

Stream SBUC007 facing southeast across

Survey Description	on	I								_
Project Name:		Waterboo	-				/aterbody ID:			Date:
Southeast Reliabili	ty	UNNAM	IED I	RIB TO NO	ORTH RIVER	s	BUK005			7/18/2014
State:	County:			Company:		Crew I	Member Initials:	F	Photos:	
Virginia	Buckingham	I		WOODAR	D & CURRAN	RS, J	S		0052-0	054
Tract Number(s):			l	Nearest Mile	post:		Associated We	etland	ID(s):	
09-045				191			NA			
Survey Type: (check one)	⊠Centerl	ne [∃Re-R	oute	□Access Road	l	□Other:			
Physical Attribute	;									
Stream Classification: (check one)	: □Epheme	eral [Interr	nittent	⊠Perennial					
Waterbody Type: (check one)	□River ⊠ S	Stream	Ditcl	n 🗆 Ca	anal 🗆 Other					
OHWM Width: 10 ft.	OHWM Indi (check all that a)			☑ Clear lin on bank	e ⊠Shelvin	g	⊠Wrested vegetation	\boxtimes	Scouring	l ⊡Water staining
Height: ft. N/A□	⊠Bent vegeta	, ,	missing	g □Wrack lir	ne ⊠Litter a debris	nd	□Abrupt plant community cha		□Soil cł	naracteristic change
Width of Waterbody -	Top of Widt	h of Waterbo	ody - T	oe of Slope	Width of Waterb	ody - W	ater Edge to	Depth (of Water	:
Bank to Top of Bank:		e of Slope:			Water Edge:			Approx.)		
<u>_14_</u> ft.		<u>10</u> ft.				<u>10</u> ft.	N	I/A⊠		<u>.5_</u> ft.
Sinuosity:		er velocity:			Bank height		E	Bank s	lope	
(check one)	(Appro				Right:	0 ff			Right	
		_1	fps		Left:	<u>8</u> ft.			Left	<u>70</u> degrees
Meander	ing N/A∑					<u>6</u> ft.				70 degrees
Qualitative Attribu	utes									
Water Appearance: (check one)	□No water	⊠Clear [∃Turbi			rface um	□Algal □ mats	Other	:	
	Bedrock	Boulder 🛛	Cobbl	e 🛛 Grave	el 🛛 Sand	⊠ Silt/ c	ay 🗆 Organic		Other:	
(check all that apply)NA % of Substrate:	<u>NA</u> % <u>10</u>	_% _1	<u>0</u> %	<u>40</u> %	<u> 30 </u> %	<u>10_</u> %	<u>NA</u> %	NA	_%	
Width of Riparian Zon	e: Vegetat	ive Layers:								
	(check all t	hat apply) H of Domina	ants:	⊠ Trees: <u>12</u> in.		⊠ Saplir _ <u>1_</u> in.	ngs/Shrubs:	\boxtimes	Herbs	
Dominant Bank Veget	. ,					OTED				
CAREX SPP., BO										
Aquatic Habitats (ex: s OVER HANGING			•		•		U	riffles, o	deep pools	s):
Aquatic Organisms O	bserved (list):									
WATER STRIDER, O	CRAYFISH, FIS	H, MAYFL	Y, STC	ONEFLY, FF	ROGS, EBONY	JEWEI	LWING			
T&E Species Observe NA	d (list):									
Disturbances (ex: lives	tock access, manur	e in waterbody	v, waste	discharge pipe	s):					
Tributary is: (check one)	⊠ Natura	I	🗆 Arti	ficial, man-ma	ade 🗆 Manip	ulated				
Stream Quality ^a : (check one)	⊠ High			derate	⊠ Low					

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:

PERENNIAL STREAM WITH MODERATE FLOW AND VOLUME. NUMEROUS AQUATIC ORGANISMS OBSERVED. RIFFLES, POOLS AND GLIDES PRESENT. CHANNEL DEEPLY INCISED AND FLOODPLAIN WETLANDS ABSENT DUE TO WELL DRAINED LOAMY SOILS.





Waterbody point sbuk005 facing northeast and downstream



Waterbody point sbuk005 facing southwest and upstream



Waterbody point sbuk005 facing northwest and across

Linear Waterbody	Data Shee	et							
Survey Description					1				
Project Name:		Waterbody Na	me:			aterbody ID:			Date:
Atlantic Coast Pipelin	е	North River			5	buc105			10/24/2015
State: C	ounty:		Company:		Crew N	Member Initials:	: P	hotos:	
Virginia B	uckingham		NRG		CR, A	AS		1-3	
Tract Number(s):			Nearest Mile	epost:		Associated W	etland I	D(s):	
09-001.AR-AR1 (09-0	045.AR)		195.5			Wbuc105			
Survey Type: (check one)		e □Re-l	Route	⊠Access Road		□Other:			
Physical Attributes									
Stream Classification: (check one)	□Ephemer	ral □Inte	mittent	⊠Perennial					
Waterbody Type: (check one) ⊠R	iver 🗆 St	ream 🗆 Dite	ch 🗆 Ca	anal 🗆 Other:					
OHWM Width: <u>30</u> ft.	OHWM Indica (check all that app		⊠ Clear lir on bank	ne ⊡Shelvin∢	g	□Wrested vegetation	\boxtimes	Scouring	g ⊟Water staining
Height: _ <u>5_</u> ft. N/A□	⊠Bent, vegetatio	matted, or missir on	ig ⊠Wrack li	ne ⊠Litter an debris	nd	□Abrupt plant community ch		⊒Soil cl	haracteristic change
Width of Waterbody - Top Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - W		Depth o	of Water	:
<u>40</u> ft.	-	<u>5</u> ft.		N/A□	<u>20_</u> ft.	I	N/A□		<u>3</u> ft.
Sinuosity: (check one)	Water (Approx.	velocity:		Bank height Right:		I	Bank sl	ope Right	:
□Straight		<u>_1_</u> fps		Left:	<u>12_</u> ft.			Left	<u>80</u> degrees
⊠Meandering	N/A□				<u>10_</u> ft.				85 degrees
Qualitative Attribute	s								
Water Appearance: (check one)	o water 🛛 🖾	Clear □Turb		leen ⊡Sur surface scu		□Algal [mats	□Other:		
	Bedrock 🛛 🖾 B	oulder 🛛 Cobb	ole 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🗆 Organic		ther:	
(check all that apply) % of Substrate:	% _5%	% <u> 5 </u> %	<u> 15 </u> %	<u>65</u> %	<u>10_</u> %	%		_%	
Width of Riparian Zone:	Vegetativ (check all that	e Layers:	X Troop			ace/Shruba		Llorbo	
_ <u>100_ft</u> - N/A□	-	I of Dominants:	⊠ Trees _ <u>12_</u> in.		⊴ Sapiir _ <u>2_</u> in.	ngs/Shrubs:		Herbs	
Dominant Bank Vegetatio	on (list):								
Ironwood, sycamore,	northern spi	cebush, easte	ern red ced	ar, red maple					
Aquatic Habitats (ex: subn	nerged or emerge	ed aquatic vegetation	n, overhanging	banks/roots, leaf pacl	ks, large	submerged wood,	riffles, d	eep pool	s):
Pools, leaf packs, ove	erhanging ro	ots/banks							
Aquatic Organisms Obse	erved (list):								
Crayfish, stonefly nym	nph, mussels	S							
T&E Species Observed (/	list):								
None									
Disturbances (ex: livestock	access, manure	in waterbody, wast	e discharge pipe	es):					
Stream flows through	a 8' culvert.	There are se	veral other	culverts preser	nt for o	overflow cond	ditions		
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🛛 Manipu	ulated				
Stream Quality ^a : (check one)	□ High	⊠ Mo	oderate	□ Low					

Waterbody ID:

Sbuc105

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:

Changed to SBUC105. JM 11/5/15

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





Waterbody SBUC105 facing southwest upstream



Waterbody SBUC105 facing northeast downstream



Waterbody SBUC105 facing northwest across

Survey Descri	iption												
Project Name:				rbody Nam					laterbody ID:			Date:	
Atlantic Coast	Pipeline	;	UNT	to North	River			S	bue002			2/26/2016	
State:	Co	ounty:			Company:			Crew I	Member Initials	6:	Photos:		
Virginia	Βι	uckingh	nam	r	NRG			CG, A	AS		1-3		
Tract Number(s):	I			I	Nearest Mile	epost:			Associated W	etland	ID(s):		
09-045				I	NA				none				
Survey Type: (check one)		□Cer	nterline	□Re-R	oute	□A	ccess Road		⊠Other: Con	tracto	or Yard		
Physical Attri													
Stream Classifica (check one)	ation:	⊠Epł	nemeral	□Intern	nittent	□P	erennial						
Waterbody Type:													
(check one)	□Riv	ver	Stream Stream	Ditch	n 🗆 C	anal	□ Other:						
онwм			Indicator:										
Width: <u>3</u> ft.		(check all t	that apply)		Clear lir on bank	ne	□Shelvin	g	☐Wrested vegetation	Þ	Scouring	g □Water staining	
Height:			Bent, matted	l, or missing	∣ □Wrack li	ine	⊠Litter ar	nd	□ Abrupt plar		□Soil cl	haracteristic change	
0.25_ N/A□	_ft.	ve	getation				debris		community ch	nange			
Width of Waterbo					oe of Slope			ody - W	ater Edge to		of Water	r:	
Bank to Top of B	ank:	t	o Toe of Slo	ppe:		Wate	r Edge:			(Approx.)		
_7	_ft.		<u>3</u> ft.					<u>2</u> ft.		N/A□	-	<u>_0.1_</u> ft.	
Sinuosity:			Nater veloci	tv-		N/A□ Bank	height			Bank	slone		
(check one)	vight		Approx.)			Bank	Right:			Bunk	Right	:	
⊠Stra	aigin			<u>0.05</u> fps			Left:	<u>1.5_</u> ft.			Left	<u>10</u> degrees	
□Mea	andering	1	N/A□					<u>1.5_</u> ft.			Len	<u>10</u> degrees	
Qualitative At		s											
Water Appearance (check one)		water	⊠Clear	□Turbi	d ⊡Sh	heen	□Su	face	□Algal	□Othe	r.		
(oneon ono)	-110	water				n surfac			mats		1.		
Substrate:	🗆 Be	edrock	□ Boulder		e 🗆 Grav	el 🗵	Sand	⊠ Silt/ o	clay 🗆 Organio		Other:		
(check all that apply) % of Substrate:		%	%	c	%	<u>% (</u>	<u>60_</u> %	<u>40_</u> %	%		%		
Width of Riparian	n Zone:	Vea	etative Laye	ers:									
		(chec	k all that apply)		⊠ Trees	:		🛛 Sapliı	ngs/Shrubs:	\triangleright	I Herbs		
N/A⊠	<u>ft</u> .	Avg (appr	. DBH of Do	minants:	<u>6</u> in.		-	<u>1</u> in.					
Dominant Bank V	/egetatio	n (list):											
Pine, honeysu	ckle, ce	dar											
Aquatic Habitats	(ex: subm	erged or e	emerged aquat	tic vegetation	, overhanging	banks/r	oots, leaf pac	ks, large	submerged wood	l, riffles,	deep pool	s):	
none													
Aquatic Organisr	ns Obser	ved (list):										
none													
T&E Species Obs	served (lis	s <i>t)</i> :											
none													
Disturbances (ex:	livestock	access, m	nanure in wate	rbody, waste	discharge pip	es):							
none													
Tributary is: (check one)		⊠ Na	itural		ficial, man-m	ade	🗆 Manip	ulated					
Stream Quality ^a : (check one)		🗆 Hiç	gh	⊠ Moo	derate		□ Low						

Waterbody ID:

