Survey Descriptio Project Name:	n	Waterbody Nar	no .		W	aterbody ID:	Date:	
Southeast Reliabilit	V	UNT to DRY				CUK037	8/25/2014	
	,							
State:	County:		Company:			Nember Initials:	Photos:	
Virginia	Cumberland		W&C		JS, B		100-0164 TO 0166 U D	X
Tract Number(s): 10-025			Nearest Mile 211	epost:		Associated We	etland ID(s):	
Survey Type:			211					
(check one)	⊠Centerline	e □Re-F	Route	□ Access Road		□Other:		
Physical Attribute	s							
Stream Classification: (check one)	⊠Ephemera	al 🗌 Inter	mittent	□Perennial				
Waterbody Type:	•							
	River ⊠ Str	eam 🗆 Ditc	h □ Ca	anal 🗌 Other:				
онwм	OHWM Indica							
Width: _ <u>2</u> ft.	(check all that apply	()	⊠ Clear lir on bank	ie □Shelving	g	☐Wrested vegetation	□Scouring □Water staining	
Height:	□Bent, r	natted, or missing	g	ne ⊠Litter an	nd	□ Abrupt plant	□Soil characteristic change	
ft. N/A□	vegetatio	n	-	debris		community cha	ange	
Width of Waterbody - 1 Bank to Top of Bank:			Toe of Slope	Width of Waterbo Water Edge:	ody - W		Depth of Water: Approx.)	
		of Slope:		water Euge.		(*		
<u>_4_</u> ft.		<u>2</u> ft.		N/A⊠	ft.	Ν	ft. √A⊠	
Sinuosity: (check one)		velocity:		Bank height		E	Bank slope	
	(Approx.)			Right:	<u>2</u> ft.		Right: <u>60</u> degrees	
⊠Meanderi		fps		Left:			Left:	
				· · · · · ·	<u>2</u> ft.		<u>60</u> degrees	_
Qualitative Attribu Water Appearance:	ites							
	[☑] No water □0	Clear □Turb		een ⊡Sur surface scu		□Algal □ mats]Other:	
Substrate:	Bedrock 🗆 Bo	oulder 🗆 Cobb	le 🛛 Grave	el 🛛 Sand 🗌	∃ Silt/ c	lay 🛛 Organic	□ Other:	
	<u>NA</u> % <u>NA</u> %	% <u>NA</u> %	<u>20</u> %	_70_%	<u>NA_</u> %	<u> 10 </u> %	<u>NA</u> %	
Width of Riparian Zone	e: Vegetative	e Layers:						
>100 ft-	(check all that	apply) of Dominants:	⊠ Trees			igs/Shrubs:	⊠ Herbs	
N/A 🗆	(approx.)	or Dominanto.	<u>8</u> in.		<u>2</u> in.			
Dominant Bank Vegeta ASH, IRONWOOD,	. ,	CEDAR						
Aquatic Habitats (ex: si			- overbenging	hanka/roota loof nool	ka larga	aubmorgad wood	rifflag, daga pagla).	
NA	ubmerged of emerged	aquatic vegetation	n, overhanging	bariks/roots, lear pack	ks, large	submerged wood,	nines, deep poors):	
Aquatic Organisms Ob	served (list):							
NA								
T&E Species Observed	(list):							
NA								
Disturbances (ex: livesto	ock access, manure i	n waterbody, waste	e discharge pipe	es):				
NA								
Tributary is: (check one)	⊠ Natural	□ Art	ificial, man-m	ade 🗌 Manipu	ulated			
Stream Quality ^a : (check one)	🗆 High	Mo	oderate	⊠ Low				

	Waterbody ID:
	SCUK037
^a High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on ear roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; disturbance by livestock or man.	
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the activ function or riparian vegetation only moderately compromised; banks moderately unstable; water color is c greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by	cloudy, submerged objects covered with
Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natura channel width on each side; lack of regeneration; filtering function severely compromised; banks unstab turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish severe disturbance from livestock or man.	le (eroding); water color is muddy and
Notes:	
DRY EPHMERAL STREAM BED. LOW QUALITY DUE TO LACK OF AQUATIC HABITA	NTS.
Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey b	ooundary, and IDs of associated features)
e e e e e e e e e e e e e e e e e e e	
SURVEY EXTENT	
CURVEL EXTENT	
JUNIER END	
150F+	1 (D
1150++	NY 0354 655ED
	W FOLES
SC SC	w fole
CENTERLINE) for
$\tilde{1}$ $ +$	
150ft FORESTED	
(RYSIV	
150ft Fors	
/304)	
SURVEY EXTENT	

Form Rev. 07/09/2014



Waterbody point scuk037 facing South and upstream



Waterbody point scuk037 facing North and downstream



Waterbody point scuk037 facing West and across

Survey Descrip	otion				har	et e als a llDa		Deter
Project Name: Southeast Relia	bility	Waterbody Nar DRY CREEK				aterbody ID: CUK038		Date: 8/26/2014
State:	County:		Company:			lember Initials	: Pho	
Virginia	Cumberland		W&C		JS, B			0-0186 TO 0188 U D X
Tract Number(s):			Nearest Mile	epost:	, .	- Associated W		
10-026			211			NA		,
Survey Type: (check one)	⊠Centerline	e □Re-F	Route	□ Access Road		□Other:		
Physical Attrib	utes							
Stream Classificati (check one)		al ⊡Inter	mittent	⊠Perennial				
Waterbody Type: (check one)	□River ⊠ Str	ream 🗆 Dito	h □C	anal 🛛 Other:	:			
OHWM Width: 4 ft.	OHWM Indica (check all that appl		⊠ Clear lir on bank	ne ⊠Shelvin	g	⊠Wrested vegetation	□Sco	ouring □Water staining
Height: 	□Bent, r vegetatio	matted, or missin	g □Wrack li	ne □Litter ar debris	nd	⊠Abrupt plan community ch		Soil characteristic change
Width of Waterbod			Toe of Slope	Width of Waterbo	ody - W		Depth of V	Vater:
Bank to Top of Bar		of Slope: _4_ft.		Water Edge:	<u>3</u> ft.		(Approx.) N/A□	<u>0.5</u> ft.
Sinuosity:		velocity:		Bank height			Bank slop	e
(check one)	ht) _0.1_ fps	i	Right:	<u>3_</u> ft.		F	Right: _ <u>40_</u> degrees
⊠Mean	dering N/A			Left:	<u>7_</u> ft.			Left: 70_ degrees
Qualitative Attr	ibutes							
Water Appearance (check one)	_	Clear □Turb		neen ⊡Sui i surface scu		□Algal [mats	□Other:	
Substrate: (check all that apply)	Bedrock Bo	oulder 🛛 Cobb	le 🛛 Grav	el 🛛 Sand 🛛	□ Silt/ cl	lay 🗆 Organic	□ Othe	r:
% of Substrate:	<u>NA</u> % <u>NA</u>	% <u>30</u> %	<u>40</u> %	<u>30</u> %	<u>NA </u> %	<u>NA</u> %	<u>NA</u> %	
Width of Riparian 2 _>100 ft·	(check all tha	e Layers: tapply) of Dominants:	⊠ Trees _10_in.		⊠ Saplin _2_in.	gs/Shrubs:	⊠ He	rbs
N/A	(approx.)			-				
	OGWOOD, IRON	WOOD, RED	MAPLE, R	ED BUD, CHR	ISTMA	AS FERN		
	x: submerged or emerge UNDER CUT BAN				ks, large	submerged wood	, riffles, deep	pools):
Aquatic Organisms WATER STRIDI	. ,							
T&E Species Obse NA	rved (list):							
Disturbances (ex: 1 NA	vestock access, manure	in waterbody, waste	e discharge pipe	es):				
Tributary is: (check one)	⊠ Natural	□ Art	ificial, man-m	ade 🗆 Manipu	ulated			
Stream Quality ^a : (check one)	🛛 High		oderate	□ Low				

	Waterbody ID:
	SCUK038
^a High Quality: Natural channel, natural vegetation extends at least one or two active channel widths or roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types availal disturbance by livestock or man.	
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the a function or riparian vegetation only moderately compromised; banks moderately unstable; water color greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance	is cloudy, submerged objects covered with
Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; nat channel width on each side; lack of regeneration; filtering function severely compromised; banks uns turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to t severe disturbance from livestock or man.	stable (eroding); water color is muddy and
Notes:	
PORTION OF DRY CREEK. SMALL SEGMENT RE-ENTERS ROW.	
	A
Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, surve	ey boundary, and IDs of associated features)
SURVEY EXTENT	DRY CREEK
SURVEY ENTED	
	90
	SCUK 038
150F+	
VIL	AND
CENTERLINE	
2	orest
F	
150ft	
15047	
SURVEY EXTENT	
JURVE/ ENENI	

Form Rev. 07/09/2014



Waterbody point scuk038 facing East and upstream



Waterbody point scuk038 facing West and downstream

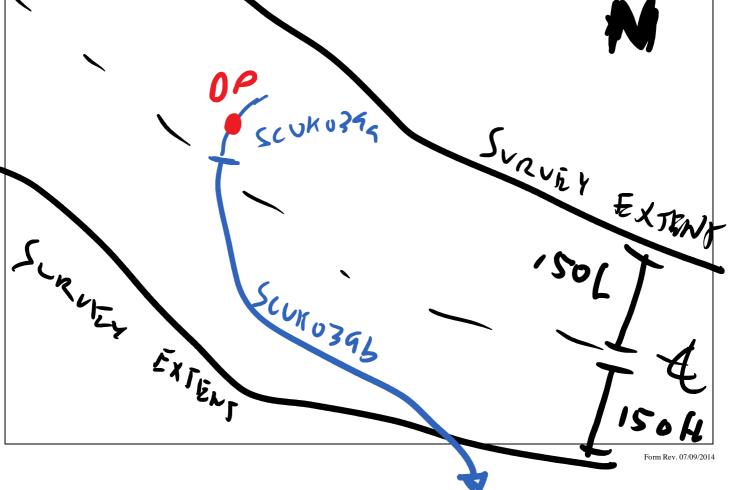


Waterbody point scuk038 facing South and across

Survey Descriptio	n				10/	eterbedy ID:	Deter
Southeast Reliabilit	V	Waterbody Nar UNT TO GR		=ĸ		aterbody ID: CUK039a	Date: 8/26/2014
	-						
State:	County:		Company:			lember Initials:	Photos:
Virginia	Cumberland		W&C		JS, BO		100-0189 TO 0191 U D X
Tract Number(s): 10-034			Nearest Mile 212	epost:		Associated Wetlan	ומ וש(ג):
Survey Type:							
(check one)		e ⊡Re-F	Route	□ Access Road		Other:	
Physical Attribute Stream Classification: (check one)	S ⊠Ephemera	al 🗆 Inter	mittent	Perennial			
Waterbody Type: (check one)	River ⊠ Str	ream 🗆 Dito	h □ Ca	anal 🛛 Other:	:		
OHWM Width: <u>3</u> ft.	OHWM Indica (check all that appl		⊠ Clear lir on bank	ne ⊠Shelvinç	g	⊠Wrested vegetation	□Scouring □Water staining
Height: ft. N/A□	vegetatio		•	debris		□ Abrupt plant community change	
Width of Waterbody - Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - Wa	ater Edge to Dep (Appril	th of Water: _{ox.)}
_ <u>_5</u> ft.	-	_4ft.		N/A⊠	<u></u> ft.	N/AI	ft.
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height		Ban	k slope
□Straight		fps		Right:	<u>3_</u> ft.		Right: <u>70</u> degrees
⊠Meanderi	ng N/A⊠			Left:	3_ ft.		Left: 70 degrees
Qualitative Attribu				·			
Water Appearance:							
(check one)	^I No water □0	Clear 🗆 Turb		ieen ⊡Sur i surface scu		□Algal □Ot mats	her:
Substrate:	Bedrock 🗆 Bo	oulder 🗆 Cobb	ole 🛛 Grave	el 🛛 Sand 🗌	□ Silt/ cl	ay 🛛 Organic 🗌	Other:
	<u>NA</u> % <u>NA</u> %	% <u>NA</u> %	<u> 10 </u> %	<u> 10 </u> %	<u>NA </u> %	80_%	<u>NA_</u> %
Width of Riparian Zone	e: Vegetative	e Layers:					
<u>>100 ft</u> ·	(check all that Avg. DBH	t apply) of Dominants:	[⊠] Trees _ <u>16_</u> in.		I Saplin _ <u>2_</u> in.	gs/Shrubs:	⊠ Herbs
N/A□ Dominant Bank Vegeta	(approx.)			-			
CHRISTMAS FERM	. ,	PANESE HOP	NEYSUCKI	LE			
Aquatic Habitats (ex: s NA	ubmerged or emerge	d aquatic vegetation	n, overhanging	banks/roots, leaf pacl	ks, large :	submerged wood, riffle	es, deep pools):
Aquatic Organisms Ob	served (list):						
NA							
T&E Species Observed	l (list):						
NA							
Disturbances (ex: livest	ock access, manure i	in waterbody, waste	e discharge pipe	es):			
Tributary is: (check one)	□ Natural	□ Art	tificial, man-m	ade 🛛 Manipu	ulated		
Stream Quality ^a : (check one)	🗆 High	□ Mc	oderate	⊠ Low			

	SCUK039a
^a High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available disturbance by livestock or man.	
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the ac function or riparian vegetation only moderately compromised; banks moderately unstable; water color is greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance b	cloudy, submerged objects covered with
Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natu channel width on each side; lack of regeneration; filtering function severely compromised; banks unstaturbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fis severe disturbance from livestock or man.	able (eroding); water color is muddy and
Notes:	
Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey	boundary, and IDs of associated features)

Waterbody ID:





Waterbody point scuk039a facing North and upstream



Waterbody point scuk039a facing South and downstream



Waterbody point scuk039a facing West and across

Southeast Reliability UNT TO GREEN CREEK SCUK039b style State: County: Company: Crew Member Initials: Photos: 100-0192 TO 0194 U D X State: Na Associated Weitand D(s): Na Na Na Struct Number(s): Naerset Milepost: Na Na Na Struct Number(s): Naerset Milepost: Na Na Na Struct Number(s): Centerline Renew Access Road Other: Physical Attributes Struct Number(s): Na Na Struct Number(s): Na Struct Number(s): Centerline Renew Access Road Other: Struct Number(s): Na Struct Number(s): Centerline Shelving Winterset Struct Number(s): Struct Number(s): Struct Number(s): Struct Number(s): Materiad(s): Centerline Shelving Winterset Struct Number(s): Struct Number(s): Na	Survey Description Project Name:		Materia du Na	<u> </u>		14/	atorbody ID:		Deter
State: County: Company: Crew Member Initials: Photos: Virginia Cumberland W&C JS, BG 100-0192 TO 0194 U D X Tract Number(6): Nearest Milepost: Associated Wetland ID(6): NA Survey Type: NA MA Other: Physical Attributes Contentine Re-Route Access Road Other: Physical Attributes Bank Intermittent Perennial Other: Sociated Wetland ID(6): Water Addy Type: Creat and a Other: Other: Sociated Wetland ID(6): Sociated Wetland ID(6): Water Addy Type: Other: Other: Sociated Wetland ID(6): Sociated Wetland ID(6): Water Addy Type: Other: Other: Sociated Wetland ID(6): Sociated Wetland ID(6): Maint:			-		=ĸ		•		Date: 8/26/2014
Virginia Cumberland W&C JS, BG 100-0192 TO 0194 U D X Tract Number(a): Nearest Milepost: Associated Weitand ID(a): NA Streem Classification: Centerline Re-Route Access Road Other: Physical Attributes Benered Milepost: Perennial Other: Physical Attributes Streem Classification: Centerline Ditch Centerline Sheking Other: ONACT Image Attributes Streem Classification: Other: Other: Streem Classification: With full Epheneral Ditch Canal Other: Other: ONACT Image Attributes Streem Ditch Canal Other: ONACT Image Attributes Streem Ditch Canal Other: Other Image Attributes Streem Ditch Canal Other: Other Image Attributes Image Attributes Streem Ditch Streem With of Waterbody - Top of Sign: With of Waterbody - Top of Sign: Image Attributes Distreem NA Image Attributes With of Waterbody Image Attributes Image Attributes Image Attributes Image Attributes With of Waterbody Image Attrib					_1				
Track Number(s): Nearest Milepost: Associated Wetland ID(s): 10-034 212 NA Survey Type: ©Centerline Re-Route Access Road Other: Physical Attributes @Centerline Re-Route Access Road Other: Waterbody Type: @Centerline @Intermittent @Peronnal Waterbody Type: @Centerline @Statum Other: Waterbody Type: @Centerline @Statum @Cherrine @Statum Waterbody Type: @Centerline @Statum @Cherrine @Statum @Cherrine Waterbody Type: @Centerline @Statum @Cherrine @Statum @Cherrine @Statum @Cherrine Water Vectory @Bent, matted, or missing @Vrack line @Liter and @Chorut plant Scouring Water statum NA		•							
10-034 212 NA Survey Type: (mark.dow) © Centerline Re.Route □Access Road □Other: Physical Attributes Stream Classification: (mark.dow) © Ephemeral Wintermittent □ Perennial Water Cody Type: (mark.dow) © River © Stream Ditch ⊂ anal Other: Water Cody Type: (mark.dow) © River © Stream Ditch ⊂ anal Other: Water Cody Type: (mark.dow) © River © Stream Ditch ⊂ anal Other: Water Cody Type: (mark.dow) © River © Stream Ditch ⊂ anal Other: Water Cody Type: (mark.dow) © River and down assign Winter Markerbody: Top of Bank to Top of Bank: © Cheer line © Shehving © Water Edge: © Depth of Water: (mark.dow)	3	Jumperland				JS, B			192 TO 0194 U D X
Survey Type: MCenterline Re-Route Access Road Other: Physical Attributes Stream Classification: Perennial Water.cody Type: Charlen Tilter Perennial Water.cody Type: River Stream Dath Canal Other: Water.cody Type: Other Other Scouring Water.cody Water.cody Diff. Other: Other: Scouring Water.cody Water.cody Diff. Other: Other: Scouring Water.cody Water.cody The missing Wrack line Stiller and Abrupt plant Scouring Scouring Scouring Scouring Scouring Mater MAC	.,				epost:			iand iD(s):	
icharck wird IRe-Route IAccess Road Other: Physical Attributes Stream Classification:				212					
Stream Classification: Binder Classification: Waterbody Type: (mack and) Classification: With of Waterbody Type: (mack and) Classification: (mack and) Classification: (mack and) (mack and) <tr< th=""><th></th><th></th><th>e □Re-I</th><th>Route</th><th>□ Access Road</th><th></th><th>□Other:</th><th></th><th></th></tr<>			e □Re-I	Route	□ Access Road		□Other:		
percent or other Ephemeral Entermittent Water obdy Type: control of the state of the subtrant of t	Physical Attributes								
Water body Type: River			al ⊠Inter	rmittent					
icited word IRver Image: Straight width:	Waterbody Type:	_p							
Wridth:		River 🛛 Str	eam 🗆 Dito	ch 🗆 C	anal 🛛 Other:				
Hight: Height: Aft. Bent, matted, or missing □Wrack line Butk for a Community plant, Community plant, Bent, matted, or missing □Wrack line Butk for a Community plant, Community plant, Bent, botter Edge to Bepth of Water: Macm Bent, botter Edge, to Bepth of Water: Macm Bank to Top of Bank: Width of Waterbody Top of Bent, and the of Waterbody Toe of Slope Width of Waterbody Water Edge to Bepth of Water: Macm Bent, beight Bank slope Right: Bank slope Right: Bank height Right: Bank height Right: Bank slope Right: Bank height 	ОНѠМ								
Height: □ft □Bent, matted, or missing □Wtack line □Litter and □Abrupt plant □Soli characteristic change Width of Waterbody - Top of Bank to Top of Bank: Width of Waterbody - Toe of Slope Width of Waterbody - Water Edge to to Toe of Slope: Depth of Water: PaperxX Sinussity:		(check all that apply	<i>v)</i>		ne Shelving	g		□Scourin	3
All vegetation every elimination of the model debris community change community change Width of Waterbody - Top of Bank to Top of Bank: Midth of Waterbody - Toe of Slope Width of Waterbody - Water Edge to to Toe of Slope: Depth of Water: All for the formation of th		□ Bent n	natted or missin	ng ⊟Wrack li	ne ⊠Litter an	hd	⊂ □ Abrunt plant	□Soil c	haracteristic change
Width of Waterbody - Top of Bank to Top of Bank: Image: Copy of Bank: Depth of Water: Copy of Cop									
	Width of Waterbody - To	op of Width of	of Waterbody -	Toe of Slope		ody - W			r:
Image: Straight Water velocity: (Approx) NA□ Sinuosity: (Approx) Orps Bank height Right: ft. Bank slope Right: ft. Water velocity: (Approx) Orps Bank height Right: ft. Bank slope Right: ft. Qualitative Attributes Water Appearance: (entext one) NA water Clear Turbid Sheen on surface Surface scum Algal Other: Substrate: (entext all that apply) NA water Clear Turbid Sheen on surface Surface Algal Other: Width of Riparian Zone: NAC Vegetative Layers: (entext all that apply) Bedrock Boulder Coble G of % NA % NA % VAG Wegetative Layers: (approx) Wegetative Layers: Saphings/Shrubs: W Herbs NA Yage. DBH of Dominants: 16. in. 	Bank to Top of Bank:	to Toe	of Slope:		Water Edge:		(A)	pprox.)	
Sinuosity: (#hero: one) Water velocity: (#hero: one) Mark height 	<u>_8_</u> ft.	-	_4ft.			<u>2</u> ft.	N	/∆ □	<u>0.5</u> ft.
Straight	Sinuosity:	Water	velocity:						
Image: Second secon		(Approx.)	-		•	o (i		Right	
Qualitative Attributes Water Appearance: (check one) No water Clear Turbid Sheen Substrate: Bedrock Bedrock one) No water Collect all that apply % of Substrate: NA % NA % NA % Substrate: NA % NA % NA % Width of Riparian Zone: Vegetative Layers: (check all that apply) Trees: >100 ft Arg. DBH of Dominants: 16 in. (approx.) 16 in. 2100 ft Arg. DBH of Dominants: 16 in. (approx.) 2 in. Dominant Bank Vegetation (list): CHRISTMAS FERN, PRIVET, JAPANESE HONEYSUCKLE Aquatic Organisms Observed (list): FROGS T&E Species Observed (list): Rappearance RAGE Steps Observed (list): NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Tributary is: (check one) In tural Artificial, man-made Manipulated Stream Quality *: In tural			<u>_0_</u> fps			<u>6</u> ft.		Lef	
Water Appearance: [check one] INo water Clear I'urbid Sheen Surface Algal Other: scum mats mats scum mats Substrate: Bedrock Boulder Cobble Gravel Sand Silt/ clay Organic Other: (check all that apply) NA % NA % 30 % 60 % NA % 10 % NA % Width of Riparian Zone: Vegetative Layers: [check all that apply) I'rees: Saplings/Shrubs: I'rees >100 ft: Avg. DBH of Dominants: 16 in. _2 in.	Meandering	D N/A⊠				<u>7_</u> ft.			<u>80</u> degrees
(check one) No water Clear Turbid Sheen Surface Algal Other: on surface scum mats Substrate: (check all matappy) % of Substrate: NA % NA % NA % 00 % NA % 10 % NA % Width of Riparian Zone: Vegetative Layers: (check all that appy) Stress: Saplings/Shrubs: Herbs NA		es							
(check all that apply) % of Substrate: NA % Width of Riparian Zone: (check all that apply) Strees:		No water C	Clear 🗆 Turk					Other:	
% of Substrate: NA % NA % 30 % 60 % NA % 10 % NA % Width of Riparian Zone: (check all that apply) □ Trees: □ Saplings/Shrubs: □ Herbs Avg. DBH of Dominants: _16_in2_in. Dominant Bank Vegetation (<i>list</i>): CHRISTMAS FERN, PRIVET, JAPANESE HONEYSUCKLE Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): POOLS Aquatic Organisms Observed (<i>list</i>): FROGS T&E Species Observed (<i>list</i>): NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (ahead one) □ Natural □ Artificial, man-made Ø Manipulated Stream Quality*:		Bedrock 🗆 Bo	oulder 🗆 Cobb	ole 🛛 Grav	el 🛛 Sand 🗌	∃ Silt/ c	lay 🛛 Organic	□ Other:	
Width of Riparian Zone: Vegetative Layers: (check all that app/) ⊠ Trees: ⊠ Saplings/Shrubs: ⊠ Herbs		<u>A</u> % <u>NA</u> %	% <u>NA</u> %	<u>30</u> %	<u> 60 </u> %	<u>NA_</u> %	<u>10_</u> %	<u>NA %</u>	
_>100 ft. Avg. DBH of Dominants: _16_in. _2_in. Dominant Bank Vegetation (<i>list</i>): CHRISTMAS FERN, PRIVET, JAPANESE HONEYSUCKLE Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): POOLS Aquatic Organisms Observed (<i>list</i>): FROGS T&E Species Observed (<i>list</i>): NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (<i>namural</i>) Artificial, man-made Manipulated Stream Quality ^a : Natural Artificial, man-made Manipulated	Width of Rinarian Zone:	Vegetative	avers:						
N/A□ (approx.)		(check all that	apply)	[⊠] Trees	: 🛛 🛛	Saplin	ngs/Shrubs:	⊠ Herbs	
CHRISTMAS FERN, PRIVET, JAPANESE HONEYSUCKLE Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): POOLS Aquatic Organisms Observed (<i>list</i>): FROGS T&E Species Observed (<i>list</i>): NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (check one) □ Natural □ Artificial, man-made ⊠ Manipulated Stream Quality ^a :	<u>>100 ft</u> · N/A□		of Dominants:	<u>16</u> in.	-	<u>2</u> in.			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): POOLS Aquatic Organisms Observed (list): FROGS T&E Species Observed (list): NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (check one) Natural Artificial, man-made Manipulated	-	• •							
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FROGS T&E Species Observed (<i>list</i>): NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (check one) □ Natural □ Artificial, man-made ⊠ Manipulated Stream Quality ^a :		• (11 - 5)							
T&E Species Observed (list): NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (check one) □ Natural □ Artificial, man-made ☑ Manipulated Stream Quality °:		erved (list):							
NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (check one) □ Natural □ Artificial, man-made ⊠ Manipulated Stream Quality ^a :									
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (check one)	-	(list):							
TRASH Tributary is: (check one) □ Natural □ Artificial, man-made ☑ Manipulated Stream Quality ^a :	-								
(check one) □ Natural □ Artificial, man-made ⊠ Manipulated Stream Quality ^a :		к access, manure i	n waterbody, wast	e aischarge pipe	es):				
Stream Quality ^a :		Natural	□ Ar	tificial, man-m	iade 🛛 Manipu	ulated			
-	Stream Quality ^a : (check one)				•	-			

