Survey Description	n										
Project Name:		Waterbo	dy Nam	ame: W				Waterbody ID:			Date:
Atlantic Coast Pipeline		UNT to	Slaty F	Fork			sp	spoa425			6/2/2016
State:	County:		C	company:		C	Crew Member Initials: Photos				
West Virginia	Pocahonta	s	Ν	IRG/ERM		C	GB, K	KO 3 phc)S
Tract Number(s):			N	learest Mile	post:			Associated W	etland	ID(s):	
access road 05-001-C0	08.AR1		7	2.0				wpoa411			
Survey Type: (check one)	□Cente	rline	□Re-Ro	oute	⊠Access	Road		□Other:			
Physical Attribute	s										
Stream Classification: (check one)	□Epher	neral	⊠Interm	littent	□Perennia	al					
Waterbody Type: (check one)	River 🛛	Stream	□ Ditch	□ Ca	anal 🗆 C	Other:					
OHWM Width: _ <u>3.0_</u> ft.	OHWM Inc (check all that	licator: apply)		⊠ Clear lir on bank	ne ⊡Sh	elving		□Wrested vegetation		Scouring	□Water staining
Height: ft. N/A□	□Be veget	nt, matted, or tation	missing	□Wrack li	ne ⊠Lit debri	ter and s	ł	⊠Abrupt plan community ch	it iange	□Soil ch	aracteristic change
Width of Waterbody - T Bank to Top of Bank:	op of Wic to T	dth of Waterk Γοe of Slope:	ody - To	pe of Slope	Width of Wa Water Edge	iterboo :	dy - Wa	ater Edge to	Depth (Approx.)	of Water	:
<u>4.0</u> ft.		<u>3.0</u> ft.			N/A□	2.	<u>5 f</u> t.		N/A□		<u>0.15 </u> ft.
Sinuosity: (check one) ⊠Straight ⊡Meanderin	Wa (App ng N/A	ter velocity: prox.) 0	. <u>25 </u> fp	S	Bank height Rigl Le	t nt:	1 <u>.0_</u> ft. 1 <u>.0_</u> ft.		Bank s	lope Right: Left	90_degrees
Analysis of Bank Stab No evidence of bank i	ility (i.e. root s nstability obs	structure, ve erved	getation	n, substrate	characteris	tics):					
Qualitative Attribu	tes										
Water Appearance: (check one)	No water	⊠Clear	□Turbid	I □Sh on	een surface	⊡Surfa scun	ace n	□Algal mats	□Other	<u>.</u>	
Substrate: [(check all that apply) % of Substrate:	Bedrock	Boulder	☑ Cobble _ <u>10_</u> %	e ⊠ Grave % _2 <u>5_</u> %	el ⊠ Sand _15	×	Silt/ cl _4(ay ⊠ Organic <u>0_</u> % <u>10_</u> %	: □C	Other: %	
Width of Riparian Zone	e: Vegeta (check al Avg. D	ative Layers: Il that apply) OBH of Domin	nants:	⊠ Trees	:		Saplin	gs/Shrubs:	\boxtimes	Herbs	
N/A⊠	(approx.)			<u> 10.0 </u> II		_	<u></u>				
Sugar maple, yellow	v birch, bee rass, jewel	ch, red ma weed	ple, cu	cumber m	agnolia, be	ee ba	lm, bı	uttercup, wo	od net	ttle, noo	lding sedge,
Aquatic Habitats (ex: su Leaf packs, woody	ubmerged or eme debris, eme	erged aquatic versent vege	egetation, tation	overhanging	banks/roots, lea	af packs	s, large :	submerged wood	, riffles, o	deep pools	5):
Aquatic Organisms Ob	served (list):										
salamander	. ,										
T&E Species Observed none	(<i>list)</i> :										
Disturbances (ex: livesto	ock access, man	ure in waterbod	y, waste c	discharge pipe	es):						
Crossing for existing	g road via 2	4" corrugat	ed met	tal culvert							
Tributary is: (check one)	⊠ Natur	ral	□ Artifi	icial, man-m	ade 🗆 N	lanipul	ated				

spoa425

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream continues out of access road corridor in both directions; seep origin within abutting PEM wetland wpoa411 outside corridor; passes under existing road via 24" corrugated metal culvert; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

□ Moderate

Stream Quality ^a : (check one)

⊠ High





Waterbody spoa425 facing west upstream



Waterbody spoa425 facing east downstream



Waterbody spoa425 facing north across

Survey Descriptio	n									
Project Name:	oject Name: Waterbody Nam			e:		Waterbody ID:			te:	
Atlantic Coast Pipeline	<u>.</u>	UNT	to Slaty F	ork		S	spoa422			1/2016
State:	County:		C	ompany:		Crew	Member Initials	s: F	Photos:	
West Virginia	Pocahon	ntas		IRG/ERM		GB,	KO		4 photos	
Tract Number(s):			N	learest Mile	epost:		Associated W	etland	ID(s):	
access road 05-001-C	008.AR1		7	2.0			wpoa410			
Survey Type: (check one)	□Ce	nterline	□Re-Ro	ute	⊠Access Ro	ad	□Other:			
Physical Attribute	S									
Stream Classification: (check one)	⊠Epl	hemeral		ittent	□Perennial					
Waterbody Type: (check one)	River	Stream	□ Ditch	□ Ca	anal 🗌 Oth	er:				
OHWM Width: _ <u>2.0_</u> ft.	OHWM (check all	Indicator: that apply)		□ Clear lir on bank	ne ⊡Shel ⁱ	<i>r</i> ing	□Wrested vegetation		Scouring	□Water staining
Height: ft. N/A□	□ ve	Bent, matted, getation	or missing	□Wrack li	ne ⊠Litter debris	and	□Abrupt plar community ch	it nange	□Soil char	acteristic change
Width of Waterbody - ⁻ Bank to Top of Bank:	Top of t	Width of Wate to Toe of Slop	erbody - To e:	e of Slope	Width of Wate Water Edge:	rbody - V	Vater Edge to	Depth ((Approx.)	of Water:	
<u>4.0</u> ft.		<u>_2.0</u> ft			N/A⊠	ft		N/A⊠		ft.
Sinuosity:	,	Water velocity	/ :		Bank height			Bank s	lope	
(check one)	0	(Approx.)			Right:	00.6			Right:	00
		-	fps		Left	<u>3.0</u> 1	ι.		Left:	60 degrees
□Meanderi	ng I	N/A⊠				<u>1.5</u> f	t.		_	<u>45</u> degrees
Analysis of Bank Stab Banks upstream of cu	oility (i.e. roo	ot structure, v everely tramp	vegetation led by live	, substrate stock ente	characteristic	s): irea from	n adjacent pasti	ure.		
Qualitativa Attribu	itaa		-							
Water Appearance:	lles									
(check one)	[⊠] No water	□Clear	□Turbid	⊡Sh on	surface	Surface scum	□Algal mats	□Other:	:	
Substrate:	Bedrock	□ Boulder	⊠ Cobble	Grave	el 🛛 Sand	Silt/	clay 🛛 Organio	; □0	ther:	
(check all that apply) % of Substrate:	%	%	<u>_10_</u> %	_ <u>5_</u> %	<u> 10 </u> %	_6	<u>60 </u> % <u>15 </u> %		%	
Width of Riparian Zon	e: Veg	etative Layer	s:							
<u>ft</u> .	(chec Avg	ck all that apply) J. DBH of Don	ninants:	⊠ Trees 13.0 ir	: 1.	⊠ Sapl 1.0 ii	ings/Shrubs: n.		Herbs	
N/A⊠ Dominant Bank Vogot	(appr	rox.)								
Sugar maple, yellow	w birch, be	eech, north	ern red o	ak, black	cherry, elder	berry, I	knotweed, ge	ranium	n, starwo	rt , anise root,
Aquatic Habitats (ex: s	ubmerged or o	emerged aquatio	vegetation,	overhanging	banks/roots, leaf p	acks, larg	e submerged wood	, riffles, c	leep pools):	
Aquatic Organisms Ol	oserved (list	t):								
none										
T&E Species Observed	d (list):									
Disturbances (ex: livest	ock access in	nanure in waterh	odv. waste d	lischarge nine	es):					
Culvert crossing for	existing	gravel road;	; 18" corr	ugated m	etal culvert;	livestoc	k access ups	tream	of culver	t.
Tributary is: (check one)	 ⊠ Ni⊄	atural	□ ∆rtifi	cial man-m	, ade ⊡ Mar	inulated	•			
· · · · ·						palated				

spoa422

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Continues out of proposed access road corridor in both directions; crosses existing road via 18" corrugated metal culvert; culvert inlet is completely covered by sediment; severely trampled by livestock upstream of culvert; flows through PEM seep wetland wpoa410; mature second growth mixed hardwood forest adjacent to livestock pasture.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

□ Moderate

Stream Quality ^a : (check one)

High

🛛 Low







Waterbody spoa422 facing southwest upstream



Waterbody spoa422 facing northeast downstream



Waterbody spoe422 facing northwest across

Survey Description	n								
Project Name:		Waterbody Na	me:		w	aterbody ID:		Date:	
Atlantic Coast Pipeline		UNT to Slaty	/ Fork		sp	boa423		6/1/2016	
State:	County:		Company:		Crew N	lember Initials	tos:		
West Virginia	Pocahontas		NRG/ERM	1	GB, K	3, KO 4 photos			
Tract Number(s):			Nearest Mile	epost:		Associated W	etland ID(s):	
access road 05-001-C0	08.AR1		72.0			none			
Survey Type: (check one)		e □Re-l	Route	⊠Access Road		Other:			
Physical Attributes	S								
Stream Classification: (check one)	⊠Ephemer	al 🗆 Inter	rmittent	Perennial					
Waterbody Type: (check one)	River ⊠ Sti	ream 🗆 Dite	ch 🗆 Ca	anal 🗌 Other:	:				
OHWM Width: <u>3.0</u> ft.	OHWM Indica (check all that appl	ator: _{IV})	⊠ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation	⊠Sco	uring ⊟Water staining	
Height: ft. N/A□	□Bent, ı vegetatio	matted, or missir on	ng	ne ⊠Litter ar debris	nd	□Abrupt plan community ch	t ⊡S ange	oil characteristic change	
Width of Waterbody - T Bank to Top of Bank:	op of Width to Toe	of Waterbody - of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - W	ater Edge to	Depth of W (Approx.)	/ater:	
<u>6.0</u> ft.	-	<u>1.5</u> ft.		N/A⊠	ft.		N/A⊠	ft.	
Sinuosity: (^{check one)} ⊠Straight □Meanderir	Mater (Approx.)	velocity:) fp:	s	Bank height Right: Left:	<u>3.0</u> ft. <u>3.0</u> ft.		Bank slope R	ight: <u>80</u> degrees Left: <u>60</u> degrees	
Analysis of Bank Stabi Banks are somewhat	ility (i.e. root stru unstable due to o	ucture, vegetation channel incision	on, substrate n/down cuttir	e characteristics): ng					
Qualitative Attribu	tes								
Water Appearance: (check one)	[]] No water □	Clear □Turb	oid □Sh on	neen ⊡Sui n surface scu	face um	□Algal [mats	□Other:		
Substrate:	Bedrock 🗆 Bo	oulder 🛛 Cobb	ole 🛛 Grav	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🛛 Organic	□ Other		
(check all that apply) % of Substrate:	%%	6 <u>35</u>	_% _ 1 <u>5_</u> %	<u> 5 </u> %	_35	<u>5</u> % <u>10</u> %		%	
Width of Riparian Zone	: Vegetativ	e Layers:							
<u>ft</u> .	(check all tha Avg. DBH (approx.)	t apply) I of Dominants:	⊠ Trees <u>14.0</u> ii	: D	Saplin <u>1.5</u> in.	ngs/Shrubs:	⊠ Herl	bs	
Dominant Bank Vegeta	tion (list):								
Sugar maple, yellov anise root, wood as	v birch, beech, ter, violet, ane	, northern red mone	oak, black	cherry, Hawtho	orne, h	nay-scented	fern , woo	od nettle, starwort ,	
Aquatic Habitats (ex: su Leaf packs	Ibmerged or emerge	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood,	riffles, deep	pools):	
Aquatic Organisms Ob	served (list)								
none									
T&E Species Observed	l (list):								
none									
Disturbances (ex: livesto	ock access, manure	in waterbody, waste	e discharge pipe	es):					
Culvert crossing for	existing grave	el road; 18" co	orrugated m	etal culvert					
Tributary is: (check one)	⊠ Natural		tificial, man-m	ade 🗌 Manipi	ulated				

spoa423

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Continues out of proposed access road corridor in both directions; crosses existing gravel road via 18" corrugated metal culvert; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

⊠ Moderate

Stream Quality ^a : (check one)

High





Waterbody spoa423 facing southwest upstream



Waterbody spoa423 facing northeast downstream



Waterbody spoa423 facing northwest across

Survey Description	n							
Project Name:		Waterbody Na	me:		w	aterbody ID:		Date:
Atlantic Coast Pipeline		UNT to Slaty	y ⊢ork		sp	00a424		6/1/2016
State:	County:		Company:		Crew N	Member Initials	: Phot	os:
West Virginia	Pocahontas		NRG/ERM	1 GB, KO			3 pl	hotos
Tract Number(s):			Nearest Mile	epost:		Associated W	etland ID(s):
access road 05-001-C0	08.AR1		72.0			wpoa411		
Survey Type: (check one)		ne □Re-	Route	⊠Access Road		□Other:		
Physical Attributes	s							
Stream Classification: (check one)	Epheme	ral ⊠Inte	rmittent	Perennial				
Waterbody Type: (check one)]River □ S	tream 🛛 Dit	ch 🗆 Ca	anal 🗆 Other:				
OHWM Width: _ <u>2.0</u> ft.	OHWM Indic (check all that ap)	ator: _{ply)}	⊠ Clear lir on bank	ne DShelvin	9	□Wrested vegetation	□Sco	uring ⊟Water staining
Height: ft. N/A□	□Bent, vegetat	matted, or missir ion	ng ⊡Wrack li	ne ⊠Litter ar debris	nd	⊠Abrupt plan community ch	t ⊡So ange	oil characteristic change
Width of Waterbody - T Bank to Top of Bank:	op of Width to Too	of Waterbody - e of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - W	ater Edge to	Depth of W (Approx.)	later:
<u>9.0</u> ft.		<u>2.0</u> ft.			<u>2.0 </u> ft	t.	N/A□	<u>0.12</u> ft.
Sinuosity:	Wate	r velocity:		Bank height			Bank slope)
(check one)	(Approx	<i>(.)</i>	_	Right:	20 #		Ri	ight:
		0.40	tps	Left:	<u>2.0</u> 11.			Left:
	ng N/A□			-	<u>7.0</u> ft.			<u>60</u> degrees
Analysis of Bank Stabi Banks are road base a	ility (i.e. root str and road cut of	ucture, vegetati existing gravel r	on, substrate oad; spring o	e characteristics): output confined to	o road s	side ditch		
Qualitative Attribu	tes							
Water Appearance:								
(check one)	[⊥] No water ⊠	IClear □Turl	oid ⊡Sh on	leen ⊡Sui i surface scu	rface um	□Algal [mats	□Other:	
Substrate:	Bedrock 🗆 E	Boulder 🛛 Cobl	ble 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🛛 Organic	Other	
% of Substrate:	%	% <u>5</u>	%3 <u>5_</u> %	<u>35</u> %	15	<u>%</u> <u>10</u> %	%	0
Width of Riparian Zone	: Vegetativ	ve Layers:						
ft	(check all th	at apply)	⊠ Trees	: D	Saplir	ngs/Shrubs:	⊠ Hert	DS
<u>n</u> . N/A⊠	(approx.)	n of Dominants.	<u>14.0</u> ir	n. <u>-</u>	<u>1.5</u> in			
Dominant Bank Vegeta	tion (list):						_	
Sugar maple, yellov anise root, wood as Aquatic Habitats (ex: su	v birch, beech <u>ter, violet, and</u> ubmerged or emerg	n, northern red emone ed aquatic vegetatic	oak, black	cherry, Hawtho	orne, r	submerged wood	riffles, deep	od nettle, starwort ,
Leaf packs			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		.,			
Aquatic Organisms Ob	served (list):							
none								
T&E Species Observed	(list):							
none								
Disturbances (ex: livesto	ock access, manure	e in waterbody, wast	e discharge pipe	es):				
Output from spring	is confined to	road side ditc	h; relic stre	am channel vis	ible or	n other side o	of road	
Tributary is: (check one)	[⊠] Natural	□ Ar	tificial, man-m	ade 🛛 🛛 Manipi	ulated			

spoa424

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream begins within the access road corridor at road cut spring ppoa420; flows into stream spoa425/wetland wpoa411 within access road corridor confined to ditch; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

□ Moderate

Stream Quality ^a : (check one)