Sbue002

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





SBUE002 facing west upstream



SBUE002 facing east downstream



SBUE002 facing south across

Survey Descriptio	n								1	-
Project Name:		Waterboo	-				/aterbody ID:			Date:
Southeast Reliabilit	iy	UNNAN	IED I	RIBION	ORTH RIVER	S	BUK004		'	7/18/2014
State:	County:			Company:		Crew I	Member Initials	:	Photos:	
Virginia	Buckingham			WOODAR	D & CURRAN	RS, J	IS		0048-0	050
Tract Number(s):				Nearest Mile	epost:		Associated W	etland	ID(s):	
09-045				191			NA			
Survey Type: (check one)	⊠Centerli	ne [□Re-R	loute	□Access Road	I	□Other:			
Physical Attribute										
Stream Classification: (check one)	⊠Epheme	eral [Inter	nittent	□Perennial					
Waterbody Type: (check one)	∃River ⊠ S	Stream	□ Ditc	h □C	anal 🛛 Other	:				
OHWM Width: _2_ft.	OHWM India (check all that ap			☑ Clear lir on bank	ne DShelvin	g	□Wrested vegetation	×	Scouring	□Water staining
Height: <u>.5_</u> ft. N/A□	□Bent vegeta	, matted, or i tion	missing	g ⊠Wrack li	ne ⊠Litter a debris	nd	□Abrupt plan community ch		□Soil ch	aracteristic change
Width of Waterbody -			ody - 1	oe of Slope	Width of Waterb	ody - W			of Water:	:
Bank to Top of Bank:	to To	e of Slope:			Water Edge:			(Approx.)		
<u>3</u> ft.		<u>2</u> ft.				ft.		N/A⊠		ft.
Sinuosity:	Wate	r velocity:			N/A⊠ Bank height			Banks	slope	
(check one)	(Appro				Right:				Right:	
)_fps		Left:	<u>.5</u> ft.			Left:	<u>30</u> degrees
□Meanderi	ng N/A⊠	3				<u>.5</u> ft.				70 degrees
Qualitative Attribu	ites				•					
Water Appearance: (check one)	[⊠] No water [Clear	∃Turbi		_	rface um	□Algal I mats	□Othe	r:	
	Bedrock 🗆 I	Boulder 🗆	Cobb	le 🗆 Grave	el 🗆 Sand 🛛	⊠ Silt/ o	clay 🗆 Organic		Other:	
(check all that apply)NA % of Substrate:	<u>NA</u> % <u>N</u> A	<u>%</u>	<u>IA </u> %	<u>NA</u> %	<u>NA</u> %	<u>100</u> %	<u>NA</u> %	NA	<u>`</u> %	
Width of Riparian Zone		ve Layers:								
<u>_100+ ft</u> - N/A□	(check all th Avg. DB (approx.)	nat apply) H of Domina	ants:	⊠ Trees <u>5</u> in.		⊠ Sapliı _ <u>2_</u> in.	ngs/Shrubs:		I Herbs	
Dominant Bank Vegeta	,									
CAREX SPP., MOS	SSES, VIBUR	NUM PRI	JNIF	OLIUM						
Aquatic Habitats (ex: s	ubmerged or emerg	ged aquatic ve	getatior	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles,	deep pools):
Aquatic Organisms Ob NA	oserved (list):									
T&E Species Observed	d <i>(list)</i> :									
Disturbances (ex: livest	ock access, manur	e in waterbody	/, waste	discharge pipe	es):					
Tributary is: (check one)	⊠ Natural		□ Art	ificial, man-m	ade 🗌 Manip	ulated				
Stream Quality ^a : (check one)	🗆 High		□ Mo	derate	⊠ Low					

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 EPHEMERAL STREAM WITH WELL DEFINED BED AND BANK. FLOWS DIAGONALLY ACROSS ROW. LEAVES AND DEBRIS IN CHANNEL. SMALL HEAD CUTS PRESENT. NO FLOW AT TIME OF SURVEY. BRAIDED CHANNEL AT HEADWATERS ON SE SIDE OF ROW.





Waterbody point sbuk004 facing north and downstream



Waterbody point sbuk004 facing south and upstream



Waterbody point sbuk004 facing west and across

Survey Description	n	<u></u>						1
Project Name:		Waterbody Na				aterbody ID:		Date:
Atlantic Coast Pipel	ine	UNT to North	h River		S	bue003		2/26/2016
State:	County:	1	Company:		Crew I	Member Initials:	Photos:	L
Virginia	Buckingham		NRG		CG, A	AS	1-3	
Tract Number(s):			Nearest Mile	epost:		Associated Wetl	and ID(s):	
Access road to 09-04	5		NA			none		
Survey Type:								
(check one)		e ⊡Re-l	Route	⊠Access Road		□Other:		
Physical Attributes Stream Classification:	S							
(check one)		al ⊠Inte	rmittent	Perennial				
Waterbody Type: (check one)	River 🛛 Str	ream 🗆 Dite	ch 🗆 C	anal 🛛 Other	:			
OHWM Width: 5 ft.	OHWM Indica (check all that appl		□ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation	Scourin	g □Water staining
Height: 2 ft.	⊠Bent, r vegetatio	matted, or missir	ng □Wrack li	ne □Litter ar debris	nd	☐ Abrupt plant community chan		haracteristic change
N/A 🗆	0						0	
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterb Water Edge:	ody - W		pth of Wate	r:
ft.		<u>3_</u> ft.		_	_4_ft.			<u>0.5</u> ft.
Sinuosity:	Water	velocity:		N/A□ Bank height		-	A□ nk slope	
(check one)	(Approx.)			Right:		Da	Right	t:
□Straight		<u>_0.1</u> fps	3	Left:	<u>2</u> ft.		Lef	30 degrees
⊠Meanderir	ng N/A□			Lent:	<u>2</u> ft.		Lei	<u>30</u> degrees
Qualitative Attribu	tes			<u> </u>				
Water Appearance:								
(check one)	No water ⊠0	Clear DTurk		neen □Sui nisurface scu		□Algal □C mats	Other:	
Substrate:	Bedrock 🗆 Bo	oulder 🛛 Cobb	ole 🛛 Grav	el 🛛 Sand 🛛	⊠ Silt/ o	clay 🛛 Organic	□ Other:	
% of Substrate:	%	_%	<u>% 5</u> %	<u>90</u> %	<u>5</u> %	%	%	
Width of Riparian Zone	e: Vegetative	a lavors:						
-	(check all that	t apply)	⊠ Trees	:	🛛 Saplii	ngs/Shrubs:	⊠ Herbs	
<u>12 ft</u> - N/A□	(approx.)	of Dominants:	_ <u>6_</u> in.		_ <u>1_</u> in.			
Dominant Bank Vegeta								
Boxelder, tulip popla	•							
Aquatic Habitats (ex: su	ubmerged or emerge	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood, rif	fles, deep poo	ls):
Leaf packs, pools								
Aquatic Organisms Ob	served (list):							
insects								
T&E Species Observed	(list):							
none								
Disturbances (ex: livesto	ock access, manure i	in waterbody, wast	e discharge pip	es):				
Field above stream								
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗆 Manip	ulated			
Stream Quality ^a : (check one)	□ High	⊠ Mo	oderate					

Waterbody ID:

Sbue003

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





SBUE003 facing south upstream



SBUE003 facing north downstream



SBUE003 facing east across

Survey Descriptio	n										
Project Name:		Waterbo	•					aterbody ID:			Date:
Southeast Reliabilit	у	UNNA	MED T	RIB TO N	ORTH	RIVER	SI	BUK003		7	7/18/2014
State:	County:			Company:			Crew N	lember Initials	:	Photos:	
Virginia	Buckingham			WOODAR	2D & C	URRAN	RS, J	S		0039-0	041
Tract Number(s):	1			Nearest Mile	epost:			Associated W	etland	ID(s):	
09-046				192				WBUK005E	Ξ		
Survey Type: (check one)	⊠Centerlir	ne	□Re-F	Route	□Ac	cess Road		□Other:			
Physical Attribute											
Stream Classification: (check one)	□ Epheme	ral	⊠Inter	mittent	□Pe	rennial					
Waterbody Type:											
	∃River ⊠ S	tream	□ Ditc	h 🗆 Ca	anal	□ Other:					
OHWM	OHWM Indic (check all that ap						~	⊠\/reated	N		⊠\M/otor
Width: ft.	(check all that ap)	<i>Jy)</i>		Clear lir on bank	ie	Shelving	g	⊠Wrested vegetation	Ľ	Scouring	⊠Water staining
Height:			missing	g	ine	□Litter ar	nd	□Abrupt plan		□Soil ch	aracteristic change
<u>.5_</u> ft. N/A□	vegetat	on				debris		community ch	ange		
Width of Waterbody - 1				Toe of Slope			ody - W			of Water	:
Bank to Top of Bank:	to lo	e of Slope:			Water	Edge:			(Approx.))	
<u>_1_</u> ft.		<u>.5</u> ft.				-	<u>.5</u> ft.		N/A□	-	<u>.25_</u> ft.
Sinuosity:	Wate	velocity:			N/A□ Bank h	neight			Bank	slope	
(check one)	(Approx					Right:				Right:	
			<u>0_</u> fps			Left:	<u>1</u> ft.			Left	70 degrees
	ng N/A⊡						<u>1_</u> ft.			Len	
Qualitative Attribu	ites										
Water Appearance: (check one)	No water □	Clear	⊠Turb		neen n surface	⊡Sur scu		□Algal I mats	□Othe	r:	
Substrate:	Bedrock 🗆 E	oulder [Cobb	le 🗆 Grave	el 🗆	Sand D	⊠ Silt/ c	lay 🗆 Organic	: 🗆 (Other:	
(check all that apply)NA % of Substrate:	<u>NA</u> % <u>NA</u>	%	<u>NA </u> %	<u>NA</u> %	N	<u>A</u> %	<u>100_</u> %	<u>NA</u> %	NA	<u>\</u> %	
Width of Riparian Zone	: Vegetativ	/e Layers:									
•	(check all th	at apply)		□ Trees	:		∃ Saplin	igs/Shrubs:		Herbs	
_ <u>20 ft</u> - N/A□	Avg. DBI (approx.)	I of Domir	ants:	in.		-	in.				
Dominant Bank Vegeta	ation (list):										
GRASSES,SEDGE	S, SCIRPUS										
Aquatic Habitats (ex: su	ubmerged or emerg	ed aquatic ve	egetatior	n, overhanging	banks/ro	ots, leaf pac	ks, large	submerged wood	, riffles,	deep pools	ə):
NA											
Aquatic Organisms Ob	served (list):										
NA											
T&E Species Observed	l (list):										
NA											
Disturbances (ex: livesto	ock access, manure	in waterbod	y, waste	discharge pipe	es):						
NA											
Tributary is: (check one)	□ Natural		□ Art	ificial, man-m	ade	🛛 Manipu	ulated				
Stream Quality ^a : (check one)	□ High		□ Mo	derate		⊠ Low					

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:

NARROW STREAM WITH WHAT APPEARS TO BE A CONSERVATION VEGETATIVE BUFFER. VERY DENSE VEGETATION IN BUFFER.