	Waterbody ID:
	SCUK039b
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on errors; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available disturbance by livestock or man.	
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the act function or riparian vegetation only moderately compromised; banks moderately unstable; water color is greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance b	cloudy, submerged objects covered with
Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natu channel width on each side; lack of regeneration; filtering function severely compromised; banks unstaturbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fis severe disturbance from livestock or man.	able (eroding); water color is muddy and
lotes:	
TERMITTENT REACH PORTION. LOTS OF GARBAGE IN CHANNEL AND ON BAN RESENT.	IKS (DUMP). NO FLOW. POOLS
Naterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey	v boundary, and IDs of associated features)
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EN,	Foreity, 07/09/2014



Waterbody point scuk039b facing North and upstream



Waterbody point scuk039b facing South and downstream

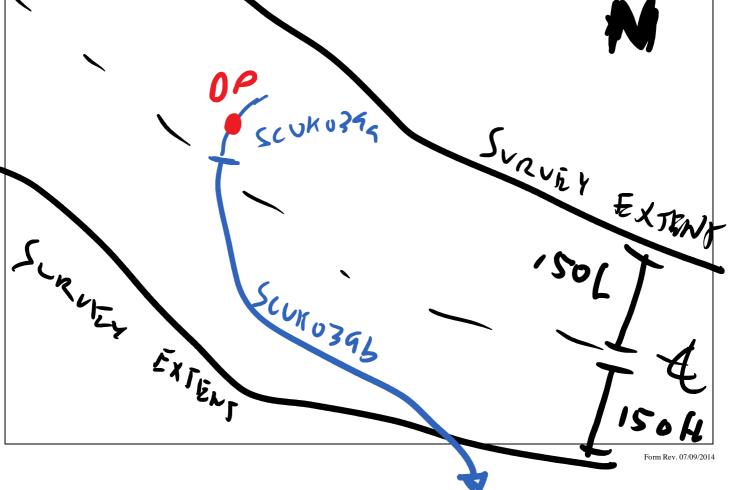


Waterbody point scuk039b facing West and across

Survey Descriptio	n				10/	eterbedy ID:	Deter
Southeast Reliabilit	V	Waterbody Nar UNT TO GR		=ĸ		aterbody ID: CUK039a	Date: 8/26/2014
	-						
State:	County:		Company:			lember Initials:	Photos:
Virginia	Cumberland		W&C		JS, BO		100-0189 TO 0191 U D X
Tract Number(s): 10-034			Nearest Mile 212	epost:		Associated Wetlan	ומ וש(ג):
Survey Type:							
(check one)		e ⊡Re-F	Route	□ Access Road		Other:	
Physical Attribute Stream Classification: (check one)	S ⊠Ephemera	al 🗆 Inter	mittent	Perennial			
Waterbody Type: (check one)	River ⊠ Str	ream 🗆 Dito	h □ Ca	anal 🛛 Other:	:		
OHWM Width: <u>3</u> ft.	OHWM Indica (check all that appl		⊠ Clear lir on bank	ne ⊠Shelvinç	g	⊠Wrested vegetation	□Scouring □Water staining
Height: ft. N/A□	vegetatio		•	debris		□ Abrupt plant community change	
Width of Waterbody - Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - Wa	ater Edge to Dep (Appril	th of Water: _{ox.)}
_ <u>_5</u> ft.	-	_4ft.		N/A⊠	<u></u> ft.	N/AI	ft.
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height		Ban	k slope
□Straight		fps		Right:	<u>3_</u> ft.		Right: <u>70</u> degrees
⊠Meanderi	ng N/A⊠			Left:	3_ ft.		Left: 70 degrees
Qualitative Attribu				·			
Water Appearance:							
(check one)	^I No water □0	Clear 🗆 Turb		ieen ⊡Sur i surface scu		□Algal □Ot mats	her:
Substrate:	Bedrock 🗆 Bo	oulder 🗆 Cobb	ole 🛛 Grave	el 🛛 Sand 🗌	□ Silt/ cl	ay 🛛 Organic 🗌	Other:
	<u>NA</u> % <u>NA</u> %	% <u>NA</u> %	<u> 10 </u> %	<u> 10 </u> %	<u>NA </u> %	80_%	<u>NA_</u> %
Width of Riparian Zone	e: Vegetative	e Layers:					
<u>>100 ft</u> ·	(check all that Avg. DBH	t apply) of Dominants:	[⊠] Trees _ <u>16_</u> in.		I Saplin _ <u>2_</u> in.	gs/Shrubs:	⊠ Herbs
N/A□ Dominant Bank Vegeta	(approx.)			-			
CHRISTMAS FERM	. ,	PANESE HOP	NEYSUCKI	LE			
Aquatic Habitats (ex: s NA	ubmerged or emerge	d aquatic vegetation	n, overhanging	banks/roots, leaf pacl	ks, large :	submerged wood, riffle	es, deep pools):
Aquatic Organisms Ob	served (list):						
NA							
T&E Species Observed	l (list):						
NA							
Disturbances (ex: livest	ock access, manure i	in waterbody, waste	e discharge pipe	es):			
Tributary is: (check one)	□ Natural	□ Art	tificial, man-m	ade 🛛 Manipu	ulated		
Stream Quality ^a : (check one)	🗆 High	□ Mc	oderate	⊠ Low			

	SCUK039a
^a High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available disturbance by livestock or man.	
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the ac function or riparian vegetation only moderately compromised; banks moderately unstable; water color is greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance b	cloudy, submerged objects covered with
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Notes:	
Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey	boundary, and IDs of associated features)

Waterbody ID:





Waterbody point scuk039a facing North and upstream



Waterbody point scuk039a facing South and downstream



Waterbody point scuk039a facing West and across

Southeast Reliability UNT TO GREEN CREEK SCUK039b style State: County: Company: Crew Member Initials: Photos: 100-0192 TO 0194 U D X State: Na Associated Weitand D(s): Na Na Na Struct Number(s): Naerset Milepost: Na Na Na Struct Number(s): Naerset Milepost: Na Na Na Struct Number(s): Centerline Renew Access Road Other: Physical Attributes Struct Number(s): Na Na Struct Number(s): Na Struct Number(s): Centerline Renew Access Road Other: Struct Number(s): Na Struct Number(s): Centerline Shelving Winterset Struct Number(s): Struct Number(s): Struct Number(s): Struct Number(s): Materiad(s): Centerline Shelving Winterset Struct Number(s): Struct Number(s): Na	Survey Description Project Name:		Materia du Na	<u> </u>		14/	atorbody ID:		Deter
State: County: Company: Crew Member Initials: Photos: Virginia Cumberland W&C JS, BG 100-0192 TO 0194 U D X Tract Number(6): Nearest Milepost: Associated Wetland ID(6): NA Survey Type: NA MA Other: Physical Attributes Contentine Re-Route Access Road Other: Physical Attributes Bank Intermittent Perennial Other: Sociated Wetland ID(6): Water Addy Type: Creat and a Other: Other: Sociated Wetland ID(6): Sociated Wetland ID(6): Water Addy Type: Other: Other: Sociated Wetland ID(6): Sociated Wetland ID(6): Water Addy Type: Other: Other: Sociated Wetland ID(6): Sociated Wetland ID(6): Maint:			-		=ĸ		•		Date: 8/26/2014
Virginia Cumberland W&C JS, BG 100-0192 TO 0194 U D X Tract Number(a): Nearest Milepost: Associated Weitand ID(a): NA Streem Classification: Centerline Re-Route Access Road Other: Physical Attributes Benered Milepost: Perennial Other: Physical Attributes Streem Classification: Centerline Ditch Centerline Sheking Other: ONACT Image Attributes Streem Classification: Other: Other: Streem Classification: With full Epheneral Ditch Canal Other: Other: ONACT Image Attributes Streem Ditch Canal Other: ONACT Image Attributes Streem Ditch Canal Other: Other Image Attributes Streem Ditch Canal Other: Other Image Attributes Image Attributes Streem Ditch Streem With of Waterbody - Top of Sign: With of Waterbody - Top of Sign: Image Attributes Distreem NA Image Attributes With of Waterbody Image Attributes Image Attributes Image Attributes Image Attributes With of Waterbody Image Attrib					_1				
Track Number(s): Nearest Milepost: Associated Wetland ID(s): 10-034 212 NA Survey Type: ©Centerline Re-Route Access Road Other: Physical Attributes @Centerline Re-Route Access Road Other: Waterbody Type: @Centerline @Intermittent @Peronnal Waterbody Type: @Centerline @Statum Other: Waterbody Type: @Centerline @Statum @Cherrine @Statum Waterbody Type: @Centerline @Statum @Cherrine @Statum @Cherrine Waterbody Type: @Centerline @Statum @Cherrine @Statum @Cherrine @Statum @Cherrine Water Vectory @Bent, matted, or missing @Vrack line @Liter and @Chorut plant Scouring Water statum NA		•							
10-034 212 NA Survey Type: (mark.dow) © Centerline Re.Route □Access Road □Other: Physical Attributes Stream Classification: (mark.dow) © Ephemeral Wintermittent □ Perennial Water Cody Type: (mark.dow) © River © Stream Ditch ⊂ anal Other: Water Cody Type: (mark.dow) © River © Stream Ditch ⊂ anal Other: Water Cody Type: (mark.dow) © River © Stream Ditch ⊂ anal Other: Water Cody Type: (mark.dow) © River © Stream Ditch ⊂ anal Other: Water Cody Type: (mark.dow) © River and down assign Winter Markerbody: Top of Bank to Top of Bank: © Cheer line © Shehving © Water Edge: © Depth of Water: (mark.dow)	3	Jumperland				JS, B			192 TO 0194 U D X
Survey Type: MCenterline Re-Route Access Road Other: Physical Attributes Stream Classification: Perennial Water.cody Type: Charlen Tilter Perennial Water.cody Type: River Stream Dath Canal Other: Water.cody Type: Collear line Shewing Wires Scouring Water Water.cody Diff. Collear line Shewing Water Scouring Water Water.cody The missing Wrack line Stillear and Orbury lipint Scouring Scouring Scouring Scouring Scouring Scouring Scouring Water Width of Waterbody - Top of March Waterbody Toe of Stope: Water Edge: NAC NAC Scouring Scouring </td <td>.,</td> <td></td> <td></td> <td></td> <td>epost:</td> <td></td> <td></td> <td>iand iD(s):</td> <td></td>	.,				epost:			iand iD(s):	
icharck wird IRe-Route IAccess Road Other: Physical Attributes Stream Classification:				212					
Stream Classification: Binder Classification: Waterbody Type: (mack and) Classification: With of Waterbody Type: (mack and) Classification: (mack and) Classification: (mack and) (mack and) <tr< th=""><th></th><th></th><th>e □Re-I</th><th>Route</th><th>□ Access Road</th><th></th><th>□Other:</th><th></th><th></th></tr<>			e □Re-I	Route	□ Access Road		□Other:		
percent or other Ephemeral Entermittent Water obdy Type: control of the state of the subtrant of t	Physical Attributes								
Water body Type: River			al ⊠Inter	rmittent					
icited word IRver Image: Straight width:	Waterbody Type:	_p							
Wridth:		River 🛛 Str	eam 🗆 Dito	ch 🗆 C	anal 🛛 Other:				
Hight: Height: Aft. Bent, matted, or missing □Wrack line Butk for a Community plant, Community plant, Bent, matted, or missing □Wrack line Butk for a Community plant, Community plant, Bent, botter Edge to Bepth of Water: Macm Bent, botter Edge, to Bepth of Water: Macm Bank to Top of Bank: Width of Waterbody Top of Stope Width of Waterbody Toe of Stope: Water Edge: Depth of Water: Macm Depth of Water: 	ОНWM								
Height: □ft □Bent, matted, or missing □Wtack line □Litter and □Abrupt plant □Soli characteristic change Width of Waterbody - Top of Bank to Top of Bank: Width of Waterbody - Toe of Slope Width of Waterbody - Water Edge to to Toe of Slope: Depth of Water: PaperxX Sinuosity:		(check all that apply	<i>v)</i>		ne Shelving	g		□Scourin	3
All vegetation every elimination of the model debris community change community change Width of Waterbody - Top of Bank to Top of Bank: Midth of Waterbody - Toe of Slope Width of Waterbody - Water Edge to to Toe of Slope: Depth of Water: All for the formation of th		□ Bent n	natted or missin	ng ⊟Wrack li	ne ⊠Litter an	hd	⊂ □ Abrunt plant	□Soil c	haracteristic change
Width of Waterbody - Top of Bank to Top of Bank: Image: Copy of Bank: Depth of Water: Copy of Cop									
	Width of Waterbody - To	op of Width of	of Waterbody -	Toe of Slope		ody - W			r:
Image: Straight Water velocity: (Approx) NA□ Sinuosity: (Approx) Orps Bank height Right: ft. Bank slope Right: ft. Water velocity: (Approx) Orps Bank height Right: ft. Bank slope Right: ft. Qualitative Attributes Water Appearance: (entext one) NA water Clear Turbid Sheen on surface Surface scum Algal Other: Substrate: (entext all that apply) NA water Clear Turbid Sheen on surface Surface Algal Other: Width of Riparian Zone: NAC Vegetative Layers: (entext all that apply) Bedrock Boulder Coble G of % NA % NA % VAG Wegetative Layers: (approx) Wegetative Layers: Saphings/Shrubs: W Herbs NA Yage. DBH of Dominants: 16. in. 	Bank to Top of Bank:	to Toe	of Slope:		Water Edge:		(A)	pprox.)	
Sinuosity: (#hero: one) Water velocity: (#hero: one) Mark height 	<u>_8_</u> ft.	-	_4ft.			<u>2</u> ft.	N	/∆ □	<u>0.5</u> ft.
Straight	Sinuosity:	Water	velocity:						
Image: Second secon		(Approx.)	-		•	o (i		Right	
Qualitative Attributes Water Appearance: (check one) No water Clear Turbid Sheen Substrate: Bedrock Bedrock one) No water Collect all that apply % of Substrate: NA % NA % NA % Substrate: NA % NA % NA % Width of Riparian Zone: Vegetative Layers: (check all that apply) Trees: >100 ft Arg. DBH of Dominants: 16 in. (approx.) 16 in. 2100 ft Arg. DBH of Dominants: 16 in. (approx.) 2 in. Dominant Bank Vegetation (list): CHRISTMAS FERN, PRIVET, JAPANESE HONEYSUCKLE Aquatic Organisms Observed (list): FROGS T&E Species Observed (list): Rappearance RAGE Steps Observed (list): NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Tributary is: (check one) In tural Artificial, man-made Manipulated Stream Quality *: In tural			<u>_0_</u> fps			<u>6</u> ft.		Lef	
Water Appearance: [check one] INo water Clear I'urbid Sheen Surface Algal Other: scum mats mats scum mats Substrate: Bedrock Boulder Cobble Gravel Sand Silt/ clay Organic Other: (check all that apply) NA % NA % 30 % 60 % NA % 10 % NA % Width of Riparian Zone: Vegetative Layers: [check all that apply) I'rees: Saplings/Shrubs: I'rees >100 ft: Avg. DBH of Dominants: 16 in. _2 in.	Meandering	D N/A⊠				<u>7_</u> ft.			<u>80</u> degrees
(check one) No water Clear Turbid Sheen Surface Algal Other: on surface scum mats Substrate: (check all matappy) % of Substrate: NA % NA % NA % 00 % NA % 10 % NA % Width of Riparian Zone: Vegetative Layers: (check all that appy) Stress: Saplings/Shrubs: Herbs NA		es							
(check all that apply) % of Substrate: NA % Width of Riparian Zone: (check all that apply) Strees:		No water C	Clear 🗆 Turk					Other:	
% of Substrate: NA % NA % 30 % 60 % NA % 10 % NA % Width of Riparian Zone: (check all that apply) □ Trees: □ Saplings/Shrubs: □ Herbs Arg. DBH of Dominants: 16_in2_in. Dominant Bank Vegetation (<i>list</i>): CHRISTMAS FERN, PRIVET, JAPANESE HONEYSUCKLE Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): POOLS Aquatic Organisms Observed (<i>list</i>): FROGS T&E Species Observed (<i>list</i>): NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (ahead one) □ Natural □ Artificial, man-made Ø Manipulated Stream Quality *:		Bedrock 🗆 Bo	oulder 🗆 Cobb	ole 🛛 Grav	el 🛛 Sand 🗌	∃ Silt/ c	lay 🛛 Organic	□ Other:	
Width of Riparian Zone: Vegetative Layers: (check all that app/) ⊠ Trees: ⊠ Saplings/Shrubs: ⊠ Herbs		<u>A</u> % <u>NA</u> %	% <u>NA</u> %	<u>30</u> %	<u> 60 </u> %	<u>NA_</u> %	<u>10_</u> %	<u>NA %</u>	
_>100 ft. Avg. DBH of Dominants: _16_in. _2_in. Dominant Bank Vegetation (<i>list</i>): CHRISTMAS FERN, PRIVET, JAPANESE HONEYSUCKLE Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): POOLS Aquatic Organisms Observed (<i>list</i>): FROGS T&E Species Observed (<i>list</i>): NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (<i>namural</i>) Artificial, man-made Manipulated Stream Quality ^a : Natural Artificial, man-made Manipulated	Width of Rinarian Zone:	Vegetative	avers:						
N/A□ (approx.)		(check all that	apply)	[⊠] Trees	: 🛛 🛛	Saplin	ngs/Shrubs:	⊠ Herbs	
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Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): POOLS Aquatic Organisms Observed (list): FROGS T&E Species Observed (list): NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (check one) Natural Artificial, man-made Manipulated	-	• •							
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Aquatic Organisms Observed (list): FROGS T&E Species Observed (list): NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (check one)		merged or emerged	d aquatic vegetatio	on, overhanging	banks/roots, leaf pack	ks, large	submerged wood, ri	iffles, deep poo	ls):
FROGS T&E Species Observed (<i>list</i>): NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (check one) □ Natural □ Artificial, man-made ⊠ Manipulated Stream Quality ^a :		• (11 - 5)							
T&E Species Observed (list): NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (check one) □ Natural □ Artificial, man-made ☑ Manipulated Stream Quality °:		erved (list):							
NA Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (check one) □ Natural □ Artificial, man-made ⊠ Manipulated Stream Quality ^a :									
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): TRASH Tributary is: (check one) □ Natural □ Artificial, man-made ⊠ Manipulated Stream Quality ^a :	•	(list):							
TRASH Tributary is: (check one) □ Natural □ Artificial, man-made ☑ Manipulated Stream Quality ^a :	-								
(check one) □ Natural □ Artificial, man-made ⊠ Manipulated Stream Quality ^a :		к access, manure i	n waterbody, wast	e aischarge pipe	es):				
Stream Quality ^a :		Natural	□ Ar	tificial, man-m	iade 🛛 Manipu	ulated			
-	Stream Quality ^a : (check one)				•	-			