High

🛛 Low





Waterbody spoa424 facing south upstream



Waterbody spoa424 facing north downstream



Waterbody spoa424 facing west across

Survey Description								
Project Name:		Waterbody Na	me:		v	Vaterbody ID:		Date:
Atlantic Coast Pipeline		UNT to Slaty	Fork		s	poa427		6/6/2016
State:	County:		Company:		Crew	Member Initials	s: Photos	1
West Virginia	Pocahontas		NRG/ERM		GB, ł	KO	3 pho	tos
Tract Number(s):			Nearest Mile	epost:		Associated W	/etland ID(s):	
access road 05-001-C00	8.AR1		72.0			none		
Survey Type: (check one)		□Re-Ro	oute	⊠Access Road		□Other:		
Physical Attributes								
Stream Classification: (check one)	□ Ephemeral	⊠Interm	nittent	□Perennial				
Waterbody Type:								
(check one)	River 🛛 Stre	am 🗆 Ditch	🗆 🗆 Car	al 🗌 Other:				
OHWM Width: <u>5.0</u> ft.	OHWM Indica (check all that appl	tor: v)	⊠ Clear lin on bank	e 🗆 Shelving	g	□Wrested vegetation	⊠Scourir	ng ⊡Water staining
Height: ft. N/A□	□Bent, r vegetatio	natted, or missin n	g	ne ⊠Litter ar debris	nd	□Abrupt plar community cł	nt ⊡Soil o nange	characteristic change
Width of Waterbody - To to Top of Bank:	p of BankWidth to Toe	of Waterbody - [·] of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - V	Vater Edge to	Depth of Wate (Approx.)	er:
<u>_10.0</u> ft.	-	<u>4.0</u> ft.		N/A	4.5f	ft.		<u>0.25</u> ft.
Sinuosity:	Water	velocity:		Bank height			Bank slope	
(check one)	(Approx.)	-		Right:			Right	:
		<u> </u>	ps	Loff:	<u>3.0</u> ft		Lof	40 degrees
	Ø N/A□			Lent.	<u>5.0_</u> ft		Lei	<u>75</u> degrees
Analysis of Bank Stabili No evidence of bank in	ity (i.e. root struc stability observe	ture, vegetatior d	n, substrate c	characteristics):				
Qualitative Attribut	es							
Water Appearance:								
(check one)	No water ⊠C	ear 🗆 Turbio	d ⊡She on s	en □Surfa surface scun	ace n	□Algal □ mats]Other:	
Substrate:	Bedrock 🛛 Bou	Ider 🛛 Cobble	e 🛛 Gravel	⊠ Sand ⊠	Silt/ cla	ay 🛛 Organic	□ Other:	
(check all that apply) % of Substrate:	%%	_ 35_	% _ 2 <u>5_</u> %	_20_%	1	<u>5</u> % <u>5</u> %	%	
Width of Riparian Zone:	Vegetativ	e Layers:	⊠ т		7.0			
<u>40.0 ft</u> .		of Dominants:	⊴ Trees. _ <u>12.0</u> ir	. 2 1	<u>2.0</u> ir	ngs/Shrubs. 1.		
Dominant Bank Vegetati	ion (list):							
Sugar maple, yellow goldenrod, may-appl	birch, beech, l e, wild rye, bee	olack cherry, l e balm	hemlock, re	ed spruce, jewe	el wee	ed, wood nett	le, anise roo	t, buttercup,
Aquatic Habitats (ex: sub Leaf packs, woody d	ebris, scattere	aquatic vegetation, d small pools	overhanging ba	anks/roots, leaf packs	s, large s	submerged wood,	riffles, deep pools	s):
Aquatic Organisms Obs	erved (list):							
caddisfly								
T&E Species Observed	(list):							
none								
Disturbances (ex: livestoc	k access, manure in	waterbody, waste	discharge pipes):				
Crossing for existing	road via 24" c	orrugated me	tal culvert					
Tributary is: (check one)	☑ Natural	□ Artif	icial, man-ma	de 🗌 Manipul	ated			

spoa427

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap: natural vegetation extends 1/3-1/2 of the active channel width on each side: filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream continues out of access road survey corridor in both directions; passes under existing road via 24" corrugated metal culvert; mature second growth mixed hardwood with hemlock and red spruce.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Stream Quality a: □ Moderate

check one)

⊠ High





Waterbody SPOA427 facing southwest upstream



Waterbody SPOA427 facing northwest downstream



Waterbody SPOA427 facing northeast across

Survey Description										
Project Name:		Wat	erbody Nar	me:		Waterbody ID:			Date:	
Atlantic Coast Pipeline		UN	T to Slaty	Fork		s	spoa428			6/6/2016
State:	County:			Company:		Crew	Member Initials	s: P	hotos:	
West Virginia	Pocahont	as		NRG/ERM		GB, I	KO	:	3 photo	os
Tract Number(s):				Nearest Mile	epost:		Associated W	/etland I	D(s):	
access road 05-001-C00	8.AR1			72.0			wpoa416			
Survey Type: (check one)	□Cente	erline	□Re-Ro	oute	⊠Access Road		□Other:			
Physical Attributes										
Stream Classification: (check one)	□Epher	meral	□Interm	nittent	⊠Perennial					
Waterbody Type: (check one)	River 🛛	Stream	□ Ditch	□ □ Car	nal 🗆 Other:					
ОНШМ	OHWM II	ndicator:								
Width:ft.	(check all th	nat apply)		☑ Clear lin on bank	le □Shelvin	g	□Wrested vegetation	\boxtimes	Scouring) □Water staining
Height: ft. N/A□	□B veg	Bent, matte getation	d, or missin	g	ne ⊠Litter ar debris	nd	□Abrupt plar community ch	nt nange	⊡Soil cł	naracteristic change
Width of Waterbody - To to Top of Bank:	op of BankW to	/idth of Wa Toe of SI	aterbody - ⁻ ope:	Toe of Slope	Width of Waterb Water Edge:	ody - V	Vater Edge to	Depth c (Approx.)	of Water	•
12.0 ft.		4.0	ft.			4.5	ft.			<u>0.33 </u> ft.
			-		N/A□			N/A□		
Sinuosity: (check one)	N	Vater veloc	ity:		Bank height			Bank sl	ope	
⊠Straight	() .	<i>(pp: 0)</i>	0.75	fno	Right:	35 fl	ł		Right:	45 degrees
Moondoring		-		ips	Left:	<u> </u>			Left:	<u></u>
	N N	I/ALI			-	<u>4.0_</u> ft	i.			50 degrees
Analysis of Bank Stabil No evidence of bank inst	ity (i.e. root ability observ	structure, ved	vegetatior	n, substrate o	characteristics):					
Qualitative Attribut	es									
Water Appearance:										
(check one)	No water	⊠Clear	□Turbic	d ⊡She on s	en ⊡Surfa surface scur	ace n	□Algal □ mats]Other:		
Substrate:	Bedrock	Boulder		e 🛛 Gravel	⊠ Sand ⊠	Silt/ cl	lay 🛛 Organic	□ Oth	ier:	
% of Substrate:	%	%	30	% _ 3 <u>5_</u> %	<u> 25 </u> %	_	<u>5</u> % <u>5</u> %		_%	
Width of Riparian Zone:	Vege	etative Lay	ers:		_					
40.0 ft-	(cneck Ava.	DBH of D	ominants:	⊠ Irees: 12.0 ir		Saplı 15 ir	ings/Shrubs:		Herbs	
N/A 🗆	(appro.	юх.)		<u> 12.0 </u> li	·	_ 1.0_1	1.			
Sugar maple, yellow	birch, bee	ch, witch	hazel, st	triped mapl	e , jewel weed	, woo	d nettle, fowl	manna	a grass	s, buttercup,
Aquatic Habitats (ex: sub	merged or em	erged aquati	c vegetation,	overhanging ba	anks/roots, leaf packs	s, large	submerged wood,	riffles, de	ep pools)	:
Lear packs, woody d	eons, sca	liered sir	iali pools							
Aquatic Organisms Obs Caddisfly, salamand	erved (list): er									
T&E Species Observed	(list):									
none										
Disturbances (ex: livestoo	k access, man	nure in water	body, waste o	discharge pipes):					
Crossing for existing	road via 4	8" corru	gated me	tal culvert						
Tributary is: (check one)	⊠ Natu	ral	□ Artif	icial, man-mae	de 🗌 Manipul	ated				

spoa428

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap: natural vegetation extends 1/3-1/2 of the active channel width on each side: filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream continues out of access road survey corridor in both directions; flows through PEM wetland wpoa416; passes under existing road via 48" corrugated metal culvert; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Stream Quality a: □ Moderate

check one)

⊠ High





Waterbody SPOA428 facing south upstream



Waterbody SPOA428 facing north downstream



Waterbody SPOA428 facing east across

Survey Descriptio	n									
Project Name:		Waterb	ody Nam	ne:		Vaterbody ID:		Dat	te:	
Atlantic Coast Pipeline		UNT to	Slaty	Fork		s	poa421		6/1	/2016
State:	County:			Company:		Crew	Member Initials	: P	hotos:	
West Virginia	Pocahonta	as	1	NRG/ERM GB			В, КО 4 р			
Tract Number(s):				Nearest Mile	epost:		Associated W	etland I	D(s):	
access road 05-001-C0	08.AR1			72.1			none			
Survey Type: (check one)	□Cent	erline	□Re-R	oute	⊠Access Ro	ad	□Other:			
Physical Attribute	s									
Stream Classification: (check one)	⊠Ephe	emeral	□Intern	nittent	□Perennial					
Waterbody Type: (check one)	River	⊠ Stream		n 🗆 Ca	anal 🗆 Oth	er:				
OHWM Width: ft.	OHWM In (check all the	ndicator: at apply)		□ Clear lir on bank	ne 🗆 Shelv	<i>i</i> ng	□Wrested vegetation	\boxtimes	Scouring	□Water staining
Height: ft. N/A□	□B vege	ent, matted, o etation	r missing	j ⊡Wrack li	ne ⊠Litter debris	and	□Abrupt plan community ch	t [lange	∃Soil chara	acteristic change
Width of Waterbody - 1 Bank to Top of Bank:	op of W to	idth of Water Toe of Slope	body - T :	oe of Slope	Width of Wate Water Edge:	rbody - V	Vater Edge to	Depth o (Approx.)	f Water:	
<u>8.0</u> ft.		<u>3.5</u> ft.			N/A⊠	ft.		N/A⊠		ft.
Sinuosity:	W	ater velocity:			Bank height			Bank sl	оре	
(check one)	(A)	oprox.)			Right:	40 8			Right:	20 desees
		_	fps		Left:	<u>4.0</u> 11			Left:	bo_degrees
	ng N/	∕A⊠				<u>2.5</u> ft				40 degrees
Analysis of Bank Stab No evidence of bank i	ility (i.e. root nstability wa	t structure, ve s observed	egetatio	n, substrate	characteristic	s):				
Qualitative Attribu	ites									
Water Appearance:	_									
(check one)	No water	□Clear	□Turbi	d ⊡Sh on	leen □: surface :	Surface scum	□Algal mats	□Other:		
Substrate:	Bedrock	⊠ Boulder	⊠ Cobbl	e 🛛 Grave	el 🛛 Sand	⊠ Silt/ o	clay 🛛 Organic	: 🗆 01	ther:	
% of Substrate:	%	<u>15_</u> %	_45	_% _1 <u>5_</u> %	%	<u>_1</u> ;	<u>5</u> % <u>10</u> %		%	
Width of Riparian Zone	e: Vege	tative Layers		⊠ т			n na (Olemakaa)		la de a	
<u>ft</u> .	Avg.	DBH of Domi	nants:	⊠ Trees <u>12.0</u> ir	: 1.	⊠ Sapii _ <u>1.5_</u> ir	ngs/Snrubs: 1.		Herbs	
N/A⊠ Dominant Bank Vegeta	(approx	<i>c.)</i>								
Sugar maple, yellov fern, bluegrass, vio	v birch, bee let	ech, cucum	ber ma	ignolia, bla	ack cherry, w	ood net	tle, jewel wee	ed, mag	y-apple,	buttercup, lady
Aquatic Habitats (ex: si	ubmerged or en debris	nerged aquatic v	regetation	, overhanging	banks/roots, leaf p	acks, large	e submerged wood	, riffles, d	eep pools):	
Aquatia Organiama Ok										
none	iservea (iist):									
T&E Species Observed	l (list):									
none										
Disturbances (ex: livest	ock access, ma	nure in waterbo	dy, waste	discharge pipe	es):					
Culvert crossing for	existing gr	ravel road;	18" cor	rugated m	etal culvert					
Tributary is: (check one)	⊠ Nati	ural	□ Artii	ficial, man-m	ade 🗆 Mar	ipulated				

spoa421

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Continues out of proposed access road corridor in both directions; crosses existing road via 18" corrugated metal culvert; culvert inlet is partially crushed; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

⊠ Moderate

Stream Quality ^a : (check one)

High





Waterbody spoa421 facing west upstream



Waterbody spoa421 facing east downstream



Waterbody spoa421 facing south across

Survey Description									
Project Name:		Waterbody Na	ame:		v	Vaterbody ID:		Date:	
Atlantic Coast Pipeline		UNT to Slat	y Fork	/ Fork			spoa429		
State:	County:		Company:		Crew I	Member Initials	s: Photos	:	
West Virginia	Pocahontas		NRG/ERM		GB, ⊧	< 0	3 pho	tos	
Tract Number(s):	1		Nearest Mile	epost:		Associated W	/etland ID(s):		
access road 05-001-C00	8.AR1		72.0			wpoa417			
Survey Type: (check one)		e □Re-F	Route	⊠Access Road		□Other:			
Physical Attributes									
Stream Classification: (check one)	Ephemer	ral ⊠Inter	mittent	Perennial					
Waterbody Type:									
(check one)	River St	ream 🗆 Ditc	h 🗆 Car	al 🗌 Other:					
OHWM Width: <u>3.0</u> ft.	OHWM Indi (check all that a)	cator: oply)	☑ Clear lin on bank	le ⊡Shelving	9	□Wrested vegetation	⊠Scourir	ng ⊡Water staining	
Height: ft. N/A□	□Bent vegeta	t, matted, or missi tion	ng □Wrack lin	ne ⊠Litter an debris	ıd	□Abrupt plar community cł	nt ⊡Soil hange	characteristic change	
Width of Waterbody - To to Top of Bank:	op of BankWidt to To	h of Waterbody - be of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - W	ater Edge to	Depth of Wate (Approx.)	er:	
<u>6.0</u> ft.		<u>2.5</u> ft.			<u>3.0 </u> f	ft.	N/A□	<u>0.20</u> ft.	
Sinuosity:	Wate	er velocity:		Bank height			Bank slope		
(check one)	(Appro	.)		Right:			Right	t:	
		0.50	_fps	Left:	<u>3.0_</u> ft.		Lef	<u>40</u> degrees t:	
	9 N/A[<u>1.0_</u> ft			90 degrees	
Analysis of Bank Stabil No evidence of bank inst	ity (i.e. root stru ability observed	ucture, vegetatic	on, substrate o	characteristics):					
Qualitative Attribut	es								
Water Appearance:									
(check one)	No water 🛛	Clear	id ⊡She on s	en ⊡Surfa surface scun	ace 1	□Algal □ mats]Other:		
Substrate:	Bedrock 🗆 B	oulder 🛛 Cobb	le 🛛 Gravel	⊠ Sand ⊠	Silt/ cla	ay 🛛 Organic	□ Other:		
% of Substrate:	%%	%10	_% _1 <u>5</u> _%	<u>40</u> %	<u>.</u>	<u>25</u> % <u>10</u>	%%		
Width of Riparian Zone:	Vegetat	ive Layers:							
40.0 ft-	(cneck all t Avg. DE	nat apply) 3H of Dominants :	⊠ Trees: 12.0 ir		Saplii	ngs/Shrubs:	⊠ Herbs		
N/A	(approx.)		<u></u> _		<u></u>				
Sugar maple, yellow	birch, beech	, witch hazel, s	striped mapl	e , jewel weed,	wood	d nettle, fowl	manna gras	s, buttercup,	
Aquatic Habitats (ex: sub	merged or emerge	ed aquatic vegetation	n, overhanging ba	anks/roots, leaf packs	, large s	submerged wood,	riffles, deep pools	5):	
Leaf packs, woody d	ebris, emerg	ent vegetation							
Aquatic Organisms Obs	erved (list):								
Caddisfly									
T&E Species Observed	(list):								
Disturbances (ex: livestor	k access manuro	in waterbody waste	discharge nines).					
Crossing for existing	road via 18"	corrugated me	etal culvert	<i>)</i> •					
Tributary is: (check one)	🛛 Natural	□ ∧ ••	ificial man mo		ated				
	- indluidi		noiai, man-ma		aleu				
spoa429

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap: natural vegetation extends 1/3-1/2 of the active channel width on each side: filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream continues out of access road survey corridor in both directions; flows through PEM wetland wpoa417; passes under existing road via 18" corrugated metal culvert; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Stream Quality a: □ Moderate

check one)

