/4	5	С	M/PL	L	Saturated				
4-10	7.5YR 5/1	80	5YR 4/6	20	С	M/PL	CL	Oxidized rhizosperes at 8"				
10-18	10GY 5/1	90	7.5 YR 5/4	5 YR 5/4 10 C M/PL SICL								
			_									
					-							
			_		-							
					-							
¹ Type: C=Co	oncentration, D=Depl	etion. RM=I	Reduced Matrix. MS	=Masked	Sand Gr	ains.	² Location: PL	_=Pore Lining, M=Matrix.				
Hydric Soil			,					ators for Problematic Hydric Soils ³ :				
Histosol	(A1)		Dark Surface	(S7)			2	cm Muck (A10) (MLRA 147)				
	pipedon (A2)		Polyvalue Be		ce (S8) (N	MLRA 147,		oast Prairie Redox (A16)				
Black Hi	stic (A3)		Thin Dark Su	rface (S9)	(MLRA 1	147, 148)		(MLRA 147, 148)				
Hydroge	en Sulfide (A4)		Loamy Gleye		F2)		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 Dar				0	ther (Explain in Remarks)				
	ark Surface (A12)	DD N	Redox Depre			LDDN						
	Mucky Mineral (S1) (L \ 147, 148)	KK N,	Iron-Mangane		es (F12) (LKK N,						
	Gleyed Matrix (S4)		Umbric Surfa	•	MIRA 13	16 122)	³ Indi	cators of hydrophytic vegetation and				
	Redox (S5)		Piedmont Flo					tland hydrology must be present,				
	Matrix (S6)		Red Parent M					ess disturbed or problematic.				
	Layer (if observed):				, ,		1					
Type:												
Depth (inc	ches):						Hydric Soil	Present? Yes No				
Remarks:							ı					

Wetland Photograph Page

Wetland ID W-KL48-PEl Date 05/15/2017



Photograph Direction NNE

Comments:		

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	37.150728	Lon.	-80.131537
STREAM/SITE ID AND SITE DESCR	RIPTION:					W-KL50, Pipeline ROW		
(% stream slope, watershed size {a	creage}, unaltered	d or impairments)						
FORM OF MITIGATION:								
DATE:	9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-KL50	Emergent	0.0408	Emergent					
						PART III - Advanced	Mitigatio	n
						Sustainable Determination Made or		
						Advanced Mitigation		Υ
						(Y or N)		
Total Impact		0.0408						
PART II - Unit Scores						Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0408					
Total Scrub-Shrub			0			\$2,448.00		
Total Forested			0					
Total Open Water			0					

Project/Site: MVP		City/C	county: Roanoke		Sampling Date: 05/16/2017		
Applicant/Owner: MVP		•	State: VA	Sampling Point: W-KL50			
Investigator(s): E. Foster, J.							
Landform (hillslope, terrace, etc					Slope (%): 0-5		
Subregion (LRR or MLRA): LF		Long: -80	.131499	Datum: NAD 83			
Soil Map Unit Name: 16C - Ed							
Are climatic / hydrologic condition							
· · · · · · · · · · · · · · · · · · ·		•					
Are Vegetation, Soil							
Are Vegetation, Soil				explain any answe			
SUMMARY OF FINDING	3S – Attach site	e map showing san	ipling point location	ons, transects	, important features, etc.		
Hydrophytic Vegetation Prese	nt? Yes	No	Is the Sampled Area				
Hydric Soil Present?	, is the sampled				No		
Wetland Hydrology Present?	Yes	No			<u> </u>		
Remarks: Cowardin Co	de: PEM	HGM: Slope	Water Type:	RPWWN			
Maintained pasture.							
·							
HYDROLOGY							
Wetland Hydrology Indicato	rs:			Secondary Indica	ators (minimum of two required)		
Primary Indicators (minimum o		heck all that apply)		Surface Soil			
✓ 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 Rhizospher	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)	Crayfish Bur	rows (C8)		
Drift Deposits (B3)		Thin Muck Surface (C	27)	Saturation V	isible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)		Other (Explain in Rer	narks)		tressed Plants (D1)		
Iron Deposits (B5)				Geomorphic	` '		
Inundation Visible on Aeri				Shallow Aqu			
Water-Stained Leaves (B	9)				aphic Relief (D4)		
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)		
Field Observations: Surface Water Present?	Voc. V No.	Donth (inches):	1				
	Yes V	Depth (inches): Depth (inches):	4				
Water Table Present?			0		V V		
Saturation Present? (includes capillary fringe)	Yes _ • No	Depth (inches):	wetiand H	iyarology Preser	nt? Yes V No		
Describe Recorded Data (stre	am gauge, monitori	ng well, aerial photos, pre	vious inspections), if ava	ilable:			
Remarks:							
Small ponded areas with	surface water i	n wetland interior.					

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

/er : 0 OBL FACW OBL	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Species Across All Strata: 4 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (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 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
/er : 0 : 0 : OBL FACW OBL	That Are OBL, FACW, or FAC:3
/er	Total Number of Dominant Species Across All Strata:
/er	Species Across All Strata:4
/er	Percent of Dominant Species That Are OBL, FACW, or FAC: Total % Cover of: Multiply by: OBL species FACW species FACU species Y 4 = UPL species Column Totals: A 5 = Fload Hydrophytic Vegetation Y 2 - Dominance Test is >50% A 75 (A/B) Problematic Hydrophytic Vegetation (B) Problematic Hydrophytic Vegetation Mata in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation Problematic Hydrophytic Vegetation Mata in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation Mata in Remarks or on a separate sheet)
/er	That Are OBL, FACW, or FAC:
/er	That Are OBL, FACW, or FAC:
0	Total % Cover of: OBL species
0	Total % Cover of: OBL species
0	OBL species x 1 =
ver 0 OBL FACW OBL	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)
ver 0 OBL FACW OBL	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)
ver 0 OBL FACW OBL	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)
ver 0 OBL FACW OBL	UPL species x 5 = (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)
OBL OBL 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)
OBL OBL OBL	Prevalence Index = B/A =
OBL OBL OBL	Prevalence Index = B/A =
OBL OBL 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)
OBL OBL 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)
OBL 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)
OBL 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)
OBL FACW OBL	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain)
OBL FACW OBL	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain)
OBL FACW OBL	Problematic Hydrophytic Vegetation¹ (Explain)
FACW OBL	
FACW OBL	
OBL	¹ Indicators of hydric soil and wetland hydrology must
	be present, unless disturbed or problematic.
FACW_	Definitions of Four Vegetation Strata:
FACW	
FACU	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
FACU	more in diameter at breast height (DBH), regardless of height.
	T. S.
· ——	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.
	of size, and woody plants less than 5.20 it tall.
	Woody vine – All woody vines greater than 3.28 ft in
	height.
	
	Hydrophytic
	Vegetation
_	Present? Yes No
:0	
	ver : 23

Sampling Point: W-KL50

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Matrix		Redox	x Features	S					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-1.5	10YR 4/2	100					SICL			
1.5-15	10YR 6/1	60_	5YR 5/6	20_	С	M/PL	SCL			
	10YR 4/2	20								
15-20	7.5YR 5/6	80	10YR 6/1	20	D	M	SL	Coarse sandy loam		
					-			-		
1Typo: C-C	oncentration, D=Deple	otion PM-	Poducod Matrix MS		L Sand Gr		² Location: PL	=Pore Lining, M=Matrix.		
Hydric Soil		elion, Kivi=	Reduced Matrix, Mc	=iviaskeu	i Sanu Gi	ali 15.		tors for Problematic Hydric Soils ³ :		
Histosol			Dark Surface	(97)				cm Muck (A10) (MLRA 147)		
	oipedon (A2)		Polyvalue Be		ce (S8) (N	II RΔ 147		past Prairie Redox (A16)		
	stic (A3)		Thin Dark Su		. , .			(MLRA 147, 148)		
	en Sulfide (A4)		Loamy Gleye			,,		edmont Floodplain Soils (F19)		
	d Layers (A5)		Depleted Mat	,	/			(MLRA 136, 147)		
	uck (A10) (LRR N)		Redox Dark S		6)			ry Shallow Dark Surface (TF12)		
	d Below Dark Surface	(A11)	Depleted Dar	,	,			her (Explain in Remarks)		
Thick Da	ark Surface (A12)		Redox Depre	ssions (F	8)					
	Mucky Mineral (S1) (L	RR N,	Iron-Mangane		es (F12) (LRR N,				
	A 147, 148)		MLRA 130							
-	Sleyed Matrix (S4)		Umbric Surfa					cators of hydrophytic vegetation and		
-	Redox (S5)		Piedmont Flo					and hydrology must be present,		
	Matrix (S6)		Red Parent M	1aterial (F	21) (MLR	A 127, 147	7) unle	ess disturbed or problematic.		
Restrictive I	Layer (if observed):									
	ompressed soil		<u> </u>							
	ches): 15						Hydric Soil F	Present? Yes No		
Remarks:										



Photograph Direction East

Comments:			

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	37.150297	Lon.	-80.132193
STREAM/SITE ID AND SITE DESCR (% stream slope, watershed size {a		d or impairments)				W-KL49, Timber Mat Crossing		
FORM OF MITIGATION:								
DATE:	9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-KL49	Emergent	0.0152	Emergent					
						PART III - Advanced	Mitigatio	n
						Sustainable Determination Made on		
						Advanced Mitigation (Y or N)		Y
							-	
Total Impact		0.0152						
Total Impaot								
		Unit Scores				Estimated		
Wetland C	PART II - lassification	Unit Scores	Replacement Unit(s)			Estimated ILF Costs		
Wetland C Fotal Emergent		Unit Scores	0.0152			ILF Costs		
		Unit Scores						

Project/Site: MVP		City/Co	ounty: Roanoke		Sampling Date: 05/15/2017
Applicant/Owner: MVP		,	State: VA	Sampling Point: W-KL49	
Investigator(s): E. Foster, J. Cook, K.	Gracie	Section	n. Township, Range: N/		_ ,
Landform (hillslope, terrace, etc.): Slope					Slope (%): 0-3
Subregion (LRR or MLRA): LRR N					Datum: NAD 83
Soil Map Unit Name: 16C - Edneyville fin					
Are climatic / hydrologic conditions on the s	• •	•		•	,
Are Vegetation, Soil, or Hyd	rology	significantly disturb	ed? Are "Normal	Circumstances" p	resent? Yes No
Are Vegetation, Soil, or Hyd	rology	naturally problema	tic? (If needed, e	xplain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Atta	ch site map	showing sam	pling point locatio	ns, transects	, important features, etc.
Hydrophytic Vegetation Present?	Yes 🗸	No			
		No	Is the Sampled Area	Yes 🗸	A) -
, , , , , , , , , , , , , , , , , , , ,		No	within a Wetland?	Yes	No
Remarks: Cowardin Code: PEM		GM: Slope	Water Type:	RD/W/WNI	
Cowardin Code. FEM	110	Sivi. Slope	vvaler Type.		
HYDROLOGY					
Wetland Hydrology Indicators:					tors (minimum of two required)
Primary Indicators (minimum of one is req				Surface Soil	, ,
Surface Water (A1)		ue Aquatic Plants (E			getated Concave Surface (B8)
High Water Table (A2)		drogen Sulfide Odo	r (C1) s on Living Roots (C3)	Drainage Pat	
Saturation (A3)	· · · · · · · · · · · · · · · · · · ·	•	• , ,	Moss Trim Li	
Water Marks (B1)Sediment Deposits (B2)		esence of Reduced	in Tilled Soils (C6)	Crayfish Buri	Water Table (C2)
Drift Deposits (B3)		in Muck Surface (C		-	sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		ner (Explain in Rem			tressed Plants (D1)
Iron Deposits (B5)	0"	ici (Explaiii iii Reili	ano,	✓ Geomorphic	
Inundation Visible on Aerial Imagery (B7)			Shallow Aqui	,
Water-Stained Leaves (B9)					phic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutral	
Field Observations:					
Surface Water Present? Yes	No 🖊 De	epth (inches):			
Water Table Present? Yes	No 🖊 De	epth (inches):			
		epth (inches):		lydrology Presen	t? Yes <u>/</u> No
(includes capillary fringe) Describe Recorded Data (stream gauge, r	nonitoring wall	acrial photos prov	ious inspections) if ava	ilabla:	
Describe Recorded Data (Stream gauge, I	normorning wen,	, aeriai priotos, prev	ious irispections), ii ava	liable.	
Remarks:					

