



Stream SBUC007 facing southeast across

# Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: UNNAMED TRIB TO NORTH RIVER	
Waterbody ID: SBUK005		Date: 7/18/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initials: RS, JS
Photos: 0052-0054			
Tract Number(s): 09-045		Nearest Milepost: 191	Associated Wetland ID(s): NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: <u>10</u> ft.		OHWM Indicator: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
OHWM Height: <u>1</u> ft.		<input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
N/A <input type="checkbox"/>			
Width of Waterbody - Top of Bank to Top of Bank: <u>14</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>10</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/> <u>10</u> ft.	Depth of Water: <i>(Approx.)</i> N/A <input checked="" type="checkbox"/> <u>.5</u> ft.
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> <u>1</u> fps N/A <input checked="" type="checkbox"/>	Bank height Right: <u>8</u> ft. Left: <u>6</u> ft.	Bank slope Right: <u>70</u> degrees Left: <u>70</u> degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> N/A			
% of Substrate: <u>NA</u> % <u>10</u> % <u>10</u> % <u>40</u> % <u>30</u> % <u>10</u> % <u>NA</u> % <u>NA</u> %			
Width of Riparian Zone: <u>100+</u> ft.		Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs	
N/A <input type="checkbox"/>		Avg. DBH of Dominants: <i>(approx.)</i> <u>12</u> in. <u>1</u> in.	
Dominant Bank Vegetation <i>(list)</i> : CAREX SPP., BOX ELDER, PAW PAW, FLOWERING DOGWOOD, EASTERN REDBUD, SLIPPERY ELM, GRASSES			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): OVER HANGING ROOTS, RIFFLE/POOL COMPLEX, OVERHANGING BANKS			
Aquatic Organisms Observed <i>(list)</i> : WATER STRIDER, CRAYFISH, FISH, MAYFLY, STONEFLY, FROGS, EBONY JEWELWING			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input checked="" type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

Waterbody ID:

SBUK005

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

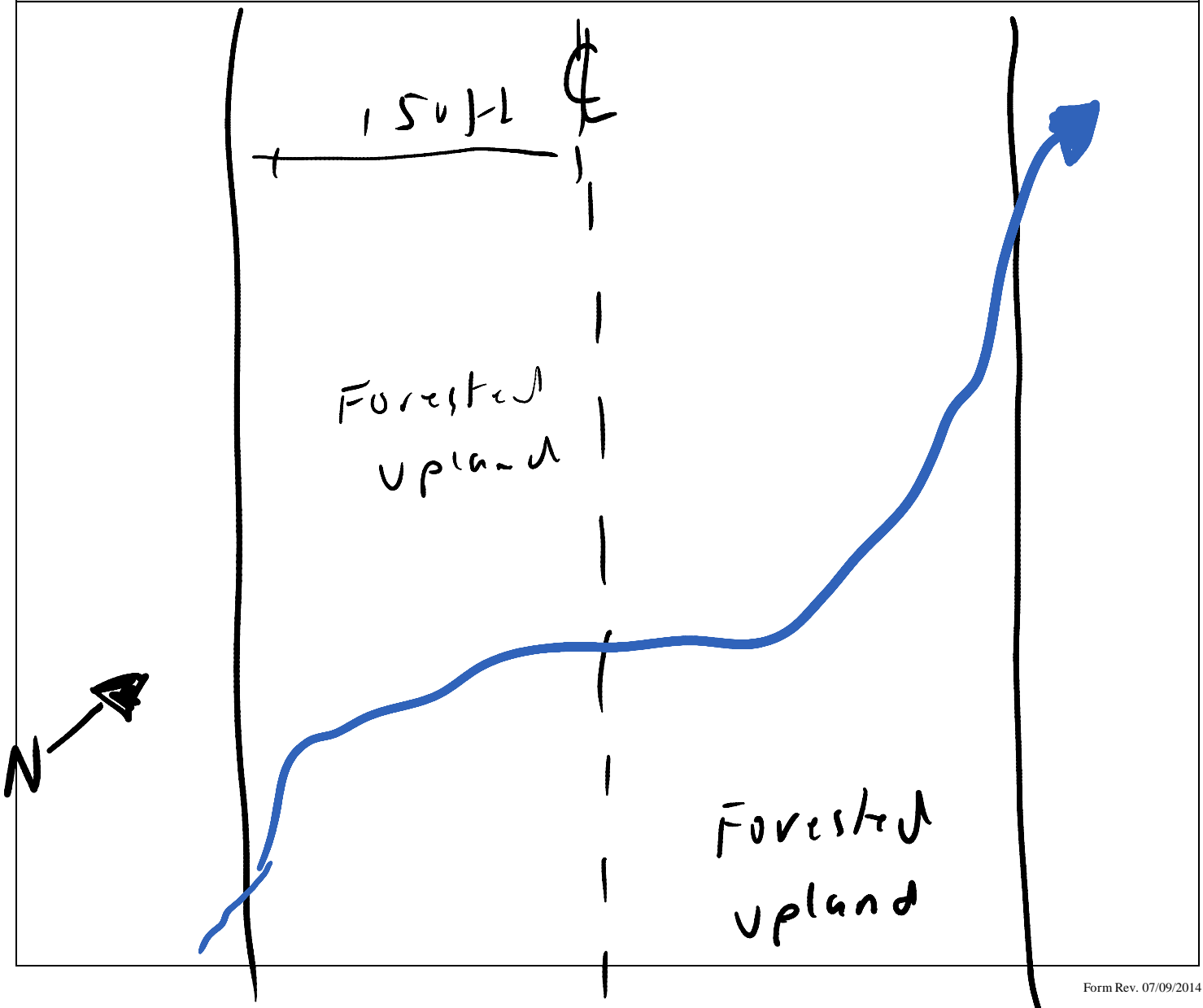
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

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

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





Waterbody point sbuk005 facing northeast and downstream



Waterbody point sbuk005 facing southwest and upstream





Waterbody point sbuk005 facing northwest and across

# Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: North River	
Waterbody ID: Sbuc105		Date: 10/24/2015	
State: Virginia	County: Buckingham	Company: NRG	Crew Member Initials: CR, AS
Photos: 1-3			
Tract Number(s): 09-001.AR-AR1 (09-045.AR)		Nearest Milepost: 195.5	Associated Wetland ID(s): Wbuc105
Survey Type: <i>(check one)</i> <input type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input checked="" type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input checked="" type="checkbox"/> River <input type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: <u>30</u> ft.		OHWM Indicator: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
Height: <u>5</u> ft.		<input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
N/A <input type="checkbox"/>			
Width of Waterbody - Top of Bank to Top of Bank: <u>40</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>5</u> ft.	Width of Waterbody - Water Edge to Water Edge: <u>20</u> ft.	Depth of Water: <i>(Approx.)</i> <u>3</u> ft.
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>	
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> <u>1</u> fps	
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>	
Bank height Right: <u>12</u> ft. Left: <u>10</u> ft.		Bank slope Right: <u>80</u> degrees Left: <u>85</u> degrees	
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> <input type="checkbox"/> Bedrock <input checked="" type="checkbox"/> Boulder <input checked="" type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate:      _____% <u>5</u> % <u>5</u> % <u>15</u> % <u>65</u> % <u>10</u> %      _____%      _____%			
Width of Riparian Zone: <u>100</u> ft.		Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs	
N/A <input type="checkbox"/>		Avg. DBH of Dominants: <i>(approx.)</i> <u>12</u> in. <u>2</u> in.	
Dominant Bank Vegetation <i>(list)</i> : Ironwood, sycamore, northern spicebush, eastern red cedar, red maple			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Pools, leaf packs, overhanging roots/banks			
Aquatic Organisms Observed <i>(list)</i> : Crayfish, stonefly nymph, mussels			
T&E Species Observed <i>(list)</i> : None			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Stream flows through a 8' culvert. There are several other culverts present for overflow conditions			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>a</sup> : <i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

Sbuc105

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

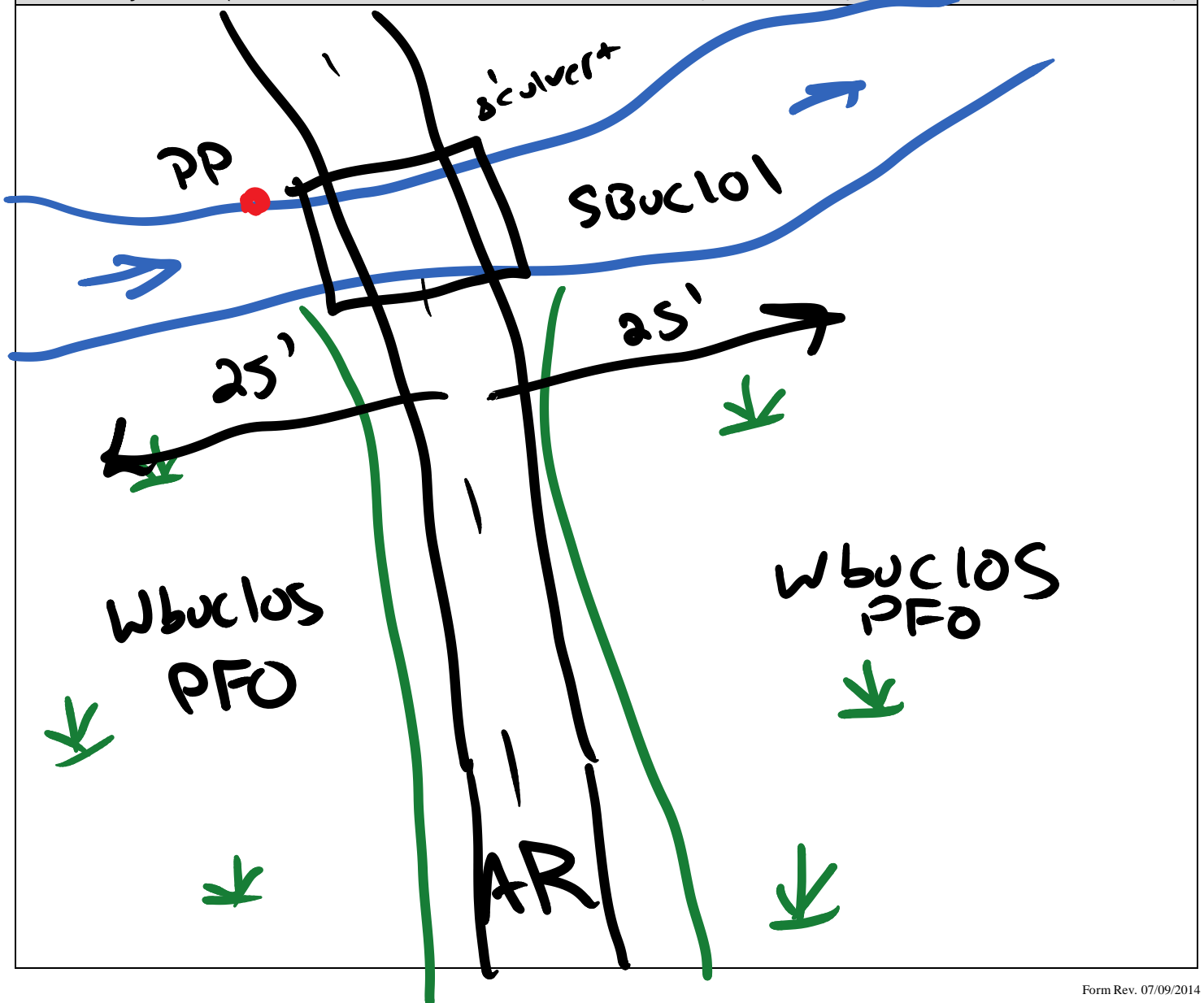
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

Changed to SBUC105. JM 11/5/15

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







Waterbody SBUC105 facing southwest upstream



Waterbody SBUC105 facing northeast downstream





Waterbody SBUC105 facing northwest across

# Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to North River	
Waterbody ID: Sbue002		Date: 2/26/2016	
State: Virginia	County: Buckingham	Company: NRG	Crew Member Initials: CG, AS
Photos: 1-3			
Tract Number(s): 09-045		Nearest Milepost: NA	Associated Wetland ID(s): none
Survey Type: <i>(check one)</i> <input type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input checked="" type="checkbox"/> Other: Contractor Yard			
Physical Attributes			
Stream Classification: <i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: 3 ft.		OHWM Indicator: <i>(check all that apply)</i>	
OHWM Height: 0.25 ft.		<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: 7 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 3 ft.	Width of Waterbody - Water Edge to Water Edge: 2 ft.	Depth of Water: <i>(Approx.)</i> 0.1 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> 0.05 fps	Bank height: Right: 1.5 ft. Left: 1.5 ft.
N/A <input type="checkbox"/>		Bank slope: Right: 10 degrees Left: 10 degrees	
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i>			
% of Substrate:      _____%      _____%      _____%      _____%      60%      40%      _____%      _____%			
Width of Riparian Zone: N/A <input checked="" type="checkbox"/>		Vegetative Layers: <i>(check all that apply)</i>	
		<input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs	
		Avg. DBH of Dominants: <i>(approx.)</i> 6 in.      1 in.	
Dominant Bank Vegetation <i>(list)</i> : Pine, honeysuckle, cedar			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): none			
Aquatic Organisms Observed <i>(list)</i> : none			
T&E Species Observed <i>(list)</i> : none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): none			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

Sbue002

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

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

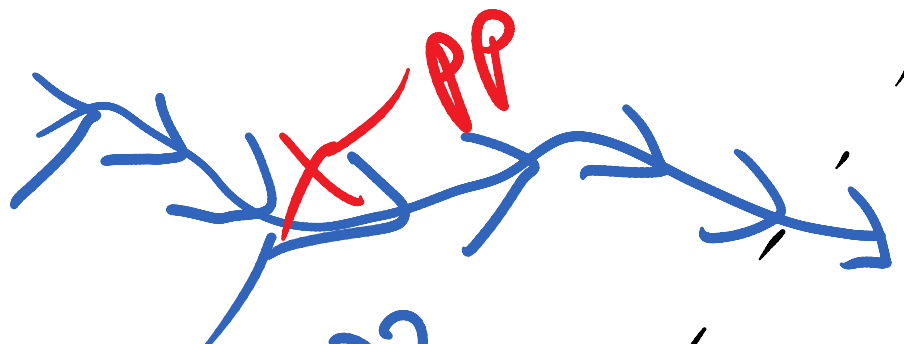
**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious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

**Notes:**

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

↖ N

Contractor yard boundary



Sbue002





SBUE002 facing west upstream



SBUE002 facing east downstream





SBUE002 facing south across

# Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: UNNAMED TRIB TO NORTH RIVER	
Waterbody ID: SBUK004		Date: 7/18/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initials: RS, JS
Photos: 0048-0050			
Tract Number(s): 09-045		Nearest Milepost: 191	Associated Wetland ID(s): NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: _ 2 _ ft.		OHWM Indicator: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
Height: _ .5 _ ft.		<input type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
N/A <input type="checkbox"/>			
Width of Waterbody - Top of Bank to Top of Bank: _ 3 _ ft.	Width of Waterbody - Toe of Slope to Toe of Slope: _ 2 _ ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/> _ _ ft.	Depth of Water: <i>(Approx.)</i> N/A <input checked="" type="checkbox"/> _ _ ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> _ 0 _ fps N/A <input checked="" type="checkbox"/>	Bank height Right: _ .5 _ ft. Left: _ .5 _ ft.	Bank slope Right: _ 30 _ degrees Left: _ 70 _ degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> NA			
% of Substrate: <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>100</u> % <u>NA</u> % <u>NA</u> %			
Width of Riparian Zone: _ 100+ _ ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs		
Avg. DBH of Dominants: <i>(approx.)</i> <u>5</u> in. <u>2</u> in.			
Dominant Bank Vegetation <i>(list)</i> : CAREX SPP., MOSSES, VIBURNUM PRUNIFOLIUM			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA			
Aquatic Organisms Observed <i>(list)</i> : NA			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

Waterbody ID:

SBUK004

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

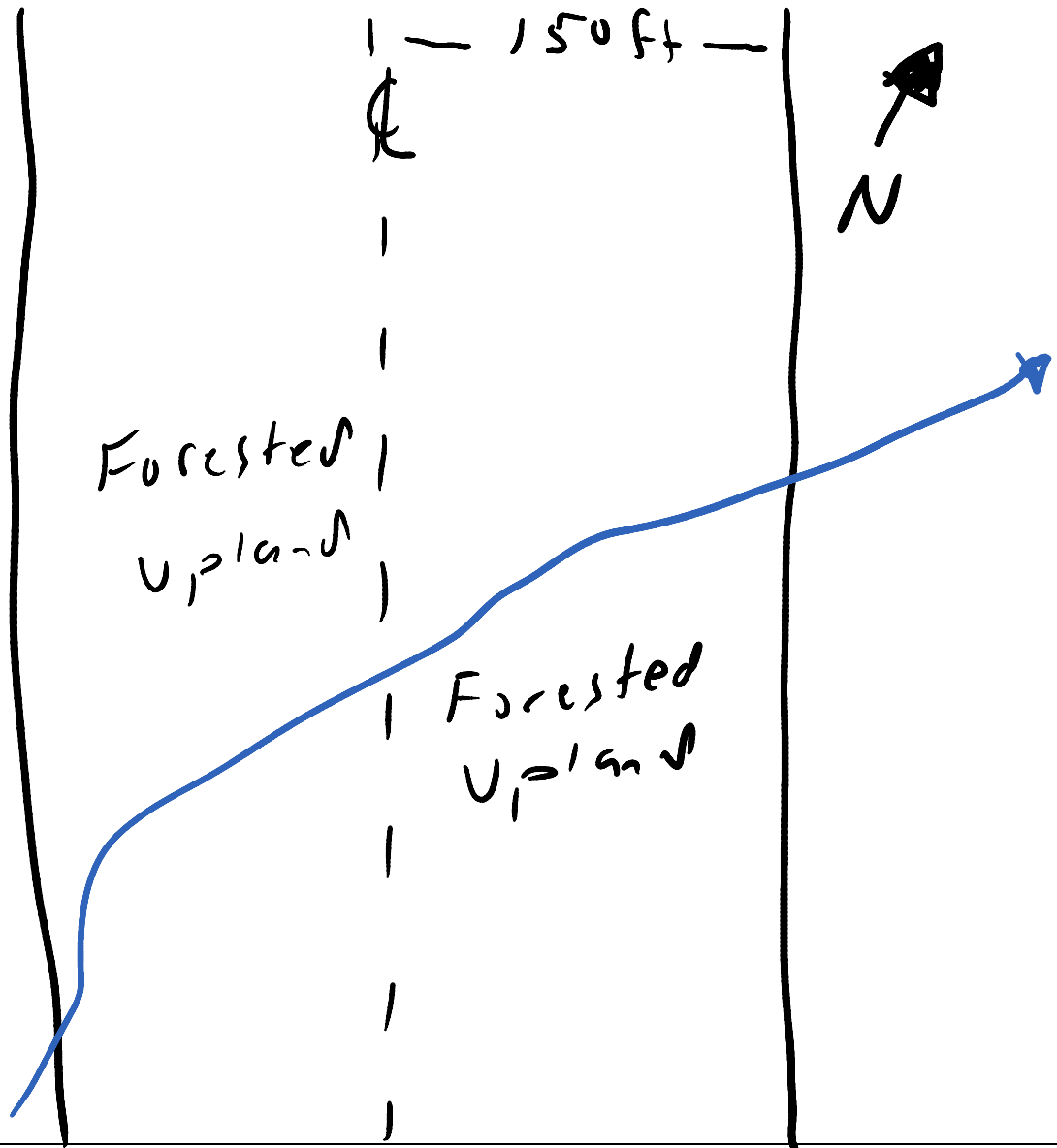
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

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

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







Waterbody point sbuk004 facing north and downstream



Waterbody point sbuk004 facing south and upstream





Waterbody point sbuk004 facing west and across

# Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to North River	
Waterbody ID: Sbue003		Date: 2/26/2016	
State: Virginia	County: Buckingham	Company: NRG	Crew Member Initials: CG, AS
Photos: 1-3			
Tract Number(s): Access road to 09-045		Nearest Milepost: NA	Associated Wetland ID(s): none
Survey Type: <i>(check one)</i> <input type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input checked="" type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: 5 ft.		OHWM Indicator: <i>(check all that apply)</i> <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
OHWM Height: 2 ft.		<input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
N/A <input type="checkbox"/>			
Width of Waterbody - Top of Bank to Top of Bank: 12 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 3 ft.	Width of Waterbody - Water Edge to Water Edge: 4 ft.	Depth of Water: <i>(Approx.)</i> 0.5 ft.
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>	
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> 0.1 fps	Bank height: Right: 2 ft. Left: 2 ft.
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>	
Bank slope: Right: 30 degrees Left: 30 degrees			
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate:      _____%      _____%      _____%      5%      90%      5%      _____%      _____%			
Width of Riparian Zone: 12 ft.		Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs	
N/A <input type="checkbox"/>		Avg. DBH of Dominants: <i>(approx.)</i> 6 in.      1 in.	
Dominant Bank Vegetation <i>(list)</i> : Boxelder, tulip poplar, fern			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, pools			
Aquatic Organisms Observed <i>(list)</i> : insects			
T&E Species Observed <i>(list)</i> : none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Field above stream			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

Sbue003

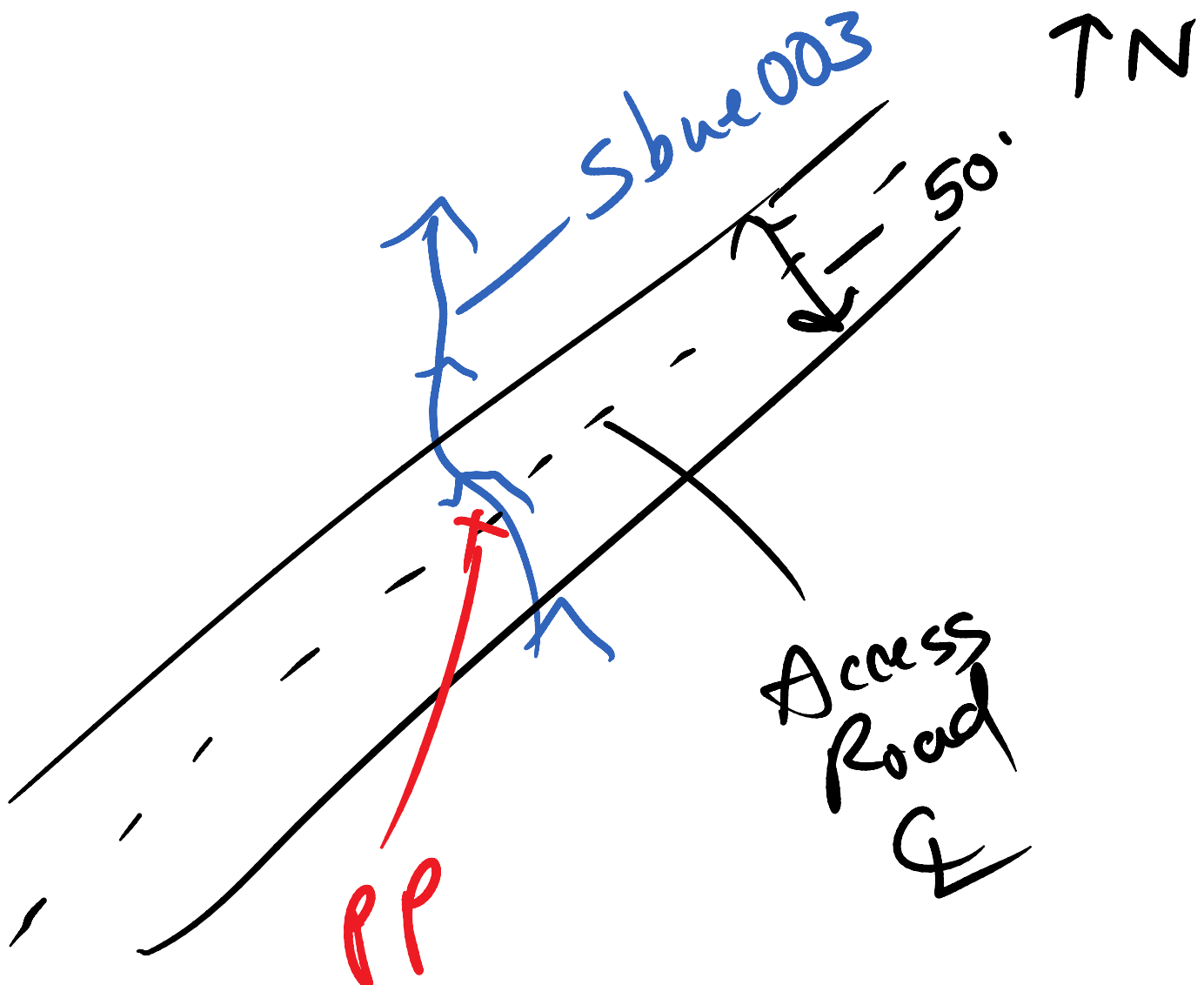
<sup>a</sup> **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat;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

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

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

**Notes:**

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







SBUE003 facing south upstream



SBUE003 facing north downstream





SBUE003 facing east across

# Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: UNNAMED TRIB TO NORTH RIVER	
Waterbody ID: SBUK003		Date: 7/18/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initials: RS, JS
Photos: 0039-0041			
Tract Number(s): 09-046		Nearest Milepost: 192	Associated Wetland ID(s): WBUK005E
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: _1_ ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: _5_ ft.		<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: _1_ ft.	Width of Waterbody - Toe of Slope to Toe of Slope: _5_ ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> _5_ ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> _25_ ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> _0_ fps N/A <input type="checkbox"/>	Bank height Right: _1_ ft. Left: _1_ ft.	Bank slope Right: _70_ degrees Left: _70_ degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> NA			
% of Substrate: <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>100</u> % <u>NA</u> % <u>NA</u> %			
Width of Riparian Zone: _20_ ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> <input type="checkbox"/> Trees: <input type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs		
Avg. DBH of Dominants: <i>(approx.)</i> ___ in.      ___ in.			
Dominant Bank Vegetation <i>(list)</i> : GRASSES, SEDGES, SCIRPUS			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA			
Aquatic Organisms Observed <i>(list)</i> : NA			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA			
Tributary is: <i>(check one)</i> <input type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

Waterbody ID:  
SBUK003

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

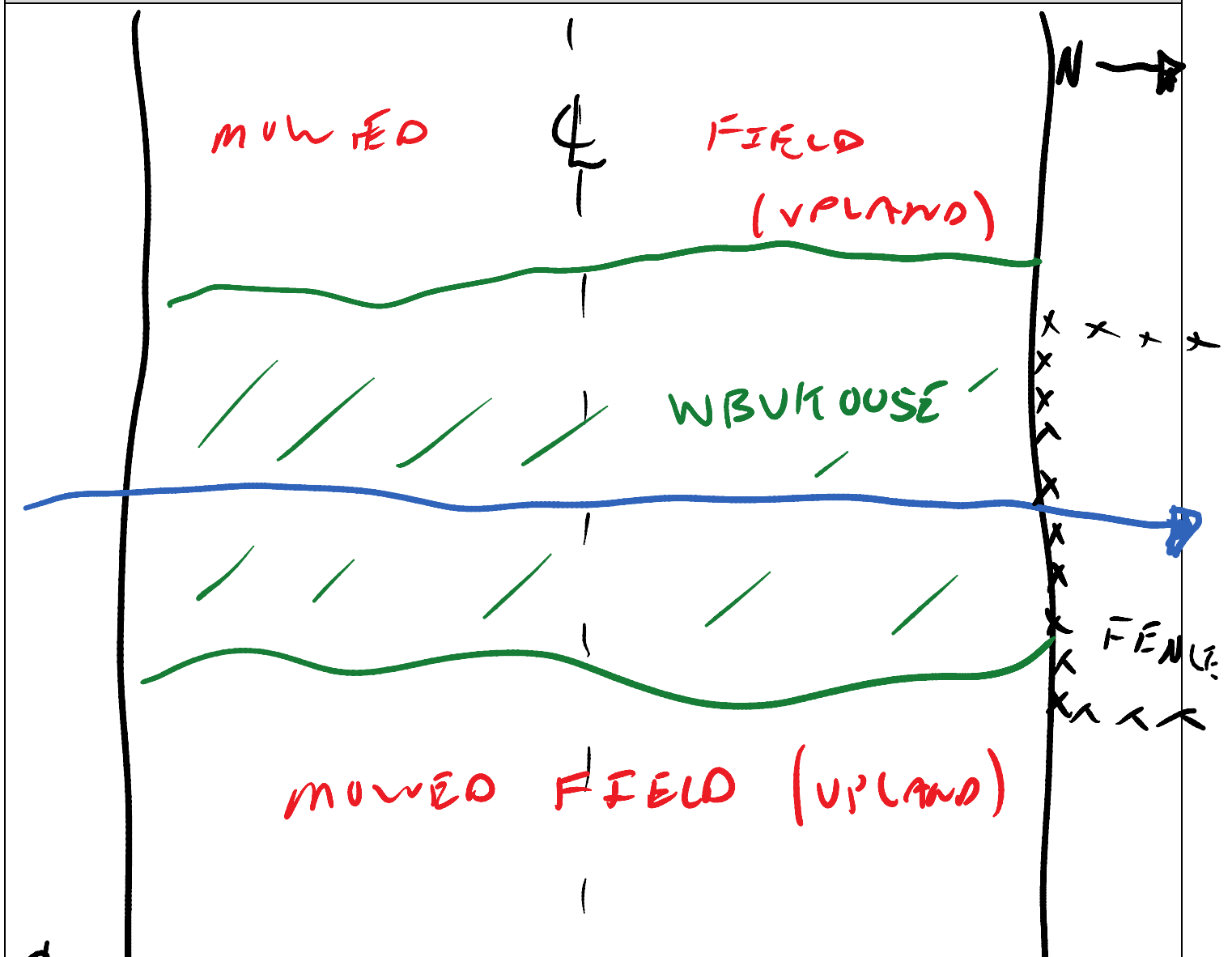
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

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

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







Waterbody point sbuk003 facing south and upstream



Waterbody point sbuk003 facing northwest and downstream



Waterbody point sbuk003 facing west and across

# Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: UNNAMED TRIB TO NORTH RIVER	
Waterbody ID: SBUK002		Date: 7/17/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initials: RS, JS
Photos: 0024-0026			
Tract Number(s): 09-047		Nearest Milepost: 192	Associated Wetland ID(s): WBUK003E
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: <u>  3  </u> ft.		OHWM Indicator: <i>(check all that apply)</i>	
OHWM Height: <u>  .75  </u> ft.		<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: <u>  5  </u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>  3  </u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> <u>  3  </u> ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> <u>  .25  </u> ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> <u>  0  </u> fps N/A <input type="checkbox"/>	Bank height Right: <u>  1-4  </u> ft. Left: <u>  1-4  </u> ft.	Bank slope Right: <u>  90  </u> degrees Left: <u>  80  </u> degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input checked="" type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> NA			
% of Substrate: <u>  NA  </u> % <u>  NA  </u> % <u>  NA  </u> % <u>  5  </u> % <u>  NA  </u> % <u>  95  </u> % <u>  NA  </u> % <u>  NA  </u> %			
Width of Riparian Zone: <u>  0  </u> ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs		
Avg. DBH of Dominants: <i>(approx.)</i> <u>  4  </u> in. <u>  2  </u> in.			
Dominant Bank Vegetation <i>(list)</i> : GRASSES, SEDGES			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): SMALL POOLS			
Aquatic Organisms Observed <i>(list)</i> : NA			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): LIVESTOCK ACCESS, MANURE			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			



Waterbody ID:

SBUK002

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

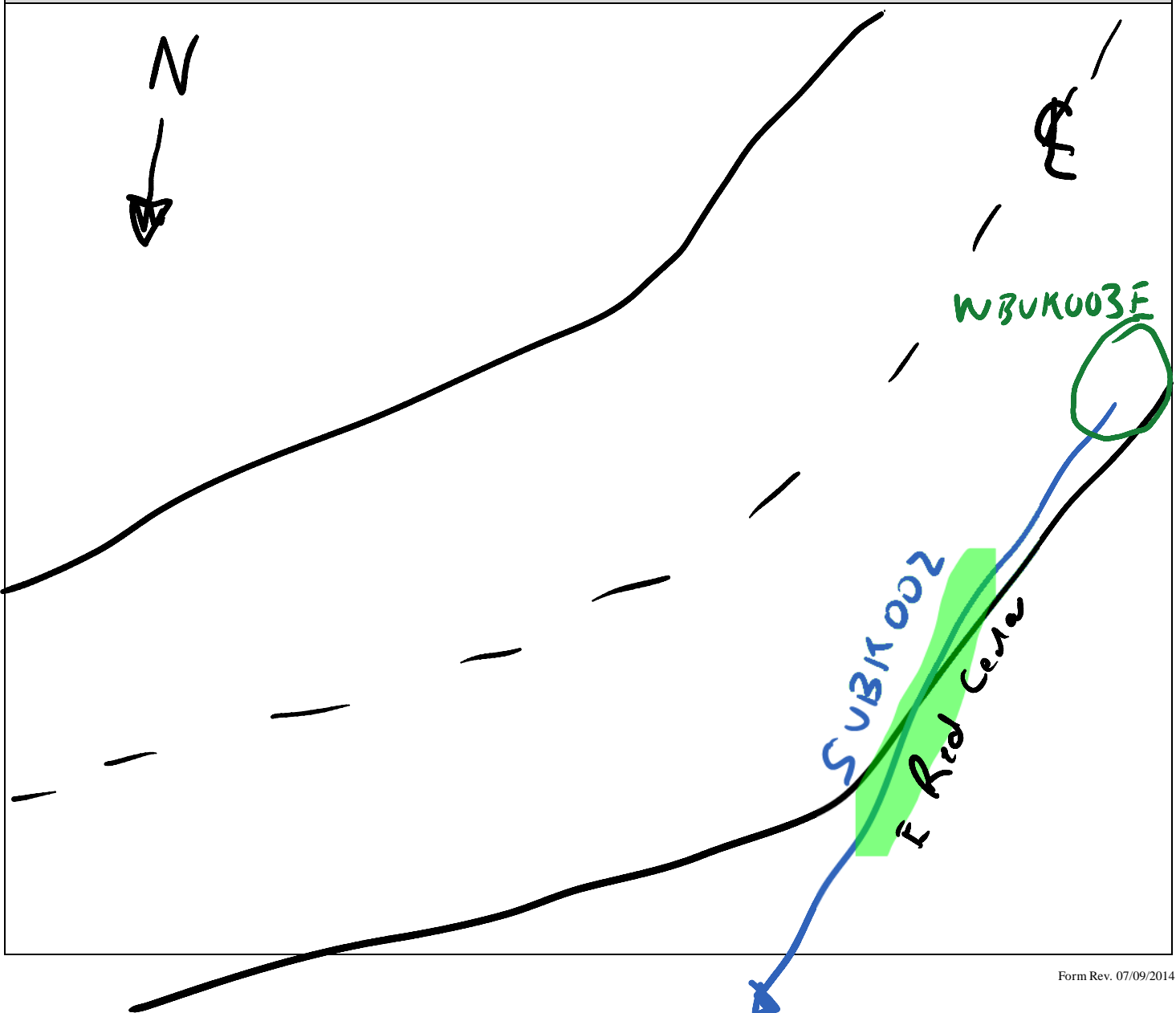
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