⊠ High





Waterbody SPOA429 facing south upstream



Waterbody SPOA429 facing northwest downstream



Waterbody SPOA429 facing east across

Survey Descriptio	n								
Project Name:		Waterbody Na	me:		W	aterbody ID:		Da	te:
Atlantic Coast Pipeline		UNT to Slaty	/ Fork		s	boa420		6/ ⁻	1/2016
State:	County:		Company:		Crew M	Member Initials	s: F	Photos:	
West Virginia	Pocahontas		NRG/ERM	1	GB, K	(O		4 photos	
Tract Number(s):	1		Nearest Mile	epost:		Associated W	etland	ID(s):	
access road 05-001-C0	008.AR1		72.1			none			
Survey Type: (check one)		e □Re-F	Route	⊠Access Road		Other:			
Physical Attribute	s								
Stream Classification: (check one)	Ephemera	al 🛛 Inter	mittent	Perennial					
Waterbody Type: (check one)	River ⊠ Str	ream 🗆 Dito	ch 🗆 Ca	anal 🛛 Other:					
OHWM Width: _ <u>7.0_</u> ft.	OHWM Indica (check all that appl	tor: _{y)}	☑ Clear lir on bank	ne 🗆 Shelving	g	□Wrested vegetation	\boxtimes	Scouring	□Water staining
Height: ft. N/A□	□Bent, r vegetatio	matted, or missin on	ig ⊡Wrack li	ne ⊠Litter ar debris	nd	□Abrupt plar community ch	nt nange	□Soil char	acteristic change
Width of Waterbody - 1 Bank to Top of Bank:	op of Width to Toe	of Waterbody - ` of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - W	ater Edge to	Depth ((Approx.)	of Water:	
<u>13.0</u> ft.	-	<u>5.0</u> ft.			<u>3.0 </u> ft		N/A□	0.2	<u>20 </u> ft.
Sinuosity: (check one) ⊠Straight ⊡Meanderin	Water (Approx.) ng N/A□	velocity: 0.33f	ps	Bank height Right: Left:	<u>6.0_</u> ft. <u>3.0_</u> ft.		Bank s	lope Right: Left:	<u>65</u> degrees 80_ degrees
Analysis of Bank Stab Banks exhibit loose so	ility (i.e. root stru bil/rock and expo	sed roots and i	on, substrate s being unde	e characteristics): ercut at culvert ou	itlet				
Qualitative Attribu	ites								
Water Appearance: (check one)	[]] No water ⊠0	Clear □Turb	oid ⊡Sh on	leen ⊡Sur surface scu	face um	□Algal mats	□Other		
Substrate: [(check all that apply) % of Substrate:	Bedrock ⊠ Bo	oulder ⊠ Cobb % _ <u>55</u>	ble \boxtimes Grave	el □ Sand ▷ o%	⊠ Silt/ c _ <u>10</u>	lay ⊠ Organic <u>0</u> % _ <u>5_</u> %	: □C	0ther: %	
Width of Riparian Zone <u>ft</u> . N/A⊠	e: Vegetative (check all that Avg. DBH (approx.)	e Layers: apply) of Dominants:	⊠ Trees: <u>12.0_</u> ir	: D	⊠ Saplir _ <u>1.5_</u> in	ngs/Shrubs:	\boxtimes	Herbs	
Dominant Bank Vegeta Sugar maple, yellov fern, bluegrass, viol	ation <i>(list)</i> : w birch, beech, let	cucumber m	agnolia, bla	ack cherry, woo	od nett	le, jewel wee	ed, ma	ıy-apple,	buttercup, lady
Aquatic Habitats (ex: su Leaf packs; woody	ubmerged or emerge debris; small pool	d aquatic vegetatio s	n, overhanging	banks/roots, leaf pacl	ks, large	submerged wood	l, riffles, c	deep pools):	
Aquatic Organisms Ob	served (list):								
Salamanders, inver	tebrates								
T&E Species Observed	l (list):								
none									
Disturbances (ex: liveste	ock access, manure i	n waterbody, waste	e discharge pipe	es):					
Culvert crossing for	existing grave	i road; 30" co	orrugated m	ietal culvert					
Tributary is: (check one)	[⊠] Natural	□ Ar	tificial, man-m	ade 🗆 Manipu	ulated				

spoa420

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Continues out of proposed access road corridor in both directions; crosses existing road via 30" corrugated metal culvert; bank is being undercut at culvert outlet; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

□ Moderate

Stream Quality ^a : (check one)

[⊠] High





Waterbody spoa420 facing east upstream



Waterbody spoa420 facing west downstream



Waterbody spoa420 facing north across

Survey D	Description												
Project Nai	me:			Naterbody Na	ime:				Naterbody ID:			Date:	
Atlantic Coa	ast Pipeline			JNT to Slaty	/ Fork			5	spoa439			6/9/2	016
State:		County	:		Company:			Crew	Member Initials	6:	Photos:		
West Virg	jinia	Pocah	ontas		NRG/ERM G			GB,	KO		5 phot	os	
Tract Num	ber(s):				Nearest Mil	epost:			Associated W	/etland	ID(s):		
access roa	d 05-001-C00	8.AR1			72.0				none				
Survey Typ (check one)	be:	□c	enterline	□Re-Ro	oute	⊠Aco	cess Road		□Other:				
Physical	Attributes												
Stream Cla (check one)	issification:	□E	ohemeral	⊠Intern	nittent	□Per	rennial						
Waterbody (check one)	′ Type: □F	River	⊠ Strea	m 🗆 Ditch	n 🗆 Ca	nal	Other:						
OHWM Width:	60 ft	OHW (check	M Indicato all that apply)	or:	⊠ Clear li on bank	ne	Shelvin	g	□Wrested vegetation	×	Scourin	9	□Water staining
Height:	<u>0.75</u> ft.		□Bent, m vegetation	atted, or missin	lg ⊡Wrack I	ine	⊠Litter ar debris	nd	□Abrupt plar community cł	nt nange	□Soil c	haracte	eristic change
Width of W to Top of B	/aterbody - To Bank:	p of Bar	kWidth of to Toe o	f Waterbody - ` f Slope:	Toe of Slope	e Width Water	of Waterbo	ody - V	Vater Edge to	Depth (Approx.)	of Wate	r:	
	<u>15.0</u> ft.			<u>3.0_</u> ft.		N/A□	:	2.0	ft.	N/A□		0.20	ft.
Sinuosity:			Water v	elocity:		Bank	height			Bank s	slope		
(check one)	⊠Straight		(Approx.)		_		Right:	F 0 6			Right:	00	d
	— .			0.501	tps		Left:	<u> </u>	ι.		Left	<u>90</u>	degrees
			N/A□					<u>5.0</u> f	t.			_70	degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Bank instability present as evidenced by exposed roots and loose rock and soil													
Qualitati	ve Attribut	s											
Water App	earance:												
(check one)	١	lo water	⊠Cle	ar □Turbio	d ⊡She on	een surface	□Surfa scun	ace n	□Algal □ mats]Other:			
Substrate:		Bedrock	Bould	ler 🛛 Cobble	e 🛛 Grave		Sand 🛛	Silt/ c	lay 🛛 Organic		ther:		
% of Subst	rate:	%	%	20	% _ 20_%		<u>15</u> %	_	<u>40</u> % _ <u>5</u> %)	%		
Width of Ri	iparian Zone:	V	egetative	Layers:	~ +		5	7.0.1					
_	<u>ft</u> .	(C A	vg. DBH c	of Dominants:	⊠ Trees 14.0_i	s: n.	2	⊴ Sapi _ <u>2.0_</u> i	ings/Shrubs: n.	X	Herbs		
N/A⊠ Dominant B	Bank Vegetati	on (list):	ιρρισχ.)										
Sugar ma violet, Du	aple, red eln tchman's pi	n, shag pe vine	bark hick , wild rye	kory, basswo e, red elderb	ood, Frasie errv	er's ma	agnolia, st	tonec	rop, jewel we	ed, w	ood ne	ttle, b	ee balm,
Aquatic Ha	s, woody d	merged or ebris	r emerged a	quatic vegetation,	, overhanging b	anks/roo	ots, leaf packs	s, large	submerged wood,	riffles, d	eep pools)	:	
Aquatic Or	ganisms Obs	erved (lis	st):										
Caddisfly	, salamande	er											
T&E Specie	es Observed (list):											
none			···· ·										
	es (ex: livestoc	k access, visting	manure in w	aterbody, waste	aischarge pipe	5):							
		, isung	giaveill	Jau									
(check one)	5.	N	latural	□ Artif	icial, man-ma	ade	Manipul	ated					

spoa439

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap: natural vegetation extends 1/3-1/2 of the active channel width on each side: filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream continues out of access road survey corridor in both directions; passes under existing gravel road via 24" corrugated metal culvert; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Stream Quality a: ⊠ Moderate

check one)

□ High





Waterbody SPOA439 facing north upstream



Waterbody SPOA439 facing south downstream



Waterbody SPOA439 facing west across

п

Survey Description	on											
Project Name:			Waterbody Na	iterbody Name:							Date:	
Atlantic Coast Pipeline			JNT to Slaty	/ Fork			S	spoa440	<u> </u>		6/9/2016	
State:	County	<i>r</i> :		Company:			Crew	Member Initials	s: F	hotos:		
West Virginia	Pocah	iontas		NRG/ERM G			GB,	KO		3 phot	os	
Tract Number(s):				Nearest Mile	post:			Associated W	/etland	ID(s):		
access road 05-001-C	008.AR1			72.0				none				
Survey Type: (check one)	□c	enterline	□Re-Re	oute	⊠Acce	ss Road		□Other:				
Physical Attribut	es											
Stream Classification (check one)	: □E	phemeral	⊠Intern	nittent	□Pere	nnial						
Waterbody Type:												
(check one)	□River	⊠ Strea	m 🗆 Ditch	n 🗆 Car	nal [Other:						
OHWM Width: _ <u>2.0_</u> ft.	OHW (check	VM Indicate k all that apply)	or:	⊠ Clear lir on bank	e	□Shelvin	g	□Wrested vegetation	\boxtimes	Scourinę	g ⊡Wa stain	ater ing
Height: ft. N/A□		□Bent, m vegetatior	atted, or missir	ıg ⊡Wrack li	ne	⊠Litter ar debris	nd	□Abrupt plar community cl	nt hange	□Soil c	haracteristic	change
Width of Waterbody - to Top of Bank:	Top of Ba	nkWidth o to Toe c	f Waterbody - f Slope:	Toe of Slope	Width c Water E	f Waterb dge:	ody - V	Vater Edge to	Depth ((Approx.)	of Water	r:	
<u>_12.0</u> ft.			<u>1.5_</u> ft.		N/A□		1.5	ft.	N/A□		<u>0.20</u> ft.	
Sinuosity:		Water v	elocity:		Bank h	eight			Bank s	lope		
(check one)		(Approx.)				Right:				Right:	1	
			0.33	fps		Loft -	<u>2.0</u> f	t.		Loft	<u>35</u> degre	es
□Meande	ring	N/A□					<u>10.0_</u> 1	ft.		Len	<u>75</u> degre	es
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks are road base and road cut; confined to ditch												
Qualitative Attrib	utes											
Water Appearance:	_											
(check one)	□No water	⊠Cle	ar □Turbio	d ⊡She on s	en surface	⊡Surfa scur	ace n	□Algal □ mats	Other:			
Substrate:	Bedrock	Bould	ler 🛛 Cobble	e 🛛 Gravel	🛛 Sa	and 🛛	Silt/ cl	lay 🛛 Organic	□ Otł	ner:		
(check all that apply) % of Substrate:	%	%	30	% _ 25_%	_	<u>20 </u> %	_	<u>15</u> % <u>10</u>	%	%		
Width of Riparian Zor	ne:	/egetative	Layers:			_						
ft.	(check all that a	pply)	⊠ Trees:			Sapli 🛛	ings/Shrubs:	\boxtimes	Herbs		
N/A⊠	(approx.)	Dominantor	<u> 14.0 </u> lf	1.	-	_ 2.0_1	1.				
Dominant Bank Vege	tation (list):	: 		ad Encie		n alla a					41. h h	
violet, Dutchman's	pipe vine submerged o	bark filch <u>e, wild ry</u> or emerged a	e, red elderb	OOU, FTASIE	anks/roots	leaf pack	s. large	submeraed wood.	riffles. de			am,
Leaf packs, woody	/ debris			,		, .	-, g-	,			-	
Aquatic Organisms C	bserved (//	ist):										
sowbug, scud												
T&E Species Observe	ed (list):											
			- to also also and	dia ale any siste	\-							
Confined to ditch a	along exis	manure in w sting grav	el road	aischarge pipes):							
Tributary is:	-			,		7 · ·						
(cneck one)		Natural	□ Artif	icial, man-ma	ae 🛛	Manipul	ated					

spoa440

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap: natural vegetation extends 1/3-1/2 of the active channel width on each side: filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream begins in roadside ditch at road cut seep ppoa438; tributary to perennial stream spoa441; confined to ditch and within access road survey corridor for entire length; does not cross existing road.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Stream Quality a: ⊠ Moderate

check one)

□ High





Waterbody SPOA440 facing west upstream



Waterbody SPOA440 facing east downstream



Waterbody SPOA440 facing north across

п

Survey Descripti	on								•
Project Name:			Waterbody Na	me:			Waterbody ID:		Date:
Atlantic Coast Pipeline	;		UNT to Slaty	/ Fork			spoa441		6/9/2016
State:	Coun	ity:		Company:		Crew	/ Member Initials	s: Photos:	
West Virginia	Poca	ahontas		NRG/ERM		GB,	KO	3 phot	tos
Tract Number(s):				Nearest Mile	epost:		Associated V	Vetland ID(s):	
access road 05-001-C	008.AR1			72.0			none		
Survey Type: (check one)		Centerline	□Re-Re	oute	⊠Access Ro	ad	□Other:		
Physical Attribut	es								
Stream Classification (check one)	n:	Ephemeral	□Intern	nittent	⊠Perennial				
Waterbody Type:									
(check one)	River	⊠ Strea	m 🗆 Ditch	n 🗆 Car	nal 🗆 Oth	er:			
OHWM Width: <u>9.0</u> ft.	OH (che	IWM Indicat	or:	□ Clear lin on bank	ie ⊡She	lving	□Wrested vegetation	⊠Scourin	g ⊟Water staining
Height: ft. N/A□		□Bent, m vegetatio	atted, or missir า	ng ⊠Wrack lin	ne ⊠Litte debris	er and	□Abrupt plai community c	nt ⊡Soil o hange	characteristic change
Width of Waterbody to Top of Bank:	- Top of B	ankWidth o to Toe o	f Waterbody - of Slope:	Toe of Slope	Width of Wat Water Edge:	erbody - '	Water Edge to	Depth of Wate (Approx.)	r:
<u>_20.0</u> ft		_	<u>6.0_</u> ft.			6.0	_ft.		<u>0.33 </u> ft.
Sinuccitur		Waters			N/A∐ Benk heisht				
(check one)		(Approx.)	elocity:		Bank neight			Bank slope	
⊠Straight			2.0 f	ps	Kigin	. <u> </u>	ft.	Kigin	60 degrees
□Meande	ering				Lef	t: 60 [·]	ft	Lef	t: 60 degrees
						<u> </u>			<u></u> uogroco
Banks appear stable;	mostly bo	ulders, cobb	le, and bedrock	n, substrate d <	characteristic	s):			
Qualitative Attrib	outes								
Water Appearance:									
(check one)	□No wate	er ⊠Cle	ar ⊡Turbio	d ⊡She on s	en ⊡S surface s	Surface scum	□Algal □ mats	∃Other:	
Substrate:	⊠ Bedroo	ck 🛛 Boul	der 🛛 Cobble	e 🛛 Gravel	⊠ Sand	□ Silt/ o	clay 🗆 Organic	□ Other:	
% of Substrate:	<u>35</u> %	<u> 20 </u> %	300	% _ 10_%	<u> 5 </u> %		%%	%	
Width of Riparian Zo	ne:	Vegetative	Layers:	× -					
45 ft-		Avg. DBH	of Dominants:	⊠ Trees: 14.0 ir	1	⊠ Sap 1.5	ings/Shrubs:		
	tation (lie	(approx.)		<u> </u>		_ 1.0			
Sugar maple, yello	ow birch	, black loc	ust, basswo	od, pignut h	ickory, bee	ch, strip	ed maple, red	d elm, wing s	tem, anemone,
Aquatic Habitats (ex:	submerged	d or emerged a	quatic vegetation	, overhanging ba	anks/roots, leaf p	acks, large	e submerged wood,	riffles, deep pools):
Leaf packs, step p	bools, co	barse woo	dy debris, ov	erhanging l	boulders				
Aquatic Organisms (Observed	(list):							
Caddisfly, mayfly,	salamai	nder, scuc							
T&E Species Observ	ed (list):								
Disturbances (ex: live	stock acces	ss. manure in v	vaterbody waste	discharge nines):				
Crossing for existi	ng road	via 42" co	rrugated me	tal culvert	,-				
Tributary is:			^						
		natural		iiciai, man-ma	ue 🗆 Man	ipulated			

spoa441

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap: natural vegetation extends 1/3-1/2 of the active channel width on each side: filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream continues out of access road corridor in both directions; high gradient stream; passes under existing road via 42" corrugated metal culvert; intermittent stream is a tributary; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Stream Quality a: □ Moderate

check one)