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

/EGETATION (Four Strata) – Use scientific n	ames of	plants.		Sampling Point: W-KL49
20'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)
2				Total Number of Dominant
3			<u> </u>	Species Across All Strata: 2 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC:50 (A/B)
6				That the OBE, I NOV, SI I No.
7				Prevalence Index worksheet:
	0	= Total Cov	ver	Total % Cover of: Multiply by:
50% of total cover:0		total cover	_	OBL species x 1 = 10
Sapling/Shrub Stratum (Plot size: 15')				FACW species 65 x 2 = 130
1				FAC species 10 x 3 = 30
2				FACU species30 x 4 =120
3				UPL species0 x 5 =0
4				Column Totals:115(A)290(B)
5				December 2 52
6				Prevalence Index = B/A = 2.52
7				Hydrophytic Vegetation Indicators:
8				1 - Rapid Test for Hydrophytic Vegetation
9			·	2 - Dominance Test is >50%
<u>. </u>	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. Carex vulpinoidea	35	/	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Juncus effuses	20		FACW	
3. Carex Iurida	10		OBL	¹ Indicators of hydric soil and wetland hydrology must
4. Carex scoparia	10		FACW	be present, unless disturbed or problematic.
5. Dicanthelium clandestinum	10		FAC	Definitions of Four Vegetation Strata:
6. Anthoxanthum odoratum	30		FACU	Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or
7.	-		. · <u></u>	more in diameter at breast height (DBH), regardless of height.
				neight.
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.
11.	-		· -	,
	115	= Total Cov		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover: 57.5				
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines greater than 3.28 ft in height.
1				neight.
2.			· · ·	
3	·	· ·	· · ·	
4			· · ·	
5				Hydrophytic Vegetation
<u> </u>	_	= Total Cov	er	Present? Yes No
50% of total cover: 0		total cover	_	
Remarks: (Include photo numbers here or on a separate s				
(,			

Sampling Point: W-KL49

SOIL

	ription: (Describe t	o the dept				or confirm	the absence	of indicate	ors.)	
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Features %	Type ¹	Loc ²	Texture		Remarks	
0-9	10YR 4/1	90	7.5YR 4/4	10	С	M/PL	SCL	Oxid	ized rhizosp	peres at 8"
9-14	10YR 4/1	60					SCL			
	10YR 6/4	40								
14-20	10YR 6/1	70	10YR 6/8	30	С	М	SC			
¹ Type: C=Co	oncentration, D=Depl	etion, RM=	Reduced Matrix, MS	S=Masked	Sand G	rains.			ing, M=Matrix.	
Hydric Soil I	Indicators:						Indica	tors for P	roblematic Hy	/dric Soils³:
Histosol			Dark Surface						A10) (MLRA 1	
	pipedon (A2)		Polyvalue Be				148) C		e Redox (A16)	
Black Hi			Thin Dark Su			147, 148)		(MLRA 14		
	n Sulfide (A4)		Loamy Gleye		F2)		Pi		oodplain Soils	(F19)
	d Layers (A5)		Depleted Ma	. ,	C)		V	(MLRA 13		(TE40)
	ick (A10) (LRR N) d Below Dark Surface	\((\(1 \) \)	Redox Dark : Depleted Dark :	•					v Dark Surface iin in Remarks	
	ark Surface (A12)	(A11)	Redox Depre				0	illei (Expia	iii iii iteiliaiks)
	lucky Mineral (S1) (L	RR N.	Iron-Mangan			(LRR N.				
	\ 147, 148)	,	MLRA 13		, , , ,	(=,				
	Gleyed Matrix (S4)		Umbric Surfa	•	MLRA 1	36, 122)	³ Indi	cators of h	ydrophytic veg	getation and
	ledox (S5)		Piedmont Flo						logy must be i	
Stripped	Matrix (S6)		Red Parent N	/laterial (F	21) (MLF	RA 127, 147	') unl	ess disturb	ed or problem	atic.
Restrictive L	_ayer (if observed):									
Type:			<u></u>							
Depth (inc	ches):						Hydric Soil	Present?	Yes	No
Remarks:										



Photograph Direction West

Commonto		
Comments:		

USACE FILE NO./Project Name:		Mountain \	Valley Pipeline	COORDINATES:	Lat.	37.150006	Lon.	-80.132403
STREAM/SITE ID AND SITE DESCRI	IPTION:				W-I	KL51-PEM, Timber Mat Crossing		
(% stream slope, watershed size {ac	creage}, unaltered	d or impairments)						
FORM OF MITIGATION:								
DATE:	9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-KL51-PEM	Emergent	0.0063	Emergent					
					ı	PART III - Advanced	Mitigatio	on
						Sustainable Determination Made or Advanced Mitigation (Y or N)	1	Υ
Total Impact		0.0063			_			
		Unit Scores				Estimated		
Wetland Cla	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0063			6070.00		
Total Scrub-Shrub			0		L	\$378.00		
Total Forested			0					

Total Open Water

Project/Site: MVP		City/C	_{county:} Roanoke		Sampling Date: 05/16/2017
Applicant/Owner: MVP					Sampling Point: W-KL51-PEN
Investigator(s): E. Foster, J. Cook,	K. Gracie	Section	on Township Range N		
Landform (hillslope, terrace, etc.): Slop					Slope (%): 0-5
Subregion (LRR or MLRA): LRR N					
Soil Map Unit Name: 16D - Edneyville			_		
Are climatic / hydrologic conditions on the		-			
Are Vegetation, Soil, or F	lydrology	significantly distur	bed? Are "Norma	al Circumstances" p	present? Yes No
Are Vegetation, Soil, or F	lydrology	naturally problema	atic? (If needed,	explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – At	tach site m	ap showing sam	pling point location	ons, transects	, important features, etc.
Lindrankotia Variatatian Brassat2	Yes_	Na			
Hydrophytic Vegetation Present? Hydric Soil Present?	Yes	No No	Is the Sampled Area		
Wetland Hydrology Present?	Yes V	 No	within a Wetland?	Yes	No
Remarks: Cowardin Code: PEI		HGM: Riverine	Water Type:	DD1444D	
LIVEROL OCY					
HYDROLOGY				Cocondon Indian	tore (minimum of two required)
Wetland Hydrology Indicators:	roquirod: abook	(all that apply)		•	tors (minimum of two required)
Primary Indicators (minimum of one is a	-		D14)	Surface Soil	, ,
Surface Water (A1) High Water Table (A2)		True Aquatic Plants (Hydrogen Sulfide Od		Sparsely veg	getated Concave Surface (B8)
Saturation (A3)			es on Living Roots (C3)		
Water Marks (B1)		Presence of Reduced	= : :	Dry-Season	
Sediment Deposits (B2)	·	Recent Iron Reductio	, ,	Crayfish Buri	· · ·
Drift Deposits (B3)		Thin Muck Surface (C		-	sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		Other (Explain in Ren			tressed Plants (D1)
Iron Deposits (B5)				✓ Geomorphic	Position (D2)
Inundation Visible on Aerial Image	y (B7)			Shallow Aqui	itard (D3)
✓ 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):			
Saturation Present? Yes (includes capillary fringe)	No	Depth (inches):	Wetland	Hydrology Presen	it? Yes No
Describe Recorded Data (stream gauge	e, monitoring w	vell, aerial photos, pre	vious inspections), if av	ailable:	
Barrada					
Remarks:					

	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 Newhord Dominant
3				Total Number of Dominant Species Across All Strata: 3 (B)
4				(2)
5				Percent of Dominant Species That Are OBL FACW or FAC: 100 (A/B)
				That Are OBL, FACW, or FAC:100 (A/B)
6		-		Prevalence Index worksheet:
7	0	T-1-1-0		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')	10	.,	EAC)4/	FAC species x 3 =
1. Cornus amomum	10		FACW_	
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Decorder on Indian 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
		= Total Cov	_	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover:5_	20% of	total cover		data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')				Problematic Hydrophytic Vegetation (Explain)
1. Symplocarpus foetidus	10		OBL	1 Toblematic Trydrophytic Vegetation (Explain)
2. Impatiens capensis	15		FACW_	1
3. Solidago altissima	5		FACU	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4				
5				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
	30	= Total Cov	er	of size, and woody plants less than 3.28 ft tall.
50% of total cover:15	20% of	total cover	6	Was bearing Allows the constant to a 0.00 ft is
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines greater than 3.28 ft in height.
1.				noight.
2				
		-		
3				
4				Hydrophytic
5				Vegetation Present? Yes No
		= Total Cov	_	rieseitt! Tes No
50% of total cover: 0		total cover	. 0	
Remarks: (Include photo numbers here or on a separate s	heet.)			

Sampling Point: W-KL51-PEM

Profile Desc	ription: (Describe to	the depth r	needed to docun	nent the i	ndicator c	r confirm	the absence	of indicators.)
Depth	Matrix			x Features		. 2		
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-20	10YR 2/1	100	_				SCL	Organic bodies throughout
¹Type: C=Co	oncentration, D=Deple	etion, RM=Re	duced Matrix, MS	=Masked	Sand Gra	ins.	² Location: P	L=Pore Lining, M=Matrix.
Hydric Soil I		,	,			-		ators for Problematic Hydric Soils ³ :
Histosol	(A1)	<u>-</u>	Dark Surface	(S7)			2	cm Muck (A10) (MLRA 147)
Histic Ep	ipedon (A2)	-	Polyvalue Be				148) C	oast Prairie Redox (A16)
Black Hi		-	Thin Dark Su			47, 148)	_	(MLRA 147, 148)
	n Sulfide (A4) I Layers (A5)	-	Loamy Gleye		F2)		P	iedmont Floodplain Soils (F19)
	ck (A10) (LRR N)	-	Depleted Mat Redox Dark \$		·6)		V	(MLRA 136, 147) ery Shallow Dark Surface (TF12)
	Below Dark Surface	(A11)	Depleted Dar					other (Explain in Remarks)
	rk Surface (A12)		Redox Depre					
	lucky Mineral (S1) (Ll	RR N,	Iron-Mangane		es (F12) (L	.RR N,		
	147, 148)		MLRA 130	-			3	
	leyed Matrix (S4) edox (S5)	-	Umbric Surfa Piedmont Flo					icators of hydrophytic vegetation and tland hydrology must be present,
	Matrix (S6)	-	Red Parent N					less disturbed or problematic.
	ayer (if observed):	-	rtou r dront is	iatoriai (i i	, (,	,		iooo diotaibod of problematic.
Type:	, ,							
	ches):		_				Hydric Soil	Present? Yes V No
Remarks:	,		_					
Soils distur	bed.							

Wetland Photograph Page

Wetland ID W-KL51-PEl Date 05/16/2017



Photograph Direction SE

Comments:		

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	37.148328	Lon.	-80.133901
STREAM/SITE ID AND SITE DESCR					W	-MN7-PEM, Timber Mat Crossing		
(% stream slope, watershed size {a	creage}, unaltered	d or impairments)						
FORM OF MITIGATION:								
DATE:	9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-MN7-PEM	Emergent	0.0116	Emergent					
						PART III - Advanced	Mitigatio	n
						Sustainable Determination Made or		
						Advanced Mitigation		Υ
						(Y or N)		
Total Impact		0.0116						
		Unit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0116			***		
Total Scrub-Shrub			0			\$696.00		
Total Forested			0					
Total Open Water			0					

Project/Site: MVP		City/C	ounty: Roanoke		Sampling Date: 05/15/2017
oplicant/Owner: MVP				State: VA	Sampling Point: W-MN7-PEM
Investigator(s): S Ryan, K Pulver, H I	Phelan	Section	n Township Range N		
Landform (hillslope, terrace, etc.): Flood					Slone (%): 5-8
Subregion (LRR or MLRA): LRR N	Lat: 3		Long: <u>-80</u>		
Soil Map Unit Name: 16C- Edneyville fine					
Are climatic / hydrologic conditions on the		•			·
Are Vegetation, Soil, or Hy	drology	significantly distur	oed? Are "Norma	I Circumstances" p	present? Yes No
Are Vegetation, Soil, or Hy	drology	_ naturally problema	itic? (If needed,	explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Atta	ich site ma	p showing sam	pling point location	ons, transects	, important features, etc.
Hydrophytia Vagatation Procent?	Yes 🗸	No			
Hydrophytic Vegetation Present? Hydric Soil Present?	Yes 🗸	No No	Is the Sampled Area	4	
	Yes 🗸	No No	within a Wetland?	Yes	No
Remarks: Cowardin Code: PEM		HGM: Riverine	Water Type:		
HYDROLOGY					
Wetland Hydrology Indicators:				Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is red	guired: check a	all that apply)		Surface Soil	<u> </u>
Surface Water (A1)		rue Aquatic Plants (B14)		getated Concave Surface (B8)
High Water Table (A2)		lydrogen Sulfide Ode		Drainage Pat	
Saturation (A3)				-	
Water Marks (B1)	P	resence of Reduced	Iron (C4)	Dry-Season	Water Table (C2)
Sediment Deposits (B2)	R	Recent Iron Reductio	n in Tilled Soils (C6)	Crayfish Burr	rows (C8)
Drift Deposits (B3)		hin Muck Surface (C			sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	<u> </u>	Other (Explain in Ren	narks)		tressed Plants (D1)
Iron Deposits (B5)	(DZ)				Position (D2)
Inundation Visible on Aerial Imagery	(B7)			Shallow Aqui	aphic Relief (D4)
Water-Stained Leaves (B9)Aquatic Fauna (B13)				FAC-Neutral	
Field Observations:				TAO Neutral	1031 (100)
	No 🗸 I	Depth (inches):			
		Depth (inches):	6		
		Depth (inches):	1 Wetland I	Hydrology Presen	it? Yes V No
(includes capillary fringe) Describe Recorded Data (stream gauge,		. , , ,		-ilabla	
Describe Recorded Data (stream gauge,	monitoring we	en, aeriai priotos, pre	vious inspections), ii ava	allable.	
Remarks:					

