Survey Description					1-
Project Name:		ody Name:		Waterbody ID:	Date:
Southeast Reliability	Butter	wood Creek		SDIM002	9/2/2014
State: 0	County:	Company:		Crew Member Initials	: Photos:
Virginia [Dinwiddie	W&C		SG, EB	2751-2753, X U D
Tract Number(s):		Nearest Mile	post:	Associated W	etland ID(s):
12-113		244		WDIM001F	AND WDIM001E
Survey Type: (check one)	⊠Centerline	□Re-Route	□Access Road	□Other:	
Physical Attributes Stream Classification:					
(check one)	⊠Ephemeral	□Intermittent	□Perennial		
Waterbody Type: (check one)	River ⊠ Stream	☐ Ditch ☐ Ca	ınal 🗆 Other:		
OHWM Width:	OHWM Indicator: (check all that apply)	☐ Clear lin on bank	e □Shelvino	g □Wrested vegetation	□Scouring ⊠Water staining
Height: 0.2 ft. N/A	☐Bent, matted, c	or missing □Wrack lir	ne ⊠Litter an debris	nd □Abrupt plan community ch	
Width of Waterbody - To		body - Toe of Slope		ody - Water Edge to	Depth of Water:
Bank to Top of Bank: _3 ft.	to Toe of Slope):	Water Edge:		(Approx.) ft.
	2_ft.		N/A⊠		N/A⊠
Sinuosity: (check one)	Water velocity (Approx.)	:	Bank height Right:		Bank slope Right:
□Straight		_ fps		0.3_ft.	80 degrees
⊠Meandering	9 N/A⊠		Left:	0.3_ ft.	Left: 75 degrees
Qualitative Attribute	26				
Water Appearance:					
(check one)	No water □Clear	□Turbid □Shoon	een □Sur surface scu	J	□Other:
	Bedrock ☐ Boulder	☐ Cobble ☐ Grave	el □ Sand ▷	☑ Silt/ clay ☐ Organic	☐ Other:
(check all that apply) % of Substrate: N	<u>NA</u> %	<u>NA</u> % <u>NA</u> %	<u>NA</u> %	100_% <u>NA</u> %	<u>NA</u> %
Width of Riparian Zone:					
_>100_ft· N/A□	(check all that apply) Avg. DBH of Dom (approx.)	[⊠] Trees: inants: <u>10</u> in.		☑ Saplings/Shrubs: _2in.	⊠ Herbs
Dominant Bank Vegetati	ion (list):				
RED MAPLE, SWEE	T GUM, TULIP TRE	E, CHESTNUT O	AK, IRONWO	DD, FLOWERING	DOGWOOD, WHITE GRASS
Aquatic Habitats (ex: sub	merged or emerged aquatic	vegetation, overhanging l	oanks/roots, leaf pack	ks, large submerged wood	, riffles, deep pools):
NA					
Aquatic Organisms Obs	erved (list):				
NA					
T&E Species Observed ((list):				
NA					
Disturbances (ex: livestock NA	k access, manure in waterbo	ody, waste discharge pipe	s):		
Tributary is: (check one)	⊠ Natural	☐ Artificial, man-ma	ade 🗆 Manipu	ulated	
Stream Quality ^a : (check one)	☐ High	☐ Moderate	⊠ Low		

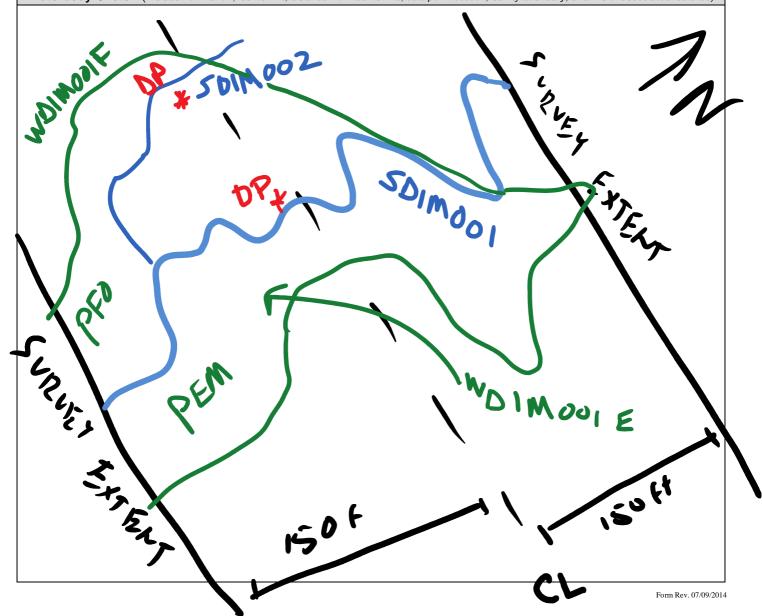
^a High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

FLOW IS TO THE SOUTH AND TIES INTO SDIM001 IN THE ROW. OHWM AND BANK WIDTH WIDEN DOWNSTREAM.





Waterbody point sdim002 facing across



Waterbody point sdim002 facing upstream



Waterbody point sdim002 facing downstream

FLOWS FROM, Linear Waterbody Data Sheet

Survey Description	1							
Project Name:		Waterbody Nar	ne:		W	aterbody ID:		Date:
Southeast Reliability	/	Butterwood (Creek		SI	DIM001		9/2/2014
State:	County:		Company:		Crew N	lember Initials	: Photos:	
9	Dinwiddie		W&C		SG, E			2749, X U D
Tract Number(s):			Nearest Mile	epost:		Associated W	etland ID(s):	
12-113			244			WDIM001F	AND WDIN	1001E
Survey Type: (check one)	⊠Centerline	e □Re-F	Route	□ Access Road	l	□Other:		
Physical Attributes Stream Classification:	3							
(check one)	□Ephemera	al □Inter	mittent	⊠Perennial				
Waterbody Type: (check one)	River ⊠ Str	eam 🗆 Ditc	h □ Ca	anal 🗆 Other	:			
OHWM Width:	OHWM Indication (check all that apply		⊠ Clear lin	ne ⊠Shelvin	g	⊠Wrested vegetation	⊠Scourin	g □Water staining
Height: 1ft. N/A□	□Bent, n vegetatio	natted, or missin n	g □Wrack lii	ne ⊠Litter ar debris	nd	⊠ Abrupt plan community ch		characteristic change
Width of Waterbody - To Bank to Top of Bank:		of Waterbody - 7 of Slope:	Toe of Slope	Width of Waterb Water Edge:	ody - W	ater Edge to	Depth of Wate	r:
_ <u>5_</u> ft.		ft.			<u>2</u> ft.		N/A□	<u>0.3</u> ft.
Sinuosity: (check one) ☐ Straight	(Approx.)	velocity:fps		Bank height Right: Left:	_2_ft.		Bank slope Righ Lef	<u>80</u> degrees t:
⊠Meanderin	3 14/10				_2_ft.			_75_ degrees
Qualitative Attribut	tes							
Water Appearance: (check one)	No water ⊠0	Clear □Turb	-		rface um	□Algal [mats	□Other:	
Substrate:	Bedrock ☐ Bo	ulder Cobb	le 🗵 Grave	el 🗵 Sand [□ Silt/ cl	lay Organic	: Other:	
(check all that apply) % of Substrate:	<u>NA</u> % <u>NA</u> %	% <u>NA</u> %	<u>20</u> %	<u>80</u> %	<u>NA_</u> %	<u>NA</u> %	<u>NA</u> %	
Width of Riparian Zone	: Vegetative	Layers:						
>100 ft N/A□	(check all that		⊠ Trees: _ <u>10</u> _in.		⊠ Saplin _2_in.	igs/Shrubs:	⊠ Herbs	
Dominant Bank Vegeta RED MAPLE, SWEI	` '	IP TREE, CH	ESTNUT C	OAK, IRONWO	OD, FL	OWERING	DOGWOOD), WHITE GRASS
Aquatic Habitats (ex: su	bmerged or emerged	d aquatic vegetation	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, deep poo	ls):
SMALL POOLS, OV	ERHANGING	ROOTS/BAN	IKS					
Aquatic Organisms Obs	served (list):							
FISH, WATER BEETLES	S, FROGS							
T&E Species Observed NA	(list):							
Disturbances (ex: livesto	ck access, manure i	n waterbody, waste	e discharge pipe	es):				
Tributary is: (check one)	Natural	□ Art	ificial, man-m	ade □ Manip	ulated			
Stream Quality ^a : (check one)	⊠ High	□ Mo	derate	□ Low				

^a **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.

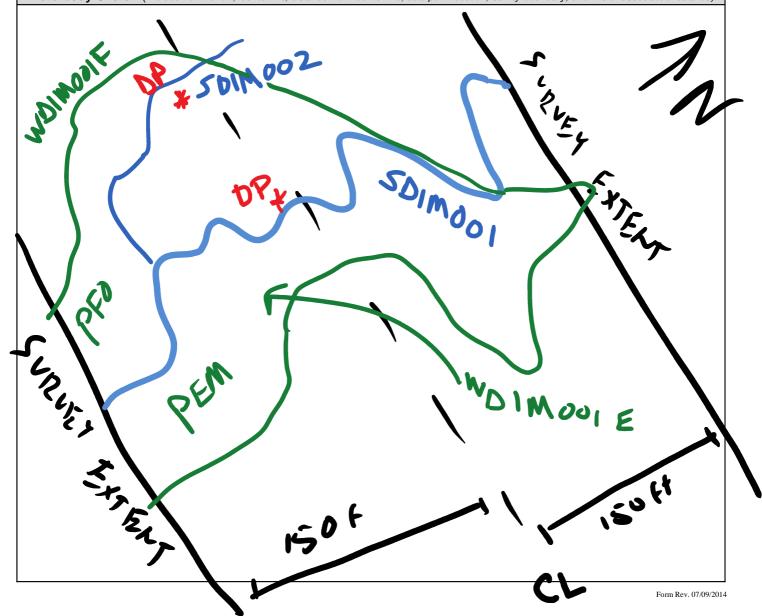
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate 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:

FLOW IS TO THE SOUTH. CHARACTERISTICS ARE VARIABLE.

STREAM SDIM001 IS THE SPLITLINE BETWEEN WDIM001F AND WDIM001E.





Waterbody point sdim001 facing across



Waterbody point sdim001 facing upstream



Waterbody point sdim001 facing downstream

Survey Descriptio	n							
Project Name:		Waterbody Nar				aterbody ID:		Date:
Southeast Reliabilit	у	UNT TO But	terwood Cr	eek	S	DIM003		9/2/2014
State:	County:	<u> </u>	Company:		Crew I	Member Initials	: Ph	otos:
Virginia	Dinwiddie		W&C		SG, E	В	27	728-2730, X U D
Tract Number(s):	ı		Nearest Mile	post:		Associated W	etland ID	(s):
13-002			245.3			WDIM003		
Survey Type: (check one)	⊠Centerline	e □Re-F	Pourto	□Access Roa	4	□Other:		
		e ⊔Re-r	koule	□ Access Roa	u	□Otner:		
Physical Attribute Stream Classification:	<u>S</u>							
(check one)	□Ephemer	al ⊠Inter	mittent	□Perennial				
Waterbody Type: (check one)	River ⊠ Str	ream 🗆 Dito	h 🗆 Ca	anal Othe	r:			
OHWM	OHWM Indica							_
Width: <u>2</u> ft.	(check all that appl	y)	⊠ Clear lin on bank	e ⊠Shelviı	ng	⊠Wrested vegetation	⊠Sc	couring
Height: 1_ft. N/A□	□Bent, ı vegetatio	matted, or missin on	g □Wrack lir	ne □Litter a debris	and	☐ Abrupt plan community ch		Soil characteristic change
Width of Waterbody - 1				Width of Water	oody - W		Depth of (Approx.)	Water:
Bank to Top of Bank:	to roe	of Slope:		Water Edge:			(Арргох.)	- 6
<u>8_</u> ft.	-	_2_ft.		N/A□	_2_ft.		N/A□	<u>.3</u> ft.
Sinuosity:		velocity:		Bank height			Bank slop	pe
(check one) ☐Straight	(Approx.)			Right:	2 4			Right:
		<u>0.1_</u> fps		Left:	<u>3_</u> ft.			65 degrees Left:
⊠Meanderi	ng N/A 🗆				<u>3_</u> ft.			<u>70</u> degrees
Qualitative Attribu	tes							
Water Appearance: (check one)	[□] No water ⊠	Clear □Turb			urface cum	□Algal [mats	□Other:	
Substrate:	☐ Bedrock ☐ Bo	oulder Cobb	le ⊠ Grave	el 🛭 Sand	⊠ Silt/ c	clay Organic	☐ Oth	er:
(check all that apply) % of Substrate:	NA % NA S	% NA %	20 %	60 %	20 %	NA %	NA %	, ,
			<u>20</u> 70	<u>00</u> 70	20 /0	<u>147 (</u> 70		
Width of Riparian Zone	Vegetative (check all that		□ Trees:		□ Saplir	ngs/Shrubs:	⊠H	erbs
>100 ft	Avg. DBH	of Dominants:	in.		in.	-g		
N/A□ Dominant Bank Vegeta								
UMBRELLA SEDG	E, SMARTWE	EDS, HORSE	NETTLE,	SPIKE RUSH	, SOFT	RUSH, DO	G FENN	EL
Aquatic Habitats (ex: su	ubmerged or emerge	d aquatic vegetation	n, overhanging l	banks/roots, leaf pa	cks, large	submerged wood	, riffles, dee	ep pools):
OVERHANGING VI		SHRUB COVI	ER, SHELV	'ES				
Aquatic Organisms Ob	servea (IIST):							
T&E Species Observed	l (list):							
NA								
Disturbances (ex: livesto	ock access, manure	in waterbody, waste	discharge pipe	es):				
IMPACTS FROM C	ATTLE							
Tributary is: (check one)	⊠ Natural	□ Art	ificial, man-ma	ade 🗆 Manip	oulated			
Stream Quality ^a : (check one)	☐ High	□ Mc	derate	⊠ Low				

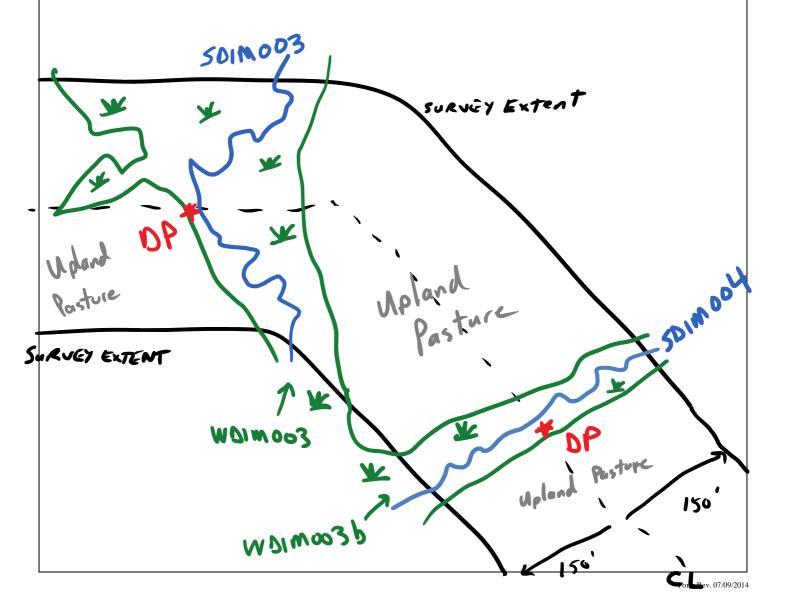
^a High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

FLOW IS TO THE SOUTH AND TIES INTO SDIM004 OUTSIDE THE ROW. HEAVY IMPACT FROM LIVESTOCK. CHARACTERISTICS ARE HIGHLY VARIABLE.





Waterbody point sdim003 facing across



Waterbody point sdim003 facing upstream



Waterbody point sdim003 facing downstream

Survey Description	1							
Project Name:		Waterbody Nar				aterbody ID:		Date:
Southeast Reliability	1	UNT TO But	terwood Cr	eek	S	DIM004		9/2/2014
State:	County:	<u> </u>	Company:		Crew I	Member Initials	: Photo	s:
Virginia	Dinwiddie		W&C		SG, E	В	2724	I-2726, X U D
Tract Number(s):			Nearest Mile	post:	<u> </u>	Associated W	etland ID(s):	
13-002			245.36			WDIM003b	1	
Survey Type: (check one)	⊠Centerlin	e □Re-F	Route	□ Access Roa	ad	□Other:		
Physical Attributes Stream Classification:								
(check one)	□Ephemer	ral ⊠Inter	mittent	□Perennial				
Waterbody Type: (check one)	River ⊠ St	tream Dito	h 🗆 Ca	anal 🗆 Othe	er:			
OHWM Width: 1 ft.	OHWM Indica (check all that app		☐ Clear lin	e □Shelv	ing	⊠Wrested vegetation	⊠Scou	ring ⊠Water staining
Height: 0.4 ft. N/A□	□Bent, vegetatio	matted, or missin on	g □Wrack lir	ne □Litter debris	and	□ Abrupt plan community ch		I characteristic change
Width of Waterbody - To		of Waterbody -			body - W	ater Edge to	Depth of Wa	ter:
Bank to Top of Bank:		e of Slope:		Water Edge:			(Арргох.)	2.4
<u>3_</u> ft.	-	_1_ft.		N/A□	_1_ft.		N/A□	<u>.3</u> ft.
Sinuosity: (check one)	Water (Approx.	velocity:		Bank height			Bank slope	
□Straight	(r pprox.	0.1_ fps		Right:	1.5_ ft.		Rig	jht: 65 degrees
⊠Meanderin	g N/A□	<u>0.1_</u> 1p3		Left:	1.5_ ft.		L	eft: 75 degrees
	14//\				<u> 1.5_</u> 1t.			<u>13</u> degrees
Qualitative Attribut Water Appearance:	ies							
	No water ⊠	Clear □Turb	-		urface cum	□Algal mats	□Other:	
	Bedrock □ Be	oulder Cobb	le 🗆 Grave	el 🗵 Sand	⊠ Silt/ c	lay 🛭 Organic	Other:	
(check all that apply) % of Substrate:	<u>IA</u> % <u>NA</u>	% <u>NA</u> %	<u>NA</u> %	<u>15</u> %	<u>65</u> %	<u>20</u> %	<u>NA</u> %	
Width of Riparian Zone	: Vegetativ	ve Layers:						
>100 ft	(check all tha	at apply) I of Dominants:			⊠ Saplir _2_in.	ngs/Shrubs:	⊠ Herb	s
N/A ☐ Dominant Bank Vegeta	,							
BLACK WILLOW, B FENNEL	LACKBERRY	, SMARTWEE	DS, CARE	X SPP., EUF	ROPEAI	N OLIVE, JU	NIPER, SO	OFT RUSH, DOG
Aquatic Habitats (ex: su	bmerged or emerge	ed aquatic vegetation	n, overhanging l	banks/roots, leaf pa	acks, large	submerged wood	, riffles, deep p	ools):
OVERHANGING RO	OOTS, SHRU	B COVER						
Aquatic Organisms Obs	served (list):							
FISH, FROGS, WATER	BEETLES							
T&E Species Observed NA	(list):							
Disturbances (ex: livesto	ck access, manure	in waterbody, waste	discharge pipe	es):				
IMPACTS FROM CA	ATTLE	•						
Tributary is: (check one)	Natural	□ Art	ificial, man-ma	ade 🗆 Mani	pulated			
Stream Quality ^a : (check one)	□ High	□ Mo	derate	⊠ Low				

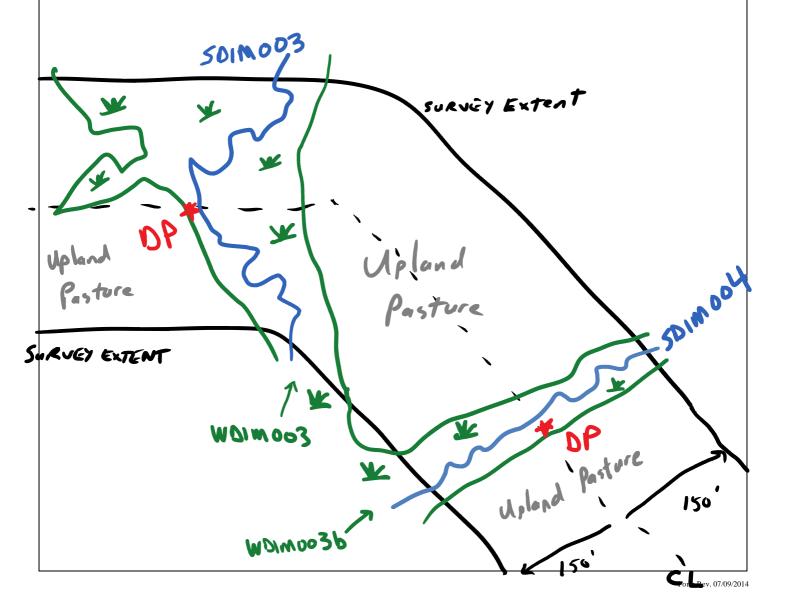
^a **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

FLOW IS TO THE SOUTHWEST AND TIES INTO SDIM003 OUTSIDE THE ROW.





