

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa425		Date: 6/2/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Photos: 3 photos			
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	Associated Wetland ID(s): wpoa411
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: 3.0 ft.		OHWM Indicator: <i>(check all that apply)</i>	
OHWM Height: 0.33 ft.		<input checked="" type="checkbox"/> Clear line on bank	
N/A <input type="checkbox"/>		<input type="checkbox"/> Shelving	
		<input type="checkbox"/> Wrested vegetation	
		<input 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 checked="" type="checkbox"/> Abrupt plant community change	
		<input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: 4.0 ft.		Width of Waterbody - Toe of Slope to Toe of Slope: 3.0 ft.	
		Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 2.5 ft.	
		Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> 0.15 ft.	
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight		Water velocity: <i>(Approx.)</i> 0.25 fps	
<input type="checkbox"/> Meandering		N/A <input type="checkbox"/>	
		Bank height	
		Right: 1.0 ft.	
		Left: 1.0 ft.	
		Bank slope	
		Right: 90 degrees	
		Left: 40 degrees	
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): No evidence of bank instability observed			
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 checked="" 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: _____% _____% 10% 25% 15% 40% 10% _____%			
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> 13.0 in. 1.5 in.	
Dominant Bank Vegetation (list): Sugar maple, yellow birch, beech, red maple, cucumber magnolia, bee balm, buttercup, wood nettle, nodding sedge, violet, fowl manna grass, jewel weed			
Aquatic Habitats (ex: submerged or emergent aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, woody debris, emergent vegetation			
Aquatic Organisms Observed (list): salamander			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Crossing for existing road via 24" corrugated metal culvert			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa425

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

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

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

Notes:

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

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

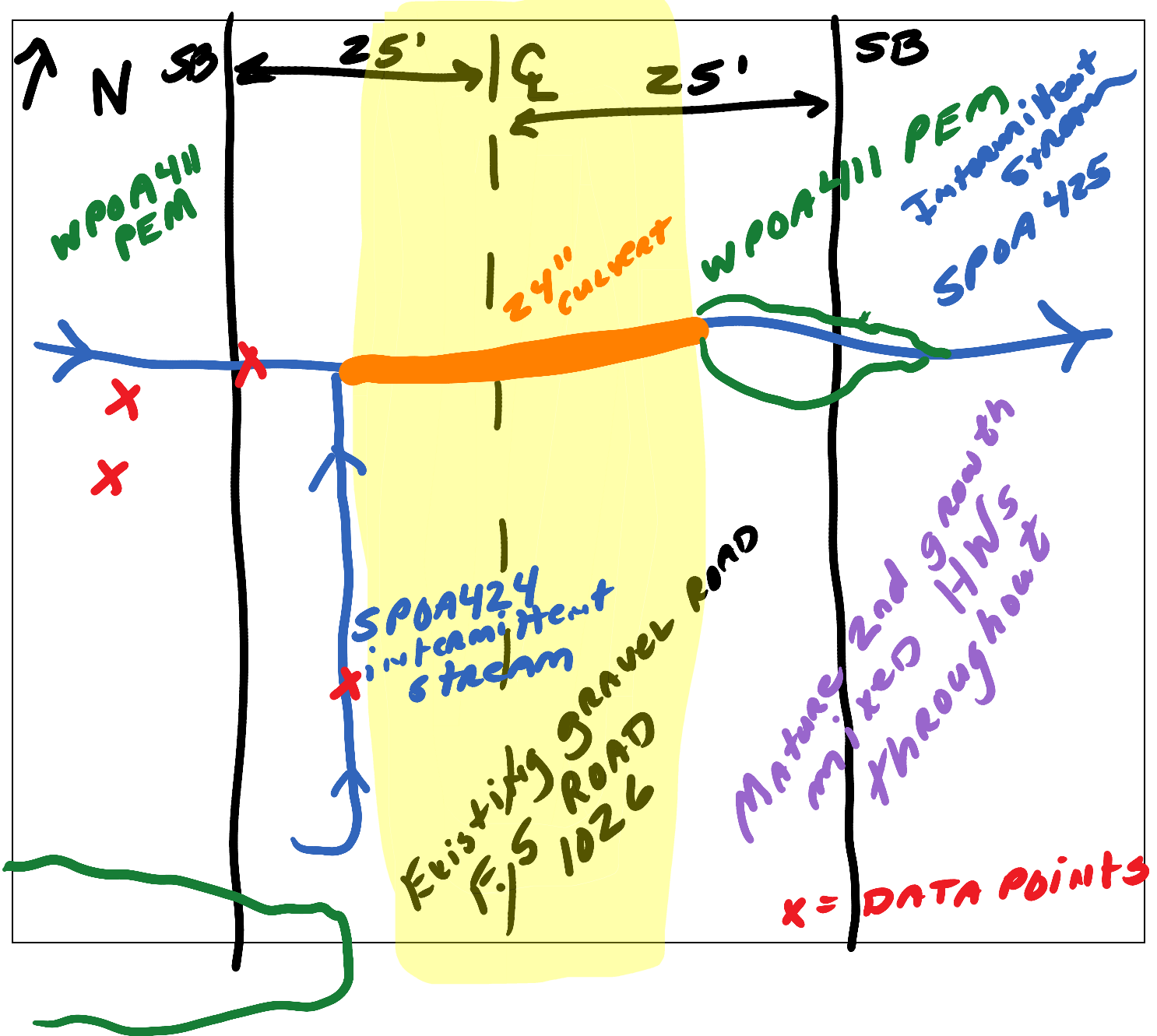
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody spoa425 facing west upstream



Waterbody spoa425 facing east downstream



Waterbody spoa425 facing north across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa422		Date: 6/1/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Photos: 4 photos			
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	Associated Wetland ID(s): wpoa410
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 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: 2.0 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: 4.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 2.0 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: 3.0 ft. Left: 1.5 ft.	Bank slope Right: 60 degrees Left: 45 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks upstream of culvert are severely trampled by livestock entering forested area from adjacent pasture.			
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> <input type="checkbox"/> Bedrock <input 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 checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: _____% _____% 10% 5% 10% 60% 15% _____%			
Width of Riparian Zone: N/A <input checked="" type="checkbox"/> _____ 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> 13.0 in. 1.0 in.		
Dominant Bank Vegetation (list): Sugar maple, yellow birch, beech, northern red oak, black cherry, elderberry, knotweed, geranium, starwort, anise root, wood aster, violet			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs			
Aquatic Organisms Observed (list): none			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Culvert crossing for existing gravel road; 18" corrugated metal culvert; livestock access upstream of culvert.			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa422

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

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

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

Notes:

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

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

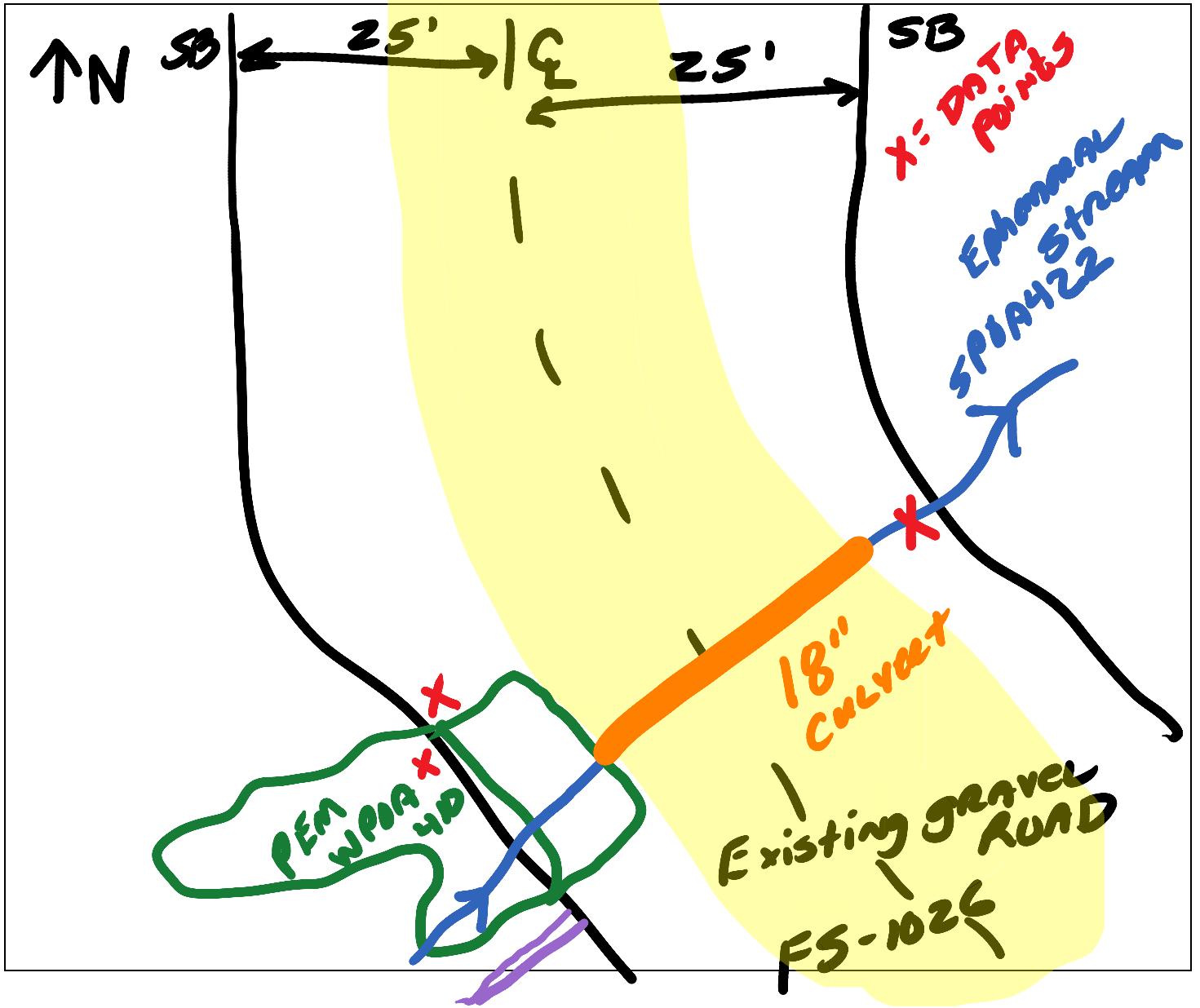
Stream Quality ^a:

(check one)

High

Moderate

Low



PASTURE



Waterbody spoa422 facing southwest upstream



Waterbody spoa422 facing northeast downstream



Waterbody spoe422 facing northwest across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa423		Date: 6/1/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Photos: 4 photos			
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	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 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: 3.0 ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: 0.50 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 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: 6.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 1.5 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: 3.0 ft. Left: 3.0 ft.	Bank slope Right: 80 degrees Left: 60 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks are somewhat unstable due to channel incision/down cutting			
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> <input type="checkbox"/> Bedrock <input 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 checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: _____% _____% 35% 15% 5% 35% 10% _____%			
Width of Riparian Zone: N/A <input checked="" type="checkbox"/> _____ 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> 14.0 in. 1.5 in.		
Dominant Bank Vegetation (list): Sugar maple, yellow birch, beech, northern red oak, black cherry, Hawthorne, hay-scented fern, wood nettle, starwort, anise root, wood aster, violet, anemone			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs			
Aquatic Organisms Observed (list): none			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Culvert crossing for existing gravel road; 18" corrugated metal culvert			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa423

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

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

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

Notes:

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

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

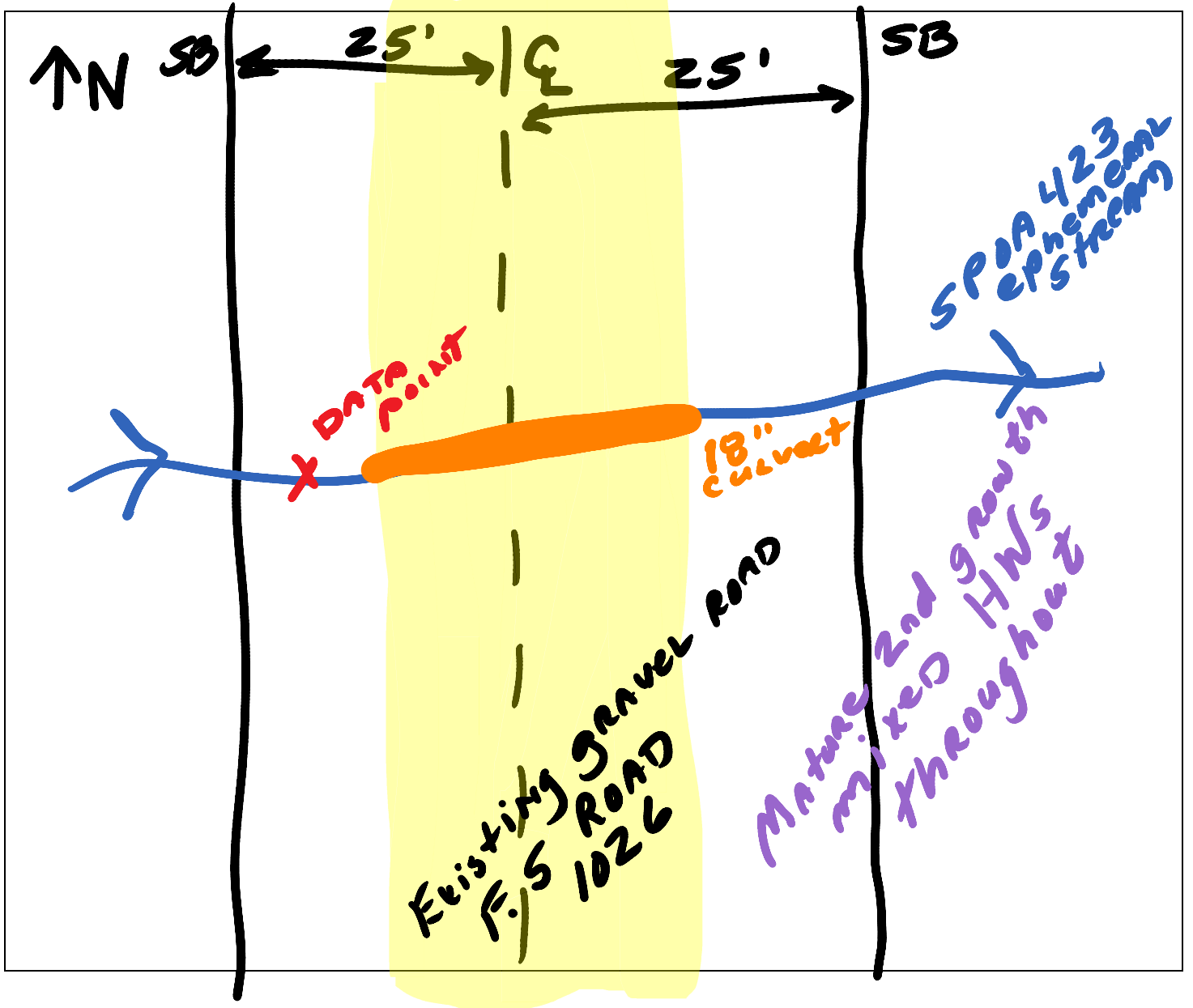
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody spoa423 facing southwest upstream



Waterbody spoa423 facing northeast downstream



Waterbody spoa423 facing northwest across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa424		Date: 6/1/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Photos: 3 photos			
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	Associated Wetland ID(s): wpoa411
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 type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: 2.0 ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: 0.33 ft.		<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	
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 checked="" type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: 9.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 2.0 ft.	Width of Waterbody - Water Edge to Water Edge: 2.0 ft.	Depth of Water: <i>(Approx.)</i> 0.12 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> 0.40 fps	Bank height Right: 2.0 ft. Left: 7.0 ft.
Bank slope Right: 45 degrees Left: 60 degrees			
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks are road base and road cut of existing gravel road; spring output confined to road side ditch			
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 checked="" 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: _____% _____% 5% 35% 35% 15% 10% _____%			
Width of 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		
N/A <input checked="" type="checkbox"/>	Avg. DBH of Dominants: <i>(approx.)</i> 14.0 in. 1.5 in.		
Dominant Bank Vegetation (list): Sugar maple, yellow birch, beech, northern red oak, black cherry, Hawthorne, hay-scented fern, wood nettle, starwort, anise root, wood aster, violet, anemone			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs			
Aquatic Organisms Observed (list): none			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Output from spring is confined to road side ditch; relic stream channel visible on other side of road			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated			

Waterbody ID:

spoa424

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

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

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

Notes:

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

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

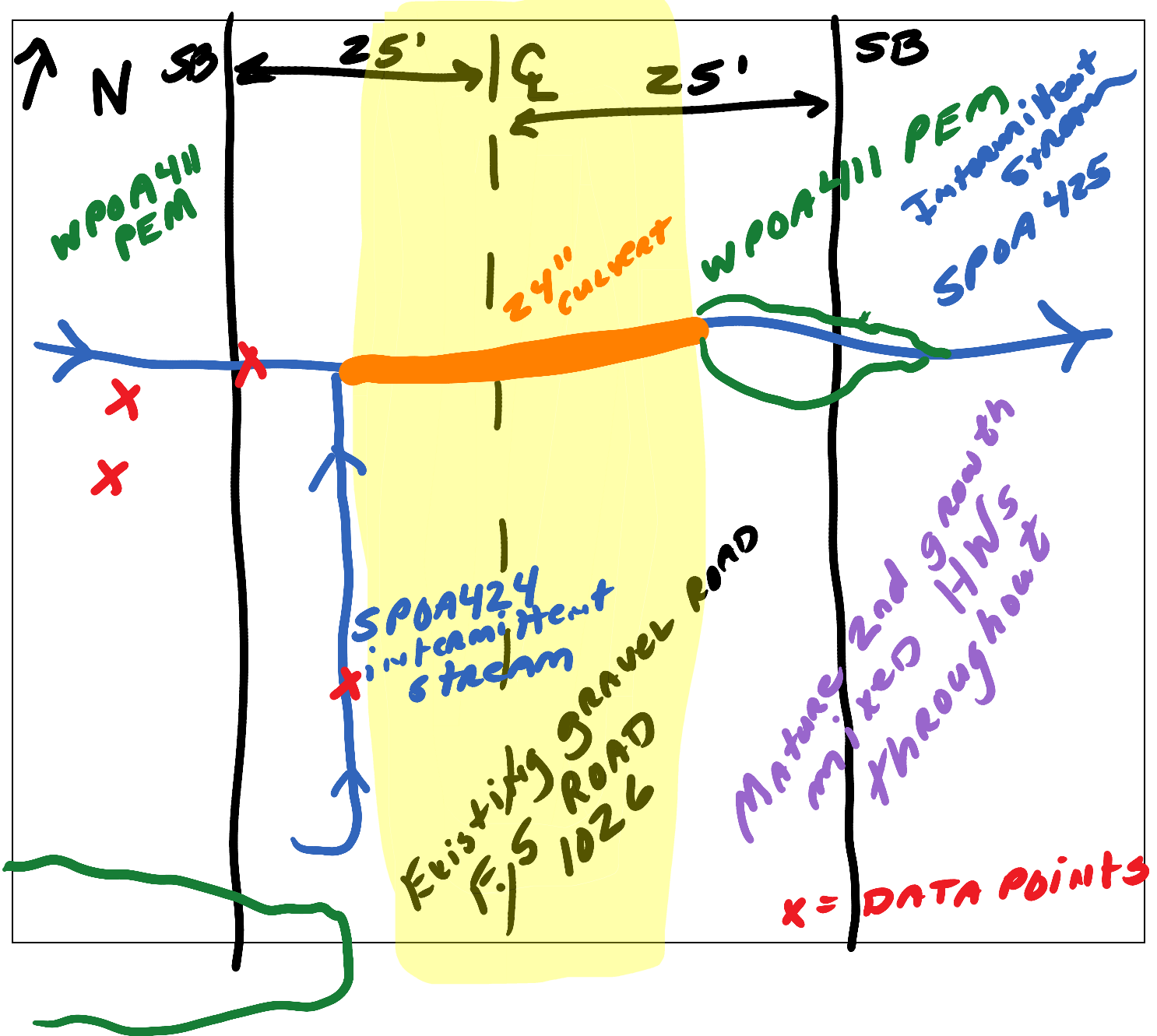
Stream Quality ^a:

(check one)