Sampling Point	W-MN7-PEM
Garribillia i Girit.	· · · · · · · · — · · ·

,	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)		Species?		Number of Dominant Species
1				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)
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 ≤3.0 ¹
		= Total Cov	er _	4 - Morphological Adaptations ¹ (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')				• • • • • • • • • • • • • • • • • • • •
1. Scirpus polyphyllus	50		OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Impatiens capensis	30	✓	FACW	
3. Viola cucullata	5		FACW	¹ Indicators of hydric soil and wetland hydrology must
4. Osmundastrom cinnamomeum	5	•	FACW	be present, unless disturbed or problematic.
5. Amphicarpaea bracteara	3		FAC	Definitions of Four Vegetation Strata:
6. Dichanthilium clandestinum	3	. ———	FACU	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
··			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
	96	= Total Cov	er er	of size, and woody plants less than 3.28 ft tall.
50% of total cover: 48		total cover		W 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines greater than 3.28 ft in height.
1				noight.
2.	<u> </u>			
^		• •		
3			·	
4		. ———		Hydrophytic
5	0	·		Vegetation Present? Yes ✓ No
500/ (1.1.)		= Total Cov	_	1103citt: 103 100
50% of total cover:0		total cover	:	
Remarks: (Include photo numbers here or on a separate s	heet.)			

Sampling Point: W-MN7-PEM

SOIL

Profile Desc	ription: (Describe t	to the dept	h needed to docur	nent the i	ndicator	or confirm	n the absence of	indicators.)
Depth (in the ca)	Matrix	0/		x Feature		Loc ²	T	Demonto
(inches) 0-4	Color (moist) 10YR 3/1	100	Color (moist)	<u> </u>	Type ¹	LOC	Texture SaLo	Remarks
4-12	5YR 4/1	97	5YR 4/6	3	С	M	SaLo	
12-18	7.5YR 5/1	70	7.5YR 5/8	25	C	M	SaCILo	
			5YR 4/4	5	C	M		
	·							
	·							
-								
-								
¹ Type: C=Co	oncentration, D=Depl	etion, RM=	Reduced Matrix, MS	S=Masked	Sand Gr	ains.	² Location: PL=	Pore Lining, M=Matrix.
Hydric Soil	Indicators:							ors for Problematic Hydric Soils ³ :
Histosol			Dark Surface	. ,	(00) (1			m Muck (A10) (MLRA 147)
Histic Ep	oipedon (A2)		Polyvalue Be Thin Dark Su					ast Prairie Redox (A16) MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye			147, 140)		dmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Ma		. –,			MLRA 136, 147)
2 cm Mu	ick (A10) (LRR N)		Redox Dark		- 6)			y Shallow Dark Surface (TF12)
	d Below Dark Surface	e (A11)	Depleted Da				Oth	er (Explain in Remarks)
	ark Surface (A12)	DD M	Redox Depre					
	lucky Mineral (S1) (L \ 147, 148)	KK N,	Iron-Mangan MLRA 13		es (F12) (LRK N,		
	Gleyed Matrix (S4)		Umbric Surfa	-	MLRA 13	6. 122)	³ Indica	ators of hydrophytic vegetation and
	tedox (S5)		Piedmont Flo					and hydrology must be present,
	Matrix (S6)		Red Parent N	Material (F	21) (MLR	A 127, 147	7) unles	ss disturbed or problematic.
	_ayer (if observed):							
Type:							Unadaia Cail D	
Remarks:	ches):						Hydric Soil P	resent? Yes V No No
Remarks.								

Wetland Photograph Page

Wetland ID $\underline{\text{W-MN7-P}}\text{EN}$ Date $\underline{\text{05/15/201}}\text{7}$



Photograph Direction WNW

Comments:		

USACE FILE NO./Project Name:		Mountain \	Valley Pipeline	COORDINATES:	Lat.	37.142977	Lon.	-80.138322
STREAM/SITE ID AND SITE DESCF (% stream slope, watershed size {a		d or impairments)				W-EF44, Timer Mat Crossing		
FORM OF MITIGATION:								
DATE:	9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-EF44	Emergent	0.0085	Emergent					
						PART III - Advanced	Mitigatio	n
						Sustainable Determination Made on		
						Advanced Mitigation (Y or N)		Y
							-	
Total Impact		0.0085						
		Unit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent Total Scrub-Shrub			0.0085			\$510.00		
Total Scrub-Shrub Total Forested			0			\$510.00		

Project/Site: MVP	City/Count	_{y:} Roanoke	Sampling Date: 08/23/2016
Applicant/Owner: MVP		State: VA	Sampling Point: W-EF44
Investigator(s): D Hadersbeck, S Therkil	dson, K Pulver Section, T		
Landform (hillslope, terrace, etc.): Slope			ve Slope (%): 4-6
Subregion (LRR or MLRA): LRR N			Datum: NAD 83
Soil Map Unit Name: 16D-Edneyville fine sa		=	
Are climatic / hydrologic conditions on the site			
Are Vegetation, Soil, or Hydrold			
Are Vegetation, Soil, or Hydrold			,
SUMMARY OF FINDINGS – Attach	site map showing sampli	ng point locations, transe	ects, important features, etc.
Hydrophytic Vegetation Present? Yes	No le f	he Sampled Area	
Hydric Soil Present? Yes	✓ No.		✓ No
Wetland Hydrology Present? Yes			
Remarks: Cowardin Code: PEM	HGM: Slope	Water Type: RPWWD	
	·		
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary II	ndicators (minimum of two required)
Primary Indicators (minimum of one is require	d: check all that apply)		Soil Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)		y Vegetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C		e Patterns (B10)
Saturation (A3)	Oxidized Rhizospheres or		rim Lines (B16)
Water Marks (B1)	Presence of Reduced Iron		ason Water Table (C2)
Sediment Deposits (B2)	Recent Iron Reduction in		Burrows (C8)
Drift Deposits (B3)	Thin Muck Surface (C7)		on Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Remarks		or Stressed Plants (D1)
Iron Deposits (B5)		_	rphic Position (D2)
Inundation Visible on Aerial Imagery (B7)			Aquitard (D3)
✓ Water-Stained Leaves (B9)			pographic Relief (D4)
Aquatic Fauna (B13)			eutral Test (D5)
Field Observations:			· ,
Surface Water Present? Yes N	o Depth (inches):	_	
Water Table Present? Yes N	o Depth (inches):	_	
	Depth (inches): 1	Wetland Hydrology Pr	esent? Yes <u> </u>
(includes capillary fringe) Describe Recorded Data (stream gauge, mor	itoring well, aerial photos, previous	s inspections), if available:	
	g, p, p	, , , , , , , , , , , , , , , , , , ,	
Remarks:			

Sampling	Point.	W-	·EF44	

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: 2 (A)
2				Total Number of Descions
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)
_				That Are OBL, FACW, or FAC: 100 (A/B)
		-		Prevalence Index worksheet:
7	0	T-1-10		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,				
2				FACU species x 4 =
3				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%
J	0	= Total Cov		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')	20 /6 01	total cover		data in Remarks or on a separate sheet)
1. Pilea pumila	30	~	EACW/	Problematic Hydrophytic Vegetation ¹ (Explain)
	30		FACW	
2. Impatiens capensis			FACW_	¹ Indicators of hydric soil and wetland hydrology must
3. Leersia orizoides	10		OBL	be present, unless disturbed or problematic.
4. Glyceria striata	5		OBL	Definitions of Four Vegetation Strata:
5. Persicaria sagittata	15		OBL	
6. Symplocarpus foetidus	5		OBL	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.				
11	95			Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover: 47.5		= Total Cov		or size, and woody plants less than 3.26 it tall.
4.51	<u>) </u>	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				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.)			
	,			

		to the depth	needed to document the indicator or con	ifirm the abser	nce of indicato	ors.)	
Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist) % Type ¹ Loc	Texture)	Remarks	
0-10	10yr 3/1	100		LS			
10-24	5GY 5/1	70		SCL			
	N 8/0	30					
		· 					
-							
	-	· 					
¹Type: C=Co	oncentration, D=Dep	letion, RM=R	educed Matrix, MS=Masked Sand Grains.	² Location:	: PL=Pore Linir	ng, M=Matrix.	
Hydric Soil I		,			dicators for Pr		dric Soils³:
Histosol	(A1)		✓ Dark Surface (S7)		_ 2 cm Muck (A	410) (MLRA 1 4	17)
	pipedon (A2)		Polyvalue Below Surface (S8) (MLRA			Redox (A16)	
Black His			Thin Dark Surface (S9) (MLRA 147, 14	18)	(MLRA 14	•	=
	n Sulfide (A4) I Layers (A5)		Loamy Gleyed Matrix (F2)Depleted Matrix (F3)		_ Pleamont Flo (MLRA 13)	oodplain Soils (F19)
	ick (A10) (LRR N)		Redox Dark Surface (F6)			Dark Surface	(TF12)
	Below Dark Surface	e (A11)	Depleted Dark Surface (F7)			in in Remarks)	()
	ark Surface (A12)		Redox Depressions (F8)				
	lucky Mineral (S1) (L	.RR N,	Iron-Manganese Masses (F12) (LRR N	l,			
	147, 148)		MLRA 136)	. 3	31	alasa kadésa sa	
	edox (S5)		Umbric Surface (F13) (MLRA 136, 122Piedmont Floodplain Soils (F19) (MLRA		Indicators of hy wetland hydrol		
	Matrix (S6)		Red Parent Material (F21) (MLRA 127,		unless disturbe		
	_ayer (if observed):		Near arent waterial (121) (MENA 121)	, 1 4 7)	unicss disturbe	ca or problema	
Type:	,						
Depth (inc	ches):		_	Hydric S	Soil Present?	Yes 🗸	No
Remarks:							



Photograph Direction West

Comments:			

USACE FILE NO./Project Name:		Mountain \	Valley Pipeline	COORDINATES:	Lat.	37.135529	Lon.	-80.134044
STREAM/SITE ID AND SITE DESCR					W	-IJ62, Temporary Access Road		
(% stream slope, watershed size {a	creage}, unaltered	d or impairments)						
FORM OF MITIGATION:								
DATE:	9/28	/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-IJ62	Emergent	0.0001	Emergent					
						PART III - Advanced	Mitigatio	n
						Sustainable Determination Made on		
						Advanced Mitigation		Υ
						(Y or N)		
Total Impact		0.0001						
		Unit Scores				Estimated		
	lassification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0001					
Total Scrub-Shrub			0			\$6.00		
Total Forested			0					
Total Open Water			0					

Project/Site: MVP	City/County: Roanoke		Sampling Date: 10/10/2016			
Applicant/Owner: MVP		Sampling Point: W-IJ62				
· ·	S. Pilcher Section, Township, Range: N/.	<u> </u>	_			
9 17	Local relief (concave, convex, non		Slone (%)· 0-5			
	Lat: 37.135526 Long: -80.					
	0 to 4 percent slopes					
	oical for this time of year? Yes No (
	y significantly disturbed? Are "Normal					
Are Vegetation, Soil, or Hydrology	y naturally problematic? (If needed, e	explain any answe	rs in Remarks.)			
SUMMARY OF FINDINGS – Attach si	ite map showing sampling point locatio	ns, transects	, important features, etc.			
Hydrophytic Vegetation Present? Yes _	No Is the Sampled Area					
Hydric Soil Present? Yes _	is the Sampled Area	V V	No			
Wetland Hydrology Present? Yes	within a wetland?	Yes	NO			
Remarks: Cowardin Code: PEM	HGM: Riverine Water Type: I	RDWWD				
	etation. Heavy rains, 5-6" rain event within		ure			
Cattle grazing, trampled soils and vege	tation. Heavy fams, 5-0 fam event within	past 24-40 110	uis.			
HYDROLOGY						
Wetland Hydrology Indicators:			tors (minimum of two required)			
Primary Indicators (minimum of one is required;		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)Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)				
Sediment Deposits (B2) Drift Deposits (B3)	Crayfish Burrows (C8) ✓ Saturation Visible on Aerial Imagery (C9)					
Algal Mat or Crust (B4)	Stunted or Stressed Plants (D1)					
Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3)						
Water-Stained Leaves (B9)	Microtopographic Relief (D4)					
Aquatic Fauna (B13)		FAC-Neutral	* * *			
Field Observations:			()			
Surface Water Present? Yes No	Depth (inches):					
	Depth (inches): 2					
	_	lydrology Presen	it? Yes 🗸 No			
(includes capillary fringe)						
Describe Recorded Data (stream gauge, monito	oring well, aerial photos, previous inspections), if avai	ılable:				
Remarks:						