Waterbody point sdim004 facing across



Waterbody point sdim004 facing upstream



Waterbody point sdim004 facing downstream

Survey Description	n							
Project Name:		Waterbody Nan				aterbody ID:		Date:
Atlantic Coast Pipel	ine	UNT TO Butt	erwood Cr	eek	S	DIM005		9/3/2014
State:	County:		Company:		Crew I	Member Initials	: Pho	os:
Virginia	Dinwiddie		W&C		SG, E	В	275	55-2757, X U D
Tract Number(s):			Nearest Mile	post:		Associated W	etland ID(s):
12-103			245.6			WDIM005f		
Survey Type: (check one)	⊠Centerline	e □Re-R	loute	□ Access Roa	d	□Other:		
Physical Attribute Stream Classification:	S							
(check one)	□Ephemera	al ⊠Inter	mittent	□Perennial				
Waterbody Type:	River ⊠ Str	eam □ Ditc	h □ Ca	anal □ Othe	r:			
OHWM Width: 6 ft.	OHWM Indica (check all that apply		⊠ Clear lin	e ⊠Shelviı	ng	□Wrested vegetation	⊠Sco	uring □Water staining
Height:	□Bent, r vegetatio	matted, or missing	g □Wrack lir	ne ⊠Litter a debris	ınd	☐ Abrupt plan		oil characteristic change
N/A□ Width of Waterbody - T				Width of Waterk	ody - W	ater Edge to	Depth of W	/ater:
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:			(Approx.)	
<u>10_</u> ft.	_	<u>6</u> _ft.		N/A□	_2_ft.		N/A□	<u>0.1</u> ft.
Sinuosity:		velocity:		Bank height			Bank slope)
(check one) ☐ Straight	(Approx.)			Right:	4 4		R	ight: 65 degrees
		<u>0.1_</u> fps	Left:	<u>4_</u> ft.		Left:		
⊠Meanderii	ng N/A□				<u>3_</u> ft.			<u>50</u> degrees
Qualitative Attribu	tes							
Water Appearance: (check one)	[]] No water ⊠0	Clear □Turb	-		urface :um	□Algal l	□Other:	
	Bedrock □ Bo	oulder Cobb	le ⊠ Grave	el 🗵 Sand	☐ Silt/ c	lay 🗆 Organic	: Othe	· ·
(check all that apply) % of Substrate:	<u>NA</u> % <u>NA</u> %	% <u>NA</u> %	<u>10</u> %	90_%	<u>NA</u> %	<u>NA</u> %	<u>NA</u> %	
Width of Riparian Zone								
_>100_ft· N/A□	(check all that Avg. DBH (approx.)	apply) of Dominants:	⊠ Trees: _ <u>10</u> _in.		⊠ Saplir _ <u>1</u> in.	ngs/Shrubs:	⊠ He	bs
Dominant Bank Vegeta	tion (list):							
TULIP TREE, RED	MAPLE, POIS	ON IVY, SWE	ET GUM,	SPICE BUSH	, HONI	EY SUCKLE		
Aquatic Habitats (ex: su	ubmerged or emerge	d aquatic vegetation	n, overhanging l	banks/roots, leaf pa	cks, large	submerged wood	, riffles, deep	pools):
OVERHANGING R	OOTS							
Aquatic Organisms Ob	served (list):							
FROGS, CRAYFISH								
T&E Species Observed NA	l (list):							
Disturbances (ex: livesto	ock access, manure i	n waterbody, waste	discharge pipe	s):				
Tributary is: (check one)	Natural	☐ Art	ificial, man-ma	ade 🗆 Manip	oulated			
Stream Quality ^a : (check one)	☐ High	⊠ Mo	derate	□ Low				

Waterbody	ID
SDIM005	

Form Rev. 07/09/2014

^a **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:

FLOW IS TO THE SOUTH. STREAM CHARACTERISTICS ARE VARIABLE.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Upland \ Forest DIM005F Upland Ext. 150 ft



Waterbody point sdim005 facing across



Waterbody point sdim005 facing upstream



Waterbody point sdim005 facing downstream

Ellicai Waterboo	y Data One	CL							
Survey Descriptio	n								
Project Name:		Waterbody N	lame:		W	aterbody ID:			Date:
Atlantic Coast Pipel	ine	UNT TO B	utterwood C	reek	SI	DIM006		S	9/3/2014
State:	County:		Company:		Crew N	lember Initials	: F	Photos:	
Virginia	Dinwiddie		W&C		SG, E				782, X U D
Tract Number(s):			Nearest Mile	epost:		Associated W	etland	ID(s):	
13-005, 13-006			245.9			WDIM006f			
Survey Type: (check one)	⊠Centerli	ine □Re	e-Route	□ Access Road	I	□Other:			
Physical Attribute	s								
Stream Classification: (check one)	⊠Epheme	eral □In	termittent	□Perennial					
Waterbody Type: (check one)	River ⊠ S	Stream 🗆 🗅	itch □ C	anal Other	:				
OHWM Width: 3 ft.	OHWM India (check all that ap		⊠ Clear lir on bank	ne ⊠Shelvin	g	□Wrested vegetation		Scouring	□Water staining
Height: <u>0.5</u> ft. N/A□	vegeta	t, matted, or miss tion	sing □Wrack li	ine ⊠Litter ar debris	nd	☐ Abrupt plan community ch		□Soil ch	aracteristic change
Width of Waterbody - 1 Bank to Top of Bank:		h of Waterbody be of Slope:	- Toe of Slope	Width of Waterbo Water Edge:	ody - W		Depth (Approx.)	of Water:	
<u>10_</u> ft.		_3_ft.		N/A⊠	ft.		N/A⊠		ft.
Sinuosity: (check one)	Wate (Appro	er velocity:		Bank height			Bank s	lope	
□Straight	(,,,,,,,,,			Right:	<u>3_</u> ft.			Right:	50 degrees
⊠Meanderi	20	fps		Left:				Left:	<u> </u>
	J IV/YE	<u> </u>			<u>2_</u> ft.				50 degrees
Qualitative Attribu	tes								
Water Appearance: (check one)	No water [⊒Clear □Tu		neen □Sui n surface scu		□Algal [mats	□Other	Ξ.	
	Bedrock □ I	Boulder 🗆 Co	bble ⊠ Grav	el 🗵 Sand 🛭	⊠ Silt/ c	lay Organic	: 🗆 C	Other:	
(check all that apply) % of Substrate:	<u>NA</u> % <u>NA</u>	<u>NA</u> %	% <u>5</u> %	90 %	<u>5</u> %	<u>NA</u> %	NA	_%	
Width of Riparian Zone	Vegetati	ive Layers:	⊠ Trees	: D	⊠ Saplin	ngs/Shrubs:	\boxtimes	Herbs	
_>100_ft N/A□	Avg. DB (approx.)	H of Dominants	<u>10_</u> in.		<u>1</u> in.	Ü			
Dominant Bank Vegeta	• /								
TULIP TREE, LOBI HONEY SUCKLE.	LOLLY PINE, CHRISTMAS	AMERICAN S FERN	ELM, FLOW	'ERINGDOGW	OOD,	POISON IVY	Y, SW	EET GU	JM, SPICE BUSH
Aquatic Habitats (ex: si			tion, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, o	deep pools):
DOWNED WOOD									
Aquatic Organisms Ob	served (list):								
FROGS									
T&E Species Observed	l (list):								
NA									
Disturbances (ex: livesto	ock access, manur	e in waterbody, wa	ste discharge pip	es):					
NA									
Tributary is: (check one)	Natura		Artificial, man-m	nade 🗆 Manipi	ulated				
Stream Quality ^a : (check one)	☐ High		Moderate	⊠ Low					

Waterbody	ID
SDIM006	

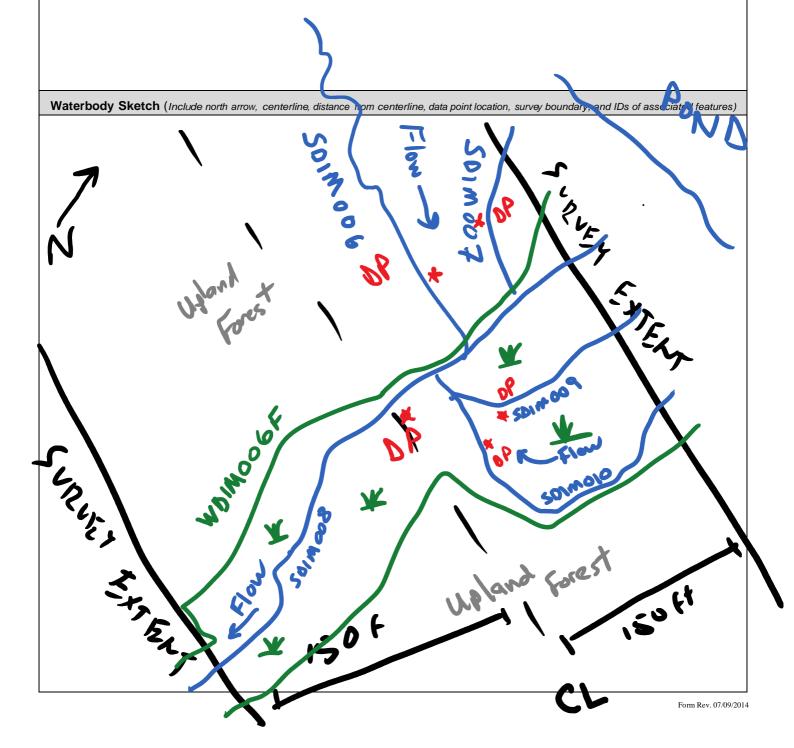
^a High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

FLOW IS TO THE EAST-SOUTHEAST. STREAM CHARACTERISTICS ARE HIGHLY VARIABLE. SOME STANDING WATER NEAR HEADWATER.





Waterbody point sdim006 facing across



Waterbody point sdim006 facing upstream



Waterbody point sdim006 facing downstream

Survey Descripti	on	haz						
Project Name:	مانم	Waterbody Na		e a a l		aterbody ID:		Date: 9/3/2014
Atlantic Coast Pip	eiine	UNT TO Bu	tterwood Cr	еек	5	DIM007		9/3/2014
State:	County:		Company:		Crew N	Member Initials	: Photo	os:
Virginia	Dinwiddie		W&C		SG, E	В	277	6-2778, X U D
Tract Number(s):			Nearest Mile	epost:	"	Associated W	etland ID(s)	:
13-005			245.9			WDIM006f		
Survey Type: (check one)	⊠Centerl	ine □Re-	Route	□Access Road	d	□Other:		
Physical Attribut								
Stream Classification (check one)	n: ⊠Ephem∈	eral □Inte	rmittent	□Perennial				
Waterbody Type: (check one)	□River ⊠ \$	Stream Dit	ch □ Ca	anal 🗆 Other	r:			
OHWM Width: 4 ft.	OHWM Indi		⊠ Clear lin	ne ⊠Shelvir	ng	□Wrested vegetation	⊠Scou	ıring □Water staining
Height: 1 ft.	□Bent vegeta	t, matted, or missi	ng □Wrack lii	ne ⊠Litter a debris	nd	□ Abrupt plan community ch		il characteristic change
Width of Waterbody -		h of Waterbody -	Toe of Slope		ody - W	ater Edge to	Depth of Wa	ater:
Bank to Top of Bank	tore	pe of Slope:		Water Edge:			(Арргох.)	
<u>5_</u> ft.		4ft.		N/A⊠	ft.		N/A⊠	ft.
Sinuosity: (check one)	Wate (Appro	er velocity:		Bank height			Bank slope	
□Straight		_fps		Right:	3_ ft.		Rig	ght: 85 degrees
⊠Meande	ring N/AD			Left:			I	_eft:
	3 14/7(2	<u> </u>			<u>3_</u> ft.			<u>85</u> degrees
Qualitative Attrib Water Appearance:	utes							
(check one)	⊠No water [□Clear □Tur			ırface um	□Algal [mats	□Other:	
Substrate:	□ Bedrock □	Boulder Cob	ble ⊠ Grave	el 🗵 Sand	⊠ Silt/ c	clay Organic	Other:	
(check all that apply) % of Substrate:	<u>NA</u> % <u>NA</u>	<u>NA</u> %	<u>5</u> %	<u>85</u> %	<u>10</u> %	<u>NA</u> %	<u>NA</u> %	
Width of Riparian Zo		ive Layers:						
<u>>100 ft</u> ⋅ N/A□	(check all t Avg. DE (approx.)	that apply) BH of Dominants:	⊠ Trees: _ <u>10_</u> in.		⊠ Saplir _ <u>1</u> .in.	ngs/Shrubs:	⊠ Hert	OS
Dominant Bank Vege								
HONEY SUCKLE.	<u>. CHRISTMAS</u>	S FERN.						GUM, SPICE BUSH
Aquatic Habitats (ex:	submerged or emer	ged aquatic vegetati	on, overhanging	banks/roots, leaf pad	cks, large	submerged wood	l, riffles, deep p	pools):
NA								
Aquatic Organisms C	Observed (list):							
NA								
T&E Species Observe	ed (list):							
Disturbances (ex: live	stock access, manur	re in waterbody, was	te discharge pipe	es):				
NA	,	,,	- 3- F-b-					
Tributary is: (check one)	□ Natura	ıl 🗆 A	rtificial, man-m	ade ⊠ Manip	ulated			
Stream Quality ^a : (check one)	☐ High	□М	oderate	⊠ Low				

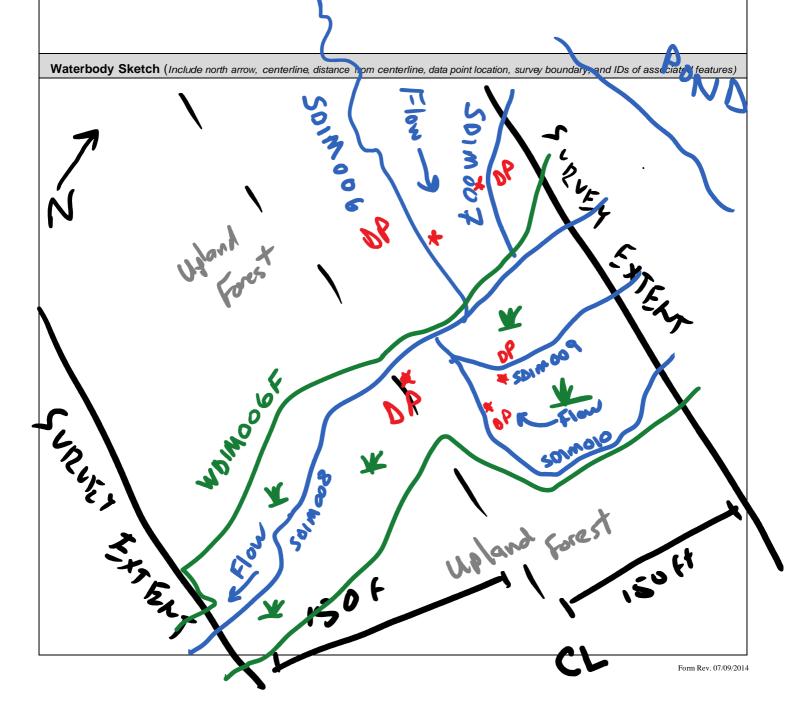
^a High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

FLOW IS TO THE SOUTHEAST. STREAM CHARACTERISTICS ARE HIGHLY VARIABLE. STREAM APPEARS TO OGINATE FROM THE POND AREA. AREA NEAR THE NORTH ROW HAD A SEWAGE-LIKE ODOR. THE CHANNEL IS NARROW AND 5-6' DEEP IN THIS AREA AS WELL.





Waterbody point sdim007 facing across



Waterbody point sdim007 facing upstream



Waterbody point sdim007 facing downstream

Survey Description	on .										
Project Name:	,	Waterbo	ody Name) :			W	aterbody ID:		Da	ate:
Atlantic Coast Pipe	line	UNT T	O Butte	rwood Cr	eek		SDIM008			9/	3/2014
State:	County:		C	ompany:			Crew N	/lember Initials	: F	Photos:	
Virginia	Dinwiddie		W	/&C			SG, E	В		2784-27	86, X U D
Tract Number(s):	_ [N	earest Mile	post:			Associated W	etland	ID(s):	
13-005, 13-006, 13	3-007		2	45.92				WDIM006f			
Survey Type: (check one)	⊠Center	line	□Re-Ro	ute	□Acc	ess Road	d	□Other:			
Physical Attribute	es										
Stream Classification: (check one)	: ⊠Ephem	eral	□Intermi	ittent	□Per	ennial					
Waterbody Type: (check one)	□River ⊠	Stream	□ Ditch	□ Ca	anal	☐ Other	- :				
OHWM Width:	OHWM Indi			□ Clear lin on bank	e	⊠Shelvir	ng	□Wrested vegetation		Scouring	□Water staining
Height: 0.5 ft.	□Ben vegeta	nt, matted, or ation	missing	□Wrack lin		□Litter a debris	nd	☐ Abrupt plan		□Soil cha	racteristic change
Width of Waterbody - Bank to Top of Bank:		th of Waterk			Width o		ody - W	ater Edge to	Depth (Approx.)	of Water:	
9 ft.		_ <u>5_</u> ft.	•		N/A⊠	-ugo.	ft.		N/A⊠	_	ft.
Sinuosity: (check one) ☐Straight	Wat (Appr	er velocity:	_fps		Bank h	eight Right: Left:	<u>3_</u> ft.		Bank s	Right:	35 degrees
⊠Meander	ing N/A	\boxtimes				Leit.	<u>3</u> ft.				85 degrees
Qualitative Attribu	utes										
Water Appearance: (check one)	[⊠] No water	□Clear	□Turbid	□Sh on	een surface		rface um	□ Algal mats	□Other	:	
Substrate: [□ Bedrock □	Boulder [☐ Cobble	⊠ Grave	el 🖂 S	Sand	⊠ Silt/ c	lay 🗆 Organio	: 🗆 C	Other:	
la	<u>NA</u> % <u>N</u>	<u>A</u> % _	<u>NA</u> %	<u>40</u> %	<u>50</u>	%	<u>10</u> %	<u>NA</u> %	NA	_%	
Width of Riparian Zon >100 ft· N/A□	(check all	tive Layers: that apply) BH of Domin		⊠ Trees: _10_in.			⊠ Saplir _2_in.	ngs/Shrubs:	\boxtimes	Herbs	
Dominant Bank Veget	ation (list): LOLLY PINE	, AMERIC	AN ELN	И, FLOW	ERING	BDOGW	OOD,	POISON IV	Y, SW	EET GU	M, SPICE BUSH
HONEY SUCKLE. Aquatic Habitats (ex: s OVERHANGING R	submerged or eme	rged aquatic v		overhanging l	banks/roo	ots, leaf pad	cks, large	submerged wood	, riffles, o	deep pools):	
Aquatic Organisms O	-	NGL FOO	,								
FROGS, CRAYFISH	baei veu (list).										
T&E Species Observe	d (list):										
NA Disturbances (and lines			d		-\-						
Disturbances (ex: lives	tock access, manu	ire in waterboo	dy, waste di	iscnarge pipe	s):						
Tributary is: (check one)	☐ Natura	al	☐ Artific	cial, man-ma	ade		ulated				
Stream Quality ^a : (check one)	☐ High		☐ Mode	erate		⊠ Low					

Waterbody	ID
SDIM008	

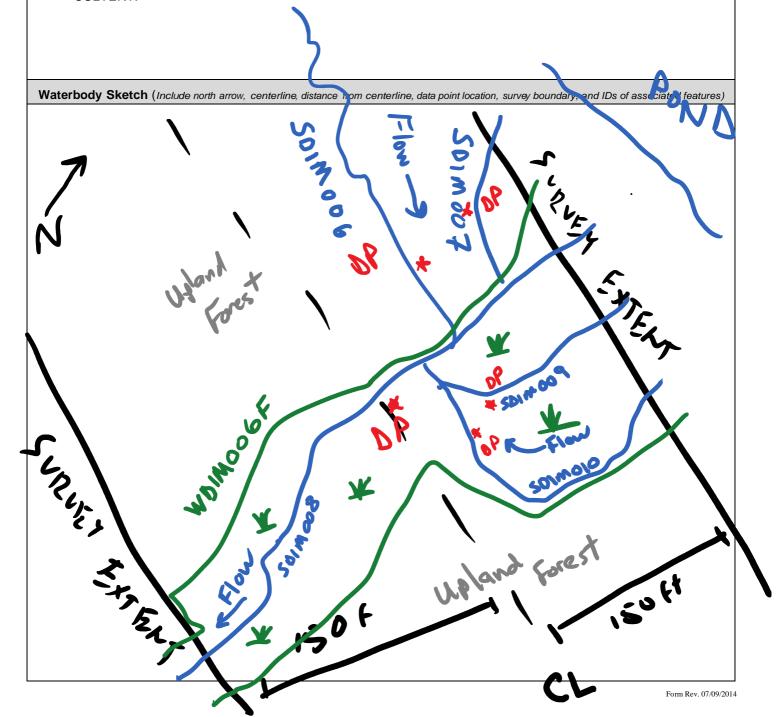
^a High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

FLOW IS TO THE SOUTH. STREAM CHARACTERISTICS ARE VARIABLE, STREAM ORIGINATES FROM CULVERT IN LEVEE BELOW POND AT N ROW EDGE. PLUNGE POOL WITH APPROX. 1.5 FT OF WATER AT CULVERT.





Waterbody point sdim008 facing across



Waterbody point sdim008 facing upstream



Waterbody point sdim008 facing downstream

Ellicai Waterboo	y Data Onc								
Survey Descriptio	n								
Project Name:		Waterbody Na	me:		W	aterbody ID:			Date:
Atlantic Coast Pipel	ine	UNT TO But	terwood Cı	reek		DIM009		S	9/3/2014
State:	County:		Company:		Crew N	Member Initials	:	Photos:	
Virginia	Dinwiddie		W&C		SG, E				790, X U D
Tract Number(s):			Nearest Mile	epost:		Associated W	etland	ID(s):	
13-005, 13-006			245.92			WDIM006f			
Survey Type: (check one)	⊠Centerl	ine □Re-l	Route	□Access Road	l	□Other:			
Physical Attribute	s								
Stream Classification: (check one)	⊠Ephem	eral □Inte	rmittent	□Perennial					
Waterbody Type: (check one)	River ⊠ \$	Stream □ Dito	ch 🗆 C	anal 🗆 Other:	:				
OHWM Width: <u>2</u> ft.	OHWM Indi		⊠ Clear lir on bank	ne □Shelvin	g	□Wrested vegetation		Scouring	⊠Water staining
Height: 0.3 ft. N/A□	vegeta	t, matted, or missir tion	ng □Wrack li	ne □Litter ar debris	nd	□ Abrupt plan community ch		□Soil ch	aracteristic change
Width of Waterbody - 1 Bank to Top of Bank:		h of Waterbody - be of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - W		Depth (Approx.)	of Water:	:
_ <u>4</u> ft.		_2_ft.		N/A⊠	ft.		N/A⊠		ft.
Sinuosity: (check one)	Wate (Appro	er velocity:		Bank height			Bank s	lope	
⊠Straight	(Αρβίο			Right:	_1ft.			Right:	45 degrees
□ Ma an dani		_fps		Left:				Left:	
□Meanderi	ng N/A∑	⊴			<u>1_</u> ft.				45 degrees
Qualitative Attribu	tes								
Water Appearance: (check one)	No water [⊒Clear □Turb		neen □Sui n surface scu		□Algal [mats	□Other	. :	
Substrate:	Bedrock □	Boulder Cobb	ole 🗆 Grav	el 🗵 Sand 🛭	⊠ Silt/ c	lay Organic	: 🗆 0	Other:	
(check all that apply) % of Substrate:	<u>NA</u> % <u>NA</u>	<u>NA</u> %	<u>NA</u> %	<u>10</u> %	<u>90 </u> %	<u>NA</u> %	NA	<u>.</u> %	
Width of Riparian Zone	vegetat (check all t	ive Layers:	⊠ Trees	: D	⊠ Saplin	ngs/Shrubs:	\boxtimes	Herbs	
_>100_ft· N/A□	Avg. DE (approx.)	BH of Dominants:	<u>_10_</u> in.	-	<u>2</u> in.				
Dominant Bank Vegeta	tion (list):								
TULIP TREE, LOBI HONEY SUCKLE.	<u>CHRISTMAS</u>	S FERN.							
Aquatic Habitats (ex: si	ubmerged or emer	ged aquatic vegetation	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles,	deep pools):
NA									
Aquatic Organisms Ob	served (list):								
NA									
T&E Species Observed	l (list):								
NA									
Disturbances (ex: liveston NA	ock access, manur	e in waterbody, wast	e discharge pipe	es):					
Tributary is: (check one)	⊠ Natura	I □ Ar	tificial, man-m	ade 🗆 Manipu	ulated				
Stream Quality a:	☐ High		oderate	⊠ Low					

Waterbody	ID
SDIM009	

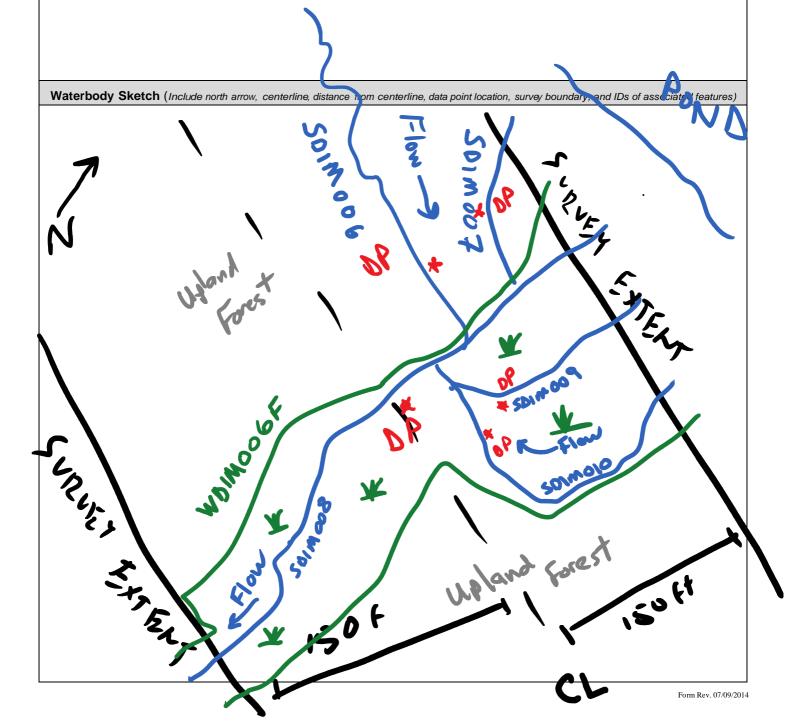
^a High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

FLOW IS TO THE SOUTH AND CONNECTS WITH SDIM010 BEFORE IT FLOWS INTO SDIM008.