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

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





Waterbody point sbuk002 facing west and upstream



Waterbody point sbuk002 facing east and downstream



Waterbody point sbuk002 facing south and across



# Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: UNNAMED TRIB TO NORTH RIVER	
Waterbody ID: SBUK001		Date: 7/17/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initials: RS, JS
Photos: 0014-0016			
Tract Number(s): 09-047		Nearest Milepost: 192	Associated Wetland ID(s): WBUK002E
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: _ 2 _ ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: _ .5 _ ft.		<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: _ 4 _ ft.	Width of Waterbody - Toe of Slope to Toe of Slope: _ 2 _ ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> _ .5 _ ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> _ .25 _ ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> _ 0 _ fps N/A <input type="checkbox"/>	Bank height Right: _ 1-6 _ ft. Left: _ 1-6 _ ft.	Bank slope Right: _ 80 _ degrees Left: _ 80 _ degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input checked="" type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> NA			
% of Substrate: <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>5</u> % <u>NA</u> % <u>95</u> % <u>NA</u> % <u>NA</u> %			
Width of Riparian Zone: _ 0 _ ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs		
Avg. DBH of Dominants: <i>(approx.)</i> <u>4</u> in. <u>2</u> in.			
Dominant Bank Vegetation <i>(list)</i> : GRASSES, CHICORY			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): SMALL 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): LIVESTOCK ACCESS, MANURE			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

Waterbody ID:

SBUK001

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

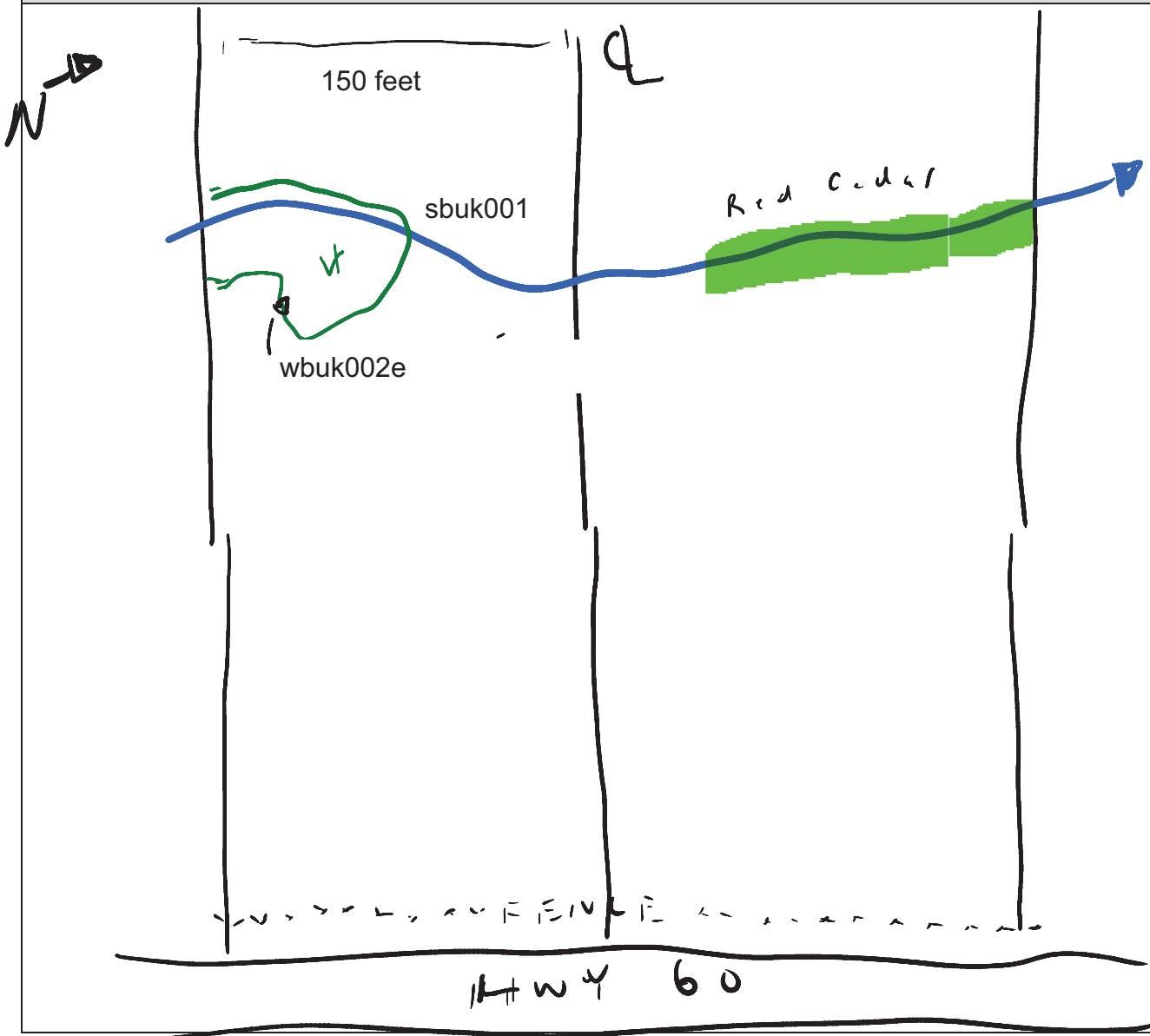
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

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

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





Waterbody point sbuk001 facing northeast and downstream



Waterbody point sbuk001 facing southwest and upstream





Waterbody point sbuk001 facing west and across



# Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: UNNAMED TRIB TO SLATE RIVER	
Waterbody ID: SBUK006		Date: 7/19/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initials: RS, JS
Photos: 001-003			
Tract Number(s): 09-048		Nearest Milepost: 193	Associated Wetland ID(s): NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: _1_ ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: _25_ ft.		<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: _1_ ft.	Width of Waterbody - Toe of Slope to Toe of Slope: _1_ ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/> ___ ft.	Depth of Water: <i>(Approx.)</i> N/A <input checked="" type="checkbox"/> ___ ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> ___ fps N/A <input checked="" type="checkbox"/>	Bank height Right: _25_ ft. Left: _25_ ft.	Bank slope Right: _10_ degrees Left: _10_ degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> NA			
% of Substrate: <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>90</u> % <u>10</u> % <u>NA</u> %			
Width of Riparian Zone: _100+ ft.	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs		
N/A <input type="checkbox"/>	Avg. DBH of Dominants: <i>(approx.)</i> <u>12</u> in. <u>1</u> in.		
Dominant Bank Vegetation <i>(list)</i> : CAREX SP., FRAXINUS SP., QUERCUS SP, MOSSES			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA			
Aquatic Organisms Observed <i>(list)</i> : NA			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

Waterbody ID:  
SBUK006

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

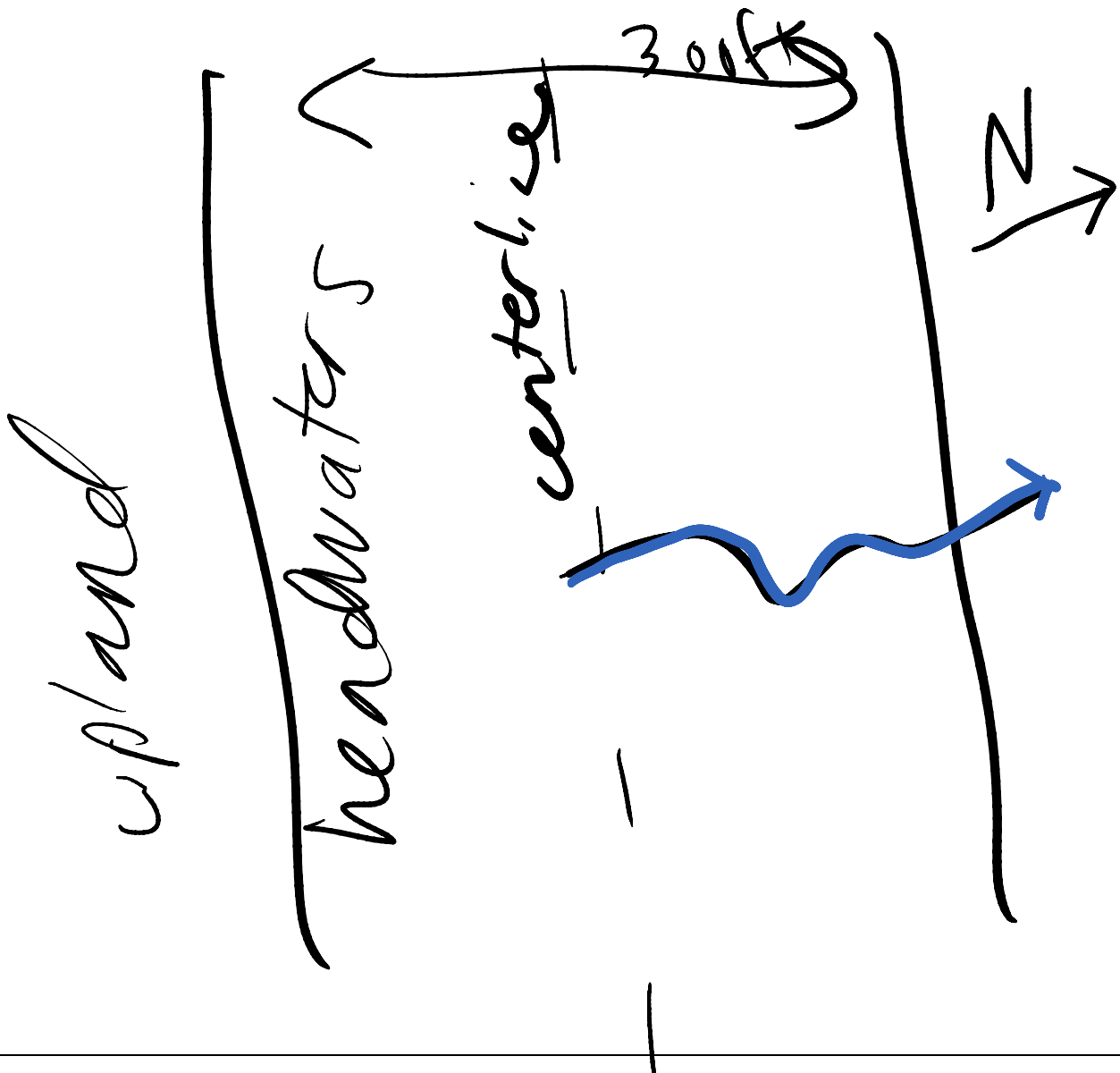
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

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

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





Waterbody point sbuk006 facing east and downstream



Waterbody point sbuk006 facing west and upstream



Waterbody point sbuk006 facing south and across



# Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slate River	
Waterbody ID: sbua004		Date: 10/22/2014	
State: Virginia	County: Buckingham	Company: NRG	Crew Member Initials: GB, TP
Photos: 3 photos			
Tract Number(s): 09-049; access road 39		Nearest Milepost: 194.2	Associated Wetland ID(s): Discontinuous fringe wetland
Survey Type: <i>(check one)</i> <input type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input checked="" type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: 4.0 ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: 1.0 ft.		<input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: 6.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 3.0 ft.	Width of Waterbody - Water Edge to Water Edge: 3.5 ft.	Depth of Water: <i>(Approx.)</i> 0.5 ft.
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> 0.75 fps	Bank height: Right: 3.0 ft. Left: 4.0 ft.
N/A <input type="checkbox"/>		Bank slope: Right: 90 degrees Left: 70 degrees	
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i>			
% of Substrate:      _____%      _____%      20%      10%      50%      20%      _____%      _____%			
Width of Riparian Zone: 60 ft.	Vegetative Layers: <i>(check all that apply)</i>		
N/A <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs		
Avg. DBH of Dominants: <i>(approx.)</i> 6.0 in.      1.0 in.			
Dominant Bank Vegetation <i>(list)</i> : Yellow poplar, alder, persimmon, juniper, sumac, dogwood, Japanese honeysuckle, black walnut, knotweed, fescue, foxtail, goldenrod, beech ticks, blackberry, ironweed, agrimony			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Pools, riffles			
Aquatic Organisms Observed <i>(list)</i> : minnow			
T&E Species Observed <i>(list)</i> : none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Culvert crossing for existing dirt two track			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>a</sup> : <i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

sbua004

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

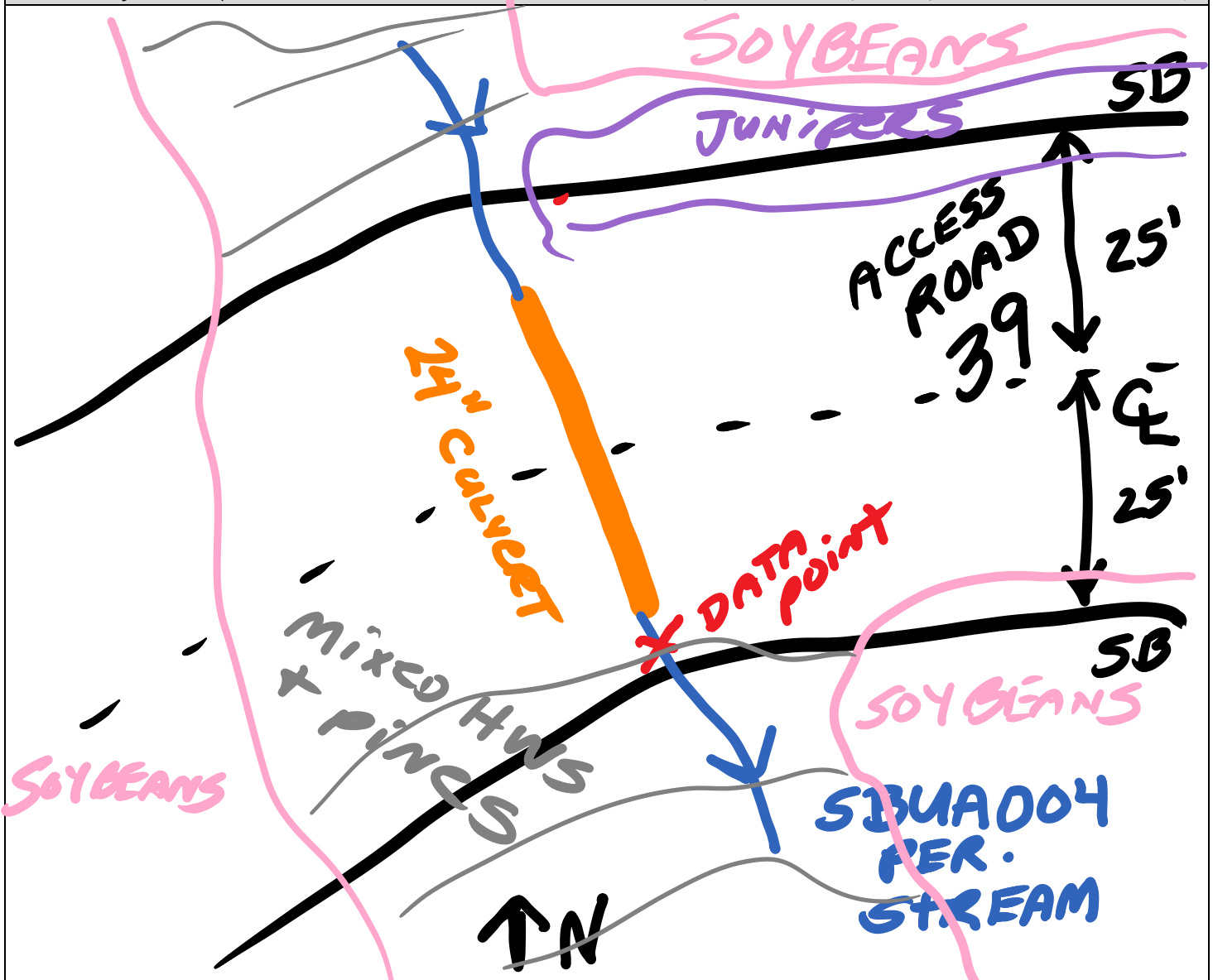
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

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

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





SBUA004 facing north upstream



SBUA004 facing south downstream





SBUA004 facing east across

# Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: UNNAMED TRIB TO SLATE RIVER	
Waterbody ID: SBUK007a		Date: 7/19/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initials: RS, JS
Photos: 004-009			
Tract Number(s): 09-051		Nearest Milepost: 193	Associated Wetland ID(s): NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: 5 ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: 2 ft.		<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: 7 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 6 ft.	Width of Waterbody - Water Edge to Water Edge: 1 ft.	Depth of Water: <i>(Approx.)</i> 5 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> ___ fps	Bank height Right: 4 ft. Left: 4 ft.
N/A <input type="checkbox"/>		N/A <input checked="" type="checkbox"/>	Bank slope Right: 80 degrees Left: 80 degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> NA			
% of Substrate:      NA %      NA %      NA %      20 %      20 %      60 %      NA %      NA %			
Width of Riparian Zone: ___ ft.		Vegetative Layers: <i>(check all that apply)</i>	
N/A <input checked="" type="checkbox"/>		<input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs	
Avg. DBH of Dominants: <i>(approx.)</i>		6 in.      1 in.	
Dominant Bank Vegetation <i>(list)</i> : HONEYSUCKLE, GRAPE, SUMAC, POPLAR			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA			
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): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