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

Sampling Point: W-IJ62	
t worksheet:	_

Trop Strotum (Blot size: 30'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species?	<u>Status</u>	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				Descrit of Descionat Conscion
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
6				(12)
7				Prevalence Index worksheet:
	0 .	= Total Cov	er	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 =
				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
•		= Total Cov		4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 0	20% of	total cover		data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5')	0.5			Problematic Hydrophytic Vegetation ¹ (Explain)
1. Juncus effuses	25		F <u>ACW</u>	1 Tobicinate Hydrophytic Vegetation (Explain)
2. Aster novi-belgii	10		FACW_	Indicators of hydric cail and watland hydrology must
3. Scirpus atrovirens	20		OBL	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Impatiens capensis	5		FACW_	Definitions of Four Vegetation Strata:
_{5.} Persicaria sagittata	15		OBL	
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.				
···	75	= Total Cov		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>37.</u>				or size, and woody plants less than 5.20 it tall.
Woody Vine Stratum (Plot size: 15')	2070 01	total cover		Woody vine – All woody vines greater than 3.28 ft in
,				height.
1				
2				
3		-		
4		-		Hydrophytic
5		-	·	Vegetation Present? Yes ✔ No
4		= Total Cov	_	riesent? res NO
50% of total cover:0		total cover	:0	
Remarks: (Include photo numbers here or on a separate s	heet.)			
Grazed and trampled vegetation in cow pasture				
				I I

Sampling Point: W-IJ62

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth	Matrix		Redox	Features	S1	. 2	_	
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	Remarks
0-6	10YR 5/1	60	7.5YR 4/6	40	С	M/PL	SCL	Some gravel
6-12	10YR 5/1	90	7.5YR 4/6	7	С	M/PL	SCL	Some gravel
			2.5Y 5/3	3_	С	M/PL	SCL	
					-			
					-			
						<u> </u>		
¹ Type: C=Ce	oncentration, D=Deple	etion, RM=F	Reduced Matrix, MS	=Masked	Sand Gr	ains.	² Location: PL	_=Pore Lining, M=Matrix.
Hydric Soil	Indicators:							tors for Problematic Hydric Soils ³ :
Histosol			Dark Surface					cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Bel		. , .			oast Prairie Redox (A16)
Black Hi	stic (A3) en Sulfide (A4)		Thin Dark Sur			147, 148)		(MLRA 147, 148)
	d Layers (A5)		Loamy Gleyer Depleted Mat		F2)		PI	edmont Floodplain Soils (F19) (MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark S		6)		Ve	ery Shallow Dark Surface (TF12)
	d Below Dark Surface	(A11)	Depleted Dari	k Surface	(F7)			ther (Explain in Remarks)
	ark Surface (A12)		Redox Depres					
	Mucky Mineral (S1) (LI	RR N,	Iron-Mangane		es (F12) (LRR N,		
	A 147, 148) Gleyed Matrix (S4)		MLRA 136 Umbric Surfac	•	MIRA 13	86 122)	³ Indi	cators of hydrophytic vegetation and
	Redox (S5)		Piedmont Floo					tland hydrology must be present,
	Matrix (S6)		Red Parent M					ess disturbed or problematic.
	Layer (if observed):							
	efusal, gravel		<u>—</u>					
Depth (in	ches): <u>6</u>		<u> </u>				Hydric Soil	Present? Yes No
Remarks:								
Disturbed s	soils in pasture.							



Photograph Direction North

Comments:			

USACE FILE NO./Project Name:		Mountain Valley Pipeline			Lat.	37.134284	Lon.	-80.137448
STREAM/SITE ID AND SITE DESCR	RIPTION:					W-Y2, Timber Mat Crossing		
(% stream slope, watershed size {acreage}, unaltered or impairments)								
FORM OF MITIGATION:								
DATE:	9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	land Indicators					•	
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-Y2	Emergent	0.0189	Emergent					
						PART III - Advanced	Mitigatio	n
						Sustainable Determination Made or		
						Advanced Mitigation		Υ
						(Y or N)		
Total Impact		0.0189						
	PART II -	Unit Scores				Estimated		
Wetland Cl	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0189					
Total Scrub-Shrub			0			\$1,134.00		
Total Forested			0					
Total Open Water			0					

Project/Site: MVP		City/C	ounty: Monroe		Sampling Date: 07/14/2015			
Applicant/Owner: MVP			Sampling Point: W-Y2					
Investigator(s): D Hadersbeck,	K Lew, G Buda,	J Swilik Section						
Landform (hillslope, terrace, etc.):	Геrrace	Local reli	ef (concave, convex, non	_{e):} Concave	Slope (%): 1			
Subregion (LRR or MLRA): LRRN	I Lat:	37.134341	Long: -80.	137416	Datum: NAD83			
Soil Map Unit Name: 16D, Edne			=	NWI classific				
Are climatic / hydrologic conditions	on the site typical fo	or this time of year? Y	res No (I	f no, explain in F	Remarks.)			
Are Vegetation, Soil	, or Hydrology	significantly disturb	bed? Are "Normal	Circumstances"	present? Yes No			
Are Vegetation, Soil	, or Hydrology	naturally problema			ers in Remarks.)			
SUMMARY OF FINDINGS					•			
Hydrophytic Vegetation Present?	Yes 🗸	No						
Hydric Soil Present?	Yes 🗸	 No	Is the Sampled Area	Vaa	No 🗸			
Wetland Hydrology Present?	Yes 🗸	No	within a Wetland?	res	NO			
Remarks:								
Cowardin Code:PEM; HGM	riverine; WT:RF	PWWD						
Information listed on this for	m represents the	e data collected ir	n 2015. The wetland	was not acce	essible for survey in 2019			
to reconfirm the presence of	wetland hydrol	ogy, hydrophytic v	vegetation, and hydr	ic soils.				
HYDROLOGY								
Wetland Hydrology Indicators:				Secondary Indica	ators (minimum of two required)			
Primary Indicators (minimum of or	ne is required: check	call that apply)	•	Surface Soil Cracks (B6)				
Surface Water (A1)	•	True Aquatic Plants (I	B14)		getated Concave Surface (B8)			
High Water Table (A2)		Hydrogen Sulfide Odd			atterns (B10)			
Saturation (A3)			es on Living Roots (C3)	Moss Trim L				
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 (C		Saturation Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)		Other (Explain in Ren		Stunted or Stressed Plants (D1)				
Iron Deposits (B5)				Geomorphic Position (D2)				
Inundation Visible on Aerial In	nagery (B7)			Shallow Aquitard (D3)				
✓ Water-Stained Leaves (B9)				Microtopographic Relief (D4)				
Aquatic Fauna (B13)				FAC-Neutral Test (D5)				
Field Observations:								
		Depth (inches):						
Water Table Present? Ye	es No	Depth (inches):						
	es <u> </u>	Depth (inches):	24 Wetland H	ydrology Prese	nt? Yes <u> </u>			
(includes capillary fringe) Describe Recorded Data (stream)	gauga monitoring w	vall parial photos pro	vious inspections) if avail	lable:				
Describe Necorded Data (stream)	Jauge, monitoring w	veii, aeriai priotos, pre	vious irispections), ii avaii	iable.				
Remarks:								
Abutting S-Y07								

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

Sampling Point: W-Y2

Tree Stratum (Plot size: 30'	Absolute	Dominant		Dominance Test worksheet:		
Tree Stratum (Plot size: 30°)	% Cover	Species?	Status	Number of Dominant Species	2	
1				That Are OBL, FACW, or FAC:	3	(A)
2				Total Number of Dominant		
3				Species Across All Strata:	4	(B)
4						(-)
				Percent of Dominant Species	100	
5				That Are OBL, FACW, or FAC:		(A/B)
6				Prevalence Index worksheet:		
7				Total % Cover of:	Multiply by:	
_		= Total Co				
50% of total cover: 0	20% of	total cover	:0	OBL species x		
Sapling/Shrub Stratum (Plot size: 15')				FACW species x		
1. Lindera benzoin	10	✓	FAC	FAC species x	3 =	_
2				FACU species x	4 =	_
				UPL species x	5 =	
3				Column Totals: (A		
4				Column Totals (A	,	_ (D)
5				Prevalence Index = B/A =		
6				Hydrophytic Vegetation Indica		
7				1 - Rapid Test for Hydrophyt		
8						
9				2 - Dominance Test is >50%		
	10	= Total Co	/or	3 - Prevalence Index is ≤3.0		
50% of total cover:5		total cove		4 - Morphological Adaptation	າຣ¹ (Provide sup	porting
l	20 /0 01	total cover		data in Remarks or on a s	separate sheet)	
Helb Stratum (Flot Size)	30	~	EA ()\A/	Problematic Hydrophytic Veg	getation ¹ (Expla	in)
1. Impatiens capensis			FACW_			,
2. Glyceria striata	20		<u>OBL</u>	¹ Indicators of hydric soil and wetl	and hydrology	muet
3. Symplocarpus phoetidus	10		OBL	be present, unless disturbed or p		illuot
4. Viola sororia	30		F <u>AC</u>	Definitions of Four Vegetation		
5						
6				Tree – Woody plants, excluding		
7				more in diameter at breast height height.	t (DBH), regard	less of
				neight.		
8				Sapling/Shrub – Woody plants,		
9				than 3 in. DBH and greater than	or equal to 3.28	3 ft (1
10				m) tall.		
11				Herb - All herbaceous (non-woo	dy) plants, rega	ırdless
		= Total Co		of size, and woody plants less the	an 3.28 ft tall.	
50% of total cover: 45	20% of	total cover	: <u>18</u>	Woody vine – All woody vines g	reater than 3 21	R ft in
Woody Vine Stratum (Plot size:15')				height.	reater than 0.20) IC III
1	-					
2						
3						
4						
				Hydrophytic		
5	^	T / 10		Vegetation Present? Yes	No	
50% of total cover: 0		= Total Co total cover	_			
		total cover				
Remarks: (Include photo numbers here or on a separate s	neet.)					

Sampling Point: _____W-Y2

	pth needed to docum	nent the i	ndicator	or confirn	n the ab	sence of indicators.)
Depth <u>Matrix</u>	Redo	x Feature	s			
(inches) Color (moist) %	Color (moist)	<u>%</u>	Type ¹	Loc ²	Text	
0-8" 10yr2/1 100	<u> </u>				SC	
8-24" Gley1 5/N 100					LS	S
						
	· ·					
	<u> </u>					
						
	<u> </u>				-	
	<u> </u>					
Type: C=Concentration, D=Depletion, RM	M=Reduced Matrix, MS	S=Masked	Sand Gra	ins.		ion: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Dark Surface					2 cm Muck (A10) (MLRA 147)
Histic Epipedon (A2)	Polyvalue Be				, 148)	Coast Prairie Redox (A16)
Black Histic (A3)	Thin Dark Su			47, 148)		(MLRA 147, 148)
✓ Hydrogen Sulfide (A4)	Loamy Gleye		F2)			Piedmont Floodplain Soils (F19)
Stratified Layers (A5)	Depleted Ma		-0\			(MLRA 136, 147)
						Other (Explain in Nemarks)
				RR N.		
			() (-	,		
Sandy Gleyed Matrix (S4)	Umbric Surfa		MLRA 13	6, 122)		³ Indicators of hydrophytic vegetation and
Sandy Redox (S5)	Piedmont Flo	odplain S	oils (F19)	(MLRA 14	48)	wetland hydrology must be present,
Stripped Matrix (S6)	Red Parent N	/laterial (F	21) (MLR	4 127, 147	7)	unless disturbed or problematic.
Restrictive Layer (if observed):						
Туре:						
Depth (inches):					Hydri	ic Soil Present? Yes 🖊 No
Remarks:					l .	
2 cm Muck (A10) (LRR N) ✓ Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Restrictive Layer (if observed): Type: Depth (inches):	Redox Dark S Depleted Dar Redox Depre Iron-Mangan MLRA 13 Umbric Surfa Piedmont Flo	Surface (Frk Surface (Frk Surface essions (Frese Mass 6)) The ce (F13) (Frese (F13) (F13) (Frese (F13) (Frese (F13) (Frese (F13) (Frese (F13) (Frese (F13) (F13) (Frese (F13) (F13) (Frese (F13) (F13) (F13) (Frese (F13) ((F7) 8) es (F12) (I (MLRA 13 oils (F19)	6, 122) (MLRA 14	7)	Very Shallow Dark Surface (TF12) Other (Explain in Remarks) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.