	Waterbody ID:
	SCUK039b
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on errors; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available disturbance by livestock or man.	
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the act function or riparian vegetation only moderately compromised; banks moderately unstable; water color is greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance b	cloudy, submerged objects covered with
Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natu channel width on each side; lack of regeneration; filtering function severely compromised; banks unstaturbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fis severe disturbance from livestock or man.	able (eroding); water color is muddy and
lotes:	
TERMITTENT REACH PORTION. LOTS OF GARBAGE IN CHANNEL AND ON BAN RESENT.	IKS (DUMP). NO FLOW. POOLS
Naterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey	v boundary, and IDs of associated features)
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Waterbody point scuk039b facing North and upstream



Waterbody point scuk039b facing South and downstream



Waterbody point scuk039b facing West and across

Survey Description		Waterbody Ner			10/	aterbody ID:	Date:
Southeast Reliability			terbody Name: IT TO GREEN CREEK			CUK041	8/27/2014
State:						lember Initials:	Photos:
	County: Cumberland		Company: W&C		JS, B		100-0207 TO 0209 U D >
Tract Number(s):			Nearest Mile	epost:		Associated Wetla	
10-034			212			NA	
Survey Type: (check one)	Centerline	□Re-R	loute	□ Access Road		□Other:	
Physical Attributes	5						
Stream Classification: (check one)	⊠Ephemera	I 🗆 Inter	mittent	Perennial			
Waterbody Type: (check one)	River 🖂 Str	eam 🗆 Ditc	h 🗆 Ca	anal 🛛 Other:	:		
OHWM Width: <u>2</u> ft.	OHWM Indicat (check all that apply		⊠ Clear lir on bank	ne 🗆 Shelving	g	⊠Wrested vegetation	□Scouring ⊠Water staining
Height: N/A□	vegetatio		-	debris		□ Abrupt plant community chang	□Soil characteristic change e
Width of Waterbody - To Bank to Top of Bank:		of Waterbody - 1 of Slope:	oe of Slope	Width of Waterbo Water Edge:	ody - Wa	ater Edge to Dep	oth of Water:
_ <u>5 ft.</u>		<u>3_</u> ft.		N/A⊠	ft.	N/A	ft.
Sinuosity: (check one)		velocity:		Bank height		Bar	ik slope
	(Approx.)	foc		Right:	<u>2</u> ft.		Right: 90 degrees
⊠Meanderin	g N/A⊠	fps		Left:	ft.		Left:
					<u></u> n.		<u>90</u> degrees
Qualitative Attribut Water Appearance:	es						
	No water C	Clear □Turb		leen □Sur surface scu		□Algal □Ot mats	ther:
Substrate:	Bedrock 🗆 Bo	ulder 🛛 Cobb	le 🛛 Grave	el 🛛 Sand 🗌	□ Silt/ cl	lay 🛛 Organic 🛛	☐ Other:
	I <u>A</u> % <u>NA</u> %	% <u>NA</u> %	<u> 10 </u> %	40_%	<u>NA </u> %	<u>50</u> %	<u>NA_</u> %
Width of Riparian Zone	: Vegetative	Layers:					
<u>>100 ft</u> ·	(check all that Avg. DBH	apply) of Dominants:	[⊠] Trees <u>16_</u> in.		I Saplin _ <u>2_</u> in.	gs/Shrubs:	⊠ Herbs
N/A□ Dominant Bank Vegetat	(approx.)						
CHRISTMAS FERN	. ,	PANESE HON	IEYSUCKI	LE			
Aquatic Habitats (ex: su NA	bmerged or emerged	aquatic vegetation	n, overhanging	banks/roots, leaf pacl	ks, large	submerged wood, riffl	es, deep pools):
Aquatic Organisms Obs	served (list):						
NA							
T&E Species Observed	(list):						
NA							
Disturbances (ex: livesto NA	ck access, manure i	n waterbody, waste	discharge pipe	es):			
Tributary is: (check one)	⊠ Natural	□ Art	ificial, man-m	ade 🗆 Manipu	ulated		
Stream Quality ^a : (check one)	🗆 High	□ Mo	derate	⊠ Low			

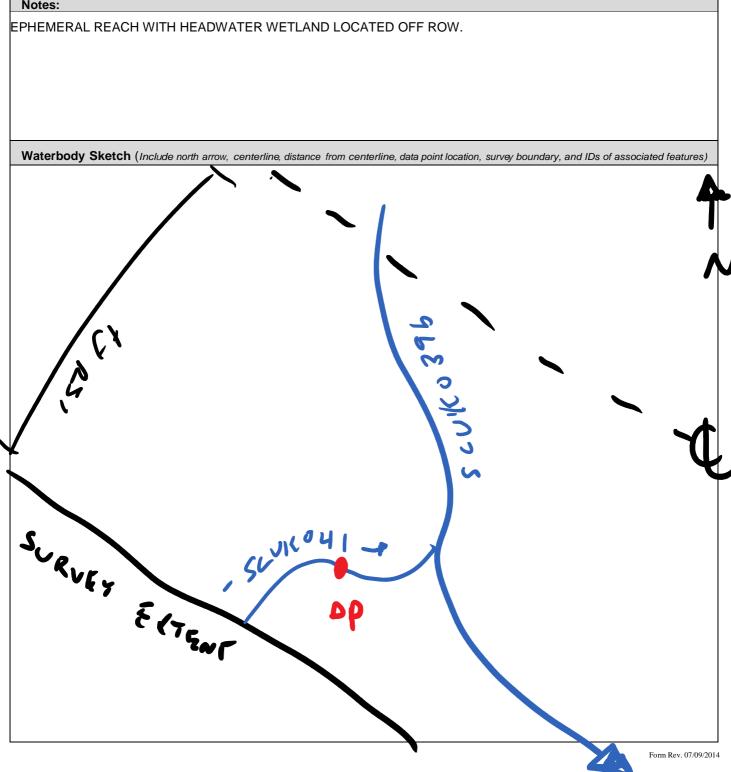
	Waterbody ID:
:	SCUK041
· · · · · · · · · · · · · · · · · · ·	

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 point scuk041 facing Southwest and upstream



Waterbody point scuk041 facing Northeast and downstream



Waterbody point scuk041 facing Southeast and across

Survey Descriptio	n	Waterbody Nor			10/	aterbody ID:	Date:
•		Waterbody Name: UNT TO GREEN CREEK				CUK040	8/26/2014
	,						
State:	County:		Company:			lember Initials:	Photos:
Virginia	Cumberland		W&C		JS, BO		100-0196 TO 0198 U D X
Tract Number(s):			Nearest Mile	epost:		Associated We	tland ID(s):
10-037			212			NA	
Survey Type: (check one)	⊠Centerline	e □Re-R	loute	□ Access Road		□Other:	
Physical Attribute							
Stream Classification: (check one)	⊠Ephemera	al 🗆 Interi	mittent	□Perennial			
Waterbody Type:							
(check one)	□River ⊠ Str	eam 🗌 Ditc	h 🗆 Ca	anal 🗌 Other:			
онwм	OHWM Indicat				_		
Width: _2_ft.	(check all that apply	/)	⊠ Clear lir on bank	ie 🗆 Shelving	g	⊠Wrested vegetation	□Scouring ⊠Water staining
Height:	□Bent, n	natted, or missing	g ⊡Wrack li	ne ⊠Litter an	nd	□ Abrupt plant	□ Soil characteristic change
ft. N/A□	vegetatio	n	-	debris		community cha	nge
Width of Waterbody - ⁻ Bank to Top of Bank:		of Waterbody - 1 of Slope:	oe of Slope	Width of Waterbo Water Edge:	ody - Wa		Pepth of Water:
		•		Water Euge.		(*	
<u>_5 f</u> t.	-	<u>2_</u> ft.		N/A⊠	<u>f</u> t.	N	ft. I/A⊠
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height		В	ank slope
	(Αρριοχ.)			Right:	<u>3_</u> ft.		Right: 70 degrees
⊠Meanderi		fps		Left:			Left:
					<u>3_</u> ft.		<u>_70</u> degrees
Qualitative Attribu Water Appearance:	ites						
	[⊠] No water □C	Clear 🗆 Turb		een ⊡Sur surface scu		□Algal □ mats	Other:
	Bedrock DBo	ulder 🗆 Cobb	le 🛛 Grave	el 🛛 Sand 🗌	□ Silt/ cl	ay 🛛 Organic	□ Other:
(check all that apply) % of Substrate:	<u>NA</u> % <u>NA</u> %	% <u>NA</u> %	<u>40 %</u>	<u> 50 </u> %	<u>NA_</u> %	<u> 10 </u> %	<u>NA %</u>
Width of Riparian Zon	e: Vegetative	e Lavers:					
	(check all that	apply)	⊠ Trees		Saplin	gs/Shrubs:	⊠ Herbs
<u>>100 ft</u> · N/A□	аvg. DBП (approx.)	of Dominants:	<u>_14_</u> in.	-	<u>2</u> in.		
Dominant Bank Veget	. ,		-				
CHRISTMAS FERI							
Aquatic Habitats (ex: s NA	ubmerged or emerged	d aquatic vegetatior	n, overhanging	banks/roots, leaf pacl	ks, large s	submerged wood, r	riffles, deep pools):
Aquatic Organisms Ob	oserved (list):						
NA							
T&E Species Observe	d (list):						
NA							
Disturbances (ex: livest	ock access, manure i	n waterbody, waste	discharge pipe	es):			
NA							
Tributary is: (check one)	⊠ Natural	□ Art	ificial, man-m	ade 🗆 Manipu	ulated		
Stream Quality ^a : (check one)	□ High		derate	⊠ Low			
· · · · · · · · · · · · · · · · · · ·							

	Waterbody ID:
	SCUK040
	at least one or two active channel widths on each side; banks stable and protected by h movement; many fish cover types available; diverse and stable aquatic habitat; no
function or riparian vegetation only moderately compromise	natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering ed; banks moderately unstable; water color is cloudy, submerged objects covered with nt; fair aquatic habitat; minimum disturbance by livestock or man.
channel width on each side; lack of regeneration; filtering	g; rip rap and channelization excessive; natural vegetation less than 1/3 of the active function severely compromised; banks unstable (eroding); water color is muddy and ce sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat;
Notes:	
PHEMERAL STREAM LACKING AQUATIC HABI	TATS AND ORGANISMS.
Waterbody Sketch (Include north arrow, centerline, dista	nce from centerline, data point location, survey boundary, and IDs of associated features)
	-
1,	~
2	~
5	×
>	UPLAND
"Share work"	FORÍST
in the second se	FORUM
3	
Kot	
3	j
· · · · · · · · · · · · · · · · · · ·	150 F+
surve	Y EXTENT
	EXTENT



Waterbody point scuk040 facing Northeast and upstream



Waterbody point scuk040 facing Southwest and downstream



Waterbody point scuk040 facing Southeast and across

Survey Descriptio	n	har					
		Waterbody Name: UNT TO GREEN CREEK			Waterbod SCUK04	-	Date:
Southeast Reliabilit	•	UNTTOGR		n .			8/27/2014
State:	County:		Company:		Crew Member	Initials:	Photos:
Virginia	Cumberland		W&C		JS, BG		100-0210 TO 0212 U D X
Tract Number(s): 10-037			Nearest Mile 212	epost:	Associa NA	ated Wetland	ID(s):
Survey Type: (check one)	⊠Centerline	e □Re-F	Route	□Access Road	□Other		
Physical Attribute			toute				
Stream Classification: (check one)		al 🗆 Inter	mittent	⊠Perennial			
Waterbody Type: (check one)	□River ⊠ Str	eam 🗆 Dito	:h □ Ca	anal 🛛 Other:			
OHWM Width: <u>6</u> ft.	OHWM Indica (check all that apply		⊠ Clear lir on bank	ne ⊠Shelving	g ⊠Wre vegeta		Scouring ⊠Water staining
Height: ft. N/A□	vegetatio		0	debris	commu	pt plant Inity change	□Soil characteristic change
Width of Waterbody - Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - Water Edg	ge to Depth (Approx.)	of Water:
<u>_10</u> ft.	-	_3_ft.		N/A□ -	<u>3</u> ft.	N/A□	<u>0.5</u> ft.
Sinuosity: (^{check one)} □ Straight ⊠ Meanderi	(Approx.)	velocity: 0.1fps	5	Left:	<u>3</u> ft.	Bank	Right: <u>45</u> degrees Left:
					<u>5_</u> ft.		<u>70</u> degrees
Qualitative Attribu Water Appearance:	ites						
	[□] No water ⊠0	Clear 🗆 Turb		leen ⊡Sur surface scu	0		r:
(check all that apply)	Bedrock □ Bo	oulder ⊠ Cobb % <u>10</u> %	le ⊠ Grave <u>30</u> %		□ Silt/ clay	0	Other: <u>_</u> %
Width of Riparian Zono <u>>100 ft</u> ∙ N/A□	(check all that Avg. DBH (approx.)		[⊠] Trees _ <u>12_</u> in.		☑ Saplings/Shrul _2_in.	os: D	3 Herbs
Dominant Bank Vegetation (<i>list</i>): CHRISTMAS FERN, GRASSES, FALSE NETTLE, MOSS							
Aquatic Habitats (ex: s RIFFLE/POOL COI							
Aquatic Organisms Ot FISH, FROGS	oserved (list):						
T&E Species Observed	d (list):						
Disturbances (ex: livest	ock access, manure i	n waterbody, waste	e discharge pipe	es):			
Tributary is: (check one)	□ Natural	□ Art	tificial, man-m	ade 🛛 🖾 Manipu	ulated		
Stream Quality ^a : (check one)	🗆 High	⊠ Mc	oderate	□ Low			

Waterbody ID:
SCUK042

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 SMALL PERENNIAL STREAM WITH LOW FLOW AND VOLUME AT TIME OF SURVEY. STREAM FLOW CULVERTED AT NORTH EDGE OF ROW.

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) GURVEN EXTENT ROAD Culvert 0 FORISTED FORESTRO Ug UPCAND line TRLAND 150 SURVEY EXTENT

Form Rev. 07/09/2014



Waterbody point scuk042 facing North and upstream



Waterbody point scuk042 facing South and downstream



Waterbody point scuk042 facing West and across

Survey Descripti	on									
Project Name:		Wa	terbody Nar	ne:			Waterbody ID:			Date:
Atlantic Coast Pip		UN	IT to Gree				scua006			10/16/2014
State:	County:			Company:			w Member Initial	s:	Photos:	
Virginia	Cumber	land		NRG		GB	, LE		3 phot	OS
Tract Number(s):				Nearest Mile	epost:		Associated V	Vetland	I ID(s):	
10-041; 10-042; 1	0-043			213.8			none			
Survey Type: (check one)	⊠Ce	enterline	□Re-F	Route		Road	□Other:			
Physical Attribut										
Stream Classification (check one)		hemeral	□Inter	mittent	⊠Perenn	al				
Waterbody Type:										
(check one)	□River	⊠ Stream	🗆 Dito	h □C	anal 🗌	Other:				
OHWM Width: 5.0 ft.		Indicator: that apply)		⊠ Clear lir on bank	ne ⊠S	nelving	□Wrested vegetation	Σ	Scouring	g ⊟Water staining
Height:		Bent matte	ed or missin	g ⊠Wrack li	ine 🗆 li	tter and	□Abrupt pla	nt	□ Soil c	haracteristic change
<u> </u>	Ve	egetation		0	deb	ris	community c	hange		0
Width of Waterbody Bank to Top of Bank		Width of W to Toe of S		Toe of Slope	Width of W Water Edg		Water Edge to	Depth (Approx.	of Wate	r:
•			•				<i>t</i> .			_0.75_ ft.
<u>10.0_</u> ft.		3.0	_ <u>m</u> .		N/A□	4.5_	<u>_</u> ft.	N/A□	-	<u>_0.75_</u> n.
Sinuosity:		Water velo	city:		Bank heigh	t		Bank	slope	
(check one)		(Approx.)			Rig	ht: 4.0_	f+		Right	: 80 degrees
			<u>_1.0</u> _fps		L	 eft:	_1(.		Left	
Meande	ering	N/A□				_4.0_	_ft.			<u>50</u> degrees
Qualitative Attrib	outes									
Water Appearance: (check one)	\Box No water	⊠Clear	r 🗆 Turb		neen n surface	□ Surface scum	□ Algal mats	□Othe	er:	
Substrate:	□ Bedrock	Boulde	er 🗆 Cobb	le 🛛 Grav	el 🛛 San	d ⊠ Sil	t/ clay 🛛 Organi	ic 🗆	Other:	
(check all that apply) % of Substrate:	%	%	ж %	<u> 5 </u> %	70 %	20	% <u> 5 </u> %		%	
Width of Dinarian Za										
Width of Riparian Zo		getative La		⊠ Trees	:	⊠ Sa	plings/Shrubs:		⊠ Herbs	
<u>ft</u> . N/A⊠		g. DBH of D	ominants:	<u>_11.0_</u> i	n.	<u>_1.5</u>	_in.			
Dominant Bank Vege										
Northern red oak, fern.	beech, wh					•				
Aquatic Habitats (ex:					banks/roots, le	af packs, la	rge submerged woo	d, riffles,	deep pool	s):
pools, riffles, ove	rhanging r	oots and I	banks, lea	f packs						
Aquatic Organisms (Dbserved (lis	st):								
Minnow, frog										
T&E Species Observ	ed (list):									
none										
Disturbances (ex: live	stock access, i	manure in wa	terbody, waste	e discharge pip	es):					
Area selectively lo	ogged									
Tributary is: (check one)	⊠ N	atural	□ Art	ificial, man-m	nade 🗆 I	<i>l</i> anipulate	d			
Stream Quality ^a : (check one)	□H	igh	⊠ Mc	derate		OW				

	scua006
а	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:
	lows through selectively logged mixed hardwoods, continues out of corridor in both directions.
_	
J	Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of a sociated features)
	68
	$A : v \in \mathcal{P} \qquad (v \in \mathcal{N}) \rightarrow \mathcal{L}$
_	
	/ (^v) .50

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Waterbody SCUA006 facing north upstream



Waterbody SCUA006 facing south downstream



Waterbody SCUA006 facing west across

Survey Description	on							
Project Name:		Waterbody Na				/aterbody ID:		Date:
Atlantic Coast Pipe	-	UNT to Gree				CUC004		1/14/2015
State:	County:		Company:			Member Initials:	Photos:	
Virginia	Cumberland		NRG		CR, A			004_001-003
Tract Number(s):			Nearest Mile	epost:		Associated We	tland ID(s):	
10-044			214			None		
Survey Type: (check one)		e ⊠Re-I	Route	□ Access Road		□Other:		
Physical Attribute								
Stream Classification: (check one)	Ephemera	al 🛛 🖾 Inter	rmittent	Perennial				
Waterbody Type: (check one)	⊐River ⊠ Str	eam 🗆 Dito	ch 🗆 C	anal 🛛 Other	:			
онwм		t.a.u.						
Width: <u>6</u> ft.	OHWM Indica (check all that apply		⊠ Clear lir on bank	ne □Shelvin	g	□Wrested vegetation	⊠Scourin	g ⊟Water staining
Height: 2 ft.	□Bent, r vegetatio	natted, or missin	ng	ne 🗆 Litter ai debris	nd	□ Abrupt plant community cha		haracteristic change
N/A	0					,	5	
Width of Waterbody - Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterb Water Edge:	ody - W	Ater Edge to D	epth of Wate	r:
_8 ft.		ft.			_5_ ft.			_0.8_ ft.
<u></u> /	-	<u></u> n.		N/A□	<u>_0_</u> n.	N	/A□	
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height		В	ank slope	
□Straight	,	_1_ fps		Right:	<u>2.5_</u> ft.		Righ	t: <u>90</u> degrees
⊠Meander	ing N/A			Left:	<u>3_</u> ft.		Lef	t: 80 degrees
Qualitative Attribu	utes							
Water Appearance:								
(check one)	□No water ⊠0	Clear □Turk			rface um	□Algal □ mats	Other:	
Substrate:	Bedrock Bc	ulder 🗆 Cobb	ole 🛛 Grav	el 🛛 Sand 🛛	□ Silt/ c	clay 🗆 Organic	□ Other:	
% of Substrate:	%	_%	<u>% 10</u> %	90_%		_%%	%	
Width of Riparian Zon	e: Vegetative	E Layers:						
-	(check all that	apply)	☑ Trees			ngs/Shrubs:	\boxtimes Herbs	
<u>_20_ft</u> - N/A□	(approx.)	of Dominants:	<u>_6_</u> in.	-	_ <u>2_</u> in.			
Dominant Bank Veget Beech, Sycamore,		hoom Christ	mas Forn	Japanoso Hon	ovend	klo		
				•	•			
Aquatic Habitats (ex: s		d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood, r	iffles, deep poo	ls):
Riffles and deep po								
Aquatic Organisms Ol	bserved (list):							
None								
T&E Species Observe	d (list):							
None								
Disturbances (ex: lives	tock access, manure i	n waterbody, waste	e discharge pipe	es):				
None								
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗆 Manip	ulated			
Stream Quality ^a : (check one)	🗆 High	⊠ Mo	oderate	□ Low				

Waterbody ID: SCUC004

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.