Waterbody point sbuk003 facing south and upstream



Waterbody point sbuk003 facing northwest and downstream



Waterbody point sbuk003 facing west and across

Survey Descriptio	n								
Project Name:		Waterbody N				aterbody ID:		Date:	
Southeast Reliabilit	у	UNNAMED) TRIB TO N	ORTH RIVER	SI	BUK002		7/17/2014	
State:	County:		Company:		Crew N	Member Initials	: Ph	notos:	
Virginia	Buckingham		WOODAR	D & CURRAN	RS, J	S	0	024-0026	
Tract Number(s):	1		Nearest Mile	epost:		Associated W	etland ID)(s):	
09-047			192			WBUK003E	Ē		
Survey Type: (check one)	⊠Centerlin	ie ⊡Re	e-Route	□Access Road	l	□Other:			
Physical Attribute	S								
Stream Classification: (check one)	Epheme	ral ⊠Int	ermittent	□Perennial					
Waterbody Type: (check one)	River ⊠ S	tream 🗆 D	itch 🗆 C	anal 🛛 Other	:				
OHWM Width: _3_ft.	OHWM Indic (check all that app		□ Clear lir on bank	ne ⊡Shelvin	g	⊠Wrested vegetation	⊠S	couring ⊠Water staining	
Height: <u>.75_</u> ft. N/A□	□Bent, vegetati	matted, or miss on	sing	ine □Litter a debris	nd	□Abrupt plan community ch		Soil characteristic change	
Width of Waterbody - 1 Bank to Top of Bank:		of Waterbody of Slope:	- Toe of Slope	Width of Waterb Water Edge:	ody - W		Depth of (Approx.)	Water:	
<u>5</u> ft.		<u>3</u> ft.		N/A□	<u>3</u> ft.		N/A□	<u>25_</u> ft.	
Sinuosity: (check one) ⊠Straight □Meanderiu	(Approx	fp	os	Bank height Right: Left:	<u>1-4</u> ft.		Bank slo	Right: <u>90</u> degrees Left:	
Qualitative Attribu				-	<u>1-4</u> ft.			<u>80</u> degrees	
Water Appearance:									_
(check one)	[□] No water ⊠	lClear □Tu		_	rface um	□Algal [mats	□Other:		
	Bedrock 🛛 B	oulder 🗆 Co	bble 🛛 Grav	el 🗆 Sand 🛛	⊠ Silt/ c	lay 🗆 Organic	□ Oth	ner:	
(check all that apply)NA % of Substrate:	<u>NA</u> % <u>NA</u>	_% <u>NA</u> %	% <u> 5 </u> %	<u>NA</u> %	<u>95_</u> %	<u>NA</u> %	NA	<u>%</u>	
Width of Riparian Zone		/e Layers:							
<u>0 ft</u> . N/A□	(check all the Avg. DBł (approx.)	at apply) H of Dominants	⊠ Trees s: _4_in.		⊠ Saplin _ <u>2_</u> in.	ngs/Shrubs:	⊠⊦	Herbs	
Dominant Bank Vegeta	. ,								
GRASSES,SEDGE	S								
Aquatic Habitats (ex: so SMALL POOLS	ubmerged or emerge	ed aquatic vegeta	tion, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, de	ep pools):	
Aquatic Organisms Ob NA	oserved (list):								
T&E Species Observed	l (list):								
Disturbances (ex: liveste	ock access, manure	in waterbody, wa	ste discharge pip	es):					
LIVESTOCK ACCE	ESS, MANURE	Ξ							
Tributary is: (check one)	⊠ Natural		Artificial, man-m	iade 🗆 Manip	ulated				
Stream Quality ^a : (check one)	□ High		Voderate	⊠ Low					

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:

INCISED STREAM WITHIN PASTURE DEGRADED BY CATTLE. POOLS PRESENT WITH SLIGHT FLOW. SPRING FED.





Waterbody point sbuk002 facing west and upstream



Waterbody point sbuk002 facing east and downstream



Waterbody point sbuk002 facing south and across

Survey Descriptio	n								
Project Name:		Waterbody Na				/aterbody ID:		Dat	
Southeast Reliabilit	У	UNNAMED	TRIB TO N	ORTH RIVER	S	BUK001		7/1	7/2014
State:	County:		Company:		Crew I	Member Initials	: Pl	notos:	
Virginia	Buckingham		WOODAR	D & CURRAN	RS, J	S	0	014-001	6
Tract Number(s):	•		Nearest Mile	epost:		Associated W	etland IC	D(s):	
09-047			192			WBUK002E	Ξ		
Survey Type: (check one)	⊠Centerlin	e □Re-	Route	□Access Road		□Other:			
Physical Attribute	S								
Stream Classification: (check one)	Ephemer	ral ⊠Inte	ermittent	□Perennial					
Waterbody Type: (check one)	∃River ⊠ St	ream 🗌 Dit	ich 🗆 Ca	anal 🗌 Other	:				
OHWM Width: 2 ft.	OHWM Indica (check all that app		□ Clear lin on bank	ne ⊡Shelvin	g	⊠Wrested vegetation	⊠S	couring	⊠Water staining
Height: 5_ft. N/A□	□Bent, vegetati	matted, or missi on	ng □Wrack lin	ne ⊡Litter a debris	nd	□Abrupt plan community ch		Soil chara	acteristic change
Width of Waterbody - 1			Toe of Slope	Width of Waterb	ody - W		Depth of	Water:	
Bank to Top of Bank: 4_ft.		of Slope: ft.		Water Edge:	<u>.5</u> ft.		(Approx.)	2	<u>5_</u> ft.
Sinuosity:	Water	velocity:		N/A⊟ Bank height			N/A⊡ Bank slo	ne	
(check one)	(Approx.		5	Right:	<u>1-6_</u> ft.		Bunk Sk	Right:	<u>0</u> degrees
□Meanderi	ng N/A□			Left:	1-6 ft.			Left: 8	0 degrees
Qualitative Attribu	I								
Water Appearance:									
(check one)	[□] No water ⊠	Clear □Tur			rface um	□Algal [mats	Other:		
Substrate:	Bedrock B	oulder 🛛 Cob	ble 🛛 Grave	el 🗆 Sand 🛛	⊠ Silt/ c	clay 🗌 Organic	: 🗆 Otl	her:	
	<u>NA</u> % <u>NA</u>	<u>% NA</u> %	<u> 5 </u> %	<u>NA</u> %	<u>95_</u> %	<u>NA</u> %	NA	%	
Width of Riparian Zone	e: Vegetativ	e Layers:							
0_ <u>ft</u> . N/A□	(check all tha Avg. DBH (approx.)	at apply) I of Dominants:	⊠ Trees: _ <u>4_</u> in.		⊠ Saplir _ <u>2_</u> in.	ngs/Shrubs:	⊠ ł	Herbs	
Dominant Bank Vegeta	ation (list):								
GRASSES, CHICO	RY								
Aquatic Habitats (ex: s SMALL POOLS	ubmerged or emerge	ed aquatic vegetati	on, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, de	ep pools):	
Aquatic Organisms Ob	served (list):								
FROGS	. ,								
T&E Species Observed	d (list):								
Disturbances (ex: livest	ock access, manure	in waterbody, was	te discharge pipe	es):					
LIVESTOCK ACCE	ESS, MANURE								
Tributary is: (check one)	⊠ Natural		rtificial, man-m	ade 🗆 Manip	ulated				
Stream Quality ^a : (check one)	🗆 High		oderate	⊠ Low					

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:

INCISED STREAM WITHIN PASTURE DEGRADED BY CATTLE. NO FLOW AT TIME OF SURVEY. POOLS PRESENT







Waterbody point sbuk001 facing northeast and downstream



Waterbody point sbuk001 facing southwest and upstream



Waterbody point sbuk001 facing west and across

Survey Descriptio	n										
Project Name:		Waterb						aterbody ID:			Date:
Southeast Reliabilit	y	UNNA	MED 1	RIB TO S	LATE	RIVER	S	BUK006		7	//19/2014
State:	County:			Company:			Crew N	Member Initials	5:	Photos:	
Virginia	Buckingham			WOODAR	RD & C	URRAN	RS, J	S		001-00	3
Tract Number(s):				Nearest Mile	epost:			Associated W	etland	ID(s):	
09-048				193				NA			
Survey Type: (check one)	⊠Centerli	ne	□Re-F	Route	□Ac	cess Road		□Other:			
Physical Attribute	1										
Stream Classification: (check one)	⊠Epheme	eral	□Inter	mittent	□Pe	erennial					
Waterbody Type: (check one)	River ⊠ S	Stream	□ Ditc	h 🗆 C	anal	Other:	:				
OHWM Width: _ <u>1</u> ft.	OHWM Indie (check all that ap			□ Clear lir on bank	ne	Shelvin	g	□Wrested vegetation	×	Scouring	□Water staining
Height: 25_ft. N/A□	□Bent vegeta		r missin	g	ine	⊠Litter ar debris	nd	□Abrupt plan community ch		□Soil ch	aracteristic change
Width of Waterbody - ⁻ Bank to Top of Bank:		h of Water e of Slope		Toe of Slope	Width Water		ody - W	ater Edge to	Depth (Approx.)	of Water:	
<u>_1_</u> ft.		<u>1_</u> ft.			N/A⊠		ft.		N/A⊠		ft.
Sinuosity: (check one) ⊠Straight	Wate (Appro	er velocity: _{vx.)}			Bank I	height Right:	05 6		Bank s	slope Right:	10
Maandari	22	-	fps			Left:	<u>.25</u> ft.			Left:	<u>10</u> degrees
	ng N/A⊵						<u>.25_</u> ft.				<u>10</u> degrees
Qualitative Attribu	ites										
Water Appearance: (check one)	[⊠] No water [□Clear	□Turb		neen n surface	⊡Sui e scu		□Algal mats	□Othe	r:	
Substrate:	Bedrock	Boulder	Cobb	le 🗆 Grav	el 🗆	Sand [⊠ Silt/ c	ay 🛛 Organic		Other:	
	<u>NA</u> % <u>NA</u>	<u>%</u>	<u>NA </u> %	<u>NA</u> %	<u>_N</u>	<u>IA </u> %	<u>90_</u> %	<u> 10 </u> %	NA	<u>%</u>	
Width of Riparian Zono _100+ ft N/A□	(check all t	ive Layers: hat apply) H of Domi		[⊠] Trees <u>12</u> in.			⊠ Saplir _ <u>1_</u> in.	ngs/Shrubs:	×	I Herbs	
Dominant Bank Vegeta											
CAREX SP., FRAX	INUS SP., QI	UERCUS	SP, N	IOSSES							
Aquatic Habitats (ex: s NA	ubmerged or emerg	ged aquatic v	vegetation	n, overhanging	banks/ro	oots, leaf pac	ks, large	submerged wood	l, riffles,	deep pools):
Aquatic Organisms Ob	oserved (list):										
NA											
T&E Species Observed	d (list):										
Disturbances (ex: livest	ock access, manur	e in waterbo	dy, waste	e discharge pipe	es):						
Tributary is: (check one)	⊠ Natural		□ Art	ificial, man-m	nade	Manip	ulated				
Stream Quality ^a : (check one)	🗆 High		□ Mo	derate		⊠ Low					

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 EPHEMERAL STREAM IN MATURE OAK/HICKORY FOREST. DEFINED BED AND BANK WITH LEAVES AND OM THROUGHOUT.





Waterbody point sbuk006 facing east and downstream



Waterbody point sbuk006 facing west and upstream


Waterbody point sbuk006 facing south and across

Survey Descriptio	n										
Project Name:			ody Nam				w	aterbody ID:			Date:
Atlantic Coast Pipe		UNT t	o Slate	-				oua004			10/22/2014
State:	County:		C	Company:			Crew N	lember Initials	:	Photos:	
Virginia	Buckinghan	ו	-	NRG			GB, T			3 photo	os
Tract Number(s):				Nearest Mile	epost:			Associated W	etland	ID(s):	
09-049; access roa	d 39		-	194.2				Discontinuc	ous fri	nge we	tland
Survey Type: (check one)	□Center	ine	□Re-Ro	oute	⊠Acc	ess Road		□Other:			
Physical Attribute	S										
Stream Classification: (check one)	□Ephem	eral	□Interm	nittent	⊠Per	ennial					
Waterbody Type:											
	River ⊠	Stream	□ Ditch	n 🗆 Ca	anal	□ Other:					
ОНШМ	OHWM Ind										
Width: ft.	(check all that a	рріу)		☑ Clear lin on bank	ie	Shelving	g	□Wrested vegetation	×	Scouring	g ⊟Water staining
Height:	□Ben	t, matted, or	r missing	□Wrack li	ne	□Litter ar	nd	□Abrupt plan	t	□Soil cl	naracteristic change
<u> </u>	vegeta	ation	0		(debris		community ch	ange		C C
Width of Waterbody - 1 Bank to Top of Bank:		th of Water		oe of Slope	Width o Water E		ody - W	ater Edge to	Depth (Approx.	of Water	:
Bank to Top of Bank.		be of Stope	•		Water L	uye.			(100103.)		a - <i>a</i>
<u>_6.0</u> ft.		<u>3.0</u> ft.			N/A□	-	<u>3.5_</u> ft.		N/A□	-	<u>0.5</u> ft.
Sinuosity:	Wat	er velocity:			Bank he	eiaht			Bank	slope	
(check one)	(Appr					Right:				Right	:
			<u>).75_</u> fps			Left:	<u>3.0</u> ft.			Left	90 degrees
⊠Meanderi	ng N/Al						<u>4.0</u> ft.			Len	<u>70</u> degrees
Qualitative Attribu	ites										
Water Appearance: (check one)	[□] No water	⊠Clear	□Turbic			□Sur		0	□Othe	r:	
Substrate:	Bedrock	Boulder			surface	sci Sand D		mats lay		Other:	
(check all that apply)		Douidei						iay 🗆 Organic		Julier.	
% of Substrate:	%	%	<u>20 </u> %	<u> 10 </u> %	_50	_%	<u>20 </u> %	%		%	
Width of Riparian Zone		ive Layers:		-		_		(0)	-		
60 ft-		that apply) 3H of Domi	nants:	⊠ Trees:			•	gs/Shrubs:	Þ	Herbs	
N/A⊠	(approx.)			<u>6.0</u> in.	-	-	<u>1.0</u> in.				
Dominant Bank Vegeta	. ,										
Yellow poplar, alder foxtail. goldenrod. b	<u>eddar ticks.</u>	blackberr	<u>v. ironv</u>	veed. aarii	mony						
Aquatic Habitats (ex: se Pools, riffles	ubmerged of emer	geo aqualic v	regetation,	, overnanging	Danks/100	is, lear pac	ks, large	submerged wood	, mies,	deep pool	5):
Aquatic Organisms Ob	served (list):										
minnow											
T&E Species Observed	d (list):										
none											
Disturbances (ex: livest	ock access, manu	re in waterbo	dy, waste	discharge pipe	es):						
Culvert crossing for	r existing dirt	two track									
Tributary is: (check one)	⊠ Natura	1	□ Artif	ficial, man-m	ade	🗆 Manipu	ulated				
Stream Quality ^a : (check one)	🗆 High		⊠ Moc	lerate		□ Low					