Photograph Direction SW

Comments:		

USACE FILE NO./Project Name:		Mountain Valley Pipeline			Lat.	37.132561	Lon.	-80.131744
STREAM/SITE ID AND SITE DESCR (% stream slope, watershed size {a		d or impairments)			V	V-IJ10, Permanent Access Road		
FORM OF MITIGATION:								
DATE:	9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-IJ10	Emergent	0.002	Emergent					
						PART III - Advanced	Mitigatio	n
						Sustainable Determination Made or		
						Advanced Mitigation		Υ
						(Y or N)		
Total Impact		0.002						
		Unit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent Total Scrub-Shrub			0.002			\$420.00		
Total Scrub-Shrub Total Forested			0			\$120.00		
Total Open Water			0					
ι σται Ορετί γγατει			U					

Project/Site: MVP	City/County: Roanoke	Sampling Date: 04/08/2016						
Applicant/Owner: MVP		State: VA Sampling Point: W-IJ10						
Investigator(s): E. Foster, S. Lieb, J. Niergarth Section, Township, Range: N/A								
	Local relief (concave, convex, non							
Subragion (LBB or MLBA): LBB N	Lat: 37.132692 Long: -80.	131921 Detum: NAD 83						
	o 4 percent slopes							
	cal for this time of year? Yes No (l	_						
	significantly disturbed? Are "Normal							
Are Vegetation, Soil, or Hydrology	naturally problematic? (If needed, e.	xplain any answers in Remarks.)						
SUMMARY OF FINDINGS – Attach sit	te map showing sampling point locatio	ns, transects, important features, etc.						
Hydrophytic Vegetation Present? Yes	No Is the Sampled Area							
Hydric Soil Present? Yes	13 tile Sallipieu Alea	Yes 🗸 No						
Wetland Hydrology Present? Yes	No within a Wetland?	res No						
Remarks: Cowardin Code: PEM	HGM: Riverine Water Type: F	RPWWD						
	comments. Looks delineated by an outside							
Actively mowed. See vegetation	comments. Looks defineated by an outsid	e party- orange hags read WZ-#						
HYDROLOGY								
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)						
Primary Indicators (minimum of one is required; of		Surface Soil 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)		Moss Trim Lines (B16)						
Water Marks (B1)	Presence of Reduced Iron (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 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: Surface Water Present? Yes No	Depth (inches):							
Water Table Present? Yes No No								
	Boput (moneo)	ydrology Present? Yes No						
(includes capillary fringe)	Depth (inches) wetland n	ydrology Present? Tes No						
Describe Recorded Data (stream gauge, monitor	ring well, aerial photos, previous inspections), if avai	lable:						
Remarks:								

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

/EGETATION (Four Strata) – Use scientific n	ames of	plants.		Sampling Point: W-IJ10
201	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:3 (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: 75 (A/B)
6				
7				Prevalence Index worksheet:
		= Total Co		Total % Cover of: Multiply by:
50% of total cover: 0	20% of	total cove	r: <u> </u>	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 30')				FACW species x 2 =
_{1.} Cornus amomum	5		<u>FACW</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%
v	5	= Total Co	ver	3 - Prevalence Index is ≤3.0 ¹
50% of total cover: 2.5				4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 30')				data in Remarks or on a separate sheet)
1. Symplocarpus foetidus	7		OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Hesperus matronalis	2	-	FACU	
3. Impatiens capensis	5		FACW	¹ Indicators of hydric soil and wetland hydrology must
4. Phalaris arundinacea	20		FACW	be present, unless disturbed or problematic.
5. Verbesina alternifolia	5		FAC	Definitions of Four Vegetation Strata:
6. Juncus effusus	10	-	FACW	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7. Poa trivialis	20		FACW	more in diameter at breast height (DBH), regardless of
7. Tod trivials 8. Dactylis glomerata	20	~	FACU	height.
			1,400	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
500/ 1/ / 441		= Total Co		of size, and woody plants less than 3.28 ft tall.
50% of total cover: 44.5	20% of	total cove	r: <u>17.0</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 Co	_	Present? Yes No
50% of total cover:0	20% of	total cove	r:0	
Remarks: (Include photo numbers here or on a separate s Disturbed, mowed vegetation. Recently mowed	,	amomum	along st	ream bank, would be PSS if not mowed. Stem
still living/coppice resprout.				
,				

Sampling Point: W-IJ10

SOIL

	cription: (Describe t	to the dept			dicator	or confirm	n the absence	of indicate	ors.)	
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Features %	Type ¹	Loc ²	Texture		Remarks	
0-3	10YR 4/2	100					SiL			
3-8	10YR 4/1	98	7.5YR 4/6	2	С	PL	SiL			
8-16	10YR 5/2	85	7.5YR 4/6		C	PL	CL	-		
0-10	10111 3/2		7.511(4/0			<u> </u>				
	·									
										
						<u> </u>				
	oncentration, D=Depl	letion, RM=	Reduced Matrix, MS	=Masked S	Sand Gr	ains.			ng, M=Matrix.	
Hydric Soil									roblematic H	
Histosol			Dark Surface		(- - \ (-				A10) (MLRA 1	
Histic Ep Black Hi	pipedon (A2)		Polyvalue Be		. , .		148) (e Redox (A16)	
	en Sulfide (A4)		Thin Dark Su Loamy Gleye			147, 140)		(MLRA 14	oodplain Soils	(F10)
	d Layers (A5)		Depleted Mat		۷)		'	(MLRA 13		(1 19)
	ick (A10) (LRR N)		Redox Dark S	, ,	6)		\		v Dark Surface	e (TF12)
	d Below Dark Surface	e (A11)	Depleted Dar	k Surface ((F7)				in in Remarks	
	ark Surface (A12)		Redox Depre							
	Mucky Mineral (S1) (L	.RR N,	Iron-Mangane		s (F12) (LRR N,				
	147, 148)		MLRA 136	-	AL D A 44)C 422\	3100	diantora of h	udraahutia ua	antation and
	Gleyed Matrix (S4) Redox (S5)		Umbric Surfa Piedmont Flo						ydrophytic veo logy must be	
	Matrix (S6)		Red Parent M						ed or problem	
	Layer (if observed):		<u> </u>		· · / (,				
Type:										
Depth (inc	ches):						Hydric Soi	I Present?	Yes_	No
Remarks:							<u> </u>			<u> </u>



Photograph Direction ESE

Comments:		

USACE FILE NO./Project Name:		Mountain Valley Pipeline			Lat.	37.13247	Lon.	-80.131638
STREAM/SITE ID AND SITE DESCR					V	V-Q11, Permanent Access Road		
(% stream slope, watershed size {a	creage}, unaltered	l or impairments)						
FORM OF MITIGATION:								
DATE:	9/28	/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl							
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-Q11	Emergent	0.013	Emergent					
						PART III - Advanced	Mitigatio	on
						Sustainable Determination Made or		
						Advanced Mitigation		Υ
						(Y or N)		
Total Impact		0.013						
		Jnit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.013					
Total Scrub-Shrub			0			\$780.00		
Total Forested			0					
Total Open Water			0					

Project/Site: MVP			City/C	county: Roanoke		Sampling Date: 07/11/2015			
Applicant/Owner: MVP						Sampling Point: W-Q11			
Investigator(s): A.Grech, J.	Swilk, A.Sto	tt	Section	on Township Range N					
Landform (hillslope, terrace, et				· · · · · ·		Slone (%): 0-6			
Subregion (LRR or MLRA): <u>L</u>						Datum: NAD 83			
Subregion (LRR of MLRA):	ate eilt loam	La	norcont clones						
Soil Map Unit Name: Alderfla				_		cation: PFO/SS1A PUBHh			
•	Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)								
Are Vegetation, Soil	, or Hydro	logy	significantly distur	bed? Are "Normal	Circumstances"	present? Yes No			
Are Vegetation, Soil	, or Hydro	logy	naturally problema	atic? (If needed, e	explain any answe	ers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.									
Lhudronhutia Vanatatian Dusa	t0 V		No						
Hydrophytic Vegetation Present?		es V	No	Is the Sampled Area	./				
Wetland Hydrology Present?		es V	No	within a Wetland?	Yes	No			
Remarks:									
Cowardin Code: PEM									
HGM: Depressional									
WT: RPWWD									
HYDROLOGY									
Wetland Hydrology Indicate	ors:				Secondary Indica	ators (minimum of two required)			
Primary Indicators (minimum	of one is requi	ed; che	ck all that apply)		Surface Soil	Cracks (B6)			
Surface Water (A1)			True Aquatic Plants (Hydrogen Sulfide Od			getated Concave Surface (B8)			
High Water Table (A2)	_	atterns (B10)							
Saturation (A3)				es on Living Roots (C3)	Moss Trim L				
Water Marks (B1)			Presence of Reduced			Water Table (C2)			
Sediment Deposits (B2)			Recent Iron Reductio		Crayfish Bu				
Drift Deposits (B3)			Thin Muck Surface (C			isible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)			Other (Explain in Rer	narks)		Stressed Plants (D1)			
Iron Deposits (B5)	rial lara anama (D	7 \				Position (D2)			
Inundation Visible on Ae	• • •	')			Shallow Aqu				
Water-Stained Leaves (E	39)					aphic Relief (D4)			
Aquatic Fauna (B13)					FAC-Neutra	Test (D5)			
Field Observations:	V	/	Danth (inch as)						
Surface Water Present? Water Table Present?		No	Depth (inches): Depth (inches):	4"					
			Dopui (inches)	0.11	luduala au Dua a a	-42 Vaa V Na			
Saturation Present? (includes capillary fringe)	Yes	NO	_ Deptn (inches):	wetland F	lyarology Prese	nt? Yes V No			
Describe Recorded Data (str	eam gauge, mo	nitoring	well, aerial photos, pre	vious inspections), if ava	ilable:				
Remarks: S-Q20 runs through									
3-Q20 runs unougn									

Sampling Poin	_{it} . W-Q1	1
---------------	----------------------	---

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		
1 Salix babylonica	5	~	FACW	Number of Dominant Species That Are OBL, FACW, or FAC:3 (A)
"		-		That Ale OBE, I AOW, OF I AO.
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				(145)
			·	Prevalence Index worksheet:
7	5	T		Total % Cover of: Multiply by:
2.5		= Total Cov		OBL species x 1 =
50% of total cover: 2.5	20% of	total cover	: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 =
		-		Column Totals: (A) (B)
4				(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
		= 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')				• • • • • • • • • • • • • • • • • • • •
1. Phalaris arundinacea	30	~	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Leersia oryzoides	30	~	OBL	
3. Aristida sp.	15		ND ND	¹ Indicators of hydric soil and wetland hydrology must
	15			be present, unless disturbed or problematic.
4. Impatiens sp.			F <u>ACW</u>	Definitions of Four Vegetation Strata:
5. Persicaria sagittata	5		<u>OBL</u>	
6. Dichanthelium scabriusculum	5		<u>OBL</u>	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7.				height.
8				g
0		-	· ——	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
	100	= Total Cov	er er	of size, and woody plants less than 3.28 ft tall.
50% of total cover: 50		total cover		
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines greater than 3.28 ft in
				height.
1		-	· ——	
2				
3				
4				Llyadrombysia
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	heet.)			
All Impatiens sp. ID'd as FACW				

SOIL Sampling Point: W-Q11

Profile Desc	ription: (Describe to	o the dept	h needed to docur	nent the	indicator	or confirm	the ab	sence of in	dicators.)	
Depth	Matrix			x Feature	s					
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Text	ture	Remarks	
0-20"	10YR 3/1	95	10YR 3/4	5	С	M/PL	L	_		
										,
					· ·		-			
										