Waterbody point sdim009 facing across



Waterbody point sdim009 facing upstream



Waterbody point sdim009 facing downstream

	_										
Survey Description	n	har .									
Project Name:	lino	Waterbo	-	e: erwood Cr	ماد			aterbody ID:			ate: (3/2014
Atlantic Coast Pipe	eiirie	UNIT	O Bulle	rwood Cr	еек			DIM010		9/	3/2014
State:	County:		C	company:			Crew I	Member Initials	s: I	Photos:	
Virginia	Dinwiddie		V	V&C			SG, E	В		2792-27	94, X U D
Tract Number(s):	_ [N	learest Mile	post:			Associated W	etland	ID(s):	
13-006			2	245.92				WDIM006f			
Survey Type: (check one)	⊠Center	line	□Re-Ro	ute	□Ac	cess Roa	d	□Other:			
Physical Attribute	es										
Stream Classification: (check one)	: ⊠Ephem	neral	□Interm	ittent	□Pe	rennial					
Waterbody Type: (check one)	□River ⊠	Stream	☐ Ditch	□ Ca	anal	□ Othe	er:				
OHWM Width:	OHWM Ind				e	□Shelvi	ng	□Wrested vegetation		Scouring	⊠Water staining
2 ft. Height: 0.5 ft.	□Ber vegeta	nt, matted, or	missing		ne	□Litter a	and	☐ Abrupt plar		□Soil cha	racteristic change
N/A□					NA 2" 14 1			•		- () 10 / - (
Width of Waterbody - Bank to Top of Bank:		th of Waterb oe of Slope:			Water		ooay - w	ater Edge to	(Approx.)	of Water:	
<u>4_</u> ft.		_2_ft.			N/A⊠		ft.		N/A⊠	_	ft.
Sinuosity:		er velocity:			Bank I	neight			Bank s	lope	
(check one) ☐Straight	(Аррг					Right:	45 4			Right:	15 dansas
		•	_fps			Left:	<u>1.5_</u> ft.			Left:	45 degrees
⊠Meander	ing N/A						<u>2.5</u> ft.			-	55 degrees
Qualitative Attribu	utes										
Water Appearance: (check one)	[⊠] No water	□Clear	□Turbid	_	een surface		urface cum	□Algal mats	□Other	:	
Substrate:	□ Bedrock □	Boulder [☐ Cobble			Sand		lay □ Organio	: DC	Other:	
(check all that apply)			□ 000010 NA_%	<u>NA</u> %		<u>)</u> %	90 %	NA_%	NA		
Width of Riparian Zon	e: Veneta	tive Layers:									
>100 ft	(check all Avg. DI	that apply) BH of Domir	nants:	[⊠] Trees: _10_in.			⊠ Saplir	ngs/Shrubs:	\boxtimes	Herbs	
N/A□ Dominant Bank Veget	(approx.)										
TULIP TREE, LOB HONEY SUCKLE.	LOLLY PINE	, AMERIC S FERN.	AN ELI	M, FLOW	ERIN	GDOGV	VOOD,	POISON IV	Y, SW	EET GU	M, SPICE BUSH
Aquatic Habitats (ex: s	submerged or eme	rged aquatic ve	egetation,	overhanging	banks/ro	ots, leaf pa	icks, large	submerged wood	d, riffles, o	deep pools):	
NA											
Aquatic Organisms O	bserved (list):										
NA											
T&E Species Observe	d (list):										
NA											
Disturbances (ex: lives	tock access, manu	ire in waterbod	ly, waste o	lischarge pipe	s):						
Tributary is:											
(check one)	⊠ Natura	al	☐ Artifi	cial, man-m	ade	☐ Mani	oulated				
Stream Quality ^a :	☐ High		□ Mod	erate		⊠ Low					

Waterbody	ID
SDIM010	

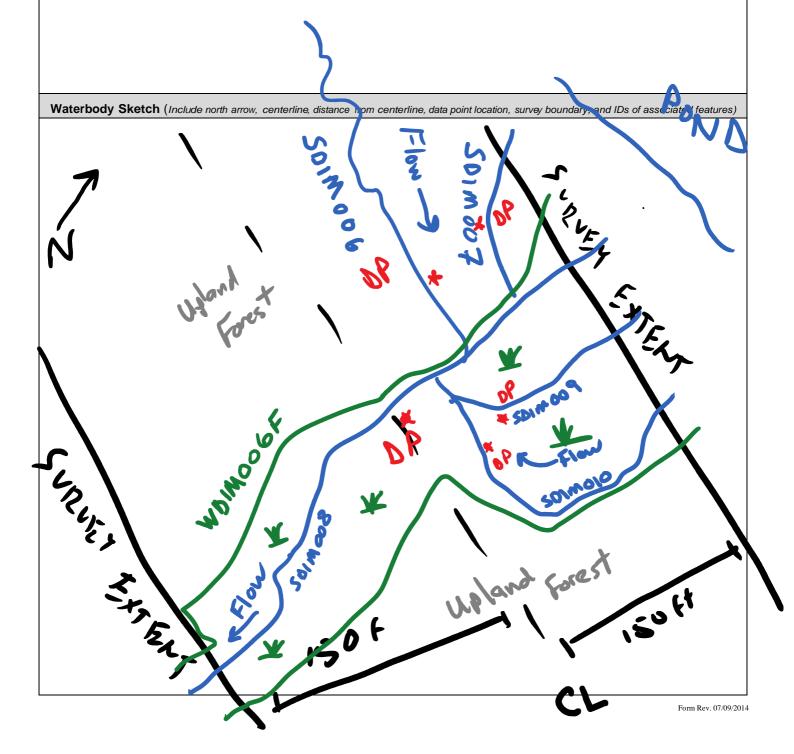
^a **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

FLOW IS TO THE EAST-SOUTHEAST. STREAM CHARACTERISTICS ARE HIGHLY VARIABLE. FLOWS INTO SDIM008





Waterbody point sdim010 facing across



Waterbody point sdim010 facing upstream



Waterbody point sdim010 facing downstream

Survey Description	า	haz			la.			
Project Name:	ina	Waterbody Na		بامماد		Waterbody ID:		Date:
Atlantic Coast Pipeli		UNT TO But		eek		SDIM011		9/3/2014
State:	County:		Company:		Crew	Member Initials	: Photos	:
Virginia	Dinwiddie		W&C		SG, I	EB	2821-	2823, X U D
Tract Number(s):			Nearest Mile	post:	•	Associated W	etland ID(s):	
13-007			246.19			WDIM007f		
Survey Type: (check one)	⊠Centerline	e □Re-F	Route	□Access Road	d	□Other:		
Physical Attributes	5							
Stream Classification: (check one)	⊠Ephemer	al □Inter	mittent	□Perennial				
Waterbody Type: (check one)	River 🗵 Str	ream Dito	:h □ Ca	anal 🗆 Other	:			
OHWM	OHWM Indica		⊠ Olasa iia				∇	
Width: <u>2</u> ft.	(спеск ан тагарр	y)		ie □Shelvin	ng	□Wrested vegetation	⊠Scourii	ng □Water staining
Height: <u>0.3</u> ft. N/A□	□Bent, i vegetatio	matted, or missin on	g □Wrack lin	ne ⊠Litter ai debris	nd	☐ Abrupt pland community ch		characteristic change
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterb Water Edge:	ody - V	Water Edge to	Depth of Wate (Approx.)	er:
3 ft.	-	ft.		N/A⊠	ft.		N/A⊠	ft.
Sinuosity:		velocity:		Bank height			Bank slope	
(check one) ☐ Straight	(Approx.)		Right:			Righ	
		fps		Left:	<u>1</u> ft.		Le	50 degrees ft:
⊠Meanderir	N/A⊠				<u>1_</u> ft.			65 degrees
Qualitative Attribu	tes							
Water Appearance: (check one) ⊠	No water □	Clear □Turb			rface um	□Algal [mats	□Other:	
Substrate:	Bedrock ☐ Bo	oulder Cobb	le □ Grave	el ⊠ Sand □	⊠ Silt/	clay ⊠ Organic	☐ Other:	
(check all that apply) % of Substrate:	IA% NA	% NA %	NA %	85 %	<u>10</u> %	<u>5</u> %	<u>NA</u> %	
		'				<u> </u>		
Width of Riparian Zone	(check all tha	t apply)	⊠ Trees:		⊠ Sapli	ings/Shrubs:	⊠ Herbs	
<u>>100 ft</u> · N/A□	(approx.)	of Dominants:	<u>8</u> in.	-	<u>2</u> in.			
Dominant Bank Vegeta LOBLOLLY PINE, R	,	SWEET GUM	, IRONWO	OD, WILLOW	OAK,	JACK & THE	PULPITS,	NEW YORK FERN,
Aquatic Habitats (ex: su	bmerged or emerge	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	cks, large	e submerged wood,	, riffles, deep poo	ols):
NA								
Aquatic Organisms Ob	served (list):							
NA								
T&E Species Observed	(list):							
NA								
Disturbances (ex: livesto	ock access, manure	in waterbody, waste	e discharge pipe	es):				
Tributary is:								
(check one)	Natural	□ Ari	ificial, man-m	ade 🗆 Manip	ulated			
Stream Quality ^a : (check one)	☐ High		derate	⊠ Low				

Waterbody	ID
SDIM011	

Form Rev. 07/09/2014

^a **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:

FLOW IS TO THE SOUTHWEST. STREAM CHARACTERISTICS ARE VARIABLE.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) pland 50 Furest Somoll



Waterbody point sdim011 facing across



Waterbody point sdim011 facing upstream



Waterbody point sdim011 facing downstream

Survey Description	້ າ							
Project Name:		Waterbody Nan	ne:		W	aterbody ID:		Date:
Atlantic Coast Pipel	ine	UNT TO BUT	TERWOO	D CREEK	S	DIM014		9/5/2014
State:	County:		Company:		Crew N	Member Initials	: Photo	s:
Virginia	Dinwiddie		W&C		SG, E	EΒ	2930), 2931, 2933 x, u, d
Tract Number(s):			Nearest Mile	post:		Associated W	etland ID(s):	
13-007			247.35			WDIM011F	:	
Survey Type: (check one)	⊠Centerline	e □Re-R	oute	□ Access Road	I	□Other:		
Physical Attributes Stream Classification:	5							
(check one)	Ephemera	al ⊠Interi	mittent	□Perennial				
Waterbody Type: (check one)	River 🗵 Str	eam 🗆 Ditc	h □ Ca	anal 🗆 Other	:			
OHWM Width:	OHWM Indica (check all that appl		⊠ Clear lin on bank	e □Shelvin	g	□Wrested vegetation	⊠Scour	ing □Water staining
Height: 0.5_ft. N/A□	□Bent, r vegetatio	matted, or missinຸ ອກ	g □Wrack lir	ne ⊠Litter ai debris	nd	☐ Abrupt plan community ch		I characteristic change
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - T of Slope:		Width of Waterb Water Edge:	ody - W	ater Edge to	Depth of War	ter:
		_2_ft.			<u>1.5_</u> ft.		N/A□	<u>0.2</u> ft.
Sinuosity: (check one) ☐ Straight	Water (Approx.)	velocity:		Bank height Right:	3.5_ft.		Bank slope Rig	65 degrees
⊠Meanderin	ng N/A□			Left:	<u>2</u> ft.		L	eft: <u>80</u> degrees
Qualitative Attribu	tes							
Water Appearance: (check one)	No water ⊠0	Clear □Turbi			rface um	□Algal l	□Other:	
(check all that apply)		oulder 🗆 Cobb			⊠ Silt/ c	, ,		
	<u>NA</u> % <u>NA</u>	<u> </u>	6 <u>5</u> %	<u>40</u> %	<u>50</u> %	<u>5</u> %	<u>NA</u> %	
Width of Riparian Zone >100 ft N/A□	(check all that		[⊠] Trees: _6_in.		⊠ Saplir _3_in.	ngs/Shrubs:	⊠ Herb	S
Dominant Bank Vegeta LOBLOLLY PINE, O PEPPERBUSH, SE	SREEN ASH, S	SWEET GUM,	RED MAF	PLE, IRONWO	OD, H	OLLY, TULII	P TREE, G	REEN BRIAR,
Aquatic Habitats (ex: su DOWNED WOOD,	bmerged or emerge	d aquatic vegetatior		•	ks, large	submerged wood	, riffles, deep po	pols):
Aquatic Organisms Ob	served (list):							
CRAYFISH, FROGS	3							
T&E Species Observed NA	(list):							
Disturbances (ex: livesto	ock access, manure	n waterbody, waste	discharge pipe	s):				
Tributary is: (check one)	Natural	☐ Arti	ficial, man-ma	ade 🗆 Manip	ulated			
Stream Quality ^a : (check one)	☐ High	⊠ Mo	derate	□ Low				

^a 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.

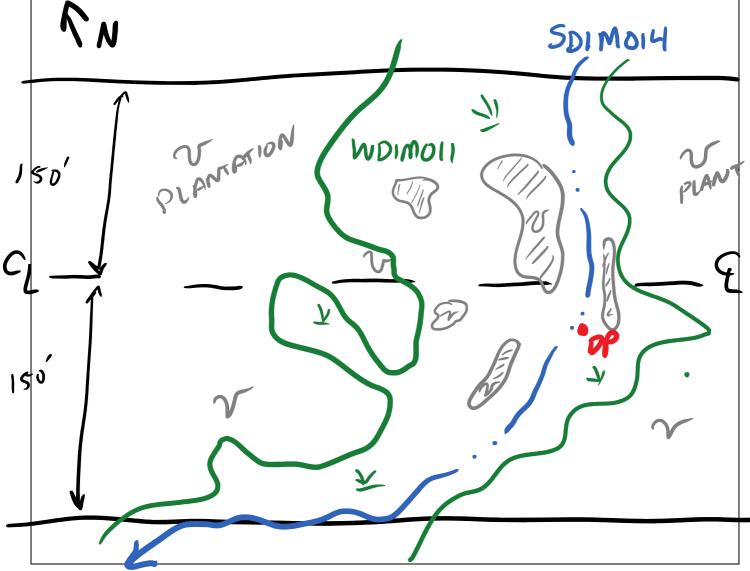
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate 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:

SMALL STREAM WITH FLOW TO SOUTH/SOUTHWEST. IDENTIFIED AS INTERMITTENT ON TOPO. ORIGINATES FROM HEADWATER WETLAND WDIM011. FLOW ON NORTH END FROM WETLAND DENDRITIC; BECOMES MORE CHANNELIZED JUST NORTH OF CENTERLINE. EXRTREMELY DENSE, BRIAR-FILLED UNDERSTORY.

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





Waterbody point sdim014 facing across



Waterbody point sdim014 facing upstream



Waterbody point sdim014 facing downstream

Survey Description	1							
Project Name:		Waterbody Nar				aterbody ID:		Date:
Atlantic Coast Pipeli	ne	UNT TO BU	TERWOO	D CREEK	SI	DIM013		9/4/2014
State:	County:	•	Company:		Crew N	lember Initials	: Ph	otos:
Virginia	Dinwiddie		W&C		SG, E			886-2888, X U D
Tract Number(s):			Nearest Mile	post:		Associated W		(s):
13-010			246.9			WDIM010F		
Survey Type: (check one)	⊠Centerline	e □Re-F	Route	□Access Road		□Other:		
Physical Attributes Stream Classification:	3							
(check one)	□Ephemera	al ⊠Inter	mittent	□Perennial				
Waterbody Type: (check one)	River ⊠ Str	eam □ Ditc	h □ Ca	anal Other	:			
OHWM Width:	OHWM Indica (check all that apply		⊠ Clear lin	e ⊠Shelvin	g	□Wrested vegetation	⊠So	couring
Height: 1_ft. N/A□	□Bent, r vegetatio	matted, or missin n	g □Wrack lii	ne ⊠Litter ar debris	nd	☐ Abrupt plan		Soil characteristic change
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - 7	Toe of Slope	Width of Waterbo	ody - W	ater Edge to	Depth of (Approx.)	Water:
_5_ft.		3_ft.			_2_ft.		N/A□	<u>0.1</u> ft.
Sinuosity: (check one)		velocity:		Bank height			Bank slop	ре
Straight	(Approx.)			Right:	2.5_ ft.			Right: 85 degrees
	_	_0.1_fps		Left:				Left:
⊠Meanderin	g N/A□				<u>3</u> ft.			90 degrees
Qualitative Attribut	tes							
Water Appearance: (check one)	No water ⊠0	Clear □Turb		een □Sui surface scu		□Algal mats	□Other:	
	Bedrock ☐ Bo	oulder Cobb	le ⊠ Grave	el 🗵 Sand 🛭	⊠ Silt/ c	lay 🗆 Organic	: 🗆 Oth	er:
(check all that apply) % of Substrate:	<u>IA</u> % <u>NA</u>	% <u>NA</u> %	% <u>10</u> %	<u>80</u> %	<u>10_</u> %	<u>NA</u> %	<u>NA %</u>	,
Width of Riparian Zone								
_>100_ft· N/A□	(check all that Avg. DBH (approx.)	of Dominants:	⊠ Trees: _ <u>15</u> _in.		⊠ Saplin _2_in.	ngs/Shrubs:	⊠H	erbs
Dominant Bank Vegeta	. ,							
AMERICA ELM, RE STILT GRASS	,	,	,	•		,	· ·	•
Aquatic Habitats (ex: su UNDERCUT BANK								p pools):
Aquatic Organisms Obs	served (list):			•				
FISH, CRAYFISH, F	ROGS							
T&E Species Observed NA	(list):							
Disturbances (ex: livesto	ck access, manure i	n waterbody, waste	discharge pipe	es):				
Tributary is: (check one)	⊠ Natural	□ Art	ificial, man-m	ade 🗆 Manipu	ulated			
Stream Quality ^a : (check one)	☐ High	⊠ Mo	derate	□ Low				

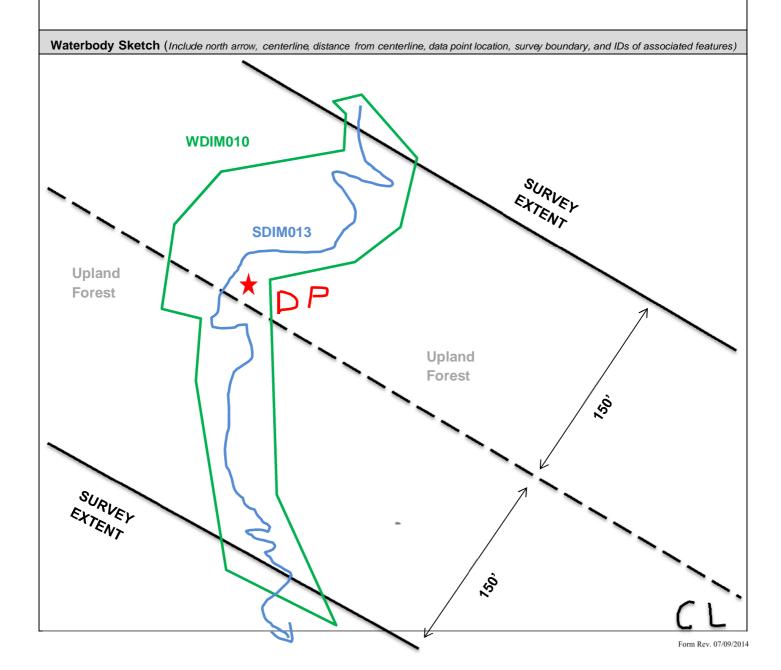
^a High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

SMALL INTERMITTENT STREAM THAT FLOWS TO THE SOUTH. SIGNIFICANT EROSION AROUND TREES JUST SOUTH OF CENTERLINE.





Waterbody point sdim013 facing across



Waterbody point sdim013 facing upstream



Waterbody point sdim013 facing downstream

Survey Description	n							
Project Name:		Waterbody Nan				aterbody ID:		Date:
Atlantic Coast Pipel	ine	UNT TO BUT	TERWOO	D CREEK	S	DIM012		9/4/2014
State:	County:		Company:		Crew N	Member Initials	: Photos:	
Virginia	Dinwiddie		W&C		SG, E	:B	2829-2	831, X U D
Tract Number(s):			Nearest Mile	post:		Associated W	• •	
13-010			247.17			WDIM008 8	& WDIM009	
Survey Type: (check one)	⊠Centerline	e □Re-R	oute	□ Access Road	l	□Other:		
Physical Attributes Stream Classification:	S							
(check one)	□Ephemera	al ⊠Interi	mittent	□Perennial				
Waterbody Type: (check one)	River ⊠ Str	eam 🗆 Ditc	h □ Ca	anal 🗆 Other	:			
OHWM Width: 4 ft.	OHWM Indica (check all that appl		⊠ Clear lin on bank	e ⊠Shelvin	g	□Wrested vegetation	⊠Scouring	g □Water staining
Height: 0.5 ft.	□Bent, r vegetatio	matted, or missinຸ ກ	g □Wrack lir	ne ⊠Litter ar debris	nd	☐ Abrupt plan community ch		naracteristic change
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - T		Width of Waterb	ody - W	ater Edge to	Depth of Water (Approx.)	:
		_4ft.			_2_ft.			<u>0.3</u> ft.
Sinuosity: (check one) ☐Straight	Water (Approx.)	velocity:			<u>2.5_</u> ft.		Bank slope Right	50 degrees
⊠Meanderir	ng N/A□			Left:	<u>3</u> ft.		Left	: _ <u>65_</u> degrees
Qualitative Attribu	tes							
Water Appearance: (check one)	[]] No water ⊠0	Clear □Turbi	-	een □Sui surface scu		□Algal [mats	□Other:	
	Bedrock 🗆 Bo	ulder Cobb	e 🗵 Grave	el 🛭 Sand	⊠ Silt/ c	lay 🗆 Organic	Other:	
(check all that apply) % of Substrate:	<u>NA</u> % <u>NA</u>	% <u>NA</u> %	<u>10</u> %	<u>85</u> %	<u>5</u> %	<u>NA</u> %	<u>NA</u> %	
Width of Riparian Zone >100 ft N/A□	(check all that	,	[⊠] Trees: _12_in.		⊠ Saplir _2_in.	ngs/Shrubs:	⊠ Herbs	
Dominant Bank Vegeta AMERICA ELM, RE	tion (list):	MAPLE, POIS	ON IVY, XI	MAS FERN, IR	RONW	OOD, CORN	l,	
Aquatic Habitats (ex: su UNDERCUT BANK				•		submerged wood	, riffles, deep pools	s):
Aquatic Organisms Ob	served (list):							
FISH, CRAYFISH, \	WATER STRIE	ERS, FROG	3					
T&E Species Observed	(list):							
Disturbances (ex: livesto	ock access, manure i	n waterbody, waste	discharge pipe	s):				
Tributary is: (check one)	⊠ Natural	□ Arti	ficial, man-ma	ade 🗆 Manipi	ulated			
Stream Quality ^a : (check one)	⊠ High	□ Мо	derate	□ Low				

Waterbody	ID
SDIM012	

Form Rev. 07/09/2014

^a 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:

SMALL STREAM IDENTIFIED AS INTERMITTENT ON TOPO BUT APPEARS TO BE PERENNIAL. PORTION OF RIPARIAN ZONE IS USED AGRICULTURALLY.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) nomoose WDIM OOPE 150 Forested



Waterbody point sdim012 facing across



Waterbody point sdim012 facing upstream



Waterbody point sdim012 facing downstream

Survey Description	, 1							
Project Name:	•	Waterbody Na	ne:		W	/aterbody ID:		Date:
ATLANTIC COAST	PIPELINE	UNT TO BU		D CREEK	S	DIM015		9/6/2014
State:	County:		Company:		Crew I	Member Initials	: Photos	:
Virginia	Dinwiddie		W&C		SG, E	В	2947-	2949, X U D
Tract Number(s):			Nearest Mile	epost:		Associated W	etland ID(s):	
13-011			247.25			WDIM012f		
Survey Type: (check one)	⊠Centerline	e □Re-F	Route	□ Access Road	d	□Other:		
Physical Attributes	3							
Stream Classification: (check one)	⊠Ephemer	al □Inter	mittent	□Perennial				
Waterbody Type: (check one)	River 🗵 Stı	ream Dito	:h □ Ca	anal 🗆 Other	r:			
OHWM Width:	OHWM Indica (check all that app			e □Shelvin	ng	□Wrested vegetation	⊠Scouri	ng ⊠Water staining
Height: 0.3 ft. N/A□	□Bent, i vegetatio	matted, or missin on	g □Wrack lir	ne ⊠Litter ar debris	nd	☐ Abrupt plant community ch		characteristic change
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterb Water Edge:	ody - W	later Edge to	Depth of Wate (Approx.)	er:
ft.		<u>2</u> ft.			<u>1</u> ft.		N/A□	<u>0.1</u> ft.
Sinuosity: (check one) ⊠ Straight	Water (Approx.	velocity: 0.05_fps		Bank height Right: Left:	<u>0.5</u> ft.		Bank slope Righ Le	45 degrees
□Meanderin	ng N/A□				<u>0.3_</u> ft.		Le	30 degrees
Qualitative Attribu	tes							
Water Appearance: (check one)	No water ⊠	Clear □Turb			ırface um	□Algal [mats	□Other:	
(check all that apply)	Bedrock □ Bo	oulder □ Cobb % <u>NA</u> %	le □ Grave		⊠ Silt/ c	clay ⊠ Organic	□ Other:	
Width of Riparian Zone	: Vegetativ	e Layers:						
_ <u>>100_ft</u> · N/A□	(check all tha Avg. DBH (approx.)	of Dominants:	[⊠] Trees: <u>12</u> in.		⊠ Saplir _1_in.	ngs/Shrubs:	⊠ Herbs	
Dominant Bank Vegeta GREEN ASH, TULI CHRISTMAS FERN	P TREE, LOBI	LOLLY PINE,	SWEET G	UM, IRONWO	OD, R	OYAL FERN	, SENSITIV	E FERN,
Aquatic Habitats (ex: su OVERHANGING VE	bmerged or emerge	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	cks, large	submerged wood,	, riffles, deep poo	ols):
Aquatic Organisms Ob	served (list):							
FROGS, CRAYFISH								
T&E Species Observed NA	(list):							
Disturbances (ex: livesto	ock access, manure	in waterbody, waste	e discharge pipe	es):				
NA								
Tributary is: (check one)	⊠ Natural	□ Art	ificial, man-m	ade 🗆 Manip	ulated			
Stream Quality ^a : (check one)	☐ High	□ Mc	oderate	⊠ Low				