⊠ High





Waterbody SPOA441 facing northeast upstream



Waterbody SPOA441 facing southwest downstream



Waterbody SPOA441 facing northwest across

Survey Description																
Project Name: Wat				Naterbody Name:						W	aterbody ID:			Date:		
Atlantic Coast Pipeline			UNT to	Slaty	For	k				sp	00a434			6/7/2	016	
State:	County:				Com	pany:			Crev	w N	lember Initial	s:	Photos:			
West Virginia	Pocaho	ontas			NRG/ERM C			GB	, K	0		3 phot	os			
Tract Number(s):	•				Nearest Milepost:					Associated V	Vetland	ID(s):				
access road 05-001-C008	3.AR1				72.0						wpoa418					
Survey Type: (check one)	□Ce	nterline]Re-Ro	oute		⊠Acc	ess Road]Other:					
Physical Attributes																
Stream Classification: (check one)	□Epl	hemeral	Σ	Interm	ittent		□Per	ennial								
Waterbody Type: (check one)	River	⊠ Strea	m [Ditch		□ Can	al	Other:								
OHWM	OHWN (check a		or:			Clear lin						5				
Width: <u>2.0</u> ft.	(CHECK A	т тас арруу)			on	bank	e		ng			×	Scouring	9	stainin	er g
Height: ft. N/A□	[∃Bent, m vegetatior	atted, or	missin	g □\	Wrack lir	ne	□Litter a debris	and		□Abrupt pla community c	nt hange	□Soil c	haract	eristic cl	nange
Width of Waterbody - To to Top of Bank:	op of Banl	Width o to Toe c	f Waterk of Slope:	ody - T	Гое о	f Slope	Width Water	of Water Edge:	body -	W	ater Edge to	Depth (Approx.)	of Wate	r:		
<u>_10.0</u> ft.			<u>1.5_</u> ft.						1.5	ft				0.20	ft.	
							N/A□					N/A□	-			
Sinuosity: (check one)		Water v (Approx.)	elocity:				Bank I	neight				Banks	slope			
⊠Straight				10 fr	20			Right:	2.0	ft.			Right	45	dearee	s
	r			<u></u> ıp				Left:	10.0				Left	70	dogroo	- -
	5								10.0						_uegiee	5
Analysis of Bank Stabil Banks are road base and	ity (i.e. ro d road cut;	ot struct	to ditch	etation along e	n, sub existir	ostrate o ng grave	charact	eristics):								
Qualitative Attribut	es															
Water Appearance:																
(check one)	No water	⊠Cle	ar 🗆	Turbid	1	□Shee on s	en urface	⊡Sui scເ	face Im		□Algal [mats]Other:				
Substrate:	Bedrock	Bould	der 🛛	Cobble	e 🛛	Gravel	\boxtimes S	Sand [⊠ Silt/	cla	y 🛛 Organic		ther:			
% of Substrate:	%	%		35	% _	_3 <u>5_</u> %	-	<u>15</u> %		_1	<u>0</u> % _ <u>5</u> %	b	%			
Width of Riparian Zone:	Ve	egetative	Layers:						⊠ Sa	nlin	ae/Shrube:		Herbs			
<u>ft</u> .	Av	g. DBH o	of Domir	nants:		<u>14.0</u> in	1.		<u>_ 1.0</u>	_in.	93/0111003.		110103			
N/A⊠ Dominant Bank Vegetat	ion (list):	φισχ.)														
Sugar maple, yellow	birch, bl	lack loc	ust, ba	sswoo	od, p	ignut h	ickory	/, beech	i, strij	peo	d maple, no	rthern	red oa	k, wir	ng sten	n,
Aquatic Habitats (ex: sub	omerged or o	emerged a	quatic vec	jetation,	overh	anging ba	anks/roo	ts, leaf pac	ks, larg	e si	ubmerged wood,	riffles, d	eep pools)	:		
Aquatic Organisms Obs Caddisfly	erved (list	t):														
T&E Species Observed	(list):															
none																
Disturbances (ex: livestoo	ck access, n	nanure in w	vaterbody	waste o	discha	rge pipes):									
Crossing for existing	road via	a 18" co	rrugate	ed met	tal cu	ulvert;	confin	ed to di	tch u	pst	tream of cul	vert				
Tributary is: (check one)	□ Na	atural		🗆 Artifi	icial, r	man-mao	de	🛛 Manipi	ulated							
L																

spoa434

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap: natural vegetation extends 1/3-1/2 of the active channel width on each side: filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream begins at road cut seep wetland wpoa418 within ditch along existing gravel road; follows ditch to culvert; passes under existing road via 18" corrugated metal culvert; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Stream Quality a: □ High ⊠ Moderate

check one)





Waterbody SPOA434 facing north upstream



Waterbody SPOA434 facing south downstream



Waterbody SPOA434 facing west across

Survey Description								
Project Name:		Waterbody Na	me:		w	/aterbody ID:		Date:
Atlantic Coast Pipeline		UNT to Slaty	/ Fork		s	poa435		6/7/2016
State:	County:		Company:		Crew I	Member Initials	s: Photos:	:
West Virginia	Pocahontas		NRG/ERM			(0	3 phot	tos
Tract Number(s):	1		Nearest Mile	epost:	1	Associated W	/etland ID(s):	
access road 05-001-C00	8.AR1		72.0			none		
Survey Type: (check one)		□Re-Re	oute	⊠Access Road	[□Other:		
Physical Attributes								
Stream Classification: (check one)	Ephemeral	⊠Intern	nittent	□Perennial				
Waterbody Type:	Pivor ⊠ Stro	am 🗆 Ditek		al Othor:				
Width: <u>2.0</u> ft.	(check all that app	itor: y)	☑ Clear lir on bank	ne 🗆 Shelving	g	□Wrested vegetation	⊠Scourin	ng ⊡Water staining
Height: ft. N/A□	□Bent, vegetatio	matted, or missir on	ng ⊡Wrack li	ne □Litter ar debris	nd	□Abrupt plar community ch	nt ⊡Soil o nange	characteristic change
Width of Waterbody - To to Top of Bank:	p of BankWidth to Toe	of Waterbody - of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - W	ater Edge to	Depth of Wate (Approx.)	er:
<u>12.0_</u> ft.	-	<u>1.5</u> ft.			<u>1.5 _</u> f	t.		<u>0.20</u> ft.
Sinuccitur	Wator	volocity		N/A⊡ Bank boight				
(check one)	(Approx.)	velocity.		Bank neight Right			Balik Slope Right	
⊠Straight		0.50	fps		<u>12.0_</u> ft		rugin	degrees
				Left:	20 ft		Lef	t: 40 degrees
			• • •					<u> </u>
Banks are road base ar	ity (i.e. root struc nd road cut; conf	ined to ditch al	n, substrate o ong existing	gravel road				
Qualitative Attribute	es							
Water Appearance:								
	No water ⊠C	lear LTurbio	d ⊔She on s	en ⊔Surfa surface scun	ace n	⊔Algal ∟ mats	Other:	
Substrate:	Bedrock 🛛 Bou	Ilder 🛛 Cobble	e 🛛 Gravel	\boxtimes Sand \boxtimes	Silt/ cla	ay 🛛 Organic	□ Other:	
(check all that apply) % of Substrate:	%%	35	%_3 <u>5_</u> %	<u> 15 </u> %	_	<u>10</u> % _ <u>5</u> %	%	
Width of Riparian Zone:	Vegetativ	e Layers:	Troco		2 Conlin	age/Chruber		
<u>ft</u> .	Avg. DBH	of Dominants:	<u> </u>		<u> </u>			
N/A⊠ Dominant Bank Vegetati	(approx.)							
Sugar maple, yellow	birch, black lo	cust, basswo	od, pignut h	nickory, beech,	stripe	d maple, noi	rthern red oa	ak, wing stem, colts
Aquatic Habitats (ex: sub	merged or emerged	aquatic vegetation	, overhanging ba	anks/roots, leaf packs	s, large s	ubmerged wood,	riffles, deep pools	s):
Leaf packs								
Aquatic Organisms Obs	erved (list):							
Caddisfly								
T&E Species Observed ((list):							
none								
Disturbances (ex: livestoc	k access, manure in	waterbody, waste	discharge pipes):		troom of all	vort	
Crossing for existing	10a0 via 18" C	orrugated me	iai cuivert;	contined to dite	on ups		ven	
Tributary is: (check one)	□ Natural	🗆 Artif	ficial, man-ma	de 🛛 Manipul	ated			

spoa435

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream begins at road cut seep ppoa431 within ditch along existing gravel road; also receives outflow from road cut seeps ppoa432 & ppoa433; follows ditch to culvert; passes under existing road via 18" corrugated metal culvert; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Stream Quality^a:

⊠ Moderate

(check one)

High





Waterbody SPOA435 facing south upstream



Waterbody SPOA435 facing north downstream



Waterbody SPOA435 facing east across

Survey Description	on									
Project Name:			Waterbody Na	me:			Waterbody ID:		Dat	e:
Atlantic Coast Pipeline			UNT to Slaty	/ Fork		:	spoa436		6/7	/2016
State:	Cour	nty:		Company:		Crew	Member Initials	s: Ph	otos:	
West Virginia	Poca	ahontas		NRG/ERM G			KO	3	photos	
Tract Number(s):				Nearest Mile	post:	1	Associated W	etland ID	(s):	
access road 05-001-C0	08.AR1			72.0			none			
Survey Type: (check one)		Centerline	□Re-Re	oute	⊠Access Road		□Other:			
Physical Attribute	es									
Stream Classification: (check one)		Ephemeral	□Interm	nittent	⊠Perennial					
Waterbody Type: (check one)	□River	⊠ Strea	m 🗆 Ditch	n 🗆 Car	al 🗆 Other:					
OHWM Width: _ <u>9.0_</u> ft.	OH (ch	IWM Indicat eck all that apply	or:	□ Clear lin on bank	e □Shelvin	ıg	□Wrested vegetation	⊠So	couring	□Water staining
Height: <u>1.0</u> ft. N/A□		□Bent, m vegetatio	latted, or missin า	ig ⊠Wrack lii	ne ⊠Litter a debris	nd	□Abrupt plar community cl	nt □ nange	Soil chara	acteristic change
Width of Waterbody - to Top of Bank:	Top of E	BankWidth o to Toe o	f Waterbody - of Slope:	Toe of Slope	Width of Waterb Water Edge:	ody - '	Water Edge to	Depth of (Approx.)	Water:	
<u>ft</u> .			<u>6.0_</u> ft.		N/A□	6.5	_ft.	N/A□	0.4	<u>40 </u> ft.
Sinuosity:		Water v	elocity:		Bank height			Bank slo	pe	
Straight		(Approx.)			Right:	4.0	4	1	Right:	
			<u></u> f	ps	Left:	4.0	n.		Left:	to degrees
	ing	N/A□			-	6.0_1	ft.		_6	<u>80</u> degrees
Analysis of Bank Stat Banks appear stable; r	bility (i.e mostly bo	. root struct oulders, cobb	ure, vegetation le, and bedrock	n, substrate o	characteristics):					
Qualitative Attribu	utes									
Water Appearance: (check one)	\Box No wat	ter ⊠Cle	ear ⊡Turbio	d ⊡Shee on s	en ⊡Surf urface scur	ace m	□Algal □ mats]Other:		
Substrate:	Bedro	ck 🛛 Boul	der 🛛 Cobble	e 🛛 Gravel	Sand 🗆] Silt/ c	clay 🗆 Organic	□ Othe	r:	
(check all that apply) % of Substrate:	<u>30 </u> %	%	<u>30_</u> °	% _ 10_%	_5_%	_	%%	%		
Width of Riparian Zon	e:	Vegetative	Layers:	× -						
<u>40 ft</u> - N/A□		(check all that a Avg. DBH (approx.)	of Dominants:	⊠ Trees: <u>14.0</u> ir	l	⊠ Sap 1.0i	in.	× He	erbs	
Dominant Bank Veget	ation (lis	st):								
Sugar maple, yello anemone, jewel we Aquatic Habitats (ex. s	w birch	n, black loc bod nettle,	ust, basswoo bee balm, vi	od, pignut h olet, Dutchi overhanging ba	ickory, beech, man's pipe vin	, strip <u>e, sto</u> s large	ed maple, no phecrop		d oak, v	ving stem,
Leaf packs, step p	ools, co	parse woo	dy debris, ov	erhanging I	boulders	o, laigo	, casillo goa nooa,		, pooro):	
Aquatic Organisms O	bserved	(list):								
Caddisfly, mayfly, s	salama	nder								
T&E Species Observe	d (list):									
none										
Disturbances (ex: lives	tock acces	ss, manure in v	vaterbody, waste	discharge pipes):					
Crossing for existin	ng road	via 42" co	rrugated me	tal culvert						
Tributary is: (check one)	Ø	Natural	□ Artif	ïcial, man-mae	de 🗆 Manipu	lated				

spoa436

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream continues out of access road corridor in both directions; high gradient stream; passes under existing road via 42" corrugated metal culvert; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Stream Quality^a:

□ Moderate

(check one)

🖾 High

Low




Waterbody SPOA436 facing east upstream



Waterbody SPOA436 facing west downstream



Waterbody SPOA436 facing north across

Survey Description	1											
Project Name:		w	aterbody Na	me:			v	Vaterbody ID:			Date:	
Atlantic Coast Pipeline		U	NT to Slaty	/ Fork			s	spoa437			6/7/20)16
State:	County:			Company:			Crew	Member Initial	S:	Photos:		
West Virginia	Pocahor	ntas		NRG/ERM	l		GB, I	KO		3 phot	os	
Tract Number(s):				Nearest Mile	epost:		I	Associated V	Vetland	ID(s):		
access road 05-001-C00)8.AR1			72.0				none				
Survey Type: (check one)	□Cen	terline	□Re-Ro	oute	⊠Acc	ess Road		□Other:				
Physical Attributes	;											
Stream Classification: (check one)	□Eph	emeral	⊠Interm	nittent	□Pere	ennial						
Waterbody Type: (check one)	River	⊠ Stream	□ Ditch	n 🗆 Cai	nal	Other:						
онwм	ОНЖМ	Indicator	:									
Width: <u>2.0</u> ft.	(check all	that apply)		☑ Clear lin on bank	ne	□Shelvin	g	□Wrested vegetation	\boxtimes	Scouring	3	□Water staining
Height: ft. N/A□	Ve	Bent, mai	tted, or missin	ig	ne	⊠Litter ar debris	nd	□Abrupt plai community c	nt hange	□Soil c	haracte	ristic change
Width of Waterbody - To to Top of Bank:	op of Bank	Width of to Toe of	Waterbody - Slope:	Toe of Slope	Width Water	of Waterb Edge:	ody - V	Vater Edge to	Depth (Approx.)	of Wate	r:	
<u>_10.0</u> ft.		1.	<u>5_</u> ft.				1.51	ft.			0.20	_ft.
Sinucsity		Wator vol	ocity		N/AL	night			Bank	long		
(check one)		(Approx.)	ocity.		Dalik I	Right [.]			Dalik	Right [.]		
⊠Straight			0.50 f	fps			<u>10.0</u> f	ft.		g	70	degrees
□Meanderin	g	N/A				Left:	20 ft	ł		Left	: 40	dearees
Analysia of Dauly Stabi					-	-		-				
Banks are road base an	d road cut; (confined to	o ditch along	existing grave	el road	ensucs).						
Qualitative Attribut												
Water Appearance:												
(check one)	No water	⊠Clea	r 🗆 Turbio	d ⊡She on s	en surface	⊡Surfa scur	ace n	□Algal □ mats	Other:			
Substrate:	Bedrock	Boulde	er 🛛 Cobble	e 🛛 Gravel	\boxtimes S	and 🛛	Silt/ cl	lay 🛛 Organic	□ Ot	her:		
(check all that apply) % of Substrate:	%	%	30	% _ 40_%	-	<u>10</u> %	_	<u>10</u> % _10_	%	%		
Width of Riparian Zone	: Veç		ayers:	⊠ ⊤		5	7.0			I I a sela a		
ft-	Avg	g. DBH of	Dominants:	⊠ Trees 14.0 ii	: 1	Ľ	1 0 ir	ngs/Snrubs:	X	Herbs		
N/A⊠ Dominant Domk Vanata	(app	irox.)		<u></u>		-						
Sugar maple, valley	tion (#st):		ot booowo	od nignut k	viekon	, hooph	otripa	od monio no	rthorp	rod ool	k win	a otom oolta
foot, jewel weed, wo Aquatic Habitats (ex: su	bmerged or e	bee ba	m, violet, Data Swoo m, violet, D atic vegetation,	Dutchman's	Dipe vanks/root	/ine, beach, /ine, bea s, leaf packs	stripe irs foc s, large s	submerged wood,	<u>m, red</u> riffles, de	l elderb eep pools)	k, win erry	g stern, cons
Leaf packs												
Aquatic Organisms Obs	served (list)	:										
Caddisfly												
T&E Species Observed	(list):											
none												
Disturbances (ex: livesto	ck access, ma	anure in wa	terbody, waste	discharge pipes):							
Crossing for existing	road via	18" corr	ugated me	tal culvert;	confin	ed to dito	ch ups	stream of cul	vert			
Tributary is: (check one)	□ Nat	tural	□ Artif	icial, man-ma	de	🛛 Manipul	ated					
				-								

spoa437

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream begins at road cut seep ppoa434 within ditch along existing gravel road; also receives outflow from road cut seep ppoa435; follows ditch to culvert; passes under existing road via 18" corrugated metal culvert; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Stream Quality^a:

⊠ Moderate

(check one)

High





Waterbody SPOA437 facing east upstream



Waterbody SPOA437 facing west downstream



Waterbody SPOA437 facing north across

Survey Des	scription											
Project Name):		N	laterbody Na	me:			v	Vaterbody ID:		Date:	
Atlantic Coast	Pipeline		U	INT to Slaty	/ Fork			s	poa438		6/7	'/2016
State:		County:			Company	:		Crew	Member Initials	s: Pho	tos:	
West Virgin	nia	Pocaho	ontas		NRG/EF	RM		GB, ł	(0	3 p	hotos	
Tract Number	r(s):	I			Nearest N	lilepost	:		Associated W	etland ID(s):	
access road 0	5-001-C008	.AR1			72.0				none			
Survey Type: (check one)		□Ce	nterline	□Re-Ro	oute	⊠Ao	ccess Road		□Other:			
Physical A	ttributes											
Stream Class (check one)	sification:	□Ep	hemeral	⊠Interm	nittent	□Pe	erennial					
Waterbody Ty (check one)	ype: □F	River	⊠ Stream	n 🗆 Ditch	n 🗆 (Canal	Other:					
01114/14		0.04										
Width:	<u>2.0</u> ft.	(check a	I Indicator	r:	⊠ Clear on bank	line	□Shelvin	g	□Wrested vegetation	⊠Sco	ouring	□Water staining
Height: N/A□	<u>).33</u> ft.		∃Bent, ma /egetation	tted, or missin	ig ⊟Wrac	k line	⊠Litter ar debris	nd	□Abrupt plar community cl	nt ⊡§ hange	Soil chara	acteristic change
Width of Wate to Top of Ban	erbody - To ık:	p of Banl	Width of to Toe of	Waterbody - Slope:	Toe of Slo	pe Widt Wate	h of Waterb er Edge:	ody - W	ater Edge to	Depth of V (Approx.)	Vater:	
_	<u>12.0</u> ft.		_2	<u>.0_</u> ft.				<u>2.0 </u> f	t.		0.2	<u>20 ft</u> .
<u>Cinus aitan</u>			14/040-0-10			N/A				N/A∐ Bankalan		
(check one)			(Approx.)	locity:		Bani	Right			Bank slop	e laht:	
	Straight			<u>0.50 f</u>	fps			<u>15.0</u> f	t.			<u>30</u> degrees
	Meandering		N/A□				Left:	2.0 ft			Left:	40 degrees
Analysis of B	Rank Stabili	tv (ie ro		re venetation	n substrat	to chara	ctoristics).					
Banks are roa	ad base and	road cut;	confined t	o ditch along	existing gra	avel roac	1					
Qualitativo	Attribute	26										
Water Appear	rance:										_	
(check one)		lo water	⊠Clea	r 🗆 Turbio	d ⊡S o	heen In surfac	⊟Surfa e scur	ace n	□Algal □ mats	Other:		
Substrate:	L	Bedrock	Boulde	er 🛛 Cobble	e 🛛 Gra	vel 🛛	Sand 🛛	Silt/ cla	ay 🛛 Organic	□ Other:		
% of Substrat	te:	_%	%	30	% _ 40_	%	<u>15</u> %		<u>10</u> % _ <u>5</u> %)	%	
Width of Rina	arian Zone [.]	Ve	a etative l	avers'								
indui or rupo		(ch	eck all that ap	ply)	⊠ Tre	es:		🛛 Sapli	ngs/Shrubs:	⊠ Hei	bs	
N/A⊠	<u>ft</u> .	Av (ap	r g. DBH of oprox.)	Dominants:	14.0	<u>)</u> in.	-	<u>1.0</u> in	1.			
Dominant Ba	nk Vegetati	on (list):										
Sugar mapl foot, jewel v	le, yellow weed, woo	birch, bl od nettle	lack locu	st, basswoo Im, violet, D	od, pignu Dutchmai	it hicko n's pipe	ry, beech, e vine, bea	stripe Irs foo	ed maple, no <u>it, slipperv el</u>	rthern rec m, red ele	l oak, v derberi	ving stem, colts
Aquatic Habit Leaf packs	tats (ex: sub	merged or	emerged aqı	uatic vegetation,	overhangin	g banks/ro	oots, leaf packs	s, large s	submerged wood,	riffles, deep	ools):	
Aquatic Orga	inisms Obse	erved (lisi	<i>t</i>):									
Caddisfly, n	nayfly, sal	amande	er									
T&E Species	Observed (list):										
none												
Disturbances	(ex: livestoc	k access, n	nanure in wa	terbody, waste	discharge pi	pes):						
Confined to	ditch											
Tributary is: (check one)		□ Na	atural	□ Artif	icial, man-r	nade	🛛 Manipul	ated				
L							•					

spoa438

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream begins at road cut seep ppoa436 within ditch along existing gravel road; also receives outflow from road cut seep ppoa437; follows ditch out of corridor – does not cross road, exits at switchback; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Stream Quality^a:

⊠ Moderate

(check one)

High





Waterbody SPOA438 facing east upstream



Waterbody SPOA438 facing west downstream



Waterbody SPOA438 facing north across

Survey Description									
Project Name:			Waterbody Na	me:			Waterbody ID:		Date:
Atlantic Coast Pipeline			UNT to Slaty	Fork			spoa430		6/6/2016
State:	County:			Company:		Crev	w Member Initials	s: Photo	s:
West Virginia	Pocaho	ntas		NRG/ERM		GB	, KO	3 ph	otos
Tract Number(s):				Nearest Mile	epost:	-	Associated W	/etland ID(s):	
access road 05-001-C00	8.AR1			72.0			none		
Survey Type: (check one)	□Cei	nterline	□Re-Ro	oute	⊠Access Ro	ad	□Other:		
Physical Attributes									
Stream Classification: (check one)	□Ept	hemeral	⊠Interm	nittent	□Perennial				
Waterbody Type:									
(check one)	River	⊠ Strea	m 🗆 Ditch	n 🗆 Car	nal 🗆 Oth	ner:			
OHWM Width: _ <u>2.0_</u> ft.	OHWN (check a	I Indicate Il that apply)	or:	⊠ Clear lir on bank	ne ⊡Sho	elving	□Wrested vegetation	⊠Scour	ing ⊡Water staining
Height: ft. N/A□	C V	∃Bent, m vegetatior	atted, or missin 1	lg ⊡Wrack li	ne 🗆 Litt debris	er and S	□Abrupt plar community cl	nt ⊡Soi nange	I characteristic change
Width of Waterbody - To to Top of Bank:	op of Bank	Width o to Toe c	f Waterbody - ` of Slope:	Toe of Slope	Width of Wa Water Edge:	terbody -	Water Edge to	Depth of Wa (Approx.)	ter:
<u>8.0</u> ft.		_	<u>1.5_</u> ft.		N/A□	1.5	_ft.	N/A□	<u>0.20</u> ft.
Sinuosity:		Water v	elocity:		Bank height			Bank slope	
(check one)		(Approx.)			Righ	t:		Rig	ht:
⊠Straight			<u> </u>	ps		3.0	_ft.		60 degrees
	a				Le	ft: 60	ft	Le	eft: 70 degrees
Analysis of Bank Stabili Banks are road base ar	ity (i.e. roo nd road cu	ot struct ut; confir	ure, vegetation ned to ditch alo	n, substrate o	characteristic gravel road	:s):		I	
Qualitative Attribut	es								
Water Appearance:									
(check one)	No water	⊠Cle	ar 🗆 Turbio	d ⊡She on s	en 🗆 surface	Surface scum	□Algal □ mats	Other:	
Substrate:	Bedrock	Bould	der 🛛 Cobble	e 🛛 Gravel	⊠ Sand	⊠ Silt/	clay 🛛 Organic	□ Other:	
(check all that apply) % of Substrate:	%	%	_ 30_	%_2 <u>5_</u> %	9	6	<u>_20</u> % <u>_5</u> %	%	
Width of Riparian Zone:	Ve	getative	Layers:						
#	(ch	eck all that a	apply)	⊠ Trees		⊠ Saj	plings/Shrubs:	⊠ Herbs	
N/A⊠	(ap	prox.)	Dominants.	<u>14.0</u> ir	1.	_ 2.0	_in.		
Dominant Bank Vegetati	ion (list):								
Sugar maple, yellow bluegrass, bee balm.	birch, bl	ack loc	ust, basswoo ts foot	overhanging b	nickory, woo		e, jewel weed,	bitter dock	woodland
Leaf packs, emerger	nt vegeta	ation	quado regetadon,			suche, larg	o odomorgou wood,		
Aquatic Organisms Obs	erved (list	t):							
Caddisfly, mayfly, sa	lamande	er							
T&E Species Observed	(list) :								
none									
Disturbances (ex: livestoc	k access, m	nanure in w	vaterbody, waste	discharge pipes):				
Crossing for existing	road via	18" co	rrugated me	tal culvert;	confined to	ditch u	pstream of cul	vert	
Tributary is: (check one)	□ Na	atural	□ Artif	ïcial, man-ma	de 🛛 Mai	nipulated			

spoa430

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream begins at nick point seep ppoa426 within ditch along existing gravel road; follows ditch to culvert; also receives output from road cut seep ppoa425; passes under existing road via 18" corrugated metal culvert; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Stream Quality^a:

⊠ Moderate

(check one)

High







Waterbody SPOA430 facing northwest upstream



Waterbody SPOA430 facing southeast downstream

Survey Description													
Project Name:		w	aterbody Nar	ne:			Ň	Naterbody ID:			Date:		
Atlantic Coast Pipeline		U	NT to Slaty	Fork			S	spoa431			6/6/2016		
State:	County:			Company:			Crew	Member Initials	s:	Photos:			
West Virginia	Pocahont	tas		NRG/ERM			GB,	KO		3 phot	os		
Tract Number(s):				Nearest Mile	post:			Associated W	/etland	ID(s):			
access road 05-001-C008	8.AR1			72.0				none					
Survey Type: (check one)	Cente	erline	□Re-Ro	oute	⊠Acc	ess Road		Other:					
Physical Attributes													
Stream Classification: (check one)	□Ephe	meral	⊠Interm	ittent	□Pere	ennial							
Waterbody Type: (check one)	River 🗆	3 Stream	⊠ Ditch	□ Car	al	□ Other:							
OHWM Width: _ <u>2.0</u> ft.	OHWM I (check all th	ndicator hat apply)	:	⊠ Clear lin on bank	e	Shelvin	g	□Wrested vegetation	×	Scouring	g ⊡Water staining		
Height: ft. N/A□	□E veg	Bent, mat getation	ted, or missin	g	ne	□Litter ar debris	nd	□Abrupt plar community cl	nt nange	□Soil c	haracteristic cha	ange	
Width of Waterbody - To to Top of Bank:	p of BankW to	Vidth of Voidth of Voidtho	Naterbody - ⁻ Slope:	Toe of Slope	Width Water	of Waterb Edge:	ody - V	Vater Edge to	Depth (Approx.)	of Wate	r:		
<u>8.0</u> ft.		1.	<u>5_</u> ft.		N/A□		1.5	ft.	N/A□		<u>0.20 </u> ft.		
Sinuosity:	V	Vater vel	ocity:		Bank h	neight			Bank s	slope			
Straight	(7	Approx.)				Right:				Right			
			<u> </u>	ps		Left:	<u>3.0</u> f	t.		Left	<u>60</u> degrees		
	N	I/A□				-	<u>6.0</u> f	t.			70 degrees		
Analysis of Bank Stabili Banks are road base and	ty (i.e. root road cut; co	structur	e, vegetatio r o ditch along e	n, substrate c existing grave	c haract I road	eristics):							
Qualitative Attribute	es												
Water Appearance:													
(check one)	lo water	⊠Clea	□Turbic	l ⊡She on s	en urface	⊡Surfa scun	ace n	□Algal □ mats	Other:				
	Bedrock	Boulde	r 🛛 Cobble	e 🛛 Gravel	\boxtimes S	and 🛛	Silt/ c	lay 🛛 Organic		ther:			
% of Substrate:	%	%	30	% _2 <u>5_</u> %	_	<u>20</u> %	_	<u>20 </u> % <u> 5 </u> %)	%			
Width of Riparian Zone:	Vege		ayers:	X Troop		5	7 Son	ingo/Shruho:		Horbo			
<u>ft</u> .	Avg.	DBH of	Dominants:	<u> 14.0 i</u> r	1.	-	<u>2.0</u> ii	n.		TIELDS			
N/A⊠ Dominant Bank Vegetati	on (list):	DX.)											
Sugar maple, yellow bluegrass, bee balm,	birch, blac goldenro	ck locus d, colts	st, basswoo foot	od, pignut h	ickory	v, wood n	ettle,	jewel weed,	bitter	dock, v	voodland		
Aquatic Habitats (ex: subi	merged or em It veaetati	ierged aqu ON	atic vegetation,	overhanging ba	anks/root	s, leaf packs	s, large	submerged wood,	riffles, d	eep pools)	it.		
Aquatic Organisms Obse	erved (list):	-											
Caddisfly													
T&E Species Observed (list):												
none													
Disturbances (ex: livestoc	k access, mar	nure in wat	erbody, waste o	discharge pipes):								
Confined to ditch													
Tributary is: (check one)	□ Natu	ıral	□ Artif	icial, man-ma	de	⊠ Manipul	ated						

spoa431

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap: natural vegetation extends 1/3-1/2 of the active channel width on each side: filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream begins within ditch along existing gravel road at road cut seep ppoa427; within survey corridor for entire length; tributary to intermittent stream spoa432; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Stream Quality a: ⊠ Moderate

check one)

□ High





Waterbody SPOA431 facing east across

Survey Descr	iption														
Project Name:				Waterbody	Nan	ne:				W	aterbody ID:		Date:		
Atlantic Coast Pipe	eline			UNT to S	laty	Fork				sp	00a432			6/6/2	016
State:	C	County	<u>-</u>			Company:			Crev	w N	lember Initial	s:	Photos:		
West Virginia	F	Pocah	ontas			NRG/ERI	1		GB	, K	0		3 phot	os	
Tract Number(s):	:					Nearest Mil	epost	:	l		Associated V	Vetland	ID(s):		
access road 05-0	001-C008	.AR1				72.0					none				
Survey Type: (check one)		□c	enterline		e-Ro	ute	⊠A	ccess Road	ł		Other:				
Physical Attri	butes														
Stream Classifica	ation:	ΠE	phemeral	⊠In	term	ittent	□P	erennial							
Waterbody Type: (check one)	: □Ri	ver	⊠ Strea	m 🗆 C	Ditch	□ Ca	nal	□ Other							
онwм		ОНМ	/M Indicat	or:											
Width:	ft.	(check	(all that apply)) 		☑ Clear li on bank	ne	□Shelv	ing		□Wrested vegetation	\boxtimes	Scouring	g	□Water staining
Height: 	_ft.		□Bent, m vegetatior	atted, or mi າ	ssing	g	ine	□Litter debris	and		□Abrupt pla community c	nt hange	□Soil c	haracte	eristic change
Width of Waterbo to Top of Bank:	ody - Top	of Bar	nkWidth o to Toe c	f Waterbod of Slope:	lу - Т	oe of Slope	Wid Wat	th of Water er Edge:	body -	- Wa	ater Edge to	Depth (Approx.)	of Wate	r:	
10	<u>.0</u> ft.		_	<u>3.0_</u> ft.					4.0	ft				0.25	ft.
Sinuosity:			Water v	elocity			N/A	k height				Bank s			
(check one)			(Approx.)	elocity.			Dan	Right				Dalik	Right		
⊠Stra	aight			2.0	fp	S		i tigiti.	4.0	_ft.			ragin	60	degrees
□Mea	andering							Left:	40	ft			Left	: 50	dearees
Analysis of Bank No evidence of I	< Stability bank inst	y (i.e. r	oot struct	ure, vegeta	ation	, substrate	chara	acteristics)	:	-				-	
Qualitativo At	tributo	-													
Water Appearance	ce.	3													
(check one)		o water	⊠Cle	ear ⊡Tu	urbid	□She on	een surfac	⊡Su ce sc	rface um		□Algal [mats	Other:			
Substrate:	□ B	edrock	🛛 Boul	der 🛛 Co	bble	🛛 Grave		Sand	□ Silt/	cla	y 🗆 Organic	🗆 Ot	ther:		
(check all that apply) % of Substrate:		%	<u>45</u> %		<u>45_</u> %	% _ <u>5</u> %		<u>5</u> %	_	<u>%</u>	%	%			
Width of Ripariar	n Zone:	V	/egetative	Layers:											
ft.		(0	check all that a	apply) of Dominar	nte:	⊠ Trees	5:		⊠ Sa	plin	gs/Shrubs:	\boxtimes	Herbs		
N/A⊠		(á	approx.)	or Dominal		14.0	n.		_2.0	_in.					
Dominant Bank V	Vegetatio	n (list): birch	black loc	uet hass	woo	d nianut	hicko	ny wood	nettle	a i	ewel weed	hitter	dock v	voodl	and
bluegrass, bee Aquatic Habitats	e balm, ((ex: subm	aolder erged o	nrod, coli r emerged a	ts foot quatic vegeta	tion,	overhanging b	anks/r	roots, leaf pac	cks, larg	je st	ubmerged wood,	riffles, de	eep pools):	
Woody debris,	, emerg	ent ve	getation												
Aquatic Organis	ms Obse	rved (li	st):												
Caddisfly, may	/fly														
T&E Species Obs	served (li	st):													
none															
Disturbances (ex:	: livestock	access,	manure in v	vaterbody, wa	aste d	ischarge pipe	s):								
Crossing for ex	xisting g	gravel	road via	24" corru	igat	ed metal o	culve	ert							
Tributary is: (check one)		× N	Natural		Artifi	cial, man-ma	ade	🗆 Manip	ulated						

spoa432

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap: natural vegetation extends 1/3-1/2 of the active channel width on each side: filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream continues out of access road corridor both ways; intermittent stream spoa431 is a tributary within the corridor; passes under existing road via 24" corrugated metal culvert; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Stream Quality a: □ Moderate

check one)