Waterbody ID:  
SBUK007a

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

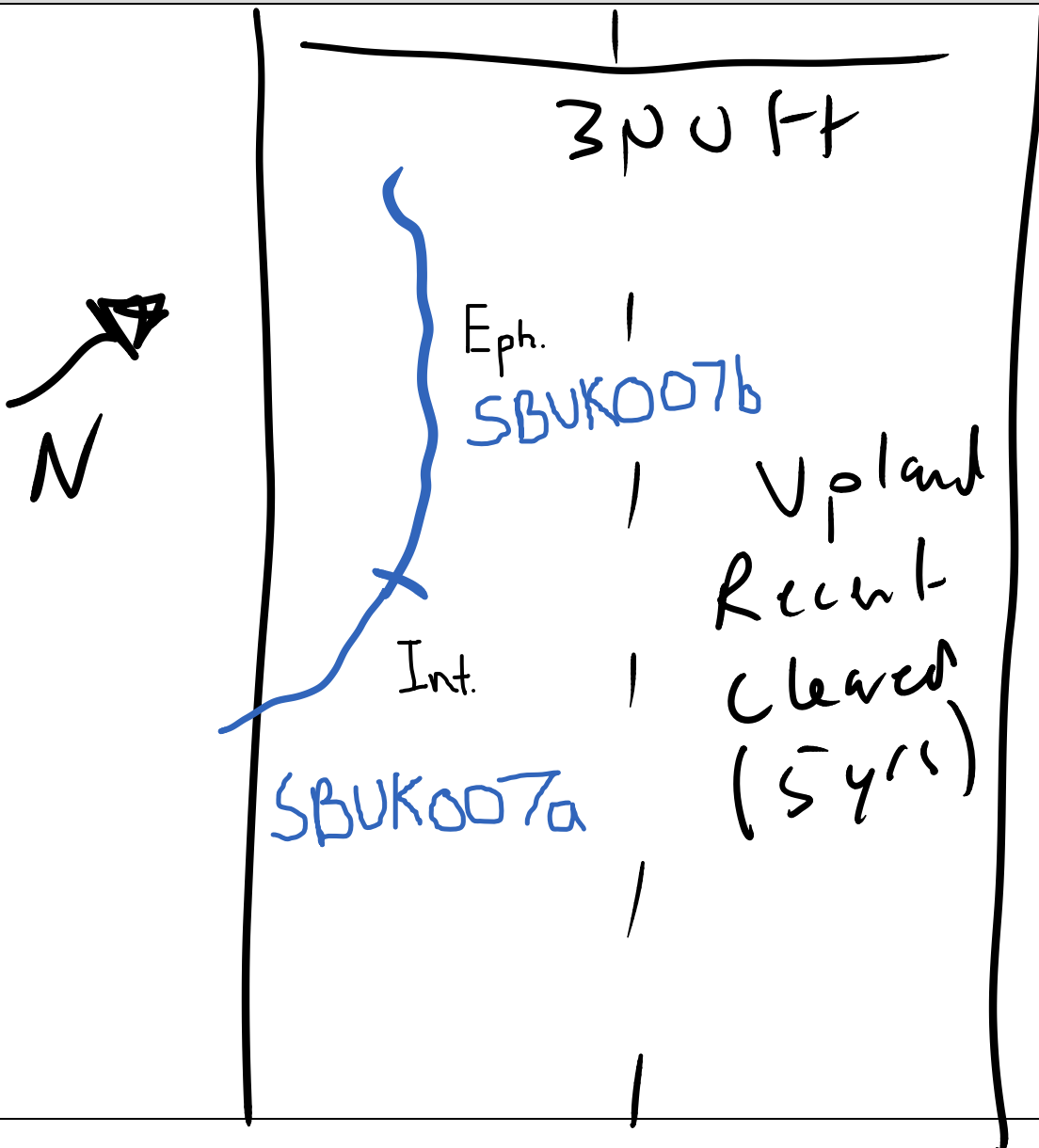
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

EPHEMERAL STREAM. SLASH PILES IN STREAM.

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







Waterbody point sbuk007a facing northeast and upstream



Waterbody point sbuk007a facing southwest and downstream



Waterbody point sbuk007a facing southeast and  
across

# Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: UNNAMED TRIB TO SLATE RIVER	
Waterbody ID: SBUK007b		Date: 7/19/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initials: RS, JS
Photos: 004-009			
Tract Number(s): 09-051		Nearest Milepost: 193	Associated Wetland ID(s): NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: 5 ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: 2 ft.		<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
N/A <input type="checkbox"/>			
Width of Waterbody - Top of Bank to Top of Bank: 7 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 6 ft.	Width of Waterbody - Water Edge to Water Edge: 1 ft.	Depth of Water: <i>(Approx.)</i> 5 ft.
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>	
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> ___ fps	
N/A <input type="checkbox"/>		N/A <input checked="" type="checkbox"/>	
Bank height Right: 4 ft. Left: 4 ft.		Bank slope Right: 80 degrees Left: 80 degrees	
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> NA			
% of Substrate:      NA %      NA %      NA %      20 %      20 %      60 %      NA %      NA %			
Width of Riparian Zone: ___ ft.		Vegetative Layers: <i>(check all that apply)</i>	
N/A <input checked="" type="checkbox"/>		<input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: <i>(approx.)</i> 6 in.      1 in.	
Dominant Bank Vegetation <i>(list)</i> : HONEYSUCKLE, GRAPE, SUMAC, POPLAR			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA			
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): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			



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

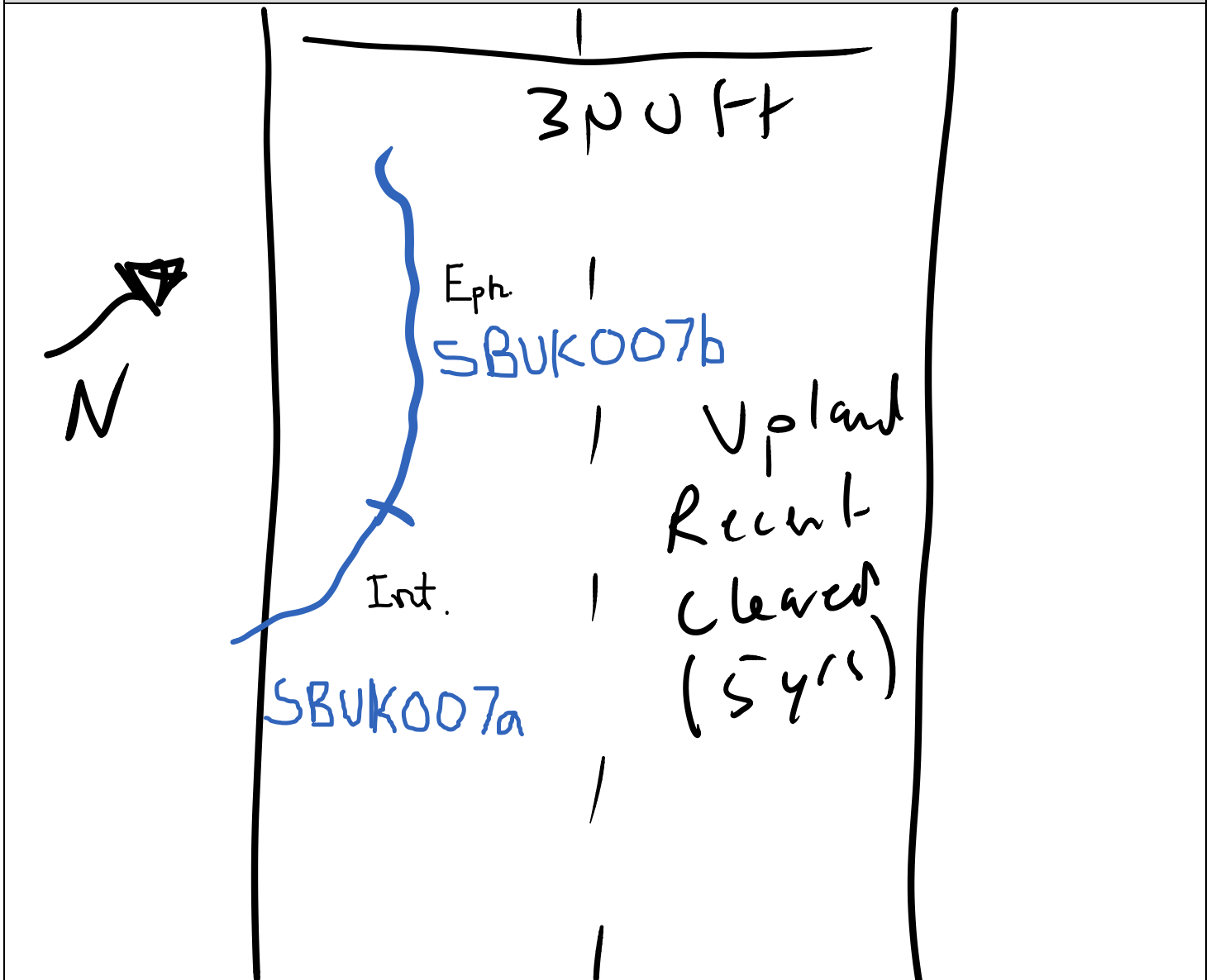
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

INTERMITTENT STREAM LOCATED DOWN CHANNEL FROM EPHEMERAL STREAM.

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





Waterbody point sbuk007a facing northeast and upstream



Waterbody point sbuk007a facing southwest and downstream



Waterbody point sbuk007a facing southeast and  
across



# Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: UNNAMED TRIB TO SLATE RIVER	
Waterbody ID: SBUK007a		Date: 7/19/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initials: RS, JS
Photos: 004-009			
Tract Number(s): 09-051		Nearest Milepost: 193	Associated Wetland ID(s): NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: 5 ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: 2 ft.		<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: 7 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 6 ft.	Width of Waterbody - Water Edge to Water Edge: 1 ft.	Depth of Water: <i>(Approx.)</i> 5 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> ___ fps	Bank height Right: 4 ft. Left: 4 ft.
N/A <input type="checkbox"/>		Bank slope Right: 80 degrees Left: 80 degrees	
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> NA			
% of Substrate:      NA %      NA %      NA %      20 %      20 %      60 %      NA %      NA %			
Width of Riparian Zone: ___ ft.		Vegetative Layers: <i>(check all that apply)</i>	
N/A <input type="checkbox"/>		<input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs	
Avg. DBH of Dominants: <i>(approx.)</i>		6 in.      1 in.	
Dominant Bank Vegetation <i>(list)</i> : HONEYSUCKLE, GRAPE, SUMAC, POPLAR			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA			
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): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

Waterbody ID:  
SBUK007a

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

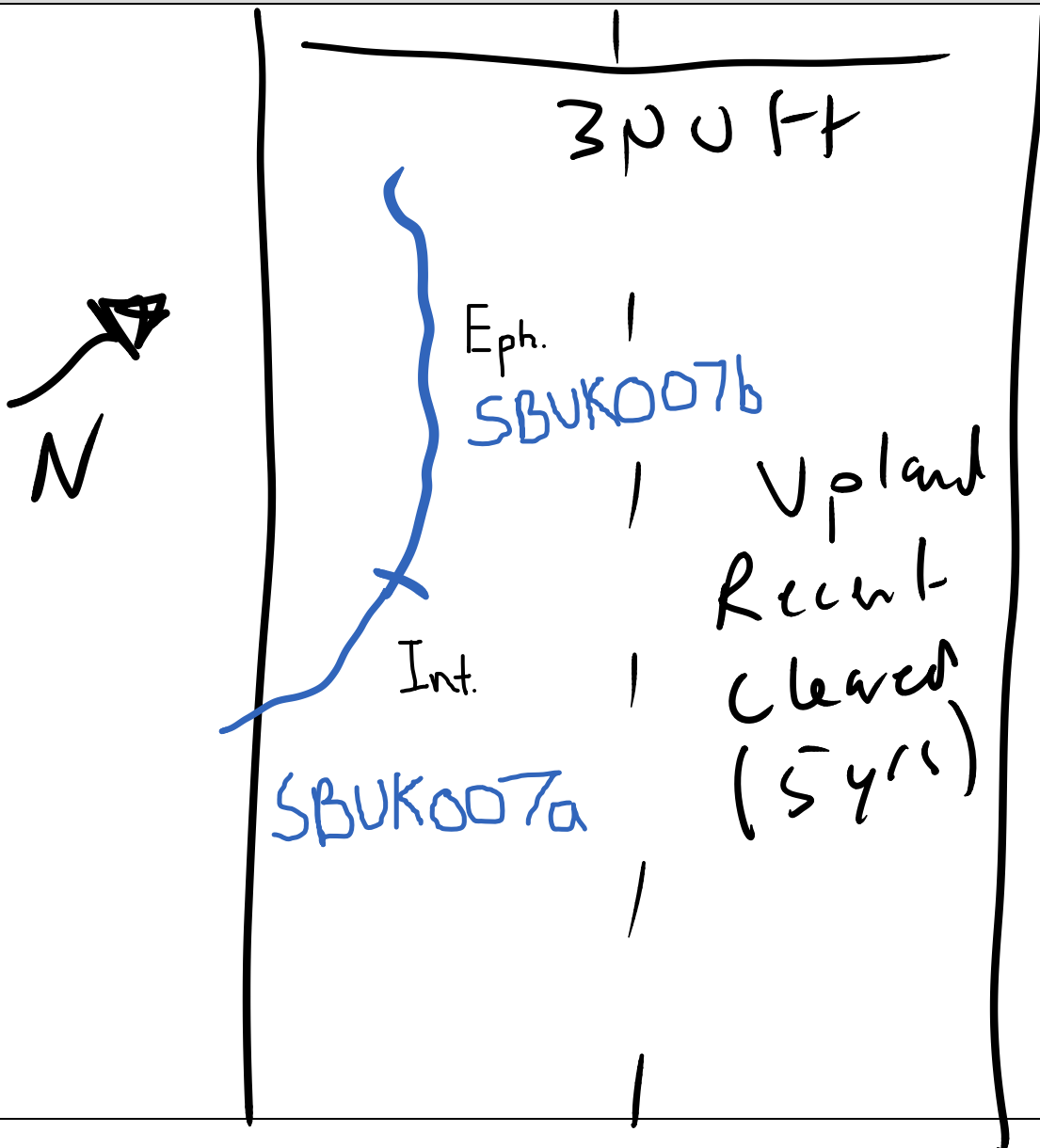
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

EPHEMERAL STREAM. SLASH PILES IN STREAM.

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





Waterbody point sbuk007a facing northeast and upstream



Waterbody point sbuk007a facing southwest and downstream





Waterbody point sbuk007a facing southeast and  
across

# Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: UNNAMED TRIB TO SLATE RIVER	
Waterbody ID: SBUK007b		Date: 7/19/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initials: RS, JS
Photos: 004-009			
Tract Number(s): 09-051		Nearest Milepost: 193	Associated Wetland ID(s): NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: 5 ft.		OHWM Indicator: <i>(check all that apply)</i>	
OHWM Height: 2 ft.		<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
N/A <input type="checkbox"/>			
Width of Waterbody - Top of Bank to Top of Bank: 7 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 6 ft.	Width of Waterbody - Water Edge to Water Edge: 1 ft.	Depth of Water: <i>(Approx.)</i> 5 ft.
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>	
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> ___ fps	
N/A <input type="checkbox"/>		N/A <input checked="" type="checkbox"/>	
Bank height Right: 4 ft. Left: 4 ft.		Bank slope Right: 80 degrees Left: 80 degrees	
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> NA			
% of Substrate:      NA %      NA %      NA %      20 %      20 %      60 %      NA %      NA %			
Width of Riparian Zone: ___ ft.		Vegetative Layers: <i>(check all that apply)</i>	
N/A <input checked="" type="checkbox"/>		<input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: <i>(approx.)</i> 6 in.      1 in.	
Dominant Bank Vegetation <i>(list)</i> : HONEYSUCKLE, GRAPE, SUMAC, POPLAR			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA			
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): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

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

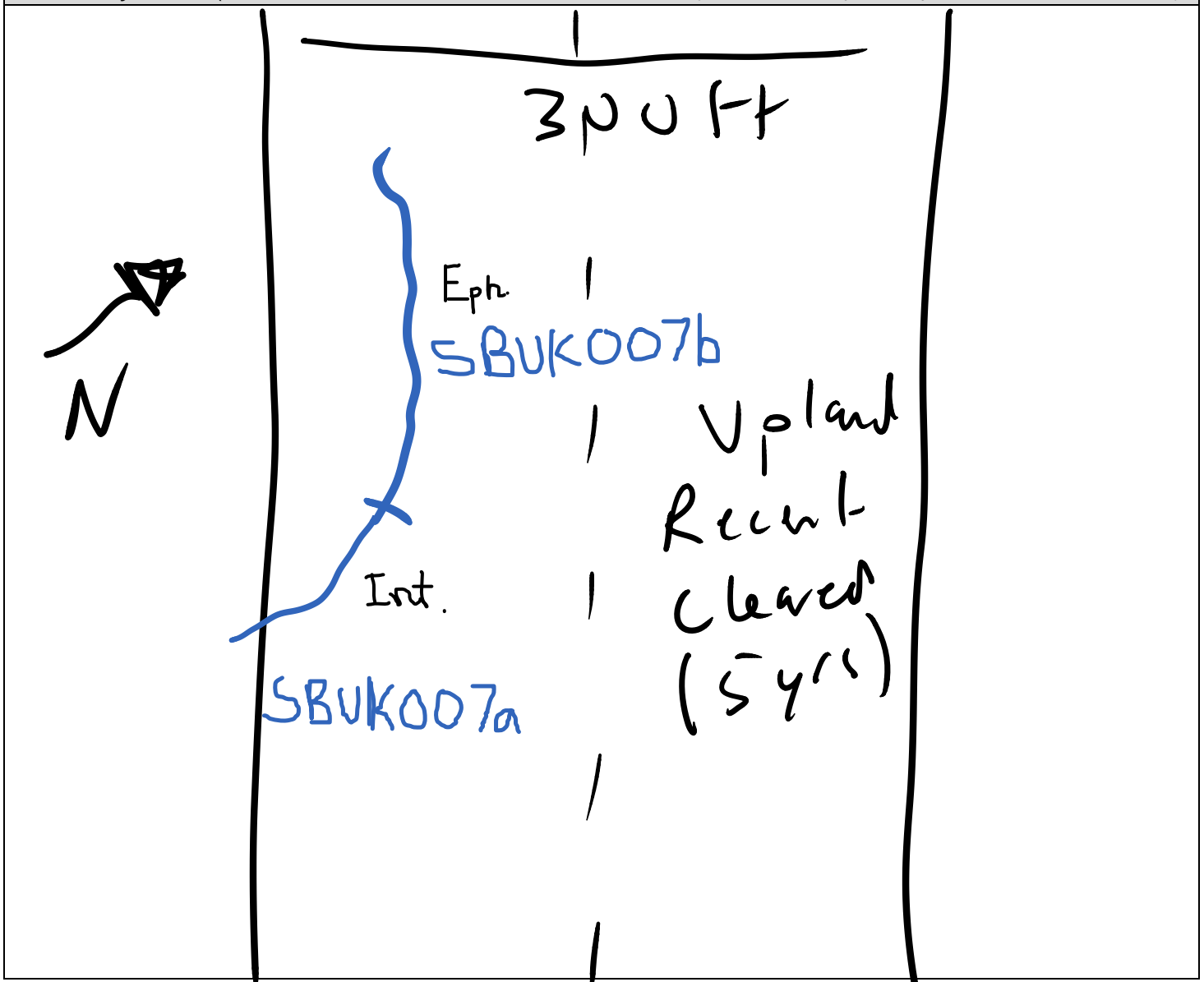
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

INTERMITTENT STREAM LOCATED DOWN CHANNEL FROM EPHEMERAL STREAM.