Form Rev. 07/09/2014

^a **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:

FLOW IS TO THE EAST. WETLAND HEADWATER. MINOR FLOW LIKELY FROM RAIN EVENT THE EVENING BEFORE (09-05-14). CHANNEL BECOMES MORE SANDY AS IT HEADS EAST.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Farest 50 fusiand Forest



Waterbody point sdim015 facing across



Waterbody point sdim015 facing upstream



Waterbody point sdim015 facing downstream

Survey Descriptio	n							
Project Name:		Waterbody Nar				aterbody ID:		Date:
Atlantic Coast Pipel	ine	UNT TO BUT	TERWOO	D CREEK	S	DIM016		9/6/2014
State:	County:		Company:		Crew N	lember Initials	: Phot	os:
Virginia	Dinwiddie		W&C		SG, E	EΒ	295	2-2954, X U D
Tract Number(s):	1		Nearest Mile	post:		Associated W	etland ID(s):
13-011, 13-012			247.35			NA		
Survey Type: (check one)	⊠Centerlin	e □Re-F	loute	□ Access Road	i	□Other:		
Physical Attribute Stream Classification:	S							
(check one)	⊠Ephemer	al □Inter	mittent	□Perennial				
Waterbody Type: (check one)	River ⊠ St	ream Ditc	h □ Ca	ınal □ Other	:			
OHWM Width:	OHWM Indica (check all that app		⊠ Clear lin on bank	e □Shelvin	ıg	□Wrested vegetation	⊠Sco	uring ⊠Water staining
Height: 0.3 ft.	□Bent, vegetatio	matted, or missing	g □Wrack lir	ne ⊠Litter a debris	nd	☐ Abrupt plan community ch		oil characteristic change
Width of Waterbody - 1 Bank to Top of Bank:		of Waterbody - 7		Width of Waterb Water Edge:	ody - W	ater Edge to	Depth of W	ater:
10 ft.		_2_ft.			<u>1</u> ft.		N/A□	<u>0.1</u> ft.
Sinuosity: (check one) ⊠ Straight	Water (Approx.	velocity:) <u>0.1fps</u>		Bank height Right: Left:	<u>2_</u> ft.			ight: 35 degrees Left:
□Meanderi	ng N/A□				<u>5</u> _ft.			80 degrees
Qualitative Attribu	ites							
Water Appearance: (check one)	[]] No water ⊠	Clear □Turb	-		rface um	□Algal mats	□Other:	
Substrate: [check all that apply)	Bedrock □ Be	oulder Cobb	le 🗆 Grave	el 🗵 Sand	⊠ Silt/ c	lay 🛭 Organic	□ Other	:
là	<u>NA</u> % <u>NA</u>	% <u>NA</u> %	<u>NA</u> %	<u>65</u> %	<u>30</u> %	<u>5</u> %	<u>NA</u> %	
Width of Riparian Zone >100 ft N/A□	(check all tha	re Layers: at apply) I of Dominants:	[⊠] Trees: _14_in.		⊠ Saplir _2_in.	ngs/Shrubs:	⊠ Her	bs
Dominant Bank Vegeta AMERICN BEECH,	• /	, LOBLOLLY F	PINE, AME	RICAN HOLLY	/, CHR	RISTMAS FE	RN,	
Aquatic Habitats (ex: so	ubmerged or emerge	ed aquatic vegetation	n, overhanging l	oanks/roots, leaf pag	ks, large	submerged wood	, riffles, deep	pools):
OVERHANGING V	EGETATION,	DOWNED WO	OOD					
Aquatic Organisms Ob	served (list):							
FROGS, CRAYFISH								
T&E Species Observed NA	l (list):							
Disturbances (ex: livesto	ock access, manure	in waterbody, waste	discharge pipe	s):				
Tributary is: (check one)	⊠ Natural	☐ Art	ificial, man-ma	ade 🗆 Manip	ulated			
Stream Quality ^a : (check one)	☐ High	□ Мо	derate	⊠ Low				

Form Rev. 07/09/2014

^a 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 IN OPEN UPPER CANOPY/DENSE MID-TORY PINE PLANTATION. FLOW IS TO THE EAST. MINOR FLOW LIKELY FROM RAIN EVENT THE EVENING BEFORE (09-05-14), ALTHOUGH A POSSIBLE SEEP ALONG STREAMBANK APPROX 100 FT EAST OF CENTERLINE MAY PROVIDE SOME CONTINUOUS FLOW. WATER FLOW SUB-SURFACE IN SEVERAL LOCATIONS. CHANNEL ALTERED 75 FT EAST OF CENTERLINE BY MAJOR TREE BLOWDOWN ALONG CHANNEL BANK.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Forest mois pland 50 Fupland Forest



Waterbody point sdim016 facing across



Waterbody point sdim016 facing upstream



Waterbody point sdim016 facing downstream

Survey Descriptio	n							
Project Name:		Waterbody Nan			W	aterbody ID:		Date:
Atlantic Coast Pipe	line	UNT TO BUT	TERWOO	D CREEK	S	DIM017		9/6/2014
State:	County:		Company:		Crew N	Member Initials	: Pho	tos:
Virginia	Dinwiddie		W&C		SG, E	В	29	68-2970, X U D
Tract Number(s):			Nearest Mile	post:		Associated W	etland ID(s	s):
13-013			247.36			WDIM013f		
Survey Type: (check one)	⊠Centerline	e □Re-R	oute	□Access Road	I	□Other:		
Physical Attribute Stream Classification:	s							
(check one)	⊠Ephemera	al □Interi	mittent	□Perennial				
Waterbody Type:	□River ⊠ Str	eam 🗆 Ditc	h □ Ca	anal 🗆 Other	:			
OHWM Width: 2 ft.	OHWM Indica (check all that appl		⊠ Clear lin on bank	e □Shelvin	g	□Wrested vegetation	⊠Sco	ouring ⊠Water staining
Height: 0.3 ft.	□Bent, r vegetatio	matted, or missing	g □Wrack lir	ne ⊠Litter a debris	nd	□ Abrupt plan community ch		Soil characteristic change
Width of Waterbody - 1 Bank to Top of Bank:				Width of Waterb	ody - W	ater Edge to	Depth of V	Vater:
6 ft.		of Slope: 2_ft.		_).5ft.		N/A□	<u>0.1</u> ft.
Sinuosity: (check one) ☐Straight	Water (Approx.)	velocity:		N/A D Bank height Right:	_ <u>4_</u> ft.		Bank slop F	e Right: 60 degrees Left:
⊠Meanderi	ng N/A□			20111	<u>3</u> ft.			70 degrees
Qualitative Attribu	ites							
Water Appearance: (check one)	[□] No water ⊠0	Clear □Turbi	-		rface um	□Algal [mats	□Other:	
(check all that apply)	Bedrock □ Bo	oulder □ Cobb % <u>NA</u> %	le □ Grave		⊠ Silt/ c 25_%	lay ⊠ Organic	□ Othe	r:
Width of Riparian Zone	e: Vegetative	e lavers						
>100 ft N/A□	(check all that		[⊠] Trees: _ <u>9</u> _in.		⊠ Saplir _2_in.	ngs/Shrubs:	⊠ He	erbs
Dominant Bank Vegeta AMERICN BEECH,	,	IRONWOOD	, AMERICA	AN HOLLY, CH	HRISTI	MAS FERN,		
Aquatic Habitats (ex: s	ubmerged or emerge	d aquatic vegetation	, overhanging I	banks/roots, leaf pac	ks, large	submerged wood	, riffles, deep	pools):
OVERHANGING B	ANKS/ROOTS	, DOWNED W	/OOD					
Aquatic Organisms Ob	served (list):							
FROGS, CRAYFISH								
T&E Species Observed NA	l (list):							
Disturbances (ex: livest	ock access, manure	n waterbody, waste	discharge pipe	es):				
Tributary is: (check one)	Natural	☐ Arti	ficial, man-ma	ade 🗆 Manip	ulated			
Stream Quality ^a : (check one)	☐ High	□ Мо	derate	⊠ Low				

Form Rev. 07/09/2014

^a **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:

FLOW IS TO THE EAST. VERY MINOR WATER FLOW UPSTREAM FROM WDIM013f LIKELY FROM RAIN EVENT THE EVENING BEFORE (09-05-14), ALTHOUGH A POSSIBLE SEEP ALONG STREAMBANK NORTH OF WDIM013F AND SOUTH OF CENTERLINE MAY PROVIDE SOME CONTINUOUS FLOW. WATER FLOW SUB-SURFACE IN A FEW LOCATIONS.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) pland 50 Fusiand Forest



Waterbody point sdim017 facing across



Waterbody point sdim017 facing upstream



Waterbody point sdim017 facing downstream

Survey Description	, 1						
Project Name:	•	Waterbody Na	me:		Waterbody	/ ID:	Date:
Atlantic Coast Pipeli	ine	UNT TO BU	TTERWOO	D CREEK	SDIM018	3	9/6/2014
State:	County:	"	Company:		Crew Member I	nitials:	Photos:
Virginia	Dinwiddie		W&C		SG, EB		3017-3019, X U D
Tract Number(s):			Nearest Mile	epost:	Associa	ted Wetland	ID(s):
13-013			247.62		WDIM	015f	
Survey Type: (check one)	⊠Centerlir	ne □Re-l	Route	□Access Road	I □Other:	1	
Physical Attributes Stream Classification:	8						
(check one)	⊠Epheme	ral □Inte	mittent	□Perennial			
Waterbody Type: (check one)	River ⊠ S	tream 🗆 Dito	ch 🗆 Ca	anal 🗆 Other	:		
OHWM Width:	OHWM Indic (check all that ap)			e □Shelvin	g □Wres vegetat		Scouring ⊠Water staining
Height: 0.3 ft. N/A□	⊠Bent, vegetat	matted, or missin	g □Wrack lii	ne ⊠Litter ar debris		pt plant nity change	□Soil characteristic change
Width of Waterbody - T Bank to Top of Bank:		of Waterbody -	Toe of Slope	Width of Waterb Water Edge:	ody - Water Edg	e to Depth	of Water:
<u>4</u> ft.		_2_ft.			<u>0</u> ft.	N/A⊠	<u>0.</u> ft.
Sinuosity: (check one) ☐ Straight	Water (Approx	r velocity:) <u>0_</u> fps		Bank height Right: Left:	<u>2_</u> ft.	Bank	slope Right: 80 degrees Left:
⊠Meanderir	ng N/A⊠			20111	<u>2_</u> ft.		80 degrees
Qualitative Attribu	tes						
Water Appearance: (check one)	No water ⊠	lClear □Turb		een □Su surface scu	0		r:
(check all that apply)	l Bedrock □ B	Soulder □ Cobb <u>NA</u> %	ole □ Grave		⊠ Silt/ clay ⊠ C	J	Other:
Width of Riparian Zone	· Vegetativ	ve Layers:					
>100 ft· N/A□	(check all th		⊠ Trees: _12_in.		⊠ Saplings/Shrub _2_in.	os:	☑ Herbs
Dominant Bank Vegeta AMERICAN BEECH AMERICAN HOLLY	I. LOBLOLLY	PINE, WHITE S FERN. GRE	OAK, REI	O OAK, PAW-F	PAW, RED MA	APLE, TUL	IP TREE, IRONWOOD,
Aquatic Habitats (ex: su OVERHANGING BA	bmerged or emerg	ed aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large submerge	d wood, riffles,	deep pools):
Aquatic Organisms Ob	served (list):						
CRAYFISH							
T&E Species Observed NA	(list):						
			P. 1				
Disturbances (ex: liveston NA	ск access, manure	ın waterbody, wastı	e aiscnarge pipe	es):			
Tributary is:		□ Ar	tificial, man-m	ade □ Manip	ulated		
Stream Quality ^a : (check one)	☐ High	□ Mc	oderate	⊠ Low			

Form Rev. 07/09/2014

^a 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:

IN AEEA OF TWO CONVERGING SMALL RAVINES. FLOW IS TO THE SOUTH. SMALL AREAS OF STANDING WATER LIKELY FROM RAIN EVENT THE EVENING BEFORE (09-05-14); NO FLOW. CHANNEL SUBSURFACE IN A FEW LOCATIONS.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) WDIA015F SOI MOIS



Waterbody point sdim018 facing across



Waterbody point sdim018 facing upstream



Waterbody point sdim018 facing downstream

Survey Description	1							
Project Name:		Waterbody Nai	me:		W	/aterbody ID:		Date:
Atlantic Coast Pipeli	ne	UNT			S	DIM019		9/9/2014
State:	County:		Company:		Crew I	Member Initials	:	Photos:
3	Dinwiddie		W&C		SG, E			3032-3034, X U D
Tract Number(s):			Nearest Mile	epost:		Associated W	etland	ID(s):
13-013			248.2			WDIM016f		
Survey Type: (check one)	⊠Centerline	□Re-F	Route	□Access Road	<u> </u>	□Other:		
Physical Attributes Stream Classification:	.							
(check one)	⊠Ephemera	ıl □Inter	mittent	□Perennial				
Waterbody Type: (check one)	River ⊠ Str	eam 🗆 Dito	ch □ Ca	anal 🗆 Other	:			
OHWM Width:	OHWM Indicat (check all that apply			ne ⊠Shelvin	g	⊠Wrested vegetation	\boxtimes	Scouring ⊠Water staining
Height: 0.3 ft. N/A□	□Bent, n vegetatio	natted, or missin n	g □Wrack li	ne ⊠Litter ar debris	nd	□ Abrupt plan community ch		☐ Soil characteristic change
Width of Waterbody - To Bank to Top of Bank:		of Waterbody -	Toe of Slope	Width of Waterb	ody - W	ater Edge to	Depth (Approx.)	of Water:
3 ft.	_	ft.		_ N/A⊠	<u>0</u> ft.		N/A⊠	<u>0.</u> ft.
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height Right:	<u>0.5_</u> ft.		Bank s	lope Right: 60 degrees Left:
⊠Meanderin	9 N/A⊠				<u>0.5_</u> ft.			60 degrees
Qualitative Attribut	tes							
Water Appearance: (check one)	No water □C	Clear □Turb		een □Sui surface scu		□Algal mats	□Other	:
(check all that apply)	Bedrock □ Bo		le □ Grave <u>NA</u> %		⊠ Silt/ o	clay ⊠ Organio		Other: _%
Width of Riparian Zone >100 ft N/A□	(check all that		⊠ Trees _ <u>7</u> _in.		⊠ Saplir _ <u>2</u> _in.	ngs/Shrubs:	×	Herbs
Dominant Bank Vegetar WHITE OAK, RED (, ,	GUM, RED M	MAPLE, FLO	OWERING DO	GWO	OD, SEDGE	S, SPI	HAGNUM,
Aquatic Habitats (ex: su	bmerged or emerged	d aquatic vegetation	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, o	deep pools):
Aquatic Organisms Obs	served (list):							
NA								
T&E Species Observed	(list):							
NA								
Disturbances (ex: livesto	ck access, manure i	n waterbody, waste	e discharge pipe	es):				
Tributary is: (check one)	Natural	□ Art	ificial, man-m	ade 🗆 Manip	ulated			
Stream Quality ^a : (check one)	☐ High	□ Mc	oderate	⊠ Low				

Waterbody ID: SDIM019

^a 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:

FLOW IS TO THE EAST-NORTHEAST FROM A HEADWATER WETLAND WDIM016. DENDRITIC DRAINAGE FORMS A CHANNEL IN THE WETLAND. THE CHANNEL BECOMES DEEPER AND BANK WIDTH BECOMES MUCH WIDER (UP TO ~20') APPROXIMATELY 40' EAST/DOWNSTREAM OF CENTERLINE. SHELVING WITH WETLAND VEGETATION IS LOCATED TYPICALLY WHERE THE BANK WIDTH WIDENS.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Apland Gores SOIM 019 MOINSIPE Form Rev. 07/09/2014



Waterbody point sdim019 facing Southwest and upstream



Waterbody point sdim019 facing Northeast and downstream



Waterbody point sdim019 facing Southeast and across

Survey Description	on							
Project Name:	JII	Waterbody Nan	ne:		W	aterbody ID:		Date:
Atlantic Coast Pipe	eline	UNT to Butte	rwood Cree	ek	s	DIM020		9/9/2014
State:	County:		Company:		Crew N	Member Initials	: Phot	os:
Virginia	Dinwiddie		W&C		SG, E	:B	305	6-3058, X U D
Tract Number(s):	<u>.</u>		Nearest Mile	oost:		Associated W	etland ID(s)):
13-014			248.67			WDIM018f		
Survey Type: (check one)	⊠Centerlin	e □Re-R	loute	□Access Road	d	□Other:		
Physical Attribute	es							
Stream Classification (check one)	: ⊠Ephemer	ral □Interi	mittent	□Perennial				
Waterbody Type: (check one)	□River ⊠ St	ream Ditc	h □ Ca	nal □ Othe	r:			
OHWM Width: 2 ft.	OHWM Indica (check all that app		□ Clear line on bank	e □Shelvir	ng	□Wrested vegetation	⊠Scoı	uring ⊠Water staining
Height: 0.1 ft.	□Bent, vegetatio	matted, or missinç on	g □Wrack lin	e ⊠Litter a debris	ınd	☐ Abrupt plan		oil characteristic change
Width of Waterbody -		of Waterbody - T			ody - W	ater Edge to	Depth of W	ater:
Bank to Top of Bank:		e of Slope:		Water Edge:	<u>1_</u> ft.		N/A□	<u>0.1</u> ft.
Sinuosity: (check one) □Straight	Water (Approx.	velocity:) <u>0.1fps</u>		N/A Bank height Right:	<u>0.2</u> ft.			ght: 25 degrees Left:
⊠Meande	ring N/A□			Leit.	<u>0.2</u> ft.			25 degrees
Qualitative Attrib	utes							
Water Appearance: (check one)	□No water ⊠	Clear □Turbi			urface cum	□Algal mats	□Other:	
(check all that apply)		oulder Cobb			⊠ Silt/ c	,		:
	<u>NA</u> % <u>NA</u>		<u>NA </u> %	<u>30</u> %	<u>50</u> %	<u>20</u> %	<u>NA</u> %	
Width of Riparian Zor <u>>100 ft</u> · N/A□	(check all tha		⊠ Trees: _6_in.		⊠ Saplir _2_in.	ngs/Shrubs:	⊠ Her	bs
Dominant Bank Vege BROOKSIDE ALD PINE. HOLLY	` ′	LE, WILLOW,	FALSE NE	TTLE, JEWE	L WEE	D, SWEET (GUM, TUL	IP TREE, LOBLOLLY
Aquatic Habitats (ex:	submerged or emerge	ed aquatic vegetation	n, overhanging b	anks/roots, leaf pa	cks, large	submerged wood	, riffles, deep	pools):
Aquatic Organisms O	bserved (list):							
FROGS, CRAYFIS	SH							
T&E Species Observe NA	ed (list):							
Disturbances (ex: lives	stock access, manure	in waterbody, waste	discharge pipes	s):				
Tributary is: (check one)	⊠ Natural	□ Arti	ificial, man-ma	ıde 🗆 Manip	oulated			
Stream Quality ^a : (check one)	☐ High		derate	⊠ Low				

Waterbody ID: SDIM020

Form Rev. 07/09/2014

a 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:

FLOW IS TO THE EAST. STREAM CHARACTERISTICS ARE VARIABLE AND DIMINISH TOWARDS THE HEADWATER.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) Apland Gorest 501mo20 pland | Forest 150 ft



Waterbody point sdim020 facing West and upstream



Waterbody point sdim020 facing East and downstream



Waterbody point sdim020 facing South and across

Survey Description	1							
Project Name:		Waterbody Nan				aterbody ID:		Date:
Atlantic Coast Pipeli	ne	UNT to Butte	rwood Cre	ek	SI	DIM021		9/9/2014
State:	County:		Company:		Crew N	lember Initials	: Р	Photos:
g	Dinwiddie		W&C		SG, E			3056-3058, X U D
Tract Number(s):			Nearest Mile	post:		Associated W	etland I	ID(s):
13-014			248.84			WDIM019f		
Survey Type: (check one)	⊠Centerline	e □Re-R	oute	□Access Road		□Other:		
Physical Attributes Stream Classification:	3							
(check one)	□Ephemera	al ⊠Interr	mittent	□Perennial				
Waterbody Type: (check one)	River ⊠ Str	eam 🗆 Ditcl	h □ Ca	anal 🗆 Other	:			
OHWM Width:	OHWM Indica (check all that appl)		⊠ Clear lin on bank	e ⊠Shelvin	g	□Wrested vegetation	$\boxtimes \S$	Scouring
Height: 0.5 ft. N/A	□Bent, r vegetatio	matted, or missing n	g □Wrack lir	ne ⊠Litter ar debris	nd	□Abrupt plan		☐Soil characteristic change
Width of Waterbody - To				Width of Waterb	ody - W	ater Edge to	Depth o	of Water:
Bank to Top of Bank:	to roe	of Slope:		Water Edge:			(Арргох.)	
<u>4</u> ft.	_	<u>2</u> ft.		<u>1</u> N/A□	<u>.5_</u> ft.		N/A□	<u>0.3</u> ft.
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height			Bank sl	lope
Straight	(дрргох.)			Right:	<u>2_</u> ft.			Right: 80 degrees
∑ Ma an danin	_	<u>0.1_</u> fps		Left:				Left:
⊠Meanderin	9 N/A□				<u>2_</u> ft.			<u>80</u> degrees
Qualitative Attribut	tes							
Water Appearance: (check one)	No water ⊠0	Clear □Turbi	-	een □Sui surface scu		□Algal I	□Other:	
	Bedrock ☐ Bo	oulder Cobb	le 🗆 Grave	el 🛛 Sand 🗈	⊠ Silt/ c	lay 🗆 Organic	: 🗆 0	ther:
(check all that apply) % of Substrate:	<u>NA</u> %	% <u>NA</u> %	<u>NA</u> %	<u>95</u> %	<u>5</u> %	<u>NA</u> %	NA	_%
Width of Riparian Zone			_					
_>100_ft· N/A□	(check all that Avg. DBH (approx.)	of Dominants:	⊠ Trees: _ <u>9</u> _in.		⊠ Saplin <u>_2</u> .in.	ngs/Shrubs:		Herbs
Dominant Bank Vegeta								
BROOKSIDE ALDE HOLLY	R, RED MAPL	.E, FALSE NE	TTLE, JEV	VEL WEED, S	WEET	GUM, TULI	P TRE	EE, LOBLOLLY PINE,
Aquatic Habitats (ex: su	bmerged or emerge	d aquatic vegetation	n, overhanging I	banks/roots, leaf pac	ks, large	submerged wood	, riffles, d	leep pools):
OVERHANGING BANKS	& ROOTS, SOM	E DEEPER POO	LS, VEGETA	TION COVER,				
Aquatic Organisms Obs	served (list):							
CRAYFISH, WATE	R STRIDERS,	FISH						
T&E Species Observed NA	(list):							
Disturbances (ex: livesto	ck access manure i	n waterhody waste	discharge nine	is):				
NA	on access, manufer	a.o.bouy, waste	a.oonargo pipe	~ _/ .				
Tributary is: (check one)	⊠ Natural	☐ Arti	ificial, man-ma	ade 🗆 Manipi	ulated			
Stream Quality ^a : (check one)	☐ High	⊠ Mo	derate	⊠ Low				

Waterbody	ID
SDIM021	

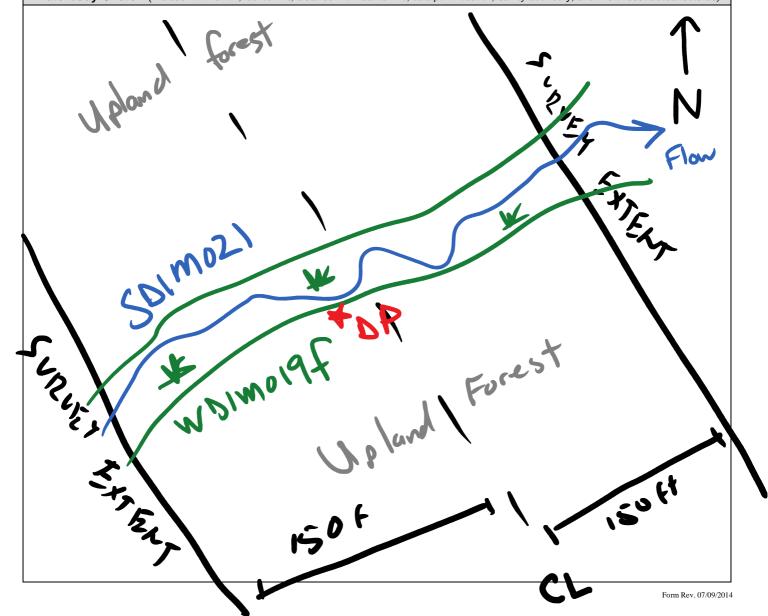
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate 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:

FLOW IS TO THE NORTHEAST.