⊠ High





Waterbody SPOA432 facing east upstream



Waterbody SPOA432 facing west downstream



Waterbody SPOA432 facing north across

Survey Description												
Project Name:		w	aterbody Na	me:			Waterbody ID:		Date:			
Atlantic Coast Pipeline		U	NT to Slaty	/ Fork			spoa433		6/6/2016			
State:	County:			Company:		Crew	Member Initials	s: Photos	:			
West Virginia	Pocahor	ntas		NRG/ERM	l	GB,	КО	3 pho	otos			
Tract Number(s):				Nearest Mile	epost:		Associated W	/etland ID(s):				
access road 05-001-C00	8.AR1			72.0			none					
Survey Type: (check one)	□Cen	terline	□Re-Ro	oute	⊠Access Roa	ıd	□Other:					
Physical Attributes												
Stream Classification: (check one)	□Eph	emeral	⊠Interm	nittent	□Perennial							
Waterbody Type: (check one)	River	⊠ Stream	□ Ditch	n 🗆 Car	nal 🗆 Othe	er:						
ОНШМ	OHWM	Indicator										
Width: _ <u>2.0</u> ft.	(check all	that apply)		☑ Clear lir on bank	ne ⊡Shel	ving	□Wrested vegetation	⊠Scouri	ng ⊟Water staining			
Height: ft. N/A□	Ve	Bent, mat egetation	ed, or missin	ig	ne □Litter debris	r and	□Abrupt plar community cl	nt ⊡Soil nange	characteristic change			
Width of Waterbody - To to Top of Bank:	p of Bank	Width of V to Toe of	Vaterbody - Slope:	Toe of Slope	Width of Wate Water Edge:	erbody - '	Water Edge to	Depth of Wat (Approx.)	er:			
<u>8.0</u> ft.		1.	5_ft.			1.5	<u>_</u> ft.		<u>0.15</u> ft.			
Sinuccity		Wator vol	ocit <i>r</i>		N/A∐ Bank boight							
(check one)		(Approx.)	Derty:		Dank neight			Dank Slope Righ	t •			
⊠Straight			0.50	fps	Kigitt.	3.0_1	ft.	itigi	<u>50</u> degrees			
	a	N/A 🗆			Left	: 10.0	ft	Le	ft: 75 degrees			
				• • •			<u>.</u>		<u>-10</u> dogrooo			
Banks are road base and	d road cut; (confined to	e, vegetation ditch along	n, substrate (existing grave	characteristics el road	;):						
Qualitative Attribut	es											
Water Appearance:												
(check one)	No water	⊠Clear	□Turbio	d ⊡She on s	en □S surface s	urface cum	□Algal □ mats	Other:				
Substrate:	Bedrock	Boulde	r 🛛 Cobble	e 🛛 Gravel	Sand Sand	Silt/ o	clay 🛛 Organic	□ Other:				
(check all that apply) % of Substrate:	%	%	30	%2 <u>5_</u> %	%		<u>20</u> % <u>5</u> %	%				
Width of Riparian Zone:	Veç	getative La	yers:									
ft.	(che	ck all that app b. DBH of	^{y)} Dominants:	⊠ Trees	:	⊠ Sap	lings/Shrubs:	⊠ Herbs				
N/A⊠	(app	rox.)		<u> </u>	1.	_ 2.0	III.					
Dominant Bank Vegetati Sugar maple, yellow	ion <i>(list)</i> : birch, bla	ack locus	st, basswoo	od, pignut ł	nickory, wood	d nettle	, jewel weed,	bitter dock,	woodland			
bluegrass, bee balm. Aquatic Habitats (ex: sub	aoldenro	<u>od, colts</u> merged aqu	foot atic vegetation,	, overhanging b	anks/roots, leaf pa	acks, large	submerged wood,	riffles, deep pool	s):			
Leaf packs, emerger	nt vegeta	tion										
Aquatic Organisms Obs	erved (list)	:										
Caddisfly												
T&E Species Observed	(list):											
Disturbances (ov: livester	k access m	anure in wet	erbody wasta	dischargo pipos)•							
Crossing for existing	road via	18" corr	ugated me	tal culvert;	confined to c	ditch up	stream of cul	vert				
Tributary is: (check one)		tural	Π Artif	icial man₋mo	de 🛛 Mani	nulated						
		ulai		iciai, man-ma		pulateu						

spoa433

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap: natural vegetation extends 1/3-1/2 of the active channel width on each side: filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream begins at road cut seep ppoa428 within ditch along existing gravel road; follows ditch to culvert; passes under existing road via 18" corrugated metal culvert; mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Stream Quality a: □ High ⊠ Moderate

check one)







Waterbody SPOA433 facing north upstream



Waterbody SPOA433 facing south downstream



Waterbody SPOA433 facing east across

Survey Description	n										
Project Name:		Waterbo	dy Nam	ie:		N	/aterbody ID:		Date:		
Atlantic Coast Pipeline		UNT to	Sugar	Camp Ru	un	s	poa408		ł	5/25/2016	
State:	County:	I	C	Company:		Crew I	Member Initials	5: F	Photos:		
West Virginia	Pocahontas		r	NRG - ER	Μ	GB, k	(0		5 photo	os	
Tract Number(s):			N	Nearest Mile	epost:		Associated W	etland	ID(s):		
Access road 05-001-E	064.AR1 within	05-001-E064	4 8	31.1			none				
Survey Type: (check one)	□Centerl	ine	□Re-Ro	oute	⊠Access Road	ł	□Other:				
Physical Attribute	S										
Stream Classification: (check one)	Ephem	eral	⊠Interm	nittent	□Perennial						
Waterbody Type: (check one)	□River ⊠ \$	Stream	□ Ditch	n 🗆 Ca	anal 🛛 Other	r:					
OHWM Width: _ <u>5.0_f</u> t.	OHWM Indi (check all that a	cator: pply)		⊠ Clear lir on bank	ne 🗆 Shelvir	ng	□Wrested vegetation		Scouring	g ⊟Water staining	
Height: <u>1.0</u> ft. N/A⊡	□ Bent vegeta	t, matted, or ation	missing	□Wrack li	ne ⊠Litter a debris	nd	□Abrupt plar community cł	nt nange	□Soil cł	naracteristic change	
Width of Waterbody - ` Bank to Top of Bank:	Top of Widt to To	h of Waterb be of Slope:	ody - To	oe of Slope	Width of Waterb Water Edge:	ody - W	ater Edge to	Depth (Approx.)	of Water	:	
<u>9.0</u> ft.		<u>4.0</u> ft.			N/A□ -	<u>3.0</u> ft.		N/A□	_	<u>0.25</u> ft.	
Sinuosity: (check one)	Wate (Appro	er velocity: _{px.)}			Bank height Right:			Bank s	lope Right:		
⊠Meanderi	ng N/A	_ <u>_1</u> .	<u>.0_</u> fps		Left:	<u>3.0</u> ft. 3.0 ft.			Left	<u>90</u> degrees : 70 degrees	
Analysis of Bank Stab Banks exhibit underci	ility (i.e. root st utting; loose so	tructure, veg il/rock and o	getatior expose	n, substrate d roots pre	characteristics) sent	:		I			
Qualitative Attribu	ites		-								
Water Appearance:	7										
(check one)	No water I	⊠Clear	Turbic	d ⊡Sh on	leen ⊡Su surface sc	urface um	□Algal mats	□Other	:		
Substrate:	Bedrock	Boulder 🛛	Cobble	e 🛛 Grave	el 🛛 Sand	□ Silt/ c	clay 🛛 Organio	; □C)ther:		
% of Substrate:	%	% _3	<u>0_</u> %	<u>35</u> %	<u>25</u> %	%	<u> 10_% </u>		6		
Width of Riparian Zon	e: Vegetat	ive Layers:									
<u>50 ft</u> -	(check all t Avg. DE (approx.)	that apply) 3H of Domin	ants:	⊠ Trees: <u>11.0_</u> ir	: 1.	⊠ Saplir _ <u>1.0_</u> in	ngs/Shrubs:	_	Herbs		
Dominant Bank Veget	ation (list):										
White oak, red man	ole, sugar ma	ple, white	pine, i	ronwood,	violet, golden	ragwol	rt, Christmas	fern, l	black c	ohosh, Virginia	
Leaf packs, overha	inging banks,	COArse W	oody d	lebris	banks/roots, lear pa	cks, large	submerged wood	i, nines, c	leep pools	5).	
Aquatic Organisms Ol	oserved (list):										
Invertebrates – stor	nefly, caddisf	ly, black fly	y								
T&E Species Observe	d (list):										
none											
Disturbances (ex: livest	ock access, manu	re in waterbody	/, waste o	discharge pipe	es):						
Paralleled by existi	ng gravel roa	d									
Tributary is: (check one)	Natura	I	□ Artif	icial, man-m	ade 🗆 Manip	oulated					

spoa408

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream continues out of access road corridor in both directions; parallels existing gravel road; does not cross road; mature second growth mixed hardwoods with white pine element.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

⊠ Moderate

Stream Quality ^a: (check one)

🗆 High

MAture Znd growth mixes Itus 1N 5B with white pine ecoment the Existing grover RUND Forest Scruce Rond 1012 5B DW point 5POA408 Intermitteut Stacom



Waterbody SPOA408 facing northeast upstream



Waterbody SPOA408 facing southwest downstream



Waterbody SPOA408 facing northwest across



Waterbody SPOA408 scouring facing northwest across
Survey Descriptio	n											
Project Name:		ľ	Waterbo	ody Nam	ie:			w	aterbody ID:			Date:
Atlantic Coast Pipeline		l	JNT to	Sugar	r Camp Rı	n		s	boa402			5/12/2016
State:	County:			C	Company:			Crew N	Member Initials	s:	Photos:	
West Virginia	Pocaho	ontas		r	NRG/ERM			GB, S	SA		3 photo	SS
Tract Number(s):	-			1	Nearest Mile	epost:			Associated W	/etland	ID(s):	
05-001-E064 – Monong	jahela Nat	tional For	rest	8	81.5				none			
Survey Type: (check one)	⊠C	enterline		□Re-Re	oute	□A	ccess Road		□Other:			
Physical Attribute	s											
(check one)	□E	phemeral		⊠Interm	nittent	□P	erennial					
Waterbody Type: (check one)	∃River	⊠ Stre	am	Ditch	n 🗆 Ca	anal	□ Other:	:				
OHWM Width: _ <u>4.0_</u> ft.	OHWN (check a	Indicato	or:		⊠ Clear lir on bank	ne	Shelvin	g	□Wrested vegetation		Scouring	g ⊟Water staining
Height: ft. N/A□	C V	∃Bent, ma /egetation	atted, or	[.] missing	∣ □Wrack li	ne	⊠Litter ar debris	nd	□Abrupt plar community cł	nt hange	□Soil cl	naracteristic change
Width of Waterbody - T Bank to Top of Bank:	Гор of	Width of to Toe o	f Waterb f Slope:	ody - To :	oe of Slope	Width Wate	n of Waterbo r Edge:	ody - W	ater Edge to	Depth (Approx.)	of Water	
<u>10.0</u> ft.			<u>3.0_</u> ft.			N/A□		<u>3.0</u> ft.		N/A□	-	<u>0.25</u> ft.
Sinuosity:		Water v	elocity:			Bank	height			Bank	slope	
(check one)		(Approx.)					Right:				Right	:
			0	<u>.75_</u> fps			Left:	<u>3.0</u> ft.			Left	<u>75</u> degrees
□Meanderi	ng	N/A□					-	<u>6.0</u> ft.				<u>75</u> degrees
Analysis of Bank Stab No evidence of bank i	ility (i.e. r nstability	oot struc	ture, ve	getatio	n, substrate	chara	acteristics):	:				
Qualitative Attribu	ites											
Water Appearance:	_											
(check one)	[⊥] No water	⊠Cl	ear	Turbio	d ⊡Sh on	een surfac	⊡Sui ce scu	rface um	□Algal mats	□Othe	r:	
Substrate:	Bedrock	🗆 Bou	lder D		e 🛛 Grave	el 🛛	Sand 🛛	⊠ Silt/ c	ay 🛛 Organio	c 🗆 (Other:	
% of Substrate:	%	%		<u>_40_</u> %	6 <u>30</u>	% <u>1</u>	<u>0 </u> %	<u>10</u> %	% _10_% _	%		
Width of Riparian Zone	e: Ve	getative	Layers:									
ft.	(ch Av	eck all that a	pply) of Domiu	nants [.]	⊠ Trees	:	Σ	Saplir ∑	ngs/Shrubs:	\boxtimes	Herbs	
N/A⊠	(ap	prox.)		iunto.	<u>12.0</u> If	1.	_	<u>1.5</u> in	•	<u> </u>		
Dominant Bank Vegeta White pine, red ma	ation (list): pple. sug	ar maol	e. norf	hern re	ed oak, wit	ch ha	azel, ches	tnut o	ak, striped m	naple.	violet. ł	hav scented fern.
Christmas fern, par Aquatic Habitats (ex: s	tridge be	r emerged	od fern aquatic v	egetation	, overhanging	banks/r	oots, leaf pac	ks, large	submerged wood	d, riffles,	deep pool	s):
coarse woody debr	is in cha	nnel, sc	attered	ל leaf p	acks							
Aquatic Organisms Ob	oserved (li	st):										
Invertebrates												
T&E Species Observed	d (list):											
none												
Disturbances (ex: livest	ock access,	manure in	waterbod	ly, waste	discharge pipe	es):						
ivone apparent												
Tributary is: (check one)		Vatural		□ Artif	ficial, man-m	ade	🗆 Manipi	ulated				

spoa402

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Steep gradient intermittent stream with no evidence of bank instability; continues out of corridor in both directions; receives outflow from seeps ppoa404 & ppoa405 via erosional rill on steep slopes above stream. Area is mature second growth forest with white pine and mixed hardwoods.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

□ Moderate

Stream Quality ^a : (check one)