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







Waterbody point sbuk007a facing northeast and upstream



Waterbody point sbuk007a facing southwest and downstream



Waterbody point sbuk007a facing southeast and  
across

# Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: UNNAMED TRIB TO SLATE RIVER	
Waterbody ID: SBUK008		Date: 7/19/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initials: RS, JS
Photos: 0010-0012			
Tract Number(s): 09-051		Nearest Milepost: 193	Associated Wetland ID(s): NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: _ 1 ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: _ .5 ft.		<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: _ 8 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: _ 2 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/> ___ ft.	Depth of Water: <i>(Approx.)</i> N/A <input checked="" type="checkbox"/> ___ ft.
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> ___ fps N/A <input checked="" type="checkbox"/>	Bank height Right: _ 4 ft. Left: _ 5 ft.	Bank slope Right: _ 60 degrees Left: _ 60 degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> NA			
% of Substrate: <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>20</u> % <u>20</u> % <u>60</u> % <u>NA</u> % <u>NA</u> %			
Width of Riparian Zone: _ 25 ft.	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs		
N/A <input type="checkbox"/>	Avg. DBH of Dominants: <i>(approx.)</i> <u>10</u> in. <u>1</u> in.		
Dominant Bank Vegetation <i>(list)</i> : BLACK GUM, EASTERN RED CEDAR, MUSCLE WOOD, JAPANESE HONEYSUCKLE, VIRGINIA CREEPER, CHRISTMAS FERN			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA			
Aquatic Organisms Observed <i>(list)</i> : NA			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			



Waterbody ID:

SBUK008

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

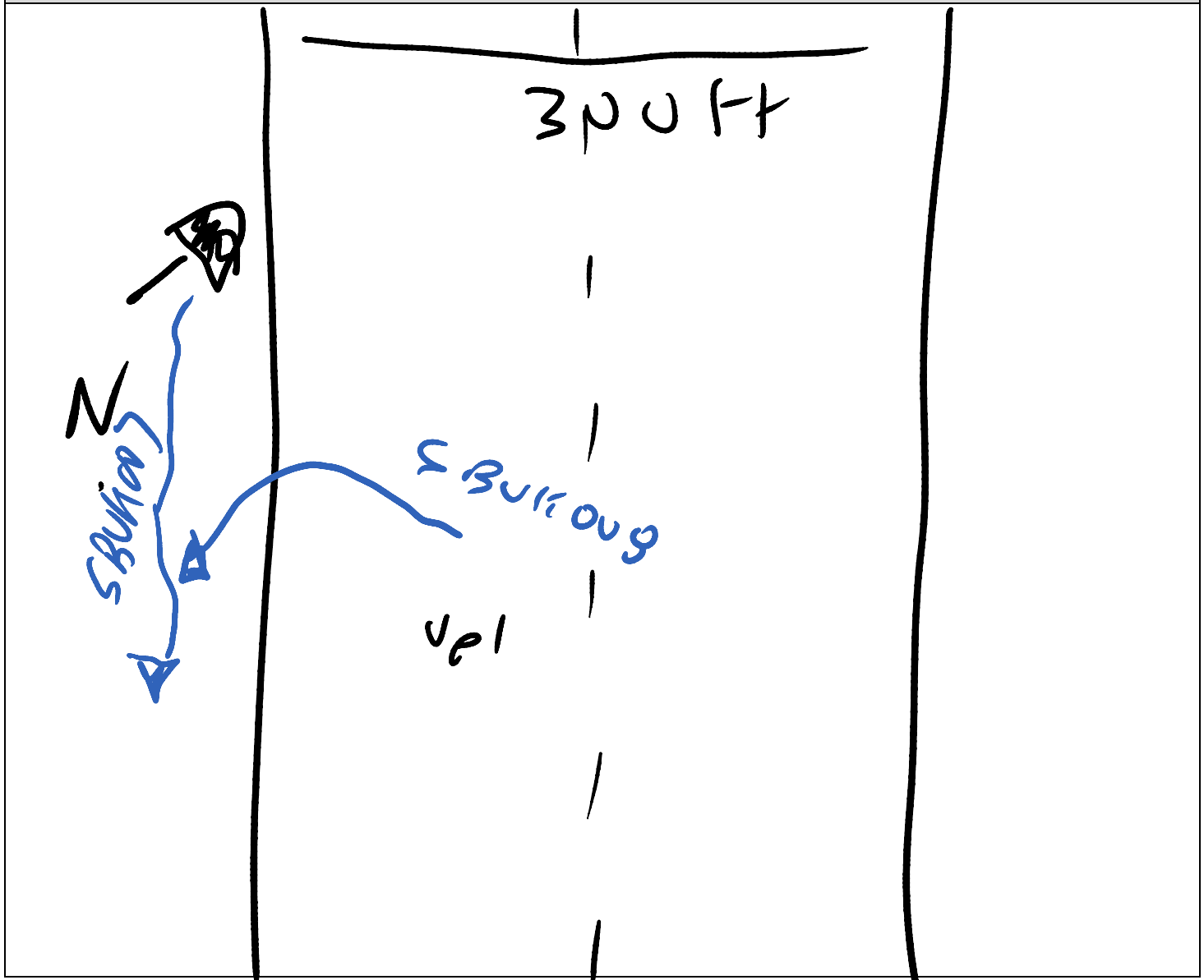
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

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

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





Waterbody point sbuk008 facing south and downstream



Waterbody point sbuk008 facing north and upstream



Waterbody point sbuk008 facing west and across



# Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: UNNAMED TRIB TO SLATE RIVER	
Waterbody ID: SBUK009		Date: 7/19/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initials: RS, JS
Photos: 0013-0015			
Tract Number(s): 09-051		Nearest Milepost: 193	Associated Wetland ID(s): NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: 8 ft.		OHWM Indicator: <i>(check all that apply)</i>	
OHWM Height: 1 ft.		<input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: 10 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 9 ft.	Width of Waterbody - Water Edge to Water Edge: 8 ft.	Depth of Water: <i>(Approx.)</i> 1 ft.
N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> 1 fps	
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>	
Bank height Right: 2 ft. Left: 3 ft.		Bank slope Right: 70 degrees Left: 80 degrees	
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> NA			
% of Substrate:      NA %      20 %      30 %      20 %      20 %      10 %      NA %      NA %			
Width of Riparian Zone: 25 ft.		Vegetative Layers: <i>(check all that apply)</i>	
N/A <input type="checkbox"/>		<input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs	
Avg. DBH of Dominants: <i>(approx.)</i>		12 in.      2 in.	
Dominant Bank Vegetation <i>(list)</i> : GRASSES, PERSICARIA SPP., CHRISTMAS FERN, MUSCLE WOOD, MOSS			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): RIFFLE/POOL COMPLEXES, OVERHANGING BANKS AND ROOTS, BOULDERS, DEBRIS			
Aquatic Organisms Observed <i>(list)</i> : EBONY JEWELWING, FISH, FROGS, WATER STRIDERS, MAYFLY, CRAYFISH,			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

Waterbody ID:  
SBUK009

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

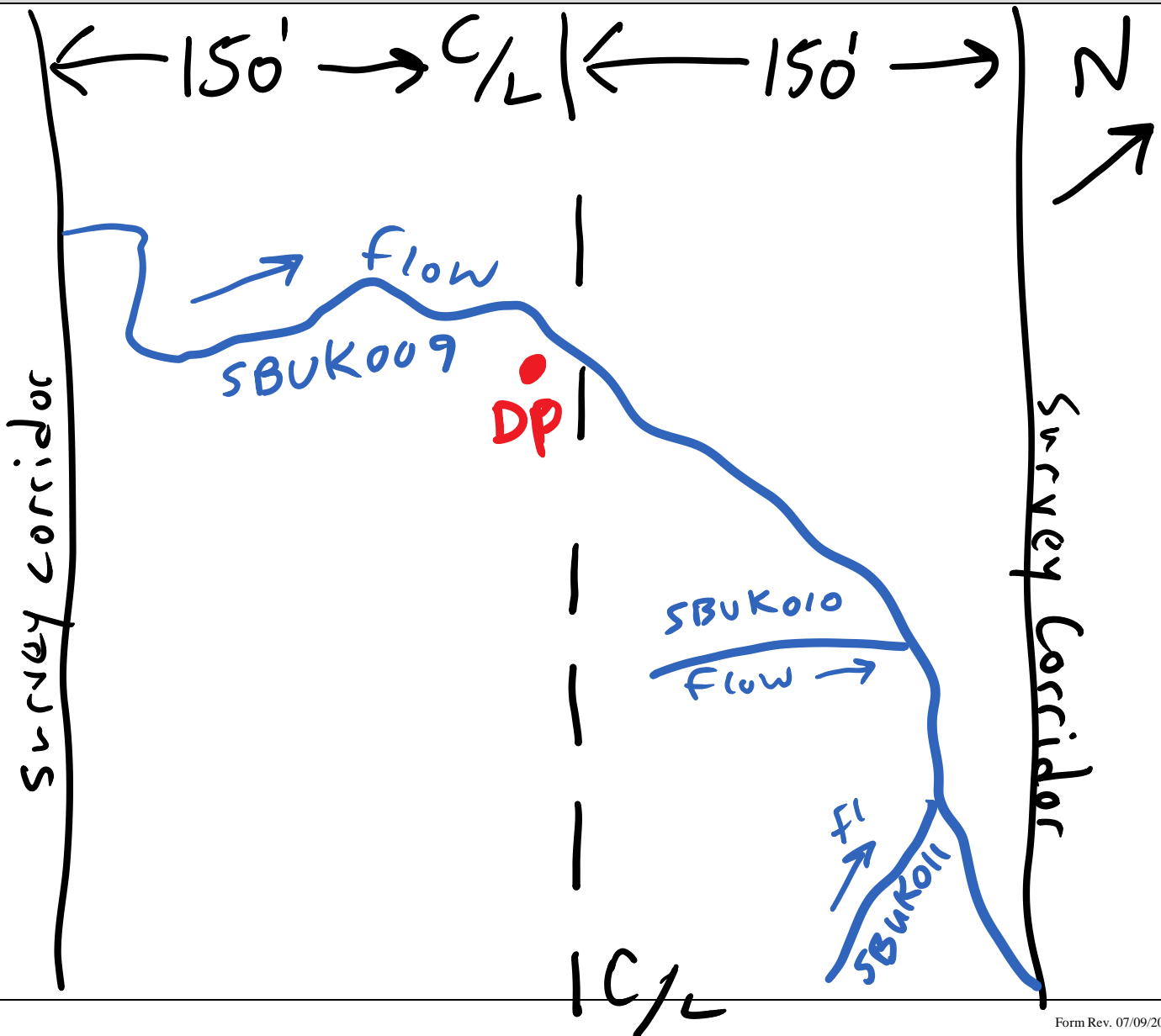
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

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

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





Waterbody point sbuk009 facing southwest and downstream



Waterbody point sbuk009 facing northeast and upstream





Waterbody point sbuk009 facing northwest and  
across

# Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: UNNAMED TRIB TO SLATE RIVER	
Waterbody ID: SBUK0010		Date: 7/19/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initials: RS, JS
Photos: NO PHOTOS			
Tract Number(s): 09-051		Nearest Milepost: 193	Associated Wetland ID(s): NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: _1_ ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: _5_ ft.		<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: _2_ ft.	Width of Waterbody - Toe of Slope to Toe of Slope: _1_ ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/> ___ ft.	Depth of Water: <i>(Approx.)</i> N/A <input checked="" type="checkbox"/> ___ ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> ___ fps N/A <input checked="" type="checkbox"/>	Bank height Right: _1_ ft. Left: _1_ ft.	Bank slope Right: _30_ degrees Left: _30_ degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> NA			
% of Substrate: <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>80</u> % <u>20</u> % <u>NA</u> %			
Width of Riparian Zone: _10_ ft.	Vegetative Layers: <i>(check all that apply)</i>		
N/A <input type="checkbox"/>	<input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs		
Avg. DBH of Dominants: <i>(approx.)</i> <u>6</u> in. <u>1</u> in.			
Dominant Bank Vegetation <i>(list)</i> : BLACK GUM, QUERCUS SPP., CAREX SPP., CHRISTMAS FERN, DEER TONGUE GRASS,			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA			
Aquatic Organisms Observed <i>(list)</i> : NA			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

Waterbody ID:  
SBUK010

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

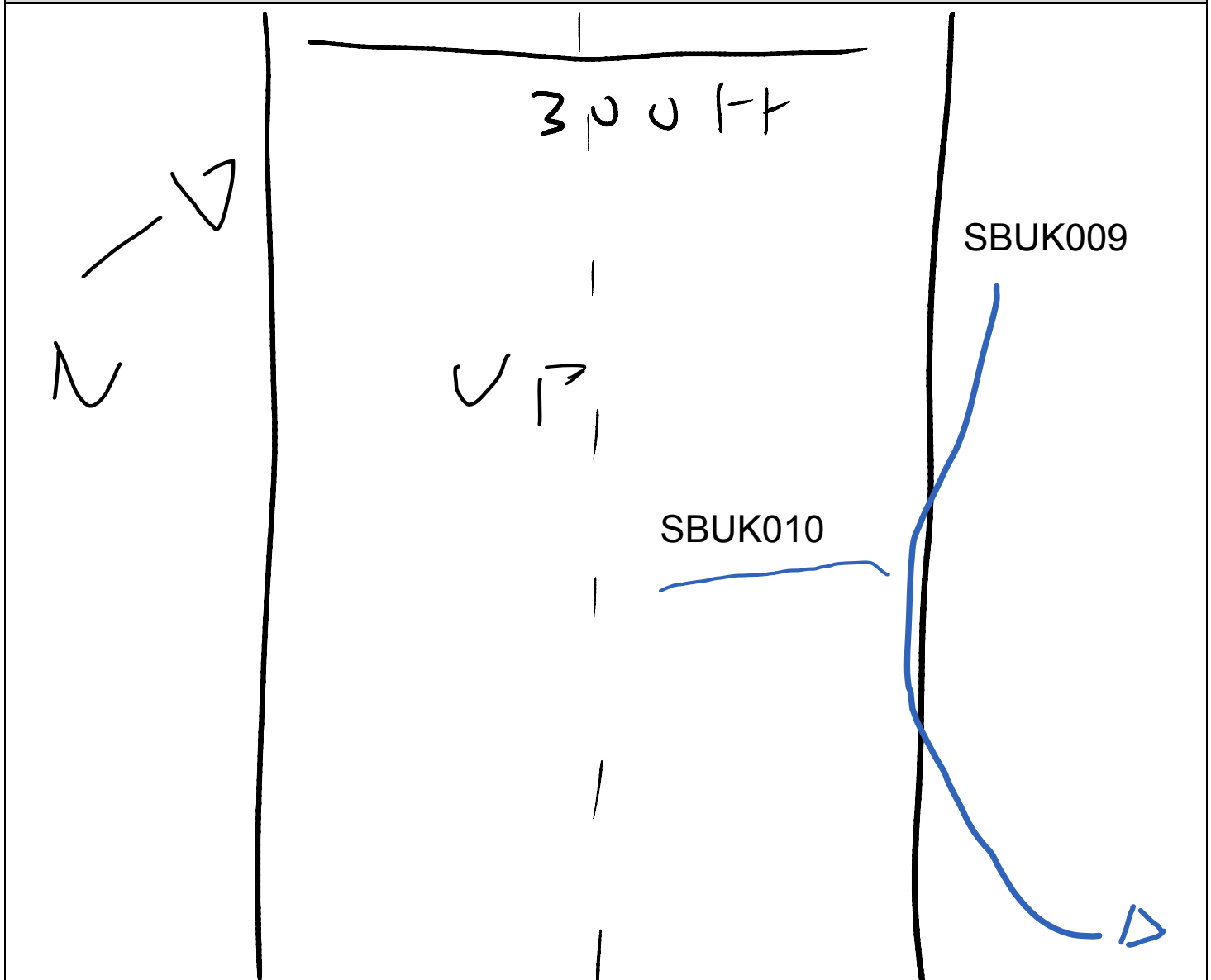
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