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





Waterbody point sdim021 facing Southwest and upstream



Waterbody point sdim021 facing Northeast and downstream



Waterbody point sdim021 facing Northwest and across

Survey Description Project Name:	า	Waterbady Nor	no.		l\A/	otorbody ID:		Date:
		Waterbody Nar		-1-		aterbody ID:		
Atlantic Coast Pipeli	ine	UNT to Butte	rwood Cre	ек	So	dic016		2/5/2016
State:	County:	•	Company:		Crew N	lember Initials:	Photos	s:
Virginia	Dinwiddie		NRG		CR, S	Н	3	
Tract Number(s):			Nearest Mile	post:		Associated We	etland ID(s):	
13-014-A001			254	•		Wdic013	()	
Survey Type: (check one)				□ A Dd		□ Oth - **		
,	⊠Centerline	e □Re-F	coute	☐ Access Road		□Other:		
Physical Attributes Stream Classification:	S							
(check one)	□Ephemera	al ⊠Inter	mittent	□Perennial				
Waterbody Type: (check one)	River ⊠ Str	eam 🗆 Dito	h □ Ca	ınal 🗆 Other:				
OHWM	OHWM Indica							
Width: 6 ft.	(check all that apply	y)		e □Shelvin	g	□Wrested vegetation	□Scour	ing □Water staining
Height: 	□Bent, r vegetatio	matted, or missin on	g □Wrack lir	ne ⊠Litter ar debris	nd	☐ Abrupt plant community cha		characteristic change
Width of Waterbody - T			Toe of Slope	Width of Waterbo	ody - Wa		Depth of Wat	er:
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:		(.	Approx.)	
<u>12</u> ft.	_	<u>2</u> ft.		_ N/A□	<u>4</u> _ft.	1	N/A□	<u>0.2</u> ft.
Sinuosity:		velocity:		Bank height		E	Bank slope	
(check one) ⊠Straight	(Approx.)			Right:			Rig	
		_ <u>1_</u> fps		Left:	_4_ft.		Le	_ <u>80_</u> degrees eft:
⊠Meanderin	ng N/A□				_4_ft.			90 degrees
Qualitative Attribu	tes							
Water Appearance:								
(check one)	No water ⊠0	Clear □Turb	-	een □Sur surface scu		□Algal □ mats	∃Other:	
	Bedrock □ Bo	oulder Cobb	le 🗆 Grave	el ⊠ Sand □	⊠ Silt/ cl	ay 🗆 Organic	☐ Other:	
(check all that apply) % of Substrate:	%	%	%	% 90 %	10 %	%	%	
_			.70	70 <u>50</u> 70 _	10_70			
Width of Riparian Zone	: Vegetative (check all that		⊠ Troop	K	7 Conlin	ac/Chrubo:	⊠ Horbo	
<u>30 ft</u> -	Avg. DBH	of Dominants:	⊠ Trees: _ <u>12</u> _in.		⊴ Sapıın <u>_2_</u> in.	gs/Shrubs:		i
N/A□ Dominant Bank Vegeta	(approx.)							
Sweet-gum, loblolly	, ,	red oak, red	maple, Jap	anese honeys	suckle,	American ho	olly, Christr	mas fern, greenbrier
Aquatic Habitats (ex: su	bmerged or emerged	d aquatic vegetation	n, overhanging I	panks/roots, leaf pac	ks, large :	submerged wood,	riffles, deep po	ools):
Leaf packs								
Aquatic Organisms Ob	served (list):							
None								
T&E Species Observed	(list):							
None	,							
Disturbances (ex: livesto	ock access, manure i	n waterbody waste	discharge nine	s):				
None				-,				
Tributary is: (check one)	⊠ Natural	□ Art	ificial, man-ma	ade 🗆 Manipu	ulated			
Stream Quality ^a : (check one)	☐ High	⊠ Mo	derate	□ Low				

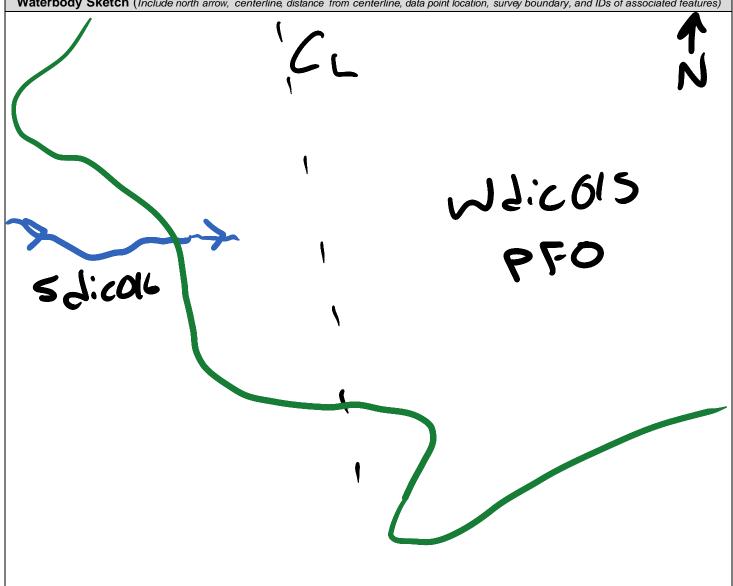
Waterbody	ID
Sdic016	

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:

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





Waterbody SDIC016 facing south upstream



Waterbody SDIC016 facing north downstream



Waterbody SDIC016 facing east across

Survey Description	1							
Project Name:		Waterbody Nar	ne:		W	aterbody ID:		Date:
Southeast Reliability	/	UNT to Butte	rwood Cre	ek	So	dic015		2/4/2016
State:	County:	•	Company:		Crew N	lember Initials:	Photos	:
9	Dinwiddie		NRG		CR, S		3	
Tract Number(s):			Nearest Mile	post:		Associated We	etland ID(s):	
13-019			254			Wdic011 &	wdic012	
Survey Type: (check one)	⊠Centerline	□Re-R	loute	□Access Road		□Other:		
Physical Attributes Stream Classification:	3							
(check one)	□Ephemera	ıl ⊠Inter	mittent	□Perennial				
Waterbody Type: (check one)	River Stre	eam 🗆 Ditc	h □ Ca	nal 🗆 Other:	:			
OHWM Width:	OHWM Indicat (check all that apply		⊠ Clear lin	e □Shelvin	g	□Wrested vegetation	□Scourir	ng □Water staining
Height: 	□Bent, n vegetatio	natted, or missing		ne ⊠Litter ar debris	nd	☐ Abrupt plant community cha		characteristic change
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - 7 of Slope:	•	Width of Waterbo Water Edge:	ody - Wa		Depth of Wate Approx.)	er:
<u>12</u> ft.	_	<u>1</u> ft.		_ N/A□	_2_ft.	N	√A□	ft.
Sinuosity: (check one) ☐Straight	Water v (Approx.)	/elocity: 1_fps		Bank height Right: Left:	<u>6</u> ft.	E	Bank slope Righ Le	70 degrees
⊠Meanderin	ng N/A□				<u>6</u> ft.			70 degrees
Qualitative Attribut	tes							
Water Appearance: (check one)	No water ⊠C	Clear □Turb	-	een □Sui surface scu		□Algal □ mats	Other:	
Substrate: (check all that apply) % of Substrate:	Bedrock □ Bo			l ⊠ Sand □	⊠ Silt/ cl	lay □ Organic%	☐ Other:%	
Width of Riparian Zone 30 ft N/A□	(check all that	•	⊠ Trees: _12_in.		⊠ Saplin _2_in.	ngs/Shrubs:	⊠ Herbs	
Dominant Bank Vegeta	tion (list):							
Sweet-gum, loblolly	pine, southern	red oak, red	maple, Jap	anese honeys	suckle,	American ho	olly, Christn	nas fern, greenbrier
Aquatic Habitats (ex: su					ks, large	submerged wood,	riffles, deep poo	ols):
Leaf packs, overhar	• •	iks, downed \	voody debr	TIS				
Aquatic Organisms Obs None	served (IIst):							
T&E Species Observed	(list):							
None								
Disturbances (ex: livesto	ock access, manure in	n waterbody, waste	discharge pipe	s):				
None								
Tributary is: (check one)	⊠ Natural	□ Art	ificial, man-ma	ade 🗆 Manipı	ulated			
Stream Quality ^a : (check one)	☐ High	⊠ Mo	derate	□ Low				

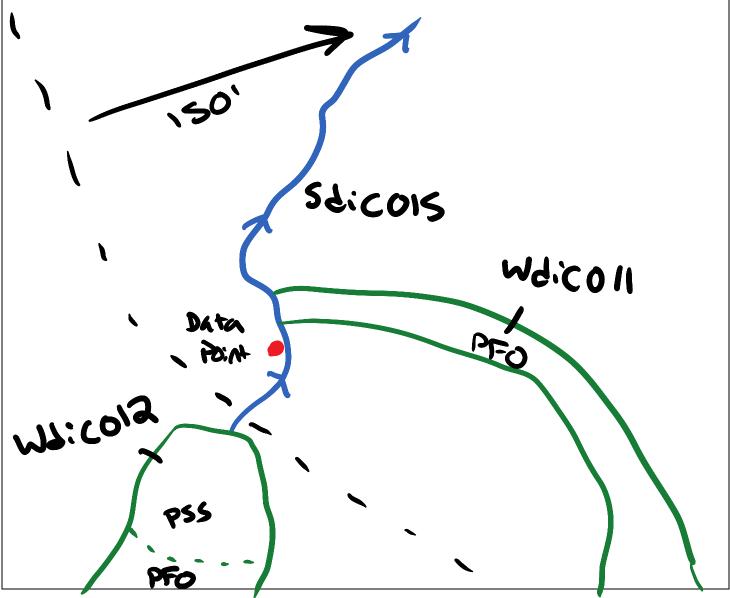
Waterbody	ID:
Sdic015	

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:

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





Waterbody SDIC015 facing southwest upstream



Waterbody SDIC015 facing north downstream



Waterbody SDIC015 facing east across

Survey Description Project Name:	1	Waterbody Nai	ne.		w	aterbody ID:		Date:
Southeast Reliability	/	UNT to Butte		ek		dic013		2/4/2016
State:	County:		Company:			Member Initials:	Photos	
	Dinwiddie		NRG		CR, S		3	•
Tract Number(s):	Diriwidale		Nearest Mile	nost:	CIX, S	Associated W		
13-019			254	post.		Wdic010	etianu ib(s).	
Survey Type: (check one)	⊠Centerline) t -	□ A D d		□ Oth a m		
		e □Re-F	Koute	□Access Road		□Other:		
Physical Attributes Stream Classification:	3							
(check one)	□Ephemera	al ⊠Inter	mittent	□Perennial				
Waterbody Type: (check one)	River ⊠ Str	eam 🗆 Dito	:h □ Ca	anal 🗆 Other:	1			
OHWM Width:	OHWM Indica (check all that apply		⊠ Clear lir	ne □Shelvin	g	□Wrested	□Scouri	
<u>3</u> ft.			on bank			vegetation		staining
Height:	□Bent, n vegetatio	natted, or missin on	g □Wrack li	ne ⊠Litter ar debris	nd	☐ Abrupt plant community ch		characteristic change
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterbo	ody - W		Depth of Wate (Approx.)	er:
·		•					учрегох.)	0.4. #
_ <u>15_</u> ft.	-	_1ft.		N/A□	_3_ft.	I	N/A□	<u>0.4</u> ft.
Sinuosity:		velocity:		Bank height			Bank slope	
(check one) □Straight	(Approx.)			Right:	12_ ft.		Righ	nt: 90 degrees
	_	<u>1.5</u> fps	i	Left:	<u> 12</u> 11.		Le	eft:
⊠Meanderin	lg N/A□			-	<u>12_</u> ft.			<u>80</u> degrees
Qualitative Attribut	tes							
Water Appearance: (check one)	No water ⊠0	Clear □Turb	-	een □Sur surface scu		□Algal [mats	□Other:	
Substrate:	Bedrock ☐ Bo	oulder Cobb	le 🗆 Grave	el 🗵 Sand 🛭	□ Silt/ cl	lay Organic	☐ Other:	
(check all that apply) % of Substrate:	%	%	%	% 100 %	%	%	%	
				,0 <u>100</u> ,0 _				
Width of Riparian Zone 20 ft	(check all that		⊠ Trees			igs/Shrubs:	⊠ Herbs	
N/A□	(approx.)	or Dominants.	<u>_10</u> _in.	_	_2_in.			
Dominant Bank Vegeta Sweet-gum, loblolly		red oak, red	maple, Ja	panese honeys	suckle,	American ho	olly, Christn	nas fern, greenbrier
Aquatic Habitats (ex: su	bmerged or emerged	d aquatic vegetation	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood,	riffles, deep po	ols):
Leaf packs				·		-		
Aquatic Organisms Ob	served (list):							
None								
T&E Species Observed None	(list):							
Disturbances (ex: livesto	ck access, manure i	n waterbody, waste	e discharge pipe	es):				
Flows out of culvert		-	5 . 1					
Tributary is:	□ Natural	□ Art	ificial, man-m	ade ⊠ Manipu	ulated			
Stream Quality ^a : (check one)	☐ High	⊠ Mo	derate	□ Low				

Waterbody	ID:
Sdic013	

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^a 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:

Banks are heavily downcut and under cut with few stabilizing roots. High erosion potential and much of the stream contain high aount of sedimentation

Waterbody Sketch (Include north arrow, certerline, distance from centerline, data point location, survey boundary, and IDs of associated features) w4:0010 51:0013 02:000



Waterbody SDIC013 facing south upstream



Waterbody SDIC013 facing north downstream



Waterbody SDIC013 facing west across

Survey Description Project Name:	า	Motorbody Nor			l\A/	otorbody ID:		Data
	·	Waterbody Nar		.		aterbody ID:		Date:
Atlantic Coast Pipel	ine	UNT to Butte	rwood Cre	ек	50	dic014		2/4/2016
State:	County:		Company:		Crew N	lember Initials:	Photos:	
Virginia	Dinwiddie		NRG		CR, S	SH.	3	
Tract Number(s):	l		Nearest Mile	post:	1	Associated We	tland ID(s):	
13-019			254			Wdic010		
Survey Type: (check one)	⊠Centerline	e □Re-F	Route	□Access Road		□Other:		
Physical Attributes								
Stream Classification: (check one)	□Ephemera	al ⊠Inter	mittent	□Perennial				
Waterbody Type: (check one)	River Str	eam 🗆 Ditc	h □ Ca	ınal 🗆 Other:				
OHWM Width:	OHWM Indica (check all that apply		⊠ Clear lin on bank	e □Shelvinç	g	□Wrested vegetation	□Scourin	g □Water staining
Height: 	□Bent, r vegetatio	matted, or missing		ne ⊠Litter ar debris	nd	☐ Abrupt plant community cha		characteristic change
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - 7 of Slope:		Width of Waterbo Water Edge:	ody - W		Depth of Wate	r:
ft.		_ <u>1_</u> ft.			<u>2</u> ft.	N	J/A□	<u>0.2</u> ft.
Sinuosity: (check one) ☐Straight	(Approx.)	velocity:		Bank height Right: Left:	<u>6</u> ft.	E	Bank slope Righ Lef	80 degrees
⊠Meanderir	ng N/A□				<u>4</u> ft.			60 degrees
Qualitative Attribu	tes							
Water Appearance: (check one)	No water ⊠0	Clear □Turb	-	een □Sur surface scu		□Algal □ mats	Other:	
Substrate: [check all that apply) % of Substrate:	Bedrock			el ⊠ Sand ☑ % <u>90</u> % _	⊠ Silt/ cl	lay □ Organic%	☐ Other:	
Width of Riparian Zone 20 ft N/A□	(check all that		⊠ Trees: _ <u>14</u> _in.		☑ Saplin _2_in.	ngs/Shrubs:	⊠ Herbs	
Dominant Bank Vegeta Sweet-gum, loblolly	, ,	n red oak, red	maple, Jap	panese honeys	suckle,	American ho	olly, Christm	as fern, greenbrier
Aquatic Habitats (ex: su Leaf packs		d aquatic vegetation	n, overhanging l	oanks/roots, leaf pacl	ks, large	submerged wood,	riffles, deep poo	ls):
Aquatic Organisms Ob None								
T&E Species Observed None	(list):							
Disturbances (ex: livesto	ck access, manure i	n waterbody, waste	discharge pipe	s):				
None	,	.,,	5-17-	,				
Tributary is: (check one)	Natural	□ Art	ificial, man-ma	ade 🗆 Manipu	ulated			
Stream Quality ^a : (check one)	☐ High	⊠ Mo	derate	□ Low				

Waterbody	ID
Sdic014	

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:

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

W4:000 12 S4:001 7

P8:0001

P8:0001

- 00:0001



Waterbody SDIC014 facing east upstream



Waterbody SDIC014 facing northwest downstream



Waterbody SDIC014 facing north across

Open Waterbody Data Sheet

Open waterboo	iy Data Sileet							
Survey Description	on							
Project Name:	Waterbody N	Name:	W	/aterbody ID:		Date:		
Southeast Reliability		pond			С	Odic001		2/4/2016
State:	County:		Company:		Crew N	Member Initials:	Photos:	
Virginia	Dinwiddie	viddie I		NRG CI		SH	3	
Tract Number(s):			Nearest Milepos	::	A	ssociated Wetland	ID(s):	
13-019-A001;13-0	19							
Survey Type: (check one)	⊠Centerline	e □F	Re-Route	□Access Ro	ad	□Other:		
Physical Attribut	es							
Waterbody Type:								1
	ck Pond Natural	Pond □ La	ike Reservoir		ent 🗆 (Oxbow 🛭 Other: R	Recreation	n pond
Hydrologic Regime:	□ Permanently	Flooded	Semipermanentl	y Flooded	Seaso	onally Flooded	Temporari	ly Flooded
ОНWМ	OHWM Indi							. –
Height:	(check all that ap	opiy)	☐ Clear li on bank	ne □She	elving	□Wrested vegetation	□Scou	uring □Water staining
ft.		, matted, or m	nissing □Wrack	□l i++	er and	•	. □Soil ch	aracteristic change
	vegeta		line	debris		community cha		iaracteristic criarige
Depth of Water:		Bank heig	ht (average):			Bank slope (aver	age):	
20	ft.		_28_	ft.			60 degree	es
N/A□	_					_		
Qualitative Attrib	utes							
Water Appearance:		Clear □1	Γurbid □She	on \Box	Surface	□Algal □0	Other:	
(Gricon Gric)	— No water 🔝	Cleal 🗆 i	on sur			mats — N	ouiei.	
Substrate:	☐ Bedrock ☐ Be	oulder \square C	obble Gravel	⊠ Sand	⊠ Silt	/ clay □ Organic	☐ Other:	
(check all that apply)	_ bearook _ b	Jaiaci 🗆 C	obbie - Giavei	△ Cana	<u> </u>	olay - Organio	□ Other.	
% of Substrate:	%	%	%	% <u>80</u> %	20 %	%%		%
Width of Riparian Zor			₽ -					
ft.	(check all that	арріу)	□ Trees:		⊠ Sapli	ings/Shrubs:	⊠ Her	bs
N/A⊠		of Dominant	s: _ <u>10</u> _in.		<u>2</u> in.			
Dominant Bank Vege	(approx.)							
Sycamore, loblolly	• ,	n holly						
	<u> </u>							
Aquatic Habitats (ex: s Submerged and e		-		, iear packs, iarge s	ubmergea	wood, rimes, deep pools, e	etc.).	
		mon, large						
Aquatic Organisms C	bserved (IIST):							
None	ad //aA.							
T&E Species Observe None	ea (IISt):							
Disturbances (ex: lives	stock access, manure	in waterbody, w	vaste discharge pipes):				
None								
Waterbody is: (check one)	☐ Natural		Artificial, man-ma	de □ Man	nipulated	1		
Waterbody Quality a:								
(check one)	☐ High		Moderate	\square Low				

Waterbody	ID:
Odic001	

^a **High Quality:** Natural, natural bank vegetation around entire waterbody; 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 by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank 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: 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:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point locations, survey boundary, and IDs of associated features) al:cool 1501

Form Rev. 07/09/2014

8



Open waterbody ODIC001 facing south



Open waterbody ODIC001 facing west

Survey Description	1							
Project Name:		Waterbody Nar	ne:		W	aterbody ID:		Date:
Southeast Reliability	/	UNT to Butte	rwood Cre	ek	S	dic012		2/3/2016
State:	County:		Company:		Crew N	lember Initials:	Photos	:
Virginia	Dinwiddie		NRG		CR, S	SH	3	
Tract Number(s):			Nearest Mile	post:		Associated We	etland ID(s):	
13-019-A001			254			Wdic007; w	dic008	
Survey Type: (check one)	⊠Centerline	e □Re-F	Route	□Access Road		□Other:		
Physical Attributes Stream Classification:	5							
(check one)	Ephemera	al ⊠Inter	mittent	□Perennial				
Waterbody Type: (check one)	River 🗵 Str	eam 🗆 Ditc	h 🗆 Ca	anal 🗆 Other:				
OHWM Width: 5 ft.	OHWM Indica (check all that apply		⊠ Clear lin	ie □Shelvinç	g	□Wrested vegetation	□Scourin	ng □Water staining
Height:	□Bent, r vegetatio	natted, or missin	g □Wrack lii	ne ⊠Litter an debris	nd	☐ Abrupt plant community cha		characteristic change
Width of Waterbody - To Bank to Top of Bank:		of Waterbody - 7	Toe of Slope	Width of Waterbo	ody - W		Depth of Wate	er:
		<u>2_</u> ft.			<u>4</u> _ft.		V/A□	<u>0.3</u> ft.
Sinuosity: (check one) □Straight ⊠Meanderin	(Approx.)	velocity: 0.3fps		Bank height Right: Left:	3_ft.	E	Bank slope Righ Le	60 degrees
	11/7				<u>3_</u> ft.			60 degrees
Qualitative Attribut Water Appearance:	ies							
	No water ⊠0	Clear □Turb	-	een □Sur surface scu		□Algal □ mats	□Other:	
Substrate: (check all that apply) % of Substrate:	Bedrock				⊠ Silt/ c 20_%	lay □ Organic %	☐ Other:	
Width of Riparian Zone 20 ft N/A□	(check all that		⊠ Trees: _ <u>10</u> _in.		☑ Saplin _2_in.	ngs/Shrubs:	⊠ Herbs	
Dominant Bank Vegeta	,							
Loblolly pine, sweet-gum, white oak, American holly, sycamore								
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):								
Leaf packs								
Aquatic Organisms Observed (list): None								
TOE Chasina Observed	(lint).							
T&E Species Observed None	(IIST):							
Disturbances (ex: livesto	ck access, manure i	n waterbody, waste	discharge pipe	es):				
Stream receives water from White Oak road and runs through a powerline right of way								
Tributary is: (check one)	☐ Natural	□ Art	ificial, man-m	ade ⊠ Manipu	ulated			
Stream Quality ^a : (check one)	☐ High	⊠ Mo	derate	□ Low				