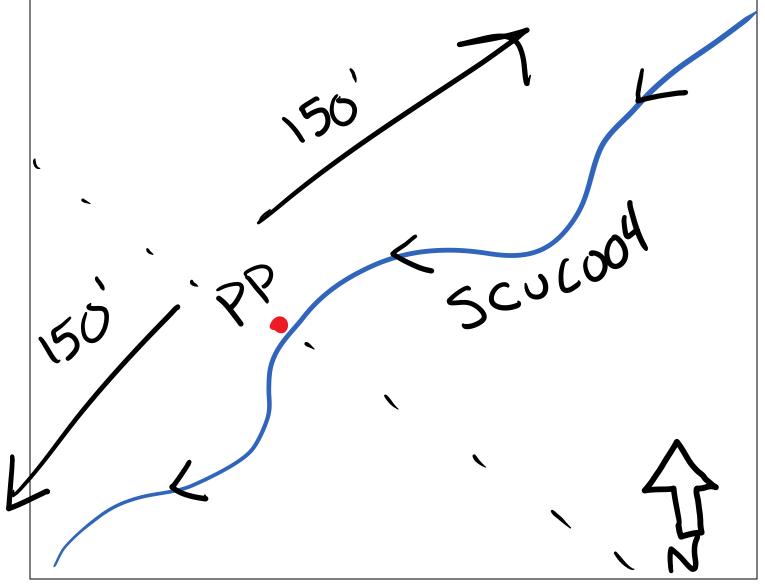
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

Recent sediment deposits are found with the stream and both banks are down cut

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





Waterbody SCUC004 facing upstream



Waterbody SCUC004 facing downstream



Waterbody SCUC004 facing across

Survey Descripti	ion										
Project Name:		Waterboo	-					aterbody ID:			Date:
Atlantic Coast Pip	peline	UNT to	Green	Creek			sc	cua001			10/16/2014
State:	County:		C	company:		С	rew N	lember Initials	:	Photos:	
Virginia	Cumberland	ł	NRG GE					E		3 phote	os
Tract Number(s):			Nearest Milepost:					Associated W	etland	ID(s):	
10-054			2	214.5				none			
Survey Type: (check one)	⊠Centerl	ine [∃Re-Ro	oute		Road		Other:			
Physical Attribut											
Stream Classification (check one)	n: □Ephem	eral	Interm	ittent	□Perennia	I					
Waterbody Type:											
(check one)	□River ⊠	Stream [] Ditch	□ Ca	anal 🗆 C	ther:					
ОНШМ	OHWM Indi (check all that a					a la sina an			N		
Width: _ <u>2.0</u> ft.	(chock all that a	ppiy)		☑ Clear lin on bank		elving		□Wrested vegetation	×	Scouring	g □Water staining
Height:		t, matted, or r	nissing	□Wrack li		er and		□Abrupt plan		□Soil c	haracteristic change
<u>1.0</u> ft. N/A□	vegeta	ation			debris	6		community ch	lange		
Width of Waterbody Bank to Top of Bank		h of Waterbo be of Slope:	ody - To	e of Slope	Width of Wa Water Edge:		ly-Wa	ater Edge to	Depth (Approx.)	of Water	:
		•			Water Luge.				() (0001030)		0.00 #
<u>ft</u>		<u>_1.5_</u> ft.			N/A□	1.	<u>.0_</u> ft.		N/A□	-	<u>0.20</u> ft.
Sinuosity:		er velocity:			Bank height				Bank s	slope	
(check one)	(Appro	ох.)			Righ					Right	
		0.1	<u>5_</u> fps		Le		<u>4.0_</u> ft.			Left	<u>75</u> degrees
⊠Meande	ering N/A					13	<u>3.0_</u> ft.				<u>75</u> degrees
Qualitative Attrik	outes										
Water Appearance: (check one)	\Box No water	⊠Clear	∃Turbic	-	een [surface	∃Surfa scum		□ Algal mats	□Othe	r:	
Substrate:	Bedrock	Boulder 🛛	Cobble	e 🗆 Grave	el 🛛 Sand	\boxtimes	Silt/ cl	lay 🛛 Organic	: 🗆 (Other:	
(check all that apply) % of Substrate:	%	%	9	<u> </u>	% 55 %	з	0 %	15 %		%	
			/		/0/0		0_70	<u> 15 </u> 78		70	
Width of Riparian Zo	one: Vegetat (check all i	ive Layers: that apply)		⊠ Trees:			Saplin	gs/Shrubs:	\square	Herbs	
<u>ft</u> .	•	BH of Domina	ants:	<u>_9.0_</u> in.			<u>2.0_</u> in.	-	-		
N/A⊠ Dominant Bank Vege	(approx.)										
Black walnut, flow		d, sweetgu	m, yel	low popla	r, red ceda	r, pav	vpaw	, Christmas	fern, .	Japane	se stilt grass
Aquatic Habitats (ex:	submerged or emer	ged aquatic ve	getation,	overhanging	banks/roots, lea	f packs	, large	submerged wood	, riffles,	deep pool	s):
Leaf packs, isolat											
Aquatic Organisms	Observed (list):										
none											
T&E Species Observ	red (list):										
none											
Disturbances (ex: live	estock access, manu	re in waterbody	, waste o	lischarge pipe	es):						
none											
Tributary is: (check one)	⊠ Natura	l	□ Artif	cial, man-m	ade 🗆 M	anipula	ated				
Stream Quality ^a : (check one)	🗆 High		⊠ Mod	erate	🗆 Lo	w					

scua001

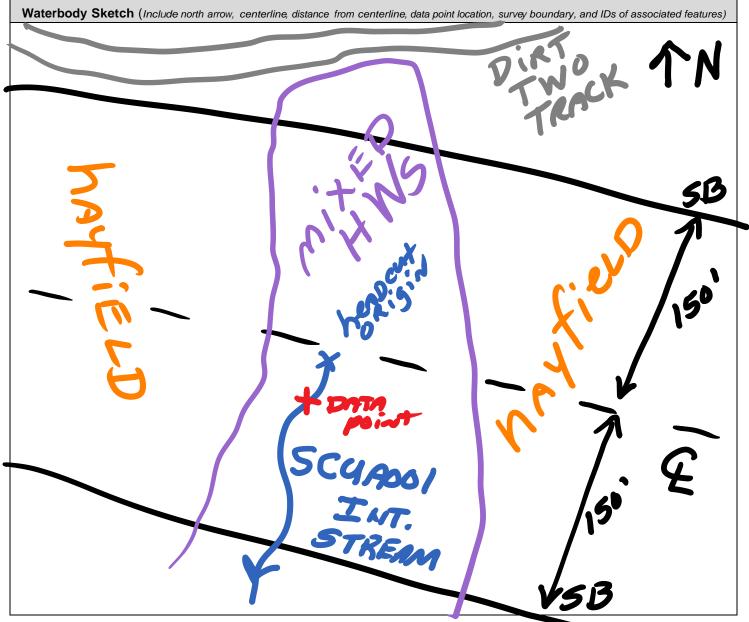
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

Begins as a deep headcut at centerline, downstream continues out; located in a finger of mixed hardwoods between hayfields, deeply incised channel.





Waterbody SCUA001 facing north upstream



Waterbody SCUA001 facing south downstream



Waterbody SCUA001 facing west across

Survey Descriptio	n								
Project Name:		Waterbody Na	me:		W	aterbody ID:			Date:
Atlantic Coast Pipe	-	UNT to Gree				cua002			10/16/2014
State:	County:		Company:			Member Initials	: F	Photos:	
Virginia	Cumberland		NRG		GB, L			3 phot	os
Tract Number(s):			Nearest Mile	epost:		Associated W	etland	ID(s):	
10-054			214.6			none			
Survey Type: (check one)		e □Re-F	Route	□ Access Road	l	□Other:			
Physical Attribute	S								
Stream Classification: (check one)	□ Ephemera	al 🛛 🖾 Inter	rmittent	Perennial					
Waterbody Type:									
	□River ⊠ Str	eam 🗆 Dito	ch 🗆 C	anal 🗆 Other	:				
онwм	OHWM Indica								
Width: _ <u>2.0</u> ft.	(check all that apply	/)	⊠ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation		Scouring	g □Water staining
Height:	□Bent, n	natted, or missin	ig	ne ⊠Litter ar	nd	□ Abrupt plan		□Soil c	haracteristic change
<u> </u>	vegetatio	n		debris		community ch	ange		
Width of Waterbody - ⁻ Bank to Top of Bank:		of Waterbody - ' of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - W		Depth ((Approx.)	of Wate	r:
_6.0 ft.		_1.0_ ft.			1.0_ ft.				_0.25_ ft.
<u>_0.0</u> 1t.	-	<u>_1.0_</u> 1t.		N/A□	<u>1.0</u> 11.		N/A□	-	
Sinuosity: (check one)		velocity:		Bank height			Bank s	lope	
	(Approx.)	0.00	_	Right:	3.0_ ft.			Right	:: 85 degrees
		<u>_0.33</u> fp	S	Left:				Lef	
Meanderi	ng N/A 🗆				<u>3.5_</u> ft.				<u>90</u> degrees
Qualitative Attribu	ites								
Water Appearance: (check one)	[□] No water \boxtimes C	Clear □Turb		neen ⊡Sui nisurface sci		□Algal [mats	□Other	:	
	Bedrock 🗆 Bo	ulder 🗆 Cobb	ole 🗆 Grav	el 🛛 Sand 🛛	⊠ Silt/ c	clay 🛛 Organic	: 🗆 C	Other:	
(check all that apply) % of Substrate:	%	%	%	% 45 %	45 %	10 %		%	
				<u> </u>					
	(check all that	apply)	⊠ Trees	:	⊠ Saplir	ngs/Shrubs:	\boxtimes	Herbs	
<u>ft</u> ·	Avg. DBH (approx.)	of Dominants:	<u>_10.0_</u> i	n	<u>1.5</u> in				
Dominant Bank Vegeta	(11)								
Black walnut, flowe	ring dogwood,	sweetgum, ye	ellow popla	r, red cedar, pa	awpaw	v, Christmas	fern, J	Japane	se stilt grass
Aquatic Habitats (ex: s	ubmerged or emerged	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, o	deep pool	s):
Leaf packs, isolate	•								
Aquatic Organisms Ob	oserved (list):								
none									
T&E Species Observed	d (list):								
none									
Disturbances (ex: livest	ock access, manure i	n waterbody, waste	e discharge pipe	es):					
none									
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗆 Manip	ulated				
Stream Quality ^a : (check one)	🗆 High	⊠ Mo	oderate	□ Low					

scua002

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.

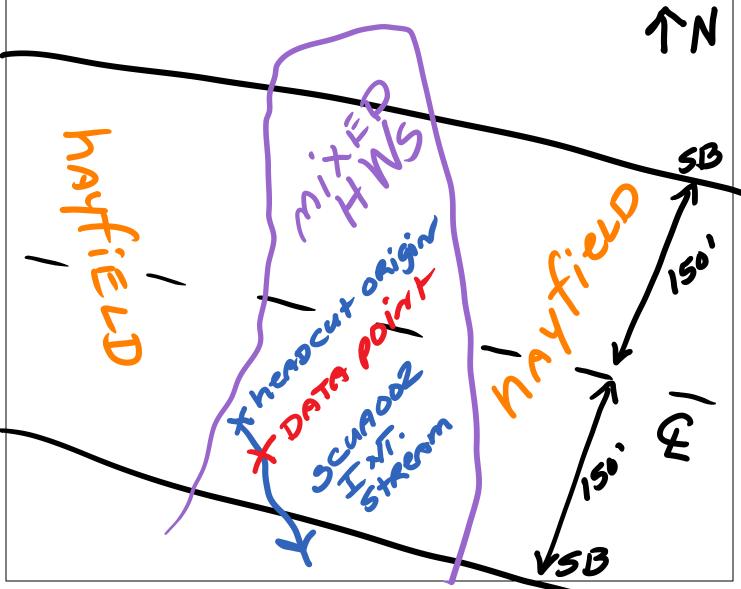
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

Begins as a headcut near edge of corridor, downstream continues out; located in a finger of mixed hardwoods between hayfields.

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





Waterbody SCUA002 facing north upstream



Waterbody SCUA002 facing south downstream



Waterbody SCUA002 facing west across

Open Waterbod	ly Data	a Sheet										
Survey Descripti	on											
Project Name:		v	Vaterbody	y Name:			1	Waterbody ID:		C	Date:	
Atlantic Coast Pip	eline	ι	Jnname	d Pond				OCUC001		1	/15/20	15
State:	County	:		Comp	any:		Crew	Member Initials	:	Photos:		
Virginia	Cumbe	erland		NRG			CR,	, AS OCUC001_001-003				
Tract Number(s):	1			Neare	st Milepost:			Associated Wet	land I	D(s):		
Unknown tract no	rth of 1	0-055		214.6	6			None				
Survey Type: (check one)	[∃Re-Rou	te 🛛 🛛	⊴Access Roa	ad	□Other:				
Physical Attribut	es											
Waterbody Type: (check one)	ok Dond					Impoundmo	~+		~ "			
	CK PONG		ona 🗆 i		Reservoir 🖾	Impoundme	nt 🗆	Oxbow 🗆 Oth	er.			
Hydrologic Regime:	🛛 Pe	ermanently F	looded	Semi	permanently F	-looded	Seas	sonally Flooded		Femporarily	Floode	d
онwм		HWM Indica			-			-				
Height:	(0	heck all that app	ly)		\boxtimes Clear line on bank	□She	lving	□Wrestervegetation		□Scour	ing	□Water staining
<u>6</u> ft.		⊠Bent, vegetati		[.] missing	□Wrack line	□Litte debris	r and	□ Abrupt communit		□Soil cha nge	racterist	ic change
Depth of Water:			Bank he	ight (ave	erage):			Bank slope (avera	ige):		
	_ft.				<u>9</u> ft.				_7	<u>70</u> degrees	i	
Qualitative Attrib	outes											
Water Appearance: (check one)	□No wa	ater ⊠C	lear 🛛	∃Turbid	□Sheen on surfac		urface m	e ⊡Algal mats	□0	ther:		
Substrate: (check all that apply)	Bedro	ock 🗆 Bou	ulder 🗆	Cobble	□ Gravel	□ Sand	🗆 Si	ilt/ clay 🛛 Orga	nic	Other:		
% of Substrate:		<u>%</u>	_%	_%	%	%		%	<u>%</u>	%)	
Width of Riparian Zo		Vegetative I										
ft.		(check all that ap	oply)		☑ Trees:		⊠ Sa∣	plings/Shrubs:		⊠ Herb	S	
N/A⊠		Avg. DBH o (approx.)	f Domina	nts:	<u>8</u> in.		_ <u>2_</u> ir	۱.				
Dominant Bank Vege	etation (I	ist):										
Sweet-gum, Short	tleaf Pi	ne, Beech	, White (Oak, Ja	panese Ho	neysuckle						
Aquatic Habitats (ex: s	submerged	or emerged aqua	atic vegetatio	n, overhangi	ng banks/roots, lea	af packs, large su	bmerge	d wood, riffles, deep p	ools, et	c.) :		
None												
Aquatic Organisms C	Observed	d (list):										
None												
T&E Species Observe	ed (list):											
None												
Disturbances (ex: live	stock acce	ess, manure in	waterbody	, waste dis	charge pipes):							
Pond has been da	ammed	as a resu	It of road	d constr	ruction							
Waterbody is: (check one)	[☐ Natural		⊠ Artifici	al, man-made	🗆 Mani	pulate	ed				
Waterbody Quality ^a : (check one)		☐ High		⊠ Moder	ate	□ Low						

OCUC001

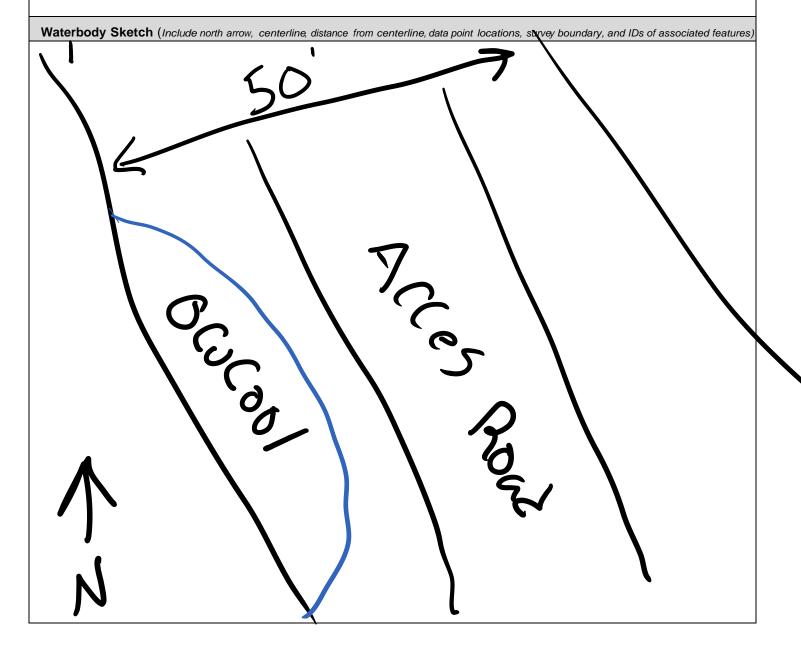
High Quality: Natural, natural bank vegetation around entire waterbody; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

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

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

Notes:

Pond is dammed and appears to drain under the road near the photo point. Pond is about 70 feet across and the top of the banks of the pond are about 90 feet across.





Open Waterbody OCUC001 facing east



Open Waterbody OCUC001 facing north



Open Waterbody OCUC001 facing west

Survey Des												
Project Name:			Waterbo	-				w	aterbody ID:			Date:
Atlantic Coas	st Pipelir	e	UNT to	Greer	n Creek			S	cua003			10/16/2014
State:	C	County:		(Company:			Crew I	Member Initials	s:	Photos:	
Virginia	C	Cumberland		1	NRG			GB, L	.E		3 phot	os
Tract Number((s):			Nearest Milepost:					Associated W	/etland	ID(s):	
10-054				4	214.7				none			
Survey Type: (check one)		⊠Centerlin	e	□Re-Re	oute		ccess Road	ł	□Other:			
Physical Att	tributes											
Stream Classif (check one)	fication:	Ephemer	al	⊠Intern	nittent	□P	erennial					
Waterbody Typ	pe:											
(check one)	□F	River 🛛 St	ream	□ Ditch	n 🗆 Ca	anal	□ Other	r:				
OHWM		OHWM Indica (check all that app								5	70	
Width: <u>2.0</u>	<u>) f</u> t.	(cneck an that app	<i>y)</i>		☑ Clear lir on bank	ie	□Shelvir	ng	□Wrested vegetation	Z	Scouring	g □Water staining
Height:		□Bent,	matted, or	missing	□Wrack li	ne	⊠Litter a	nd	□Abrupt plar	nt	□Soil c	haracteristic change
_ <u>1.0</u>	<u>0_</u> ft.	vegetatio	on				debris		community cl	nange		
Width of Water Bank to Top of	rbody - To f Bank:		of Water		oe of Slope		of Waterb Edge:	ody - W	ater Edge to	Depth (Approx.	of Wate	r:
			•	•		water	•			() (0)01 034		0.05 #
	<u>4.5</u> ft.	-	<u>1.5_</u> ft.			N/A□	-	<u>2.0</u> ft.		N/A□	-	<u>_0.25_</u> ft.
Sinuosity:			velocity:			-	height			Bank	slope	
(check one)	Straight	(Approx.					Right:	00 (1			Right	
			0	<u>.25_</u> fps			Left:	<u>3.0_</u> ft.			Left	<u>60</u> degrees
⊠N	Meandering	N/A□						<u>3.0_</u> ft.				45 degrees
Qualitative /		es										
Water Appeara (check one)	ance:	lo water 🛛 🛛	Clear	□Turbio		neen 1 surfac		irface um	□Algal mats	□Othe	r:	
Substrate:	\boxtimes	Bedrock 🗆 Be	oulder [Cobble	e 🗆 Grave	el 🛛	Sand	⊠ Silt/ c	lay 🛛 Organio		Other:	
(check all that apply) % of Substrate		%	%	a	%	% 3	30 %	55 %	10 %		%	
Width of Dinon						<u>,,, </u>	<u>,,,</u> ,,,	<u> </u>	<u></u> ,			
Width of Ripar	ian Zone:	Vegetativ (check all tha			⊠ Trees	:	[⊠ Saplir	ngs/Shrubs:	\triangleright	I Herbs	
N/A⊠	<u>ft</u> .	Avg. DBH (approx.)	l of Domi	nants:	<u> 10.0 </u> ii	n.		<u>1.5_</u> in				
Dominant Ban	k Vegetati	,										
	-		sweetg	um, ye	llow popla	r, red	cedar, p	awpaw	v, Christmas	fern,	Japane	se stilt grass
Aquatic Habita			ed aquatic v	egetation,	, overhanging	banks/r	oots, leaf pao	cks, large	submerged wood	d, riffles,	deep pool	s):
Leaf packs,	isolated	small pools										
Aquatic Organ	isms Obs	erved (list):										
none												
T&E Species C	Observed (list):										
none												
Disturbances ((ex: livestoc	k access, manure	in waterboo	ly, waste	discharge pipe	es):						
none												
Tributary is: (check one)		⊠ Natural		□ Artif	icial, man-m	ade	🗆 Manip	oulated				
Stream Quality (check one)	y ^a :	🗆 High		⊠ Moo	derate		□ Low					

scua003

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.

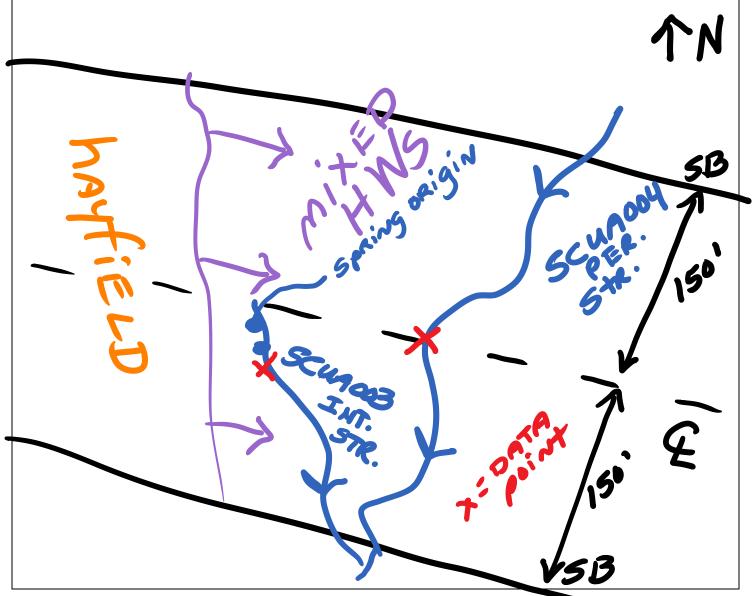
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

Begins at a spring in southern half of corridor, downstream continues flows into scua004 within corridor; located in mixed hardwoods with old hayfield to the west.

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





Waterbody SCUA003 facing north upstream



Waterbody SCUA003 facing south downstream



Waterbody SCUA003 facing west across

Survey Descriptio	n											
Project Name:		Waterb	ody Nam	ne:			W	aterbody ID:			Date:	
Atlantic Coast Pipe		UNT to		n Creek				cua004			10/16/2014	
State:	County:			Company:			Crew I	Member Initials	5:	Photos:		
Virginia	Cumberla	nd	1	NRG			GB, L	.E		3 photo	DS	
Tract Number(s):				Nearest Mile	epost:			Associated Wetland ID(s):				
10-054; 10-056				214.75				none				
Survey Type: (check one)	⊠Cent	terline	□Re-R	oute	□Ac	ccess Road	1	□Other:				
Physical Attribute	S											
Stream Classification: (check one)	Ephe	emeral	□Intern	nittent	⊠Pe	erennial						
Waterbody Type:												
(check one)	River	⊠ Stream	□ Ditch	n 🗆 Ca	anal	□ Other	:					
ОНШМ	OHWM Ir									10		
Width: <u>5.0</u> ft.	(check all th	агарріу)		☑ Clear lin on bank	ie	□Shelvin	g	☐Wrested vegetation	×	Scouring	g □Water staining	
Height:	□B	ent, matted, o	r missing	J ⊡Wrack li	ne	⊠Litter a	nd	□Abrupt plar	nt	□Soil cl	naracteristic change	
<u>1.5_</u> ft. N/A□	veg	etation				debris		community ch	nange			
Width of Waterbody - ⁻ Bank to Top of Bank:		idth of Water		oe of Slope		of Waterb Edge:	ody - W	ater Edge to	Depth (Approx.)	of Water	:	
12.0.#		•				U	40 #				_0.75_ ft.	
<u>_12.0</u> ft.		<u>3.0</u> ft.			N/A□	-	<u>4.0</u> ft.		N/A□	-	<u></u>	
Sinuosity:		ater velocity:			Bank	height			Bank s	slope		
(check one)	(A)	pprox.)	/			Right:	1 E #			Right		
		(<u>).50</u> fps			Left:	<u>4.5_</u> ft.	1		Left	<u>90</u> degrees	
Meanderi	ng N	/A□					<u>12.0_</u> ft				<u>80</u> degrees	
Qualitative Attribu	ites											
Water Appearance: (check one)	☐No water	□Clear	⊠Turbi		een surfac	⊡Su e sc	rface um	□Algal mats	□Othe	r:		
Substrate:	Bedrock	Boulder	⊠ Cobbl	e 🛛 Grave	el 🛛	Sand	⊠ Silt/ c	lay 🗆 Organic		Other:		
(check all that apply) % of Substrate:	<u>10_</u> %	_%	<u>10_</u> %	<u> 10 </u> %	_4	1 <u>5 </u> %	<u>25_</u> %	_%		%		
Width of Riparian Zone	e: Vege	tative Layers	:									
4	(check	all that apply)		☑ Trees:		[⊠ Saplir	ngs/Shrubs:	\geq	I Herbs		
<u>ft</u> . N/A⊠	AVG. (approx	DBH of Domi	nants:	<u>_11.0_</u> iı	n.	-	_ <u>1.5_</u> in					
Dominant Bank Vegeta	ation (list):											
Northern red oak, b Christmas fern, Jan	oanese stilt	arass					-					
Aquatic Habitats (ex: s Step pools, riffles, o	-		-			oots, leaf pac	ks, large	submerged wood	i, riffles,	deep pool	5):	
Aquatic Organisms Ob	served (list):	1										
Minnow, frog												
T&E Species Observed	d (list):											
none												
Disturbances (ex: livest	ock access, ma	anure in waterbo	dy, waste	discharge pipe	es):							
none												
Tributary is: (check one)	⊠ Nat	ural	□ Arti	ficial, man-m	ade	🗆 Manip	ulated					
Stream Quality ^a : (check one)	🖂 Higi	n		derate		□ Low						

scua004

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.