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

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





# Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: UNNAMED TRIBUTARY TO SLATE RIVER	
Waterbody ID: SBUK011		Date: 7/19/2014	
State: Virginia	County: BUCKINGHAM	Company: WOODARD & CURRAN	Crew Member Initials: R.S., J.S.
Photos: 0016-0018			
Tract Number(s): 09-052		Nearest Milepost: 194	Associated Wetland ID(s): WBUK007E
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: _1_ ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: _25_ ft.		<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: _1.0_ ft.	Width of Waterbody - Toe of Slope to Toe of Slope: _1.0_ ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/> _____ ft.	Depth of Water: <i>(Approx.)</i> N/A <input checked="" type="checkbox"/> _____ ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> _____ fps N/A <input checked="" type="checkbox"/>	Bank height Right: _1.0_ ft. Left: _1.0_ ft.	Bank slope Right: _80_ degrees Left: _80_ degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i>			
% of Substrate: <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: _NA_ %      _NA_ %      _NA_ %      _NA_ %      _NA_ %      _70_ %      _30_ %      _NA_ %			
Width of Riparian Zone: _10_ ft.	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs		
N/A <input type="checkbox"/>	Avg. DBH of Dominants: <i>(approx.)</i> _15_ in.      _1_ in.		
Dominant Bank Vegetation <i>(list)</i> : Christmas Fern, Sedges, Geranium sp., Acer rubrum, Liriodendron tulipifera, Carpinus caroliniana			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA			
Aquatic Organisms Observed <i>(list)</i> : NA			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Logging			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>3</sup> : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

Waterbody ID:  
SBUK011

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

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

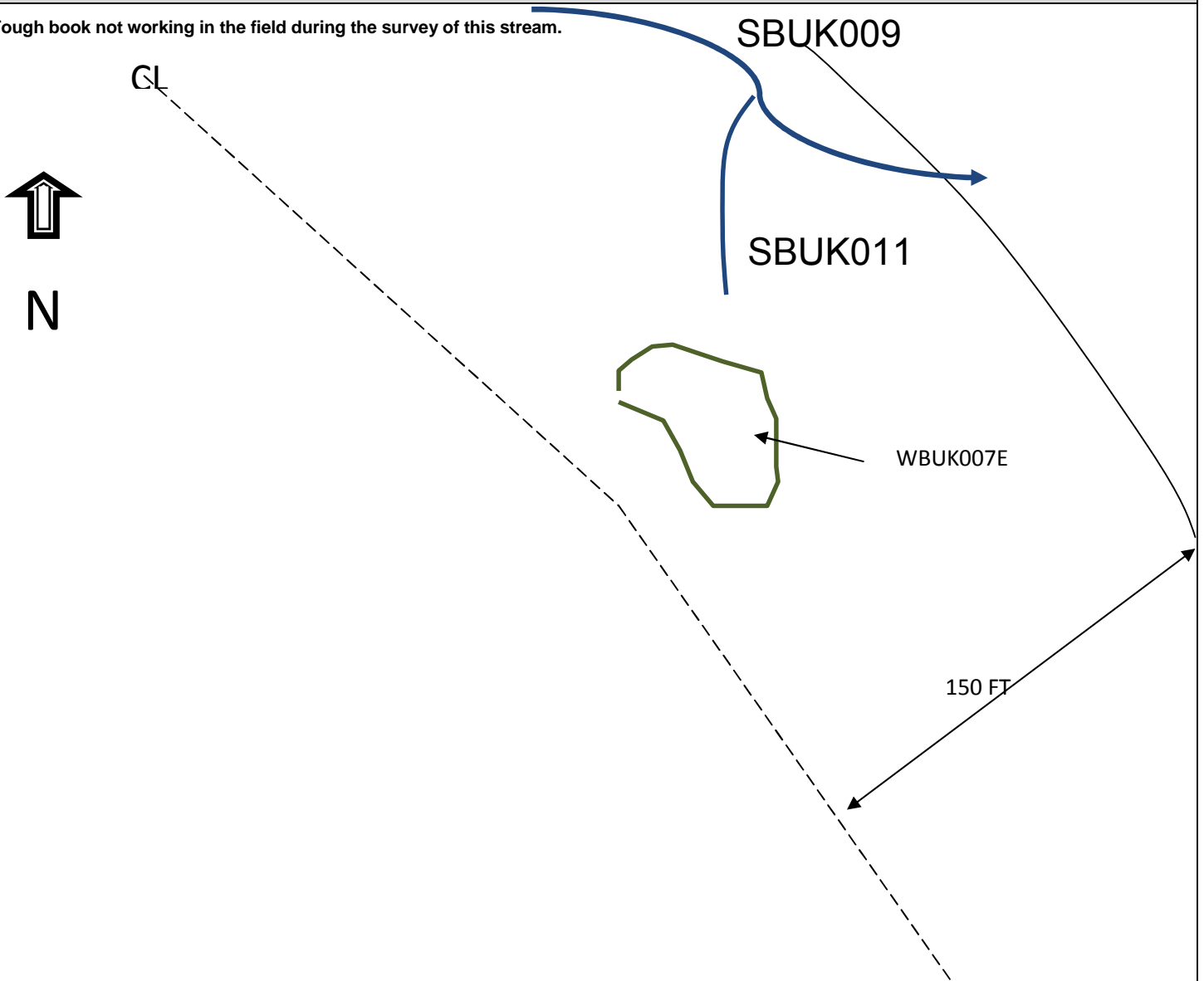
**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious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

**Notes:**

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

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

Tough book not working in the field during the survey of this stream.





Waterbody point sbuk011 facing north and downstream



Waterbody point sbuk011 facing south and upstream





Waterbody point sbuk011 facing west and across

# Linear Waterbody Data Sheet

Survey Description				
Project Name: Southeast Reliability		Waterbody Name: Slate River		Waterbody ID: SBUK012
State: Virginia		County: Buckingham	Company: W&C	Crew Member Initials: JS, WM, RS
Date: 7/21/2014		Photos: 100-0089 TO 100-0091		
Tract Number(s): 09-053		Nearest Milepost: 94		Associated Wetland ID(s): WBUK008E
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>19</u> ft. Height: <u>3.5</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>25</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>18</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> <u>12</u> ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> <u>2</u> ft.	
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> <u>0.42</u> fps N/A <input type="checkbox"/>	Bank height Right: <u>10</u> ft. Left: <u>7</u> ft.	Bank slope Right: <u>45</u> degrees Left: <u>50</u> degrees	
Qualitative Attributes				
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <i>(check all that apply)</i> % of Substrate: <u>NA</u> % <u>NA</u> %      <u>NA</u> % <u>20</u> % <u>40</u> % <u>40</u> % <u>NA</u> % <u>NA</u> %				
Width of Riparian Zone: <u>&gt;100</u> ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> Avg. DBH of Dominants: <i>(approx.)</i> <u>12</u> in. <u>2.5</u> in.			
Dominant Bank Vegetation <i>(list)</i> : PANICUM SPP., SYCAMORE, PAW PAW, BOX ELDER, BOEHMERIA				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): CWD, RIFFLE/POOL COMPLEX, OVERHANGING BANKS AND VEG, ROOT MATS, DEEP POOLS, LEAF PACK				
Aquatic Organisms Observed <i>(list)</i> : TURTLE, WATER STRIDER, FISH, ASIATIC CLAM, EPT				
T&E Species Observed <i>(list)</i> : NA				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): LOGGING ON RIGHT BANK				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality <sup>a</sup> : <i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:

sbuk012

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

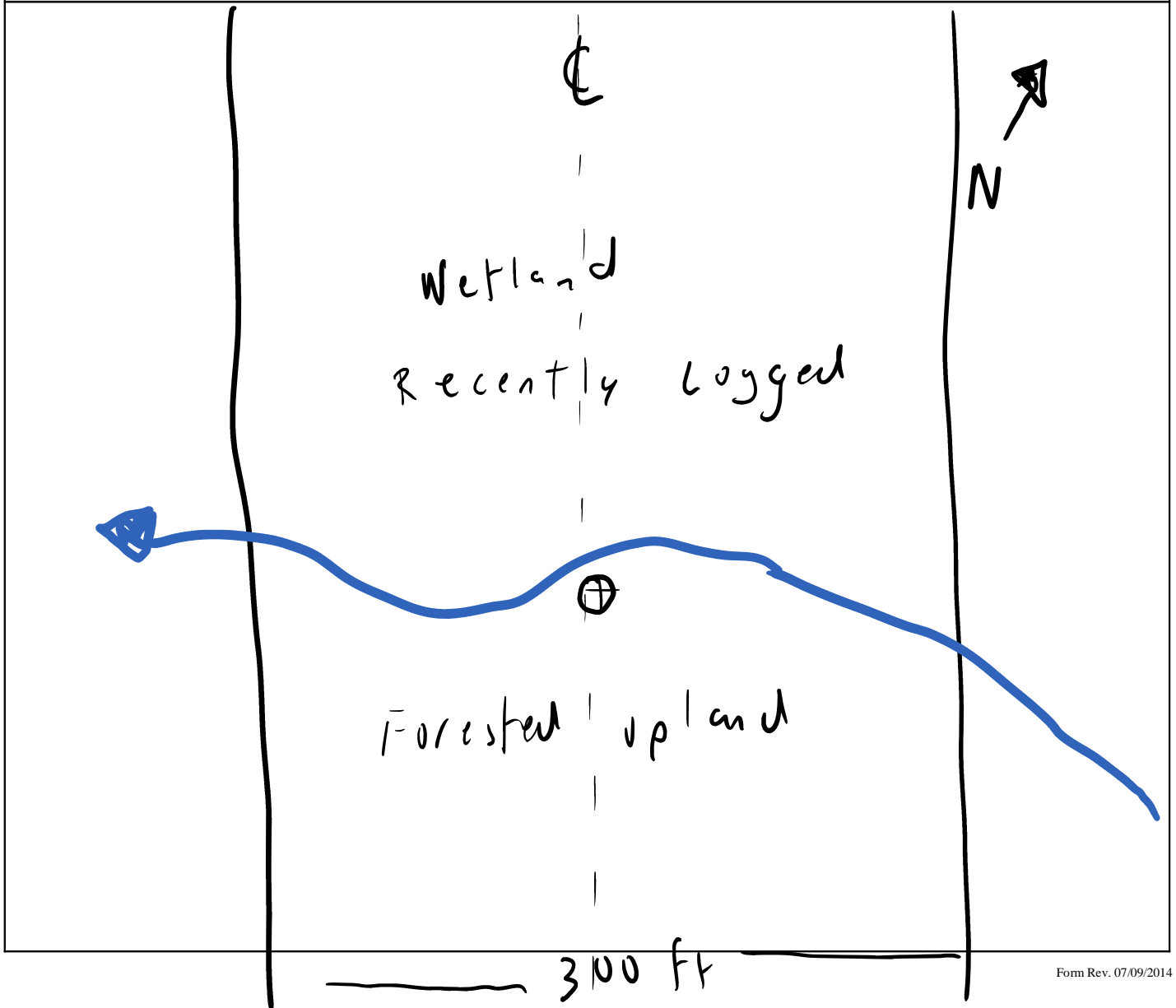
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

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

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







Waterbody point sbuk012 facing across



Waterbody point sbuk012 facing upstream



Waterbody point sbuk012 facing downstream

# Linear Waterbody Data Sheet

Survey Description				
Project Name: Southeast Reliability		Waterbody Name: Unnamed Tributary to Slate River		Waterbody ID: sbuk013
State: Virginia		County: Buckingham	Company: W&C	Date: 7/21/2014
Tract Number(s): 09-055		Nearest Milepost: 194		Photos: 100-0110 to 0112
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial				
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>1</u> ft. Height: <u>0.5</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>6</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>2</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/> _____ ft.	Depth of Water: <i>(Approx.)</i> _____ ft.	
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> _____ fps N/A <input checked="" type="checkbox"/>	Bank height Right: <u>3</u> ft. Left: <u>3</u> ft.	Bank slope Right: <u>65</u> degrees Left: <u>65</u> degrees	
Qualitative Attributes				
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <i>(check all that apply)</i> % of Substrate: <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>10</u> % <u>60</u> % <u>30</u> % <u>NA</u> % <u>NA</u> %				
Width of Riparian Zone: <u>&gt;100</u> ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: <i>(approx.)</i> <u>8</u> in. <u>2</u> in.			
Dominant Bank Vegetation <i>(list)</i> :  				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): XMAS FERN, BLACK HAW, BEECH, MICROSTEGIUM, TULIP POPLAR, DOGWOOD				
Aquatic Organisms Observed <i>(list)</i> : N/A				
T&E Species Observed <i>(list)</i> : N/A				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NEARBY CLEARCUT IN RIPARIAN ZONE				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality <sup>a</sup> : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low				



Waterbody ID:

sbuk013

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

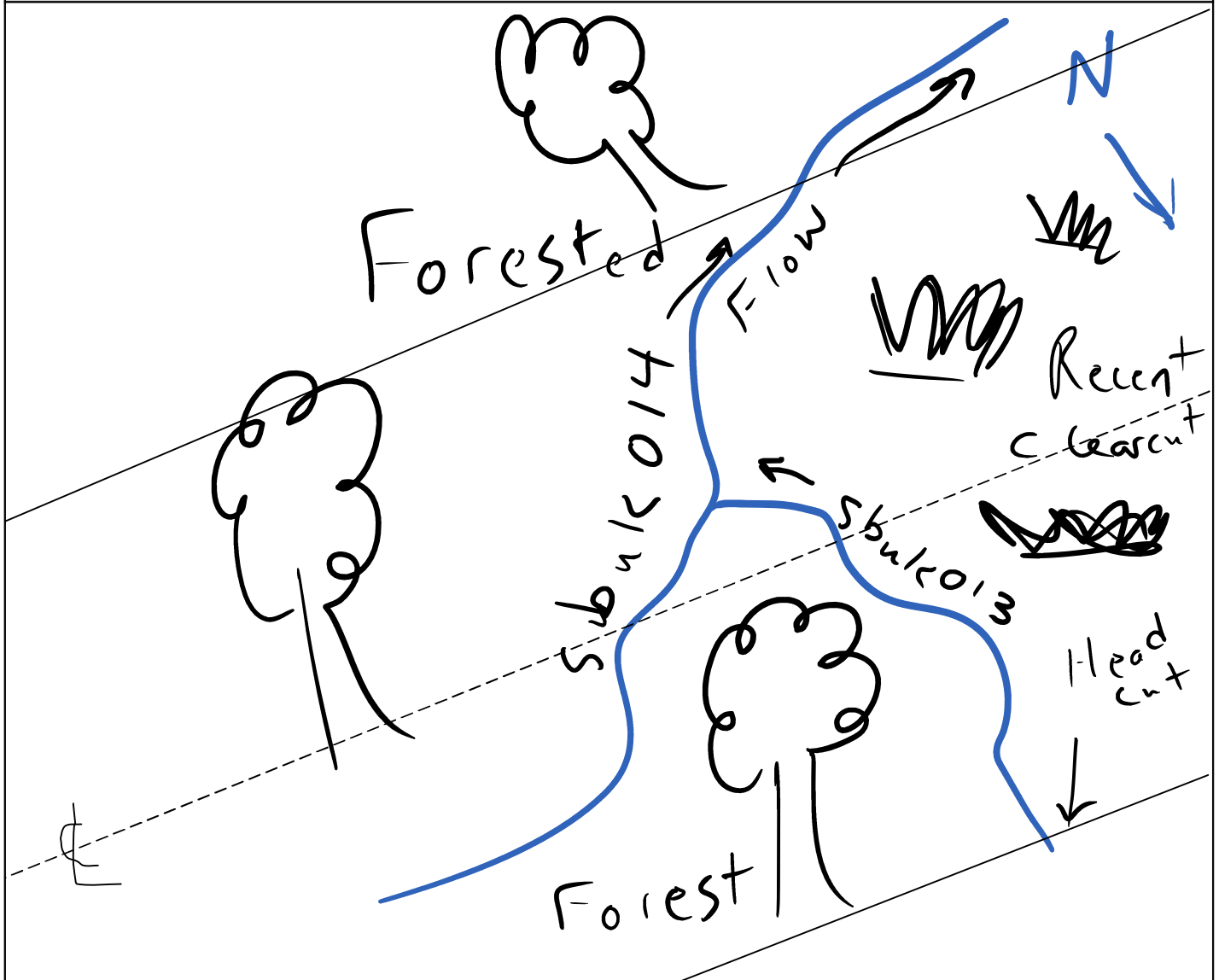
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