High

Moderate

Low



↑ N SB

← 25' → | C

← 25' →

SB

WPOA411 PEM

WPOA411 PEM
Intermittent stream
SPOA 425

24" CULVERT

X
X

SPOA424
Intermittent stream

Existing GRAVEL ROAD
ROAD P.S. 1026

Mature 2nd growth
mixed HWS
throughout

X = DATA POINTS



Waterbody spoa424 facing south upstream



Waterbody spoa424 facing north downstream



Waterbody spoa424 facing west across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa427		Date: 6/6/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Photos: 3 photos			
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	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: <u>5.0</u> ft. Height: <u>0.50</u> ft. N/A <input type="checkbox"/>	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 <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>10.0</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>4.0</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> <u>4.5</u> ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> <u>0.25</u> ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> <u>1.0</u> fps N/A <input type="checkbox"/>	Bank height Right: <u>3.0</u> ft. Left: <u>5.0</u> ft.	Bank slope Right: <u>40</u> degrees Left: <u>75</u> degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): No evidence of bank instability observed			
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>35</u> % <u>25</u> % <u>20</u> % <u>15</u> % <u>5</u> % _____%			
Width of Riparian Zone: <u>40.0</u> ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <u>12.0</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>2.0</u> in. <input checked="" type="checkbox"/> Herbs		
Dominant Bank Vegetation <i>(list)</i> : Sugar maple, yellow birch, beech, black cherry, hemlock, red spruce, jewel weed, wood nettle, anise root, buttercup, goldenrod, may-apple, wild rye, bee balm			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, woody debris, scattered small pools			
Aquatic Organisms Observed <i>(list)</i> : caddisfly			
T&E Species Observed <i>(list)</i> : none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Crossing for existing road via 24" corrugated metal culvert			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa427

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

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

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

Notes:

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

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

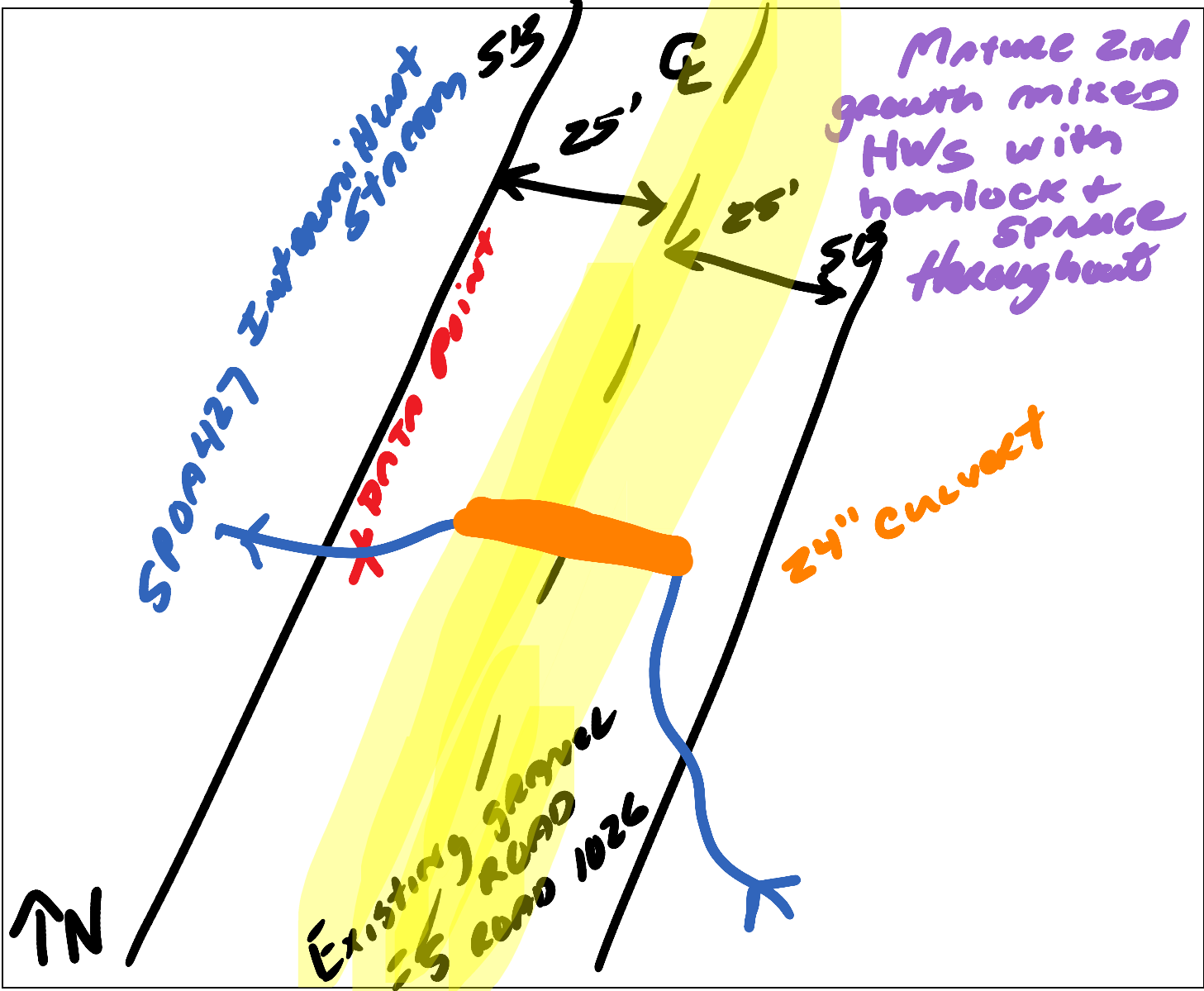
Stream Quality ^a :

(check one)

High

Moderate

Low





Waterbody SPOA427 facing southwest upstream



Waterbody SPOA427 facing northwest downstream



Waterbody SPOA427 facing northeast across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa428		Date: 6/6/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Photos: 3 photos			
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	Associated Wetland ID(s): wpoa416
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: 5.0 ft.	OHWM Indicator: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
Height: 0.50 ft.	<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: 12.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 4.0 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 4.5 ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> 0.33 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> 0.75 fps N/A <input type="checkbox"/>	Bank height Right: 3.5 ft. Left: 4.0 ft.	Bank slope Right: 45 degrees Left: 50 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): No evidence of bank instability observed			
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: _____% _____% 30% 35% 25% 5% 5% _____%			
Width of Riparian Zone: 40.0 ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: 12.0 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 1.5 in. <input checked="" type="checkbox"/> Herbs		
Dominant Bank Vegetation (list): Sugar maple, yellow birch, beech, witch hazel, striped maple, jewel weed, wood nettle, fowl manna grass, buttercup, eastern rough sedge, false hellebore, white turtlehead			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, woody debris, scattered small pools			
Aquatic Organisms Observed (list): Caddisfly, salamander			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Crossing for existing road via 48" corrugated metal culvert			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa428

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

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

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

Notes:

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

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

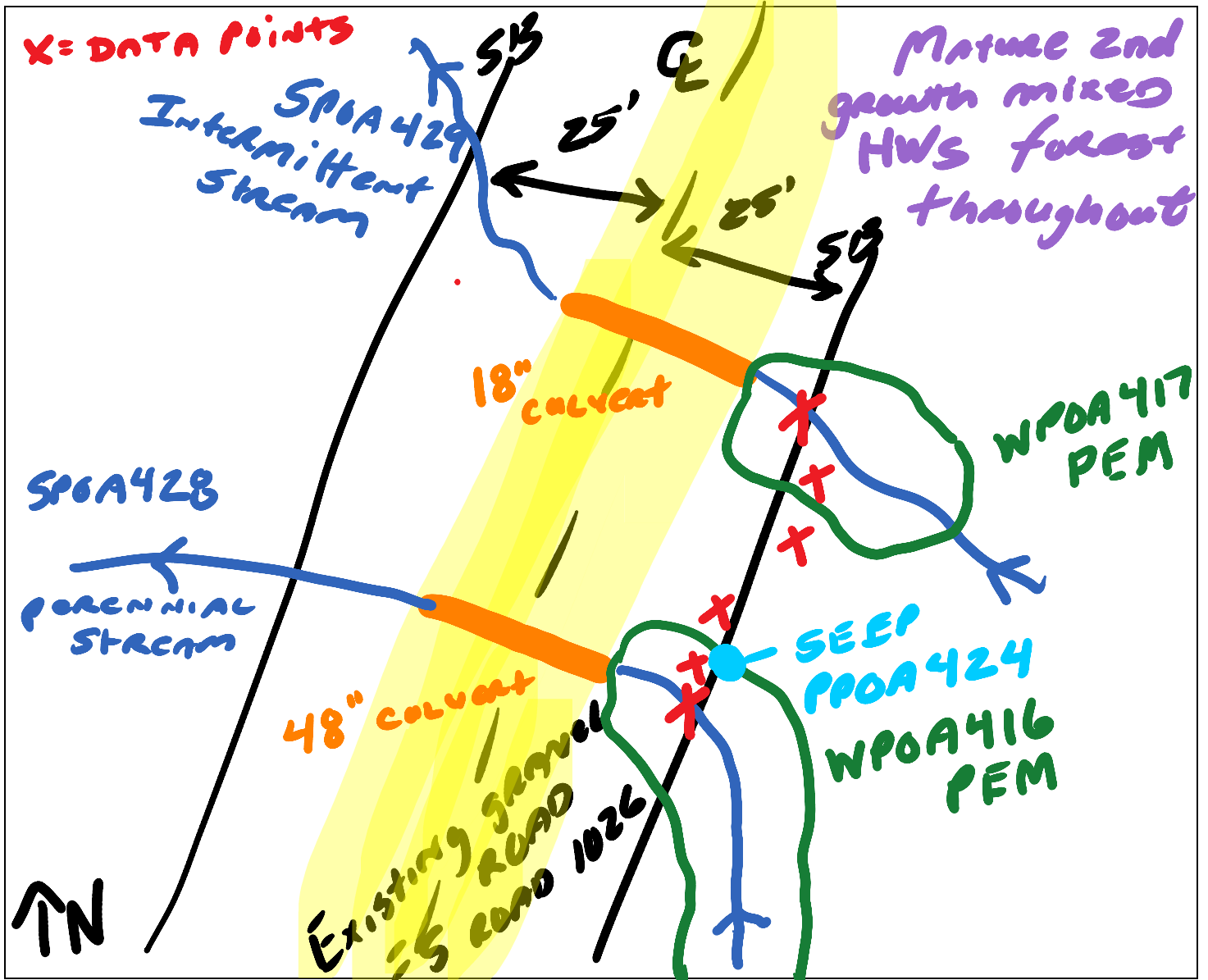
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA428 facing south upstream



Waterbody SPOA428 facing north downstream



Waterbody SPOA428 facing east across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa421		Date: 6/1/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Photos: 4 photos			
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.1	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 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: 4.0 ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: 0.33 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: 8.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 3.5 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/>	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	Bank height Right: 4.0 ft. Left: 2.5 ft.	Bank slope Right: 60 degrees Left: 40 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): No evidence of bank instability was observed			
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> <input type="checkbox"/> Bedrock <input checked="" type="checkbox"/> Boulder <input checked="" type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: _____ % 15 % 45 % 15 % _____ % 15 % 10 % _____ %			
Width of 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		
N/A <input checked="" type="checkbox"/>	Avg. DBH of Dominants: <i>(approx.)</i> 12.0 in. 1.5 in.		
Dominant Bank Vegetation (list): Sugar maple, yellow birch, beech, cucumber magnolia, black cherry, wood nettle, jewel weed, may-apple, buttercup, lady fern, bluegrass, violet			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs; woody debris			
Aquatic Organisms Observed (list): none			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Culvert crossing for existing gravel road; 18" corrugated metal culvert			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa421

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

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

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

Notes:

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

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

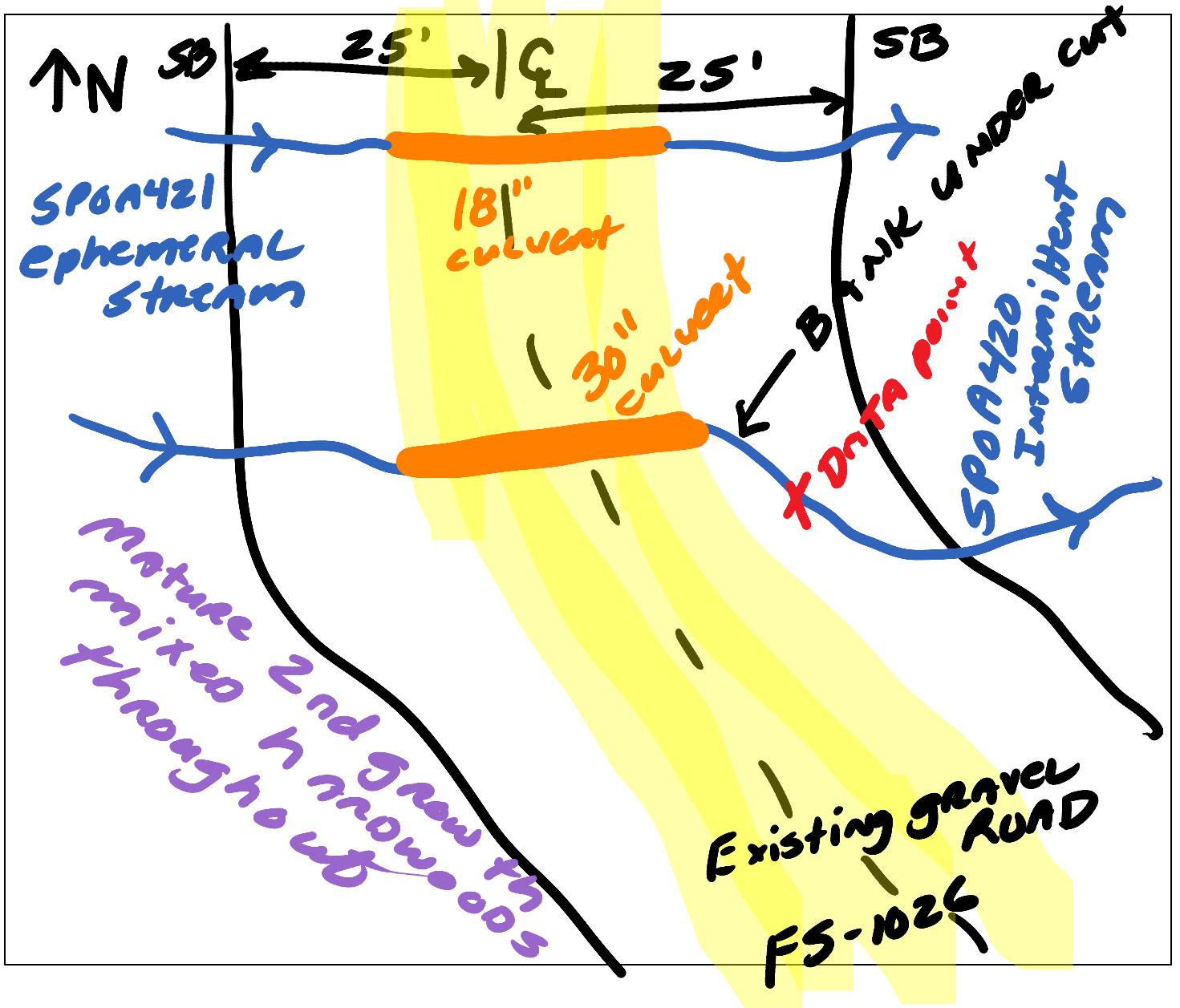
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody spoa421 facing west upstream



Waterbody spoa421 facing east downstream



Waterbody spoa421 facing south across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa429		Date: 6/6/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Photos: 3 photos			
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	Associated Wetland ID(s): wpoa417
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: 3.0 ft.	OHWM Indicator: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
Height: 0.33 ft.	<input type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input checked="" type="checkbox"/> Litter and debris
N/A <input type="checkbox"/>		<input type="checkbox"/> Wrested vegetation	<input checked="" type="checkbox"/> Scouring
		<input type="checkbox"/> Abrupt plant community change	<input type="checkbox"/> Water staining
Width of Waterbody - Top of Bank to Top of Bank: 6.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 2.5 ft.	Width of Waterbody - Water Edge to Water Edge: 3.0 ft.	Depth of Water: <i>(Approx.)</i> 0.20 ft.
N/A <input type="checkbox"/>		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> 0.50 fps N/A <input type="checkbox"/>	Bank height Right: 3.0 ft. Left: 1.0 ft.	Bank slope Right: 40 degrees Left: 90 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): No evidence of bank instability observed			
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: _____% _____% 10% 15% 40% 25% 10% _____%			
Width of Riparian Zone: 40.0 ft.	Vegetative Layers: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Trees:	<input checked="" type="checkbox"/> Saplings/Shrubs:
N/A <input type="checkbox"/>	Avg. DBH of Dominants: <i>(approx.)</i>	12.0 in.	1.5 in.
Dominant Bank Vegetation (list): Sugar maple, yellow birch, beech, witch hazel, striped maple, jewel weed, wood nettle, fowl manna grass, buttercup, eastern rough sedge, false hellebore, white turtlehead			
Aquatic Habitats (ex: submerged or emergent aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, woody debris, emergent vegetation			
Aquatic Organisms Observed (list): Caddisfly			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Crossing for existing road via 18" corrugated metal culvert			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa429

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

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

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

Notes:

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

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

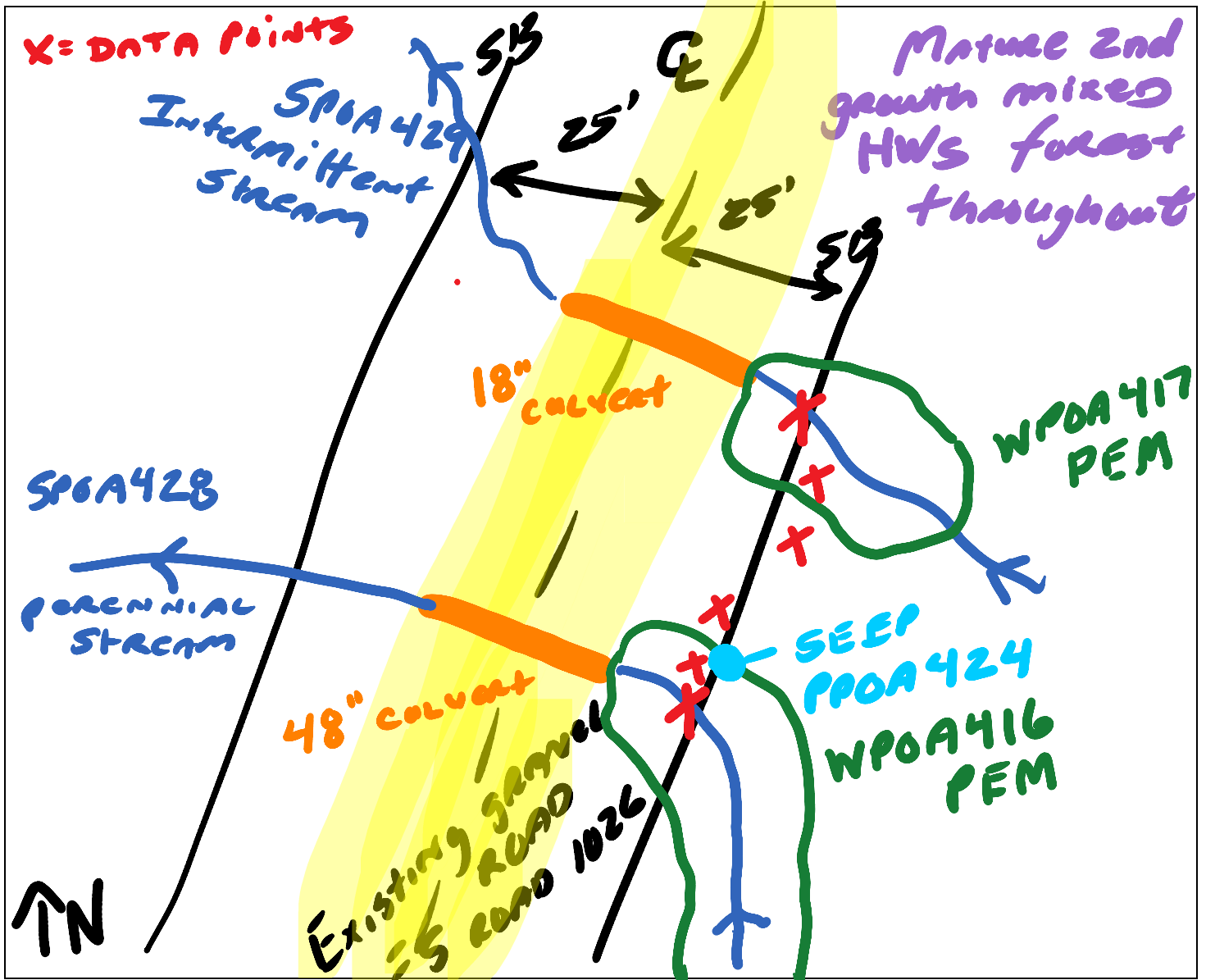
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA429 facing south upstream