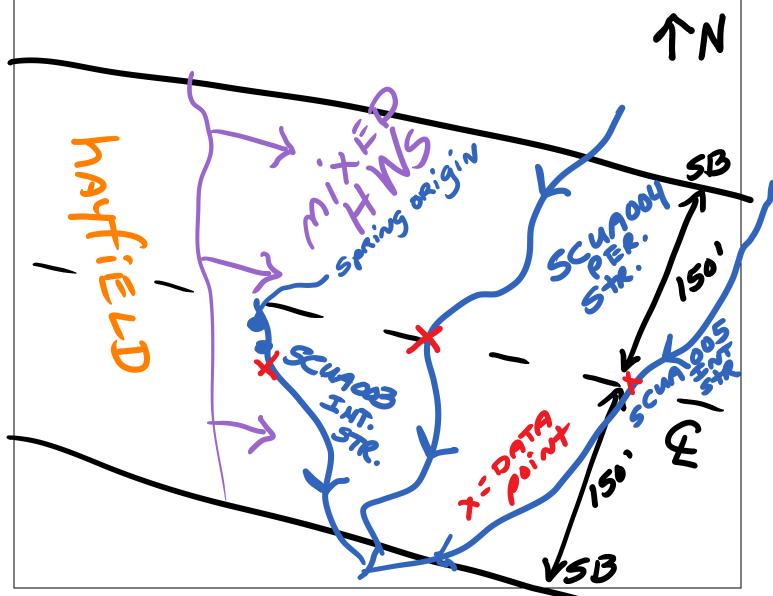
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

Flows through a stand of mature mixed hardwoods, slightly turbid due to heavy rain yesterday, continues out of corridor in both directions, scua003 & scua005 are tributaries.

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





Waterbody SCUA004 facing east upstream



Waterbody SCUA004 facing west downstream



Waterbody SCUA004 facing south across

Survey Description	on										
Project Name:		Waterbo	ody Nam	e:			W	aterbody ID:			Date:
Atlantic Coast Pipe	eline	UNT to	Green	Creek			sc	ua005			10/16/2014
State:	County:		C	company:			Crew N	lember Initials	:	Photos:	
Virginia	Cumberlar	nd	NRG GI					E		3 photo	DS
Tract Number(s):	•		Nearest Milepost:					Associated W	etland	ID(s):	
10-056			2	214.8				none			
Survey Type: (check one)	⊠Cente	erline	□Re-Ro	oute		ss Road	l	Other:			
Physical Attribute	es										
Stream Classification: (check one)	: □Ephe	emeral	⊠Interm	ittent	□Perer	nnial					
Waterbody Type: (check one)	□River D	Stream	Ditch	□ Ca	anal [Other	:				
ОНШМ	OHWM In										
Width:ft.	(check all tha	at apply)		☑ Clear lin on bank	e 🗆	Shelvin	g	☐Wrested vegetation	\boxtimes	Scouring	g □Water staining
Height:		ent, matted, or	missing	□Wrack lii	ne 🛛	Litter ar	nd	□Abrupt plan	ıt	□Soil cl	naracteristic change
ft. N/A□	vege	etation			de	ebris		community ch	nange		
Width of Waterbody - Bank to Top of Bank:		dth of Water		e of Slope			ody - Wa	ater Edge to	Depth (Approx.)	of Water	•
Balik to Top of Balik.	tO	Toe of Slope			Water Ed	ige:			(Approx.)		<i>(</i> -
<u>_5.0</u> ft.		<u>_1.0_</u> ft.			N/A□		<u>1.5_</u> ft.		N/A□	-	<u>0.20</u> ft.
Sinuosity:	w	ater velocity:			Bank hei	ght			Bank s	slope	
(check one)	(Ap	pprox.)			F	light:				Right	
		0	<u>.25</u> fps			Left:	<u>3.0_</u> ft.			Left	<u>85</u> degrees
Meander	ing N/	A				-	<u>4.0_</u> ft.				60 degrees
Qualitative Attribu	utes										
Water Appearance: (check one)	□No water	⊠Clear	□Turbid		een surface	⊡Su sci		□Algal mats	□Othe	r:	
	Bedrock	Boulder	Cobble	e 🗆 Grave	el 🛛 Sa	and [⊠ Silt/ cl	lay 🛛 Organic	: 🗆 (Other:	
(check all that apply) % of Substrate:	_%	%	5 %	%	_60	%	25 %	10 %		%	
Width of Riparian Zon		tative Layers:									
		all that apply)		⊠ Trees:			⊠ Saplin	gs/Shrubs:	\boxtimes	I Herbs	
<u>ft</u> . N/A⊠	Avg. I	DBH of Domi	nants:	<u>_11.0_</u> ir	า.	-	_ <u>1.5_</u> in.				
Dominant Bank Veget		.,									
Northern red oak, t Christmas fern. Jar	banese stilt	arass					-				
Aquatic Habitats (ex: s Small pools, leaf p		nerged aquatic v	egetation,	overhanging	banks/roots	, leaf pac	ks, large	submerged wood	, riffles,	deep pool	s):
Aquatic Organisms O	bserved (list):										
frog											
T&E Species Observe	d (list):										
none											
Disturbances (ex: lives	tock access, mai	nure in waterboo	dy, waste o	lischarge pipe	es):						
none											
Tributary is: (check one)	⊠ Natu	ıral	□ Artifi	cial, man-m	ade 🔤] Manip	ulated				
Stream Quality ^a : (check one)	🗆 High		⊠ Mod	erate		Low					

scua005

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.

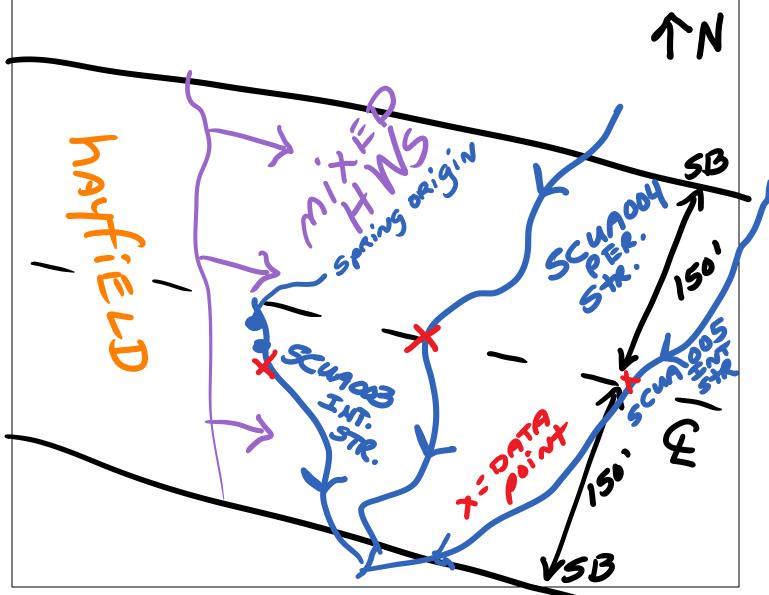
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

Flows through a stand of mature mixed hardwoods, upstream continues out of corridor, downstream continues out of corridor and flows into scua004.

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





Waterbody SCUA005 facing east upstream



Waterbody SCUA005 facing west downstream



Waterbody SCUA005 facing south across

Survey Description					Watash a du ID.	Data
Project Name: Southeast Reliability		Naterbody Nar		REEN CREEK	Waterbody ID: SCUK025	Date: 8/5/2014
		-				
State: Count Virginia CUM	iy: BERLAND		Company: W&C		Crew Member Initials WM, JD	s: Photos: 100-0540 TO 0543
Tract Number(s):			Nearest Mile	epost:	Associated W	/etland ID(s):
11-058			214		NA	
Survey Type: (check one)	Centerline	□Re-F	Route	□ Access Road	□Other:	
Physical Attributes						
Stream Classification:	[⊠] Ephemeral	□Inter	mittent	⊠Perennial		
Waterbody Type: (check one)	⊠ Strea	am 🗌 Ditc	h 🗆 Ca	anal 🗆 Other:		
Width: (che	WM Indicato	or:	⊠ Clear lir on bank	e □Shelving	g ⊠Wrested vegetation	□Scouring ⊠Water
<u> </u>					0	staining
Height: <u>.5_</u> ft. N/A□	⊠Bent, ma vegetation	atted, or missing	g ⊠Wrack li	ne ⊠Litter an debris	d	
Width of Waterbody - Top of Bank to Top of Bank:	Width of to Toe o		Foe of Slope	Width of Waterbo Water Edge:	ody - Water Edge to	Depth of Water: (Approx.)
<u>_10 ft.</u>	<u>1</u>	•		water Euge.	ft.	ft.
				N/A⊠		N/A⊠
Sinuosity: (check one)	Water ve (Approx.)	elocity:		Bank height Right:		Bank slope Right:
□ Straight		fps		•	<u>5</u> ft.	<u>75</u> degrees
⊠Meandering	N/A⊠			Left:	<u>8</u> ft.	Left: _ <u>75</u> _degrees
Qualitative Attributes				<u> </u>		<u> </u>
Water Appearance: (check one)					face 🗆 🖓 Almal	
			on	surface scu	m mats	□Other:
Substrate: Bedro (check all that apply)	ock 🗌 Bou	lder 🗆 Cobb	le 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ clay □ÁOrganio	\Box Other:
% of Substrate: _%	<u>NA</u> %	_%	<u> 50 </u> %	<u> 30 </u> %	<u>15_% 5_%</u>	%
Width of Riparian Zone:	Vegetative	Layers:				
<u>>100 ft</u> ·	(check all that a	^{pply)} of Dominants:	[⊠] Trees: <u>20</u> in.		3 Saplings/Shrubs: _2_in.	⊠ Herbs
N/A Dominant Bank Vegetation (Iii						
BEECH, RED MAPLE, S ^V				•	-	
Aquatic Habitats (ex: submerge LWD, STEEP V SHAPED	-					
Aquatic Organisms Observed	(list):					
NA	. ,					
T&E Species Observed (list):						
NA						
Disturbances (ex: livestock acce	ess, manure in	waterbody, waste	e discharge pipe	es):		
Tributary is: (check one)	☑ Natural	□ Art	ificial, man-m	ade 🗆 Manipu	llated	
Stream Quality ^a : (check one)	∃ High	□ Mo	derate	⊠ Low		

Waterbody ID:
SCUK025

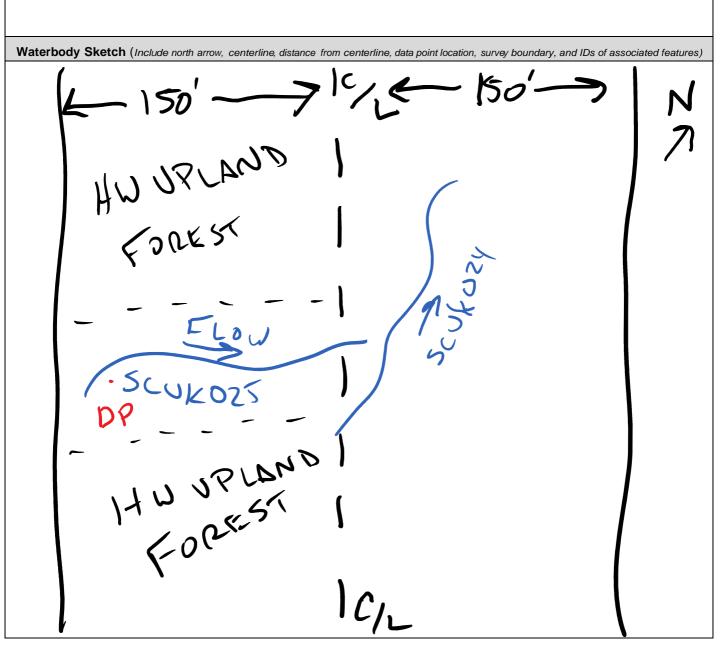
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance 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 IN UPLAND HW FOREST WITH NO FLOW AND STEEP GRADIENT, MINIMUM HUMAN DISTURBANCE.





Waterbody point scuk025 facing west and upstream



Waterbody point scuk025 facing east and downstream



Waterbody point scuk025 facing east and across

Survey Desc	ription							1				
Project Name:				terbody Nar		005			Vaterbody ID:		Dat	
Southeast Re	liability		UN	INAMENL	D TRIB TO	GRE	EN CRE	EK S	SCUK024		8/5	/2014
State:		ounty:			Company:				Member Initials	:	Photos:	
Virginia	C	UMBER	LAND		W&C			WM,	JD		100-0532	TO 0534
Tract Number(s)):				Nearest Mil	epost:			Associated W	etland	ID(s):	
11-058					214				NA			
Survey Type: (check one)		⊠Cen	terline	□Re-F	Route	□A	ccess Roa	ad	□Other:			
Physical Attr	ibutes											
Stream Classific (check one)		Eph	emeral	□Inter	rmittent	⊠P	erennial					
Waterbody Type (check one)	a: □Riv	ver	⊠ Stream	Ditc	ch □ C	anal	□ Othe	er:				
OHWM Width:		OHWM II (check all th	ndicator: nat apply)		⊠ Clear li	ne	⊠Shelv	ing	⊠Wrested vegetation	X	Scouring	⊠Water staining
<u>10</u> f Height:	ι.	ØF	Bent, matte	ed. or missin	ig ⊠Wrack I	ine	⊠Litter	and	□ Abrupt plan	t	Soil chara	acteristic change
ft N/A□			etation	,			debris		community ch			
Width of Waterb Bank to Top of I	ody - Top Bank:		/idth of W o Toe of S		Toe of Slope		of Water Edge:	body - V		Depth (Approx.)	of Water:	
•	<u>5 f</u> t.		<u>10 ft</u>	•		N/A	-	<u>5</u> ft.		N/A□		<u>5</u> ft.
Sinuosity:			later velo	city:		-	height			Bank s	lope	
(check one)	raight	(A	(pprox.)				Right:	E f+			Right:	
				<u>0.3_</u> fps			Left:	<u>5</u> ft.			Left:	5 degrees
	eandering	N	/A□					<u>5</u> ft.				<u>′5</u> degrees
Qualitative A		5										
Water Appearan (check one)		water	⊠Clea	r 🗆 Turb		neen n surfac		urface cum	□Algal mats	□Other	r:	
Substrate: (check all that apply)	⊠B	edrock	Boulde	er 🛛 Cobb	ole 🛛 Grav	el 🗵	Sand	Silt/	clay 🗆 Organic	: 🗆 C	Other:	
% of Substrate:	2%	, o _	<u>NA_</u> %	<u> 15 </u> %	<u>35</u> %	4	<u>5</u> %	<u>3</u> %	<u>NA</u> %		%	
Width of Riparia	n Zone:	Vege	etative La	yers:								
>100 N/A□	<u>ft</u> .	·) Dominants:	[⊠] Trees <u>16</u> in.			⊠ Sapli <u>3</u> in.	ngs/Shrubs:	\boxtimes	I Herbs	
Dominant Bank	Vegetatio	n (list):	·									
RIVER BIRCH	H, RED N	/APLE,	SYCAN	IORE, MI	CROSTEG	IUM,	PAW PA	AW, CH	IRISTMAS F	ERN,	SPICE BL	JSH
Aquatic Habitats	s (ex: subm	erged or er	merged aqu	atic vegetatio	n, overhanging	banks/r	oots, leaf pa	acks, large	e submerged wood	, riffles,	deep pools):	
LWD, OVERH	ANGIN	G BANK	KS, RIFF	LES, PO	OLS, LEAF	PAC	KS, RO	OTMA	TS			
Aquatic Organis	sms Obser	ved (list):	:									
FROGS, WAT	FER STR	RIDERS	, FISH									
T&E Species Ob	served (lis	st):										
NA												
Disturbances (ex	x: livestock	access, ma	anure in wa	terbody, waste	e discharge pip	es):						
NA												
Tributary is: (check one)		⊠ Nat	ural	□ Art	tificial, man-m	nade	🗆 Mani	pulated				
Stream Quality ^a (check one)	1:	🗆 Higi	h	⊠ Mo	oderate		□ Low					

Waterbody ID:
SCUK024

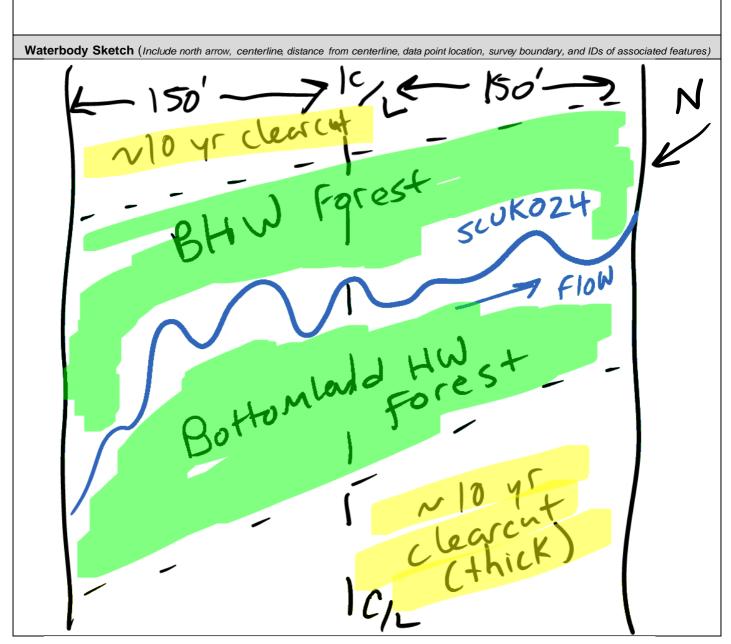
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance 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 IN BOTTOMLAND HW FOREST WITH LOW FLOW; RECENT TIMBERING (~10 YRS) ON UPLINE/DOWNLINE RIPARIAN ZONE





Waterbody point scuk024 facing north and upstream



Waterbody point scuk024 facing south and downstream



Waterbody point scuk024 facing west and across

Survey Description					Mataukasha	10.	Deter
Project Name: Southeast Reliability		Waterbody Nar		REEN CREEK	Waterbody SCUK023		Date: 8/5/2014
	County: CUMBERLAN	D	Company: W&C		Crew Member In WM, JD	ntials:	Photos: 100-0519 TO 0521
Tract Number(s):			Nearest Mile	epost:	Associat	ed Wetland	ID(s):
11-058			214	-	Wcuk0	12s	
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)	River 🖂 Str	eam 🗆 Dito	h □ Ca	anal 🛛 Other:			
OHWM Width: 3 ft.	OHWM Indicat (check all that apply		⊠ Clear lir on bank	ne ⊠Shelvinç	g ⊠Wrest vegetatio		Scouring ⊠Water staining
Height:ft.	⊠Bent, n vegetatio	natted, or missin n	g ⊠Wrack li	ne ⊠Litter an debris		t plant hity change	Soil characteristic change
N/A□ Width of Waterbody - To	pof Width o	of Waterbody -	Toe of Slope	Width of Waterbo	ody - Water Edge	to Depth	of Water:
Bank to Top of Bank:		of Slope:		Water Edge:	, ,	(Approx.))
<u>_7</u> ft.	<u>3</u>	<u>3 ft.</u>		N/A□	<u>1</u> ft.	N/A□	<u>0.1</u> ft.
Sinuosity: (check one)	Water (Approx.)	elocity:		Bank height		Bank s	•
	(1.00.000)	fps		Right:	<u>4</u> ft.		Right: 45 degrees
⊠Meandering) N/A⊠			Left:	3 ft.		Left: 60 degrees
				-	<u> </u>		
Qualitative Attribute Water Appearance:	es						
(check one)	lo water □C	Clear ⊠Turb		leen ⊠Sur surface scu	3	□Othe	r:
Substrate:	Bedrock 🛛 Bo	ulder 🛛 Cobb	ole 🛛 Grave	el 🛛 Sand 🛛	🛛 Silt/ clay 🛛 Or	rganic 🗆 (Other:
	<u>4</u> % <u>NA</u>	% <u>5</u> %	<u>25</u> %	<u>50</u> %	<u>15</u> % <u>5</u> %		%
Width of Riparian Zone:	Vegetative	Layers:					
<u>_>100_ft</u> ·	(check all that	apply) of Dominants:	[⊠] Trees <u>18</u> in.		Saplings/Shrubs	s: 🛛 🛛] Herbs
N/A□ Dominant Bank Vegetati							
CEDAR, RED MAPL	•				•		
Aquatic Habitats (ex: sub LWD, OVERHANGIN	8 8		, 00	, I	, , ,	, ,	deep pools):
Aquatic Organisms Obs	erved (list):						
FROGS							
T&E Species Observed (NA	(list):						
Disturbances (ex: livestoc NA	k access, manure i	n waterbody, waste	e discharge pipe	es):			
Tributary is: (check one)	⊠ Natural	□ Art	tificial, man-m	ade 🗆 Manipu	ulated		
Stream Quality ^a : (check one)	🗆 High	□ Mc	oderate	⊠ Low			