				-			-			•
	oncentration, D=Deple	etion, RM=	Reduced Matrix, MS	S=Maske	d Sand Gr	ains.	² Locat		re Lining, M=Matrix.	2
Hydric Soil I	ndicators:							Indicators	for Problematic Hydric Soi	ils³:
Histosol			Dark Surface	. ,					luck (A10) (MLRA 147)	
	ipedon (A2)		Polyvalue Be				148)		Prairie Redox (A16)	
Black Hi			Thin Dark Su			147, 148)		•	RA 147, 148)	
	n Sulfide (A4)		Loamy Gleye		(F2)				ont Floodplain Soils (F19)	
	Layers (A5)		Depleted Ma						RA 136, 147)	
	ck (A10) (LRR N)	(0.4.4)	Redox Dark		,				hallow Dark Surface (TF12)	
	Below Dark Surface	(A11)	Depleted Date		, ,			Otner (Explain in Remarks)	
	irk Surface (A12) lucky Mineral (S1) (L l	DD N	Redox Depre Iron-Mangan			I DD N				
	147, 148)	KK N,	MLRA 13		es (F12) (LKK N,				
	leyed Matrix (S4)		Umbric Surfa	-	/MIRA 13	86 122)		³ Indicator	s of hydrophytic vegetation a	and
	edox (S5)		Piedmont Flo				18)		hydrology must be present,	ariu
-	Matrix (S6)		Red Parent N						listurbed or problematic.	
	ayer (if observed):		rtou r arone r	natoriai (i	21) (2 1)		'	4111000 0	notarboa or problematic.	
Type:										
							Llyde	ic Soil Pres	ent? Yes V No	
	ches):						пуаг	ic Soil Pres	ent? res_+_ NO	_
Remarks:										



Photograph Direction NNE

Comments:	

USACE FILE NO./Project Name:	Mountain Valley Pipeline			COORDINATES:	Lat.	37.132456	Lon.	-80.131463
STREAM/SITE ID AND SITE DESCR (% stream slope, watershed size {a		d or impairments)			V	V-KL1, Permanent Access Road		
FORM OF MITIGATION:	lcreage, unaitered	a or impairments)						
TOKIN OF IMPROAFIES								
DATE:	9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-KL1	Emergent	0.0018	Emergent					
						PART III - Advanced	Mitigatio	n
						Sustainable Determination Made or		<u> </u>
						Advanced Mitigation		Υ
						(Y or N)		
Total Impact		0.0018						
		Unit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0018					
Total Scrub-Shrub			0			\$108.00		
Total Forested			0					
Total Open Water			0					

Project/Site: MVP		City/C	county: Roanoke		Sampling Date: 04/08/2016		
Applicant/Owner: MVP							
Investigator(s): J. Cook, D. McCullough, L. Sexton Section, Township, Range: N/A							
Landform (hillslope, terrace, et					Slone (%): 2		
Subregion (LRR or MLRA): L							
Soil Map Unit Name: 1A - Ald				NWI classific			
Are climatic / hydrologic condit		•		(If no, explain in R	emarks.)		
Are Vegetation, Soil	, or Hydrology	significantly distur	bed? Are "Normal	Circumstances" p	present? Yes No		
Are Vegetation, Soil	, or Hydrology	naturally problema	atic? (If needed, e	explain any answe	rs in Remarks.)		
SUMMARY OF FINDIN	GS – Attach site m	nap showing sam	pling point location	ns, transects	, important features, etc.		
Lludraphytic Variation Drag	ent? Yes	No					
Hydrophytic Vegetation Presonal Hydric Soil Present?	Yes Y	No	Is the Sampled Area				
Wetland Hydrology Present?		No No	within a Wetland?	Yes	No		
Remarks: Cowardin C		HGM: Slope	Water Type:	RPWWN			
Pasture wetland likely ca		•			Feature is not directly		
	•		. •		Upland point from W-Q11		
used for this feature.	ikely has the subsu	nace now and sur	lace now for suitable	e connection.	opiana point nom w-Q m		
HYDROLOGY				On an all made of the	to a first of the second of th		
Wetland Hydrology Indicate		le all that analys			ators (minimum of two required)		
Primary Indicators (minimum	of one is required; chec		D4.4)	Surface Soil			
Surface Water (A1)	_	True Aquatic Plants (I			getated Concave Surface (B8)		
High Water Table (A2) Saturation (A3)	_	Hydrogen Sulfide Odd	or (C1) es on Living Roots (C3)	Drainage Pa			
Water Marks (B1)	_	Presence of Reduced		Moss Trim Li	Water Table (C2)		
Sediment Deposits (B2)		Recent Iron Reductio		Crayfish Bur			
Drift Deposits (B3)	_	Thin Muck Surface (C			sible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)	_	Other (Explain in Ren			tressed Plants (D1)		
Iron Deposits (B5)	_	C (2/p.a		Geomorphic	, ,		
Inundation Visible on Ae	rial Imagery (B7)			Shallow Aqu			
Water-Stained Leaves (E					aphic Relief (D4)		
Aquatic Fauna (B13)	,			FAC-Neutral			
Field Observations:							
Surface Water Present?	Yes No						
Water Table Present?	Yes No	_ Depth (inches):	14				
Saturation Present?	Yes No	Depth (inches):	6 Wetland H	lydrology Preser	nt? Yes <u>/</u> No		
(includes capillary fringe) Describe Recorded Data (stre	eam gauge, monitoring	well, aerial photos, pre	vious inspections), if ava	ilable:			
,			, ,,				
Remarks:							
_	•	•	e was taken. Slope v	vetiand drains	down into concave land		
feature, created by land	owner with gravel t	ill.					

		۱۸	•	1/	1
Sampling	Daint.	V١	<i>l</i> –	N	1
Sambilliu	r Oll II.	•	•		

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:1 (A)				
2				Total Niverbay of Dansinger				
3				Total Number of Dominant Species Across All Strata: 1 (B)				
4				(B)				
				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		·						
		= Total Cov	er					
50% of total cover:0	20% of	total cover:	0	OBL species x 1 =				
Sapling/Shrub Stratum (Plot size: 15')				FACW species 30 x 2 = 60				
1. Rosa multiflora	3		FACU	FAC species 7 x 3 = 21				
2				FACU species19 x 4 =76				
				UPL species x 5 =				
3				Column Totals: 56 (A) 157 (B)				
4				(b)				
5				Prevalence Index = B/A =2.80				
6				Hydrophytic Vegetation Indicators:				
7	-			1 - Rapid Test for Hydrophytic Vegetation				
8				✓ 2 - Dominance Test is >50%				
9		· ·						
v	_	= Total Cov		3 - Prevalence Index is ≤3.0 ¹				
50% of total cover:1.5				4 - Morphological Adaptations ¹ (Provide supporting				
E!	2070 01	total cover.		data in Remarks or on a separate sheet)				
Herb Stratum (Flot Size)	30	~	E4 0)4/	Problematic Hydrophytic Vegetation ¹ (Explain)				
1. Juncus effusus			F <u>ACW</u>					
2. Andropogons virginicus	3		F <u>ACU</u>	¹ Indicators of hydric soil and wetland hydrology must				
3. Rumex crispus	7		F <u>AC</u>	 be present, unless disturbed or problematic. 				
4. Solanum carolinense	5		FACU_	Definitions of Four Vegetation Strata:				
5. Fragarria virginiana	5		FACU	Definitions of Four Vegetation offata.				
6 Taraxacum officionale	3		FACU	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or				
<u> </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				Herb – All herbaceous (non-woody) plants, regardless				
	53	= Total Cov	er	of size, and woody plants less than 3.28 ft tall.				
50% of total cover: <u>26.</u>	5 20% of	total cover:	10.6					
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	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	sheet.)							
Heavily mowed and altered.	,							
riodvily movod and altoroa.								

Sampling Point: W-KL1

SOIL

	ription: (Describe t	o the dept			dicator	or confirm	the absence	of indicate	ors.)	
Depth (inches)	Matrix Color (moist)	%	Color (moist)	Features %	Type ¹	Loc ²	Texture		Remarks	
0-3	7.5 YR 4/2	100					SiL			
3-12	10 YR 5/2	97	10 YR 5/8	3	С	M/PL	SiL			
12-18	10YR 5/1	95	7.5 YR 5/6		C	M/PL	SiL			
12-10	101113/1		7.5 111 5/0			1V1/1 L	OIL	-		
								-		
								-		
	oncentration, D=Depl	etion, RM=	Reduced Matrix, MS	=Masked S	Sand Gra	ains.			ing, M=Matrix.	
Hydric Soil I			5 1 6 1	(0-)					roblematic Hy	
Histosol			Dark Surface		o (CO) /#/	II D A 447		,	A10) (MLRA 1	•
Histic Ep	pipedon (A2)		Polyvalue Bel				140) (oast Prairie MLRA 14	e Redox (A16) 17 148)	
	n Sulfide (A4)		Loamy Gleye			47, 140)	F		oodplain Soils	(F19)
	Layers (A5)		Depleted Mat	•	_,			(MLRA 13		(* 15)
2 cm Mu	ick (A10) (LRR N)		Redox Dark S	Surface (F6)	5)		\	ery Shallov	v Dark Surface	e (TF12)
	d Below Dark Surface	e (A11)	Depleted Dar	•			0	Other (Expla	in in Remarks	5)
	ark Surface (A12)	DD N	Redox Depre			DD 11				
	lucky Mineral (S1) (L \ 147, 148)	KK N,	Iron-Mangane		s (F12) (I	LKK N,				
	sleyed Matrix (S4)		Umbric Surfa	•	II RA 13	6. 122)	³ Inc	licators of h	ydrophytic veg	netation and
	edox (S5)		Piedmont Flo						logy must be	
	Matrix (S6)		Red Parent M						ed or problem	
Restrictive I	ayer (if observed):									
Type:										
Depth (inc	ches):						Hydric Soil	Present?	Yes 🖊	No
Remarks:							1			
None										



Photograph Direction WNW

Comments:	

USACE FILE NO./Project Name:		Mountain \	Valley Pipeline	COORDINATES:	Lat.	37.128942	Lon.	-80.133774
STREAM/SITE ID AND SITE DESCRI				W-E	325-PEM-4, Timber Mat Crossing			
(% stream slope, watershed size {ac	creage}, unaltered	d or impairments)						
FORM OF MITIGATION:								
DATE:	9/28	/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-B25-PEM-4	Emergent	0.0093	Emergent					
					[PART III - Advanced		n
						Sustainable Determination Made or Advanced Mitigation (Y or N)		Υ
Total Impact		0.0093			_			
		Unit Scores				Estimated		
Wetland Cla	ssification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0093			6550.00		
Total Scrub-Shrub			0		Ĺ	\$558.00		
Total Forested			0					

Total Open Water

Project/Site: MVP		City/C	ounty: Roanoke		Sampling Date: 09/10/20			
Applicant/Owner: MVP			,		Sampling Point: W-B25-PEM			
Investigator(s): JM, HS Section, Township, Range: N/A								
Landform (hillslope, terrace, etc.):					Slope (%): 2-4			
Subregion (LRR or MLRA): LRR					Datum: NAD 83			
Soil Map Unit Name: Alderflat								
Are climatic / hydrologic conditions			_					
· ·	• •	•		•				
Are Vegetation, Soil								
Are Vegetation, Soil				explain any answe	,			
SUMMARY OF FINDINGS	– Attach site m	nap showing sam	pling point location	ons, transects	, important features, etc.			
Hydrophytic Vegetation Present?	Yes V	No	la the Compled Area					
Hydric Soil Present?	Yes 🗸	No	Is the Sampled Area within a Wetland?	Yes 🗸	No			
Wetland Hydrology Present?	Yes	No	Within a Wolland.					
Remarks: Cowardin Code	=====================================	HGM: Riverine	Water Type:	RPWWD				
W-B25-PEM-4 extension d	elineated 9/10/2	020 during additio						
VV B25 I LIVI 4 CALCIISIOII G	cirreated 5/10/20	ozo danng additio	nai neia sarveys.					
HYDROLOGY								
Wetland Hydrology Indicators:				Secondary Indica	ators (minimum of two required)			
Primary Indicators (minimum of c		k all that apply)		Surface Soil				
Surface Water (A1)	•	True Aquatic Plants (B14)		getated Concave Surface (B8)			
High Water Table (A2)		Hydrogen Sulfide Odd		Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2)				
Saturation (A3)	<u></u>		es on Living Roots (C3)					
Water Marks (B1)		Presence of Reduced	=					
Sediment Deposits (B2)		Recent Iron Reductio	` ,	Crayfish Burrows (C8)				
Drift Deposits (B3)	<u> </u>	Thin Muck Surface (C		Saturation Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)		Other (Explain in Ren	narks)	Stunted or Stressed Plants (D1)				
Iron Deposits (B5)				Geomorphic Position (D2)				
Inundation Visible on Aerial	Imagery (B7)			Shallow Aqu	itard (D3)			
Water-Stained Leaves (B9)				Microtopographic Relief (D4)				
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)			
Field Observations:								
	'es No							
		Doptin (interior)	8		_			
	′es No	Depth (inches):	Wetland H	lydrology Preser	nt? Yes V No			
(includes capillary fringe) Describe Recorded Data (stream	gauge, monitoring v	well, aerial photos, pre	l vious inspections), if ava	ilable:				
Remarks:								

Sampling	Point: W-B25-PEM-4

Trop Stratum (Plot size: 30'	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:)	% 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)
				That Are OBL, FACW, or FAC: 100% (A/B)
6				Prevalence Index worksheet:
7	0			Total % Cover of: Multiply by:
500/ /		= Total Cov		OBL species x 1 =
4.51	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				Branch and Indian B/A
6				Prevalence Index = B/A =
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	data in Remarks or on a separate sheet)
Helb Stratum (Flot Size)			ODI	Problematic Hydrophytic Vegetation ¹ (Explain)
1. Iris pseudacorus	25		OBL	1 Toblematic Trydrophytic Vegetation (Explain)
2. Impatiens capensis	20		FACW	1
3. Bidens frondosa	10		FACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Verbena hastata	15		FACW	
5. Leersia oryzoides	20	~	OBL	Definitions of Four Vegetation Strata:
6. Glyceria striata	10	-	OBL	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7. Carex stricta	10		OBL	more in diameter at breast height (DBH), regardless of
				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
	110	= Total Cov	er	of size, and woody plants less than 3.28 ft tall.
50% of total cover: 55	20% of	total cover:	22	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% ()		= Total Cov	_	resent: res no
50% of total cover:0		total cover:		
Remarks: (Include photo numbers here or on a separate sl	heet.)			