Waterbody SPOA429 facing northwest downstream



Waterbody SPOA429 facing east across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa420		Date: 6/1/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Photos: 4 photos			
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.1	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: 7.0 ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: 0.50 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 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: 13.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 5.0 ft.	Width of Waterbody - Water Edge to Water Edge: 3.0 ft.	Depth of Water: <i>(Approx.)</i> 0.20 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> 0.33 fps	
N/A <input type="checkbox"/>		Bank height Right: 6.0 ft. Left: 3.0 ft.	
Bank slope Right: 65 degrees Left: 80 degrees			
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks exhibit loose soil/rock and exposed roots and is being undercut at culvert outlet			
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 type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: _____ % 15 % 55 % 15 % _____ % 10 % 5 % _____ %			
Width of 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		
N/A <input checked="" type="checkbox"/>	Avg. DBH of Dominants: <i>(approx.)</i> 12.0 in. 1.5 in.		
Dominant Bank Vegetation (list): Sugar maple, yellow birch, beech, cucumber magnolia, black cherry, wood nettle, jewel weed, may-apple, buttercup, lady fern, bluegrass, violet			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs; woody debris; small pools			
Aquatic Organisms Observed (list): Salamanders, invertebrates			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Culvert crossing for existing gravel road; 30" corrugated metal culvert			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa420

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

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

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

Notes:

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

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

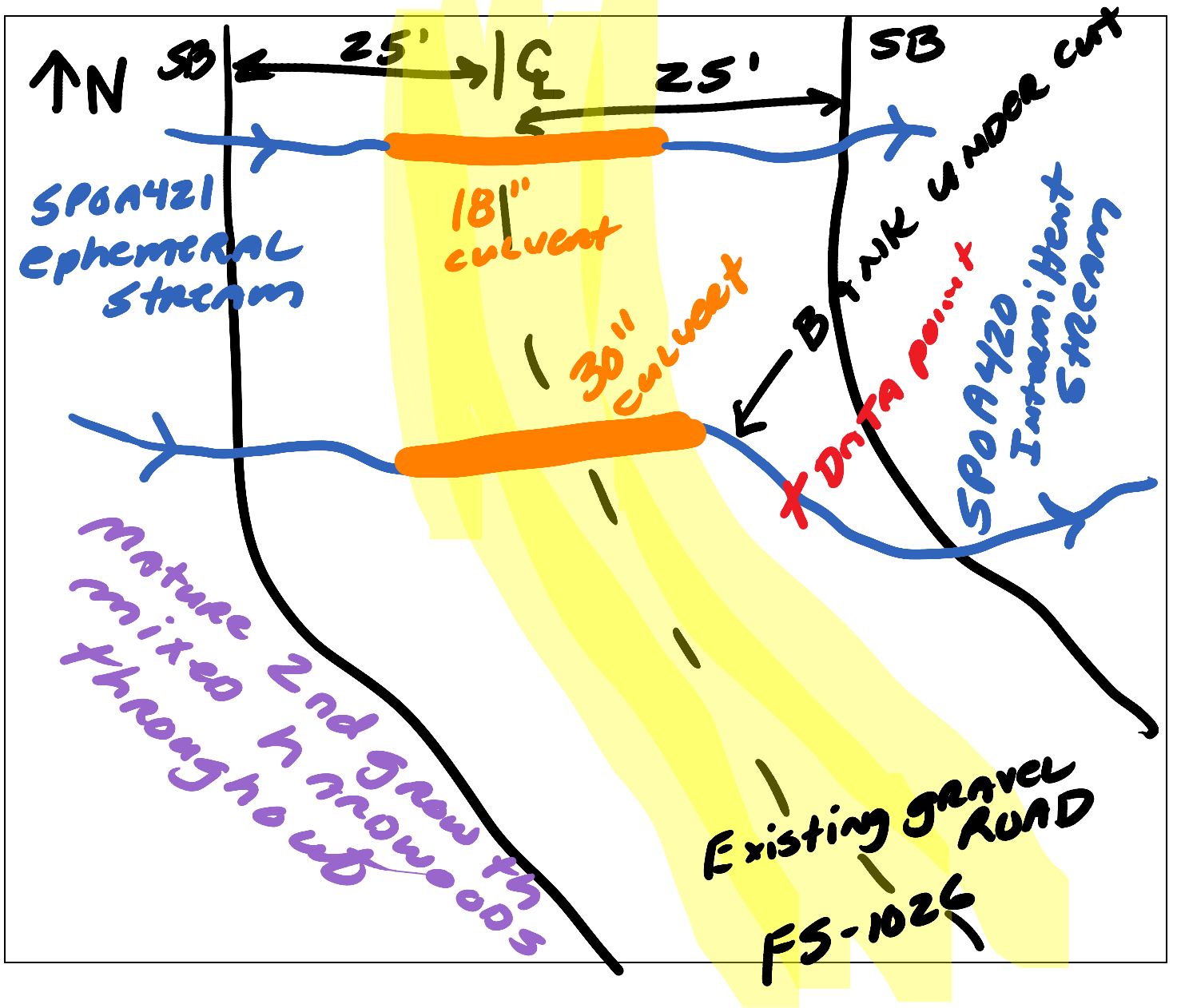
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody spoa420 facing east upstream



Waterbody spoa420 facing west downstream



Waterbody spoa420 facing north across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa439		Date: 6/9/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	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: 6.0 ft.	OHWM Indicator: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
Height: 0.75 ft.		<input type="checkbox"/> Wrested vegetation	<input checked="" type="checkbox"/> Scouring
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"/> Water staining
Width of Waterbody - Top of Bank to Top of Bank: 15.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 3.0 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 2.0 ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> 0.20 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> 0.50 fps N/A <input type="checkbox"/>	Bank height Right: 5.0 ft. Left: 5.0 ft.	Bank slope Right: 90 degrees Left: 70 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Bank instability present as evidenced by exposed roots and loose rock and soil			
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% 20% 15% 40% 5% _____%			
Width of Riparian Zone: N/A <input checked="" type="checkbox"/> _____ ft.	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: 14.0 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 2.0 in. <input checked="" type="checkbox"/> Herbs		
Avg. DBH of Dominants: <i>(approx.)</i>			
Dominant Bank Vegetation (list): Sugar maple, red elm, shagbark hickory, basswood, Frasier's magnolia, stonecrop, jewel weed, wood nettle, bee balm, violet, Dutchman's pipe vine, wild rye, red elderberry			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, woody debris			
Aquatic Organisms Observed (list): Caddisfly, salamander			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Culvert crossing for existing gravel road			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa439

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

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

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

Notes:

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

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

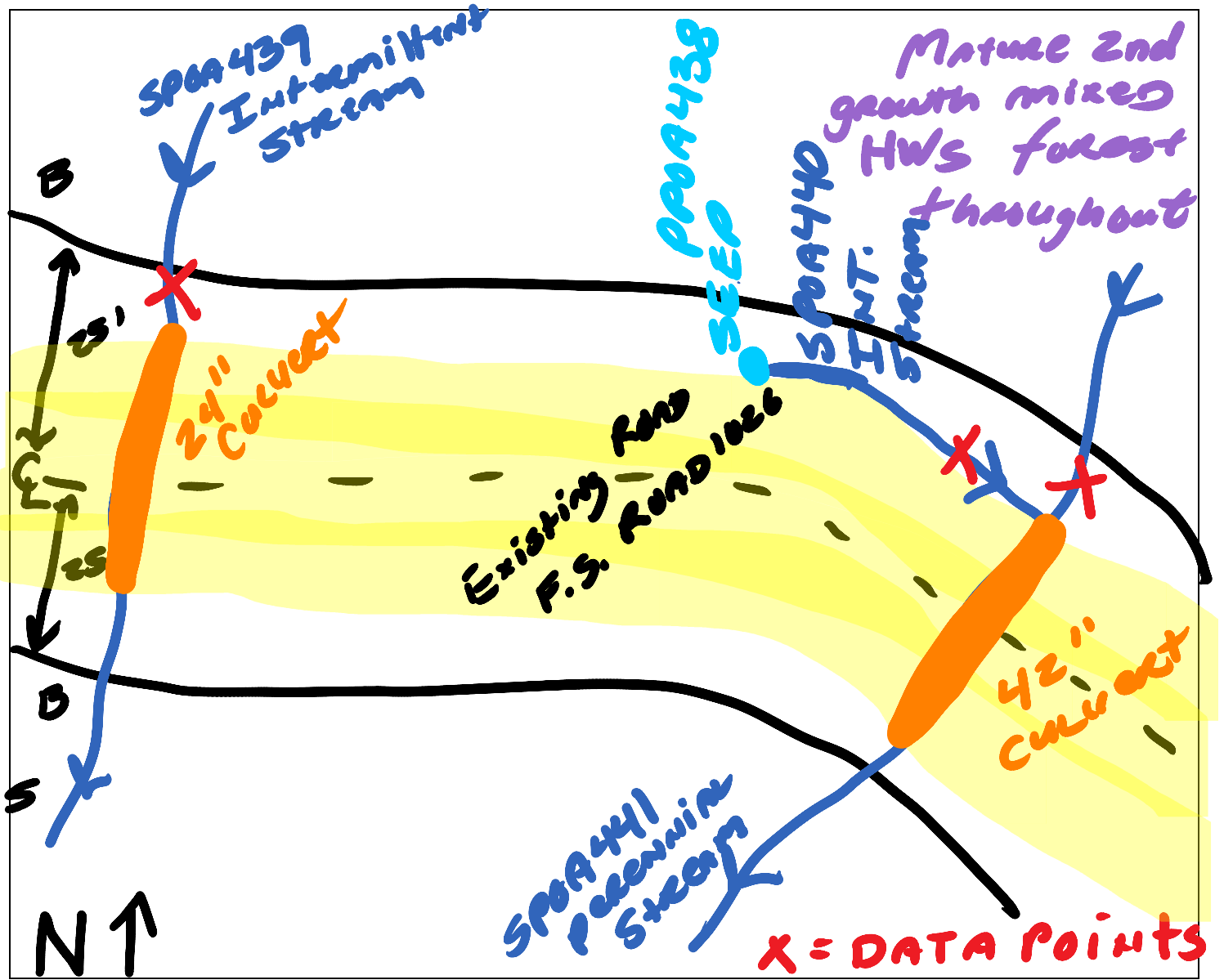
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA439 facing north upstream



Waterbody SPOA439 facing south downstream



Waterbody SPOA439 facing west across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa440		Date: 6/9/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	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: 2.0 ft.	OHWM Indicator: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
Height: 0.33 ft.		<input type="checkbox"/> Wrested vegetation	<input checked="" type="checkbox"/> Scouring
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"/> Water staining
Width of Waterbody - Top of Bank to Top of Bank: 12.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 1.5 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 1.5 ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> 0.20 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> 0.33 fps N/A <input type="checkbox"/>	Bank height Right: 2.0 ft. Left: 10.0 ft.	Bank slope Right: 35 degrees Left: 75 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks are road base and road cut; confined to ditch			
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: _____% _____% 30% 25% 20% 15% 10% _____%			
Width of Riparian Zone: N/A <input checked="" type="checkbox"/> _____ ft.	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: 14.0 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 2.0 in. <input checked="" type="checkbox"/> Herbs		
Avg. DBH of Dominants: <i>(approx.)</i>			
Dominant Bank Vegetation (list): Sugar maple, red elm, shagbark hickory, basswood, Frasier's magnolia, stonecrop, jewel weed, wood nettle, bee balm, violet, Dutchman's pipe vine, wild rye, red elderberry			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, woody debris			
Aquatic Organisms Observed (list): sowbug, scud			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Confined to ditch along existing gravel road			
Tributary is: <i>(check one)</i> <input type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated			

Waterbody ID:

spoa440

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

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

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

Notes:

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

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

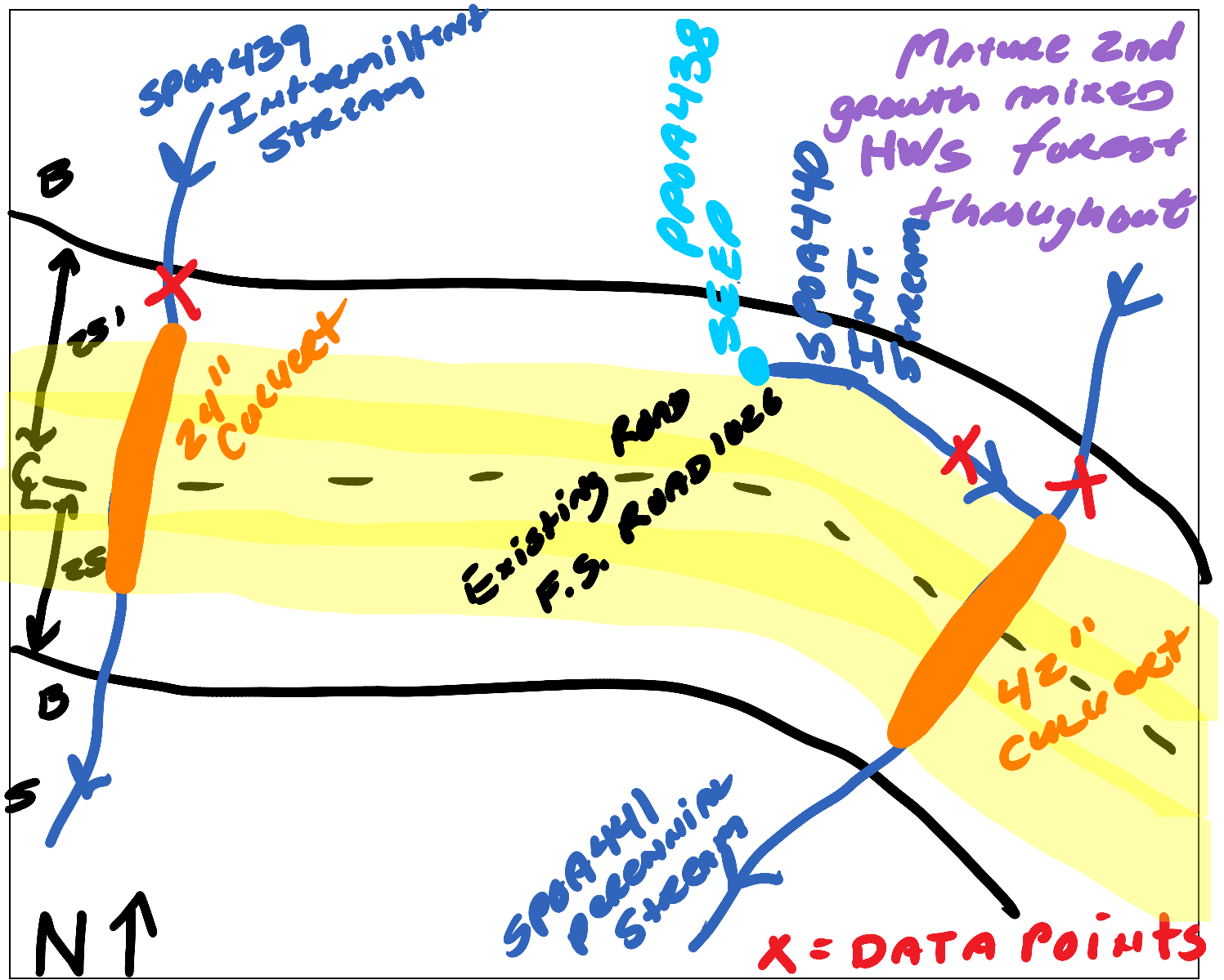
Stream Quality ^a:

(check one)

High

Moderate

Low



5



Waterbody SPOA440 facing west upstream



Waterbody SPOA440 facing east downstream



Waterbody SPOA440 facing north across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa441		Date: 6/9/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	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 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: 9.0 ft.	OHWM Indicator: <i>(check all that apply)</i>	<input type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
Height: 1.0 ft.		<input type="checkbox"/> Wrested vegetation	<input checked="" type="checkbox"/> Scouring
N/A <input type="checkbox"/>	<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"/> Water staining
Width of Waterbody - Top of Bank to Top of Bank: 20.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 6.0 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 6.0 ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> 0.33 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> 2.0 fps N/A <input type="checkbox"/>	Bank height Right: 6.0 ft. Left: 6.0 ft.	Bank slope Right: 60 degrees Left: 60 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks appear stable; mostly boulders, cobble, and bedrock			
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: 35% 20% 30% 10% 5% % % %			
Width of Riparian Zone: 45 ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: 14.0 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 1.5 in. <input checked="" type="checkbox"/> Herbs		
Dominant Bank Vegetation (list): Sugar maple, yellow birch, black locust, basswood, pignut hickory, beech, striped maple, red elm, wing stem, anemone, jewel weed, wood nettle, bee balm, violet, Dutchman's pipe vine, stonecrop			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, step pools, coarse woody debris, overhanging boulders			
Aquatic Organisms Observed (list): Caddisfly, mayfly, salamander, scud			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Crossing for existing road via 42" corrugated metal culvert			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa441

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

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

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

Notes:

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

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

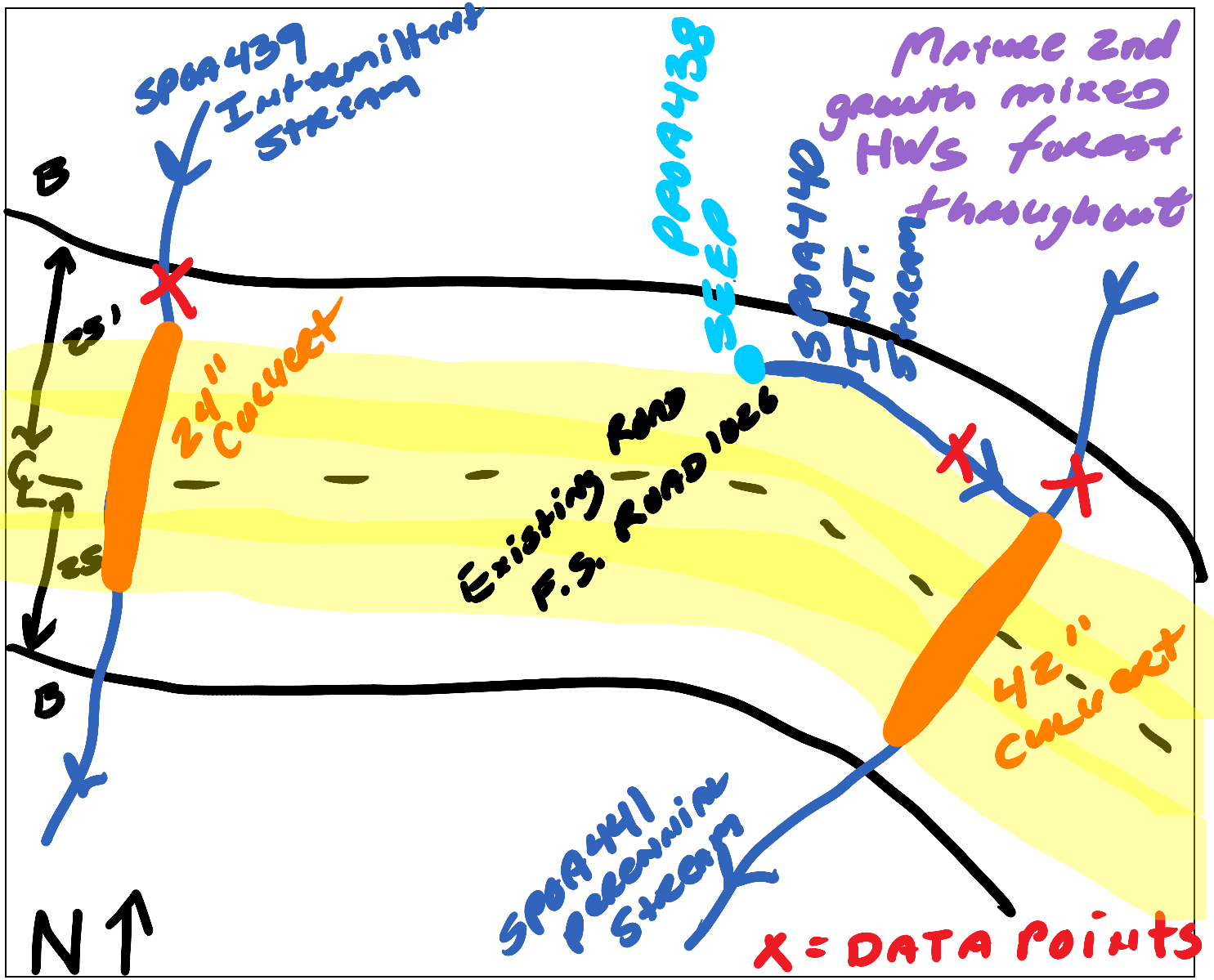
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA441 facing northeast upstream