Waterbody ID:
SCUK023

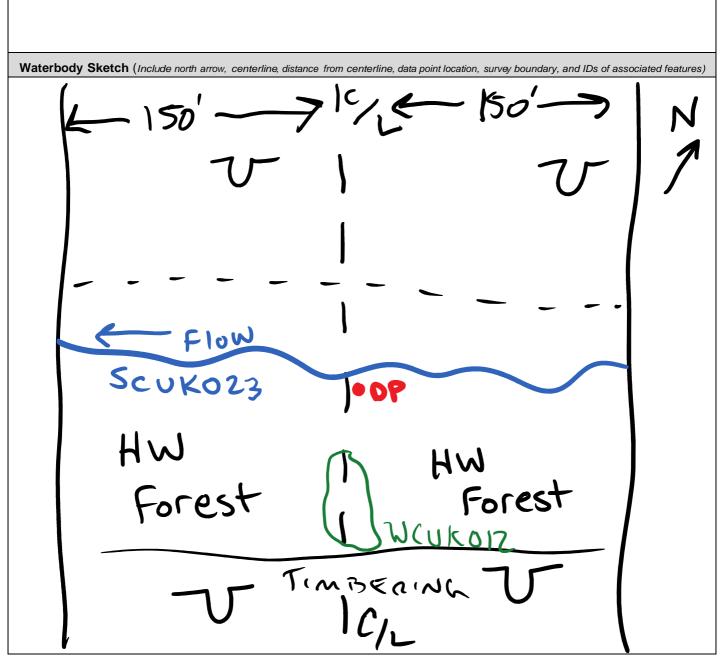
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

NTERMITTENT STREAM WITH NO FLOW; RECENT TIMBERING (~10 YRS) ON UPLINE RIPARIAN ZONE



Form Rev. 07/09/2014



Waterbody point scuk023 facing East and upstream



Waterbody point scuk023 facing West and downstream



Waterbody point scuk023 facing North and across

Survey Description				
-	Waterbody Name:		Waterbody ID:	Date:
, ,	UNNAMED TRIB TO G	REEN CREEK	SCUK022	8/4/2014
State: County:	Company:	Crew	Member Initials:	Photos:
Virginia CUMBERLANE	D W&C	WM	, JD	100-0494 TO 0496
Tract Number(s):	Nearest Mile	epost:	Associated Wetland	I ID(s):
11-059	214		NA	
Survey Type: (check one)	□Re-Route	□ Access Road	□Other:	
Physical Attributes				
Stream Classification:				
(check one)	⊠Intermittent	Perennial		
Waterbody Type: (check one) □River ⊠ Stre	am 🗆 Ditch 🗆 Ca	anal 🛛 Other:		
OHWM OHWM Indicato	or:			
Width: (check all that apply) 3 ft.	⊠ Clear lin on bank	e ⊠Shelving	⊠Wrested vegetation	Scouring □Water staining
Height: ⊠Bent, m	atted, or missing ⊠Wrack lir	ne ⊠Litter and	□ Abrupt plant	Soil characteristic change
ft. vegetation		debris	community change	0
Width of Waterbody - Top of Width o	f Waterbody - Toe of Slope			of Water:
Bank to Top of Bank: to Toe o	of Slope:	Water Edge:	(Approx.)
<u>_15 ft.</u> <u>3</u>	_ft.	ft. N/A⊠	N/A⊠	ft.
Sinuosity: Water v	elocity:	Bank height	Bank	slope
(check one) (Approx.)		Right:		Right:
	fps	<u>5</u> ft Left:		<u>70</u> degrees Left:
Meandering N/A		6	ft.	60 degrees
Qualitative Attributes				
Water Appearance: (check one) ⊠No water □Cl		een □Surface surface scum	□Algal □Othe mats	er:
Substrate: Bedrock Bou	Ilder 🛛 Cobble 🖾 Grave	el 🛛 Sand 🖾 Silt/	′ clay ⊠ Organic □	Other:
(check all that apply) % of Substrate: <u>NA</u> % <u>NA</u> %	% <u>5</u> % <u>25</u> %	<u>_50</u> % _15_%	<u> </u>	%
		<u> </u>	<u> </u>	//
Width of Riparian Zone: Vegetative (check all that a		⊠ Sap	lings/Shrubs:	⊠ Herbs
<u>>100 ft</u> · Avg. DBH c N/A□ (approx.)	of Dominants: <u>20</u> in.	<u>3</u> in.	-	
Dominant Bank Vegetation (list):				
CEDAR, RED MAPLE, SYCAMOR	E, TULIP POPLAR, DIO	CHANTHELIUM, VA	ACCINIUM, CAREX	K, VIOLET
Aquatic Habitats (ex: submerged or emerged	aquatic vegetation, overhanging	banks/roots, leaf packs, larg	ge submerged wood, riffles,	deep pools):
NA				
Aquatic Organisms Observed (list):				
NA				
T&E Species Observed (list):				
NA				
Disturbances (ex: livestock access, manure in	waterbody, waste discharge pipe	es):		
NA				
Tributary is: (check one) ⊠ Natural	□ Artificial, man-m	ade 🛛 Manipulated		
Stream Quality ^a :				

Waterbody ID:
SCUK022

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

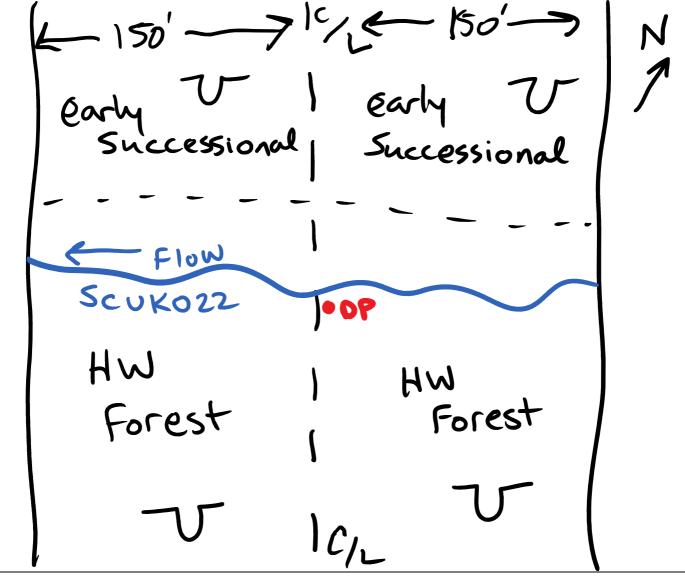
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate 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 WITH NO FLOW; RECENT TIMBERING (~10 YRS) ON UPLINE RIPARIAN ZONE

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



Form Rev. 07/09/2014



Waterbody point scuk022 facing north and upstream



Waterbody point scuk022 facing south and downstream



Waterbody point scuk022 facing west and across

Project Name: Waterbody Name: Waterbody ID: Date: Southeast Reliability UNNAMED TRIB TO GREEN CREEK SCUK021 8/4/2014 State: County: Company: Crew Member Initials: Photos: Virginia CUMBERLAND W&C WM, JD 100-0491 TO 0493 Tract Number(s): Nearest Milepost: Associated Wetland ID(s): 11-061 215 NA Survey Type: Centerline Re-Route Access Road Other:
State: County: Company: Crew Member Initials: Photos: Virginia CUMBERLAND W&C WM, JD 100-0491 TO 0493 Tract Number(s): Nearest Milepost: Associated Wetland ID(s): 11-061 215 NA
Virginia CUMBERLAND W&C WM, JD 100-0491 TO 0493 Tract Number(s): Nearest Milepost: Associated Wetland ID(s): 11-061 215 NA
Tract Number(s): Nearest Milepost: Associated Wetland ID(s): 11-061 215 NA Survey Type:
11-061 215 NA
Survey Type:
Physical Attributes
Stream Classification: (check one) \Box Ephemeral Intermittent \Box Perennial
Waterbody Type:
(check one)
OHWM OHWM Indicator: Width: (check all that apply) 2 ft. Of the character of the
Height: ⊠Bent, matted, or missing ⊠Wrack line ⊠Litter and □Abrupt plant ⊠Soil characteristic change
Width of Waterbody - Toe of Slope Width of Waterbody - Water Edge to Depth of Water:
Sinuosity: Water velocity: Bank height Bank slope
(check one) (Approx.) Right: Right: 45 dogrado
fpsftfgs Left: Left: Left:
⊠Meandering N/A⊠ _2_ft. _45_degrees
Qualitative Attributes
Water Appearance: (check one) No water Clear Turbid Sheen Surface Algal Other: on surface scum mats
Substrate: □ Bedrock □ Boulder □ Cobble ⊠ Gravel ⊠ Sand ⊠ Silt/ clay ⊠ Organic □ Other:
(check all that apply) % of Substrate: <u>NA</u> % <u>NA</u> % <u>5</u> % <u>40</u> % <u>40</u> % <u>15</u> %%
Width of Riparian Zone: Vegetative Layers:
(check all that apply)
<u>>100 ft</u> · Avg. DBH of Dominants: <u>9 in</u> inin.
Dominant Bank Vegetation (list):
HICKORY, RED MAPLE, QUERCUS SPP., POPLAR, CEDAR, LONICERA,CHRISTMAS FERN, CAREX
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):
NA
Aquatic Organisms Observed (list):
NA
T&E Species Observed (list):
NA
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):
NA
Tributary is: (check one) Image: Artificial, man-made Image: Manipulated
Stream Quality °: (check one) High Moderate Low

Waterbody ID:
SCUK021

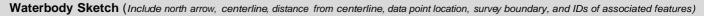
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

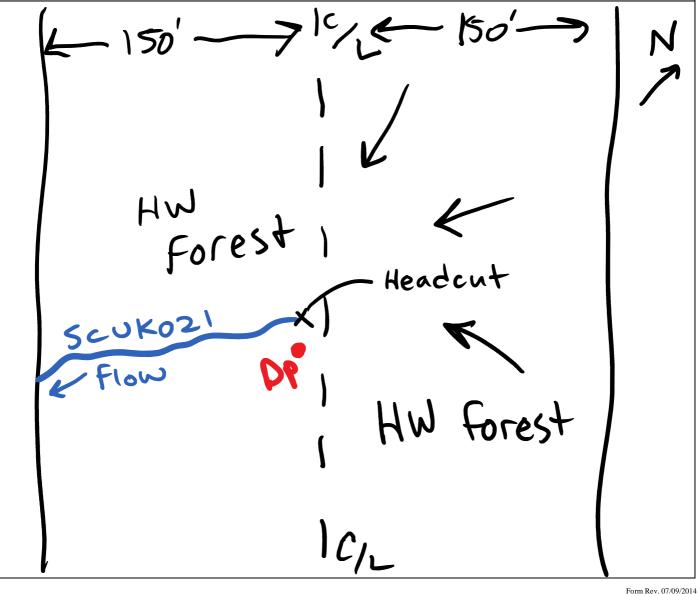
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

HEADWATER EPHEMERAL STREAM IN UPLAND HARDWOOD FOREST







Waterbody point scuk021 facing north and upstream



Waterbody point scuk021 facing south and downstream



Waterbody point scuk021 facing west and across

Survey Description	l	Waterbody Na					Dete
Project Name: Southeast Reliability				REEN CREEK	Waterbody IE SCUK020):	Date: 8/4/2014
			<u>.</u>				
	County:		Company:		Crew Member Init	ials:	Photos:
Virginia Tract Number(s):	CUMBERLAN		W&C Nearest Mile		WM, JD Associated	d Wotland	100-0485 TO 0487
11-061			215	epost:			ID(S):
Survey Type:			210		WCUK01	11F	
(check one)		e □Re-	Route	□ Access Road	□Other:		
Physical Attributes							
Stream Classification: (check one)	Ephemer	al ⊠Inte	rmittent	Perennial			
Waterbody Type: (check one)	River 🛛 St	ream 🗆 Dite	ch 🗆 Ca	anal 🛛 Other:			
OHWM Width: 2 ft.	OHWM Indica (check all that appl		⊠ Clear lir on bank	ne ⊠Shelviną	g ⊠Wrested vegetation		Scouring ⊠Water staining
Height: <u>0.5</u> ft. N/A□	⊠Bent, i vegetatio	matted, or missir on	ng □Wrack li	ne ⊠Litter an debris	nd DAbrupt p community		\boxtimes Soil characteristic change
Width of Waterbody - To	op of Width	of Waterbody -	Toe of Slope	Width of Waterbo	ody - Water Edge t	o Depth	of Water:
Bank to Top of Bank:		of Slope:	•	Water Edge:		(Approx.)	
<u>_25 ft</u> .	-	<u>2 ft.</u>		-	<u>1</u> ft.	N/A□	<u>0.1</u> ft.
Sinuosity:	Water	velocity:		N/A□ Bank height		Bank s	slope
(check one)	(Approx.)		Right:	o <i>1</i>		Right:
		fps		Left:	<u>8</u> ft.		60_degrees
Meanderin	g N/A⊠				<u>6</u> ft.		60 degrees
Qualitative Attribut	es						
Water Appearance: (check one)	No water	Clear ⊠Turb		neen ⊠Sur i surface scu		□Other	
Substrate:	Bedrock 🗆 Bo	oulder 🗆 Cobl	ole 🛛 Grav	el 🛛 Sand 🛛	🛛 Silt/ clay 🛛 🖾 Orga	anic 🗆 C	Other:
	<u>A % NA</u>	<u>% NA %</u>	<u> 10 </u> %	40 %	<u>45_% _5_%</u>		%
Width of Riparian Zone:	Vegetativ	e Layers:					
_>100 ft·	(check all tha	t apply)	⊠ Trees		Saplings/Shrubs:	\boxtimes	Herbs
N/A 🗆	(approx.)	or Dominanto.	<u>20</u> in.		<u>_2_</u> in.		
Dominant Bank Vegetat BEECH, RED MAPL		S SPP., POPI	_AR, CHRI	STMAS FERN,	SPICE BUSH,	CAREX,	VIOLET
Aquatic Habitats (ex: sub	omerged or emerge	d aquatic vegetatio	n, overhanging	banks/roots, leaf pacl	ks, large submerged w	ood, riffles,	deep pools):
LWD, ROOTS, STA							
Aquatic Organisms Obs	erved (list):						
NA							
T&E Species Observed	(list):						
NA							
Disturbances (ex: livestor HIGHLY SEDIMENT			• • • •				
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗆 Manipu	ulated		
Stream Quality ^a : (check one)	🗆 High		oderate	⊠ Low			

Waterbody ID:
SCUK020

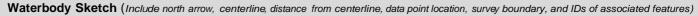
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

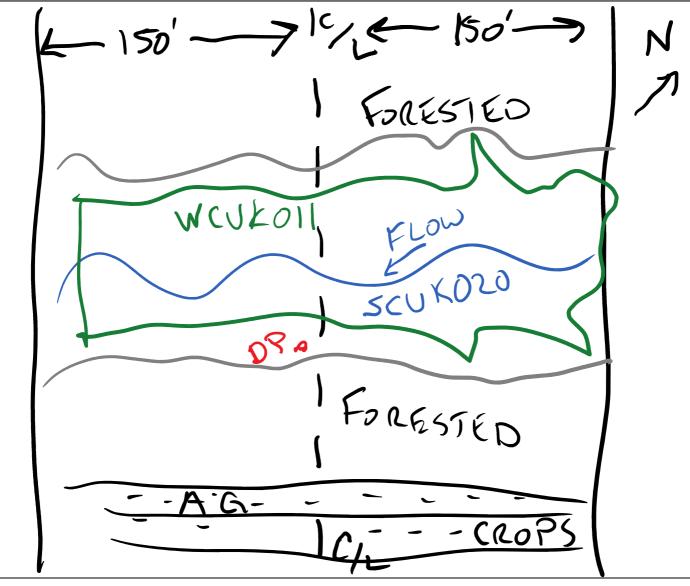
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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







Waterbody point scuk020 facing North and upstream



Waterbody point scuk020 facing South and downstream



Waterbody point scuk020 facing West and across

Survey Descriptio	n					aterbody ID:				
Project Name:	•		-						Date:	
Atlantic Coast Pipe	line	Green Cree	een Creek			scua011			10/24/2014	
State:	County:		Company:		Crew Member Initial			s: Photos:		
Virginia	Cumberland		NRG		GB, T	Р		3 photo)S	
Tract Number(s):			Nearest Mile	epost:	1	Associated W	etland	ID(s):		
10-061; access roa	d 33		216.0			wcua002; r	ot dire	ectly co	nnected in corridor	
Survey Type: (check one)		e □Re-I	Route	⊠Access Road	I	□Other:				
Physical Attribute	S									
Stream Classification: (check one)		al 🗆 Inte	rmittent	⊠Perennial						
Waterbody Type:	•									
	River ⊠ Str	eam 🗆 Dite	ch 🗆 C	anal 🛛 Other	:					
онwм	OHWM Indica							<u> </u>		
Width:ft.	(check all that appl	()	☑ Clear lir on bank	ne ⊠Shelvin	g	□Wrested vegetation	X	Scouring	□Water staining	
Height:		natted, or missir	ng ⊠Wrack li		nd	□Abrupt plar		□Soil ch	aracteristic change	
<u> </u>	vegetatio	n		debris		community ch	nange			
Width of Waterbody - Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterb Water Edge:	ody - W	ater Edge to	Depth (Approx.)	of Water	1	
•		•		Ū	400 4				1.0 ft.	
<u>_25.0</u> ft.	-	<u>_10.0_</u> ft.		N/A□	<u>12.0_</u> ft		N/A□	-	<u>_1.0_</u> 1t.	
Sinuosity:		velocity:		Bank height			Bank s	lope		
(check one)	(Approx.)		_	Right:	<u>6.0_</u> ft.			Right:	<u>65</u> degrees	
		<u>_1.0</u> _fps	5	Left:	<u>0.0</u> 11.			Left		
Meanderi	ng N/A□			-	<u>8.0_</u> ft.				80_degrees	
Qualitative Attribu	ites									
Water Appearance: (check one)	[□] No water ⊠0	Clear 🗆 Turk		neen ⊡Su n surface sci		□Algal mats	□Other	:		
Substrate:	Bedrock 🗆 Bo	ulder 🛛 Cobl	ole 🛛 Grav	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🗆 Organio	; □ C)ther:		
(check all that apply) % of Substrate:	%	% 20 %	<u> 10 </u> %	<u> 55 </u> %	<u>15_</u> %	%		%		
_			<u> 10 </u> /0	<u></u> ,,,	<u>10</u> /0	/		/0		
Width of Riparian Zone	e: Vegetative (check all that		⊠ Trees	:	⊠ Saplir	ngs/Shrubs:	\boxtimes	Herbs		
<u>_200_ft</u> - N/A□	Avg. DBH (approx.)	of Dominants:	<u>_12.0_</u> i		<u>1.0_</u> in	-				
Dominant Bank Vegeta	ation (list):									
Sycamore, river bir areenbrier. Virginia	rve. false nett	e. smartweed				-			-	
Aquatic Habitats (ex: s Pools, riffles, leaf p				banks/roots, leaf pac	ks, large	submerged wood	l, riffles, o	deep pools	s):	
· · · ·										
Aquatic Organisms Ot Frogs, fish	iserved (list):									
.	• //									
T&E Species Observed	d (<i>list)</i> :									
Disturbances (ex: livest	ock access manure i	n waterbody wast	e discharge pipe	25):						
road crossing direc		-		<i>,</i> -						
Tributary is: (check one)		A	tificial man		ا منوان					
Stream Quality ^a :	⊠ Natural	⊔ Ar	tificial, man-m	ade 🗌 Manip	ulated					
(check one)	🗆 High	⊠ Mo	oderate	🗆 Low						

Waterbody ID:

scua011

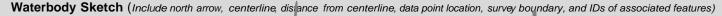
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

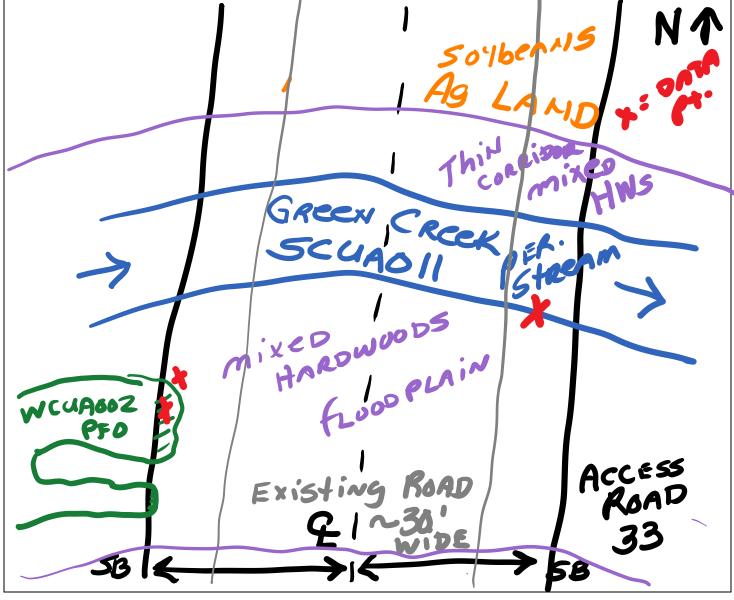
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate 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 33 corridor in both directions. Vehicles drive through stream, no culvert or bridge





Form Rev. 07/09/2014



SCUA011 facing northwest upstream



SCUA011 facing southeast downstream



SCUA011 facing northeast across

Survey Description	n								
Project Name:		Waterbody Na				/aterbody ID:			ate:
Southeast Reliability		UNNAMED CREEK		Y TO GREEN		CUK015			/31/2014
State:	County:		Company:			Member Initials:		hotos:	
Virginia	Cumberland		W&C		JS, W	/M, JD	1	100-035	2 TO 0354
Tract Number(s):			Nearest Mile	epost:		Associated W	etland I	D(s):	
10-061			215			NA			
Survey Type: (check one)	⊠Centerline	e □Re-l	Route	□Access Road		□Other:			
Physical Attributes	S								
Stream Classification: (check one)	Ephemera	al 🗌 Inte	rmittent	⊠Perennial					
Waterbody Type:									
	River 🛛 Str	ream 🗆 Dite	ch 🗆 Ca	anal 🗌 Other	:				
OHWM	OHWM Indica (check all that appl				~	M/restad		Coouring	Motor
Width: <u>15</u> ft.	(oncon an inar appr	1)	⊠ Clear lir on bank	ne ⊠Shelvin	g	⊠Wrested vegetation		Scouring	⊠Water staining
Height:	⊠Bent, r	natted, or missir	ng ⊠Wrack li	ne ⊠Litter ar	nd	□ Abrupt plant	t 🛙	⊠Soil cha	aracteristic change
_ <u>2.5_</u> ft. N/A□	vegetatio	on	0	debris		community cha	ange		Ū
Width of Waterbody - T	op of Width	of Waterbody -	Toe of Slope	Width of Waterb	ody - W	ater Edge to	Depth o	f Water:	
Bank to Top of Bank:	to Toe	of Slope:	-	Water Edge:	-	((Approx.)		
<u>20 ft</u> .	_	<u>15_</u> ft.		_	<u>5</u> ft.				<u>0.5_</u> ft.
				N/A 🗆			N/A 🗆		
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height			Bank sl	•	
□Straight		_0.2_ fps	3	Right:	<u>6_</u> ft.			Right:	80 degrees
⊠Meanderir	ng N/A□			Left:	<u>5_ft</u> .			Left:	80 degrees
Qualitative Attribu					<u> </u>			-	
Water Appearance:	163								
(check one)	No water ⊠0	Clear DTurk		neen ⊠Su nisurface scu		⊠Algal mats	⊠Other:	CATTL	E MANURE
	Bedrock 🛛 🖾 Bo	oulder 🛛 Cob	ole 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	clay 🗆 Organic		ther:	
(check all that apply) % of Substrate:	<u>NA_% 5_%</u>	<u> 10 </u> %	<u> 35 </u> %	<u>45</u> %	<u>5</u> %	<u>NA</u> %	NA	<u>%</u>	
Width of Riparian Zone	: Vegetative	e Lavers:							
	(check all that	apply)	⊠ Trees	:	🛛 Saplir	ngs/Shrubs:	\boxtimes	Herbs	
<u>>100 ft</u> · N/A□	Avg. DBH (approx.)	of Dominants:	<u>_12_</u> in.	-	<u>3</u> in.				
Dominant Bank Vegeta	,								
MICROSTEGIUM, N	MUSCADINE,	SPICEBUSH	, RED MAF	PLE, SYCAMO	RE RI	VER BIRCH,	HACK	BERR	Y
Aquatic Habitats (ex: su	Ibmerged or emerge	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood,	riffles, de	eep pools)	:
SOFT SAND, COB	BLE, LWD, UN	IDERCUT BA	NKS, ROC	DTMATS					
Aquatic Organisms Ob	served (list):								
FISH, WATER STR	IDERS, FROG	S, COLEOP	TERANS						
T&E Species Observed NA	(list):								
Disturbances (ex: livesto	ock access. manure i	n waterbodv. wast	e discharae pipe	es):					
HEAVY CATTLE IN		-		,					
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗆 Manip	ulated				
Stream Quality ^a : (check one)	□ High		oderate	⊠ Low					