[⊠] High

□ Low





Waterbody SPOA402 facing north upstream



Waterbody SPOA402 facing south downstream



Waterbody SPOA402 facing west across

Survey Description	1							I
Project Name:		Waterbody Na	me:		w	aterbody ID:		Date:
Atlantic Coast Pipeline		UNT to Suga	ar Camp Rı	un	sp	boa410		5/25/2016
State:	County:		Company:		Crew N	lember Initials	: Photo	s:
West Virginia	Pocahontas		NRG - ER	Μ	GB, K	0	3 ph	otos
Tract Number(s):			Nearest Mile	epost:		Associated W	etland ID(s):	
Access road 05-001-E0	64.AR1 within 0	5-001-E064	81.9			none		
Survey Type: (check one)	Centerlir	ne □Re-	Route	⊠Access Road		Other:		
Physical Attributes	;							
Stream Classification: (check one)	⊠Epheme	ral □Inte	rmittent	Perennial				
Waterbody Type: (check one)	River 🛛 S	tream 🗆 Dit	ch 🗆 Ca	anal 🗌 Other:				
OHWM Width: ft.	OHWM Indic (check all that app	ator: ply)	⊠ Clear lir on bank	ne 🗆 Shelving	g	□Wrested vegetation	⊠Scou	ring ⊟Water staining
Height: <u>0.33</u> ft. N/A□	□Bent, vegetati	matted, or missir ion	ng	ne ⊠Litter ar debris	nd	□Abrupt plan community ch	t ⊡So ange	I characteristic change
Width of Waterbody - To Bank to Top of Bank:	op of Width to Toe	of Waterbody - e of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - W	ater Edge to	Depth of Wa (Approx.)	ter:
<u>_3.0</u> ft.		<u>1.0</u> ft.			ft.		N/A⊠	ft.
Sinuosity:	Water	r velocity:		Bank height			Bank slope	
(check one)	(Approx	c.)		Right:			Riç	jht:
		fps	6	Left:	<u>2.0_</u> π.		L	degrees .eft:
	9 N/A⊠				<u>3.0</u> ft.			<u>85</u> degrees
Analysis of Bank Stabil No evidence of bank in	lity (i.e. root str stability observ	ucture, vegetati /ed	on, substrate	e characteristics):				
Qualitative Attribut	es							
Water Appearance:								
(cneck one)	No water		old ⊔Sh on	leen ⊔Sur I surface scu	tace Im	∐Algal mats	_Other:	
Substrate:	Bedrock 🗆 B	Boulder 🛛 Cobl	ble 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🛛 Organic	□ Other:	
% of Substrate:	%	<u>% _25</u> %	<u>35</u> %	<u>20</u> %	<u> 10 </u> %	_10_%	%	
Width of Riparian Zone:	Check all the	ve Layers: at apply)	⊠ Trees	: 8	Saplin	ngs/Shrubs:	⊠ Herbs	3
<u>_30_ft</u> - N/A□	Avg. DBI (approx.)	H of Dominants:	<u>10.0</u> ir	n	<u>1.0</u> in.		-	
Dominant Bank Vegetat	tion (list):							
White oak, Chestnut violet, speedwell, bu	t oak, striped <u>ttercup, gold</u> e	maple, black enrod	locust, whit	e pine, sweet b	virch, N	New York feri	n, witch ha	zel, blackberry,
Leaf packs	energed of energy				ko, large	Submerged wood,	, mico, ucop p	
Aquatic Organisms Obs	served (list):							
None								
T&E Species Observed	(list):							
none								
Disturbances (ex: livesto	ck access, manure	e in waterbody, wast	e discharge pipe	es):				
Existing dirt road cro	osses stream	with no bridge	e or culvert	present				
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗆 Manipu	ulated			

spoa410

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream continues out of access road corridor in both directions; no culvert present for road crossing; receives outflow from seep ppoa417 located approximately 15 feet upslope; seep outflow becomes subterranean immediately upon reaching stream channel.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

⊠ Moderate

Stream Quality ^a : (check one)

🗆 High

🗆 Low





Waterbody SPOA410 facing southeast upstream



Waterbody SPOA410 facing northwest downstream



Waterbody SPOA410 facing northeast across



Waterbody SPOA410 scouring facing east

Survey Descrip	otion													
Project Name:			,	Vaterb	ody Nam	e:			w	laterbody ID:			Date:	
Atlantic Coast Pipel	ine		l	JNT to	o Shock	Run			s	poa400			5/12/20	016
State:	Co	ounty:			C	Company:			Crew M	Member Initials	s:	Photos:		
West Virginia	Po	ocahoi	ntas		N	IRG/ERM			GB, S	SA		5 phot	os	
Tract Number(s):	•				N	learest Mile	epost:			Associated W	/etland	ID(s):		
05-001-E064 – Mor	nongah	ela Nati	ional For	est	8	2.05				none				
Survey Type: (check one)		⊠Ce	enterline		□Re-Ro	oute	□A	ccess Road		□Other:				
Physical Attrib	utes													
(check one)	ion:	□Ep	ohemeral			ittent	⊠P	erennial						
Waterbody Type: (check one)	□Riv	ver	⊠ Strea	am	□ Ditch	□ Ca	anal	□ Other	:					
OHWM Width: 12.0 f	t.	OHWM (check all	I Indicato	or:		☑ Clear lir on bank	ie	⊠Shelvin	g	□Wrested vegetation		Scouring	g [s	⊒Water staining
Height: ft. N/A□		⊑ Ve	Bent, magetation	atted, o	r missing	⊠Wrack li	ne	□Litter a debris	nd	□Abrupt plar community cł	nt nange	□Soil c	haracteri	istic change
Width of Waterboo Bank to Top of Ba	ly - Top nk:	of	Width of to Toe o	Water f Slope	body - To	be of Slope	Width Water	n of Waterb r Edge:	ody - W	ater Edge to	Depth (Approx.)	of Wate	r:	
16.0	_ft.		_0	<u>9.0_</u> ft.			N/A□	-	<u>10.0</u> ft.		N/A□	-	<u>0.50</u> f	t.
Sinuosity:			Water ve	elocity:			Bank	height			Bank s	slope		
(check one)	ght		(Approx.)		(Right:	40 ft			Right	: 00 d	logroop
□Mear	nderina			1	<u>.75_</u> tps			Left:	<u>4.0</u> .			Lef	t: 50 d	
	lacing		N/A∟					-	<u>3.0</u> 11.				<u> </u>	legrees
Analysis of Bank S Loose rocks/soil a	Stability and exp	/ (i.e. ro osed ro	oot struc oots in pl	ture, ve laces; v	egetation would co	n, substrate Insider nor	chara mal fo	r a stream	: of this g	gradient with f	flashy,	high flo	ws	
Qualitative Attr	ributes	s												
Water Appearance (check one)	: □Nc	o water	⊠Cl	ear	□Turbid	I □Sh	een	□Su	rface	□Algal mate	□Othe	r:		
Substrato		odrock		Idor				l Sand				Othor:		
(check all that apply) % of Substrate:		%	⊠ B00		<u>_50_%</u>	_ <u>30_</u> %	<u>10 '</u>	%		_% _5_%	%	Julei.		
Width of Riparian 2	Zone:	Ve	getative	Lavers										
<u>50 ft</u> -		(che Ave	eck all that ap g. DBH o	oply) of Domi	nants:	⊠ Trees <u>12.0</u> ir	: 1.	[⊠ Saplir _ <u>1.0_</u> in	ngs/Shrubs:	·	Herbs		
Dominant Bank Ve	getatio	n (list):	<i>JIO</i> X .)											
Sugar maple, he nettle, foamflow	emlock er. vio	, swee let. lac	et birch dv fern,	, beec wood	h, black land see	c cherry, s dae	striped	d maple,	witch h	nazel, green	ash, (Christm	as fern	ı, wood
Small step pole	s, riffle	erged of S, COre	e wood	y debr	is in ch	annel, sca	attere	d leaf pac	cks alc	ong edges, w	/rack	piles	5).	
Aquatic Organism	s Obser	rved (lis	st):											
Invertebrates, c	rayfish	Ì												
T&E Species Obse	erved (lis	st):												
none														
Disturbances (ex: 1	ivestock	access, I	manure in	waterbo	dy, waste c	discharge pipe	es):							
(check one)		⊠ N	latural		□ Artifi	icial, man-m	ade	🗆 Manip	ulated					

Waterbody ID: spoa400

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Moderately steep gradient perennial stream exhibiting areas of bank instability in the form of loose rock/soil and exposed roots; normal for a stream of this gradient. Stream continues out of corridor in both directions; receives output from seep ppoa401 located on cut bank above stream; intermittent stream spoa401 flows into this stream within the survey corridor downstream of center line. Surrounding area is a mature second growth mixed hardwood forest with scattered hemlock.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

□ Moderate

Stream Quality ^a : (check one)

🛛 High

Low





Waterbody SPOA400 facing south upstream



Waterbody SPOA400 facing north downstream



Waterbody SPOA400 facing east across

Survey Description	n							
Project Name:		Waterbody Nan	10:		w	/aterbody ID:		Date:
Atlantic Coast Pipeline		UNT to Shoc	k Run		sp	poa401		5/12/2016
State:	County:		Company:		Crew N	Member Initials	Phote	os:
West Virginia	Pocahontas		NRG/ERM	1	GB, S	SA	3 pł	notos
Tract Number(s):			Nearest Mile	epost:		Associated W	etland ID(s)	:
05-001-E064 – Monong	ahela National Fo	prest	82.05			wpoa402		
Survey Type: (check one)	Centerline	e □Re-R	oute	□ Access Road		□ Other:		
Physical Attributes	S							
(check one)	Ephemera	al 🛛 Interr	nittent	Perennial				
Waterbody Type: (check one)	River 🛛 Str	eam 🗆 Ditcl	n 🗆 Ca	anal 🗌 Other:				
OHWM Width: ft.	OHWM Indica (check all that apply	tor: /)	⊠ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation	⊠Scou	uring □Water staining
Height: ft. N/A□	□Bent, n vegetatio	natted, or missing n	g	ne ⊠Litter ar debris	nd	□Abrupt plant community ch	t ⊡So ange	il characteristic change
Width of Waterbody - T Bank to Top of Bank:	op of Width of to Toe	of Waterbody - T of Slope:	oe of Slope	Width of Waterbo Water Edge:	ody - W	ater Edge to	Depth of Wa (Approx.)	ater:
<u>_10.0_</u> ft.	-	<u>3.0_</u> ft.		N/A□	<u>3.5_</u> ft.	I	N/A□	<u>0.25</u> ft.
Sinuosity: (^{check one)} ⊠Straight □Meanderir	Water (Approx.)	velocity: 1.5fps		Bank height Right: Left:	<u>6.0</u> ft. <u>7.0</u> ft.		Bank slope Ri I	ght:
Analysis of Bank Stabi	ility (i.e. root stru exposed roots in	cture, vegetatio places; would c	n, substrate onsider nor	e characteristics): mal for a stream (of this (gradient with fl	ashy, high	flows
Qualitative Attribu	tes							
(check one)	No water ⊠C	Clear □Turbi	d ⊡Sh on	leen ⊡Sui i surface sci	face Im	□Algal [mats	□Other:	
Substrate:	Bedrock 🗆 Bo	ulder 🛛 Cobbl	e 🛛 Grave	el 🛛 Sand 🛛	□ Silt/ c	clay 🛛 Organic	□ Other:	
% of Substrate: <u>4</u>	<u>0 % </u> %	_40_9	% _5_%	% <u>5</u> %		% _10_%	%	
Width of Riparian Zone	e: Vegetative	E Layers:						
<u>ft</u> . N/A⊠	(check all that Avg. DBH (approx.)	of Dominants:	⊠ Trees <u>12.0</u> ir	: D	⊴ Saplır _ <u>1.0_</u> in.	ngs/Shrubs:	∐ Herb 	S
Dominant Bank Vegeta	tion (list):							
Sugar maple, hemlo nettle, foamflower, y	ock, sweet bircl <u>/iolet, ladv fern</u>	h, beech, blac , woodland se	k cherry, s dae	striped maple, v	vitch h	nazel, green a	ash, Chris	tmas fern, wood
coarse woody debri	s in channel, s	cattered leaf p	, overhanging Dacks	banks/roots, leaf pac	ks, large	submerged wood,	riffles, deep	DOOIS):
Aquatic Organisms Ob	served (list):							
Invertebrates								
T&E Species Observed	l (list):							
none								
None annarent	ock access, manure i	n waterbody, waste	discharge pipe	es):				
Tributary is:								
(check one)	Natural	□ Arti	ficial, man-m	ade 🗌 Manip	ulated			

spoa401

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Steep gradient intermittent stream exhibiting areas of bank instability in the form of loose rock/soil and exposed roots; normal for a stream of this gradient. Stream flows into perennial stream spoa400 within the survey corridor; upstream continues out of corridor where it originates at spring ppoa402 within PFO wetland wpoa402; also receives outflow from seep ppoa403 via wetland. Surrounding area is a mature second growth mixed hardwood forest with scattered hemlock.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

□ Moderate

Stream Quality ^a : (check one)

⊠ High

□ Low





Waterbody SPOA401 facing east upstream



Waterbody SPOA401 facing west downstream



Waterbody SPOA401 facing north across

Survey Descriptio	n										
Project Name:		Waterb	ody Nan	ne:			w	aterbody ID:		[Date:
Atlantic Coast Pipeline		UNT t	o Knap	p Creek			sp	boa407			5/13/2016
State:	County:			Company:			Crew N	lember Initials	: F	Photos:	
West Virginia	Pocahont	as		NRG/ERM	l		GB, S	A		3 photo	S
Tract Number(s):				Nearest Mile	epost:			Associated W	etland	ID(s):	
Access road 05-001-E0)64.AR2; Mo	nongahela N	F	83.6				none			
Survey Type: (check one)	□Cent	terline	□Re-R	loute	⊠Acces	s Road		□Other:			
Physical Attribute	s										
Stream Classification: (check one)	Ephe	emeral	⊠Inter	mittent	□Perer	inial					
Waterbody Type: (check one)	River	Stream 🛛	□ Ditc	h 🗆 Ca	anal 🛛] Other:	:				
OHWM Width: _ <u>2.0_</u> ft.	OHWM Ir (check all th	ndicator: at apply)		⊠ Clear lin on bank	ie 🗆	Shelvin	g	□Wrested vegetation		Scouring	□Water staining
Height: 	□B veg	ent, matted, c etation	or missinę	g	ne 🛛 de	Litter ar bris	nd	□ Abrupt plan community ch	it iange	□Soil ch	aracteristic change
Width of Waterbody - 1 Bank to Top of Bank:	op of W to	idth of Water Toe of Slope	rbody - T ə:	oe of Slope	Width of Water Ed	Waterbo ge:	ody - W	ater Edge to	Depth (Approx.)	of Water	1
<u>5.0</u> ft.		<u>1.0</u> ft.			N/A□		<u>1.5_</u> ft.		N/A□	-	<u>0.25_</u> ft.
Sinuosity: (^{check one)} ⊠Straight □Meanderin	ng N	/ater velocity ^{pprox.)} /A□	: <u>1.25_</u> fps	3	Bank heig R	ght ight: Left: 	<u>2.5_</u> ft. <u>10.0_</u> ft.		Bank s	lope Right: Left:	60_degrees
Analysis of Bank Stab Confined to ditch alon	ility (i.e. roo g existing ro	t structure, v bad; banks a	egetatio re road o	on, substrate	characte bed	ristics):					
Qualitative Attribu	tes										
Water Appearance: (check one)	[]] No water	⊠Clear	□Turbi	id ⊡Sh on	een surface	⊡Sur scu	face um	□Algal mats	□Other	:	
Substrate:	Bedrock	Boulder	🛛 Cobb	le 🛛 Grave	el 🛛 Sa	nd 🛛	⊠ Silt/ c	lay 🛛 Organic	; 🗆 C	ther:	
(check all that apply) % of Substrate:	%	%	<u>40</u> %	<u>35</u> %	<u> 10 </u> %	5	%	<u>_10 %</u>			
Width of Riparian Zone	e: Vege (check Avg. (appro:	tative Layers all that apply) DBH of Dom x.)	: inants:	⊠ Trees: ir	: 1.	۶	⊠ Saplir _ <u>1.0_</u> in.	ngs/Shrubs:		Herbs	
Dominant Bank Vegeta	ntion (list):	anut hickor	v white	a oak redu	manle s	ugar n	anla	areen ash a	onvice	borry	aarlic mustard
Vellow cress, golder Aquatic Habitats (ex: si	n raqwort, pignorer	<u>Colts foot, 1</u> merged aquatic	Vegetation	ork fern, wh	hite snak	eroot leaf pac	ks, large	submerged wood	, riffles, o	leep pools	
Leaf packs											
Aquatic Organisms Ob	served (list):										
	(list)										
none	i (<i>IISI)</i> :										
Disturbances (ex: livesto	ock access, ma	anure in waterbo	ody, waste	discharge pipe	es):		<i>c</i>		407 5		. ,
Culvert crossing for	existing g	ravel road;	24″ co	rrugated m	etal culv	ert; co	ontined	to ditch for	125 fe	et alon	g existing road
Tributary is: (check one)	□ Nat	ural	□ Art	ificial, man-m	ade 🗵	Manipu	ulated				

spoa407

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream begins at spring ppoa413 located on road cut and is confined to ditch for 125 feet; downstream continues out; culvert crossing for existing gravel road (forest service road 55); mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

⊠ Moderate

Stream Quality ^a: (check one)