20 FT LENGTH OF EPHEMERAL CHANNEL THAT FLOWS INTO SBUK014

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







Waterbody data point sbuk013 facing upstream



Waterbody data point sbuk013 facing downstream





Waterbody data point sbuk013 facing across

# Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: Unnamed Tributary to Slate River	
Waterbody ID: sbuk014		Date: 7/21/2014	
State: Virginia	County: Buckingham	Company: W&C	Crew Member Initials: JS, WM, RS
Photos: 100-0113 TO 0115			
Tract Number(s): 09-055 AND 056		Nearest Milepost: 194	Associated Wetland ID(s): NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: <u>4</u> ft. Height: <u>1</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: <u>6</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>4</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> <u>2</u> ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> <u>0.5</u> ft.
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> <u>0.2</u> fps N/A <input type="checkbox"/>	Bank height Right: <u>5</u> ft. Left: <u>6</u> ft.	Bank slope Right: <u>70</u> degrees Left: <u>60</u> degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> % of Substrate: <u>NA</u> % <u>NA</u> % <u>10</u> % <u>20</u> % <u>60</u> % <u>10</u> % <u>NA</u> % <u>NA</u> %			
Width of Riparian Zone: N/A <input type="checkbox"/> <u>&gt;100</u> ft.		Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: <i>(approx.)</i> <u>12</u> in. <u>2</u> in.	
Dominant Bank Vegetation <i>(list)</i> : XMAS FERN, TULIP POPLAR, DOGWOOD, BEECH, ASH, IRONWOOD			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): UNDERCUT BANKS, RIFFLE/POOL COMPLEX, SOFT SANDY SEDIMENT, CWD, OVERHANGING VEG, ROOTMATS			
Aquatic Organisms Observed <i>(list)</i> : FISH, CRAYFISH, SALAMANDER LARVAE, WATER STRIDERS, EPT, DAMSELFLY			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): LOGGING IN RIPARIAN ZONE			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>a</sup> : <i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

sbuk014

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

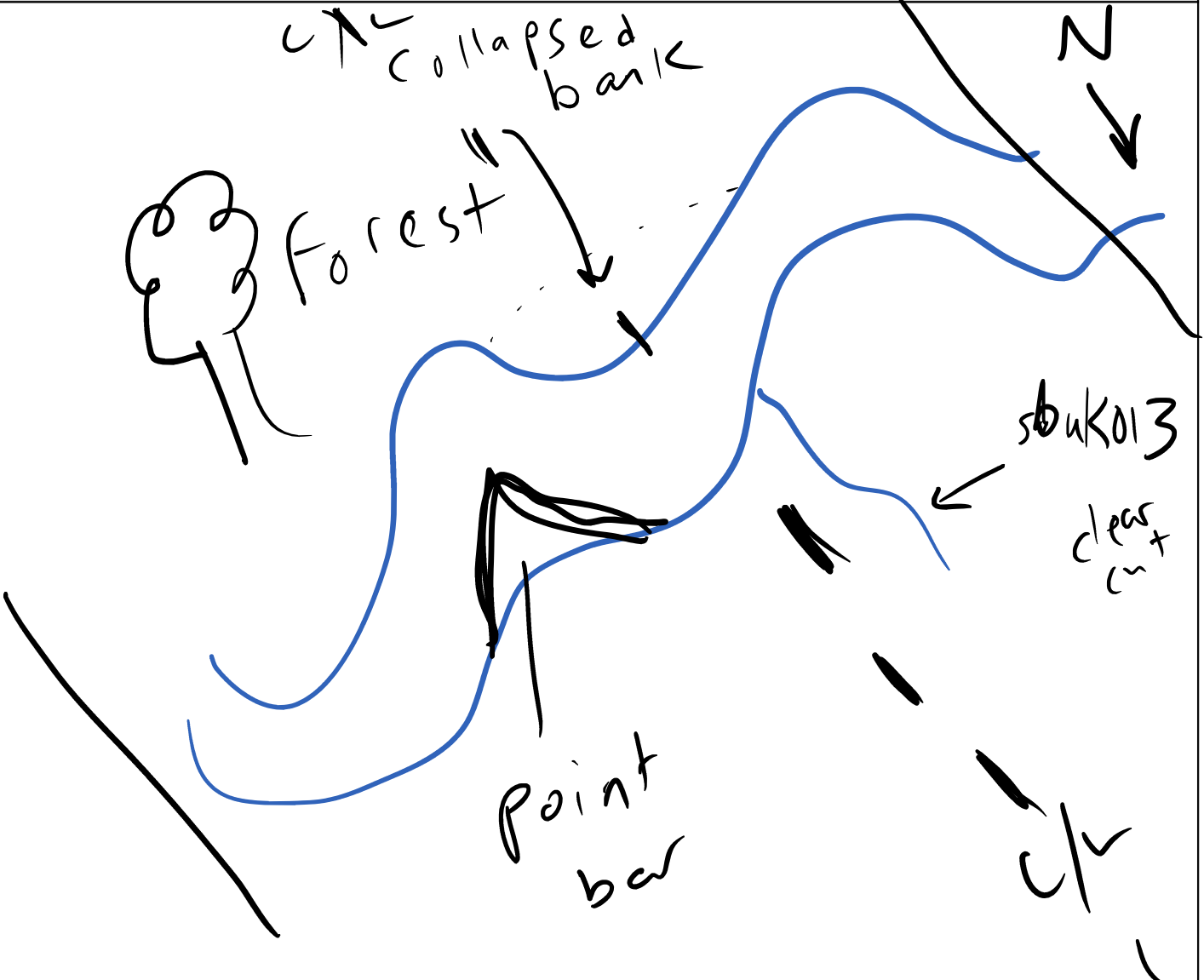
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

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

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







Waterbody point sbuk014 facing upstream



Waterbody point sbuk014 facing downstream



Waterbody point sbuk014 facing across



## Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: Unnamed Tributary to Slate River	
Waterbody ID: sbuk015		Date: 7/21/2014	
State: Virginia	County: Buckingham	Company: W&C	Crew Member Initials: JS, WM, RS
Photos: 100-0116 TO 0121			
Tract Number(s): 09-055 AND 056		Nearest Milepost: 55	Associated Wetland ID(s): NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: <u>1</u> ft. Height: <u>1</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: <u>4</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>1</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/> <u>    </u> ft.	Depth of Water: <i>(Approx.)</i> N/A <input checked="" type="checkbox"/> <u>    </u> ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> <u>    </u> fps N/A <input checked="" type="checkbox"/>	Bank height Right: <u>5</u> ft. Left: <u>5</u> ft.	Bank slope Right: <u>80</u> degrees Left: <u>80</u> degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> % of Substrate: <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>5</u> % <u>25</u> % <u>70</u> % <u>NA</u> % <u>NA</u> %			
Width of Riparian Zone: N/A <input type="checkbox"/> <u>&gt;100</u> ft.		Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <u>7</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>2</u> in. <input checked="" type="checkbox"/> Herbs	
Dominant Bank Vegetation <i>(list)</i> : XMAS FERN, LOBLOLLY PINE, DOGWOOD			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA			
Aquatic Organisms Observed <i>(list)</i> : NA			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): SMALL ROAD ACROSS CHANNEL			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>a</sup> : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			



Waterbody ID:

sbuk015

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

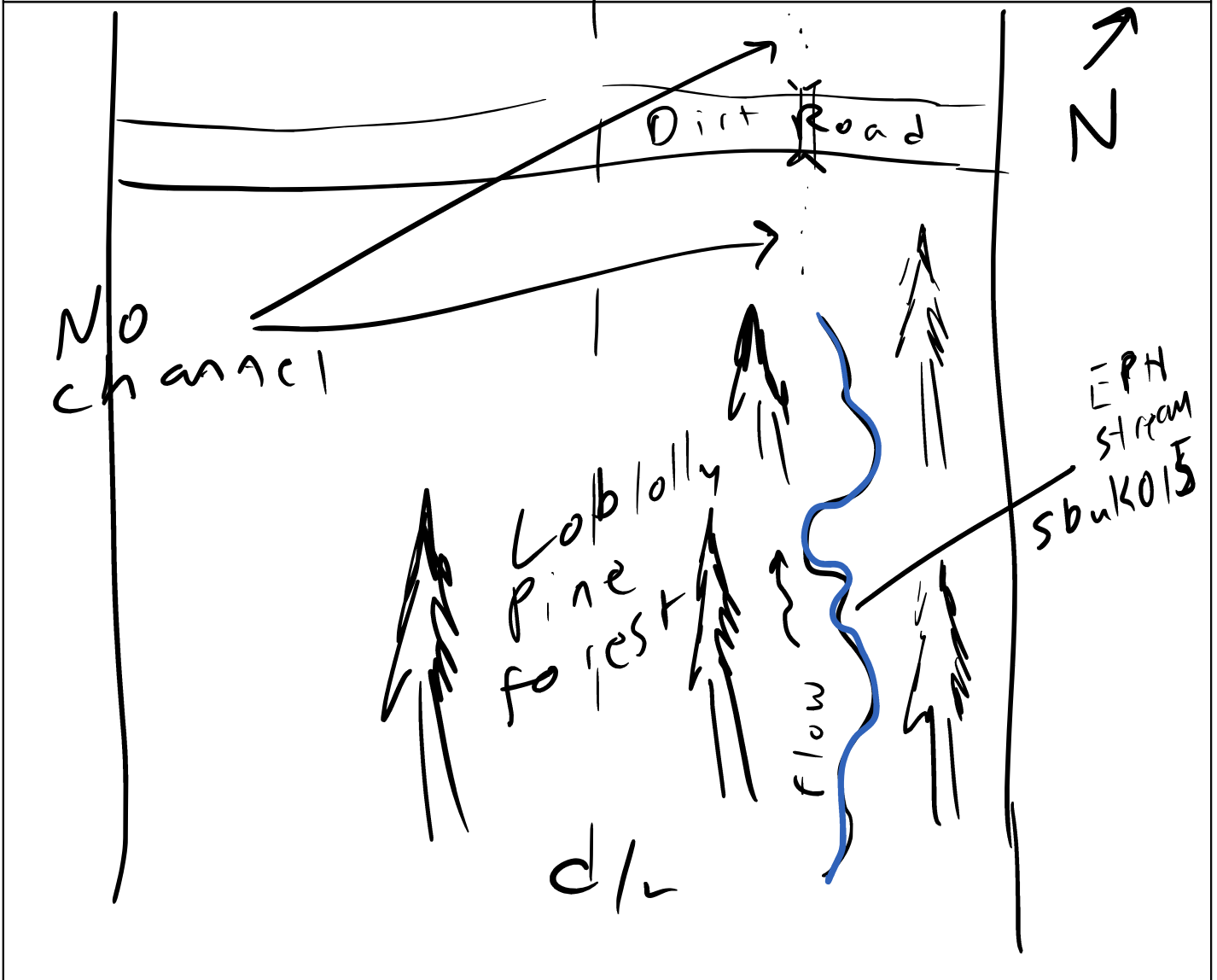
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

SMALL EROSIONAL EPHEMERAL STREAM WITH A DISCONTINUOUS CHANNEL

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





Waterbody point sbuk015 facing upstream



Waterbody point sbuk015 facing upstream





Waterbody point sbuk015 facing upstream



# Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Licky Branch	
Waterbody ID: sbua200		Date: 1/15/2015	
State: Virginia	County: Buckingham	Company: NRG	Crew Member Initials: GB, TP
Photos: 3 photos			
Tract Number(s): 09-057		Nearest Milepost: 195.4	Associated Wetland ID(s): none
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: 5.0 ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: 1.25 ft.		<input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: 12.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 3.0 ft.	Width of Waterbody - Water Edge to Water Edge: 3.5 ft.	Depth of Water: <i>(Approx.)</i> 0.25 ft.
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> 0.75 fps	Bank height: Right: 4.5 ft. Left: 5.0 ft.
N/A <input type="checkbox"/>		Bank slope: Right: 75 degrees Left: 80 degrees	
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i>			
% of Substrate:      _____%      _____%      25%      30%      20%      20%      5%      _____%			
Width of Riparian Zone: _____ ft.	Vegetative Layers: <i>(check all that apply)</i>		
N/A <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs		
Avg. DBH of Dominants: <i>(approx.)</i> 7.0 in.      1.0 in.			
Dominant Bank Vegetation <i>(list)</i> : Loblolly pine, sycamore, ironwood, beech, black cherry, yellow poplar, sourwood, red cedar, Christmas fern, grape			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, small pools, small wrack piles, undercut bank in places			
Aquatic Organisms Observed <i>(list)</i> : Crayfish, caddisfly stonefly			
T&E Species Observed <i>(list)</i> : none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Clear cut about 3 years ago leaving a minimal buffer			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality <sup>a</sup> : <i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

sbua200

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

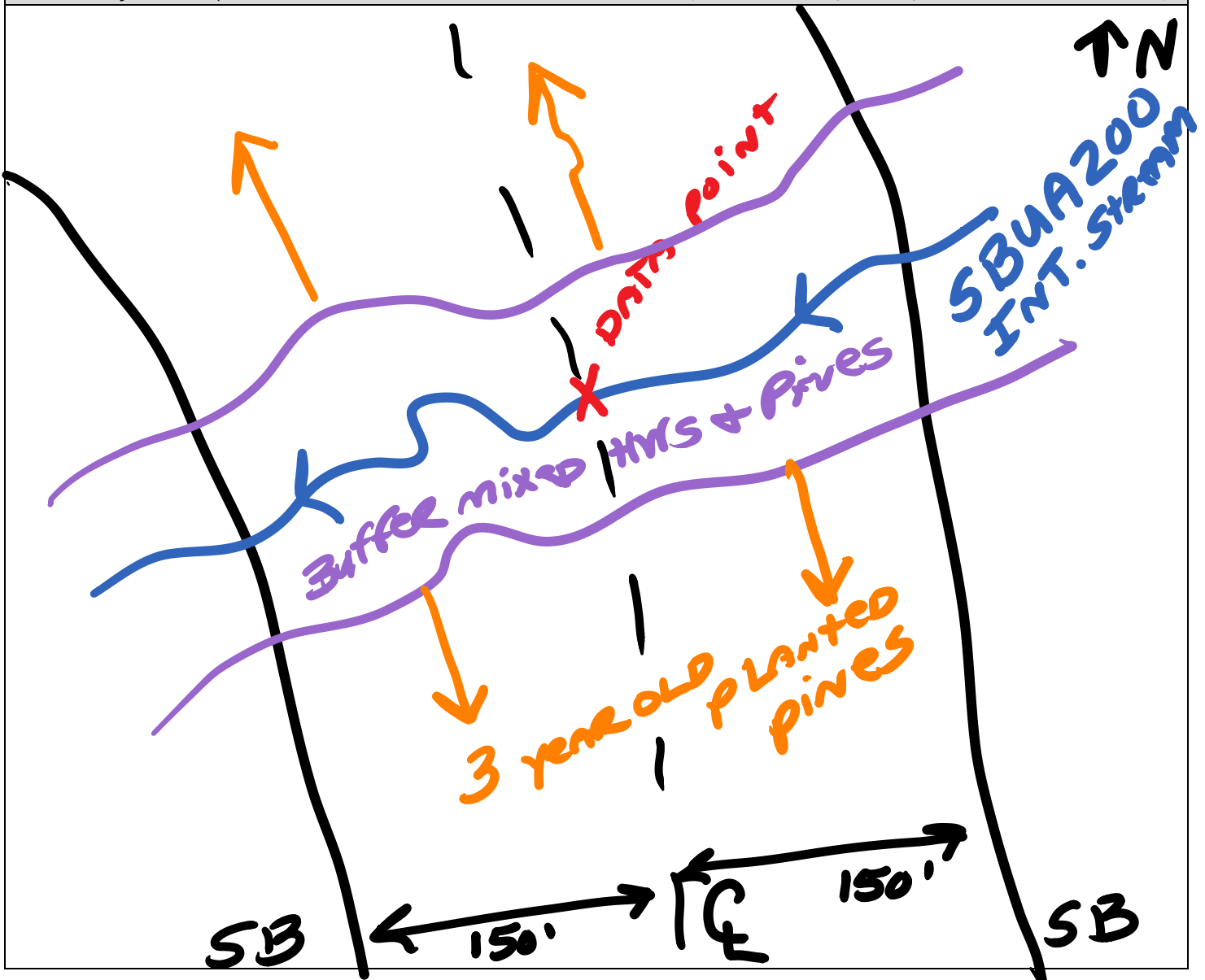
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

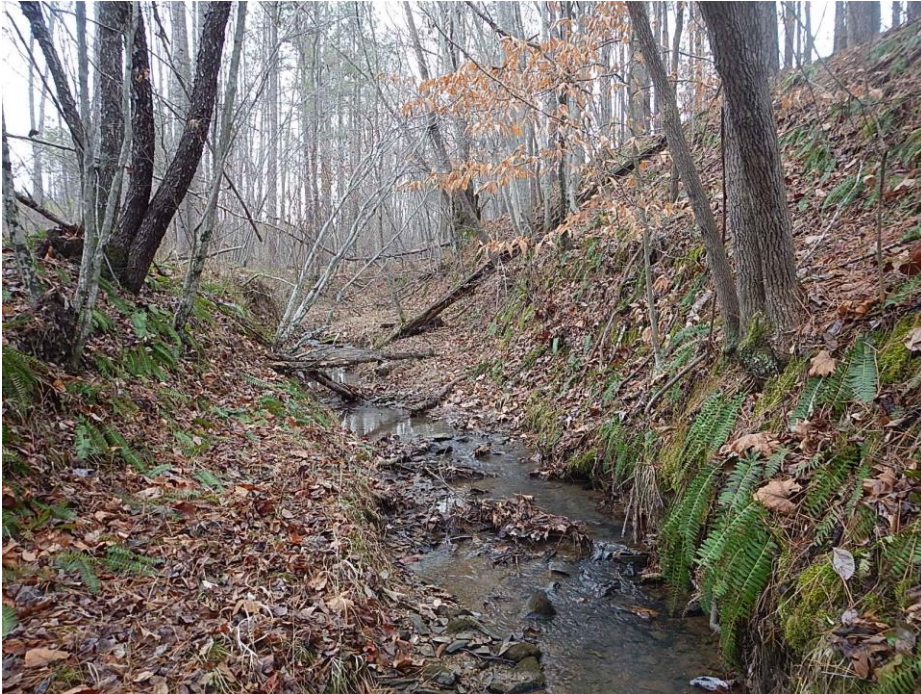
**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious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