Waterbody ID:

sbua004

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

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

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

Notes:

Continues out of access road 39 corridor in both directions, road crossing via fill and 24" concrete culvert

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



Form Rev. 07/09/2014



SBUA004 facing north upstream



SBUA004 facing south downstream



SBUA004 facing east across

Survey Descriptio	n								1-	
Project Name:			ody Na				/aterbody ID:			Date:
Southeast Reliabilit	ty	UNNA	MED	I RIB TO S	LATE RIVER	S	BUK007a			7/19/2014
State:	County:	-		Company:		Crew I	Member Initials	:	Photos:	
Virginia	Bucking	nam		WOODAR	D & CURRAN	RS, J	S		004-00	9
Tract Number(s):				Nearest Mile	epost:		Associated W	etland	ID(s):	
09-051				193			NA			
Survey Type: (check one)	⊠Ce	nterline	□Re-F	Route	□Access Road	l	□Other:			
Physical Attribute										
Stream Classification: (check one)		hemeral	⊠Inter	mittent	Perennial					
Waterbody Type: (check one)	River	Stream	🗆 Dito	ch 🗆 Ca	anal 🛛 Other	:				
OHWM Width: <u>5 f</u> t.		Indicator: that apply)		□ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation		Scouring	□Water staining
Height: ft. N/A□		Bent, matted, c	or missin	ig	ne ⊠Litter ar debris	nd	□Abrupt plan community ch		□Soil ch	naracteristic change
Width of Waterbody -				Toe of Slope	Width of Waterb	ody - W	ater Edge to		of Water	:
Bank to Top of Bank:	1	to Toe of Slope) :		Water Edge:			(Approx.)	
<u>_7_</u> ft.		<u>6</u> ft.			N/A□	<u>1</u> ft.		N/A□		<u>5</u> ft.
Sinuosity:	1	Water velocity			Bank height			Bank	slope	
(check one) Straight	1	(Approx.)			Right:				Right:	
			fps		Left:	<u>4_</u> ft.			Left	<u>80</u> degrees
	ng	N/A⊠				_ <u>4_</u> ft.				80 degrees
Qualitative Attribu	utes									
Water Appearance: (check one)	[⊠] No water	□Clear	□Turb		leen ⊡Su i surface sci		□Algal mats	□Othe	r:	
	Bedrock	□ Boulder		ole 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ o	lay 🗆 Organic	: 🗆 (Other:	
(check all that apply)NA % of Substrate:	<u>NA </u> %	<u>NA %</u>	<u>NA </u> %	<u>20</u> %	<u>20</u> %	<u>60</u> %	<u>NA</u> %	NA	<u>\</u> %	
Width of Riparian Zon		jetative Layers	:	× -	5	3.0 "	(0)	5	2	
<u>_ft</u> . N/A⊠		. DBH of Dom	inants:	⊠ Trees <u>6</u> in.		⊠ Sapili _ <u>1_</u> in.	ngs/Shrubs:	Z	I Herbs	
Dominant Bank Vegeta	ation (list):									
HONEYSUCKLE, (GRAPE, S	SUMAC, POI	PLAR							
Aquatic Habitats (ex: s NA	ubmerged or	emerged aquatic	vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles,	deep pools	5):
Aquatic Organisms Of	oserved (lisi	t):								
FROGS	-	-								
T&E Species Observed	d (list):									
Disturbances (ex: livest	ock access, n	nanure in waterbo	ody, waste	e discharge pipe	es):					
Tributary is: (check one)	⊠ Na	atural		tificial, man-m	ade 🗆 Manip	ulated				
Stream Quality ^a : (check one)	🗆 Hi	gh		oderate	⊠ Low					

Waterbody ID: SBUK007a

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:

EPHEMERAL STREAM. SLASH PILES IN STREAM.

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





Waterbody point sbuk007a facing northeast and upstream



Waterbody point sbuk007a facing southwest and downstream



Waterbody point sbuk007a facing southeast and across

Survey Descriptio	n									_
Project Name:			ody Na				/aterbody ID:			Date:
Southeast Reliabilit	ty	UNNA	MED	I RIB TO S	LATE RIVER	S	BUK007b			7/19/2014
State:	County:			Company:		Crew I	Member Initials	:	Photos:	
Virginia	Bucking	nam		WOODAR	D & CURRAN	RS, J	S		004-00	9
Tract Number(s):	1			Nearest Mile	epost:		Associated W	etland	ID(s):	
09-051				193			NA			
Survey Type: (check one)	⊠Ce	nterline	□Re-F	Route	□ Access Road		□Other:			
Physical Attribute										
Stream Classification: (check one)		hemeral	□Inter	mittent	Perennial					
Waterbody Type: (check one)	River	Stream	🗆 Dito	ch 🗆 Ca	anal 🛛 Other	:				
OHWM Width: <u>5 f</u> t.		Indicator: that apply)		□ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation		Scouring	□Water staining
Height: ft. N/A□		Bent, matted, c	or missin	ig	ne ⊠Litter ar debris	nd	□Abrupt plan community ch		□Soil ch	naracteristic change
Width of Waterbody -				Toe of Slope	Width of Waterb	ody - W			of Water	:
Bank to Top of Bank:	t	to Toe of Slope) :		Water Edge:			(Approx.)	
<u>_7_</u> ft.		<u>6</u> ft.			N/A□	<u>1</u> ft.		N/A□		<u>5</u> ft.
Sinuosity:		Water velocity			Bank height			Bank	slope	
(check one) Straight	((Approx.)			Right:				Right:	
			fps		Left:	<u>4_</u> ft.			Left	<u>80</u> degrees
	ng	N/A⊠				_ <u>4_</u> ft.				80 degrees
Qualitative Attribu	utes									
Water Appearance: (check one)	□No water	⊠Clear	□Turb		leen ⊡Sul i surface sci		□Algal mats	□Othe	r:	
	Bedrock	□ Boulder		ole 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🗆 Organic	: 🗆 (Other:	
(check all that apply)NA % of Substrate:	<u>NA %</u>	<u>NA %</u>	<u>NA </u> %	<u>20</u> %	<u>20</u> %	<u>60_</u> %	<u>NA</u> %	NA	<u>\</u> %	
Width of Riparian Zon		jetative Layers	:	⊠ -	5		(0)	5	2	
<u>_ft</u> . N/A⊠		. DBH of Dom	inants:	⊠ Trees <u>6</u> in.		⊴ Sapiir _ <u>1_</u> in.	ngs/Shrubs:	Z	I Herbs	
Dominant Bank Vegeta	ation (list):									
HONEYSUCKLE, (GRAPE, S	SUMAC, POI	PLAR							
Aquatic Habitats (ex: s NA	ubmerged or	emerged aquatic	vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles,	deep pools	5):
Aquatic Organisms Of	oserved (lisi	t):								
FROGS	-	-								
T&E Species Observed	d (list):									
Disturbances (ex: livest	ock access, n	nanure in waterbo	ody, waste	e discharge pipe	es):					
Tributary is: (check one)	⊠ Na	atural	□ Ar	tificial, man-m	ade 🗆 Manip	ulated				
Stream Quality ^a : (check one)	🗆 Hi	gh		oderate	⊠ Low					

Waterbody ID: SBUK007b

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:

INTERMITTENT STREAM LOCATED DOWN CHANNEL FROM EPHEMERAL STREAM.







Waterbody point sbuk007a facing northeast and upstream



Waterbody point sbuk007a facing southwest and downstream



Waterbody point sbuk007a facing southeast and across

Survey Descriptio	n								1-	
Project Name:			ody Na				/aterbody ID:			Date:
Southeast Reliabilit	ty	UNNA	MED	I RIB TO S	LATE RIVER	S	BUK007a			7/19/2014
State:	County:	-		Company:		Crew I	Member Initials	:	Photos:	
Virginia	Bucking	nam		WOODAR	D & CURRAN	RS, J	S		004-00	9
Tract Number(s):				Nearest Mile	epost:		Associated W	etland	ID(s):	
09-051				193			NA			
Survey Type: (check one)	⊠Ce	nterline	□Re-F	Route	□Access Road	l	□Other:			
Physical Attribute										
Stream Classification: (check one)		hemeral	⊠Inter	mittent	Perennial					
Waterbody Type: (check one)	River	Stream	🗆 Dito	ch 🗆 Ca	anal 🛛 Other	:				
OHWM Width: <u>5 f</u> t.		Indicator: that apply)		□ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation		Scouring	□Water staining
Height: ft. N/A□		Bent, matted, c	or missin	ig	ne ⊠Litter ar debris	nd	□Abrupt plan community ch		□Soil ch	naracteristic change
Width of Waterbody -				Toe of Slope	Width of Waterb	ody - W	ater Edge to		of Water	:
Bank to Top of Bank:	1	to Toe of Slope) :		Water Edge:			(Approx.)	
<u>_7_</u> ft.		<u>6</u> ft.			N/A□	<u>1</u> ft.		N/A□		<u>5</u> ft.
Sinuosity:	1	Water velocity			Bank height			Bank	slope	
(check one) Straight	1	(Approx.)			Right:				Right:	
			fps		Left:	<u>4_</u> ft.			Left	<u>80</u> degrees
	ng	N/A⊠				_ <u>4_</u> ft.				80 degrees
Qualitative Attribu	utes									
Water Appearance: (check one)	[⊠] No water	□Clear	□Turb		leen ⊡Su i surface sci		□Algal mats	□Othe	r:	
	Bedrock	□ Boulder		ole 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ o	lay 🗆 Organic	: 🗆 (Other:	
(check all that apply)NA % of Substrate:	<u>NA </u> %	<u>NA %</u>	<u>NA </u> %	<u>20</u> %	<u>20</u> %	<u>60</u> %	<u>NA</u> %	NA	<u>\</u> %	
Width of Riparian Zon		jetative Layers	:	× -	5	3.0 "	(0)	5	2	
<u>_ft</u> . N/A⊠		. DBH of Dom	inants:	⊠ Trees <u>6</u> in.		⊠ Sapili _ <u>1_</u> in.	ngs/Shrubs:	Z	I Herbs	
Dominant Bank Vegeta	ation (list):									
HONEYSUCKLE, (GRAPE, S	SUMAC, POI	PLAR							
Aquatic Habitats (ex: s NA	ubmerged or	emerged aquatic	vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles,	deep pools	5):
Aquatic Organisms Of	oserved (lisi	t):								
FROGS	-	-								
T&E Species Observed	d (list):									
Disturbances (ex: livest	ock access, n	nanure in waterbo	ody, waste	e discharge pipe	es):					
Tributary is: (check one)	⊠ Na	atural		tificial, man-m	ade 🗆 Manip	ulated				
Stream Quality ^a : (check one)	🗆 Hi	gh		oderate	⊠ Low					

Waterbody ID: SBUK007a

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:

EPHEMERAL STREAM. SLASH PILES IN STREAM.