🗆 High

🗆 Low





Waterbody SPOA407 facing northwest upstream



Waterbody SPOA407 facing southeast downstream



Waterbody SPOA407 facing northeast across

Survey Description	n							I
Project Name:		Waterbody Na	me:		w	aterbody ID:		Date:
Atlantic Coast Pipeline		UNT to Knap	op Creek		s	boa406		5/13/2016
State:	County:		Company:		Crew N	Member Initials	: Photos	:
West Virginia	Pocahontas		NRG/ERM	1	GB, S	SA	3 pho	tos
Tract Number(s):	I		Nearest Mile	epost:		Associated W	etland ID(s):	
Access road 05-001-E0)64.AR2; Monong	gahela NF	83.8			none		
Survey Type: (check one)		e □Re-F	Route	⊠Access Road		□Other:		
Physical Attributes	S							
(check one)	Ephemer	al ⊠Inter	mittent	Perennial				
Waterbody Type: (check one)	River ⊠ Sti	ream 🗆 Dito	ch 🗆 Ca	anal 🗌 Other:	:			
OHWM Width: _ <u>2.0_</u> ft.	OHWM Indica (check all that appl	ator: ly)	⊠ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation	□Scourir	ng ⊟Water staining
Height: ft. N/A□	□Bent, i vegetatio	matted, or missin on	lg ⊡Wrack li	ne ⊠Litter ar debris	nd	□Abrupt plan community ch	t ⊡Soil ange	characteristic change
Width of Waterbody - T Bank to Top of Bank:	op of Width to Toe	of Waterbody - of Slope:	Toe of Slope	Width of Waterbe Water Edge:	ody - W	ater Edge to	Depth of Wate (Approx.)	er:
<u>5.0</u> ft.	-	<u>1.0</u> ft.			<u>1.5_</u> ft.		N/A□	<u>0.25</u> ft.
Sinuosity: (^{check one)} ⊠Straight □Meanderir	N/AD	velocity:) 1.25fp	s	Bank height Right: Left:	<u>2.5</u> ft. <u>10.0</u> ft		Bank slope Righ Le	nt: <u>60</u> degrees ft: <u>70</u> degrees
Analysis of Bank Stabi Confined to ditch along	ility (i.e. root strue existing road; ban	ucture, vegetation	on, substrate and road bed	characteristics):	:			
Qualitative Attribu	tes							
Water Appearance: (check one)	[]] No water ⊠	Clear □Turb	oid □Sh on	leen ⊡Sui i surface sci	rface um	□Algal [mats	□Other:	
Substrate:	Bedrock 🗆 Bo	oulder 🛛 Cobb	ole 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🛛 Organic	□ Other:	
(check all that apply) % of Substrate:	%	% _ <u>40</u> _%	<u>35</u> %	<u> 10 </u> % <u> 5</u>	%	<u>_10 %</u>		
Width of Riparian Zone 	e: Vegetativ (check all tha Avg. DBH (approx.)	e Layers: t apply) I of Dominants:	⊠ Trees ir	: D	⊠ Saplir _ <u>1.0_</u> in	ngs/Shrubs:	⊠ Herbs –	
Dominant Bank Vegeta	ition (list):	(. ' .						
Mustard, vellow creater Aquatic Habitats (ex: su	et DIFCN, PIGNUI ss. golden rag	t NICKORY, WHIT Wort, colts foc a aquatic vegetatio	e pine, whi ot, New Yor	te oak, red maj <u>'k fern</u> banks/roots, leaf pac	pie, su	submerged wood	riffles, deep poo	erviceberry, gariic
Leaf packs	loniongoù er eniongo	a aquano rogonano	n, eremenging		no, iaigo	casilioigea neea	,,	
Aquatic Organisms Ob	served (list):							
none								
T&E Species Observed	(list):							
none								
Disturbances (ex: livesto	ock access, manure	in waterbody, waste	e discharge pipe	es):	<i>.</i>			
Culvert crossing for	existing grave	el road; 24" co	prrugated m	ietal culvert; co	ontinec	to ditch for	150 Ft along	g existing road
Tributary is: (check one)	□ Natural		tificial, man-m	ade 🛛 Manipi	ulated			

spoa406

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream begins at spring ppoa409 located on road cut and is confined to ditch for 150 feet; downstream continues out; culvert crossing for existing gravel road (forest service road 55); mature second growth mixed hardwood forest with scattered white pine.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

⊠ Moderate

Stream Quality ^a : (check one)

🗆 High

□ Low





Waterbody SPOA406 facing northwest upstream



Waterbody SPOA406 facing southeast downstream



Waterbody SPOA406 facing northeast across

Survey Description	n					k			1
Project Name:		Waterboo	ly Name:			N N	Waterbody ID:		Date:
Atlantic Coast Pipeline		UNT to I	Knapp (Creek		S	spoa405		5/13/2016
State:	County:		Co	mpany:		Crew	Member Initials	: Photos	5:
West Virginia	Pocahontas		NF	RG/ERM		GB,	SA	4 pho	otos
Tract Number(s):	1		Nea	arest Mile	epost:	I	Associated W	etland ID(s):	
Access road 05-001-E0	064.AR2; Mono	ngahela NF	83.	9			none		
Survey Type: (check one)		ine 🛛	Re-Rout	e	⊠Access R	oad	Other:		
Physical Attribute	s								
(check one)	Ephem	eral D	Intermitt	ent	Perennial				
Waterbody Type: (check one)	River 🛛	Stream	Ditch	🗆 Ca	anal 🗆 Of	her:			
OHWM Width: _ <u>5.0</u> ft.	OHWM Indi (check all that a	cator: pply)	∑ 0	Clear lin n bank	ne ⊡She	lving	□Wrested vegetation	⊠Scour	ing ⊟Water staining
Height: ft. N/A□	□Ben vegeta	t, matted, or r ation	nissing [∃Wrack li	ne ⊠Litte debris	er and	□Abrupt plan community ch	t ⊡Soil ange	characteristic change
Width of Waterbody - 1 Bank to Top of Bank:	op of Widt to To	h of Waterbo be of Slope:	ody - Toe	of Slope	Width of Wat Water Edge:	erbody - V	Nater Edge to	Depth of Wat (Approx.)	er:
<u>9.0</u> ft.		<u>5.0</u> ft.			N/A□	<u>5.0</u> ft	t.	N/A□	<u>0.33</u> ft.
Sinuosity: (^{check one)} ⊠Straight □Meanderin	Wate (Appro ng N/A[er velocity: _{ox.)}	5_fps		Bank height Right Lef	t: <u>5.0_</u> fi t: <u>5.0_</u> fi	t. t.	Bank slope Rig Lo	ht: _ <u>80_</u> degrees degrees
Analysis of Bank Stab Banks are eroded and	ility (i.e. root s stream is dow	tructure, veg n cutting at o	etation, s culvert or	substrate utlet; out	characteristi let is set too h	cs): nigh.			
Qualitative Attribu	tes								
Water Appearance: (check one)	No water	⊠Clear [∃Turbid	⊡Sh on	een 🗆	Surface scum	□Algal [mats	□Other:	
Substrate:	Bedrock	Boulder 🛛	Cobble	⊠ Grave	el 🛛 Sand	□ Silt/	clay 🛛 Organic	□ Other:	
(check all that apply) % of Substrate:	%	% _ <u>50</u>	<u>)_%_3</u>	0%	<u>10</u> %	%	<u>_10 %</u>		
Width of Riparian Zone <u>ft</u> .	e: Vegetat (check all Avg. DE	ive Layers: that apply) BH of Domina	ants:	⊠ Trees: 13.0 ir	: 1.	⊠ Sapl _ 1.5_ii	lings/Shrubs: n.	⊠ Herbs	
N/A⊠ Dominant Bank Vegeta	(approx.)								
Basswood, green as pipe, geranium, Chi Aquatic Habitats (ex: su	sh, sweet bir ristmas fern, ubmerged or emer	ch, striped wood aster	maple, r. golder	red map n ragwo verhanging	ole, sugar m rt. wood nel banks/roots, leaf	aple, be	ech, multiflora	a rose, wito	h hazel, Dutchman's
Leaf packs, coarse	woody debri	s in channe	el	0.0			Ŭ		
Aquatic Organisms Ob	served (list):								
Invertebrates									
T&E Species Observed	l (list):								
	ock accord marrie	ro in waterbad	waata di-	charao nin -);				
Culvert crossing for	existing gra	vel road; 18	, waste dise B" corrug	gated m	etal culvert				
Tributary is: (check one)	⊠ Natura	al	Artificia	al, man-m	ade 🗆 Ma	nipulated			

Waterbody ID: spoa405

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream continues out of access road corridor in both directions; moderate gradient stream with eroded banks at culvert outlet; culvert crossing for existing gravel road (forest service road 55); mature second growth mixed hardwood; stream is a tributary to perennial stream spoa404 outside access road corridor; receives outflow from seep ppoa407 located on nearly vertical road cut.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

⊠ Moderate

Stream Quality ^a : (check one)

High

□ Low





Waterbody SPOA405 facing northwest upstream



Waterbody SPOA405 facing southeast downstream



Waterbody SPOA405 facing northeast across

Survey Descriptio	n								
Project Name:		Waterbody Na	me:		W	aterbody ID:			Date:
Atlantic Coast Pipeline		UNT to Knap	op Creek		s	ooa404			5/13/2016
State:	County:		Company:		Crew I	Member Initials	:	Photos:	
West Virginia	Pocahontas		NRG/ERM	1	GB, S	SA		4 phot	os
Tract Number(s):			Nearest Mile	epost:		Associated W	etland	ID(s):	
Access road 05-001-E0	64.AR2; Monong	ahela NF	83.9			none			
Survey Type: (check one)		e □Re-F	Route	⊠Access Road		□Other:			
Physical Attribute	S								
Stream Classification: (check one)	Ephemera	al 🗆 Inter	mittent	⊠Perennial					
Waterbody Type: (check one)]River ⊠ Str	ream 🗆 Dito	ch 🗆 Ca	anal 🗌 Other:	:				
OHWM Width: _ <u>8.0_ft</u> .	OHWM Indica (check all that appl	tor: _{y)}	⊠ Clear lir on bank	ne 🗆 Shelving	g	□Wrested vegetation	×	Scouring	g ⊟Water staining
Height: _ <u>1.25_</u> ft. N/A□	□Bent, r vegetatio	matted, or missin on	ig	ne ⊠Litter ar debris	nd	□Abrupt plan community ch	t lange	□Soil c	haracteristic change
Width of Waterbody - T Bank to Top of Bank:	op of Width to Toe	of Waterbody - ` of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - W	ater Edge to	Depth (Approx.)	of Wate	:
<u>15.0_</u> ft.	-	<u>6.0</u> ft.		N/A□	<u>7.0</u> ft.		N/A□	-	<u>0.50</u> ft.
Sinuosity: (check one) ⊠Straight ⊡Meanderin	Water (Approx.)	velocity: 1.5_fps	3	Bank height Right: Left:	<u>4.5</u> ft. <u>8.0</u> ft.		Bank ៖	slope Right Leff	: <u>60_</u> degrees :: _ <u>75_</u> degrees
Analysis of Bank Stab No evidence of bank ins	i lity (i.e. root strι tability	icture, vegetatio	on, substrate	e characteristics):					
Qualitative Attribu	tes								
Water Appearance: (check one)	No water ⊠	Clear □Turb	oid □Sh on	leen ⊡Sur surface scu	rface um	□Algal mats	□Othe	r:	
Substrate:	Bedrock 🗆 Bo		ole 🛛 Grave	el 🛛 Sand 🛛	□ Silt/ c	lay 🛛 Organic	; 🗆 (Other:	
	%	% <u>40</u> _%	<u>35</u> %	<u> 15 </u> % <u> </u>	%	<u>_10 %</u>			
Width of Riparian Zone <u>30</u> ft. N/A□	e: Vegetative (check all that Avg. DBH (approx.)	e Layers: apply) of Dominants:	⊠ Trees 13.0_ir	: D	⊠ Saplir _ <u>1.5_</u> in	ngs/Shrubs:		Herbs	
Dominant Bank Vegeta Basswood, green a pipe, geranium, Chi	tion (list): sh, sweet birch istmas fern, w	n, striped map	ole, red maj Iden ragwo	ple, sugar mapl rt, wood nettle	le, bee	ech, multiflora	a rose	e, witch	hazel, Dutchman's
Aquatic Habitats (ex: su Leaf packs, coarse	ubmerged or emerge woody debris	d aquatic vegetatio in channel, oc	n, overhanging ccasional p	banks/roots, leaf pact	ks, large	submerged wood	, riffles,	deep pool	s):
Aquatic Organisms Ob	served (list):								
Invertebrates, crayf	ish								
T&E Species Observed	l (list):								
none									
Disturbances (ex: livesto Culvert crossing for	ock access, manure existing grave	n waterbody, waste I road; 48" co	e discharge pipe oncrete sou	es): are box culvert					
Tributary is: (check one)	⊠ Natural		tificial, man-m	ade 🗆 Manipi	ulated				
Waterbody ID:

spoa404

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream continues out of access road corridor in both directions; moderate gradient stream with stable banks; culvert crossing for existing gravel road (forest service road 55); mature second growth mixed hardwood ; intermittent stream is a tributary outside access road corridor.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

□ Moderate

Stream Quality ^a : (check one)

⊠ High

□ Low





Waterbody SPOA404 facing north upstream



Waterbody SPOA404 facing south downstream



Waterbody SPOA404 facing east across

Linear Waterbody Data Sheet

Survey Description	n									
Project Name:	Waterbody Name:					/aterbody ID:		Date:		
Atlantic Coast Pipeline	UNT	to Knap	p Creek	Creek		spoa403		5/13/2016		
State:	County:			Company: C			rew Member Initials:		Photos:	
West Virginia Pocahontas				NRG/ERM G			B, SA		3 photos	
Tract Number(s):				Nearest Milepost:			Associated Wetland ID(s):			
Access road 05-001-E064.AR2; Monongahela NF				84.1			none			
Survey Type: (check one)	nterline	ine □Re-F		Route Access Road		□Other:				
Physical Attribute	s									
Stream Classification: (check one)	□Eph	nemeral	⊠Inter	mittent	nittent DPerennial					
Waterbody Type: (check one)	River	Stream	Ditc	h □ Ca	anal 🗌 Othe	r:				
OHWM Width: _ <u>3.0_</u> ft.	OHWM I (check all ti	Indicator: hat apply)		⊠ Clear line □Shelvir on bank		ng	□Wrested vegetation	I ⊠Scouring		□Water staining
Height: ft. N/A□	□Bent, matted, or mived and the second seco			ing □Wrack line ⊠Litter and debris			□Abrupt plant □Soil characteristic change community change			
Width of Waterbody - T Bank to Top of Bank:	op of V	Vidth of Wate o Toe of Slop	erbody - ⁻ be:	oe of Slope Width of Waterbod Water Edge:			Water Edge to Dep		epth of Water: oprox.)	
<u>6.0</u> ft.		<u>2.5</u> ft	-		N/A□	<u>3.0</u> ft.		N/A□	0.2	<u>5_</u> ft.
Sinuosity:	V	Vater velocit	y:		Bank height			Bank slo	pe	
(check one)	(*	Approx.)			Right:	20 4			Right:	
		•	<u>_1.0</u> _fps		Left:	<u> </u>			Left:	<u>uegrees</u>
	ng N	I/A□				<u>3.0</u> ft			_6	0_degrees
Analysis of Bank Stab No evidence of bank ir	ility (i.e. roo nstability	ot structure,	vegetatio	on, substrate	characteristics):				
Qualitative Attribu	tes									
Water Appearance:	1					_				
(check one)	No water	⊠Clear	□Turb	id ⊡Sh on	leen ⊡Su surface so	urface cum	□Algal mats	□Other:		
Substrate:	Bedrock	□ Boulder	🛛 Cobb	le 🛛 Grave	el 🛛 Sand	Silt/ o	clay 🛛 Organic	; 🗆 Oth	ier:	
% of Substrate:	%	%	<u>35</u> %	<u>35</u> %	<u>15 %</u>	<u>5 %</u>	<u>_10 %</u>			
Width of Riparian Zone	: Veg	etative Layer	s:							
ft.	(check	k all that apply)	ninants [.]	⊠ Trees	:	Saplii	ngs/Shrubs:	⊠ He	erbs	
N/A⊠	(appro	р ан от Вог рх.)	innunto.	<u> 10.0 </u> lr	1.	<u>1.0</u> in		_		
Dominant Bank Vegeta White oak, northern	ition (list): red oak,	beech, red	maple,	black gum	, white pine, n	nounta	in laurel, pinl	< azalea	ı, cinque	foil, wood aster,
, teaberry Aquatic Habitats (ex: su	ubmerged or e	emerged aquation	c vegetatio	n, overhanging	banks/roots, leaf pa	cks, large	submerged wood	, riffles, dee	ep pools):	
Leaf packs, coarse	woody de	bris in cha	nnel							
Aquatic Organisms Ob	served (list)):								
none										
T&E Species Observed	(list):									
				- dia ala a second						
Culvert crossing for existing gravel road; 24" corrugated metal culvert										
Tributary is: (check one)	⊠ Na	tural	□ Art	ificial, man-m	ade 🗆 Manir	oulated				
1				,		-				

Waterbody ID:

spoa403

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Stream continues out of access road corridor in both directions; moderate gradient stream with stable banks; culvert crossing for existing gravel road (forest service road 55); mature second growth mixed hardwood forest.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

⊠ Moderate

Stream Quality ^a: (check one)

🗆 High

🗆 Low





Waterbody SPOA403 facing east upstream



Waterbody SPOA403 facing west downstream



Waterbody SPOA403 facing south across