**Notes:**

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

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





Waterbody SBUA200 facing east upstream



Waterbody SBUA200 facing west downstream





Waterbody SBUA200 facing south across

# Linear Waterbody Data Sheet

Survey Description				
Project Name: Atlantic Coast Pipeline		Waterbody Name: Licky Branch		Waterbody ID: sbua201
Date: 1/15/2015				
State: Virginia	County: Buckingham	Company: NRG	Crew Member Initials: GB, TP	Photos: 3 photos
Tract Number(s): 09-057; 09-059		Nearest Milepost: 195.65		Associated Wetland ID(s): wbua201
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: 12.0 ft.		OHWM Indicator: <i>(check all that apply)</i>		
Height: 2.5 ft.		<input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
N/A <input type="checkbox"/>				
Width of Waterbody - Top of Bank to Top of Bank: 18.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 9.0 ft.	Width of Waterbody - Water Edge to Water Edge: 10.0 ft.	Depth of Water: <i>(Approx.)</i> 1.25 ft.	
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>		
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> 1.0 fps N/A <input type="checkbox"/>	Bank height Right: 5.0 ft. Left: 4.5 ft.	Bank slope Right: 90 degrees Left: 40 degrees	
Qualitative Attributes				
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <i>(check all that apply)</i> % of Substrate: 5%      _____%      10%      25%      35%      25%      _____%      _____%				
Width of Riparian Zone: 175 ft.	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: <i>(approx.)</i> 9.0 in.      1.5 in.			
N/A <input type="checkbox"/>				
Dominant Bank Vegetation <i>(list)</i> : River birch, ironwood, red maple, red cedar, loblolly pine, shortleaf pine, American holly, sycamore, yellow poplar, greenbrier, woodland sedge, Christmas fern				
Aquatic Habitats <i>(ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools)</i> : Pools, riffles, overhanging banks, leaf packs, wrack piles, coarse woody debris				
Aquatic Organisms Observed <i>(list)</i> : Minnow, crayfish				
T&E Species Observed <i>(list)</i> : none				
Disturbances <i>(ex: livestock access, manure in waterbody, waste discharge pipes)</i> : Recent logging to north				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality <sup>a</sup> : <i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:

sbua201

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

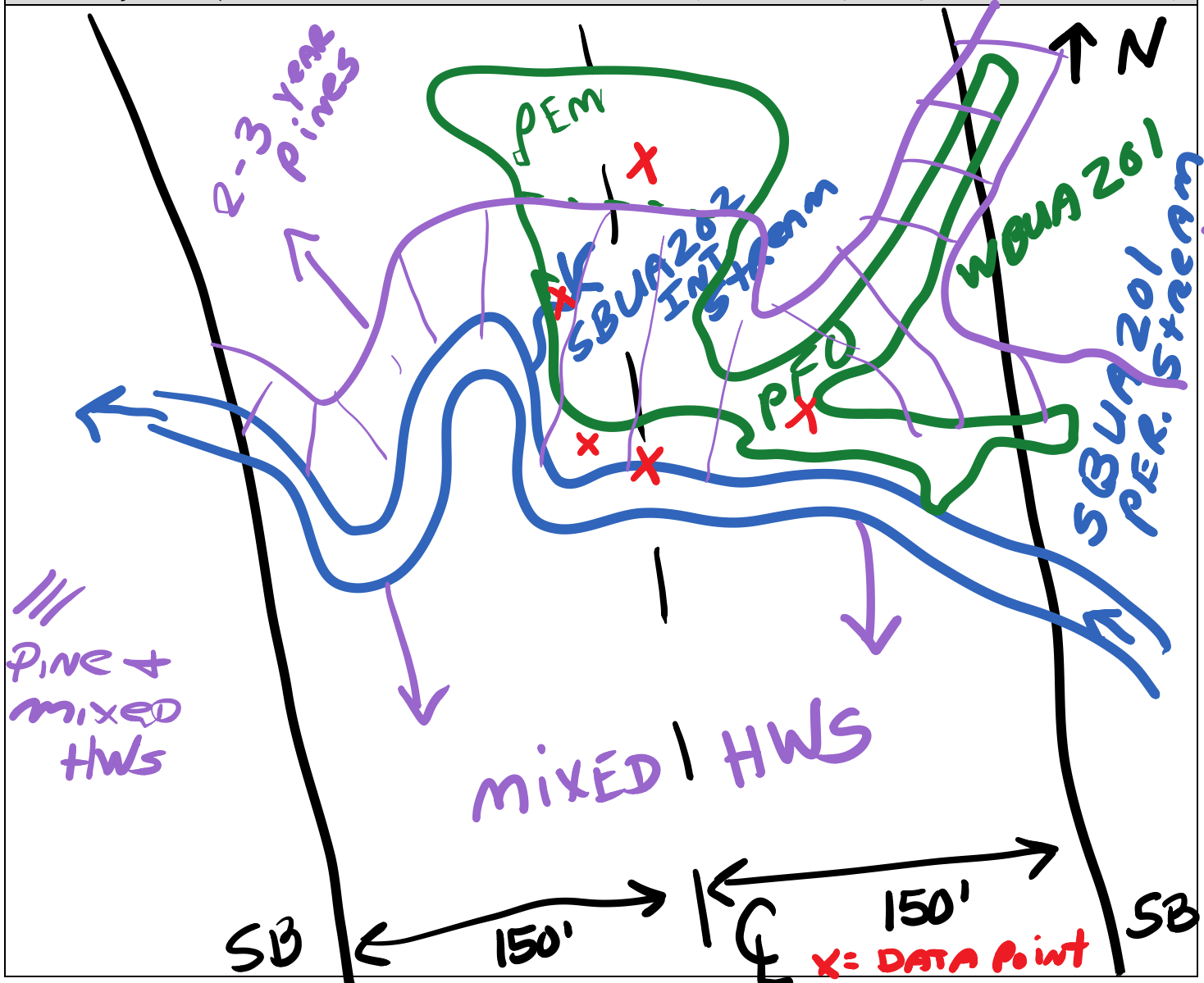
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

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

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







Waterbody SBUA201 facing east upstream



Waterbody SBUA201 facing west downstream





Waterbody SBUA201 facing north across

# Linear Waterbody Data Sheet

Survey Description				
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Licky Branch		Date: 1/15/2015
State: Virginia	County: Buckingham	Company: NRG	Crew Member Initials: GB, TP	Photos: 3 photos
Tract Number(s): 09-057; 09-059		Nearest Milepost: 195.65	Associated Wetland ID(s): wbua201	
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial				
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: 2.0 ft.		OHWM Indicator: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining		
Height: 0.5 ft.		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
N/A <input type="checkbox"/>				
Width of Waterbody - Top of Bank to Top of Bank: 3.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 1.0 ft.	Width of Waterbody - Water Edge to Water Edge: 1.25 ft.	Depth of Water: <i>(Approx.)</i> 0.25 ft.	
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>		
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> 0.5 fps		Bank slope Right: 65 degrees Left: 70 degrees
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>		
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>		
Qualitative Attributes				
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <i>(check all that apply)</i> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:				
% of Substrate:      ___%      ___%      ___%      ___%      50%      35%      15%      ___%				
Width of Riparian Zone: Within sbua201 riparian zone ft.		Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs		
		Avg. DBH of Dominants: <i>(approx.)</i> 9.0 in.      1.5 in.		
Dominant Bank Vegetation <i>(list)</i> : River birch, ironwood, red maple, red cedar, loblolly pine, shortleaf pine, American holly, sycamore, yellow poplar, greenbrier, woodland sedge, Christmas fern				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs				
Aquatic Organisms Observed <i>(list)</i> : none				
T&E Species Observed <i>(list)</i> : none				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Recent logging to north				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality <sup>a</sup> : <i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				



Waterbody ID:

sba202

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

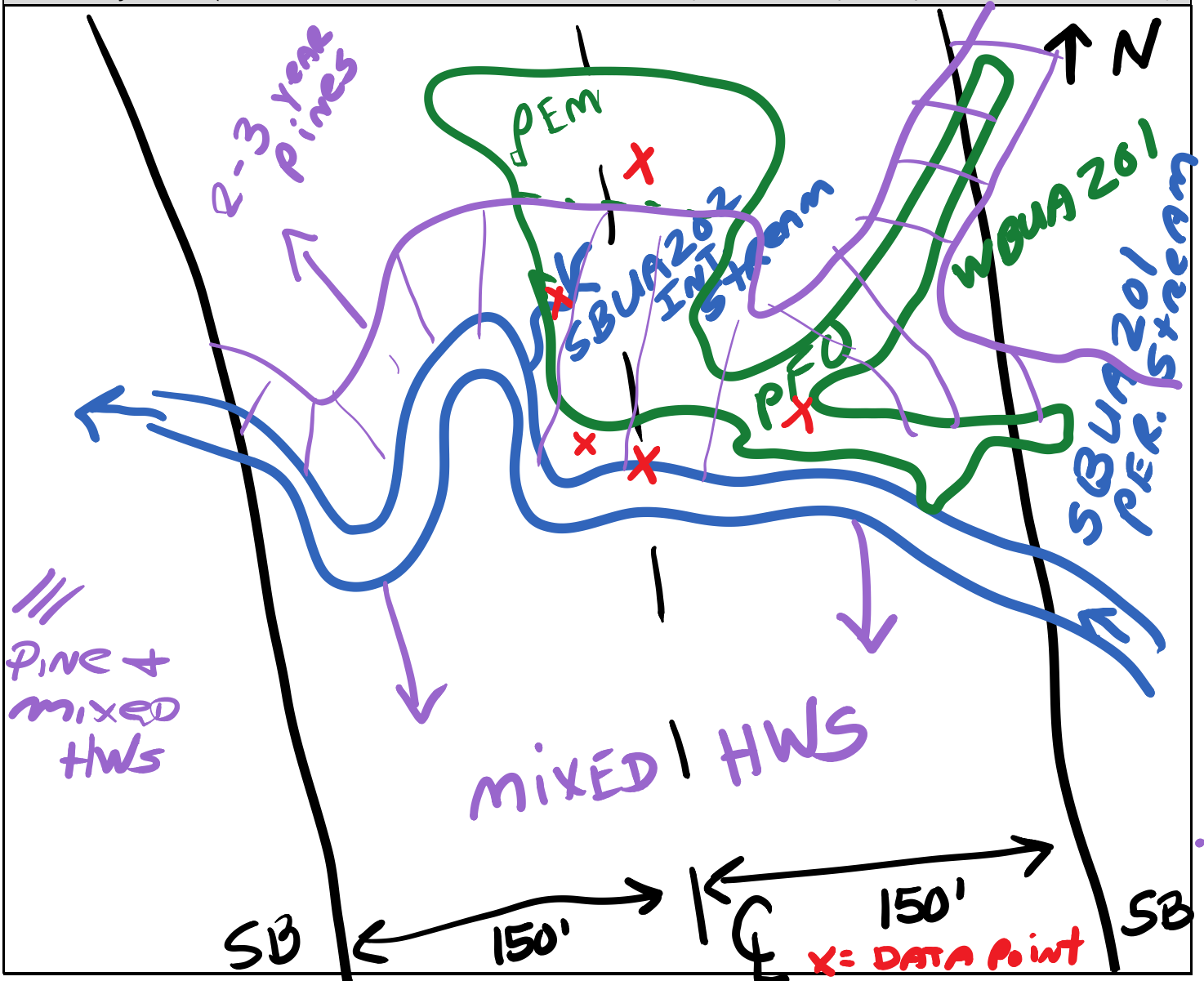
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film;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

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

**Notes:**

Outflow from wbua201 & flows into sba201 within corridor

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





Waterbody SBUA202 facing northeast upstream



Waterbody SBUA202 facing southwest downstream





Waterbody SBUA202 facing west across



# Linear Waterbody Data Sheet

Survey Description				
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Licky Branch		Waterbody ID: SBUC010
Date: 1/15/2015				
State: Virginia	County: Buckingham	Company: NRG	Crew Member Initials: CR, AS	Photos: SBUC010_001-003
Tract Number(s): 09-059		Nearest Milepost: 196.1	Associated Wetland ID(s): None	
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial				
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>2</u> ft.		OHWM Indicator: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining		
OHWM Height: <u>0.8</u> ft.		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
N/A <input type="checkbox"/>				
Width of Waterbody - Top of Bank to Top of Bank: <u>4</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>1</u> ft.	Width of Waterbody - Water Edge to Water Edge: <u>2</u> ft.	Depth of Water: <i>(Approx.)</i> <u>0.3</u> ft.	
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>		
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> <u>0.5</u> fps		Bank height: Right: <u>3</u> ft. Left: <u>6</u> ft.
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>		Bank slope: Right: <u>90</u> degrees Left: <u>85</u> degrees
Qualitative Attributes				
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <i>(check all that apply)</i> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input checked="" type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:				
% of Substrate:      _____%      _____% <u>10</u> %      _____%      _____% <u>70</u> % <u>20</u> %      _____%				
Width of Riparian Zone: <u>10</u> ft.		Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs		
N/A <input type="checkbox"/>		Avg. DBH of Dominants: <i>(approx.)</i> <u>14</u> in. <u>2</u> in.		
Dominant Bank Vegetation <i>(list)</i> : Christmas Fern, Japanese Honeysuckle, White Oak, Beech, Tulip Poplar, Smilax				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf Packs				
Aquatic Organisms Observed <i>(list)</i> : None				
T&E Species Observed <i>(list)</i> : None				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): None				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality <sup>a</sup> : <i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:  
SBUC010

<sup>a</sup> **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.

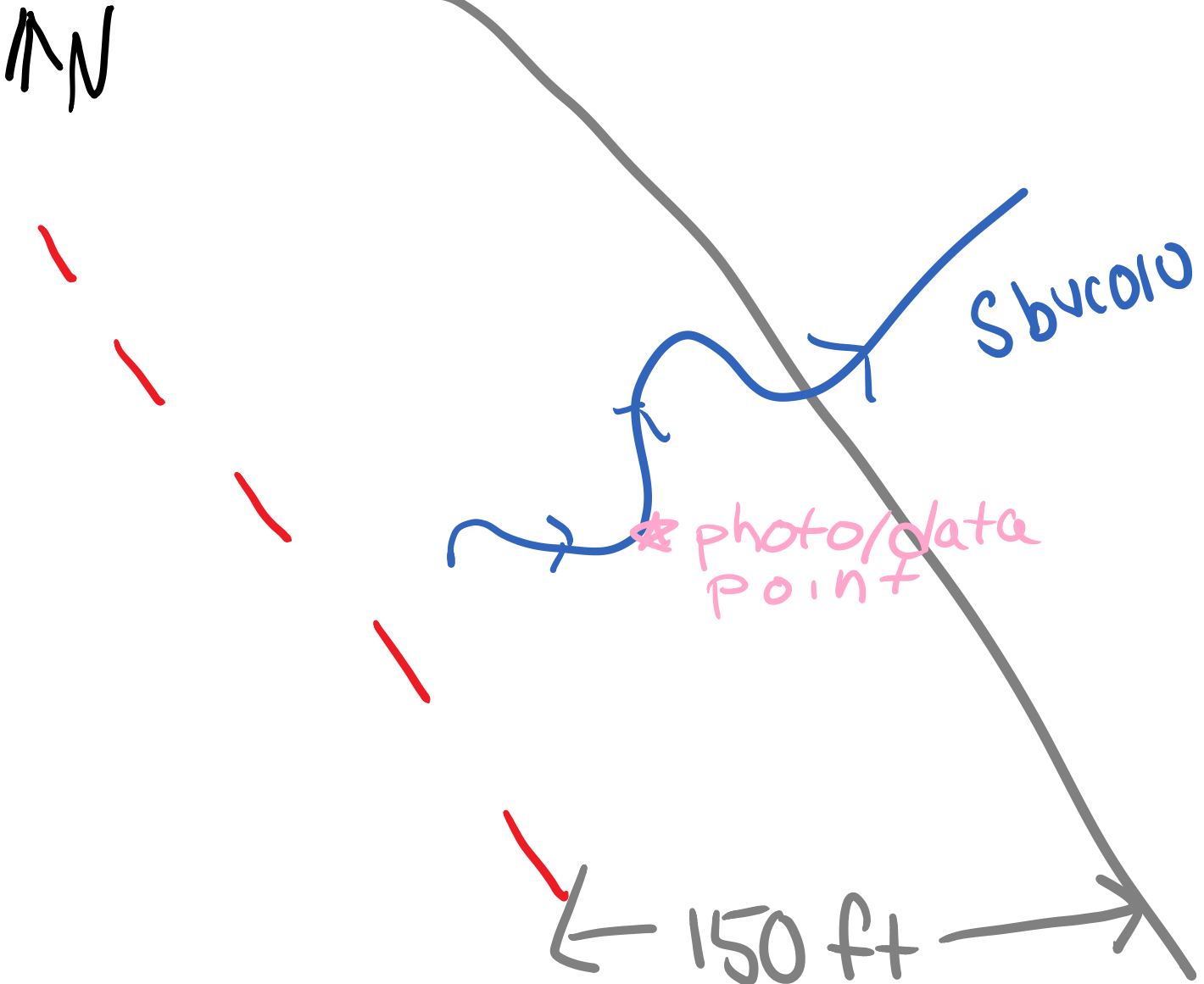
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**Notes:**

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

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





Waterbody SBUC010 facing upstream



Waterbody SBUC010 facing downstream





Waterbody SBUC010 facing across