Waterbody SPOA441 facing southwest downstream



Waterbody SPOA441 facing northwest across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa434		Date: 6/7/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Photos: 3 photos			
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	Associated Wetland ID(s): wpoa418
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: 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 checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
Height: 0.33 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: 10.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 1.5 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 1.5 ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> 0.20 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> 1.0 fps N/A <input type="checkbox"/>	Bank height Right: 2.0 ft. Left: 10.0 ft.	Bank slope Right: 45 degrees Left: 70 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks are road base and road cut; confined to ditch along existing gravel road			
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: _____% _____% 35% 35% 15% 10% 5% _____%			
Width of Riparian Zone: N/A <input checked="" type="checkbox"/> _____ ft.		Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: 14.0 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 1.0 in. <input checked="" type="checkbox"/> Herbs	
Avg. DBH of Dominants: <i>(approx.)</i>			
Dominant Bank Vegetation (list): Sugar maple, yellow birch, black locust, basswood, pignut hickory, beech, striped maple, northern red oak, wing stem, Christmas fern, jewel weed, wood nettle, wood fern, violet, Dutchman's pipe vine			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs			
Aquatic Organisms Observed (list): Caddisfly			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Crossing for existing road via 18" corrugated metal culvert; confined to ditch upstream of culvert			
Tributary is: <i>(check one)</i> <input type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated			

Waterbody ID:

spoa434

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

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

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

Notes:

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

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

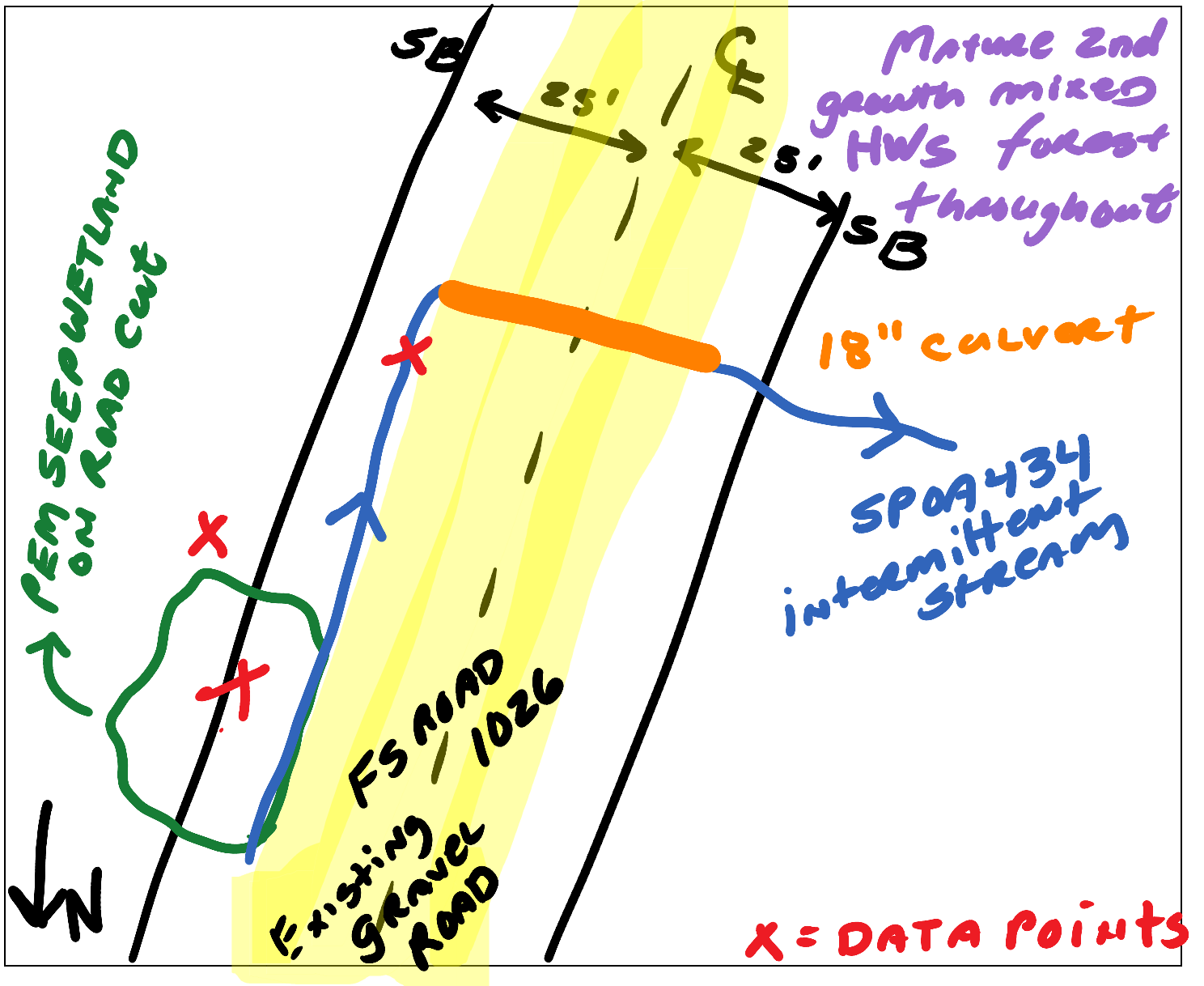
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA434 facing north upstream



Waterbody SPOA434 facing south downstream



Waterbody SPOA434 facing west across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa435		Date: 6/7/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	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: 2.0 ft.	OHWM Indicator: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
Height: 0.33 ft.	<input type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input type="checkbox"/> Litter and debris
N/A <input type="checkbox"/>		<input type="checkbox"/> Wrested vegetation	<input checked="" type="checkbox"/> Scouring
		<input type="checkbox"/> Abrupt plant community change	<input type="checkbox"/> Water staining
Width of Waterbody - Top of Bank to Top of Bank: 12.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 1.5 ft.	Width of Waterbody - Water Edge to Water Edge: 1.5 ft.	Depth of Water: <i>(Approx.)</i> 0.20 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> 0.50 fps	Bank height Right: 12.0 ft. Left: 2.0 ft.	Bank slope Right: 75 degrees Left: 40 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks are road base and road cut; confined to ditch along existing gravel road			
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: _____% _____% 35% 35% 15% 10% 5% _____%			
Width of Riparian Zone: _____ ft.	Vegetative Layers: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Trees: 14.0 in.	<input checked="" type="checkbox"/> Saplings/Shrubs: 1.0 in.
N/A <input checked="" type="checkbox"/>	Avg. DBH of Dominants: <i>(approx.)</i>		<input checked="" type="checkbox"/> Herbs
Dominant Bank Vegetation (list): Sugar maple, yellow birch, black locust, basswood, pignut hickory, beech, striped maple, northern red oak, wing stem, colts foot, jewel weed, wood nettle, bee balm, violet, Dutchman's pipe vine			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs			
Aquatic Organisms Observed (list): Caddisfly			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Crossing for existing road via 18" corrugated metal culvert; confined to ditch upstream of culvert			
Tributary is: <i>(check one)</i> <input type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated			

Waterbody ID:

spoa435

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

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

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

Notes:

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

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

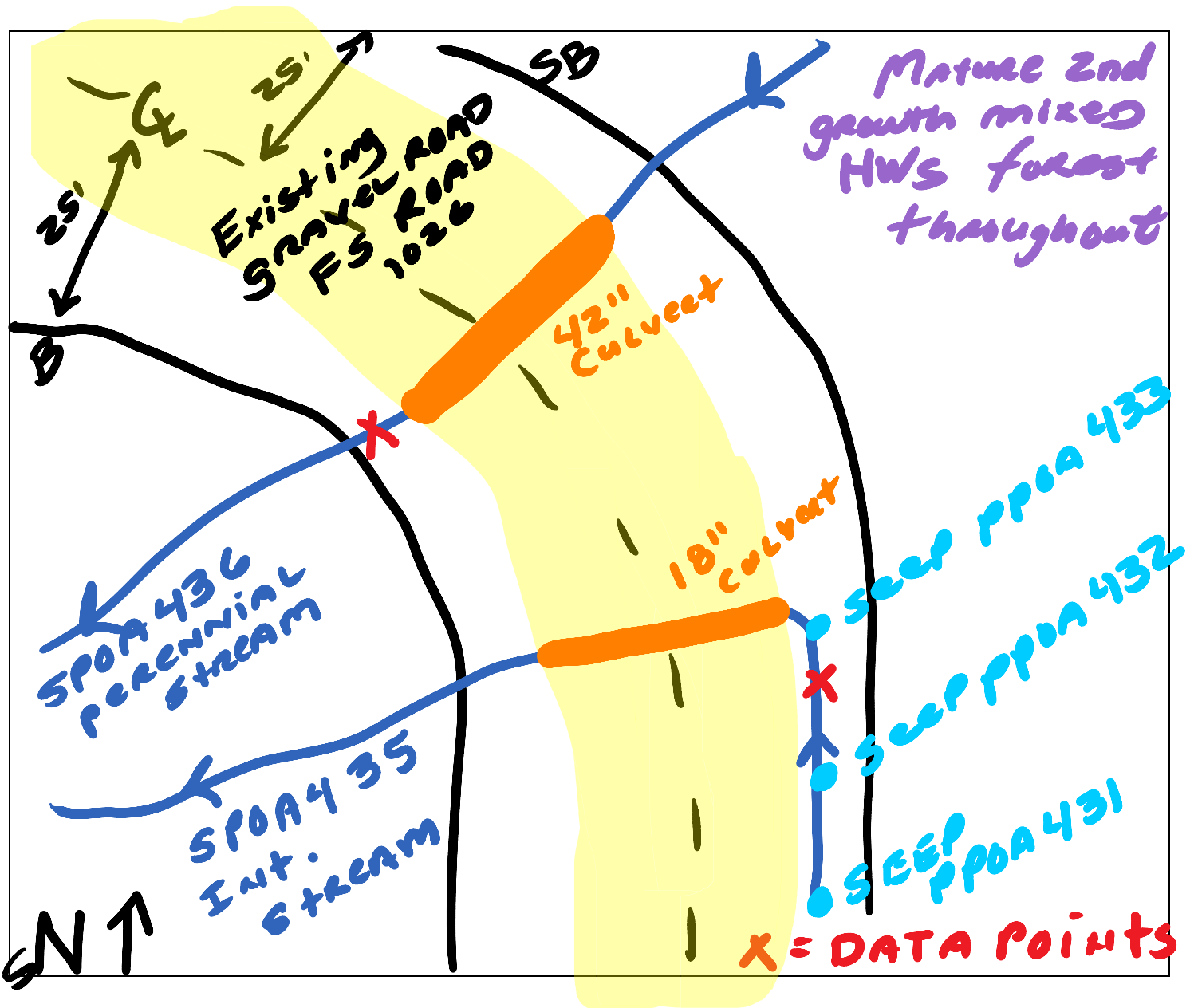
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA435 facing south upstream



Waterbody SPOA435 facing north downstream



Waterbody SPOA435 facing east across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa436		Date: 6/7/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	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 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: 9.0 ft.	OHWM Indicator: <i>(check all that apply)</i>	<input type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
Height: 1.0 ft.		<input type="checkbox"/> Wrested vegetation	<input checked="" type="checkbox"/> Scouring
N/A <input type="checkbox"/>	<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"/> Water staining
Width of Waterbody - Top of Bank to Top of Bank: 20.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 6.0 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 6.5 ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> 0.40 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> 2.0 fps N/A <input type="checkbox"/>	Bank height Right: 4.0 ft. Left: 6.0 ft.	Bank slope Right: 45 degrees Left: 60 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks appear stable; mostly boulders, cobble, and bedrock			
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: 30% 25% 30% 10% 5% % % %			
Width of Riparian Zone: 40 ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: 14.0 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 1.0 in. <input checked="" type="checkbox"/> Herbs		
Dominant Bank Vegetation (list): Sugar maple, yellow birch, black locust, basswood, pignut hickory, beech, striped maple, northern red oak, wing stem, anemone, jewel weed, wood nettle, bee balm, violet, Dutchman's pipe vine, stonecrop			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, step pools, coarse woody debris, overhanging boulders			
Aquatic Organisms Observed (list): Caddisfly, mayfly, salamander			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Crossing for existing road via 42" corrugated metal culvert			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa436

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

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

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

Notes:

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

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

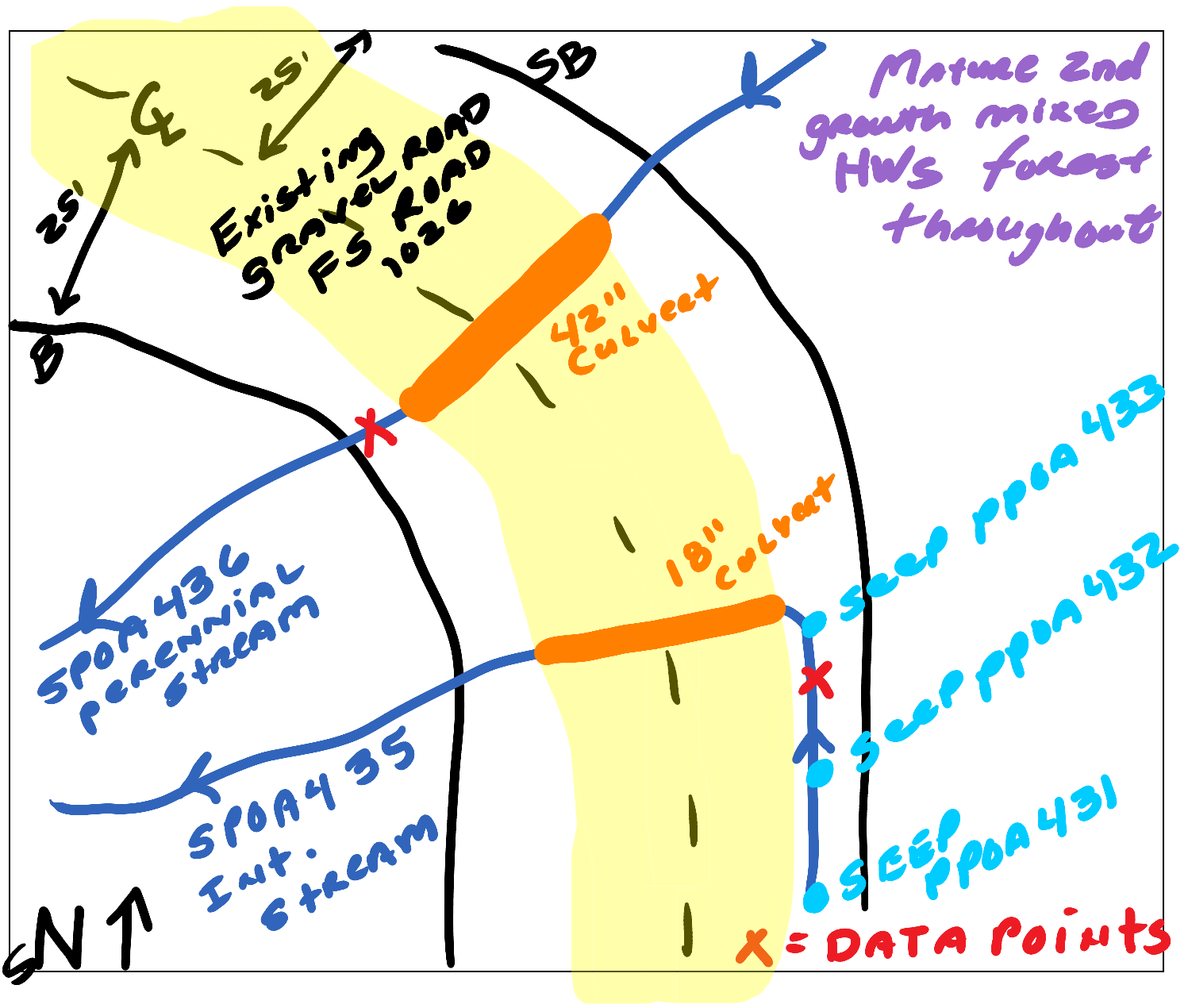
Stream Quality ^a :

(check one)

High

Moderate

Low





Waterbody SPOA436 facing east upstream



Waterbody SPOA436 facing west downstream



Waterbody SPOA436 facing north across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa437		Date: 6/7/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	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: 2.0 ft.	OHWM Indicator: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
Height: 0.33 ft.	<input type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input checked="" type="checkbox"/> Litter and debris
N/A <input type="checkbox"/>		<input type="checkbox"/> Wrested vegetation	<input checked="" type="checkbox"/> Scouring
		<input type="checkbox"/> Abrupt plant community change	<input type="checkbox"/> Water staining
Width of Waterbody - Top of Bank to Top of Bank: 10.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 1.5 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 1.5 ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> 0.20 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> 0.50 fps N/A <input type="checkbox"/>	Bank height Right: 10.0 ft. Left: 2.0 ft.	Bank slope Right: 70 degrees Left: 40 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks are road base and road cut; confined to ditch along existing gravel road			
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: _____% _____% 30% 40% 10% 10% 10% _____%			
Width of Riparian Zone: N/A <input checked="" type="checkbox"/> _____ ft.	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: 14.0 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 1.0 in. <input checked="" type="checkbox"/> Herbs		
Dominant Bank Vegetation (list): Sugar maple, yellow birch, black locust, basswood, pignut hickory, beech, striped maple, northern red oak, wing stem, colts foot, jewel weed, wood nettle, bee balm, violet, Dutchman's pipe vine, bears foot, slippery elm, red elderberry			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs			
Aquatic Organisms Observed (list): Caddisfly			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Crossing for existing road via 18" corrugated metal culvert; confined to ditch upstream of culvert			
Tributary is: <i>(check one)</i> <input type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated			

Waterbody ID:

spoa437

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

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

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

Notes:

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

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

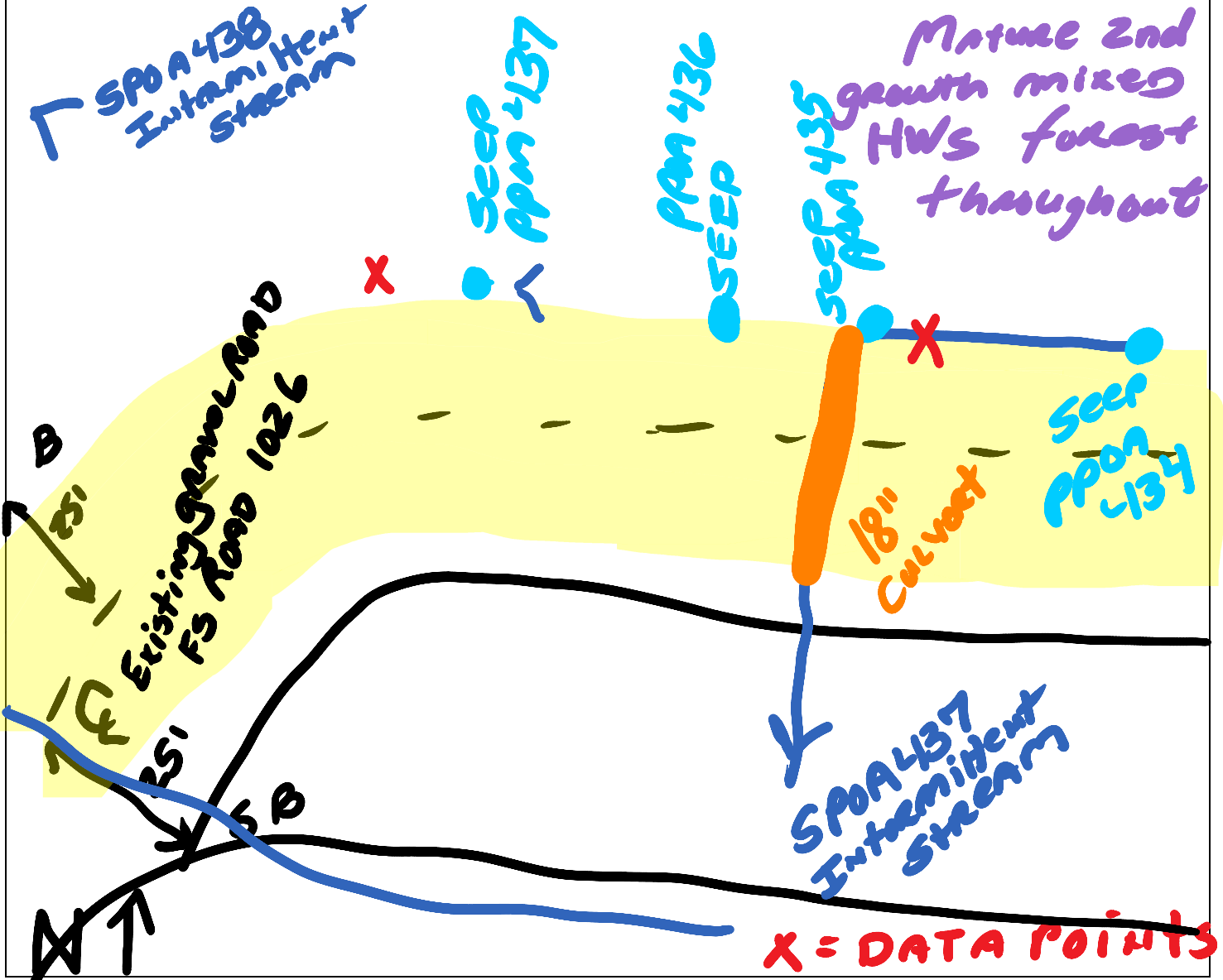
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA437 facing east upstream