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





Waterbody point sbuk007a facing northeast and upstream



Waterbody point sbuk007a facing southwest and downstream



Waterbody point sbuk007a facing southeast and across

Survey Descriptio	n									_
Project Name:			ody Na				/aterbody ID:			Date:
Southeast Reliabilit	ty	UNNA	MED	I RIB TO S	LATE RIVER	S	BUK007b			7/19/2014
State:	County:			Company:		Crew I	Member Initials	:	Photos:	
Virginia	Bucking	nam		WOODAR	D & CURRAN	RS, J	S		004-00	9
Tract Number(s):	1			Nearest Mile	epost:		Associated W	etland	ID(s):	
09-051				193			NA			
Survey Type: (check one)	⊠Ce	nterline	□Re-F	Route	□Access Road		□Other:			
Physical Attribute										
Stream Classification: (check one)		hemeral	□Inter	mittent	Perennial					
Waterbody Type: (check one)	River	Stream	🗆 Dito	ch 🗆 Ca	anal 🛛 Other	:				
OHWM Width: <u>5 f</u> t.		Indicator: that apply)		□ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation		Scouring	□Water staining
Height: ft. N/A□		Bent, matted, c	or missin	ig	ne ⊠Litter ar debris	nd	□Abrupt plan community ch		□Soil ch	naracteristic change
Width of Waterbody -				Toe of Slope	Width of Waterb	ody - W			of Water	:
Bank to Top of Bank:	t	to Toe of Slope) :		Water Edge:			(Approx.)	
<u>_7_</u> ft.		<u>6</u> ft.			N/A□	<u>1</u> ft.		N/A□		<u>5</u> ft.
Sinuosity:		Water velocity			Bank height			Bank	slope	
(check one) Straight	((Approx.)			Right:				Right:	
			fps		Left:	<u>4_</u> ft.			Left	<u>80</u> degrees
	ng	N/A⊠				<u>4</u> ft.				80 degrees
Qualitative Attribu	utes									
Water Appearance: (check one)	□No water	⊠Clear	□Turb		leen ⊡Sul i surface sci		□Algal mats	□Othe	r:	
	Bedrock	□ Boulder		ole 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🗆 Organic	: 🗆 (Other:	
(check all that apply)NA % of Substrate:	<u>NA %</u>	<u>NA %</u>	<u>NA </u> %	<u>20</u> %	<u>20</u> %	<u>60_</u> %	<u>NA</u> %	NA	<u>\</u> %	
Width of Riparian Zon		jetative Layers	:	× -	5		(0)	5	2	
<u>_ft</u> . N/A⊠		. DBH of Dom	inants:	⊠ Trees <u>6</u> in.		⊴ Sapili _ <u>1_</u> in.	ngs/Shrubs:	Z	I Herbs	
Dominant Bank Vegeta	ation (list):									
HONEYSUCKLE, (GRAPE, S	SUMAC, POI	PLAR							
Aquatic Habitats (ex: s NA	ubmerged or	emerged aquatic	vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles,	deep pools	5):
Aquatic Organisms Of	oserved (lisi	t):								
FROGS	-	-								
T&E Species Observed	d (list):									
Disturbances (ex: livest	ock access, n	nanure in waterbo	ody, waste	e discharge pipe	es):					
Tributary is: (check one)	⊠ Na	atural	□ Ar	tificial, man-m	ade 🗆 Manip	ulated				
Stream Quality ^a : (check one)	🗆 Hi	gh		oderate	⊠ Low					

Waterbody ID: SBUK007b

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:

INTERMITTENT STREAM LOCATED DOWN CHANNEL FROM EPHEMERAL STREAM.







Waterbody point sbuk007a facing northeast and upstream



Waterbody point sbuk007a facing southwest and downstream



Waterbody point sbuk007a facing southeast and across

Survey Descriptio	n										
Project Name:		Waterbo	-					aterbody ID:			ate:
Southeast Reliabilit	У	UNNA	MED 1	RIB TO S	LATE F	RIVER	S	BUK008		7	/19/2014
State:	County:	<u>.</u>		Company:			Crew N	Member Initials	:	Photos:	
Virginia	Buckingham			WOODAR	D & CL	JRRAN	RS, J	S		0010-00)12
Tract Number(s):				Nearest Mile	epost:			Associated W	etland	ID(s):	
09-051				193				NA			
Survey Type: (check one)	⊠Centerli	ne	□Re-F	loute	□Acc	ess Road		□Other:			
Physical Attribute											
Stream Classification: (check one)	⊠Epheme	eral	□Inter	mittent	□Per	ennial					
Waterbody Type: (check one)	River ⊠ S	Stream	Ditc	h 🗆 Ca	anal	Other:					
OHWM Width: _ <u>1</u> ft.	OHWM India (check all that ap			□ Clear lir on bank	ne	Shelving	g	□Wrested vegetation	×	Scouring	□Water staining
Height: 5_ft. N/A□	□Bent vegeta		missin	g		⊠Litter ar debris	nd	□Abrupt plan community ch		□Soil ch	aracteristic change
Width of Waterbody - T Bank to Top of Bank:		h of Waterl e of Slope		oe of Slope	Width o Water E		ody - W		Depth (Approx.)	of Water:	
<u>8</u> ft.		<u>2</u> ft.			N/A⊠	-	ft.		N/A⊠		ft.
Sinuosity: (check one)	Wate (Appro	er velocity:			Bank he	•			Bank s	•	
□Straight		,	fps			Right:	<u>4</u> ft.			Right:	60 degrees
⊠Meanderii	ng N/A⊵	-	po			Left:	<u> </u>			Left:	60 degrees
		2					<u> </u>				
Qualitative Attribu Water Appearance:	ites										
	No water	□Clear	□Turb		ieen i surface	⊡Sur scu		□Algal mats	□Othe	r:	
	Bedrock	Boulder [Cobb	le 🛛 Grave	el 🛛 S	Sand 🛛	⊠ Silt/ c	lay 🗆 Organic	: 🗆 (Other:	
(check all that apply)NA % of Substrate:	<u>NA</u> % <u>NA</u>	<u>\</u> %	<u>NA </u> %	<u>20</u> %	_20	_%	<u>60</u> %	<u>NA</u> %	NA	<u>\</u> %	
Width of Riparian Zone	e: Vegetat	ive Layers:									
_ <u>25 ft</u> - N/A□	(check all t Avg. DB (approx.)	hat apply) H of Domin	nants:	[⊠] Trees <u>10</u> in.	:		⊠ Saplir _ <u>1_</u> in.	ngs/Shrubs:	×	I Herbs	
Dominant Bank Vegeta	ation (list):	EDAR N	AUSCI	F WOOD				(SUCKLE V			FPFR
CHRISTMAS FERN Aquatic Habitats (ex: su	1										
NA Aquatia Organiama Ob	conved (list)										
Aquatic Organisms Ob NA	iserved (<i>IISt)</i> :										
T&E Species Observed	l (list):										
NA											
Disturbances (ex: livesto NA	ock access, manur	e in waterboo	dy, waste	discharge pipe	es):						
Tributary is: (check one)	⊠ Natura		□ Art	ificial, man-m	ade	🗆 Manipu	ulated				
Stream Quality ^a : (check one)	□ High		□ Mo	derate		⊠ Low					

Waterbody ID: SBUK008

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:

EPHEMERAL CHANNEL THAT FEEDS INTO SBUK007 OFF ROW. NO FLOW OR POOLS AT TIME OF SURVEY.







Waterbody point sbuk008 facing south and downstream



Waterbody point sbuk008 facing north and upstream



Waterbody point sbuk008 facing west and across

Survey Description	on									
Project Name:			body Nar				aterbody ID:			Date:
Southeast Reliabili	ty	UNN	AMED 1	RIB TO S	LATE RIVER	S	BUK009			7/19/2014
State:	County:			Company:		Crew I	Member Initials	÷	Photos:	
Virginia	Bucking	nam		WOODAR	D & CURRAN	RS, J	S		0013-0	015
Tract Number(s):				Nearest Mile	epost:		Associated W	etland	ID(s):	
09-051				193			NA			
Survey Type: (check one)	⊠Ce	nterline	□Re-F	Route	□Access Road	1	□Other:			
Physical Attribute	•									
Stream Classification: (check one)		hemeral	□Inter	mittent	⊠Perennial					
Waterbody Type: (check one)	River	⊠ Stream	□ Ditc	h □Ca	anal 🗆 Other	•				
OHWM Width: 8 ft.		Indicator: that apply)		⊠ Clear lir on bank	ne ⊠Shelvin	ıg	⊠Wrested vegetation		Scouring	g ⊟Water staining
Height:		Bent, matted, getation	or missin	g	ne ⊠Litter a debris	nd	☐Abrupt plan community ch		□Soil cl	naracteristic change
N/A□ Width of Waterbody - `	Top of	Nidth of Wat	rhody - T	Too of Slope	Width of Waterb	ody - W	later Edge to	Donth	of Water	•
Bank to Top of Bank:		to Toe of Slop		i de di Siope	Water Edge:	ouy - w		(Approx.		
<u>_10_</u> ft.		<u> 9 </u> ft.			N/A□	<u>8</u> ft.		N/A⊠		<u> </u>
Sinuosity:		Water velocit	y:		Bank height			Bank s	slope	
(check one)		(Approx.)			Right:	0 4			Right	
_			<u>_1_</u> fps		Left:	<u>2</u> ft.			Left	<u>70</u> degrees
Meander	ing	N/A□				<u>3</u> ft.				80 degrees
Qualitative Attribu	utes									
Water Appearance: (check one)	□No water	⊠Clear	□Turb		-	rface um	□Algal [mats	□Othe	r:	
	Bedrock	⊠ Boulder	⊠ Cobb	le 🛛 Grav	el 🛛 Sand	⊠ Silt/ c	clay 🗆 Organic	: 🗆 (Other:	
(check all that apply)NA % of Substrate:	<u>NA %</u>	<u>20</u> %	<u>30</u> %	<u>20</u> %	<u>20</u> %	<u>10_</u> %	<u>NA</u> %	NA	<u>\</u> %	
Width of Riparian Zon		jetative Layer	s:							
_ <u>25 ft</u> - N/A□		ck all that apply) J. DBH of Don rox.)	ninants:	[⊠] Trees <u>12 i</u> n.		⊠ Saplir <u>2</u> in.	ngs/Shrubs:		I Herbs	
Dominant Bank Veget							-			
GRASSES, PERSI										
Aquatic Habitats (ex: s RIFFLE/POOL CO									deep pool	s):
Aquatic Organisms O		-		2/						
EBONY JEWELWING		·	ER STR	IDERS, MA	YFLY, CRAYFIS	SH,				
T&E Species Observe	d (list):									
NA										
Disturbances (ex: livest	tock access, n	nanure in watert	ody, waste	discharge pipe	es):					
Tributary is: (check one)	⊠ Na	atural	□ Art	ificial, man-m	ade 🗆 Manip	ulated				
Stream Quality ^a : (check one)	🗆 Hi	gh	⊠ Mo	derate	⊠ Low					

Waterbody ID: SBUK009

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:

PERENNIAL STREAM WITH SIGNS OF TORRENT. LOW FLOW AND MODERATE VOLUME AT TIME OF SURVEY. LEFT BANK WITH SIGNS OF EROSION NEAR CENTERLINE. FLOOD PLAIN WITH WELL DRAINED SOILS. NO WETLANDS PRESENT. WILDLIFE TRACKS INCLUDING WHITETAIL DEER, RACCOON, BOBCAT.