Waterbody ID: SCUK015

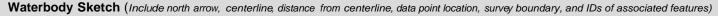
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

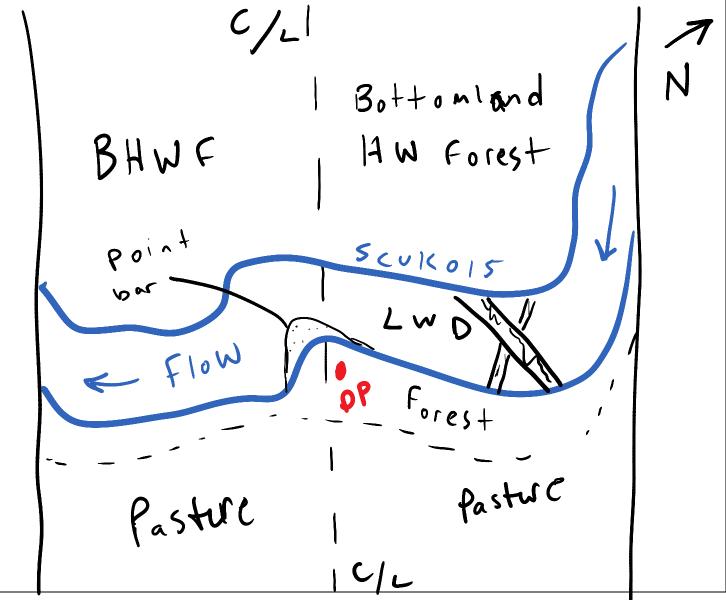
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate 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 IN HARDWOOD FOREST WITH OPEN PASTURELAND NEARBY; GOOD SINUOSITY; DOWNSTREAM RIGHT RIPARIAN AREA IS A NICE FLOODPLAIN FOREST HABITAT. HEAVY CATTLE USE THROUGHOUT THE REACH.







Waterbody point scuk015 facing south and downstream



Waterbody point scuk015 facing north and upstream



Waterbody point scuk015 facing west and across

Survey Description	on		-			=			
Project Name:		Waterbody		me: TRIB TO GREEN CREEK		Waterbody ID:		-	ite:
Southeast Reliability		UNNAMEL	D TRIB TO G	REEN CREEK	S	SCUK016		7/31/2014	
State:	County:		Company:	Company:		Crew Member Initials:		Photos:	
Virginia	Cumberland		W&C	W&C		JS, WM, JD		104- 4688 TO 4690	
Tract Number(s):			Nearest Mile	epost:		Associated W	etland	ID(s):	
12-061			215			NA			
Survey Type: (check one)	⊠Centerli	ne 🗆 Re	e-Route	□Access Road		Other:			
Physical Attribute									
Stream Classification (check one)	: ⊠Epheme	eral ⊡In	termittent	Perennial					
Waterbody Type: (check one)	□River ⊠ \$	Stream 🗆 D	9itch □ C	anal 🛛 Other:					
OHWM Width: _ <u>1</u> ft.	OHWM Indi (check all that ap		Clear lin on bank	ne 🗆 Shelving	g	□Wrested vegetation		Scouring	⊠Water staining
Height: ft. N/A□	⊠Bent vegeta	, matted, or miss tion	sing □Wrack li	ine 🗆 Litter an debris	nd	⊠ Abrupt plant ⊠ Soil characteristic change community change			racteristic change
Width of Waterbody -			- Toe of Slope	Width of Waterbo	ody - W	ater Edge to	Depth (of Water:	
Bank to Top of Bank:	to To	e of Slope:		Water Edge:			(Approx.)		
<u>_3_</u> ft.		<u>_1_</u> ft.			<u>ft</u> .		N/A⊠	_	ft.
Sinuosity:	Wate	er velocity:		N/A⊠ Bank height			Bank s	lope	
(check one)	(Appro			Right:				Right:	
		fp	S	Left:	<u>2</u> ft.			Left:	70 degrees
⊠Meander	ing N/A⊵	3			<u>2</u> ft.				70 degrees
Qualitative Attrib	utes								
Water Appearance: (check one)	[⊠] No water [⊡Clear ⊡Tu		neen 🗆 Sur n surface scu		□Algal mats	□Other	:	
Substrate:	Bedrock	Boulder Cobb	le 🗆 Gravel	Sand 🖂	Silt/ clay	y 🗆 Organic	□ Oth	er:	
(check all that apply) % of Substrate:	<u>NA_% N/</u>	<u>NA </u>	% <u>NA</u> %	5_%	<u>95_</u> %	NA %	NA	%	
Width of Riparian Zor		ive Layers:	<u> </u>	<u></u> ,,	<u></u> /0	<u>- 101 /</u> /0		_/0	
<u>_>100_ft</u> - N/A□	(check all t		□ Trees s: <u>NA</u> in		∃ Saplir <u>_NA</u> in.	ngs/Shrubs:		Herbs	
Dominant Bank Veget	()						<u> </u>		
COCKLEBUR, FE	SCUE, JOE P	YE WEED, K	ENTUCKYE	BLUEGRASS, J	IUNCU	JS EFFUSU	S		
Aquatic Habitats (ex: s	submerged or emerged	ged aquatic vegeta	tion, overhanging	banks/roots, leaf pacl	ks, large	submerged wood	l, riffles, o	deep pools):	
Aquatic Organisms O NA	bserved (list):								
T&E Species Observe NA	d (list):								
Disturbances (ex: lives	tock access, manur	e in waterbody, wa	iste discharge pip	es):					
Tributary is: (check one)	Natura	I .	Artificial, man-m	nade 🛛 🖾 Manipu	ulated				
Stream Quality ^a : (check one)	🗆 High		Moderate	⊠ Low					

Waterbody ID: SCUK016

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

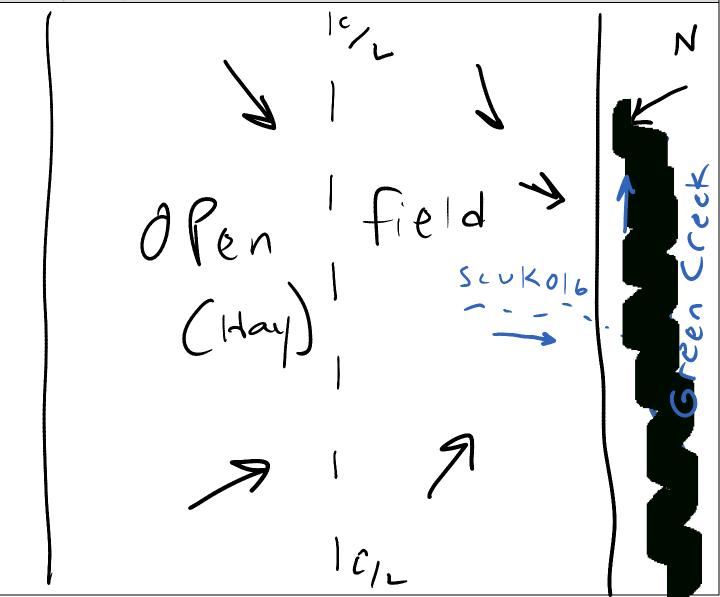
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate 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 A FARM FIELD ; NO FLOW AT DATA POINT

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



Form Rev. 07/09/2014



Waterbody point scuk016 facing south and downstream



Waterbody point scuk016 facing north and upstream



Waterbody point scuk016 facing east and across

Survey Descriptio	n									
Project Name:		Waterbody Name:				laterbody ID:			ate:	
Southeast Reliabilit		GREEN CF	GREEN CREEK			CUK017		7	/31/2014	
State:	County:		Company: C			rew Member Initials: P				
Virginia	Cumberland		W&C J			S, WM, JD 1			104-4691, 4692 & 4694	
Tract Number(s):			Nearest Milepost:			Associated Wetland ID(s):				
10-061 and 10-063			215			NA				
Survey Type: (check one)	⊠Centerlin	e □Re	-Route	□Access Road		□Other:				
Physical Attribute	S									
Stream Classification: (check one)	Epheme	ral ⊡Inte	ermittent	⊠Perennial						
Waterbody Type:										
(check one)	River ⊠ St	ream 🗆 Di	tch 🗆 C	anal 🛛 Other:	:					
OHWM Width:	OHWM Indica (check all that app		⊠ Clear lir	ne ⊠Shelving	a	⊠Wrested		Scouring	⊠Water	
<u>18 f</u> t.			on bank		9	vegetation		occurrig	staining	
Height:		matted, or miss	ng 🗆 Wrack li		nd	□ Abrupt plan		Soil ch	aracteristic change	
ft. N/A□	vegetati	on		debris		community ch	ange			
Width of Waterbody - 1 Bank to Ton of Bank			· Toe of Slope	Width of Waterbo	ody - W	ater Edge to	Depth (Approx.)	of Water:		
Bank to Top of Bank:	to 106	e of Slope:		Water Edge:			(Арргох.)			
<u>24 ft</u> .		<u>18_</u> ft.		N/A□	<u>7</u> ft.		N/A□		<u>_0.5</u> ft.	
Sinuosity:	Water	velocity:		Bank height			Bank s	lope		
(check one)	(Approx)		Right:				Right:		
		<u>_0.3_</u> fp	OS	Left:	<u>8_</u> ft.			Left:	<u>80</u> degrees	
⊠Meanderi	ng N/A□				<u>7_</u> ft.				80 degrees	
Qualitative Attribu	ites									
Water Appearance: (check one)	No water ⊠	Clear 🗆 Tu		neen ⊠Sur nisurface scu		⊠Algal mats	⊠Other	: CATTL	E MANURE	
	Bedrock 🗆 B	oulder 🗆 Cot	ble 🛛 Grav	el 🛛 Sand 🛛	⊠ Silt/ c	clay 🛛 Organic	; 🗆 C	Other:		
(check all that apply) % of Substrate:	NA % NA	_% <u>NA</u> %	۵	45 %	<u>5</u> %	5 %	NA	%		
Width of Riparian Zone		e Layers:								
•	(check all the	at apply)	⊠ Trees	: 🛛 🛛	🛛 Saplir	ngs/Shrubs:	\boxtimes	Herbs		
<u>>100 ft</u> · N/A□	Avg. DBH (approx.)	l of Dominants	<u>_12_</u> in.	-	<u>3</u> in.					
Dominant Bank Vegeta										
MICROSTEGIUM,					•		-		-	
Aquatic Habitats (ex: s	0 0			•	ks, large	submerged wood	, riffles,	deep pools)):	
SOFT SAND, GRA	VEL, LWD, UI	NDERCUT B	ANKS, ROC	DTMATS						
Aquatic Organisms Ob	. ,									
FISH, WATER STR	IDERS, FRO	GS, COLEOF	TERANS							
T&E Species Observed	l (list):									
NA										
Disturbances (ex: livested HEAVY CATTLE IN		-		es):						
Tributary is:										
(check one)	⊠ Natural		rtificial, man-m	ade 🗆 Manipu	ulated					
Stream Quality ^a : (check one)	□ High		loderate	⊠ Low						

Waterbody ID: SCUK017

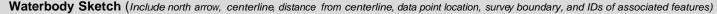
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

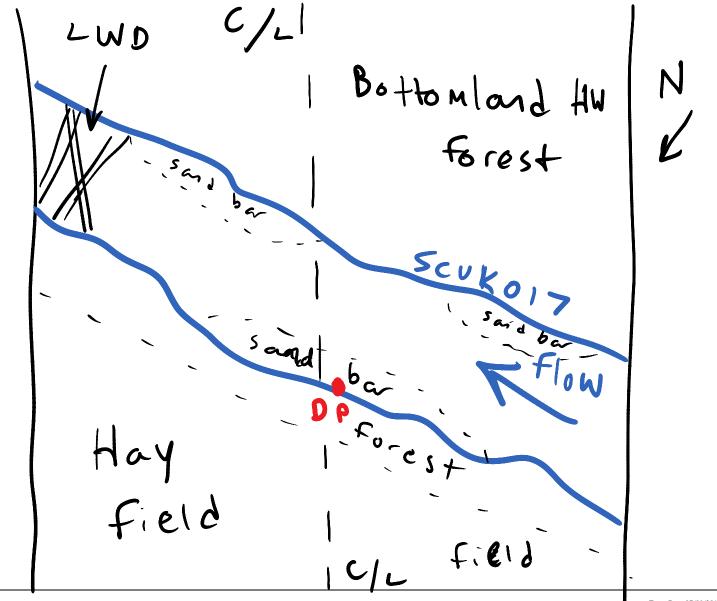
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate 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 IN HARDWOOD FOREST WITH OPEN PASTURELAND NEARBY; DECENT SINUOSITY; DOWNSTREAM RIGHT RIPARIAN AREA IS A NICE FLOODPLAIN FOREST HABITAT







Waterbody point scuk017 facing east and downstream



Waterbody point scuk017 facing west and upstream



Waterbody point scuk017 facing southeast and across

Survey Descriptio	n		-					I	
Project Name:		Waterbody				aterbody ID:		Date:	
Southeast Reliabilit	iy	UNNAMEI	J TRIB TO G	REEN CREEK	S	CUK018		7/31/201	4
State:	County:		Company:	Company: Cre			:: F	Photos:	
Virginia	Cumberland		W&C	W&C		JS, WM, JD		100-0365 TO 0367	
Tract Number(s):			Nearest Mil	epost:		Associated W	etland l	ID(s):	
12-063			215			WCUK008			
Survey Type: (check one)	⊠Centerlir	ne 🗆 R	e-Route	□Access Road		Other:			
Physical Attribute									
Stream Classification: (check one)	□Epheme	ral ⊠In	termittent	Perennial					
Waterbody Type: (check one)	∃River ⊠ S	tream 🗆 [Ditch 🗆 C	anal 🗌 Other:					
онwм	OHWM Indic	ator:							
Width:ft.	(check all that ap		⊠ Clear li on bank	ne 🗆 Shelving	g	⊠Wrested vegetation			Water iining
Height: 	⊠Bent, vegetat	matted, or mis ion	sing □Wrack I	ine □Litter ar debris	nd	□Abrupt plan community ch		⊠Soil characterist	ic change
N/A□ Width of Waterbody - ⁻	Top of Width	of Waterbody	. Too of Slope	Width of Waterbo	odv - W	ater Edge to	Denth (of Water:	
Bank to Top of Bank:		e of Slope:		Water Edge:	5uy - W		(Approx.)	or water.	
<u>4</u> ft.		<u>_2</u> ft.		N/A⊠	ft.		N/A⊠	ft.	
Sinuosity:	Wate	r velocity:		Bank height			Bank s	lope	
(check one)	(Approx	c.)		Right:				Right:	
		fp	S	Left:	<u>0.5 f</u> t.			<u>70</u> deg Left:	grees
Meanderi	ng N/A⊠			-	<u>0.5 </u> ft.			<u>_70</u> _deg	grees
Qualitative Attribu	ites								
Water Appearance: (check one)	[⊠] No water □	Clear DT	urbid □Sł or	neen DSur n surface scu		□Algal mats	□Other:	:	
	Bedrock 🗆 E	Boulder 🗆 Co	obble 🛛 Grav	el 🗆 Sand 🛛	⊠ Silt/ c	lay 🛛 Organic	; □0	other:	
(check all that apply) % of Substrate:	<u>NA % NA</u>	<u>% NA</u>	<u>% NA %</u>	<u>NA</u> %	80_%	20 %	NA	%	
Width of Riparian Zon		ve Lavers:						_	
>100 ft	(check all th		⊠ Trees			ngs/Shrubs:	\boxtimes	Herbs	
N/A 🗆	(approx.)		s: <u>18</u> in.	-	<u>3</u> in.				
Dominant Bank Vegeta MICROSTIGIUM, E	()	USH, RIVEF	R BIRCH, AF	ROW ARUM					
Aquatic Habitats (ex: s	ubmerged or emerg	ed aquatic vegeta	ation, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, d	leep pools):	
NA									
Aquatic Organisms Ob NA	oserved (list):								
T&E Species Observed	d (list):								
Disturbances (ex: livest	ock access, manure	e in waterbody, wa	aste discharge pip	es):					
Tributary is: (check one)	⊠ Natural		Artificial, man-m	nade 🗆 Manipu	ulated				
Stream Quality ^a : (check one)	□ High		Moderate	⊠ 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

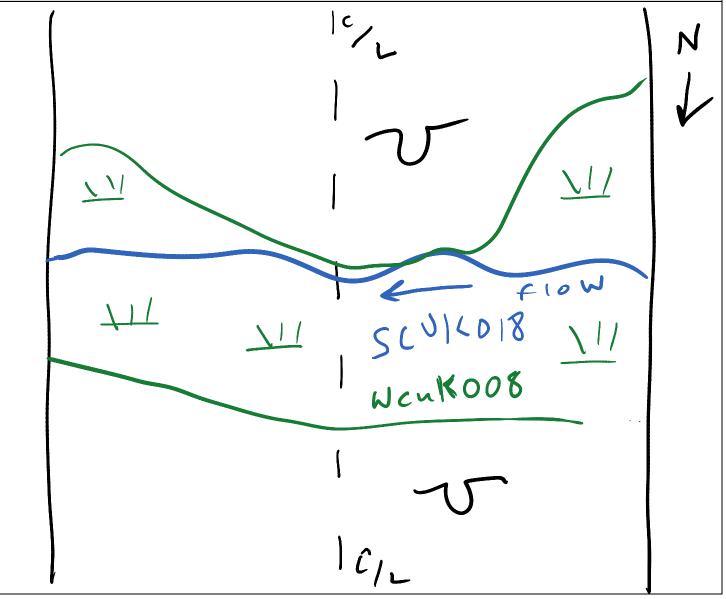
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate 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 INTERMITTENT STREAM IN A WETLAND ; NO FLOW AT DATA POINT

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





Waterbody point scuk018 facing northeast and downstream



Waterbody point scuk018 facing southwest and upstream



Waterbody point scuk018 facing east and across

Survey Description	n							
Project Name:		Waterbody Na				aterbody ID:		Date:
Southeast Reliability	y	UNNAMED		REEN CREEK	S	CUK019		7/31/2014
State:	County:		Company:		Crew N	Member Initials:	Ρ	hotos:
Virginia	Cumberland		W&C		JS, W	/M, JD		100-0368 TO 0370
Tract Number(s):			Nearest Mile	epost:	•	Associated We	etland I	D(s):
12-063			216			WCUK009		
Survey Type: (check one)	⊠Centerline	e □Re-F	Route	□Access Road		□Other:		
Physical Attributes	S							
Stream Classification: (check one)	Ephemera	al 🛛 🖾 Inter	mittent	Perennial				
Waterbody Type: (check one)	River 🛛 Str	eam 🗆 Dito	ch 🗆 Ca	anal 🗌 Other:				
OHWM Width: <u>3</u> ft.	OHWM Indica (check all that apply		⊠ Clear lir on bank	ne ⊠Shelving	g	⊠Wrested vegetation		Scouring ⊠Water staining
Height: ft. N/A□	⊠Bent, r vegetatio	natted, or missin n	ig ⊠Wrack li	ne ⊠Litter ar debris	nd	□ Abrupt plant community cha		\boxtimes Soil characteristic change
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - W		Depth o Approx.)	of Water:
<u>_5 f</u> t.	-	<u>3 ft.</u>		N/A□	<u>1.5_</u> ft.	1	N/A□	<u>0.3</u> ft.
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height		E	Bank sl	•
	(_0.1_ fps	2	Right:	1 ft.			Right: 50 degrees
⊠Meanderir	ng N/A 🗆	<u></u> .pc		Left:	1 ft.			Left:
				-	<u> </u>			
Qualitative Attribu Water Appearance:	les							
	No water ⊠0	Clear 🗆 Turb		leen ⊡Sur i surface scu		□Algal □ mats	Other:	
	Bedrock 🗆 Bo	ulder 🗆 Cobb	ole 🛛 Grav	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🛛 Organic		ther:
(check all that apply) % of Substrate:	<u>NA % NA </u>	% <u>NA</u> %	<u> 5 </u> %	<u> 60 </u> %	<u>25_</u> %	<u> 10 </u> %	NA	_%
Width of Riparian Zone	: Vegetative	e Lavers:						
<u>>100 ft</u> ·	(check all that		[⊠] Trees <u>18</u> in.		⊠ Saplir <u>_3_</u> in.	ngs/Shrubs:	\boxtimes	Herbs
N/A□ Dominant Bank Vegeta	,							
MICROSTEGIUM, E	ELM, SPICE B	USH, BOX E	LDER, ASH	H, RIVER BIRC	H, WI	NGSTEM		
Aquatic Habitats (ex: su SOFT SAND, LEAF					ks, large	submerged wood,	riffles, d	eep pools):
Aquatic Organisms Ob	served (list):							
CORBICULA, FRO	GS							
T&E Species Observed	l (list):							
Disturbances (ex: livesto			• • • •					
HISTORIC IMPOUR	NDMENT UPS	TREAM ALO	NG CREE	<				
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗆 Manipu	ulated			
Stream Quality ^a : (check one)	⊠ High		oderate	□ Low				

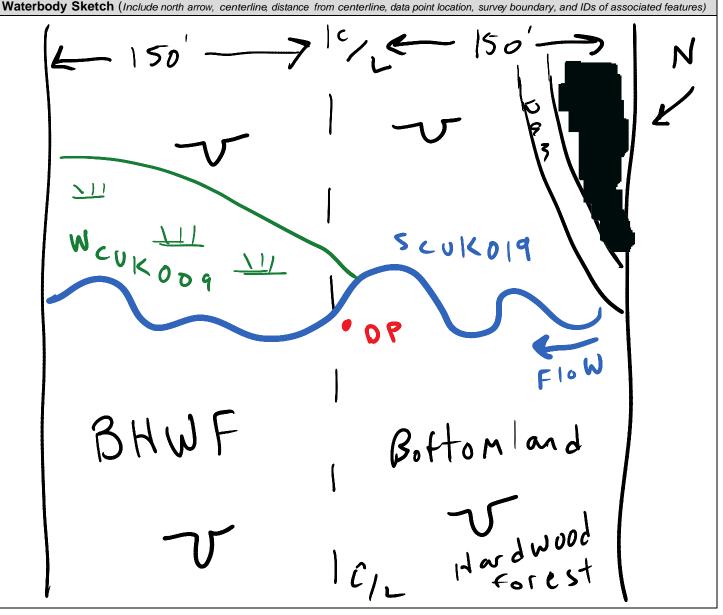
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

SMALL INTERMITTENT STREAM IN A WETLAND ; NO FLOW AT DATA POINT. STREAM FLOWS FROM AN OLD IMPOUNDMENT THAT WAS LIKELY USED AS A CATTLE WATERING POND OR RESERVOIR FOR DRINKING WATER.