Waterbody SPOA437 facing west downstream



Waterbody SPOA437 facing north across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa438		Date: 6/7/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	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: 2.0 ft.	OHWM Indicator: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
Height: 0.33 ft.	<input type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input checked="" type="checkbox"/> Litter and debris
N/A <input type="checkbox"/>		<input type="checkbox"/> Wrested vegetation	<input checked="" type="checkbox"/> Scouring
		<input type="checkbox"/> Abrupt plant community change	<input type="checkbox"/> Water staining
Width of Waterbody - Top of Bank to Top of Bank: 12.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 2.0 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 2.0 ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> 0.20 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> 0.50 fps N/A <input type="checkbox"/>	Bank height Right: 15.0 ft. Left: 2.0 ft.	Bank slope Right: 60 degrees Left: 40 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks are road base and road cut; confined to ditch along existing gravel road			
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: _____% _____% 30% 40% 15% 10% 5% _____%			
Width of Riparian Zone: N/A <input checked="" type="checkbox"/> _____ ft.	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: 14.0 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 1.0 in. <input checked="" type="checkbox"/> Herbs		
Dominant Bank Vegetation (list): Sugar maple, yellow birch, black locust, basswood, pignut hickory, beech, striped maple, northern red oak, wing stem, colts foot, jewel weed, wood nettle, bee balm, violet, Dutchman's pipe vine, bears foot, slippery elm, red elderberry			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs			
Aquatic Organisms Observed (list): Caddisfly, mayfly, salamander			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Confined to ditch			
Tributary is: <i>(check one)</i> <input type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated			

Waterbody ID:

spoa438

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

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

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

Notes:

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

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

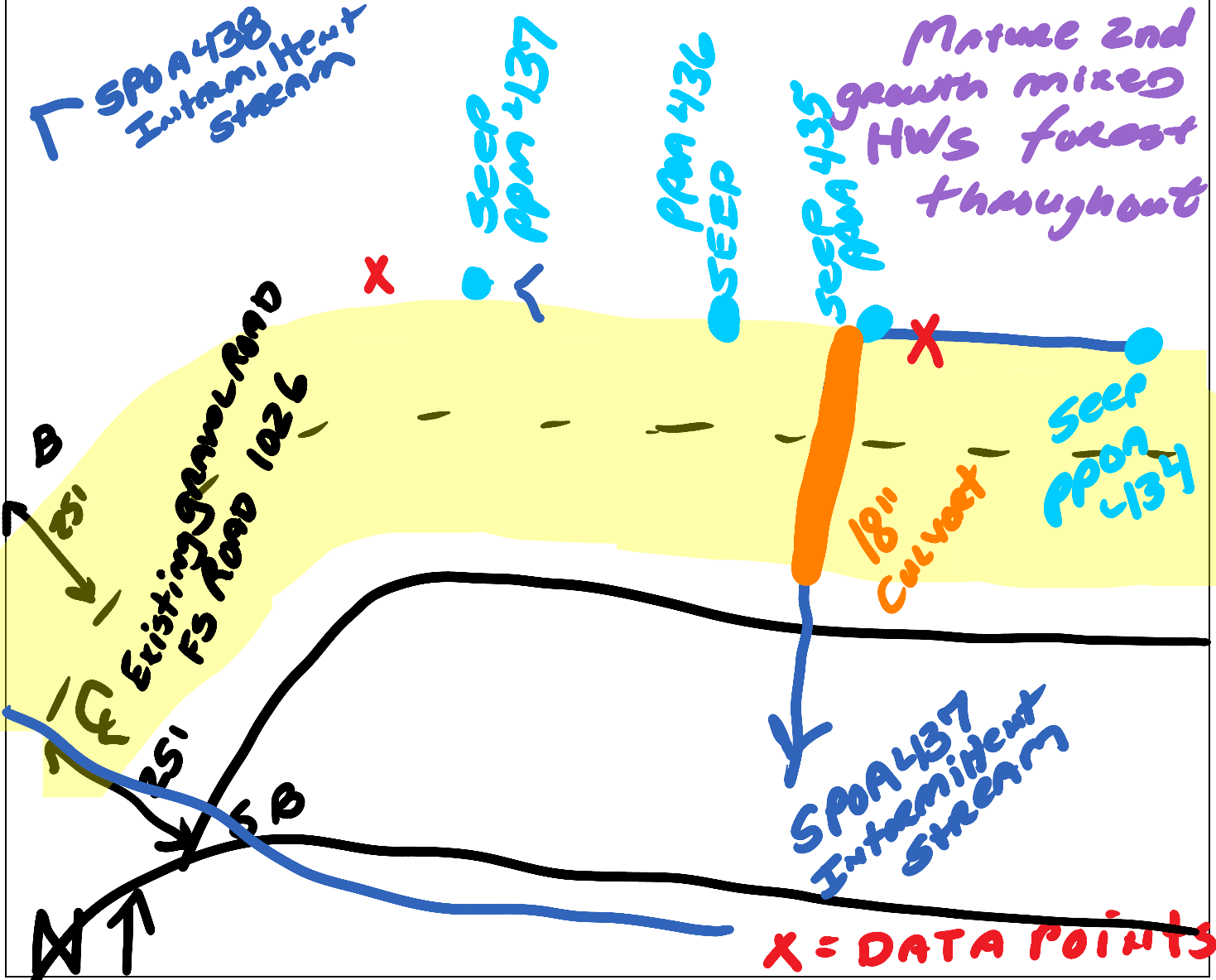
Stream Quality ^a:

(check one)

High

Moderate

Low



S



Waterbody SPOA438 facing east upstream



Waterbody SPOA438 facing west downstream



Waterbody SPOA438 facing north across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa430		Date: 6/6/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	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: 2.0 ft.	OHWM Indicator: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
Height: 0.33 ft.	<input type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input type="checkbox"/> Litter and debris
N/A <input type="checkbox"/>		<input type="checkbox"/> Wrested vegetation	<input checked="" type="checkbox"/> Scouring
		<input type="checkbox"/> Abrupt plant community change	<input type="checkbox"/> Water staining
Width of Waterbody - Top of Bank to Top of Bank: 8.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 1.5 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 1.5 ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> 0.20 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> 1.0 fps N/A <input type="checkbox"/>	Bank height Right: 3.0 ft. Left: 6.0 ft.	Bank slope Right: 60 degrees Left: 70 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks are road base and road cut; confined to ditch along existing gravel road			
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: _____% _____% 30% 25% 20% 20% 5% _____%			
Width of Riparian Zone: N/A <input checked="" type="checkbox"/> _____ ft.	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: 14.0 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 2.0 in. <input checked="" type="checkbox"/> Herbs		
Dominant Bank Vegetation (list): Sugar maple, yellow birch, black locust, basswood, pignut hickory, wood nettle, jewel weed, bitter dock, woodland bluegrass, bee balm, goldenrod, colts foot			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, emergent vegetation			
Aquatic Organisms Observed (list): Caddisfly, mayfly, salamander			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Crossing for existing road via 18" corrugated metal culvert; confined to ditch upstream of culvert			
Tributary is: <i>(check one)</i> <input type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated			

Waterbody ID:

spoa430

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

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

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

Notes:

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

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

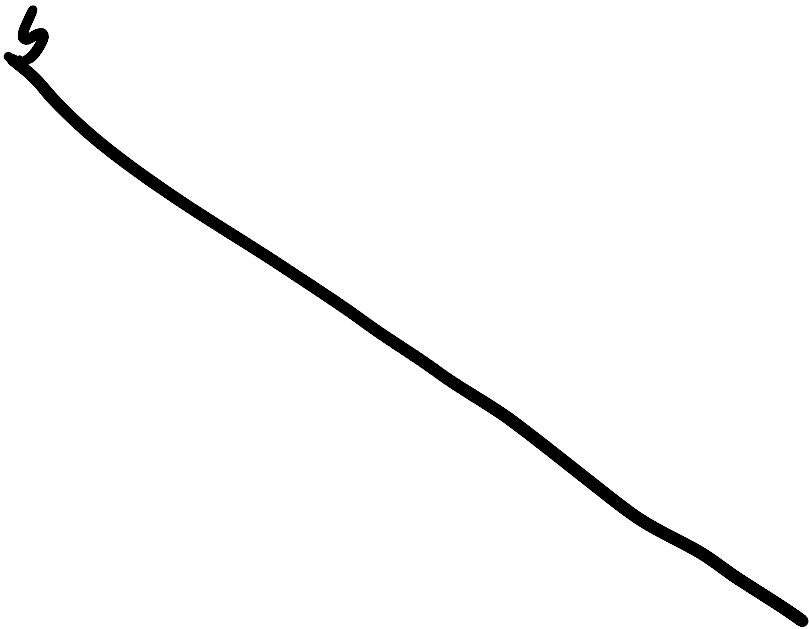
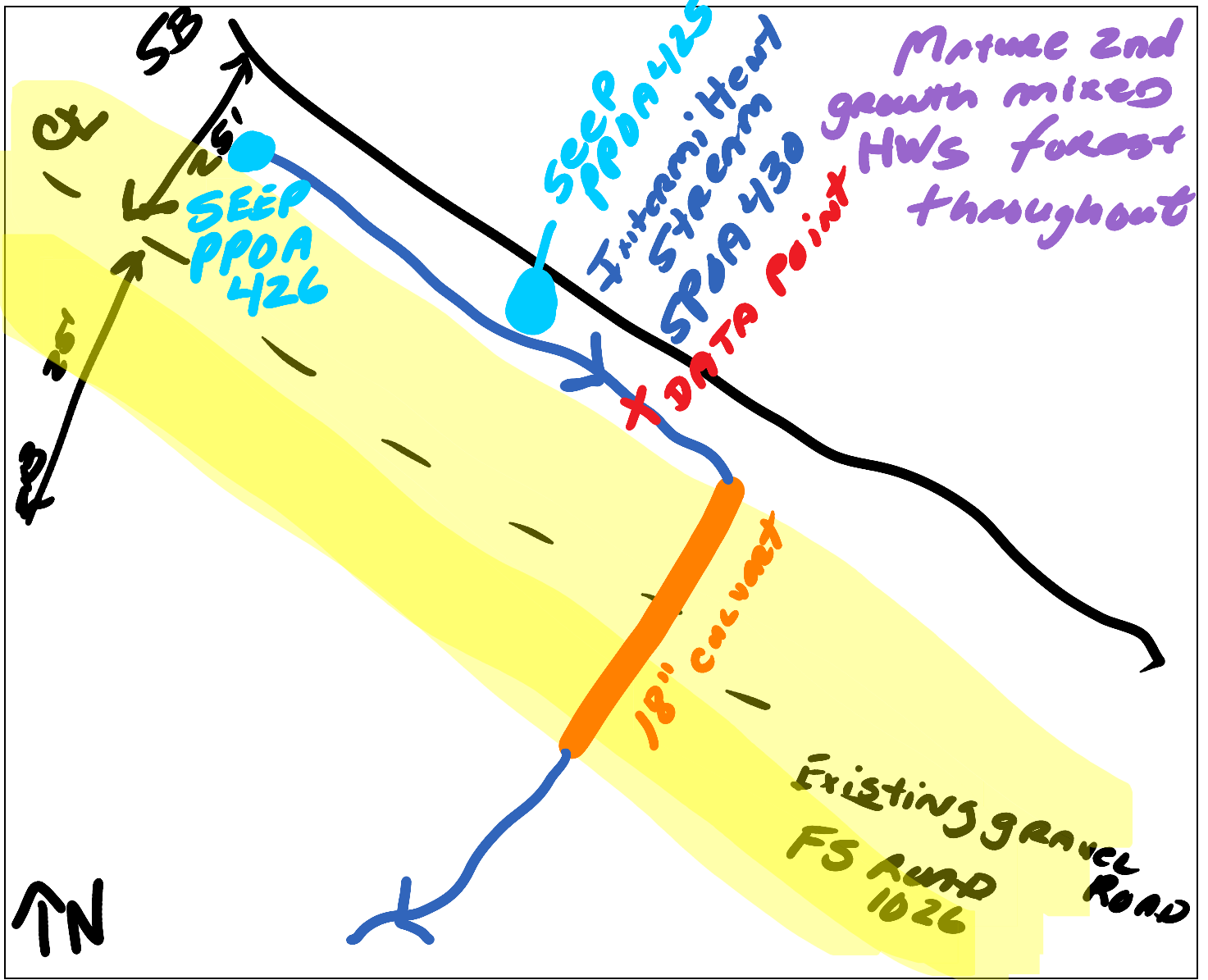
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA430 facing northwest upstream



Waterbody SPOA430 facing southeast downstream

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa431		Date: 6/6/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Photos: 3 photos			
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	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 type="checkbox"/> Stream <input checked="" 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
Height: 0.33 ft.	<input type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input type="checkbox"/> Litter and debris
N/A <input type="checkbox"/>		<input type="checkbox"/> Wrested vegetation	<input checked="" type="checkbox"/> Scouring
		<input type="checkbox"/> Abrupt plant community change	<input type="checkbox"/> Water staining
Width of Waterbody - Top of Bank to Top of Bank: 8.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 1.5 ft.	Width of Waterbody - Water Edge to Water Edge: 1.5 ft.	Depth of Water: <i>(Approx.)</i> 0.20 ft.
		N/A <input type="checkbox"/>	N/A <input type="checkbox"/>
Sinuosity: <i>(check one)</i>	Water velocity: <i>(Approx.)</i>	Bank height	Bank slope
<input checked="" type="checkbox"/> Straight	1.0 fps	Right: 3.0 ft.	Right: 60 degrees
<input type="checkbox"/> Meandering	N/A <input type="checkbox"/>	Left: 6.0 ft.	Left: 70 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks are road base and road cut; confined to ditch along existing gravel road			
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 checked="" 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: _____% _____% 30% 25% 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: 14.0 in.		
	<input checked="" type="checkbox"/> Saplings/Shrubs: 2.0 in.		
	<input checked="" type="checkbox"/> Herbs		
Dominant Bank Vegetation (list): Sugar maple, yellow birch, black locust, basswood, pignut hickory, wood nettle, jewel weed, bitter dock, woodland bluegrass, bee balm, goldenrod, colts foot			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, emergent vegetation			
Aquatic Organisms Observed (list): Caddisfly			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Confined to ditch			
Tributary is: <i>(check one)</i> <input type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated			

Waterbody ID:

spoa431

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

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

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

Notes:

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

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

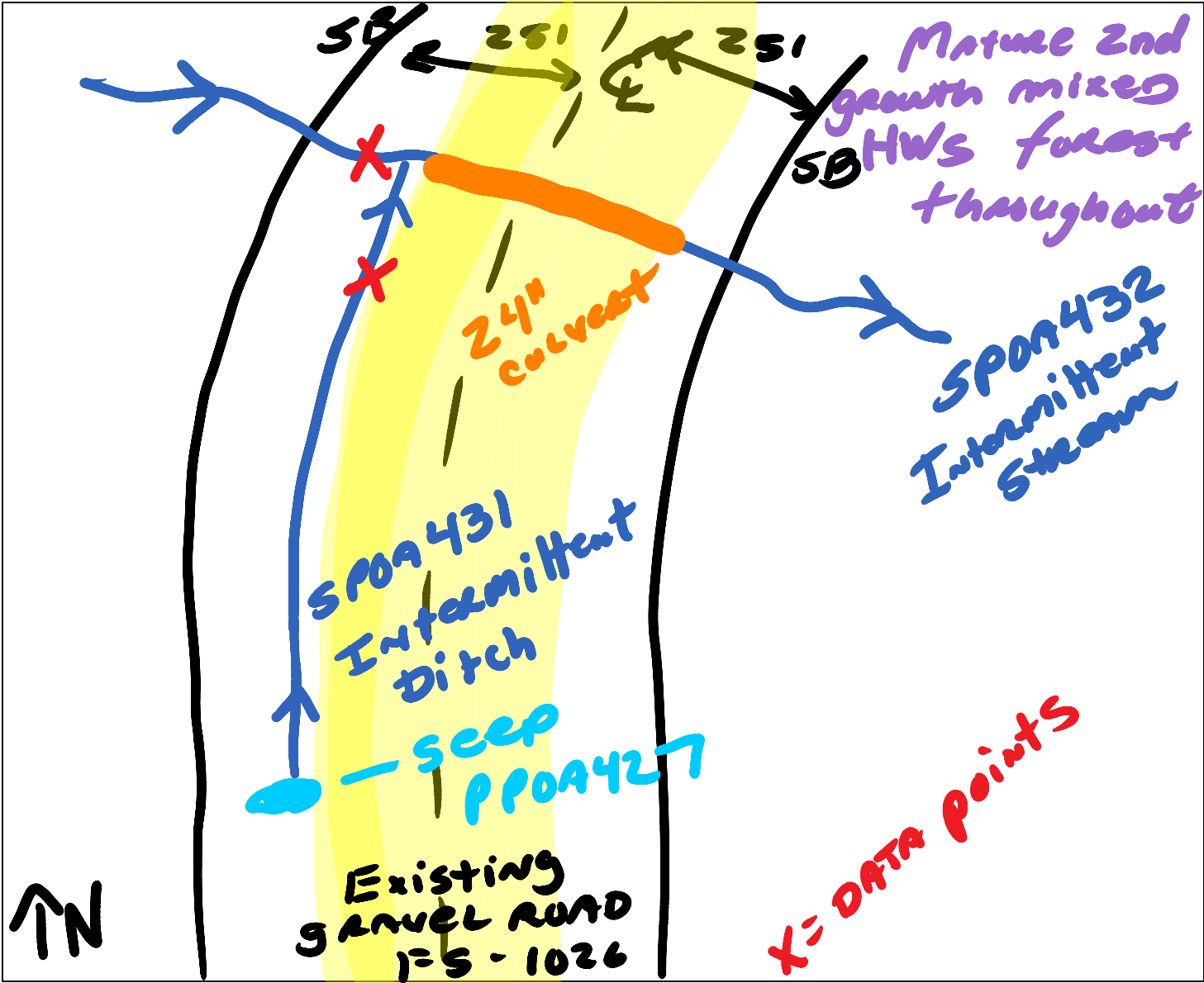
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA431 facing east across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa432		Date: 6/6/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Photos: 3 photos			
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	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: 5.0 ft.	OHWM Indicator: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
Height: 0.50 ft.	<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: 10.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 3.0 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 4.0 ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> 0.25 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> 2.0 fps	Bank height Right: 4.0 ft. Left: 4.0 ft.	Bank slope Right: 60 degrees Left: 50 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): No evidence of bank instability observed			
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: _____% 45% 45% 5% 5% _____% _____%			
Width of Riparian Zone: N/A <input checked="" type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Trees: 14.0 in.	<input checked="" type="checkbox"/> Saplings/Shrubs: 2.0 in.
	Avg. DBH of Dominants: <i>(approx.)</i>		<input checked="" type="checkbox"/> Herbs
Dominant Bank Vegetation (list): Sugar maple, yellow birch, black locust, basswood, pignut hickory, wood nettle, jewel weed, bitter dock, woodland bluegrass, bee balm, goldenrod, colts foot			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Woody debris, emergent vegetation			
Aquatic Organisms Observed (list): Caddisfly, mayfly			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Crossing for existing gravel road via 24" corrugated metal culvert			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa432