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





Waterbody point sbuk009 facing southwest and downstream



Waterbody point sbuk009 facing northeast and upstream



Waterbody point sbuk009 facing northwest and across

Survey Descriptio	n									
Project Name:		Waterbo	-				/aterbody ID:			ate:
Southeast Reliabilit	ty	UNNAI	MED	RIBTOS	LATE RIVER	S	BUK0010		(/19/2014
State:	County:			Company:		Crew I	Member Initials	:	Photos:	
Virginia	Buckingham	1		WOODAR	D & CURRAN	RS, J	IS		NO PH	OTOS
Tract Number(s):				Nearest Mile	epost:		Associated W	etland	ID(s):	
09-051				193			NA			
Survey Type: (check one)	⊠Centerl	ine	□Re-F	Route	□Access Road	I	□Other:			
Physical Attribute										
Stream Classification: (check one)	⊠Ephem	eral	□Inter	mittent	□Perennial					
Waterbody Type: (check one)	□River ⊠ S	Stream		h 🗆 Ca	anal 🗌 Other					
OHWM Width: _ <u>1</u> ft.	OHWM Indi (check all that a			□ Clear lir on bank	ne ⊡Shelvin	g	□Wrested vegetation		Scouring	□Water staining
Height: <u>.5_</u> ft. N/A□	□Ben vegeta		missin	g	ne ⊠Litter a debris	nd	□Abrupt plan community ch		□Soil ch	aracteristic change
Width of Waterbody -				Foe of Slope	Width of Waterb	ody - W			of Water:	
Bank to Top of Bank:	to To	be of Slope			Water Edge:			(Approx.)		
<u>_2 ft</u> .		<u> 1 </u> ft.			N/A⊠	<u>ft</u> .		N/A⊠		ft.
Sinuosity:		er velocity:			Bank height			Bank s	lope	
(check one)	(Appro	ox.)			Right:	<u>1</u> ft.			Right:	<u>30</u> degrees
Moondori	ing	_	fps		Left:				Left:	
	Ing N/A					<u> 1 </u> ft.				<u>30</u> degrees
Qualitative Attribu	utes									
Water Appearance: (check one)	[⊠] No water	□Clear	□Turb		_	rface um	□Algal [mats	□Other		
	Bedrock	Boulder [Cobb	le 🗆 Grave	el 🗆 Sand	⊠ Silt/ c	clay 🗆 Organic		Other:	
(check all that apply)NA % of Substrate:	<u>NA</u> % <u>N</u>	<u>4</u> %	<u>NA </u> %	<u>NA</u> %	<u>NA</u> %	<u>80 </u> %	<u>20</u> %	NA	<u>%</u>	
Width of Riparian Zone		ive Layers:		_						
<u>_10 ft</u> - N/A□	(check all t Avg. DE (approx.)	hat apply) BH of Domii	nants:	⊠ Trees <u>6</u> in.		⊠ Saplir _ <u>1_</u> in.	ngs/Shrubs:	X	Herbs	
Dominant Bank Vegeta	ation (list):									
BLACK GUM, QUE	RCUS SPP.,	CAREX	SPP.,	CHRISTM	AS FERN, DE	ER TC	ONGUE GRA	SS,		
Aquatic Habitats (ex: s NA	ubmerged or emer	ged aquatic v	egetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood,	, riffles,	deep pools):
Aquatic Organisms Ob	oserved (list):									
NA										
T&E Species Observed	d (list):									
NA										
Disturbances (ex: livest	ock access, manu	e in waterboo	ly, waste	e discharge pipe	es):					
NA										
Tributary is: (check one)	⊠ Natura	I	□ Art	ificial, man-m	ade 🗆 Manip	ulated				
Stream Quality ^a : (check one)	□ High		□ Mo	derate	⊠ Low					

Waterbody ID: SBUK010

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:

EPHEMERAL CHANNEL THAT FEEDS INTO SBUK009. NO FLOW OR POOLS AT TIME OF SURVEY.

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



Survey Description	n								
Project Name:		Waterbody Na				aterbody ID:		Date:	
Southeast Reliability		UNNAMED ⁻ RIVER		Y TO SLATE	_	BUK011	—	7/19/2	2014
State:	County:		Company:			Member Initials:		otos:	
Virginia	BUCKINGHAI	М	WOODAR	D & CURRAN	R.S.,	J.S.	00	016-0018	
Tract Number(s):			Nearest Mile	epost:		Associated We	tland ID	(s):	
09-052			194			WBUK007E			
Survey Type: (check one)	⊠Centerline	e □Re-F	Route	□Access Road	1	□Other:			
Physical Attributes	S								
Stream Classification: (check one)	⊠Ephemera	al 🛛 🗆 Inter	mittent	□Perennial					
Waterbody Type: (check one)	River 🛛 Str	ream 🗆 Dito	ch 🗆 Ca	anal 🗌 Other					
OHWM Width: _ <u>1_</u> ft.	OHWM Indica (check all that apply		□ Clear lir on bank	ne DShelvin	g	□Wrested vegetation	⊠So	couring	□Water staining
Height: <u>.25_</u> ft. N/A□	⊠Bent, r vegetatio	natted, or missin n	ig	ne ⊠Litter a debris	nd	□Abrupt plant community cha		Soil characte	eristic change
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - ` of Slope:	Toe of Slope	Width of Waterb Water Edge:	ody - W		Depth of Approx.)	Water:	
<u> 1.0 </u> ft.	-	<u>1.0</u> ft.		N/A⊠	f	it. N	I/A⊠		_ft.
Sinuosity: (check one) ⊠Straight □Meanderir	(Approx.)		ps	Bank height Right: Left:	<u>1.0</u> ft. <u>1.0</u> ft.		3ank slo∣	Right: <u>80</u> Left:	degrees
Qualitative Attribu					<u></u>				
Water Appearance: (check one)	No water	Clear 🗆 Turb			rface um	□Algal □ mats	Other:		
Substrate:	Bedrock 🗆 Bo	oulder 🗆 Cobb			⊠ Silt/ c		□ Oth	ier:	
	<u>NA % NA </u>	% <u>NA</u> %	<u>NA</u> %	<u>NA</u> %	<u>70</u> %	<u>30</u> %	<u>NA</u> %	6	
Width of Riparian Zone <u>10</u> ft⊦ N/A⊡	(check all that		[⊠] Trees _ <u>15</u> _in.		⊠ Saplir _ <u>1_</u> in.	ngs/Shrubs:	⊠ H	lerbs	
Dominant Bank Vegeta Ch		lges, Geranium s	sp., Acer rubru	um, Liriodendron tu	ulipifera,	, Carpinus carolin	niana		
Aquatic Habitats (ex: su	bmerged or emerger NA	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood,	riffles, dee	ep pools):	
Aquatic Organisms Ob NA	served (list):								
T&E Species Observed NA	(list):								
Disturbances (ex: livesto Logging	ock access, manure i	n waterbody, waste	e discharge pipe	es):					
Tributary is: (check one)	⊠ Natural		tificial, man-m	ade 🗆 Manip	ulated				
Stream Quality ^a : (check one)	□ High		oderate	⊠ Low					

Waterbody ID: SBUK011

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 ephemeral channel that is separated from wetland WBUK07E by a narrow strip of overland sheet flow. Stream channel begins at headcut and flows into stream SBUK009. No water at time of survey.





Waterbody point sbuk011 facing north and downstream



Waterbody point sbuk011 facing south and upstream



Waterbody point sbuk011 facing west and across

Survey Description	n							
Project Name:		Waterbody Na	me:			aterbody ID:		Date:
Southeast Reliability		Slate River			SI	BUK012		7/21/2014
State:	County:		Company:		Crew N	lember Initials:	Photos:	
Virginia	Buckingham		W&C		JS, W	'M, RS	100-00	89 TO 100-0091
Tract Number(s):			Nearest Mile	epost:		Associated Wetlan	d ID(s):	
09-053			94			WBUK008E		
Survey Type: (check one)	⊠Centerline	□Re-F	Route	□Access Road	I	□Other:		
Physical Attributes								
Stream Classification: (check one)	Ephemera	ıl ⊡Inter	mittent	⊠Perennial				
Waterbody Type:								
(check one)	River Stre	eam 🗆 Dito	ch □ Ca	anal 🗌 Other:	:			
онwм	OHWM Indicat							
Width: <u>19</u> ft.	Check an that apply)	⊠ Clear lir on bank	ne ⊠Shelving	g	⊠Wrested vegetation	⊠Scouring	⊠Water staining
Height: <u>3.5_</u> ft. N/A□	□Bent, n vegetatio	natted, or missin n	g □Wrack li	ne ⊠Litter ar debris	nd	☐Abrupt plant community change		aracteristic change
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - ` of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - Wa	ater Edge to Dept	h of Water:	
						(* 777***	/	2 f f
<u>25_</u> ft.		<u>18_</u> ft.		N/A□ -	<u>12</u> ft.	N/A□		<u>2</u> ft.
Sinuosity: (check one)		velocity:		Bank height		Bank	slope	
	(Approx.)	0.42 fp	c	Right:	<u>10</u> ft.		Right:	45 _{degrees}
⊠Meanderir		<u>0.42</u> _ip	5	Left:			Left:	<u> </u>
					<u>7_</u> ft.			degrees
Qualitative Attribut Water Appearance:	tes							
	No water ⊠C	Clear ⊠Turb		leen ⊡Sur surface scu		□Algal □Oth mats	er:	
	Bedrock 🗆 Bo	ulder 🗆 Cobb	le 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ cl	lay 🗆 Organic 🛛	Other:	
(check all that apply) % of Substrate:	<u>NA_% _NA_</u> %	% <u>NA</u> %	<u> 20 </u> %	_40_%	<u>40_</u> %	<u>NA_%</u>	<u>IA_</u> %	
Width of Riparian Zone	: Vegetative							
	(check all that	apply)	⊠ Trees	: 🛛 🛛	⊠ Saplin	gs/Shrubs:	⊠ Herbs	
<u>>100 ft</u> - N/A□	Avg. DBH (approx.)	of Dominants:	<u>_12_</u> in.	-	<u>2.5</u> in.			
Dominant Bank Vegeta	tion (list):							
PANICUM SPP., SY	CAMORE, PA	W PAW, BO	X ELDER,	BOEHMERIA				
Aquatic Habitats (ex: su	Ibmerged or emerged	l aquatic vegetatio	n, overhanging	banks/roots, leaf pacl	ks, large	submerged wood, riffles	s, deep pools):
CWD, RIFFLE/POC	L COMPLEX,	OVERHANG	ING BANK	S AND VEG, F	ROOT	MATS, DEEP PO	DOLS, LE	AF PACK
Aquatic Organisms Ob	()							
TURTLE, WATER S	STRIDER, FISH	I, ASIATIC C	LAM, EPT					
T&E Species Observed	(list):							
NA								
Disturbances (ex: livesto	ock access, manure ir	n waterbody, waste	e discharge pipe	es):				
LOGGING ON RIGI	HT BANK							
Tributary is: (check one)	⊠ Natural	□ Ari	tificial, man-m	ade 🗆 Manipu	ulated			
Stream Quality ^a : (check one)	🗆 High	⊠ Mo	oderate	□ Low				
Waterbody ID: sbuk012

^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:

NICE PERENNIAL STREAM. MODERATE QUALITY DUE TO SEDIMENTATION, BANK EROSION, LOGGING OF RIPARIAN ZONE ON RIGHT BANK, PRESENCE OF ASIATIC CLAM.