Depth	ription: (Describe to Matrix	to the dept		nent tne indicat x Features	or or confirm	tne absence	of indicate	ors.)	
(inches)	Color (moist)	%	Color (moist)	<u>%</u> Type	e ¹ Loc ²	Texture		Remarks	
0-6	10YR 4/3					S		Fluvial dep	osit
6-18	10YR 5/2	90	7.5YR 5/6	10 C	M/PL	SL			
							-		
							-		
	oncentration, D=Depl	letion, RM=	Reduced Matrix, MS	S=Masked Sand	Grains.			ing, M=Matrix.	
Hydric Soil	ndicators:					Indica	ators for Pr	roblematic Hy	dric Soils³:
Histosol			Dark Surface				•	A10) (MLRA 1 4	47)
	pipedon (A2)			low Surface (S8	•	148) C		e Redox (A16)	
Black Hi				rface (S9) (MLR	A 147, 148)	_	(MLRA 14		(= . a)
	n Sulfide (A4)		Loamy Gleye Depleted Mat			P		oodplain Soils ((F19)
	d Layers (A5) ick (A10) (LRR N)		Redox Dark S			\/	(MLRA 13	v Dark Surface	(TF12)
	d Below Dark Surface	e (A11)		k Surface (F7)				in in Remarks)	
	ark Surface (A12)	(****)	Redox Depre					,	,
	lucky Mineral (S1) (L	.RR N,		ese Masses (F12	2) (LRR N,				
MLRA	A 147, 148)		MLRA 130	6)					
	lleyed Matrix (S4)			ce (F13) (MLRA				ydrophytic veg	
	edox (S5)			odplain Soils (F				logy must be p	
	Matrix (S6)		Red Parent M	Material (F21) (M	LRA 127, 147	') un	ess disturb	ed or problema	atic.
	_ayer (if observed):								
Type:									
Depth (inc	ches):					Hydric Soil	Present?	Yes	No
Remarks:									

Wetland Photograph Page

Wetland ID W-B25-PEMCowardin Code PEM Date 09/10/20



Photograph Number <u>1</u>
Photograph Direction North

Comments:



Photograph Number 2

Photograph Direction NE

Comments:



Photograph Number 3

Photograph Direction SW

Comments:



Photograph Number 4

Photograph Direction NE

Comments:

ments:			

Mountain Valley Pipeline			COORDINATES:	Lat.	37.128645	Lon.	-80.133283
STREAM/SITE ID AND SITE DESCRIPTION: (% stream slope, watershed size {acreage}, unaltered or impairments)					W-B25-PEM-1, Pipeline ROW		
9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
PART I - Wetl	land Indicators						
Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
Emergent	0.1934	Emergent					
					PART III - Advanced	Mitigatio	n
					Sustainable Determination Made on		
					Advanced Mitigation (Y or N)		Y
						-	
	0.1934						
	Unit Scores						
assification					ILF Costs		
					¢44.004.00		
		U			\$11,604.00		
		0					
	9/28 PART I - Wet Impact Wetland Classification Emergent	RIPTION: creage}, unaltered or impairments) 9/28/2021 PART I - Wetland Indicators Impact Wetland (acreage) Classification Emergent 0.1934 0.1934 PART II - Unit Scores	RIPTION: creage}, unaltered or impairments) 9/28/2021 WEATHER CONDITIONS: PART I - Wetland Indicators Impact (acreage) Wetland Classification Emergent 0.1934 Emergent 0.1934 PART II - Unit Scores	RIPTION: creage}, unaltered or impairments) 9/28/2021 WEATHER CONDITIONS: PART I - Wetland Indicators Impact Wetland (acreage) Wetland Classification Emergent 0.1934 Emergent 0.1934 PART II - Unit Scores assification Replacement Unit(s) 0.1934	PART I - Unit Scores assification PART II - Unit Scores Replacement Unit(s) O 1934 PART II - Unit Scores Replacement Unit(s) O 1934 Replacement Unit(s) O 1934 Replacement Unit(s) O 1934 Page 1	PART II - Unit Scores PART II - Unit Scores Replacement Unit(s) O.1934 PART II - Unit Scores Replacement Unit(s) O.1934 PART II - Unit Scores Replacement Unit(s) O.1934 Replacement Unit(s)	RIPTION: creage), unaltered or impairments) PART I - Wetland Indicators Impact Metland (acreage) Wetland Classification Emergent 0.1934 Emergent PART II - Morting Mitigation (Y or N) PART II - Init Scores assification Replacement Unit(s) 0.1934 Replacement Unit(s) 0.1934 Replacement Unit(s) 0.1934

Project/Site: MVP		City/County: Ro	oanoke		Sampling Date: 04/10/2015	
Applicant/Owner: MVP					_ Sampling Point: W-b25-pem1	
• •	guez, M. Whitten Section, Township, Range: N/A					
Landform (hillslope, terrace, etc.): Slope			-		Slope (%): 3	
Subregion (LRR or MLRA): LRRN			Long:80.1		Datum: NAD 83	
Soil Map Unit Name: Alderflats silt loa						
Are climatic / hydrologic conditions on the						
Are Vegetation, Soil, or Hy						
Are Vegetation, Soil, or Hy						
SUMMARY OF FINDINGS – Atta				plain any answer		
			onit location		important reatures, etc.	
Hydrophytic Vegetation Present?	Yes No	Is the Sa	mpled Area			
Hydric Soil Present?	Yes No		Wetland?	Yes	No	
Wetland Hydrology Present?	Yes No					
Remarks: Cowardin Code:pem; HGM: slope	wetland: WT: rnw	wd				
The wetland was revisited on 11/2	•		ay hydronhy	utic vegetation	and hydric soils was	
		-		_	i, and flydric soils was	
confirmed using the USACE EMP	Regional Suppler	nent delineation r	nethodology.			
HYDROLOGY						
Wetland Hydrology Indicators:			<u>S</u>	econdary Indicat	tors (minimum of two required)	
Primary Indicators (minimum of one is re-	quired; check all that a	oply)		Surface Soil 0	Cracks (B6)	
Surface Water (A1)	True Aqua	atic Plants (B14)			etated Concave Surface (B8)	
High Water Table (A2)		Sulfide Odor (C1)	_	Drainage Pat		
Saturation (A3)	Oxidized I	Rhizospheres on Livir	g Roots (C3)	Moss Trim Lii	nes (B16)	
Water Marks (B1)	Presence	of Reduced Iron (C4)	_	Dry-Season V	Vater Table (C2)	
Sediment Deposits (B2)	Recent Iro	n Reduction in Tilled	Soils (C6)	Crayfish Burr	ows (C8)	
Drift Deposits (B3)		Surface (C7)	_	Saturation Vis	sible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)	Other (Ex	olain 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)			<u>-</u>	FAC-Neutral	Test (D5)	
Field Observations:	V 5 4 6					
	_ No Depth (in					
	_ No _ L Depth (in					
Saturation Present? Yes (includes capillary fringe)	No Depth (in	ches):	Wetland Hy	drology Presen	t? Yes <u>/</u> No	
Describe Recorded Data (stream gauge,	monitoring well, aerial	photos, previous insp	ections), if availa	able:		
Remarks:	tland complex that	was disturbed fro	m aloor outtir	~~		
This wetland is part of a large wet	·			-	is a libral . 050/	
The wetland within the marked bo	•	•			•	
wetland and 15% upland. The are	ea to the north outs	side the 300ft con	idor continue	s the wetland	mosaic. Notes from 2015	
field survey.						

Sampling	Point: W-b25-	pem1
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30'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata:3 (B)
4				Percent of Deminant Species
5		-		Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)
6			· -	Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
500/ -1/		= Total Cov		OBL species x 1 =
50% of total cover: 0	20% of	total cover	:	FACW species x 2 =
Dubus alleghenismis	5	./	EACH	FAC species x 3 =
			FACU_	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 ≤3.0 ¹
		= Total Cov		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'				Problematic Hydrophytic Vegetation ¹ (Explain)
1. Juncus effusus	50		FACW_	Froblematic Hydrophytic vegetation (Explain)
2. Carex Iurida	50		<u>OBL</u>	The Person of books and another distribute to an annual
3. Poa palustris	20		FACW_	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				John Mone of Four Togottation Carata.
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.		-	· ·	
	120	= Total Cov	vor	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover: 60	20% of	total cover	24	
Woody Vine Stratum (Plot size: 15')		10101 00101		Woody vine – All woody vines greater than 3.28 ft in
1				height.
2				
3			·	
4				Hydrophytic
5	0	T-1-1-0		Vegetation Present? Yes ✓ No
50% of total cover: 0		= Total Cover	_	
		total cover		
Remarks: (Include photo numbers here or on a separate s	neet.)			

SOIL Sampling Point: W-b25-pem1

Profile Desc	ription: (Describe t	o the dept	h needed to docur	nent the i	ndicator	or confirm	the absen	ce of indicators.)
Depth	Matrix		Redo	x Feature:	S			
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	Loc ²	<u>Texture</u>	Remarks
0-3"	10yr 4/3	100					SiCL	
3-20"	10yr 6/1	60	7.5 yr 5/8	5	С	M/PL	С	
320"	2.5y 6/6	35				. <u></u>	С	
<u> </u>	2.5y 0/0							
				-			-	
						·		
¹ Type: C=Co	oncentration, D=Depl	etion RM-	Reduced Matrix MS	S-Masked	I Sand Gr	ains	² l ocation:	PL=Pore Lining, M=Matrix.
Hydric Soil		Ction, raivi=	reduced Matrix, Me)=IVId3NCC	T Garia Gi	anis.		licators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(\$7)				2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be		ce (S8) (N	/ILRA 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 Ma	trix (F3)				(MLRA 136, 147)
2 cm Mu	ick (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					
	lucky Mineral (S1) (L	RR N,	Iron-Mangan		es (F12) (LRR N,		
	\ 147, 148)		MLRA 13	•	MI DA 40	0 400)	3,	La Paratago a Charabago de Carabago de Carabago de
	ileyed Matrix (S4)		Umbric Surfa					Indicators of hydrophytic vegetation and wetland hydrology must be present,
	edox (S5) Matrix (S6)		Piedmont Floor Red Parent N					unless disturbed or problematic.
	_ayer (if observed):		Neu Faieiit ii	nateriai (i	ZI) (IVILIN	A 121, 141	<u>, </u>	unless disturbed of problematic.
Type:	-ayer (ii observed).							
	ah a a \ .						Usalaio C	oil Present? Yes V No
	ches):						nyuric S	oil Present? Yes No
Remarks:								

Wetland Photograph Page

Wetland ID W-b25-pem1



Photograph Direction South

Date: 04/10/2015

Comments: 2015 wetland delineation.



Photograph Direction South

Date: 11/02/19

Comments: 2019 wetland delineation confirmation.