Waterbody	ID:
Sdic012	

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: Waterbody Sketch (Include north allow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) 52:012, CL W2:0007 CAVERA



Waterbody SDIC012 facing southwest upstream



Waterbody SDIC012 facing northeast downstream



Waterbody SDIC012 facing northwest across

Survey Description	1								
Project Name:		Waterbody Name:			W	Waterbody ID:			9 :
Atlantic Coast Pipeli	ne	UNT to Butto	nwood Cre	eek	SI	DIB003		11/	11/2014
State:	County:		Company:		Crew N	Member Initials:	Pl	notos:	
Virginia	Dinwiddie		NRG		TP, S	Р	3	}	
Tract Number(s):			Nearest Mile	epost:		Associated We	etland II	O(s):	
13-019-A004			252.0			none			
Survey Type: (check one)	⊠Centerline	e □Re-F	Route	□Access Road		□Other:			
Physical Attributes Stream Classification:	<u> </u>								
(check one)	□Ephemera	al ⊠Inter	mittent	□Perennial					
Waterbody Type: (check one)	River ⊠ Str	eam □ Dito	:h □ Ca	anal					
OHWM Width: 3.0 ft.	OHWM Indica (check all that apply		⊠ Clear lin	ne □Shelving	g	□Wrested vegetation	□S	Scouring	□Water staining
Height:ft.	⊠Bent, n vegetatio	natted, or missin n	g □Wrack li	ne □Litter an debris	nd	□ Abrupt plant community cha		∃Soil chara	cteristic change
Width of Waterbody - To Bank to Top of Bank:			Toe of Slope	Width of Waterbo	ody - W		Depth of	f Water:	
		of Slope: _1.5ft.		Water Edge:	<u>2.0_</u> ft.		<i>Αρριοχ.)</i>	_0.2	<u>5</u> ft.
Sinuosity: (check one)	(Approx.)	velocity:1.0fps		Bank height Right: Left:	<u>5.0</u> ft.		Bank slo	Right: 9	0 degrees
⊠Meanderin	147.2			_	<u>5.0_</u> ft.			_9	0_degrees
Qualitative Attribut	tes								
Water Appearance: (check one)	No water ⊠C	Clear □Turb	-	een □Sur surface scu		□Algal □ mats	□Other:		
(check all that apply) % of Substrate:	Bedrock				⊠ Silt/ c <u>60</u> %	lay □ Organic %	□ Otl	her: %	
Width of Riparian Zone <u>>50 ft</u> ⋅ N/A□	(check all that		⊠ Trees: _ <u>12</u> _in.		☑ Saplin _2.0_in.	ngs/Shrubs:	□ H	Herbs	
Dominant Bank Vegetar Red maple, white oa		red cedar, so	ourwood, A	American holly,	Christ	tmas fern			
Aquatic Habitats (ex: su A few roots and poo			n, overhanging	banks/roots, leaf pack	ks, large	submerged wood,	riffles, de	eep pools):	
Aquatic Organisms Obs frogs	served (list):								
T&E Species Observed	(list):								
none									
Disturbances (ex: livesto None noted	ck access, manure i	n waterbody, waste	e discharge pipe	es):					
Tributary is:									
(check one) Stream Quality ^a :	Natural	□ Art	ificial, man-m	ade 🗆 Manipu	ulated				
(check one)	☐ High	⊠ Mc	derate	□ Low					

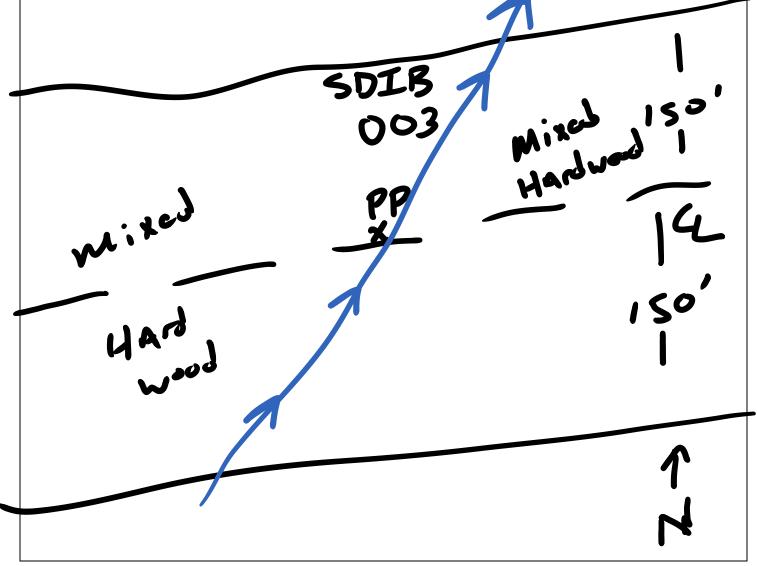
Waterbody	ID:
SDIB003	

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 is slightly to moderately incised, has good grade control, noted sediment transport and benches, also observed nick points, leaf packs, and iron oxidizing bacteria. Saw some evidence of bank failures.





Waterbody SDIB003 facing northeast upstream



Waterbody SDIB003 facing south downstream



Waterbody SDIB003 facing southeast across

Survey Description	1								
Project Name:	-	Waterbody Nar	Waterbody Name:			Waterbody ID:			
Atlantic Coast Pipeli	ne	UNT to Butto	nwood Cre	ek	SI	DIB002		11/1	1/2014
State:	County:		Company:		Crew N	/lember Initials:	Pho	otos:	
Virginia	Dinwiddie		NRG		TP, S	Р	3		
Tract Number(s):			Nearest Mile	post:		Associated We	tland ID(s):	
13-019-A004			252.01			none			
Survey Type: (check one)	⊠Centerline	Re-F	Route	□Access Road		□Other:			
Physical Attributes Stream Classification:	S								
(check one)	□Ephemera	ıl ⊠Inter	mittent	□Perennial					
Waterbody Type: (check one)	River ⊠ Str	eam 🗆 Dito	h 🗆 Ca	anal 🗆 Other:	:				
OHWM Width: 2.0 ft.	OHWM Indicat (check all that apply		⊠ Clear lin	e □Shelvin	g	□Wrested vegetation	□Sco	ouring	□Water staining
Height: 0.5 ft.	⊠Bent, n vegetatio	natted, or missin n	g □Wrack lir	ne □Litter ar debris	nd	☐Abrupt plant community cha		Soil charact	eristic change
Width of Waterbody - To			Toe of Slope	Width of Waterbo	ody - W		Depth of V	Nater:	
Bank to Top of Bank: ft.		of Slope: _1.5ft.		Water Edge: N/A□	<u>2.0_</u> ft.		Approx.) N/A□	0.25	_ft.
Sinuosity: (check one) ☐Straight	Water (Approx.)	velocity:		Bank height Right:	4.0_ft.		Bank slop	Right:	_ degrees
⊠Meanderin	g N/A□				4.0_ft.				_degrees
Qualitative Attribut	tes								
Water Appearance: (check one)	No water ⊠C	Clear □Turb	-	een □Sur surface scu		□Algal □ mats	Other:		
Substrate: (check all that apply) % of Substrate:	Bedrock DBo			el ⊠ Sand □ % <u>40</u> % _	⊠ Silt/ c 60_%	lay □ Organic%	□ Othe	er: _%	
Width of Riparian Zone <u>>50 ft</u> ⋅ N/A□	(check all that		[⊠] Trees: _ <u>12</u> _in.		⊠ Saplin _ <u>2.0</u> _in.	ngs/Shrubs:	□ Не	erbs	
Dominant Bank Vegeta									
Red maple, white oa	ak, Northern re	d oak, sweet	gum, willow	w oak, America	an holl	y, Christmas	fern		
Aquatic Habitats (ex: su A few roots and poo		d aquatic vegetation	n, overhanging l	banks/roots, leaf pac	ks, large	submerged wood,	riffles, deep	p pools):	
Aquatic Organisms Obs	served (list):								
none									
T&E Species Observed	(list):								
none									
Disturbances (ex: livesto None noted	ck access, manure i	n waterbody, waste	discharge pipe	es):					
Tributary is:		☐ Art	ificial, man-ma	ade □ Manipı	ulated				
Stream Quality ^a : (check one)			derate	□ Low					

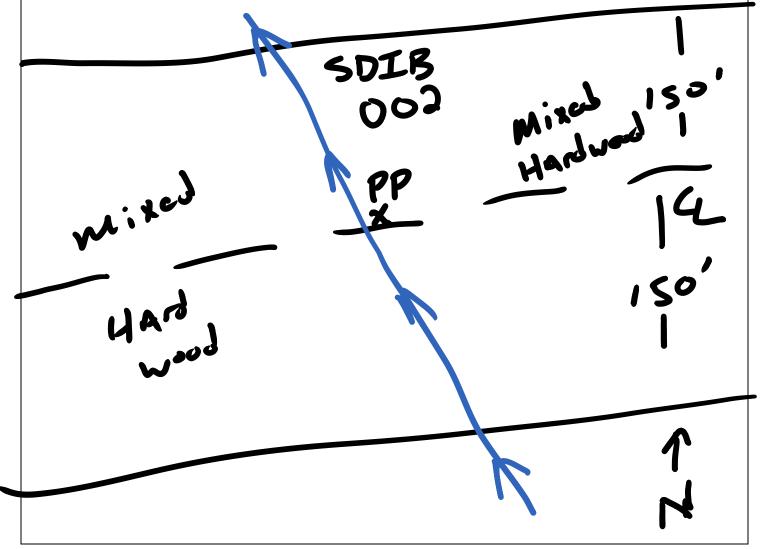
Waterbody	ID
SDIB002	

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:

Although water is present in stream, it is only located in shallow pools, there is not flowing water at this time. Stream is slightly incised, has good grade control, noted sediment transport and benches, also observed nick points and leaf packs.





Waterbody SDIB002 facing west upstream



Waterbody SDIB002 facing northwest downstream



Waterbody SDIB002 facing northeast across

Survey Description	n									
Project Name:		Waterbody Name:				aterbody ID:		Date:		
Atlantic Coast Pipe	line	UNT to Beaver Pond Creek				DIB001		11/10/2014		
State:	County:	-1	Company:		Crew N	Member Initials:		Photos:		
Virginia	Dinwiddie		NRG TP, S)3	
Tract Number(s):			Nearest Milepost:			Associated Wetland ID(s):				
Unlabeled tract and	d 13-019-A007		253			WDIB001				
Survey Type: (check one)	⊠Centerline	e □Re-l	Route	□ Access Road	<u> </u>	□Other:				
Physical Attribute										
Stream Classification: (check one)	□Ephemer	al ⊠Inte	rmittent	□Perennial						
Waterbody Type:										
	□River ⊠ St	ream 🗆 Dito	ch □ Ca	anal 🗆 Other:	:					
ОНWМ	OHWM Indica							10 .		
Width: <u>2.0</u> ft.	(check all that app	iy)	□ Clear lin on bank	ie □Shelvin	g	□Wrested vegetation]Scouring	g □Water staining	
Height:			atted, or missing □Wrack line □Litter and				d □Abrupt plant □Soil characteristic cha			
	vegetation	on		debris		community ch	ange			
Width of Waterbody -			Toe of Slope	Width of Waterbo	ody - W			of Water	r:	
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:			(Approx.))		
_ <u>3_</u> ft.	_	_1.0ft.			<u>1.5</u> ft.		N1/A 🖂		_ <u>0.1_</u> ft.	
Sinuosity:	Water	velocity:		N/A□ Bank height			N/A□ Bank s	clone		
(check one)	(Approx.			Right:			Dalik s	Right	•	
□Straight		_ <u>0.25_</u> fp	S	_	3.0_ft.			•	90 degrees	
⊠Meanderi	ing N/A			Left:	3.0_ft.			Left	:: _ <u>90_</u> degrees	
Qualitative Attribu	ıtes									
Water Appearance: (check one)	□No water □	Class VII. rh	.:d □ Ch		rfooo		□Otho			
(Under one)	-ino water □	Clear ⊠Turk		een □Sui surface scu		□Algal □ mats	□Othe	Ι.		
Substrate: [☐ Bedrock ☐ Be	oulder Cobb	ole 🗆 Grave	el ⊠ Sand □	⊠ Silt/ c	lay 🗆 Organic		Other:		
% of Substrate:	%	%	_%	% <u>50</u> %	<u>50</u> %	%		%		
Width of Riparian Zon	e: Vegetativ	e Lavers:								
	(check all tha	t apply)			⊠ Saplir	ngs/Shrubs:		Herbs		
<u>40_ft</u> - N/A□	Avg. DBH (approx.)	l of Dominants:	<u>_10_</u> in.	-	_ <u>2.0</u> _in.					
Dominant Bank Veget										
Blackgum, tulip por	olar, red maple	, sweetgum, s	sweet bay,	green brier						
Aquatic Habitats (ex: s	ubmerged or emerge	d aquatic vegetation	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood,	riffles,	deep pool	s):	
A few roots along b	ank									
Aquatic Organisms Ol	oserved (list):									
none										
T&E Species Observe	d (list):									
none										
Disturbances (ex: livest	ock access, manure	in waterbody, waste	e discharge pipe	es):						
Tract timbered app	roximately 15-2	20 years ago,	they did le	ave 30' SMZ						
Tributary is: (check one)	Natural	□ Ar	tificial, man-m	ade 🗆 Manipi	ulated					
Stream Quality ^a : (check one)	☐ High	⊠ Mo	oderate	☐ Low						
L										

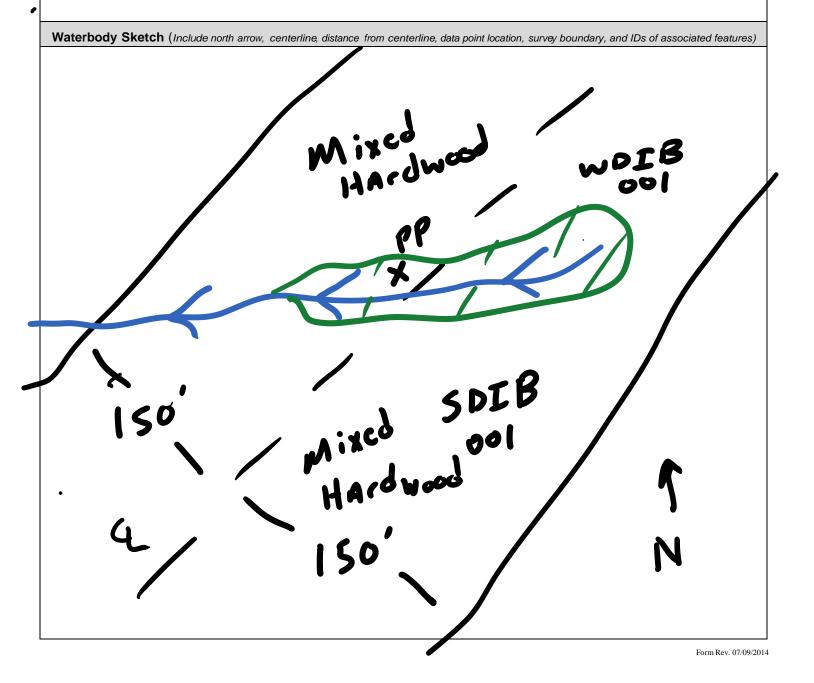
Waterbody	ID:
SDIB001	

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 originates in corridor. Slightly incised at origin, deeply eroded at downstream edge of corridor. Moderate meanders, evidence of sediment transport. Moderate grade control.





Waterbody SDIB001 facing east upstream



Waterbody SDIB001 facing west downstream



Waterbody SDIB001 facing south across

Survey Description	1							
Project Name:		Waterbody Nar				aterbody ID:		Date:
ATLANTIC COAST	PIPELINE	BEAVER PO	ND CREE	K	S	DIL001		9/18/2014
State:	County:	•	Company:		Crew I	Member Initials	: Ph	otos:
Virginia	Dinwiddie		W&C		WLM	, RMS	1	00-1297 TO 1299
Tract Number(s):			Nearest Mile	post:		Associated W	etland ID	(s):
13-030			253			WDIL001		
Survey Type: (check one)	⊠Centerlin	e □Re-F	Route	□Access Ro	ad	□Other:		
Physical Attributes Stream Classification:	5							
(check one)	□Ephemer	al □Inter	mittent	⊠Perennial				
Waterbody Type: (check one)	River 🗵 St	ream Ditc	h □ Ca	anal 🗆 Oth	er:			
OHWM Width: _7_ft.	OHWM Indica (check all that app		⊠ Clear lin on bank	e ⊠Shelv	ing	⊠Wrested vegetation	□S	couring
Height: 1_ft. N/A□	□Bent, vegetatio	matted, or missing	g □Wrack lir	ne ⊠Litter debris	and	☐ Abrupt plan community ch		Soil characteristic change
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - 7		Width of Water Water Edge:	body - W	ater Edge to	Depth of (Approx.)	Water:
_ <u>24_</u> ft.		_7_ft.		N/A□	_3_ft.		N/A□	<u>0.3</u> ft.
Sinuosity: (check one) ☐Straight	Water (Approx.	velocity:) 0.5fps		Bank height Right: Left:	_7_ft.		Bank slo	pe Right: 35_ degrees Left:
⊠Meanderin	ng N/A□			Leit.	_4_ft.			85 degrees
Qualitative Attribu	tes							
Water Appearance: (check one)	[]] No water ⊠	Clear □Turb			Surface	□Algal mats	□Other:	
	Bedrock 🗆 Be	oulder Cobb	le 🛭 Grave	el 🛭 Sand	⊠ Silt/ c	lay 🗆 Organic	: 🗆 Oth	er:
(check all that apply) % of Substrate:	<u>NA</u> % <u>NA</u>	% <u>NA</u> %	<u>20</u> %	<u>70</u> %	<u>10</u> %	<u>NA</u> %	<u>NA </u> 9	6
Width of Riparian Zone >100 ft N/A□	(check all tha	re Layers: at apply) I of Dominants:	[⊠] Trees: _14_in.		⊠ Saplir _3_in.	ngs/Shrubs:	⊠⊦	lerbs
Dominant Bank Vegeta POPLAR, IRONWC	,	OD, RED MAI	PLE, VIBUI	RNUM, PINE	, CHRIS	STMAS FER	N, BIDE	:NS
Aquatic Habitats (ex: su SOFT SANDY SED						•		
Aquatic Organisms Ob COLEOPTERANS,	• •							
T&E Species Observed NA	(list):							
Disturbances (ex: livesto	ock access, manure	in waterbody, waste	discharge pipe	es):				
Tributary is: (check one)	⊠ Natural	□ Art	ificial, man-ma	ade □ Man	ipulated			
Stream Quality ^a : (check one)	☐ High	⊠ Mo	derate	□ Low				

Waterbody ID: SDIL001

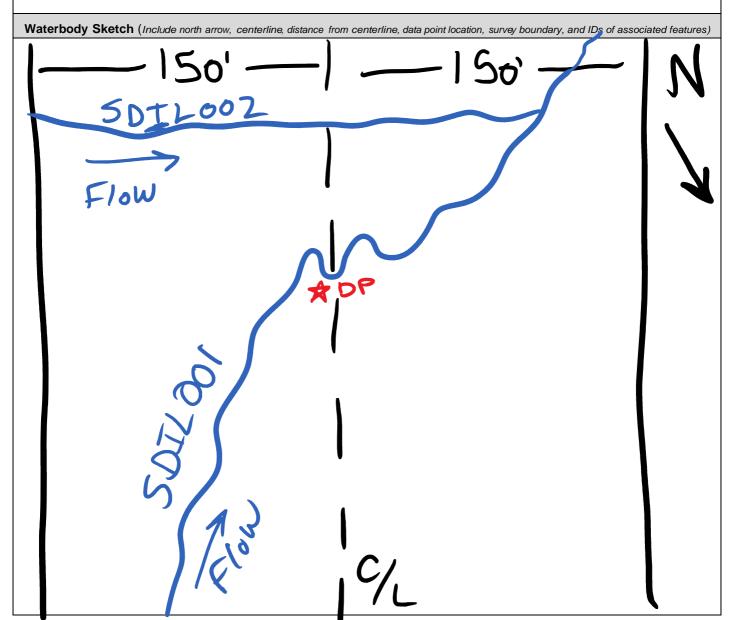
^a **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

STABLE PERENNIAL STREAM





Waterbody data point sdil001 facing North and upstream



Waterbody data point sdil001 facing South and downstream



Waterbody data point sdil001 facing East and across

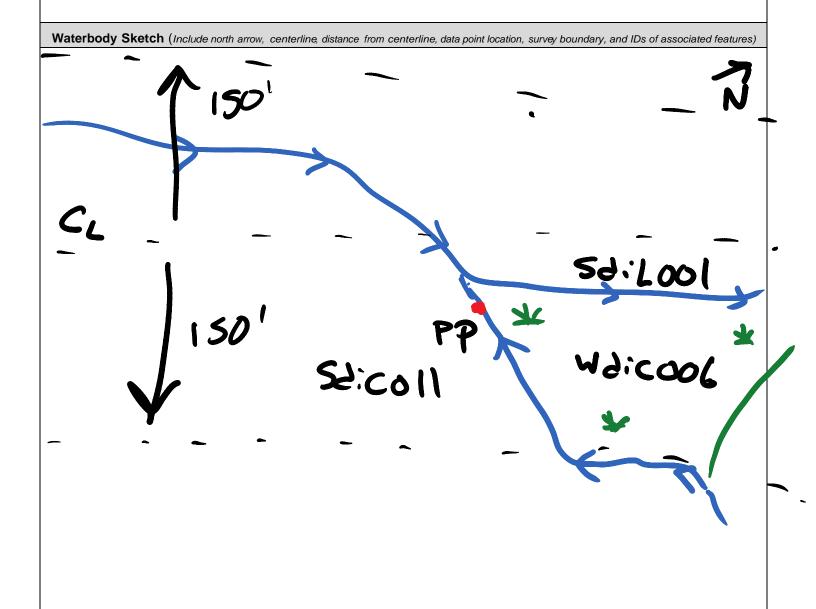
Survey Description)							
Project Name:		Waterbody Name:			W	aterbody ID:		Date:
Atlantic Coast Pipeli	ne	UNT to Bear	ver Pond C	reek	S	dic011		12/14/2015
State:	County:		Company:		Crew N	Member Initials:	Photo	os:
9	Dinwiddie		NRG		CR, S		1-3	
Tract Number(s):			Nearest Mile	epost:		Associated We	etland ID(s)	:
13-019-A013			256.5			Wdic006		
Survey Type: (check one)	⊠Centerline	Re-F	Route	□Access Road		□Other:		
Physical Attributes Stream Classification:								
(check one)	□Ephemera	ıl ⊠Inter	mittent	□Perennial				
Waterbody Type: (check one)	River ⊠ Str	eam 🗆 Dito	:h □ Ca	anal Other:				
OHWM Width: 5 ft.	OHWM Indicat (check all that apply		⊠ Clear lin	ne □Shelving	g	□Wrested vegetation	□Scou	uring □Water staining
Height: 0.8 ft.	⊠Bent, n vegetatio	natted, or missin n	g □Wrack li	ne ⊠Litter an debris	nd	□Abrupt plant community cha		oil characteristic change
Width of Waterbody - To			Toe of Slope	Width of Waterbo	ody - W		Depth of Wa	ater:
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:		(Approx.)	
<u>12_</u> ft.	_	<u>1_</u> ft.		 N/A□	_4_ft.	N	\ /A□	<u>0.3</u> ft.
Sinuosity:		velocity:		Bank height		E	Bank slope	
(check one) ☐Straight	(Approx.)			Right:			Ri	ght:
		_1_fps		Left:	_4_ft.		ı	<u>90</u> degrees L eft:
⊠Meanderin	g N/A□				<u>6</u> _ft.			70 degrees
Qualitative Attribut	es							
Water Appearance: (check one)	No water ⊠C	Clear □Turb	-	een □Sur surface scu		□Algal □ mats	Other:	
Substrate:	Bedrock ☐ Bo	ulder □ Cobb	le 🗵 Grave	el ⊠ Sand ∑	⊠ Silt/ c	clay Organic	☐ Other:	
(check all that apply) % of Substrate:	%	%	% <u>30</u> %	<u>50</u> %	<u>20_</u> %	%		%
Width of Riparian Zone								
_ <u>20_ft</u> - N/A□	(check all that Avg. DBH (approx.)	of Dominants:	⊠ Trees: _ <u>10</u> _in.		☑ Saplir _2_in.	ngs/Shrubs:	⊠ Herl	OS
Dominant Bank Vegetat	tion (list):							
Sweet-gum, red oak	, American be	ech, America	n holly, Jar	oanese honeys	uckle,	, christmas fei	rn, white	oak
Aquatic Habitats (ex: su	bmerged or emerged	d aquatic vegetatio	n, overhanging	banks/roots, leaf pack	ks, large	submerged wood,	riffles, deep	pools):
Overhanging roots/b	oanks, leaf pac	ks						
Aquatic Organisms Obs	served (list):							
None								
T&E Species Observed	(list):							
None								
Disturbances (ex: livesto	ck access, manure in	n waterbody, waste	e discharge pipe	es):				
None								
Tributary is: (check one)	⊠ Natural	□ Art	ificial, man-m	ade □ Manipu	ulated			
Stream Quality ^a : (check one)	☐ High	⊠ Mo	oderate	□ Low				