Waterbody point sbuk012 facing across



Waterbody point sbuk012 facing upstream



Waterbody point sbuk012 facing downstream

Survey Description								
Project Name:		Waterbody Na				aterbody ID:		Date:
Southeast Reliability		Unnamed Tr	ibutary to S	Slate River	st	ouk013		7/21/2014
State:	County:		Company:		Crew N	lember Initials:	Photos:	
J	Buckingham		W&C JS,			/M, RS		10 to 0112
Tract Number(s):			Nearest Mile	epost:		Associated Wet	and ID(s):	
09-055			194			NA		
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 🛛 Stre	eam 🗆 Dito	h 🗆 Ca	anal 🗌 Other:	:			
OHWM Width:	OHWM Indicat (check all that apply		🗆 Clear lir	ne 🗆 Shelving	g	□Wrested	⊠Scourin	
<u> </u>			on bank			vegetation		staining
Height: ft.	⊠Bent, n vegetatio	natted, or missin n	g □Wrack li	ne ⊠Litter ar debris	nd	□ Abrupt plant community chan		haracteristic change
N/A Width of Waterbody - To	n of Width (of Waterbody -	Too of Slope	Width of Waterbo	odv - W	ater Edge to De	pth of Wate	r.
Bank to Top of Bank:		of Slope:	l de di Siope	Water Edge:	ouy - 11	(Ap	prox.)	
<u>6</u> ft.		<u>2</u> ft.			ft	t.	_	ft.
				N/A⊠			A⊠	
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height		Ba	ink slope	
⊠Straight			os	Right:	<u>3</u> ft.		Right	: _ <u>65_</u> degrees
	D N/A⊠	·r		Left:	 _3_ft.		Lef	t: <u>65_</u> degrees
					<u></u> n.			
Qualitative Attribute Water Appearance:	es							
	No water □C	Clear 🗆 Turb		leen ⊡Sur surface scu		□Algal □0 mats	Other:	
	Bedrock 🗆 Bo	ulder 🗆 Cobb	le 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🗆 Organic	□ Other:	
(check all that apply) % of Substrate: <u>N</u>	<u>a_% _NA</u>	<u>% _NA_</u> %	<u> 10 </u> %	<u> 60 </u> %	<u>30_</u> %	<u>NA</u> %	<u>NA</u> %	
Width of Riparian Zone:	Vegetative	Lavers:						
-	(check all that	apply)	☑ Trees	: 🛛 🛛	⊠ Saplin	ngs/Shrubs:	⊠ Herbs	
<u>>100 ft</u> - N/A□	Avg. DBH (approx.)	of Dominants:	<u>8</u> in.	-	<u>2</u> in.			
Dominant Bank Vegetati	ion (list):							
Americ Habitata (<u>a</u>	<u>\</u>
Aquatic Habitats (ex: sub	•			•			fles, deep pool	s):
XMAS FERN, BLAC			TEGIOW,		κ, DOC	30000		
Aquatic Organisms Obs	erved (list):							
N/A								
T&E Species Observed	(list):							
N/A								
Disturbances (ex: livestoc	k access, manure ir	n waterbody, waste	e discharge pipe	es):				
NEARBY CLEARCU	T IN RIPARIA	AN ZONE						
Tributary is: (check one)	⊠ Natural	Π Δrf	ificial, man-m	ade 🗆 Manipu	ulated			
Stream Quality ^a :				· ·				
(check one)	🗆 High	⊔ Mc	derate	⊠ Low				

Waterbody ID: sbuk013

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:

20 FT LENGTH OF EPHEMERAL CHANNEL THAT FLOWS INTO SBUK014 Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) </ ¹⁰ Forested ν' 5 56-10-3 Forest



Waterbody data point sbuk013 facing upstream



Waterbody data point sbuk013 facing downstream



Waterbody data point sbuk013 facing across

Survey Description								
Project Name:		Waterbody Nar	ne:		w	aterbody ID:	Date:	
Southeast Reliability		Unnamed Tr	med Tributary to Slate River			ouk014	7/21/2014	
State:	County:		Company: Crev			Member Initials:	: Ph	iotos:
Virginia E	Buckingham		W&C JS			/M, RS	00-0113 TO 0115	
Tract Number(s):			Nearest Mile	epost:		Associated W	etland ID	(s):
09-055 AND 056			194			NA		
Survey Type: (check one)	Centerline	□Re-F	Route	□ Access Road		□Other:		
Physical Attributes								
Stream Classification: (check one)	Ephemera	al ⊡Inter	mittent	⊠Perennial				
Waterbody Type:								
	River 🛛 Str	eam 🗌 Ditc	h 🗆 Ca	anal 🗌 Other:				
OHWM Width: _ <u>4_</u> ft.	OHWM Indicat (check all that apply		⊠ Clear lir on bank	ne ⊠Shelving	g	⊠Wrested vegetation	⊠S	couring ⊟Water staining
Height:	⊠Dont n	acted or missin			d	U U	•	0
N/A□	vegetatio	natted, or missin n		ne ⊠Litter an debris	iu	□ Abrupt plant community ch		Soil characteristic change
Width of Waterbody - To Bank to Top of Bank:		of Waterbody - 1 of Slope:	Foe of Slope	Width of Waterbo Water Edge:	ody - W		Depth of (Approx.)	Water:
	to roe	of Slope:		water Euge.			(Applox.)	
<u>_6_</u> ft.	-	<u>4_</u> ft.		- N/A	<u>2</u> ft.		N/A□	<u>0.5</u> ft.
Sinuosity:	Water	velocity:		Bank height			Bank slo	pe
(check one)	(Approx.)			Right:				Right:
		<u>0.2</u> fps		Left:	<u>5</u> ft.			_ <u>70</u> degrees Left:
⊠Meandering	N/A□				<u>6</u> ft.			_ <u>60</u> degrees
Qualitative Attribute	es							
Water Appearance: (check one)	lo water ⊠C	Clear □Turb		leen ⊡Sur surface scu		□Algal [mats	□Other:	
Substrate:	Bedrock 🗆 Bo	ulder 🛛 Cobb	le 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🗆 Organic	🗆 Oth	ner:
(check all that apply) % of Substrate: NI	<u>4_% _NA_</u>	% <u>10</u> %	_20_%	_60_%	<u>10_</u> %	<u>NA</u> %	<u>NA </u> 9	6
			/0		10_70	<u></u> /0	<u> </u>	
Width of Riparian Zone:	Vegetative (check all that		⊠ Trees	: 🛛	Saplin	ngs/Shrubs:	⊠⊦	lerbs
<u>>100 ft</u> -		of Dominants:	<u>_12_</u> in.		<u>2</u> in.	.g		
N/A□ Dominant Bank Vegetati	(approx.)							
XMAS FERN, TULIP	. ,	DGWOOD, B	EECH, ASI	H, IRONWOOE)			
Aquatic Habitats (ex: sub	merged or emerged	aquatic vegetation	n, overhanging	banks/roots, leaf pack	ks, large	submerged wood,	riffles, dee	ep pools):
		OL COMPLE	X, SOFT S	ANDY SEDIME	ENT, C	CWD, OVERI	HANGI	NG VEG, ROOTMATS
Aquatic Organisms Obs	. ,							
FISH, CRAYFISH, S	ALAMANDER	R LARVAE, W	ATER STF	RIDERS, EPT, I	DAMS	SELFLY		
T&E Species Observed	(list):							
NA								
Disturbances (ex: livestoc	k access, manure i	n waterbody, waste	discharge pipe	es):				
LOGGING IN RIPAR	IAN ZONE							
Tributary is: (check one)	⊠ Natural	□ Art	ificial, man-m	ade 🗆 Manipu	ulated			
Stream Quality ^a : (check one)	🗆 High	⊠ Mo	derate	□ Low				

Waterbody ID: sbuk014

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 PERENNIAL STREAM, SOME BANK EROSION AND SEDIMENTATION, TYPICAL PIEDMONT SMALL STREAM FOREST COMMUNITY



Form Rev. 07/09/2014



Waterbody point sbuk014 facing upstream



Waterbody point sbuk014 facing downstream



Waterbody point sbuk014 facing across

Survey Description					har		<u> </u>	
Project Name:		Waterbody Nar				aterbody ID:	Da	
Southeast Reliability		Unnamed Ir	Jnnamed Tributary to Slate River			ouk015	//2	21/2014
	ounty:					lember Initials:	Photos:	
•	uckingham		W&C			M, RS		6 TO 0121
Tract Number(s):			Nearest Mile	epost:		Associated Wet	tland ID(s):	
09-055 AND 056			55			NA		
Survey Type: (check one)	⊠Centerline	□Re-F	Route	□Access Road		□Other:		
Physical Attributes								
Stream Classification: (check one)	⊠Ephemera	I □Inter	mittent	Perennial				
Waterbody Type: (check one)	ver 🛛 Stre	eam 🗆 Ditc	h □ Ca	anal 🗆 Other:				
OHWM Width:	OHWM Indicat		Clear lin	e DShelving	g	□Wrested	⊠Scouring	□Water
<u> </u>			on bank			vegetation		staining
Height: ft. N/A□	⊠Bent, m vegetation	natted, or missin า	g	ne ⊠Litter an debris	nd	□ Abrupt plant community cha		acteristic change
Width of Waterbody - Top Bank to Top of Bank:		of Waterbody - 7 of Slope:	oe of Slope	Width of Waterbo Water Edge:	ody - Wa		epth of Water:	
		•		Water Luge.		(,	_ft.
<u>4</u> ft.	- -	<u>1_</u> ft.		N/A⊠	ft.	N	/A⊠	
Sinuosity: (check one)	Water (Approx.)	elocity:		Bank height		В	ank slope	
⊠Straight	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	fps		Right:	<u>5</u> ft.		Right:	<u>80</u> degrees
	N/A⊠			Left:	<u> </u>		Left:	80_ degrees
Qualitative Attributes				· · · ·				<u> </u>
Water Appearance:								
(check one)	o water □C	lear □Turb		een ⊡Sur surface scu		□Algal □ mats	Other:	
Substrate: B (check all that apply)	edrock 🗆 Bo	ulder 🗆 Cobb	le 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ cl	ay 🗆 Organic	□ Other:	
% of Substrate: <u>NA</u>	% <u>NA</u>	% <u>NA</u> %	_5_%	_25_%	<u>70_</u> %	<u>NA</u> %	<u>NA</u> %	
Width of Riparian Zone:	Vegetative	Layers:						
<u>>100 ft</u> -	(check all that Avg. DBH	apply) of Dominants:	⊠ Trees: _ <u>7_</u> in.		⊠ Saplin _ <u>2_</u> in.	gs/Shrubs:	⊠ Herbs	
N/A□ Dominant Bank Vegetatio	(approx.)							
XMAS FERN, LOBLO	. ,	OGWOOD						
Aquatic Habitats (ex: subm	nerged or emerged	aquatic vegetation	n, overhanging	banks/roots, leaf pacl	ks, large :	submerged wood, r	iffles, deep pools):	
NA								
Aquatic Organisms Obser	rved (list):							
NA								
T&E Species Observed (li	st):							
NA								
Disturbances (ex: livestock SMALL ROAD ACRO			discharge pipe	es):				
Tributary is: (check one)	⊠ Natural	□ Art	ificial, man-m	ade 🗆 Manipu	ulated			
Stream Quality ^a : (check one)	□ High	□ Mo	derate	⊠ Low				

Waterbody ID:
sbuk015

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 EROSIONAL EPHEMERAL STREAM WITH A DISCONTINUOUS CHANNEL Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) 9 3 sbuko13 0



Waterbody point sbuk015 facing upstream



Waterbody point sbuk015 facing upstream



Waterbody point sbuk015 facing upstream

Survey Description	on						Waterbody ID:			
Project Name:			Waterbody Name:							Date:
Atlantic Coast Pipe	eline	UNT to	o Licky	ky Branch			sbua200			1/15/2015
State:	County:	ł		Company:		Crew	Member Initials	s:	Photos:	
Virginia	Buckingham	า		NRG GB			, TP 3 pho			os
Tract Number(s):				Nearest Mile	epost:	Associated Wetland ID(s):				
09-057				195.4			none			
Survey Type: (check one)	⊠Center	line	□Re-R	oute	□Access R	load	□Other:			
Physical Attribute	es									
Stream Classification (check one)	: □Ephem	eral	⊠Interr	nittent	□Perennia	I				
Waterbody Type:		0.				41				
(check one)		Stream	Ditcl	h 🗆 Ca	anal 🗌 O	ther:				
OHWM Width: <u>5.0</u> ft.	OHWM Indi (check all that a			⊠ Clear lir on bank	ne ⊡She	elving	□Wrested vegetation	×	Scouring	g □Water staining
Height:	□Ben	t matted or	missing	g ⊠Wrack li	ne ⊡Litte	er and	□Abrupt plar	nt	□Soil cl	haracteristic change
	vegeta	ation		-	debris	5	community cl			
Width of Waterbody - Bank to Top of Bank:		th of Waterl oe of Slope		oe of Slope	Width of Wat Water Edge:	erbody -	Water Edge to	Depth (Approx.)	of Water	:
<u>_12.0</u> ft.		<u>_3.0</u> ft.				3.51	ft.	N/A□	-	<u>0.25</u> ft.
Sinuosity:	Wat	er velocity:			N/A□ Bank height			Bank s	slope	
(check one)	(Appr				Righ	t:		Dunie	Right	
		0	<u>.75</u> fps	;	Lef	4.5	ft.		Left	<u>75</u> degrees
⊠Meander	ring N/A					5.0	ft.		2011	80 degrees
Qualitative Attrib	utes									
Water Appearance: (check one)	□No water	⊠Clear	□Turbi		een 🛛	Surface	□Algal mats	□Othe	r:	
Substrate:	Bedrock	Boulder [⊠ Cobbl			scum ⊠ Silt			Other:	
(check all that apply)							, ,			
% of Substrate:	%	%	<u>25_</u> %	<u>30</u> %	<u>20</u> %	<u>20</u> %	6 <u>5</u> %		%	
Width of Riparian Zor		tive Layers: that apply)		Trees			lingo/Chrubo	N	Herbs	
<u> </u>	Avg. Di	BH of Domi	nants:	⊠ Trees: _7.0_in.		⊠ Sap _ <u>1.0</u>	lings/Shrubs: in.			
N/A⊠ Dominant Bank Veget	(approx.)									
Loblolly pine, syca		od, beech	, black	cherry, ye	ellow poplar	, sourwo	ood, red ceda	r, Chri	stmas f	ern, grape
Aquatic Habitats (ex: s	submerged or eme	rged aquatic v	egetation	n, overhanging	banks/roots, lea	f packs, lar	ge submerged wood	l, riffles,	deep pool	s):
Leaf packs, small	pools, small v	vrack piles	s, unde	ercut bank	in places					
Aquatic Organisms O	bserved (list):									
Crayfish, caddisfly	stonefly									
T&E Species Observe	ed (list):									
none										
Disturbances (ex: lives	stock access, manu	re in waterboo	dy, waste	discharge pipe	es):					
Clear cut about 3 y	years ago lea	ving a mir	nimal b	uffer						
Tributary is: (check one)	⊠ Natura	al	🗆 Arti	ficial, man-m	ade 🗆 Ma	anipulated				
Stream Quality ^a : (check one)	🗆 High		⊠ Mo	derate	□ Lo	w				