USACE FILE NO./Project Name:		Valley Pipeline	COORDINATES:	Lat.	37.12853	Lon.	-80.13106	
STREAM/SITE ID AND SITE DESCR			W-B24-PEM, Pipeline ROW					
(% stream slope, watershed size {a	creage}, unaltered	d or impairments)						
FORM OF MITIGATION:								
DATE:	9/28	3/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-B24-PEM	Emergent	0.1031	Emergent					
						PART III - Advanced Sustainable Determination Made or		n
						Advanced Mitigation (Y or N)		Y
						(Y OF N)		
Total Impact		0.1031						
		Unit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.1031					
Total Scrub-Shrub			0			\$6,186.00		
Total Forested			0					
Total Open Water			0					

Project/Site: MVP		City/Co	_{ounty:} Franklin		Sampling Date: 04/09/2015	
Applicant/Owner: MVP				State: VA	Sampling Point: W-B24-PEM	
Investigator(s): C. Ansari, J. Rodriguez,	M. Whitt					
Landform (hillslope, terrace, etc.): Valley floo			·		Slope (%): 1	
Subregion (LRR or MLRA): LRRN					Datum: NAD 83	
Soil Map Unit Name: Alderflats silt loam,			_			
Are climatic / hydrologic conditions on the site						
Are Vegetation, Soil, or Hydrok		-			present? Yes No	
Are Vegetation, Soil, or Hydrok				explain any answe		
SUMMARY OF FINDINGS – Attach	-		•			
	4		p9 p		,, p	
, , , ,	- V		Is the Sampled Area			
Hydric Soil Present? Yes Wetland Hydrology Present? Yes		No No	within a Wetland?	Yes	No	
Remarks:		NO				
Cowardin:PEM; HGM: RIVERINE; W	T:RPWV	VD				
Information listed on this form repres of wetland hydrology, hydrophytic ve Supplement delineation methodology	ents the getation,	data collected ir and hydric soils	2015. The wetland was confirmed us	d was revisited ing the USAC	I on 11/02/2019. Presence E EMP Regional	
HYDROLOGY						
Wetland Hydrology Indicators:				Secondary Indica	ators (minimum of two required)	
Primary Indicators (minimum of one is require	d; check a	all that apply)		Surface Soil	Cracks (B6)	
Surface Water (A1)	Tr	Sparsely Vegetated Concave Surface (B8)				
High Water Table (A2)		ydrogen Sulfide Odd	. ,	Drainage Pa	, ,	
Saturation (A3)	<u>~</u> 0	xidized Rhizosphere	s on Living Roots (C3)	Moss Trim L	ines (B16)	
Water Marks (B1)		resence of Reduced	` '		Water Table (C2)	
Sediment Deposits (B2)		ecent Iron Reduction		Crayfish Bur		
Drift Deposits (B3)		hin Muck Surface (C			isible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)	0	ther (Explain in Rem	arks)		stressed Plants (D1)	
Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7)					Position (D2)	
Water-Stained Leaves (B9)				Shallow Aqu	aphic Relief (D4)	
Aquatic Fauna (B13)				FAC-Neutral	, ,	
Field Observations:						
	, / [Depth (inches):				
Water Table Present? Yes N	· · ·	Depth (inches):				
		Depth (inches):		lydrology Presei	nt? Yes V No	
(includes capillary fringe)						
Describe Recorded Data (stream gauge, mor	itoring wel	ll, aerial photos, prev	rious inspections), if ava	ilable:		
Remarks:						
This wetland is the emergent portion	of the do	own-gradient shr	ub wetland during	2015 field surv	vey.	

Sampling Point: W-B24-PEM

001	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 Descions
3				Total Number of Dominant Species Across All Strata: 3 (B)
4				
5				Percent of Dominant Species That Are OBL FACW or FAC: 100 (A/B)
				That Are OBL, FACW, or FAC:100 (A/B)
_				Prevalence Index worksheet:
7	0	T / 10		Total % Cover of: Multiply by:
50% of total cover: 0		= Total Co		OBL species x 1 =
	20% 01	total cover		FACW species x 2 =
Sapling/Shrub Stratum (Plot size: 15')				FAC species x 3 =
1,				
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Drawalanaa Inday D/A
6				Prevalence Index = B/A =
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 Co	_	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover: 0 Herb Stratum (Plot size: 5')	20% of	total cover	:0	data in Remarks or on a separate sheet)
/ I let 6126.	45	,		Problematic Hydrophytic Vegetation ¹ (Explain)
1. Symplocarpus foetidus	15		OBL	1 Toblematio Trydrophytio Vegetation (Explain)
2. Solidago gigantea	65		FACW_	
3. Poa trivialis	35		FACW_	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. Taraxacum officinale	5		F <u>ACU</u>	Definitions of Four Vegetation Strata:
5. Rumex crispus	5		FAC	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
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 Co		of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>62.5</u>	20% of	total cover	: <u>25</u>	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15')				height.
1				
2				
3				
_			-	
· ·				Hydrophytic
5	0			Vegetation Present? Yes ✓ No
500% of total account		= Total Co	_	103 NO
50% of total cover: 0		total cover	:	
Remarks: (Include photo numbers here or on a separate s	heet.)			

SOIL Sampling Point: W-B24-PEM

Profile Desc	ription: (Describe t	o the dept	h needed to docur	nent the i	ndicator	or confirm	the abse	ence of indicators.)		
Depth	Matrix		Redo	x Features	S					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture			
0-7"	10yr 4/3	100			MS	M/PL	SCL	<u>. </u>		
7-20"	10yr 5/2	85	7.5yr 5/8	15			SC			
							-			
					-					
					-					
¹ Type: C=C	oncentration, D=Depl	etion, RM=	Reduced Matrix, MS	S=Masked	Sand Gra	ains.	² Location	n: PL=Pore Lining, M=Matrix.		
Hydric Soil		,	,					ndicators for Problematic Hydric Soils ³ :		
Histosol	(A1)		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				(MLRA 147, 148)			
Hydroge	en Sulfide (A4)		Loamy Gleye	ed Matrix (F2)		_	_ Piedmont Floodplain Soils (F19)		
	d Layers (A5)		Depleted Ma					(MLRA 136, 147)		
	uck (A10) (LRR N)		Redox Dark				_	Very Shallow Dark Surface (TF12)		
	d Below Dark Surface	e (A11)	Depleted Dai				_	Other (Explain in Remarks)		
	ark Surface (A12)	DD N	Redox Depre			I DD N				
	Mucky Mineral (S1) (L A 147, 148)	KK N,	Iron-Mangan MLRA 13		es (F12) (LKK N,				
	Gleyed Matrix (S4)		Umbric Surfa	•	MIRA 13	6 122)		³ Indicators of hydrophytic vegetation and		
	Redox (S5)		Piedmont Flo	wetland hydrology must be present,						
	Matrix (S6)		Red Parent N					unless disturbed or problematic.		
	Layer (if observed):				, (,	<u>, </u>			
Type:										
	ches):						Hydric	Soil Present? Yes No		
Remarks:							1.7			
rtomants.										

Wetland Photograph Page

Wetland ID W-B24-PEM



Photograph Direction North

Date: 04/09/2015

Comments: 2015 wetland delineation.



Photograph Direction NW

Date: 11/02/19

Comments: 2019 wetland delineation confirmation.

USACE FILE NO./Project Name:		Mountain	Valley Pipeline	COORDINATES:	Lat.	37.128436	Lon.	-80.132646
STREAM/SITE ID AND SITE DESCR	W-B25-PEM-2, Timber Mat Crossing							
(% stream slope, watershed size {a								
FORM OF MITIGATION:								
DATE:	9/28	/2021	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	and Indicators					•	
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-B25-PEM-2	Emergent	0.0048	Emergent					
						PART III - Advanced	Mitigatio	n
						Sustainable Determination Made on Advanced Mitigation (Y or N)		Υ
					ı	, ,		
Total Impact		0.0048			_			
	PART II - I				Estimated			
Wetland Classification			Replacement Unit(s)		ļ	ILF Costs		
Total Emergent			0.0048			*		
Total Scrub-Shrub			0		ļ	\$288.00		
Total Forested		0						
Total Open Water			0					

Project/Site: MVP	City/County: Roanoke	Sampling Date: 04/08/2016
Applicant/Owner: MVP	State: \	VA Sampling Point: W-B25-PEM-2
Investigator(s): J. Cook, D. McCullough, L. Sexton		
Landform (hillslope, terrace, etc.): Flat		ear Slope (%): 3
Subregion (LRR or MLRA): LRR N Lat: 37.128		
Soil Map Unit Name: 1A - Alderflats silt loam, 0 to 4 percent		
Are climatic / hydrologic conditions on the site typical for this tim	e of year? Yes No (If no, exp	lain in Remarks.)
Are Vegetation, Soil, or Hydrology signif	ficantly disturbed? Are "Normal Circumst	ances" present? Yes No
Are Vegetation, Soil, or Hydrology natur		y answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map sho		
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes No No No	within a Wetland?	s No
Remarks: Cowardin Code: PEM HGM:	Slope Water Type: RPWWI	
PEM Drainage area that flows into nearby PSS. Up HYDROLOGY	orana point abbumba nom w-bzo-r oc	/ -
Wetland Hydrology Indicators:	Seconda	ry Indicators (minimum of two required)
High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Hydroge Oxidized Oxidized Recent I	uatic Plants (B14) Spar In Sulfide Odor (C1) Drain It Rhizospheres on Living Roots (C3) Moss It of Reduced Iron (C4) Dry-3 Iron Reduction in Tilled Soils (C6) Cray Ick Surface (C7) Satu Ick Surface (C7) Stun Ick Surface (C7) Shall Ick Micro Ick Surface (C7) Shall Ick Surface (C7)	ace Soil Cracks (B6) sely Vegetated Concave Surface (B8) nage Patterns (B10) s Trim Lines (B16) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) low Aquitard (D3) otopographic Relief (D4) -Neutral Test (D5) Present? Yes No

Sampling Point: W-B25-PEM-2

001	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: (A)
2				Total Number of Danisa of
3				Total Number of Dominant Species Across All Strata: 2 (B)
4				Species / torous / till ottata.
				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				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	total cover:	0	4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5')				data in Remarks or on a separate sheet)
1. Juncus effusus	60	/	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Rumex crispus	10		FAC	
3. Scirpus fluviatalis	10		OBL	¹ Indicators of hydric soil and wetland hydrology must
				be present, unless disturbed or problematic.
4. Impatiens capensis	20		FACW_	Definitions of Four Vegetation Strata:
5				Tara Mandaglada ayakallan isan O'a (70 ay) ay
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.
10				
II	100			Herb – All herbaceous (non-woody) plants, regardless
500/ // / 50		= Total Cov		of size, and woody plants less than 3.28 ft tall.
50% of total cover: 50	20% of	total cover:	20	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15)				height.
1				
2				
3				
4				Hudaankudia
5			· · · · · · · · · · · · · · · · · · ·	Hydrophytic Vegetation
	^	= Total Cov		Present? Yes No
50% of total cover: 0		total cover:	_	
Remarks: (Include photo numbers here or on a separate s				
Emergent wetland flows into scrub shrub via na		and conn	ection	
Linergent wettand hows into soldb shirdb via ha	IIOW WEU	and com	CCIIOII	

Sampling Point: W-B25-PEM-2

SOIL

Profile Desc	ription: (Describe t	o the depth	n needed to docum	nent the i	ndicator	or confirm	the absence	of indicators.)
Depth Matrix				x Features		. 2		-
(inches) 0-5	Color (moist) 10YR 4/1	<u>%</u> 98	Color (moist) 7.5YR 4/6	<u>%</u> 2	Type ¹	Loc ²	Texture SiL	Remarks
					<u>C</u>			
<u>5-11</u>	10YR 4/1	95	7.5YR 4/6	5	<u>C</u>	M/PL	SL	
11-18	10YR 6/1	90	10YR 6/8	10_	С	M/PL	CL	
			_	-				
	-							
1			De diversid Marketin MAC				21 DI	Barra Historia M. Matria
Hydric Soil I	ncentration, D=Depl	etion, RM=I	Reduced Matrix, MS	s=Masked	Sand Gr	ains.		_=Pore Lining, M=Matrix. tors for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(S7)				cm Muck (A10) (MLRA 147)
	ipedon (A2)		Polyvalue Be		ce (S8) (N	ILRA 147,		past Prairie Redox (A16)
Black His			Thin Dark Su			47, 148)		(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye	,	F2)			edmont Floodplain Soils (F19)
	Layers (A5) ck (A10) (LRR N)		Depleted MatRedox Dark \$:6)			(MLRA 136, 147) ery Shallow Dark Surface (TF12)
	Below Dark Surface	(A11)	Depleted Dar					ther (Explain in Remarks)
	rk Surface (A12)		Redox Depre	ssions (F	8)			
	ucky Mineral (S1) (L	RR N,	Iron-Mangan		es (F12) (LRR N,		
	147, 148) leyed Matrix (S4)		MLRA 136 Umbric Surfa	•	MI DA 13	6 122)	³ Indi	cators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo					tland hydrology must be present,
	Matrix (S6)		Red Parent N					ess disturbed or problematic.
Restrictive L	ayer (if observed):							
Туре:								_
	thes):		<u>—</u>				Hydric Soil	Present? Yes No
Remarks:								



Photograph Direction South

Comments:		