Waterbody	ID:
Sdic011	

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:





Waterbody SDIC011 facing east upstream



Waterbody SDIC011 facing west downstream



Waterbody SDIC011 facing north across

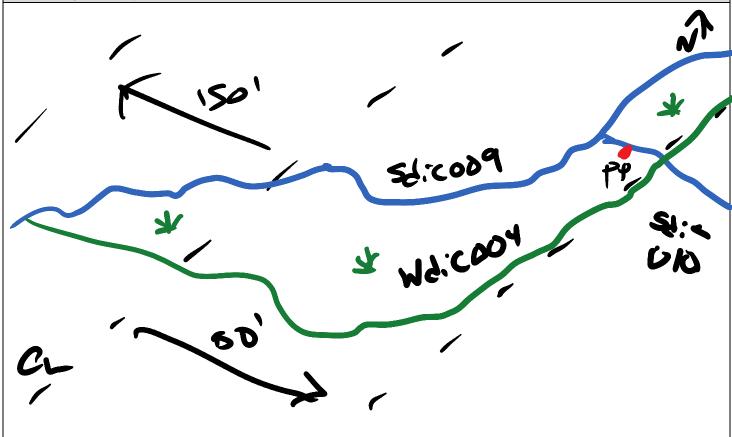
Survey Description								
Project Name:		Waterbody Nar	ne:		W	aterbody ID:		Date:
Atlantic Coast Pipeli	ne	UNT to Bear		reek		dic010		12/14/2015
State:	County:		Company:		Crew N	Member Initials:	Photos:	
Virginia	Dinwiddie		NRG		CR, S	SA	1-3	
Tract Number(s):			Nearest Mile	post:		Associated We	etland ID(s):	
13-019-A013, 5			256.5			Wdic004		
Survey Type: (check one)	⊠Centerline	□Re-F	Route	□Access Road		□Other:		
Physical Attributes Stream Classification:	3							
(check one)	Ephemera	ıl ⊠Inter	mittent	□Perennial				
Waterbody Type: (check one)	River ⊠ Str	eam 🗆 Dito	h □ Ca	anal 🗆 Other:	:			
OHWM Width: _5_ft.	OHWM Indicat (check all that apply		⊠ Clear lin on bank	e □Shelvin	g	□Wrested vegetation	□Scourin	g □Water staining
Height: _1_ft. N/A□	⊠Bent, n vegetatio	natted, or missin n	g □Wrack lir	ne ⊠Litter ar debris	nd	□Abrupt plant community cha		characteristic change
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - Total	Toe of Slope	Width of Waterbo	ody - W		Depth of Wate	r:
_ <u>12_</u> ft.		_1ft.		N/A□	<u>4</u> ft.	1	N/A□	<u>.5</u> ft.
Sinuosity: (check one) ☐Straight	Water (Approx.)	velocity:		Bank height Right: Left:	_5_ft.	E	Bank slope Righ Lef	70 degrees
⊠Meanderin	g N/A□			Loit.	<u>5</u> ft.			90 degrees
Qualitative Attribut	tes							
Water Appearance: (check one)	No water ⊠C	Clear □Turb		een □Sui surface scu		□Algal □ mats	Other:	
Substrate: (check all that apply) % of Substrate:	Bedrock DBo		le □ Grave % <u></u> %	el ⊠ Sand □ _20_%	⊠ Silt/ c	lay ⊠ Organic	☐ Other:	
Width of Riparian Zone 20 ft N/A□	(check all that		[⊠] Trees: _ <u>16</u> _in.		☑ Saplir _2_in.	ngs/Shrubs:	⊠ Herbs	
Dominant Bank Vegeta Sweet-gum, red oak	, ,	och America	n holly lar	vanose honovs	ucklo	christmas fo	rn eveamor	· · · · · · · · · · · · · · · · · · ·
Aquatic Habitats (ex: su pool, leaf packs								
Aquatic Organisms Obs Water striders	served (list):							
T&E Species Observed None	(list):							
Disturbances (ex: livestone)	ck access, manure i	n waterbody, waste	discharge pipe	s):				
Tributary is: (check one)	Natural	□ Art	ificial, man-ma	ade 🗆 Manipi	ulated			
Stream Quality ^a : (check one)	☐ High	⊠ Mo	derate	□ Low				

Waterbody	IC
Sdic010	

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:





Waterbody SDIC010 facing southeast upstream



Waterbody SDIC010 facing northwest downstream



Waterbody SDIC010 facing southwest across

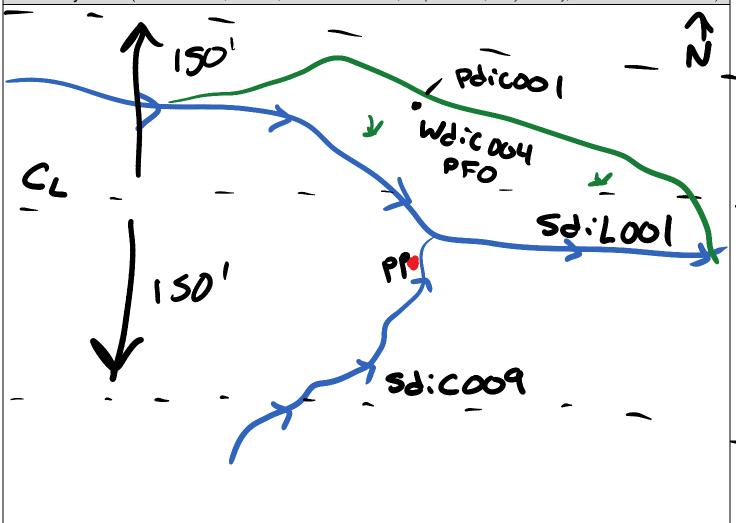
Survey Description)								
Project Name:		Waterbody Name:			W	Waterbody ID:			e:
Atlantic Coast Pipeli	ne	UNT to Bear	ver Pond C	reek	S	dic009		12/	14/2015
State:	County:		Company:		Crew N	Member Initials:	Ph	otos:	
3	Dinwiddie		NRG		CR, S		1-		
Tract Number(s):			Nearest Mile	epost:		Associated We	etland ID	(s):	
13-019-A014			256.5			None			
Survey Type: (check one)	⊠Centerline	Re-F	Route	□Access Road		□Other:			
Physical Attributes Stream Classification:	.								
(check one)	□Ephemera	al ⊠Inter	mittent	□Perennial					
Waterbody Type: (check one)	River ⊠ Str	eam 🗆 Dito	ch □ Ca	anal 🗆 Other:					
OHWM Width:	OHWM Indica (check all that apply			ne □Shelvin	g	□Wrested vegetation	□Sc	couring	□Water staining
Height: 1_ft.	⊠Bent, n vegetatio	natted, or missin n	g □Wrack li	ne ⊠Litter ar debris	nd	□ Abrupt plant community cha		Soil chara	acteristic change
Width of Waterbody - To			Toe of Slope	Width of Waterbo	ody - W		Depth of '	Water:	
Bank to Top of Bank: 10_ft.		of Slope: _1_ft.		Water Edge: N/A□	<u>3</u> _ft.	ľ	A <i>ρριοχ.)</i>		5_ft.
Sinuosity: (check one)	(Approx.)	velocity:		Bank height Right: Left:	_4_ft.	E	Bank slop	Right: <u>7</u> Left:	<u>'0</u> degrees
⊠Meanderin	14712				_ <u>5_</u> ft.				<u>'0</u> degrees
Qualitative Attribut	es								
Water Appearance: (check one)	No water ⊠0	Clear □Turb	-	een □Sur surface scu		□Algal □ mats	∃Other:		
Substrate: (check all that apply) % of Substrate:	Bedrock DBo	ulder Cobb	le ⊠ Grave _% <u>10</u> %		⊠ Silt/ c 40_%	elay □ Organic%	□ Oth	er: %	
Width of Riparian Zone 20 ft N/A□	(check all that		⊠ Trees. _ <u>10</u> _in.		☑ Saplir _2_in.	ngs/Shrubs:	⊠H	erbs	
Dominant Bank Vegetar Sweet-gum, red oak	, ,	merican beed	ch, America	an holly, Japan	ese ho	oneysuckle, c	hristma	ıs fern, s	sycamore
Aquatic Habitats (ex: sul Riffle and pool, leaf		d aquatic vegetatio	n, overhanging	banks/roots, leaf pacl	ks, large	submerged wood,	riffles, dee	ep pools):	
Aquatic Organisms Obs None	served (list):								
T&E Species Observed None	(list):								
Disturbances (ex: livesto	ck access manura i	n waterhody wast	dischargo ning	e).					
None	on access, manure I	ii waterbouy, Waste	, also large pipe	, _j .					
Tributary is: (check one)	Natural	□ Art	ificial, man-m	ade □ Manipu	ulated				
Stream Quality ^a : (check one)	☐ High	⊠ Mc	oderate	□ Low					

Waterbody Sdic009	ID
Sdic009	

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:





Waterbody SDIC009 facing north upstream



Waterbody SDIC009 facing south downstream



Waterbody SDIC009 facing east across

Linear Waterboo	dy Data Sheet		waster caracter	05/10/2020/04/0			ESTERATES IN
Survey Description	on	Waterbody Na	mo:		Waterbody ID:	[D	ate:
Project Name:		150hous adominion Not traffic CT - 12002-900		Ad Cunal			3-16-16
ACP		4410	Beaver Por	no cree	Crew Member Initial	s: Photos:	Care Company Colorado AC AMOSTO OFFICIONOS SECURIOS ESTA
State:	County/Parish:		Company:		LR, WV	S, N	E
VA	Dinwid	die	FZT				Control of the second
Tract Number(s):			Nearest Milepost			Vetland ID(s):	
13-019-	A017		256.8		W	210030	
Survey Type: (check one)	□Centerline	⊡⁄Ŕe-l	Route 🗆	Access Road	□Other:		
Physical Attribute							
Stream Classification: (check one)	: □Ephemera	i □Inte	rmittent 🗅	Perennial			
Waterbody Type: (check one) [□River □ Str	eam 🗆 Dit	ch 🗆 Canal	☐ Other			
OHWM Width: 3_ft.	OHWM Indicat (check all that apply		Clear line on bank	□Shelvin	g	Scouring	□Water staining
Height:/_ft.	vegetatio	п	ng □Wrack line	□Litter ar debris	community o	hange	aracteristic change
Width of Waterbody -	Top of Width	of Waterbody -	Toe of Slope Wid	th of Waterb er Edge:	ody - Water Edge to	Depth of Water:	
Bank to Top of Bank:		of Slope:	wat	AND THE PROPERTY OF THE PARTY O	3 _{ft.}	>	ft.
	_	ft.	N/A!		<u>√</u> ft.	N/A□	
Sinuosity:	Water	velocity:		k height		Bank slope	
(check one)	(Approx.)			Right	3 .	Right:	75 degrees
Listraight		21_1	fps	Left:	3 a	Left	75
☑Meander	ring N/A				S_ft.		degrees
Qualitative Attrib	utės						
Water Appearance:		/			Filaled	□Other:	
(check one)	□No water 🖼	Clear □Turi	bid □Sheen on surfa	Carlotte and the second of the second of	rface □Algal um mats	Louier.	
	☐ Bedrock ☐ Bo	ulder 🗆 Cob	ble 🖾 Gravel	Sand	☐ Silt/ clay ☐ Organ	ic Other:	
(check all that apply)						%%	
% of Substrate:	%	_%	_% _15 _%	05 %			
Width of Riparian Zor	ne: Vegetativ					☐ Herbs	
50 ft.	(check all that	of Dominants:	Trees:	I	Saplings/Shrubs: 2 in.	- in	
N/A□	(approx.)	Of Dominants.	ins		1.00 (
Dominant Bank Vege							
Liantdanber styre	el. Pian	tacda	Carpinus	carol.	nima, Polus	tichum ac	rostichoides
Aquatic Habitats (ex:	submerged or emerge	d aquatic vegetati	on, overhanging bank	s/roots, leaf par	cks, large submerged wo	od, riffles, deep pool	s):
- 1	1.15	1	b- 1.	0.00	. does or	nle	
Submerged Aquatic Organisms O	bserved (list):	overhange	y works	11771	, , , ,	SA T OF BUILDING TOPING	
T&E Species Observe	h, trogs	ar the Section 1999 and 1999					Action of the Control
	observed						
Disturbances (ex: live:	stock access, manure	in waterbody, was	ite discharge pipes):				
nor	ne					i Calanda Para India da Anta	
Tributary Is: (check one)	□ Natural	□ A	rtificial, man-made	☐ Manij	oulated		
Stream Quality *: (check one)	□ High	rr/s	/ Moderate	□ Low			
(Gireck Gire)	- nigii	ALVERTON AND AND AND AND AND AND AND AND AND AN			A MARKET SHALL SHE THE THE PART OF THE PAR	The second secon	WANT THE CONTRACT OF THE CONTRACT OF

Waterb	ody ID:	
So	in DIT	

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.



Waterbody data point sdio017 facing south upstream.



Waterbody data point sdio017 facing north downstream.



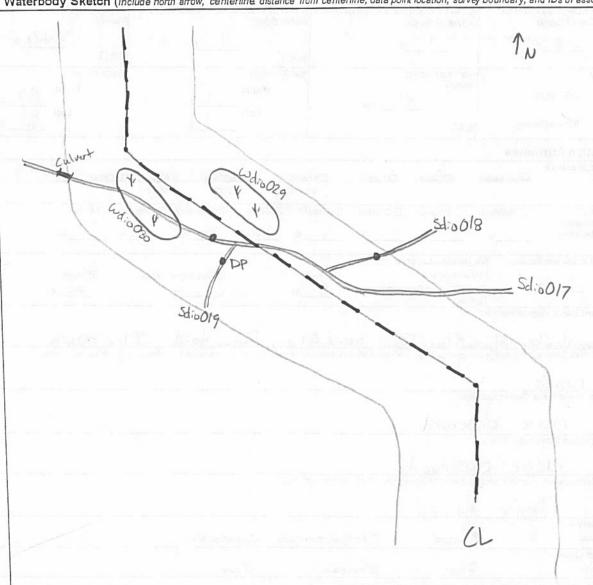
Waterbody data point sdio017 facing east across.

Special American Waterbody Name: Waterbody Name: Waterbody Name: Sol ool 9 3-16-16	near Waterbody Data She	et			
CountyParish: CountyParish: Company: Crew Member Initials: Photos: Focking LR LR LR LR LR LR LR L	rvey Description	NAC-AddNo-mai		Materbody ID:	Date:
Tributary is: CountyParish: Company: Crew Member Initials: Photos: Facing LR, WV LR, WV	[2.구 2gg] [2] 전화점(2.2 2도 2분이다. 2 2일일 (1)(2.5 25.1 1)(1)(2.1 1.4 2)(1.1 1)(1.1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	waterbody Name:	Pard Create		
Nearest Milepost: LR, UV					(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
Nearest Milepost: Associated Wetland ID(s): 13 - 0 q - Ad17		11			
NA NA NA NA NA NA NA NA	VA Dinui	ddie ESI	- Share of the L		
Tributary is: Centerline Re-Route Access Road Other: Access Road Other:	act Number(s):	Nearest Mil	epost:	Associated Wetlan	d ID(s):
Centerline CRe-Route Cherry Che	13-019-A017	25	6.8	THE STATE OF THE S	- NA
Tributary is: Canal Canal	irvey Type: □ck one) □Center	line 🗹 Re-Route	□Access Road	□Other:	Statistical and the state of th
Ephemeral Cheenister Perennial	hysical Attributes		1 12 404 S. V. T. A. C. C. L. T. T. C.		
River		neral Dintermittent	□Perennial		
Width: 3 ft. Check et lives spoty) GPC (clear line Shelving Sevinested Scouring Statistical Sevinested Sevinested Scouring Statistical Sevinested Sevinested Scouring Statistical Sevinested Sevi	aterbody Type: neck one) □River □	Stream Ditch	Canal		
Act Vegetation Act Vegetation Act Ac	Width: (check all that	apply) If Clear	line		
Approximate to Toe of Slope: Straight					☐Soil characteristic change e
ft. N/A	vidth of Waterbody - Top of Wi		water Edge:	y - Water Edge to Dep	
inuosity: Water velocity: Bank height Right: Bank slope Right: SO degree SO		1	Water Edge.	. 1	
Straight Approx	ft.	n.	N/AD	π. N/A	
Straight Meandering MAC Left: ft. Left: 80 degree 80			Bank height	Bar	nk slope
Meandering N/A Left: Left: Moder M		~1	Right:	1 .	Right: 80 degrees
Qualitative Attributes Nater Appearance:		fps	Left:	n.	
No water Olear Turbid Sheen Surface Sufface Other: mats Other: mats	☑Meandering N	A□		t.	80 degrees
No water Olear Turbid Sheen Surface Sufface Other: mats Other: mats	Qualitative Attributes				
on surface scum mats Substrate: Bedrock Boulder Cobble Gravel Sand Griff clay Organic Other: Check all that apply)	Water Appearance:	/	The state of the s		
Width of Riparian Zone: Vegetative Layers:	(check one) □No water	☑Clear □Turbid □			Other:
Width of Riparian Zone: Wegetative Layers: (check at that appty) Avg. DBH of Dominants: (approx) Dominant Bank Vegetation (list): Liquidan bar Styraciflus Fagus grand folia Pinus tacks Tex submerged or emerged equation equation overhanging banks froots leaf packs large submerged wood niffes deep pools): NOCE Aquatic Organisms Observed (list): NOCE OBSERVED Disturbances (ex. Investock access manure in waterbody waste discharge pipes): Tributary is: (check one) Stream Quality*: Manipulated Manipulated	Substrate: Bedrock	☐ Boulder ☐ Cobble ☐ G	ravel Sand B	Sift clay Organic	Other:
Check all that apply) Avg. DBH of Dominants: B in. 3 in. WA in.	(check all that apply)	%%	% 80%	20 %%	%
Check all that apply) Avg. DBH of Dominants: B in. 3 in. WA in.	Width of Riparian Zone: Vego	etative Layers:			
Dominant Bank Vegetation (list): Liouidandar Styraciffus Fagus grand folia Pinus tacda I lex Oaca Aquatic Habitats (ex: submerged or emerged aquatic Vegetation overhanging banks/roots, leaf packs large submerged wood, riffles deep pools): NONC OBSCRED TRE Species Observed (list): NONC OBSCRED Disturbances (ex: Investock access manure in waterbody waste discharge pipes): logging activity Tributary is: (check one)	(check	k all that apply)	With the second		
Dominant Bank Vegetation (list): Liquidan bar Styraciffus, Fagus grandifolia, Pinus tacda, Ilex opaca Aquatic Habitats (ex. submerged or emerged aquatic vegetation overhanging banks/roots, leaf packs, large submerged wood, riffles deep pools): None Aquatic Organisms Observed (list): None Observed Tibe Species Observed (list): None Observed Disturbances (ex. livestock access, manure in waterbody waste discharge pipes): logging advity Tributary is: (check one)			<u> </u>	<u>3</u> in.	WA in.
Aquatic Organisms Observed (list): Nonc obscrued T&E Species Observed (list): Nonc obscrued Disturbances (ext. Investock access manure in waterbody waste discharge pipes): Ogging adjusty Tributary is: (check one)	Dominant Bank Vegetation (list):			A STATE OF THE STA	2.000 000 000 0000000000000000000000000
Aquatic Organisms Observed (list): Nonc obscrued T&E Species Observed (list): Nonc obscrued Disturbances (ext. Investock access manure in waterbody waste discharge pipes): Ogging adjusty Tributary is: (check one)	1 1 1 0	01 1	P. D.	Lad Tla	1 00000
Aquatic Organisms Observed (list): Nonc obscrued T&E Species Observed (list): Nonc obscrued Disturbances (ext. Investock access manure in waterbody waste discharge pipes): Ogging adjusty Tributary is: (check one)	Aquatic Habitats (ex. submerred or	The Fagus gland	nging banks/roots, leaf pack	ks large submerged wood.	nifiles deer pools):
Aquatic Organisms Observed (list): Nonc obscrucd T&E Species Observed (list): Nonc obscrucd Disturbances (ext. Investock access manure in waterbody waste discharge pipes): Ogging act wity Tributary is: (check one)	Add to Habitata lex. addine ged of	sine igea aqualle regelatori or ema-	Suid an interest that have		2 15 25211 1
T&E Species Observed (list): Nonc observed Nonc observed Disturbances (ext. Investock access manure in waterbody waste discharge pipes): logging activity Tributary is: (check one) Natural Artificial, man-made Manipulated Stream Quality':	none	100 p. 45			
T&E Species Observed (list): Nonce Observed Disturbances (ex: Investock access manure in waterbody waste discharge pipes): Ogging advidy Tributary is: (check one) Natural Artificial, man-made Manipulated Stream Quality':	Aquatic Organisms Observed (lis	t):			
T&E Species Observed (list): Nonce Observed Disturbances (ex: Investock access manure in waterbody waste discharge pipes): Ogging advidy Tributary is: (check one) Natural Artificial, man-made Manipulated Stream Quality':	none obs	crued			
Disturbances (ext. livestock access manure in waterbody waste discharge pipes): Ogging activity Tributary is: (check one)					
Disturbances (ext. livestock access manure in waterbody waste discharge pipes): Ogging activity Tributary is: (check one)	Mana Ma	Seaul			
Tributary is: (check one) Natural Artificial, man-made Manipulated	Disturbances (ex: livestock access	manure in waterbody waste disonard	ge pipes);		
Tributary is: (check one) Natural Artificial, man-made Manipulated Stream Quality*:		Roman and the second se			
(check one)		ducty			
Stream Quality 1:	(check one)	Natural	nan-made 🗆 Mani	pulated	Angest and a second
(check one)	Stream Quality ::	,			

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:







Waterbody data point sdio019 facing east downstream.