Waterbody ID:

sbua200

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

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

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

Notes:

Stream continues out of corridor in both directions; clear cut three years ago on both sides and replanted in pine; fifty foot buffer left on either side, buffer is about 50/50 mixed hardwoods and loblolly pine







Waterbody SBUA200 facing east upstream



Waterbody SBUA200 facing west downstream



Waterbody SBUA200 facing south across

Survey Description Project Name: Waterbody Name: Waterbody ID: Date: Atlantic Coast Pipeline Licky Branch sbua201 1/15/2015 **Crew Member Initials:** Company: State: Photos: County: Virginia Buckingham NRG GB. TP 3 photos Tract Number(s): Nearest Milepost: Associated Wetland ID(s): 09-057: 09-059 195.65 wbua201 Survey Type: ⊠Centerline (check one) □Re-Route □Access Road Other: Physical Attributes Stream Classification: (check one) Ephemeral Intermittent ⊠ Perennial Waterbody Type: (check one) □ Other: River ⊠ Stream □ Ditch Canal OHWM OHWM Indicator: check all that apply Width: Clear line ⊠ Shelving □Wrested ⊠Scouring □Water on bank vegetation staining <u>12.0</u>ft. Height: □Bent, matted, or missing ⊠Wrack line Litter and □Abrupt plant □Soil characteristic change 2.5 ft. vegetation debris community change N/A□ Width of Waterbody - Toe of Slope Width of Waterbody - Water Edge to Depth of Water: Width of Waterbody - Top of Bank to Top of Bank: to Toe of Slope: Water Edge: (Approx.) <u>1.25</u>ft. <u>18.0</u>ft. <u>9.0</u>ft. <u>10.0</u>ft. N/A□ N/A□ Sinuosity: Water velocity: Bank height Bank slope (check one (Approx.) **Right:** Right: □Straight <u>5.0</u>ft. 90 degrees <u>1.0</u> fps Left: I oft ⊠Meandering N/A∏ 4.5 ft. 40 degrees **Qualitative Attributes** Water Appearance: (check one) □No water ⊠Clear □Sheen □Other: Turbid Surface □Algal on surface scum mats Substrate: ⊠ Bedrock Boulder ⊠ Cobble Gravel ⊠ Sand Silt/ clav Organic □ Other: (check all that apply) % of Substrate: 5 % % 10 % 25 % 35 % <u>25</u>% % % Width of Riparian Zone: Vegetative Layers: (check all that apply) ⊠ Trees: Saplings/Shrubs: ⊠ Herbs 175 ft Avg. DBH of Dominants: <u>9.0</u>in. __1.5_in. (approx.) N/A□ Dominant Bank Vegetation (list): River birch, ironwood, red maple, red cedar, loblolly pine, shortleaf pine, American holly, sycamore, yellow poplar, areentries woodland sedge. Christmas fern Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Pools, riffles, overhanging banks, leaf packs, wrack piles, coarse woody debris Aquatic Organisms Observed (list): Minnow, cravfish T&E Species Observed (list): none Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Recent logging to north Tributary is: check one ☑ Natural □ Artificial, man-made Manipulated Stream Quality ^a: (check one) ⊠ Moderate □ High □ Low

Waterbody ID:

sbua201

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

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

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

Notes:

Continues out of corridor in both directions, sbua202 is a tributary, connects to wetland wbua201; mixed hardwood to south; recent clear cut to south with a thin buffer of mixed hardwood to the south.





Waterbody SBUA201 facing east upstream



Waterbody SBUA201 facing west downstream



Waterbody SBUA201 facing north across

Linear Waterbod	y Data Shee	t					
Survey Description	n						
Project Name:	ine	Waterbody Name			Waterbody ID:	Date:	
Atlantic Coast Pipel	-	UNT to Licky E			sbua202	1/15/20	15
State:	County:		ompany:		Crew Member Initial		
•	Buckingham		IRG		GB, TP	3 photos	
Tract Number(s):			earest Mile	post:	Associated W	/etland ID(s):	
09-057; 09-059		1	95.65		wbua201		
Survey Type: (check one)	⊠Centerline	e □Re-Ro	ute	□ Access Road	□Other:		
Physical Attributes	S						
Stream Classification: (check one)							
, ,		al ⊠Interm	ittent	Perennial			
Waterbody Type: (check one)	River ⊠ Str	ream 🗆 Ditch	□ Ca	anal 🗆 Other:			
OHWM Width: <u>2.0 ft</u> .	OHWM Indica (check all that appl		⊠ Clear lin on bank	e 🗆 Shelving	g]Water aining
Height: ft. N/A□	□Bent, r vegetatio	natted, or missing	□Wrack li	ne ⊠Litter ar debris	nd		stic change
Width of Waterbody - T		of Waterbody - To	e of Slope		ody - Water Edge to	Depth of Water:	
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:		(Approx.)	
<u>_3.0</u> ft.		<u>1.0</u> ft.		N/A□	<u>1.25_</u> ft.	<u>0.25_</u> ft. N/A□	-
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height		Bank slope	
□Straight		<u>0.5</u> fps			<u>3.0_</u> ft.	Right: 65de	egrees
⊠Meanderir	ng N/A□			Left:	3.0 ft.	Left: 70 de	egrees
Qualitative Attribu	tos						-
Water Appearance:							
(check one)		Clear □Turbid		surface scu	um mats	□Other:	
Substrate:	Bedrock 🗆 Bo	oulder 🗆 Cobble	□ Grave	el 🛛 Sand 🛛	🛛 Silt/ clay 🖾 Organi	c 🗆 Other:	
% of Substrate:	_%	_%%	%	<u> 50 </u> %	<u>35_% _15_%</u>	%	
Width of Riparian Zone	: Vegetativ (check all that		⊠ Trees:	Σ	Saplings/Shrubs:	⊠ Herbs	
<u>Within sbua2</u> riparian zone		of Dominants:	<u>9.0</u> in.		<u>_1.5_</u> in.		
Dominant Bank Vegeta							
areenbrier, woodlan	<u>id sedae. Chris</u>	stmas fern		•		camore, yellow popl	ar,
Aquatic Habitats (ex: su Leaf packs	Ibmerged or emerge	d aquatic vegetation,	overhanging	banks/roots, leaf pac	ks, large submerged wood	d, riffles, deep pools):	
Aquatic Organisms Ob	served (list):						
none							
T&E Species Observed	(list):						
none							
Disturbances (ex: livesto	ock access, manure	n waterbody, waste d	ischarge pipe	es):			
Recent logging to n	orth						
Tributary is: (check one)	⊠ Natural	□ Artifi	cial, man-m	ade 🗆 Manipu	ulated		
Stream Quality ^a : (check one)	🗆 High	⊠ Mod	erate	□ Low			

Waterbody ID:

sbua202

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:

Outflow from wbua201 & flows into sbua201 within corridor







Waterbody SBUA202 facing northeast upstream



Waterbody SBUA202 facing southwest downstream



Waterbody SBUA202 facing west across

Survey Description	on								
Project Name:		Waterbody Na	me:	W	aterbody ID:		I	Date:	
Atlantic Coast Pipe		UNT to Licky				BUC010			1/15/2015
State:	County:		Company:		Crew I	Member Initials:	P	hotos:	
Virginia	Buckingham		NRG CF			R, AS SBL			010_001-003
Tract Number(s):			Nearest Milepost:			Associated Wetland ID(s):			
09-059			196.1			None			
Survey Type: (check one)	⊠Centerline	e □Re-l	Route	□Access Road		□Other:			
Physical Attribute									
Stream Classification (check one)	Ephemera	al 🛛 Inter	rmittent	Perennial					
Waterbody Type:									
	□River ⊠ Str	eam 🗆 Dito	ch 🗆 C	anal 🛛 🗆 Other	:				
ОНШМ	OHWM Indica								
Width:ft.	(check all that apply	/)	⊠ Clear lir on bank	ne ⊡Shelvin	g	□Wrested vegetation		Scouring	□Water staining
Height:		natted, or missin	ng ⊡Wrack li		nd	□Abrupt plant		□Soil ch	naracteristic change
ft. N/A□	vegetatio	n		debris		community cha	ange		
Width of Waterbody - Bank to Top of Bank:			Toe of Slope	Width of Waterb Water Edge:	ody - W	ater Edge to	Depth c	of Water	:
Ballk to Top of Ballk.		of Slope:		water Euge.		(Αρριολ.)		0.0.4
<u>4</u> ft.	-	<u>1</u> ft.		N/A□	<u>2</u> ft.	1	N/A□	-	<u>0.3</u> ft.
Sinuosity:	Water	velocity:		Bank height		E	3ank sl	оре	
(check one)	(Approx.)	•		Right:				Right:	
		<u>0.5</u> fps	6	Left:	<u>3</u> ft.			Left	<u>90</u> degrees
Meander	ring N/A□				<u>6</u> ft.				85 degrees
Qualitative Attrib	utes								
Water Appearance: (check one)	[□] No water ⊠0	Clear 🗆 Turb			rface um	□Algal □ mats	Other:		
	Bedrock Bo	oulder 🛛 Cobb	ole 🗆 Grav	el 🗆 Sand 🛛	⊠ Silt/ c	clay 🛛 Organic		ther:	
(check all that apply) % of Substrate:	%	% 10 %		% %	70 %	20 %		%	
Width of Dination Zor									
Width of Riparian Zor	te: Vegetative (check all that		⊠ Trees	:	⊠ Saplir	ngs/Shrubs:	\boxtimes	Herbs	
<u>_10_ft</u> - N/A□	Avg. DBH (approx.)	of Dominants:	<u>_14_</u> in.	-	<u>2</u> in.				
Dominant Bank Vege									
Christmas Fern, Ja	apanese Honeys	suckle, White	Oak, Beed	ch, Tulip Poplai	⁻ , Smil	ax			
Aquatic Habitats (ex:	submerged or emerged	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood,	riffles, d	eep pools	3):
Leaf Packs									
Aquatic Organisms O	bserved (list):								
None									
T&E Species Observe	ed (list):								
None									
Disturbances (ex: lives	stock access, manure i	n waterbody, waste	e discharge pipe	es):					
None									
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	nade 🗆 Manip	ulated				
Stream Quality ^a : (check one)	□ High	⊠ Mo	oderate	□ Low					

Waterbody ID: SBUC010

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

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

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

Notes:

Stream begins about 30 feet northeast of the centerline and the continues to run northeast

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

pucolo



Waterbody SBUC010 facing upstream



Waterbody SBUC010 facing downstream



Waterbody SBUC010 facing across