Waterbody point scuk019 facing north and downstream



Waterbody point scuk019 facing south and upstream



Waterbody point scuk019 facing east and across

Survey Description	n							
Project Name:		Waterbody Na				aterbody ID:		Date:
Southeast Reliability		UNNAMED CREEK		Y TO GREEN		CUK014		7/30/2014
State:	County:		Company:			Member Initials:	Photo	
Virginia	Cumberland		W&C		JS, W	/M, JD	104-	4668 to 4670
Tract Number(s):			Nearest Mile	epost:		Associated Wet	tland ID(s):	
10-063			216			NA		
Survey Type: (check one)	⊠Centerline	e □Re-	Route	□Access Road		□Other:		
Physical Attributes	S							
Stream Classification: (check one)	Ephemer	al ⊠Inte	rmittent	□Perennial				
Waterbody Type:								
(check one)	River 🛛 Sti	ream 🗆 Dit	ch 🗆 Ca	anal 🗆 Other				
онwм	OHWM Indica							
Width: <u>3</u> ft.	(check all that appl	y)	☑ Clear lir on bank	ne ⊠Shelvin	g	⊠Wrested vegetation	⊠Scour	ing ⊠Water staining
Height:		matted, or missir	ng ⊡Wrack li		nd	□Abrupt plant		characteristic change
_ <u>1_</u> ft. N/A□	vegetatio	on		debris		community cha	nge	
Width of Waterbody - T			Toe of Slope	Width of Waterb	ody - W		epth of Wa	ter:
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:		(A	pprox.)	
<u>6</u> ft.	-	<u>3</u> ft.			<u>2</u> ft.	N	/A□	<u>0.2</u> ft.
Sinuosity:	Water	velocity:		N/A□ Bank height			ank slope	
(check one)	(Approx.)			Right:			Rig	ht:
□Straight		<u>_0.1_</u> fp	s	Left:	<u>4</u> ft.		-	<u>50</u> degrees eft:
⊠Meanderir	ng N/A□			Lent:	<u>3_</u> ft.		L	<u>50</u> degrees
Qualitative Attribu	tes			1				
Water Appearance: (check one)	No water						Other	
		Clear □Turl		neen ⊡Sui n surface scu		□Algal □ mats	Other:	
	Bedrock 🗆 Bo	oulder 🛛 Cob	ble 🛛 Grav	el 🛛 Sand 🛛	⊠ Silt/ c	clay 🛛 Organic	□ Other:	
(check all that apply) % of Substrate:	<u>NA_% NA</u>	<u>% 10</u> %	<u> 10 </u> %	<u>65</u> %	<u>10_</u> %	<u> 5 </u> %	<u>NA %</u>	
Width of Riparian Zone	: Vegetativ	e Layers:						
. 400 #	(check all tha		□ Trees			ngs/Shrubs:	⊠ Herb	3
<u>>100 ft</u> - N/A□	AV G. DBH (approx.)	of Dominants:	<u>12</u> in.	-	<u>3</u> in.			
Dominant Bank Vegeta	tion (list):							
CHRISTMAS FERN	I, SPICEBUSH	I, PAW PAW	, SYCAMO	RE, HACKBER	RY			
Aquatic Habitats (ex: su	Ibmerged or emerge	d aquatic vegetatio	on, overhanging	banks/roots, leaf pac	ks, large	submerged wood, r	iffles, deep po	pols):
SOFT SAND, COBI	BLE, CPOM							
Aquatic Organisms Ob	served (list):							
ODONATES								
T&E Species Observed	(list):							
NA								
Disturbances (ex: livesto	ock access, manure	in waterbody, wast	e discharge pipe	es):				
SMALL HISTORICA	AL BERM LOC	ATED AT CE	ENTERLINE	E CROSSING,	BREA	CHED BY ST	REAM	
Tributary is: (check one)	⊠ Natural	□ Aı	tificial, man-m	ade 🗆 Manip	ulated			
Stream Quality ^a : (check one)	⊠ High	□ M	oderate	□ Low				

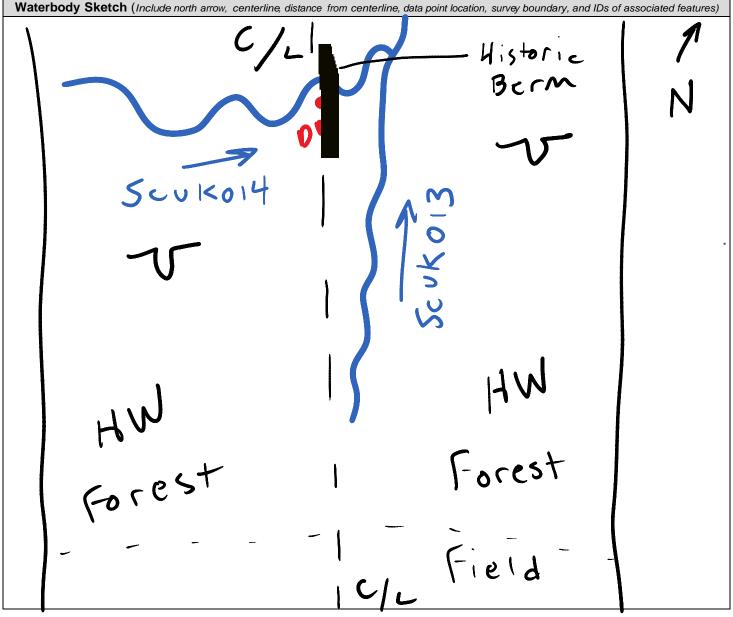
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

HEADWATER INTERMITTENT STREAM IN MATURE HARDWOOD FOREST; GOOD SINUOSITY; SEEPY STREAM BANKS, BUT NO WETLANDS.





Waterbody point scuk014 facing southeast and downstream



Waterbody point scuk014 facing northwest and upstream



Waterbody point scuk014 facing east and across

Survey Description	n	-							
Project Name:		Waterbody Na				aterbody ID:			ate:
Southeast Reliability		UNNAMED CREEK		Y TO GREEN		CUK013			/30/2014
State:	County:		Company:			Member Initials	s:	Photos:	
Virginia	Cumberland		W&C		JS, W	/M, JD		104-466	8 to 4670
Tract Number(s):			Nearest Mile	epost:		Associated W	/etland	ID(s):	
10-063			216			NA			
Survey Type: (check one)	⊠Centerline	e □Re-	Route	□Access Road		□Other:			
Physical Attributes	S								
Stream Classification: (check one)	Ephemera	al ⊠Inte	rmittent	□Perennial					
Waterbody Type: (check one)	River ⊠ Str	ream 🗆 Dit	ch 🗆 C	anal 🗌 Other:	:				
OHWM Width: <u>3</u> ft.	OHWM Indica (check all that appl		⊠ Clear lir on bank	ne 🗆 Shelvin	g	⊠Wrested vegetation		Scouring	⊠Water staining
Height: ft. N/A□	□Bent, r vegetatio	matted, or missii on	ng □Wrack li	ine ⊠Litter ar debris	nd	□Abrupt plar community ch		⊠Soil cha	aracteristic change
Width of Waterbody - T			Toe of Slope	Width of Waterbo	ody - W	ater Edge to		of Water:	
Bank to Top of Bank: 10_ft.		of Slope: <u>3</u> ft.		Water Edge: N/A□	<u>1</u> ft.		(Approx.) N/A□		<u>0.1_</u> ft.
Sinuosity:	Water	velocity:		Bank height			Bank s	lope	
(check one)	(Approx.)			Right:				Right:	
		<u> 0.01 </u> fp	DS	Left:	<u>2.5</u> ft.			Left:	60 degrees
	ng N/A□			Lon	<u>5_</u> ft.			<u></u>	60 degrees
Qualitative Attribu	tes								
Water Appearance: (check one)	[]] No water ⊠0	Clear □Tur		neen ⊡Sui n surface scu		□Algal mats	□Other	r:	
Substrate:	Bedrock 🗆 Bo	oulder Cobble	e 🗆 Gravel	Sand	Silt/ clay	y 🛛 Organic	□ Oth	ner:	
(check all that apply) % of Substrate:	NA% NA	% NA %	<u>NA %</u>	70 %	20 %	10 %	NA	%	
Width of Riparian Zone									
<u>>100 ft</u> . N/A□	(check all that		[⊠] Trees _ <u>12_</u> in.		⊠ Saplir _ <u>3_</u> in.	ngs/Shrubs:	×	Herbs	
Dominant Bank Vegeta	tion (list):								
XMAS FERN, SPIC	EBUSH, PAW	PAW, SYCA	MORE, HA	ACKBERRY					
Aquatic Habitats (ex: su SOFT SAND, CPOI		d aquatic vegetatio	on, overhanging	banks/roots, leaf pac	ks, large	submerged wood	l, riffles,	deep pools)	:
Aquatic Organisms Ob	served (list):								
FROGS									
T&E Species Observed	(list):								
Disturbances (ex: livesto			• • • •	es):					
HOUSEHOLD TRA	SH AND DEBI	RIS IN CHAN	INEL						
Tributary is: (check one)	⊠ Natural		rtificial, man-m	nade 🗆 Manipi	ulated				
Stream Quality ^a : (check one)	□ High	⊠ M	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.

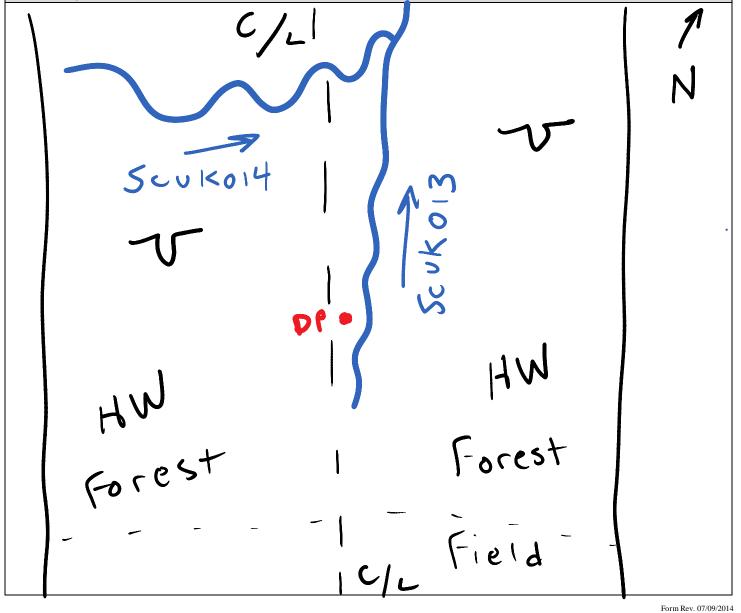
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

ARGE PERENNIAL RIVER. MODERATE FLOW AND VOLUME AT TIME OF SURVEY.

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





Waterbody point scuk013 facing northwest and downstream



Waterbody point scuk013 facing southeast and upstream



Waterbody point scuk013 facing east and across

Survey Descriptio	n									
Project Name:			terbody Na				/aterbody ID: SCUk012		Date:	
Southeast Reliabilit	ty	UN	INAMED	TRIB TO G	REEN CREEK		SCUKUTZ		7/30/2014	
State:	County:			Company:			Member Initials	:	Photos:	
Virginia	Nottowa	iy		W&C		JS, W	/M, JD		100-0343 TO 0346	
Tract Number(s):				Nearest Mile	epost:	•	Associated W	etland	ID(s):	
10-064				216			NA			
Survey Type: (check one)	⊠Ce	enterline	□Re-F	Route	□Access Road	1	□Other:			
Physical Attribute										
Stream Classification: (check one)		ohemeral	□Inter	rmittent	Perennial					
Waterbody Type: (check one)	River	⊠ Stream	□ Dite	ch □C	anal 🛛 Other	:				
OHWM Width: _2_ft.		I Indicator: I that apply)		□ Clear lin on bank	ne 🗆 Shelvin	ıg	⊠Wrested vegetation	×	Scouring DWater staining	
Height: ft. N/A□		Bent, matte	ed, or missin	ig	ine □Litter a debris	nd	□ Abrupt plan community ch		Soil characteristic chan	ige
Width of Waterbody - Bank to Top of Bank:		Width of W to Toe of S		Toe of Slope	Width of Waterb Water Edge:	ody - W		Depth (Approx.)	of Water:	
<u>4</u> ft.			ít.		N/A⊠	ft.		N/A⊠	ft.	
Sinuosity: (check one)		Water velo (Approx.)	city:		Bank height			Bank s	slope	
⊠Straight		(Approx.)	fac		Right:	1_ ft.			Right: 70 degrees	
□Meanderi	ina		fps		Left:				Left:	
		N/A⊠				<u>1_</u> ft.			<u>70</u> degrees	
Qualitative Attribu Water Appearance:	utes									
(check one)	[⊠] No water	□Clear	⊡Turb			rface um	□Algal mats	□Othe	r:	
	Bedrock	Boulde	r 🛛 Cobb	ole 🛛 Grav	el 🛛 Sand	⊠ Silt/ c	lay 🗆 Organic	; □0	Other:	
(check all that apply) % of Substrate:	<u>NA_</u> %	<u>NA</u> %	<u> 5 </u> %	<u> 5 </u> %	_20_%	<u>70_</u> %	<u>NA %</u>	NA	<u>\</u> %	
Width of Riparian Zon	e: Ve	getative La	vers:							
	(che	eck all that apply)	□ Trees	:: [□ Saplir	ngs/Shrubs:	\boxtimes	Herbs	
<u>>100 ft</u> · N/A□		g. DBH of E prox.)	ominants:	<u>NA</u> i	n	_NA	<u>i</u> n.			
Dominant Bank Vegeta	ation (list):									
RAGWEED, FESC	UE, SET	ARIA SP.	, VERBEN	NA SP., KE	NTUCKY BLU	EGRA	SS, INDIAN	HEMI		
Aquatic Habitats (ex: s NA	ubmerged or	emerged aqu	atic vegetatio	n, overhanging	banks/roots, leaf pac	cks, large	submerged wood	, riffles,	deep pools):	
Aquatic Organisms Ob	served (lis	st):								
NA										
T&E Species Observe	d (list):									
NA										
Disturbances (ex: livest	ock access,	manure in wa	terbody, waste	e discharge pip	es):					
Tributary is: (check one)	⊠ N	atural	□ Ar	tificial, man-m	nade 🗌 Manip	ulated				
Stream Quality ^a : (check one)	□H	igh		oderate	⊠ Low					

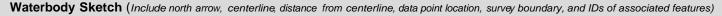
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

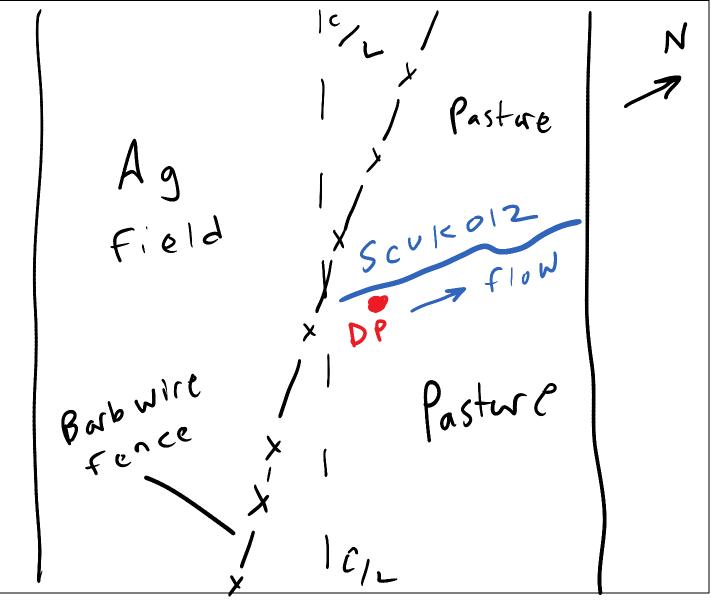
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

SMALL HEADWATER EPHEMERAL STREAM IN A SEMI-MATURE MIXED PINE-HW FOREST ; NO FLOW AT DATA POINT







Waterbody point scuk012 facing north and downstream



Waterbody point scuk012 facing south and upstream



Waterbody point scuk012 facing west and across

Linear Waterbod	y Data Shee	t					
Survey Description	n	-					
Project Name:		Waterbody Nam			Waterbody ID:		ate:
Southeast Reliability	ý	APPOMATTO	DX RIVER		SCUK011	()	/30/2014
State:	County:		Company:		Crew Member Initia	ls: Photos:	
Virginia	Cumberland		N&C		JS, WM, JD	100-032	25 to 0327
Tract Number(s):	•	I	Nearest Mile	post:	Associated	Wetland ID(s):	
10-064			217		NA		
Survey Type: (check one)	⊠Centerline	e □Re-R	oute	□Access Roa	d □Other:		
Physical Attributes							
Stream Classification:							
(check one)		al 🗌 Intern	nittent	⊠Perennial			
Waterbody Type: (check one)	River □ Str	eam 🛛 Ditch	n 🗆 Ca	anal 🗆 Othe	r:		
онwм	OHWM Indica						
Width: <u>100</u> ft.	(check all that apply	V)	☑ Clear lir on bank	e ⊠Shelvir	ng ⊠Wrested vegetation	Scouring	□Water staining
Height: 6 ft.	⊠Bent, r vegetatio	natted, or missing	□Wrack li	ne ⊠Litter a debris	and		aracteristic change
N/A 🗆	0					0	
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - T of Slope:	oe of Slope	Width of Waterk Water Edge:	oody - Water Edge to	Depth of Water: (Approx.)	
110 ft.		_100_ ft.		Ū	100 ft.		_6_ ft.
<u></u> n.	-	<u>_100_</u> n.		N/A□	<u>_100_</u> 1t.	N/A 🗆	
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height		Bank slope	
⊠Straight	()	_2_ fps		Right:	_12_ft.	Right:	80 degrees
□Meanderir	ng N/A□	<u></u> ipo		Left:	12_ ft.	Left:	60 degrees
					<u> 12 </u> 11.		
Qualitative Attribut	tes						
	No water ⊠0	Clear 🗆 Turbi			urface □Algal cum mats	□Other:	
	Bedrock 🗆 Bo	oulder 🛛 Cobbl	e 🛛 Grave	el 🛛 Sand	🛛 Silt/ clay 🛛 Organ	ic 🗆 Other:	
(check all that apply) % of Substrate:	<u>NA % NA </u>	% <u>NA</u> %	<u> 5 </u> %	<u>70</u> %	<u>20</u> % <u>5</u> %	<u>NA</u> %	
Width of Riparian Zone	: Vegetative		× -				
_>100 ft	·	of Dominants:	⊠ Trees: _ <u>16_</u> in.		Saplings/Shrubs: _2_in.	⊠ Herbs	
N/A 🗆	(approx.)		<u>_10</u>				
Dominant Bank Vegeta SWEET GUM, PIGN	• •	(, HACKBERF	Y, BLACH	(HAW, POIS	ON IVY, WILLOW	OAK	
Aquatic Habitats (ex: su	bmerged or emerged	d aquatic vegetation	, overhanging	banks/roots, leaf pa	cks, large submerged woo	od, riffles, deep pools)	:
CWD, SOFT SAND	OVER HANG,	ING VEG, LEA	AF PACKS	S, POOLS			
Aquatic Organisms Ob	served (list):						
FISH, LIKELY MOR	E NOT VISIBL	E FROM TOP	OF BAN	<			
T&E Species Observed	(list):						
NA							
Disturbances (ex: livesto	ock access, manure i	n waterbody, waste	discharge pipe	es):			
CATTLE GRAZING	ON LEFT BAI	NK					
Tributary is: (check one)	⊠ Natural	□ Artii	ficial, man-m	ade 🗆 Manip	oulated		
Stream Quality ^a :							
(check one)	🗆 High	⊠ Moo	derate	🗆 Low			

Form Rev. 07/09/2014

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.

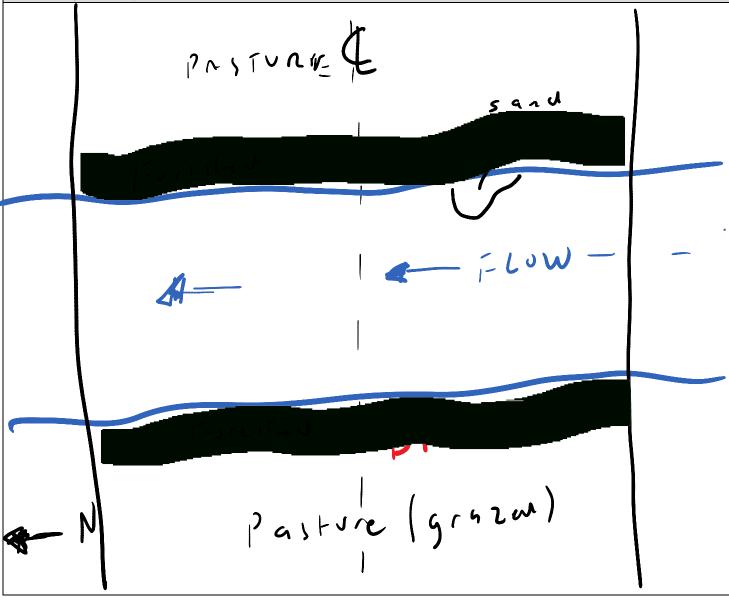
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Notes:

ARGE PERENNIAL RIVER. MODERATE FLOW AND VOLUME AT TIME OF SURVEY.

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





Waterbody point scuk011 facing southwest and downstream



Waterbody point scuk011 facing northeast and upstream



Waterbody point scuk011 facing east and across