Linear Waterbody Data Sheet Survey Description Project Name: Waterbody Name: Waterbody ID: Date: LINT to Beguer Pond Creek ACP 52:0018 3-16-16 State: County/Parish: Company: Crew Member Initials: Photos: Facing ESI LR, WV VA Tract Number(s): Nearest Milepost: Associated Wetland ID(s): 3-019-4017 256.8 Survey Type: □ Centerline ☑Re-Route (check one) ☐ Access Road □Other: Physical Attributes Stream Classification: (check one) □ Ephemeral □Intermittent Perennial Waterbody Type: (check one) □River Stream. □ Ditch ☐ Canal Other: OHWM OHWM Indicator: Width: Clear line ☐ Shelving **W** rested □ Scouring □Water on bank vegetation staining Bent, matted, or missing Wrack line Height: □ Litter and ☐ Abrupt plant ☐Soil characteristic change debris community change N/A Width of Waterbody - Top of Width of Waterbody - Toe of Slope Width of Waterbody - Water Edge to Depth of Water: Bank to Top of Bank: to Toe of Slope: Water Edge: 0.5 ft. N/A N/A Water velocity: Sinuosity: Bank height Bank slope (check one) (Approx.) Right: Right: 3 □ Straight degrees fps Left: Left: Meandering 3 N/A degrees Qualitative Attributes Water Appearance: Clear (check one) □No water □Turbid ☐ Sheen □ Surface □ Algal Other: on surface scum mats Substrate: Sand ☐ Bedrock ☐ Boulder ☐ Cobble ☐ Gravel ☐ Silt/ clay ☐ Organic ☐ Other: (check all that apply)
% of Substrate: Width of Riparian Zone: Vegetative Layers: check all that apply) Trees: Herbs Saplings/Shrubs: Avg. DBH of Dominants: 10 in. MA in. in. Dominant Bank Vegetation (list): Polystichum acrostichoides, Ilex maca, Smilax rotundifolia Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Aquatic Organisms Observed (list): T&E Species Observed (list) Observed Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): none Tributary is: (check one) ☑ Natural ☐ Artificial, man-made ☐ Manipulated

Stream Quality *: (check one)

☐ High

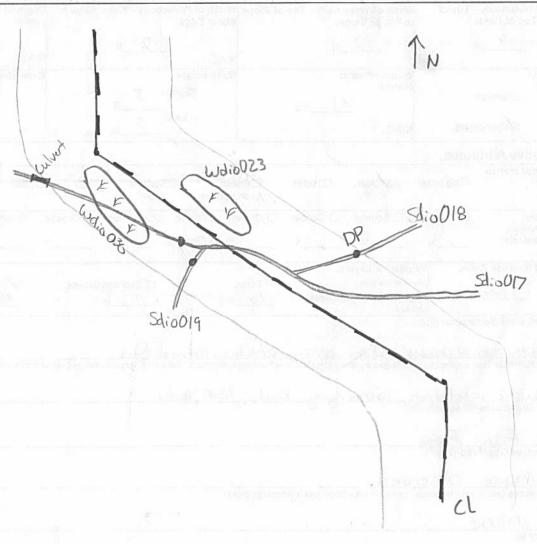
□ Moderate

□ Low

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:







Waterbody data point sdio018 facing west downstream.



Survey Description									
Project Name:	Waterbody Name:			W	Waterbody ID:			Date:	
Atlantic Coast Pipeli	Beaver Pond Creek			S	SDIC001			1/7/2014	
State:	State: County:			Company: Crew M			: F	Photos:	
Virginia	Virginia Dinwiddie NI				CR, C	CG, EH		3	
Tract Number(s): 13-036-A001; 13-036-A0	002; 13-038		Nearest Mile 256.3	post:		Associated W WDIC001	etland	ID(s):	
Survey Type: (check one)		□D. D	\(-			□ Outs - ···			
	⊠Centerline	e □Re-R	toute	☐ Access Road		□Other:			
Physical Attributes Stream Classification:	8								
(check one)	□Ephemera	al □Inter	mittent	⊠Perennial					
Waterbody Type: (check one)	River Str	eam □ Ditc	h □ Ca	anal 🗆 Other	:				
OHWM Width:	OHWM Indicat (check all that apply		⊠ Clear lin on bank	e □Shelvin	g	□Wrested vegetation		Scouring	□Water staining
Height: 1.5 ft N/A□	□Bent, n vegetatio	natted, or missino n	g □Wrack lir	ne □Litter ar debris	nd	□Abrupt plan community ch		□Soil ch	aracteristic change
Width of Waterbody - To Bank to Top of Bank:		of Waterbody - 1 of Slope:		Width of Waterbo	ody - W		Depth (of Water:	
		_1ft.			_3_ft.		N/A□		_1_ft.
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height Right: Left:	<u>3</u> ft.		Bank s	lope Right: Left:	_70_ degrees
⊠Meanderin	ng N/A□				_2_ft.				_70_ degrees
Qualitative Attribut	tes								
Water Appearance: (check one)	No water ⊠C	Clear □Turb	-	een □Sui surface scu		□Algal [mats	□Other	:	
Substrate: (check all that apply) % of Substrate:	Bedrock DBo	oulder □ Cobb %		el ⊠ Sand □ % <u>90</u> % _	⊠ Silt/ c 	elay □ Organic %		Other: %	
Width of Riparian Zone ft N/A⊠	(check all that		⊠ Trees: _6_in.		⊠ Saplir _2_in.	ngs/Shrubs:		Herbs	
Dominant Bank Vegeta Red Maple, Hazel A		rry, Arrowwod	od, Violet						
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Overhanging roots, leaf packs									
Aquatic Organisms Obs Salamanders, frogs,	, ,	ows							
T&E Species Observed None	(list):								
Disturbances (ex: livesto None	ck access, manure i	n waterbody, waste	discharge pipe	es):					
Tributary is: (check one)	Natural	□ Art	ificial, man-ma	ade 🗆 Manipi	ulated				
Stream Quality ^a : (check one)	□ High	⊠ Mo	derate	□ Low					

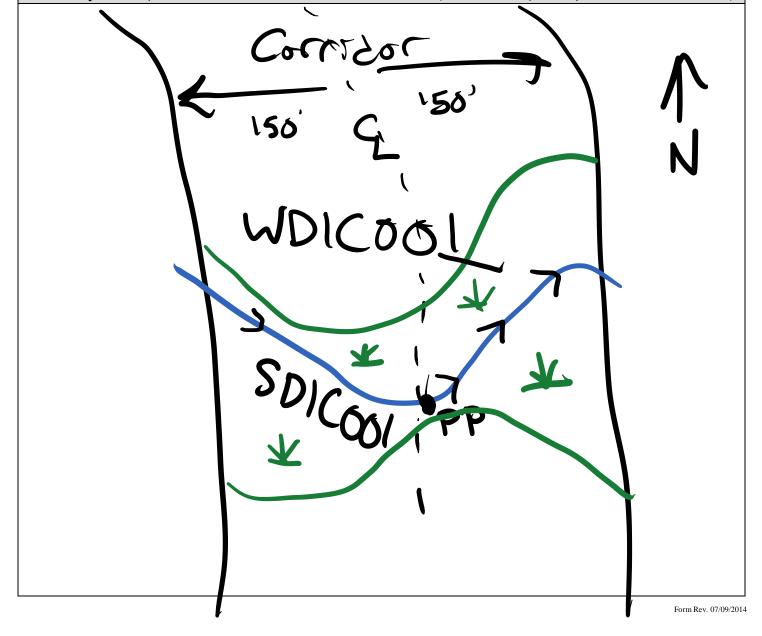
Waterbody	ID
SDIC001	

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:

Beaver Pond Creek is associated with a PFO wetland. Crayfish burrows were observed on the banks.





SDIC001 facing west upstream



SDIC001 facing east downstream



SDIC001 facing south across

Survey Description	1							
Project Name:	Waterbody Name:			W	aterbody ID:	Date:		
Atlantic Coast Pipeli	UNT to Beaver Pond Creek			sc	dia400	4/30/2016		
State:	County:		Company:		Crew N	Member Initials:	Phot	tos:
9	Dinwiddie		NRG - ERM		GB, C		·	hotos
Tract Number(s):			Nearest Milepo	st:		Associated Wo	etland ID(s):
13-038			259.4			wdia400		
Survey Type: (check one)	⊠Centerline	Re-R	Route	□Access Road		□Other:		
Physical Attributes Stream Classification:	S 🗵							
(check one)	□Ephemera	al ⊠Interi	mittent	□Perennial				
Waterbody Type: (check one)	River ⊠ Str	eam 🗆 Ditc	h □ Cana	al Other:	:			
OHWM Width: 4.0 ft.	OHWM Indicat (check all that apply		□ Clear line on bank	□Shelvin	g	□Wrested vegetation	⊠Sco	uring □Water staining
Height: 1.0ft. N/A□	□Bent, n vegetatio	natted, or missino n	g □ Wrack line	e □Litter ar debris	nd	☐ Abrupt plant community ch		oil characteristic change
Width of Waterbody - To Bank to Top of Bank:		of Waterbody - T		idth of Waterboater Edge:	ody - W		Depth of W (Approx.)	/ater:
6.0ft.		<u>3.0</u> ft.		•	1.5 _ft		N/A□	0.10
Sinuosity: (check one) ☐Straight	(Арргох.)	velocity: 0.101	fps Ba	ank height Right: Left:	3.5 _	ft.		ight:
⊠Meanderin	147.12				3.5	ft.		<u>80</u>
Qualitative Attribut Water Appearance:	ies							
(check one)	No water ⊠C	Clear □Turbi		n □Sui irface scu		□Algal □ mats	□Other:	
Substrate: (check all that apply) % of Substrate:	Bedrock □ Bo		le ⊠ Gravel <u>5</u> %	⊠ Sand □	⊠ Silt/ cl	lay ⊠ Organic <u>15</u> %		%
Width of Riparian 40 _{ft} .	Vegetative (check all that		⊠ Trees:			ngs/Shrubs:	⊠ Her	rbs
N/A□	(approx.)	or Dominants.	10.0	in	<u>1.0</u>	in.		
Dominant Bank Vegeta Sycamore, sweetgu bedstraw. Virginia c	m, hackberry,			nwood, spice	ebush,	hazelnut, ch	ickweed,	Christmas fern, violet
Aquatic Habitats (ex: su	bmerged or emerged	d aquatic vegetation	n, overhanging bar	nks/roots, leaf pac	ks, large	submerged wood,	riffles, deep	pools):
Leaf packs, woody of Aquatic Organisms Obs		iging roots						
frog	serveu (#St).							
T&E Species Observed	(list):							
none								
Disturbances (ex: livesto	ck access, manure i	n waterbody, waste	discharge pipes):					
Clear cut to the wes	t							
Tributary is: (check one)		□ Art	ificial, man-mad	e 🗆 Manipi	ulated			
Stream Quality ^a : (check one)	☐ High	⊠ Mo	derate	□ Low				

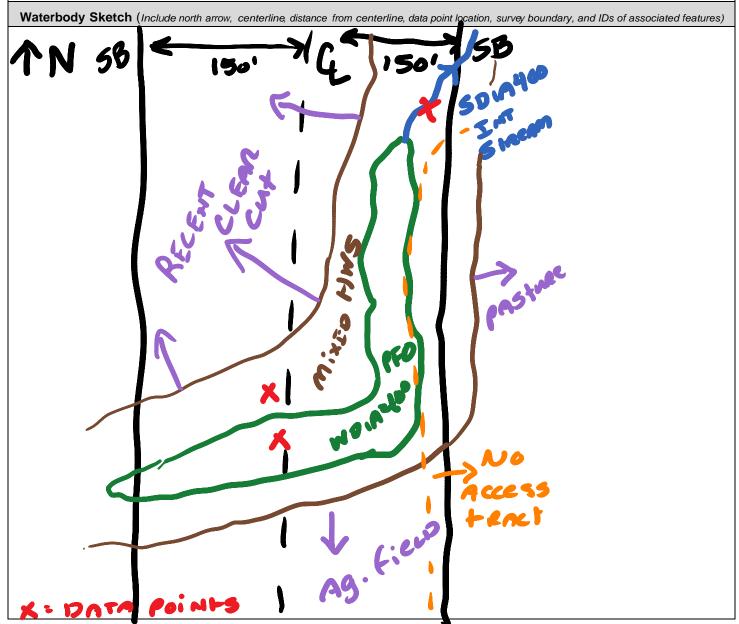
Waterbody sdia400	ID
sdia400	

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 a headcut within corridor at the edge of PFO wetland wdia400; downstream continues out of corridor; recent clear cut to the west.





Waterbody SDIA400 facing south upstream



Waterbody SDIA400 facing north downstream



Waterbody SDIA400 facing east across

Linear Waterbody Data Sheet **Survey Description** Date: Waterbody Name: Waterbody ID: Project Name: SdioDI Crew Member Initials: Photos: County/Parish: State: Tract Number(s): Nearest Milepost: Associated Wetland ID(s): -(170 Survey Type: □ Centerline □Other: (check one) MRe-Route ☐Access Road Physical Attributes Stream Classification: (check one) □ Ephemeral Intermittent □ Perennial Waterbody Type: Stream (check one) □River □ Ditch □ Canal □ Other: OHWM OHWM Indicator: Clear line □Wrested □ Scouring □Water □ Shelving Width: vegetation staining on bank Height: ☐Soil characteristic change □Bent, matted, or missing □Wrack line ☐Litter and ☐ Abrupt plant vegetation community change Width of Waterbody - Top of Width of Waterbody - Toe of Slope Width of Waterbody - Water Edge to Depth of Water: Bank to Top of Bank: Water Edge: to Toe of Slope: D.5 # 0 N/A 🗆 N/A 🗆 Sinuosity: Water velocity: Bank height Bank slope (Approx.) check one) Right: Right: □Straight degrees fps Left: Meandering degrees N/A 🗆 Qualitative Attributes Water Appearance: □No water Clear □Algal □Other: (check one) □Turbid □Sheen □ Surface on surface Substrate: □ Bedrock ☐ Boulder ☐ Cobble ☐ Gravel Sand Silt/ clay Organic ☐ Other: (check all that apply) 70 % % of Substrate: % % Width of Riparian Zone: Vegetative Layers: check all that apply) Trees: A Saplings/Shrubs: Herbs Avg. DBH of Dominants: N/A 🗆 Dominant Bank Vegetation (list): Fague grandito Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Aquatic Organisms Observed (list): Non T&E Species Observed (list): DVR Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NONE Tributary is: Natural (check one) ☐ Artificial, man-made ☐ Manipulated Stream Quality *: (check one) ☐ High Moderate ☐ Low

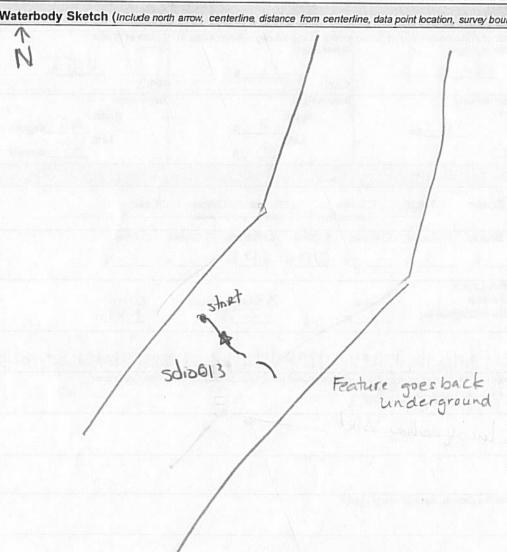
Waterbody ID: cdi0013

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:





Waterbody sdio013 facing north upstream.



Waterbody sdio013 facing south downstream.



Waterbody sdio013 facing west across bank.

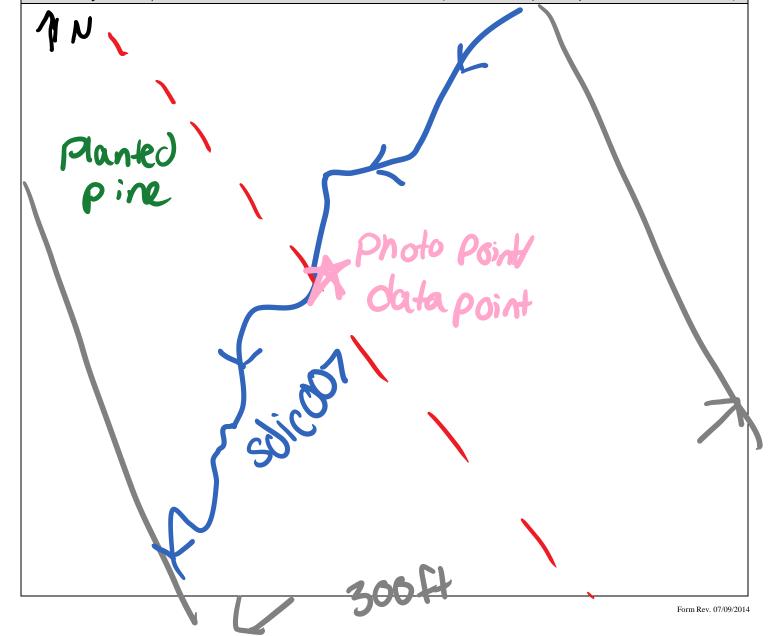
Survey Description	1							
Project Name:		Waterbody Name:			W	aterbody ID:	Date:	
Atlantic Coast Pipel	UNT to Tommeheton Creek			S	DIC008	12/3/2014		
State:	County:		Company:		Crew N	Member Initials	: Photo	os:
9	Dinwiddie		NRG		CR, A			C008_001-003
Tract Number(s):			Nearest Mile	post:		Associated W	etland ID(s)	:
13-041 Survey Type:			257.3			None		
(check one)	□Centerline	e ⊠Re-R	loute	□ Access Road	l	□Other:		
Physical Attributes Stream Classification:	S							
(check one)	Ephemera	al ⊠Intern	mittent	□Perennial				
Waterbody Type: (check one)	River 🛭 Str	eam Ditc	h □ Ca	ınal 🗆 Other	:			
OHWM Width: 4.0 ft.	OHWM Indica (check all that apply		⊠ Clear lin on bank	e □Shelvin	g	□Wrested vegetation	□Scou	uring □Water staining
Height:ft.	□Bent, r vegetatio	natted, or missino n	g □Wrack lir	ne □Litter ar debris	nd	□Abrupt plant		oil characteristic change
Width of Waterbody - T Bank to Top of Bank:			oe of Slope	Width of Waterb	ody - W		Depth of Wa	ater:
9 ft.		of Slope: _¹_ ft.		Water Edge:	_3_ ft.		(Αρριολ.)	_0.2_ ft.
				N/A□			N/A 🗆	
Sinuosity: (check one)	(Approx.)	velocity:		Bank height Right:			Bank slope	ght:
□Straight		0.3fps		<u> </u>	2.5_ft.			50 degrees
⊠Meanderir	ng N/A□			Left:	_2_ft.		l	Left: _60_degrees
Qualitative Attribu	tes							
Water Appearance:								
(check one)	No water ⊠0	Clear □Turbi	-	een □Su surface sci		□Algal [mats	□Other:	
Substrate:	Bedrock □ Bo	oulder Cobb	le 🗆 Grave	el ⊠ Sand □	⊠ Silt/ c	lay 🛭 Organic	☐ Other:	
% of Substrate:	%	%	%9	% <u>60</u> % _	30_%	<u>10</u> %		%
Width of Riparian Zone	: Vegetative		⊠ Trees:	N.	✓ Sanlir	ngs/Shrubs:	⊠ Herb	he
<u>ft</u> - N/A⊠	ľ	of Dominants:	<u>12</u> in.		2_in.	iga/orituba.		03
Dominant Bank Vegeta								
Sycamore, Musclew	ood, Americar	n Holly, White	Oak, Japa	nese Honeysu	ıckle, S	Shumard Oal	k, Red Ma	ple
Aquatic Habitats (ex: su	bmerged or emerged	d aquatic vegetation	n, overhanging b	oanks/roots, leaf pac	ks, large	submerged wood,	, riffles, deep p	pools):
Overhanging roots	and leaf packs							
Aquatic Organisms Ob	served (list):							
None								
T&E Species Observed	(list):							
None								
Disturbances (ex: livesto	ock access, manure i	n waterbody, waste	discharge pipe	s):				
Tributary is:	✓ Natural	□ A	ificial man and	ado - Manier	uloto -l			
Stream Quality a:	⊠ Natural		ificial, man-ma	<u> </u>	uiated			
(check one)	☐ High	⊠ Mo	derate	☐ Low				

Waterbody	ID
SDIC008	

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:





Waterbody SDIC008 facing upstream



Waterbody SDIC008 facing downstream



Waterbody SDIC008 facing across

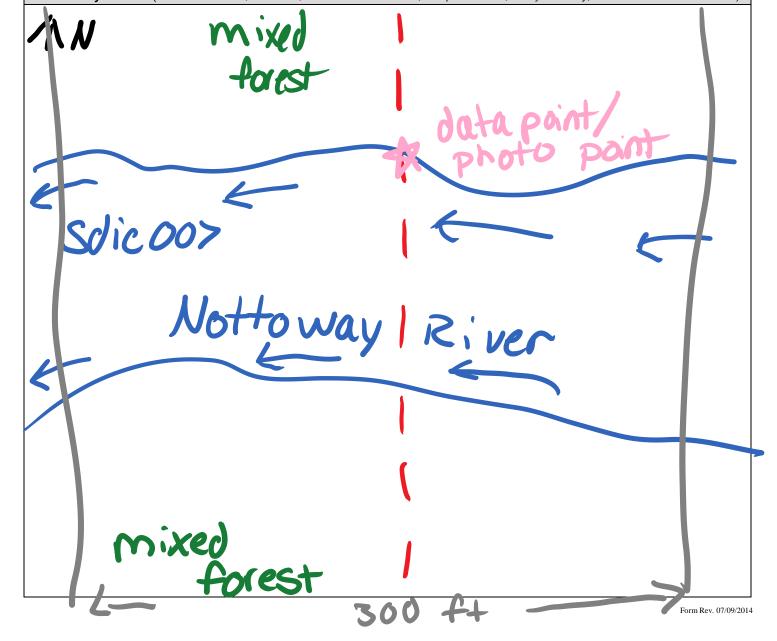
Survey Description	1							
Project Name:	Waterbody Name:			W	aterbody ID:	Date:		
Atlantic Coast Pipeli	Nottoway River			S	DIC007	12/2/2014		
State:	County:		Company:		Crew I	Member Initials	: Pho	otos:
Virginia Dinwiddie NR			NRG	IRG CR, A		AS SDIC		DIC007_001-003
Tract Number(s):			Nearest Mile	post:		Associated W	etland ID(s):
13-041; unknown tra	act between 13	3-041 and	257.7			None		
Survey Type: (check one)	□Centerline	e ⊠Re-F	Pouto	□Access Road	l	□Other:		
Physical Attributes		; AKE-I	Coule	□ Access Road		□Otrier.		
Stream Classification:								
(check one)	Ephemera	al □Inter	mittent	⊠Perennial				
Waterbody Type: (check one)	River Str	eam 🗆 Dito	ch □ Ca	anal 🗆 Other:	:			
OHWM Width: 55 ft	OHWM Indica (check all that apply		⊠ Clear lin on bank	ne ⊠Shelvin	g	□Wrested vegetation	□Sc	ouring
Height: 6 ft.	□Bent, r vegetatio	matted, or missin n	g □Wrack li	ne □Litter ar debris	nd	□Abrupt plan community ch		Soil characteristic change
N/A 🗆		()4/ ()		NAC Job - CNAC-CI	1 \A	tatan Edon ta T	D (1)	N-1
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterbo	ody - W		Depth of \((Approx.)	water:
<u>_75</u> ft.	_	_45ft.			<u>53</u> ft.		N/A□	<u>3.5</u> ft.
Sinuosity:	Water	velocity:		Bank height			Bank slop	oe .
(check one) ⊠Straight	(Approx.)			Right:			Ī	Right:
≥ otraigin		_1_fps			<u>16_</u> ft.			80 degrees
□Meanderin	ng N/A□			Left:	<u>20_</u> ft.			Left: 80 degrees
Qualitative Attribut	tes			L				
Water Appearance:								
(check one)	No water ⊠0	Clear □Turb	-	een □Sui surface scu		□Algal mats	□Other:	
	Bedrock ☐ Bo	oulder Cobb	le 🗆 Grave	el 🛭 Sand	⊠ Silt/ c	lay 🗆 Organic	: Othe	er:
(check all that apply) % of Substrate:	%	%	<u> </u>	% 60 %	<u>40</u> %	%		%
Width of Binarian Zana				·· <u></u> ·· -				
Width of Riparian Zone	: Vegetative (check all that		⊠ Trees:	: [2	☑ Saplir	ngs/Shrubs:	⊠ He	erbs
<u>100_ft</u> - N/A□	Avg. DBH (approx.)	of Dominants:	<u>_12</u> _in.	-	<u>2</u> in.			
Dominant Bank Vegeta								
Sycamore, Musclew	ood, Loblolly I	Pine, Red Ma	ple, and Ja	panese Honey	suckle	Э		
Aquatic Habitats (ex: su	bmerged or emerged	d aquatic vegetation	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, dee	p pools):
Riffles and large sul	omerged wood	l (8-12in diam	neter)					
Aquatic Organisms Ob	served (list):							
None								
T&E Species Observed	(list):							
None								
Disturbances (ex: livesto	ck access, manure i	n waterbody, waste	e discharge pipe	es):				
A bridge from the pa	aved Gills Brid	ge Road runs	over the ri	iver just outside	e of the	e corridor up	stream.	
Tributary is: (check one)	Natural	□ Art	ificial, man-m	ade □ Manip	ulated			
Stream Quality ^a : (check one)	☐ High	⊠ Mo	oderate	□ Low				

Waterbody	ID:
SDIC007	

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:





Waterbody SDIC007 facing upstream



Waterbody SDIC007 facing downstream



Waterbody SDIC007 facing across