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

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

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

Notes:

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

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

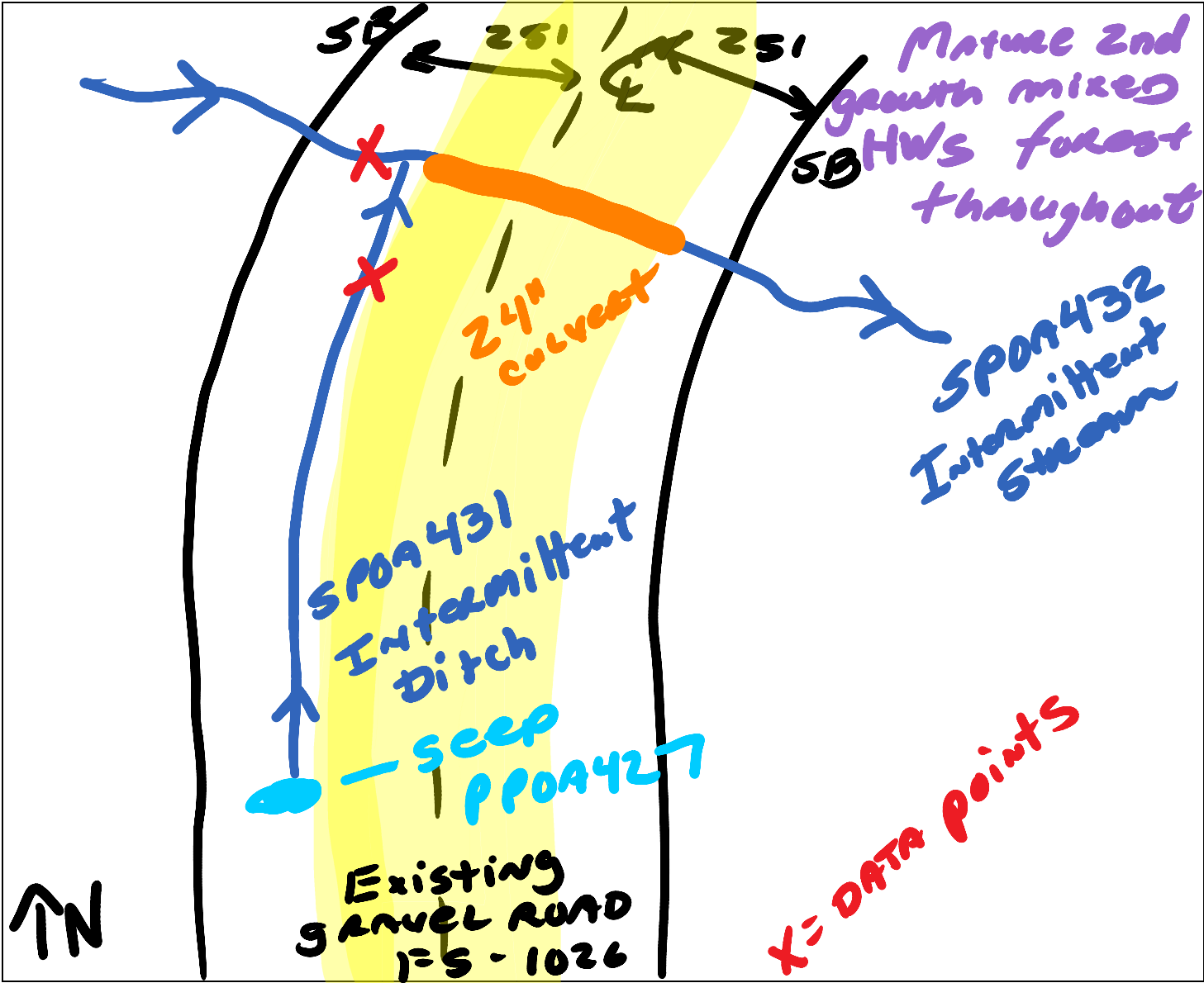
Stream Quality ^a :

(check one)

High

Moderate

Low





Waterbody SPOA432 facing east upstream



Waterbody SPOA432 facing west downstream



Waterbody SPOA432 facing north across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Slaty Fork	
Waterbody ID: spoa433		Date: 6/6/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, KO
Photos: 3 photos			
Tract Number(s): access road 05-001-C008.AR1		Nearest Milepost: 72.0	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: 2.0 ft.	OHWM Indicator: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
Height: 0.33 ft.	<input type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input type="checkbox"/> Litter and debris
N/A <input type="checkbox"/>		<input type="checkbox"/> Wrested vegetation	<input checked="" type="checkbox"/> Scouring
		<input type="checkbox"/> Abrupt plant community change	<input type="checkbox"/> Water staining
Width of Waterbody - Top of Bank to Top of Bank: 8.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 1.5 ft.	Width of Waterbody - Water Edge to Water Edge: 1.5 ft.	Depth of Water: <i>(Approx.)</i> 0.15 ft.
N/A <input type="checkbox"/>		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> 0.50 fps	Bank height Right: 3.0 ft. Left: 10.0 ft.	Bank slope Right: 50 degrees Left: 75 degrees
N/A <input type="checkbox"/>	N/A <input type="checkbox"/>		
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks are road base and road cut; confined to ditch along existing gravel road			
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 checked="" 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: _____% _____% 30% 25% 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: 14.0 in.		
	<input checked="" type="checkbox"/> Saplings/Shrubs: 2.0 in.		
	<input checked="" type="checkbox"/> Herbs		
Dominant Bank Vegetation (list): Sugar maple, yellow birch, black locust, basswood, pignut hickory, wood nettle, jewel weed, bitter dock, woodland bluegrass, bee balm, goldenrod, colts foot			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, emergent vegetation			
Aquatic Organisms Observed (list): Caddisfly			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Crossing for existing road via 18" corrugated metal culvert; confined to ditch upstream of culvert			
Tributary is: <i>(check one)</i> <input type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated			

Waterbody ID:

spoa433

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

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

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

Notes:

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

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

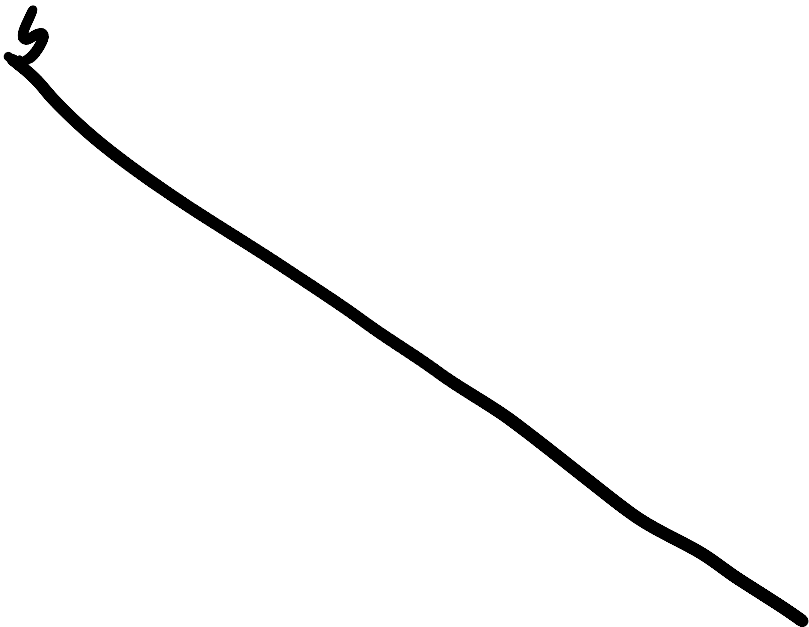
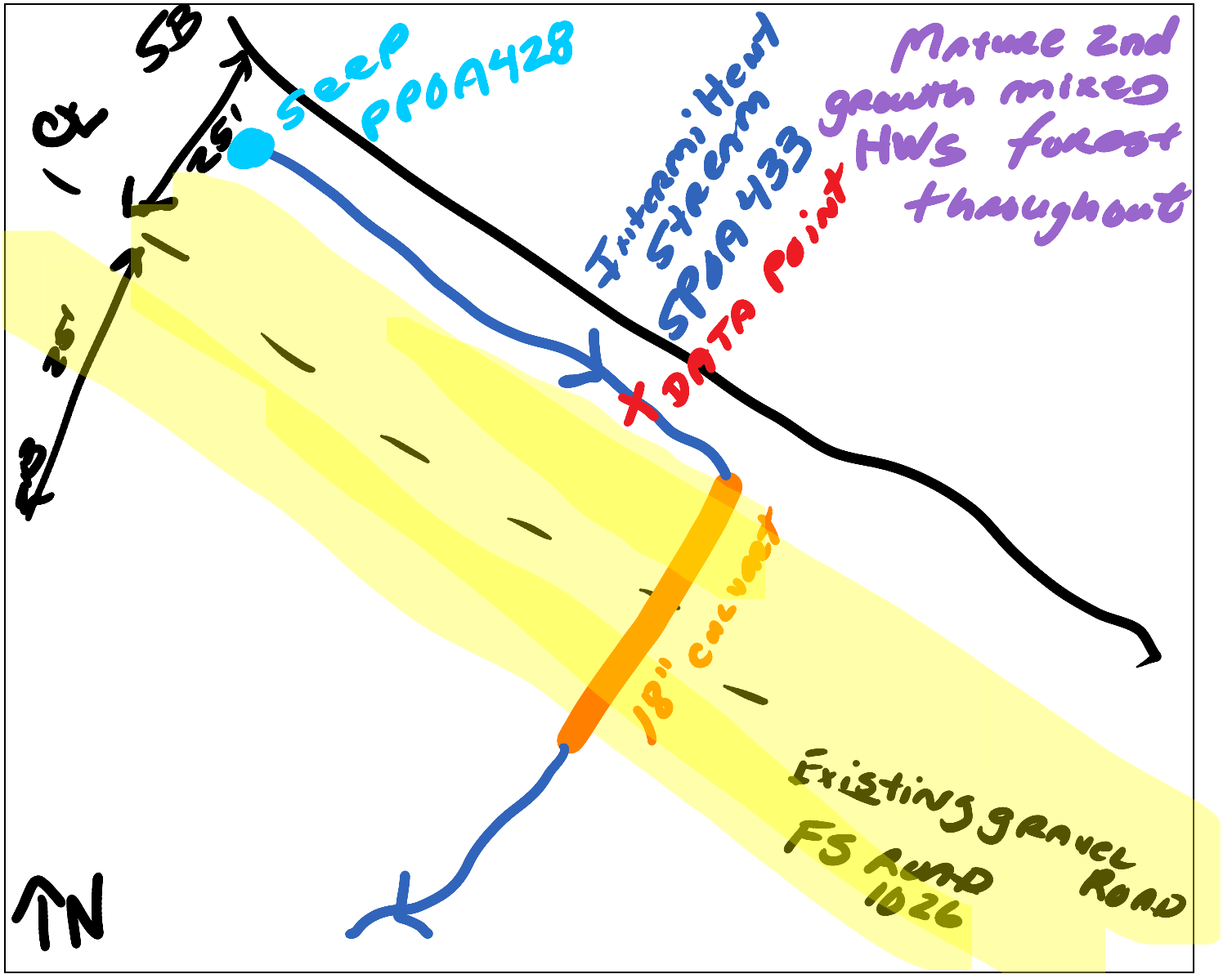
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA433 facing north upstream



Waterbody SPOA433 facing south downstream



Waterbody SPOA433 facing east across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Sugar Camp Run	
Waterbody ID: sboa408		Date: 5/25/2016	
State: West Virginia	County: Pocahontas	Company: NRG - ERM	Crew Member Initials: GB, KO
Tract Number(s): Access road 05-001-E064.AR1 within 05-001-E064		Nearest Milepost: 81.1	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: 5.0 ft. Height: 1.0 ft. N/A <input type="checkbox"/>		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 <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: 9.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 4.0 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 3.0 ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> 0.25 ft.
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: 3.0 ft. Left: 3.0 ft.	Bank slope Right: 90 degrees Left: 70 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks exhibit undercutting; loose soil/rock and exposed roots present			
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: _____% _____% 30% 35% 25% _____% 10% _____%			
Width of Riparian Zone: 50 ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: 11.0 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 1.0 in. <input checked="" type="checkbox"/> Herbs: - Avg. DBH of Dominants: <i>(approx.)</i>		
Dominant Bank Vegetation (list): White oak, red maple, sugar maple, white pine, ironwood, violet, golden ragwort, Christmas fern, black cohosh, Virginia creeper, wood fern			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, overhanging banks, coarse woody debris			
Aquatic Organisms Observed (list): Invertebrates – stonefly, caddisfly, black fly			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Paralleled by existing gravel road			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:
spoa408

- ^a **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.
- Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.
- Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

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

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

Stream Quality ^a:
(check one) High Moderate Low

↑N

Mature 2nd growth mixed ItWs
with white pine element throughout SB

Existing gravel ROAD
Forest Service ROAD 1012

25'

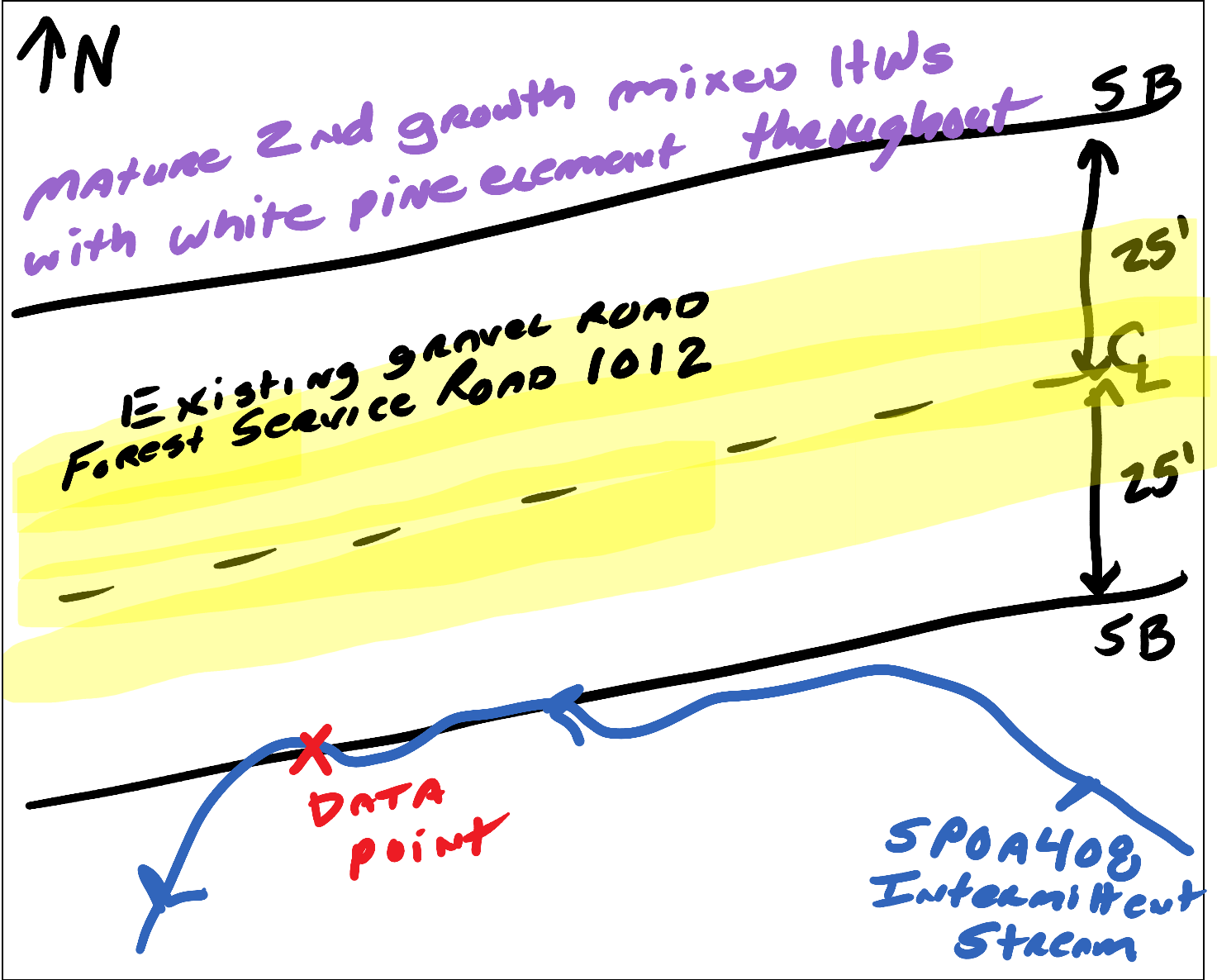
CL

25'

SB

X
DATA
POINT

SPOA408
Intermittent
Stream





Waterbody SPOA408 facing northeast upstream



Waterbody SPOA408 facing southwest downstream



Waterbody SPOA408 facing northwest across



Waterbody SPOA408 scouring facing northwest across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Sugar Camp Run	
Waterbody ID: spoa402		Date: 5/12/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, SA
Photos: 3 photos			
Tract Number(s): 05-001-E064 – Monongahela National Forest		Nearest Milepost: 81.5	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: 4.0 ft.		OHWM Indicator: <i>(check all that apply)</i>	
OHWM Height: 0.50 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 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: 10.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 3.0 ft.	Width of Waterbody - Water Edge to Water Edge: 3.0 ft.	Depth of Water: <i>(Approx.)</i> 0.25 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> 0.75 fps	Bank height Right: 3.0 ft. Left: 6.0 ft.
Bank slope Right: 75 degrees Left: 75 degrees			
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): No evidence of bank instability			
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 checked="" 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: _____% _____% 40% 30% 10% 10% 10% _____%			
Width of 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		
N/A <input checked="" type="checkbox"/>	Avg. DBH of Dominants: <i>(approx.)</i> 12.0 in. 1.5 in. -		
Dominant Bank Vegetation (list): White pine, red maple, sugar maple, northern red oak, witch hazel, chestnut oak, striped maple, violet, hay scented fern, Christmas fern, partridge berry, wood fern			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): coarse woody debris in channel, scattered leaf packs			
Aquatic Organisms Observed (list): Invertebrates			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): None apparent			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa402

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

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

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

Notes:

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

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

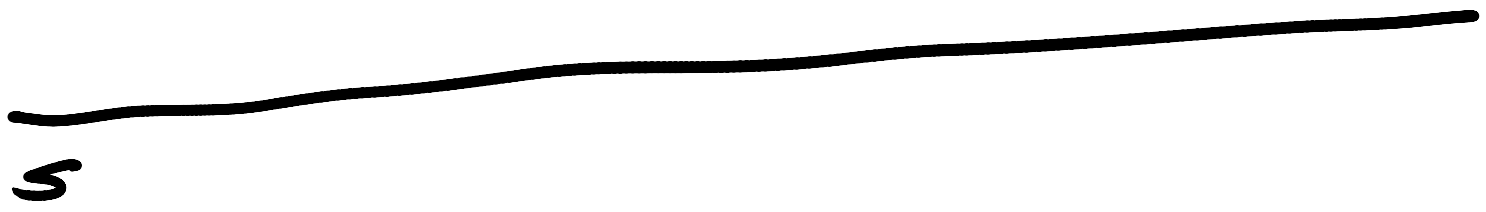
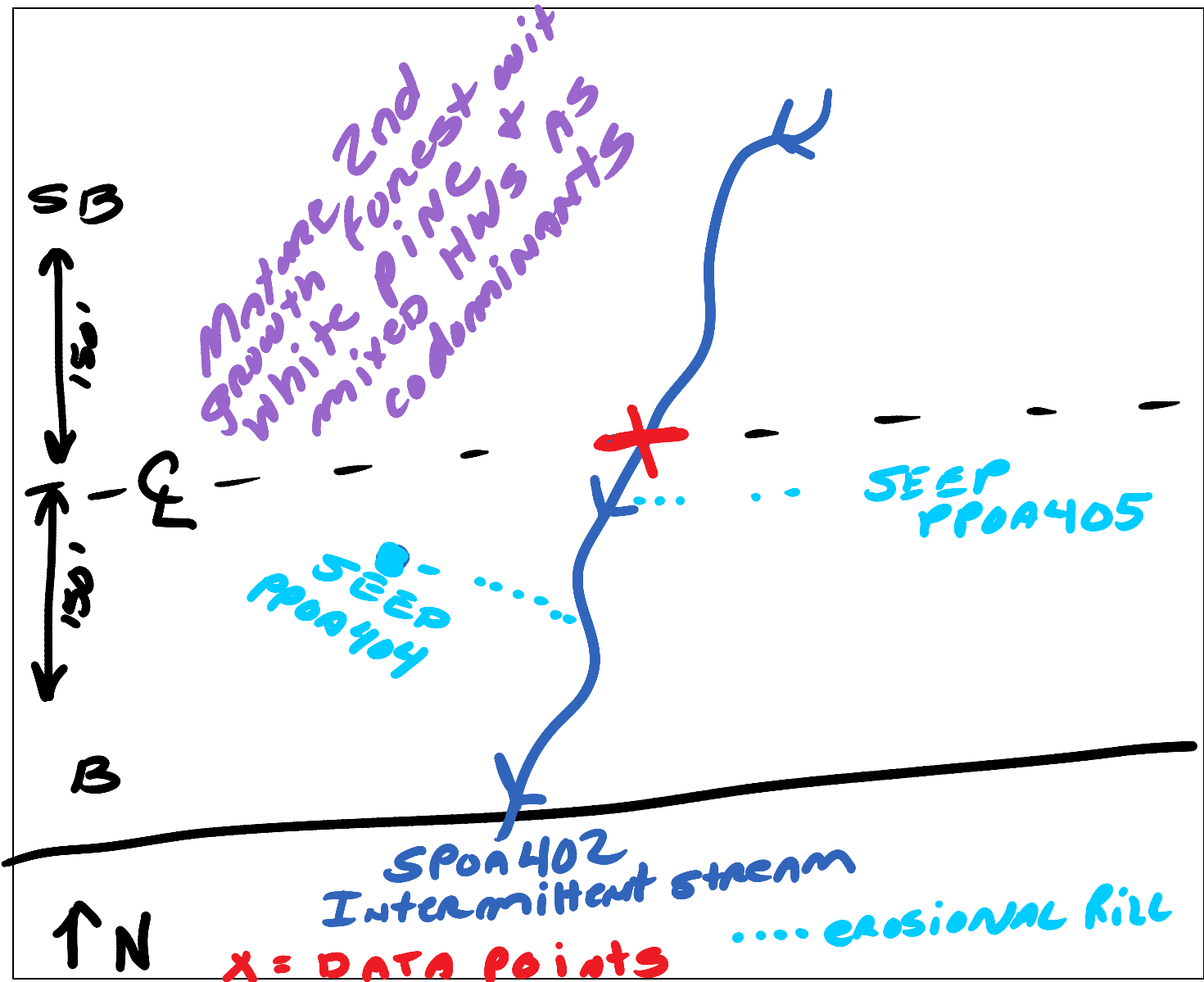
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA402 facing north upstream



Waterbody SPOA402 facing south downstream



Waterbody SPOA402 facing west across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Sugar Camp Run	
Waterbody ID: spoa410		Date: 5/25/2016	
State: West Virginia	County: Pocahontas	Company: NRG - ERM	Crew Member Initials: GB, KO
Tract Number(s): Access road 05-001-E064.AR1 within 05-001-E064		Nearest Milepost: 81.9	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 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>1.0</u> ft. Height: <u>0.33</u> ft. N/A <input type="checkbox"/>		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 <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>3.0</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>1.0</u> 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: <u>2.0</u> ft. Left: <u>3.0</u> ft.	Bank slope Right: <u>75</u> degrees Left: <u>85</u> degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): No evidence of bank instability observed			
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> <input type="checkbox"/> Bedrock <input 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 checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: % of Substrate: _____ % _____ % <u>25</u> % <u>35</u> % <u>20</u> % <u>10</u> % <u>10</u> % _____ %			
Width of Riparian Zone: <u>30</u> ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <u>10.0</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>1.0</u> in. <input checked="" type="checkbox"/> Herbs		
Dominant Bank Vegetation (list): White oak, Chestnut oak, striped maple, black locust, white pine, sweet birch, New York fern, witch hazel, blackberry, violet, speedwell, buttercup, goldenrod			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs			
Aquatic Organisms Observed (list): None			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Existing dirt road crosses stream with no bridge or culvert present			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa410

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

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

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

Notes:

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

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

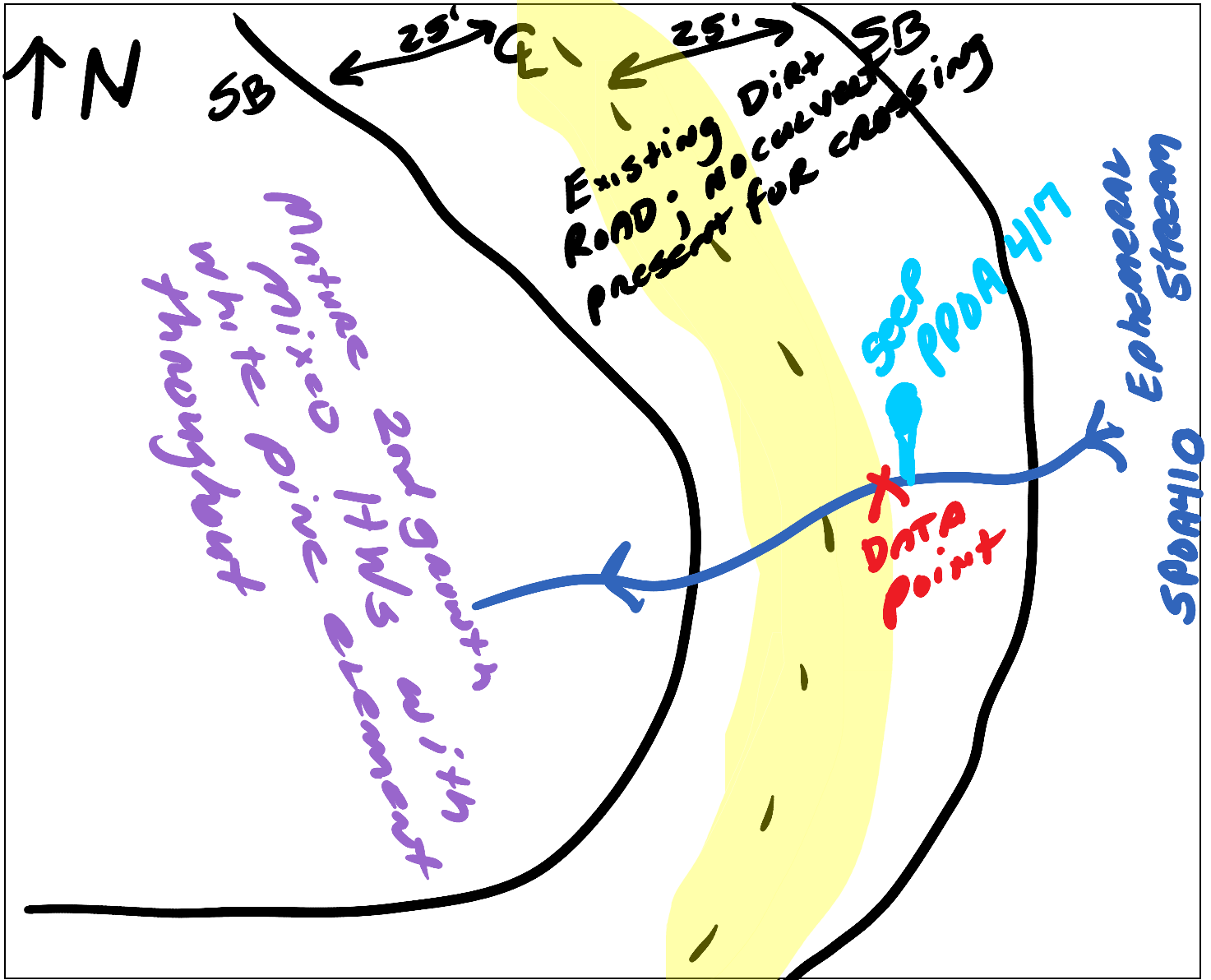
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA410 facing southeast upstream



Waterbody SPOA410 facing northwest downstream



Waterbody SPOA410 facing northeast across



Waterbody SPOA410 scouring facing east

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Shock Run	
Waterbody ID: spoa400		Date: 5/12/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, SA
Photos: 5 photos			
Tract Number(s): 05-001-E064 – Monongahela National Forest		Nearest Milepost: 82.05	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 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: 1.0 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	
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: 16.0 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> 0.50 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> 1.75 fps	Bank height: Right: 4.0 ft. Left: 3.0 ft.
N/A <input type="checkbox"/>		Bank slope: Right: 90 degrees Left: 50 degrees	
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Loose rocks/soil and exposed roots in places; would consider normal for a stream of this gradient with flashy, high flows			
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 type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: _____% 5% 50% 30% 10% _____% 5% _____%			
Width of Riparian Zone: 50 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> 12.0 in. 1.0 in. -		
Dominant Bank Vegetation (list): Sugar maple, hemlock, sweet birch, beech, black cherry, striped maple, witch hazel, green ash, Christmas fern, wood nettle, foamflower, violet, lady fern, woodland sedge			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Small step poles, riffles, core woody debris in channel, scattered leaf packs along edges, wrack piles			
Aquatic Organisms Observed (list): Invertebrates, crayfish			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): None apparent			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa400

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

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

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

Notes:

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

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

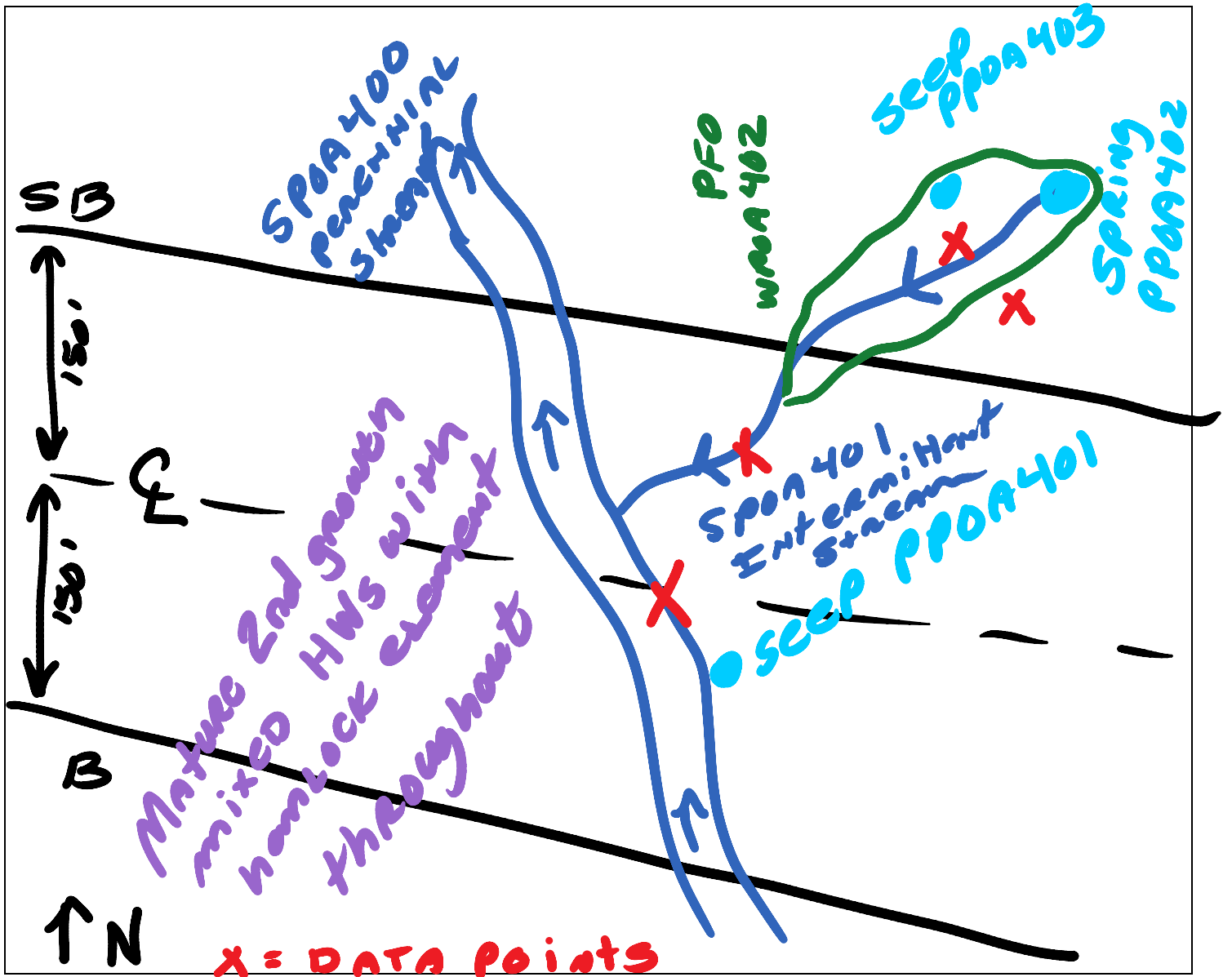
Stream Quality ^a:

(check one)

High

Moderate

Low



5



Waterbody SPOA400 facing south upstream



Waterbody SPOA400 facing north downstream



Waterbody SPOA400 facing east across

Linear Waterbody Data Sheet

Survey Description				
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Shock Run		Waterbody ID: spoa401
Date: 5/12/2016				
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, SA	Photos: 3 photos
Tract Number(s): 05-001-E064 – Monongahela National Forest		Nearest Milepost: 82.05	Associated Wetland ID(s): wpoa402	
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: 4.0 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 checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining		
OHWM Height: 0.50 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: 10.0 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.	
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> 1.5 fps		Bank height Right: 6.0 ft. Left: 7.0 ft.
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>		Bank slope Right: 70 degrees Left: 75 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Loose rocks/soil and exposed roots in places; would consider normal for a stream of this gradient with flashy, high flows				
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 checked="" type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input checked="" type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:				
% of Substrate: 40% % 40% 5% 5% % 10% %				
Width of 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		
N/A <input checked="" type="checkbox"/>		Avg. DBH of Dominants: <i>(approx.)</i> 12.0 in. 1.0 in. -		
Dominant Bank Vegetation (list): Sugar maple, hemlock, sweet birch, beech, black cherry, striped maple, witch hazel, green ash, Christmas fern, wood nettle, foamflower, violet, lady fern, woodland sedge				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): coarse woody debris in channel, scattered leaf packs				
Aquatic Organisms Observed (list): Invertebrates				
T&E Species Observed (list): none				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): None apparent				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				

Waterbody ID:

spoa401

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

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

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

Notes:

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

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

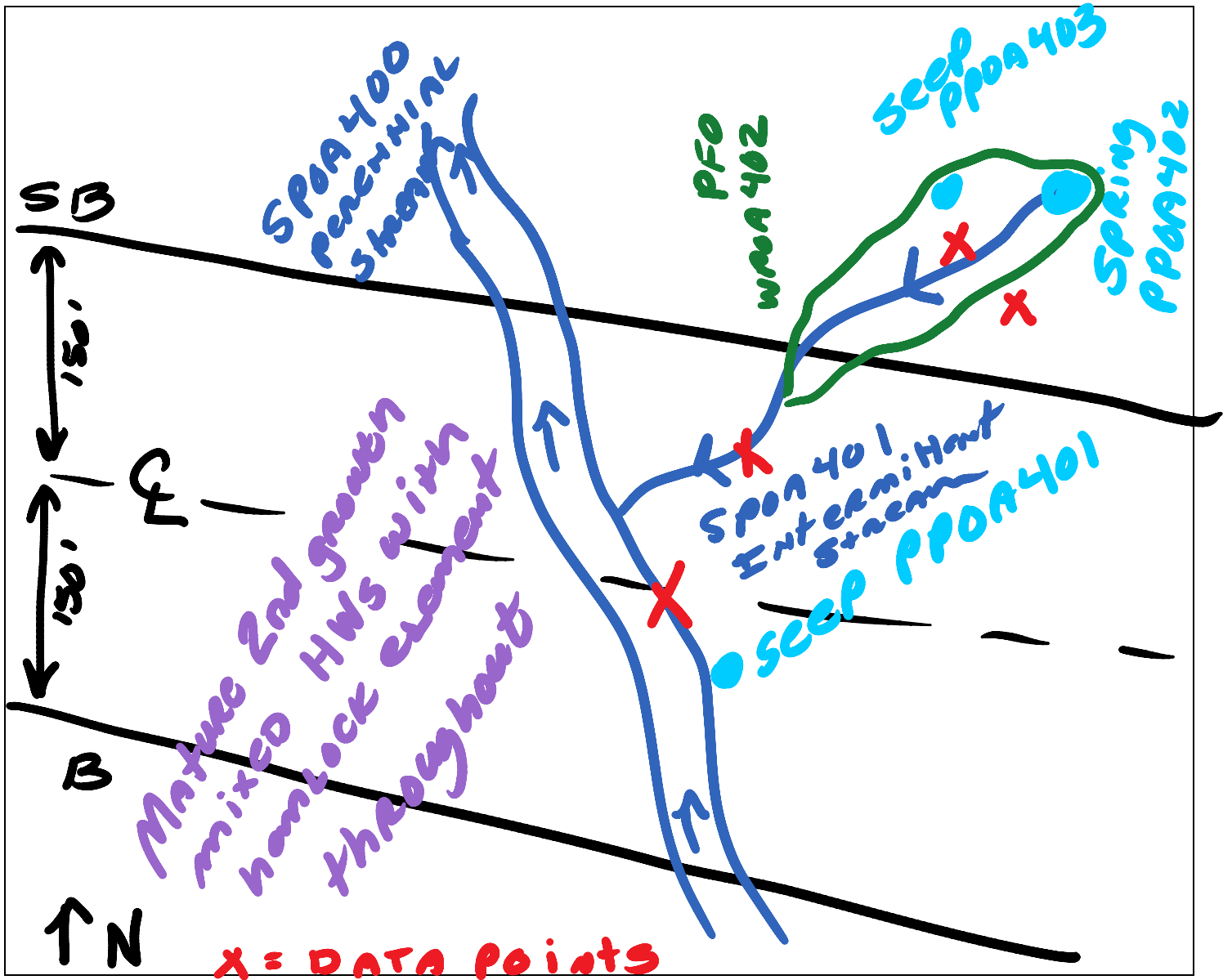
Stream Quality ^a:

(check one)

High

Moderate

Low



5



Waterbody SPOA401 facing east upstream



Waterbody SPOA401 facing west downstream



Waterbody SPOA401 facing north across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Knapp Creek	
Waterbody ID: spoa407		Date: 5/13/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, SA
Photos: 3 photos			
Tract Number(s): Access road 05-001-E064.AR2; Monongahela NF		Nearest Milepost: 83.6	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: 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	
OHWM Height: 0.33 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: 5.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 1.0 ft.	Width of Waterbody - Water Edge to Water Edge: 1.5 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 checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> 1.25 fps	Bank height: Right: 2.5 ft. Left: 10.0 ft.
N/A <input type="checkbox"/>		Bank slope: Right: 60 degrees Left: 70 degrees	
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Confined to ditch along existing road; banks are road cut and road bed			
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 checked="" 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: _____ % _____ % 40 % 35 % 10 % 5 % 10 %			
Width of 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	
N/A <input checked="" type="checkbox"/>		Avg. DBH of Dominants: <i>(approx.)</i> 12.0 in. 1.0 in. -	
Dominant Bank Vegetation (list): Chestnut oak, sweet birch, pignut hickory, white oak, red maple, sugar maple, green ash, serviceberry, garlic mustard, yellow cress, golden ragwort, colts foot, New York fern, white snakeroot			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs			
Aquatic Organisms Observed (list): none			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Culvert crossing for existing gravel road; 24" corrugated metal culvert; confined to ditch for 125 feet along existing road			
Tributary is: <i>(check one)</i> <input type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated			

Waterbody ID:

spoa407

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

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

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

Notes:

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

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

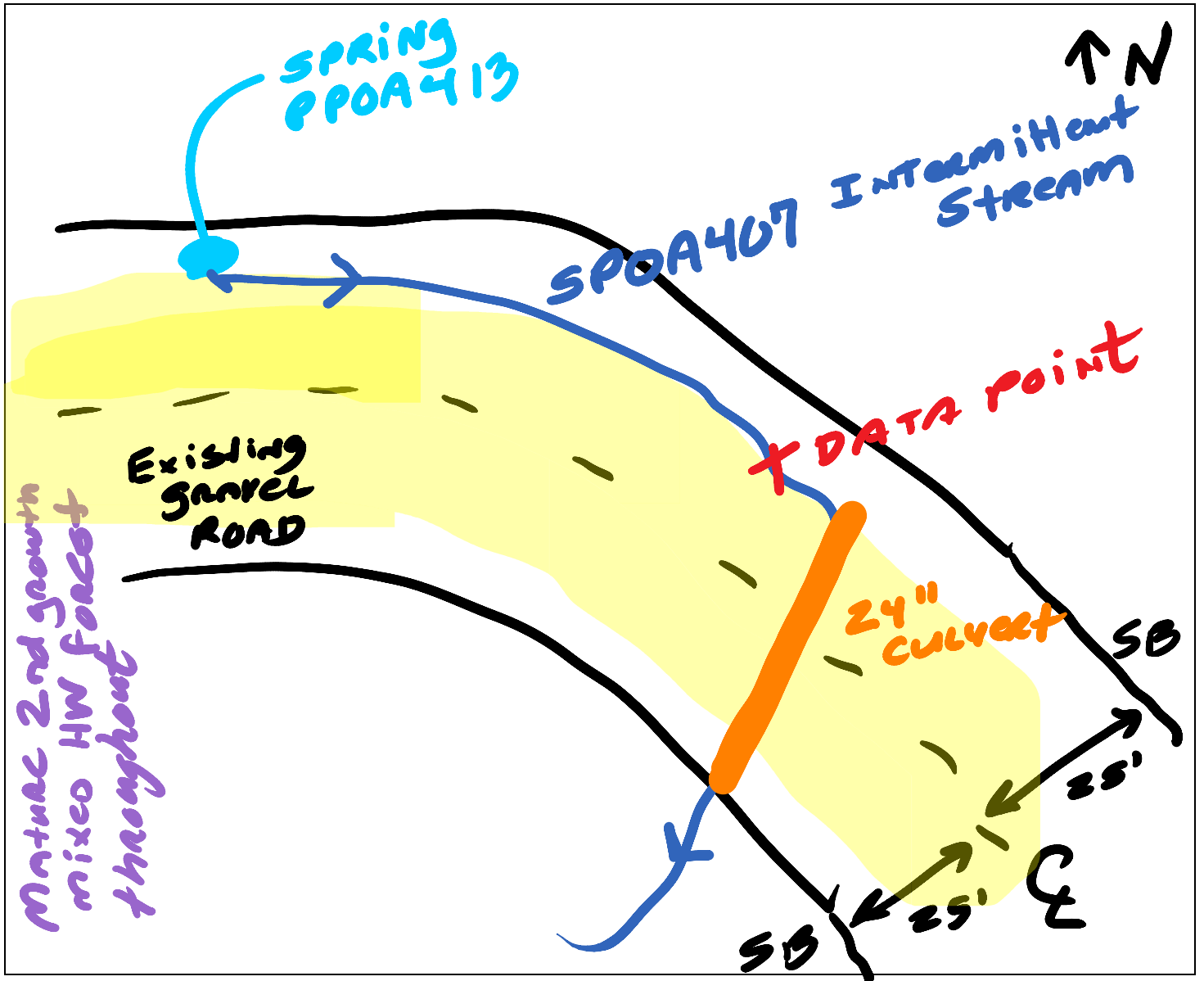
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA407 facing northwest upstream



Waterbody SPOA407 facing southeast downstream



Waterbody SPOA407 facing northeast across

Linear Waterbody Data Sheet

Survey Description				
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Knapp Creek		Waterbody ID: spoa406
Date: 5/13/2016				
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, SA	Photos: 3 photos
Tract Number(s): Access road 05-001-E064.AR2; Monongahela NF		Nearest Milepost: 83.8	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: 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		
OHWM Height: 0.33 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: 5.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 1.0 ft.	Width of Waterbody - Water Edge to Water Edge: 1.5 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 checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> 1.25 fps	Bank height Right: 2.5 ft. Left: 10.0 ft.	
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>		Bank slope Right: 60 degrees Left: 70 degrees
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Confined to ditch along existing road; banks are road cut and road bed				
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 checked="" 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: _____ % _____ % 40 % 35 % 10 % 5 % 10 %				
Width of 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		
N/A <input checked="" type="checkbox"/>		Avg. DBH of Dominants: <i>(approx.)</i> 12.0 in. 1.0 in. -		
Dominant Bank Vegetation (list): Chestnut oak, sweet birch, pignut hickory, white pine, white oak, red maple, sugar maple, green ash, serviceberry, garlic mustard, yellow cress, golden ragwort, colts foot, New York 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 (list): none				
T&E Species Observed (list): none				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Culvert crossing for existing gravel road; 24" corrugated metal culvert; confined to ditch for 150 Ft along existing road				
Tributary is: <i>(check one)</i> <input type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated				

Waterbody ID:

spoa406

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

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

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

Notes:

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

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

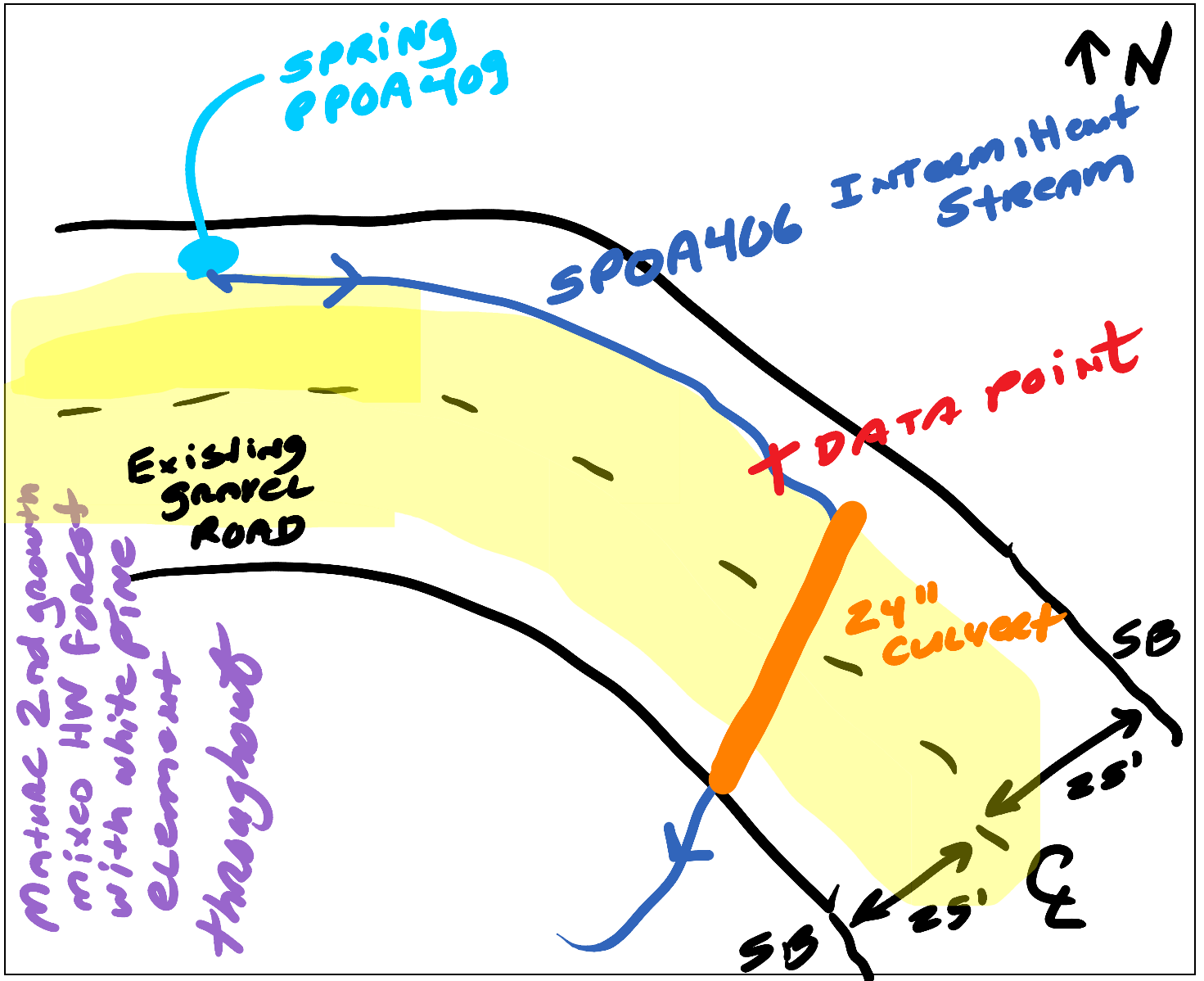
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA406 facing northwest upstream



Waterbody SPOA406 facing southeast downstream



Waterbody SPOA406 facing northeast across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Knapp Creek	
Waterbody ID: spoa405		Date: 5/13/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, SA
Photos: 4 photos			
Tract Number(s): Access road 05-001-E064.AR2; Monongahela NF		Nearest Milepost: 83.9	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: 5.0 ft.		OHWM Indicator: <i>(check all that apply)</i>	
OHWM 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 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: 9.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 5.0 ft.	Width of Waterbody - Water Edge to Water Edge: 5.0 ft.	Depth of Water: <i>(Approx.)</i> 0.33 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> 1.5 fps	Bank height Right: 5.0 ft. Left: 5.0 ft.
N/A <input type="checkbox"/>		Bank slope Right: 80 degrees Left: 80 degrees	
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): Banks are eroded and stream is down cutting at culvert outlet; outlet is set too high.			
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 checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: _____% _____% 50% 30% 10% _____% 10%			
Width of 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		
N/A <input checked="" type="checkbox"/>	Avg. DBH of Dominants: <i>(approx.)</i> 13.0 in. 1.5 in. -		
Dominant Bank Vegetation (list): Basswood, green ash, sweet birch, striped maple, red maple, sugar maple, beech, multiflora rose, witch hazel, Dutchman's pipe, geranium, Christmas fern, wood aster, golden ragwort, wood nettle			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, coarse woody debris in channel			
Aquatic Organisms Observed (list): Invertebrates			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Culvert crossing for existing gravel road; 18" corrugated metal culvert			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa405

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

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

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

Notes:

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

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

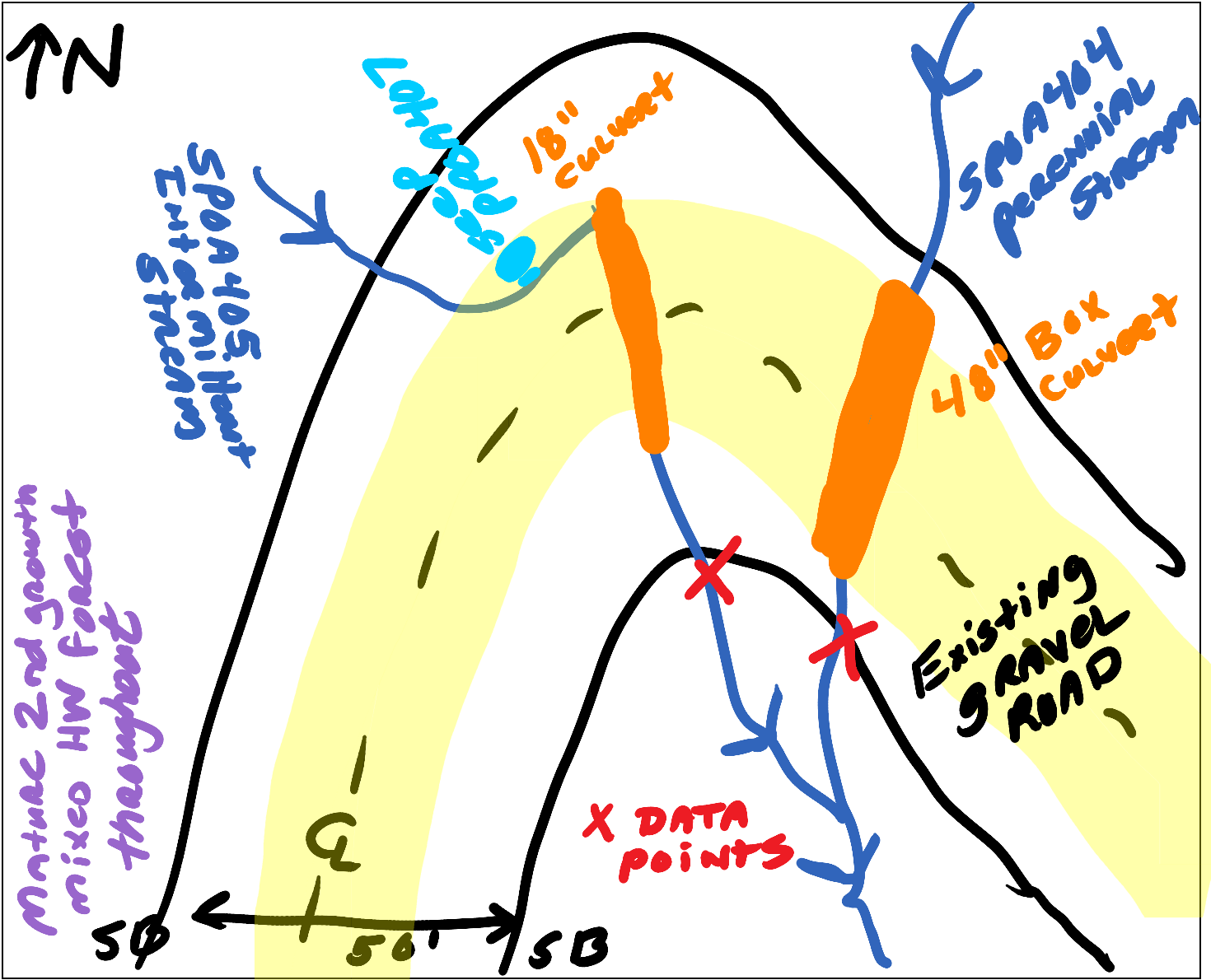
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA405 facing northwest upstream



Waterbody SPOA405 facing southeast downstream



Waterbody SPOA405 facing northeast across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Knapp Creek	
Waterbody ID: spoa404		Date: 5/13/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, SA
Photos: 4 photos			
Tract Number(s): Access road 05-001-E064.AR2; Monongahela NF		Nearest Milepost: 83.9	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 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: 8.0 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 checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
OHWM Height: 1.25 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: 15.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 6.0 ft.	Width of Waterbody - Water Edge to Water Edge: 7.0 ft.	Depth of Water: <i>(Approx.)</i> 0.50 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> 1.5 fps	
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>	
Bank height Right: 4.5 ft. Left: 8.0 ft.		Bank slope Right: 60 degrees Left: 75 degrees	
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): No evidence of bank instability			
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 checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: _____ % _____ % 40 % 35 % 15 % _____ % 10 %			
Width of Riparian Zone: 30 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> 13.0 in. 1.5 in. -	
Dominant Bank Vegetation (list): Basswood, green ash, sweet birch, striped maple, red maple, sugar maple, beech, multiflora rose, witch hazel, Dutchman's pipe, geranium, Christmas fern, wood aster, golden ragwort, wood nettle			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, coarse woody debris in channel, occasional pools, riffles			
Aquatic Organisms Observed (list): Invertebrates, crayfish			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Culvert crossing for existing gravel road; 48" concrete square box culvert			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa404

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

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

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

Notes:

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

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

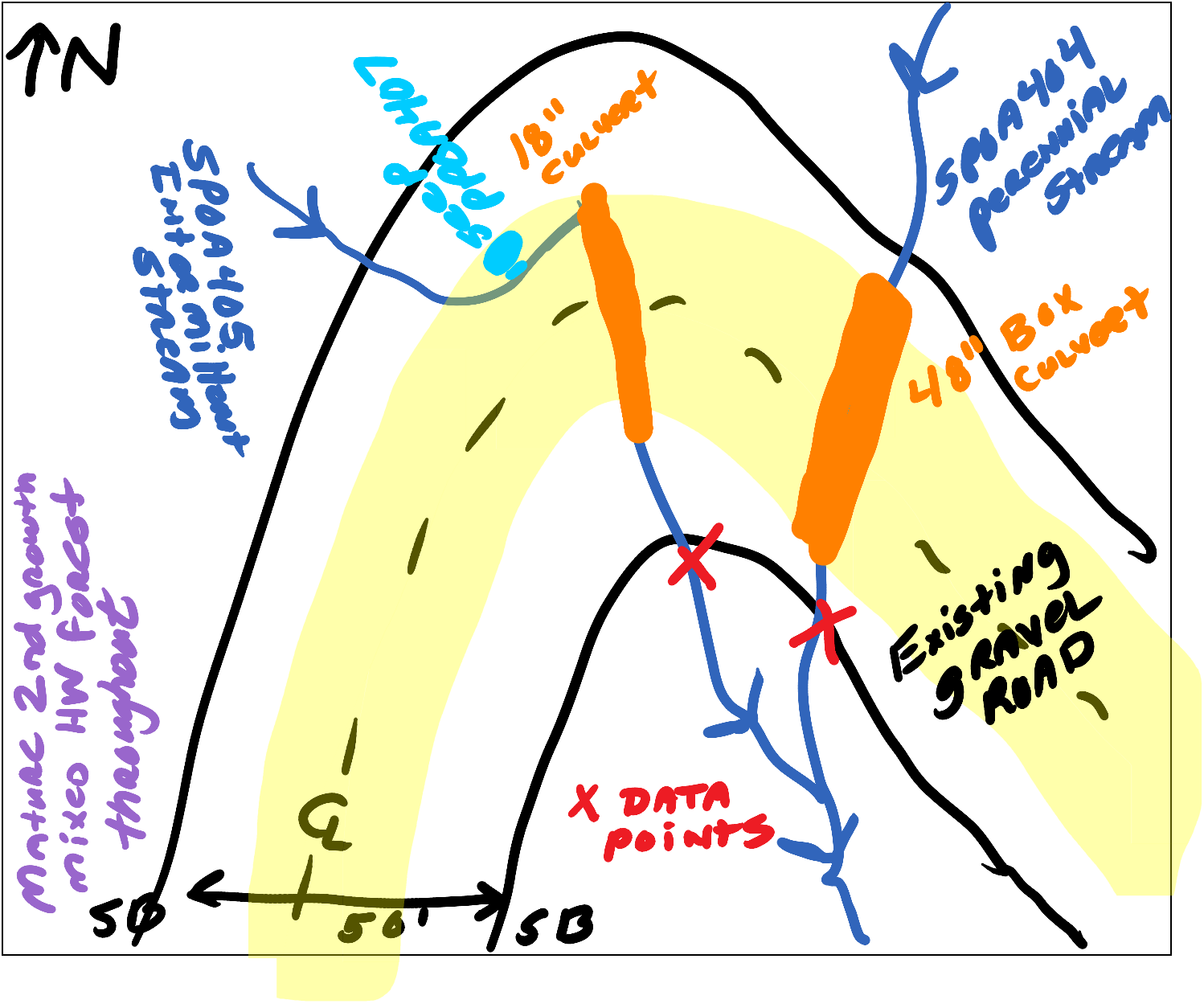
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA404 facing north upstream



Waterbody SPOA404 facing south downstream



Waterbody SPOA404 facing east across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Knapp Creek	
Waterbody ID: spoa403		Date: 5/13/2016	
State: West Virginia	County: Pocahontas	Company: NRG/ERM	Crew Member Initials: GB, SA
Photos: 3 photos			
Tract Number(s): Access road 05-001-E064.AR2; Monongahela NF		Nearest Milepost: 84.1	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: 3.0 ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: 0.50 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 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: 6.0 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 2.5 ft.	Width of Waterbody - Water Edge to Water Edge: 3.0 ft.	Depth of Water: <i>(Approx.)</i> 0.25 ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> 1.0 fps	Bank height: Right: 3.0 ft. Left: 3.0 ft.
N/A <input type="checkbox"/>		Bank slope: Right: 70 degrees Left: 60 degrees	
Analysis of Bank Stability (i.e. root structure, vegetation, substrate characteristics): No evidence of bank instability			
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 checked="" 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: _____ % _____ % 35 % 35 % 15 % 5 % 10 %			
Width of 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		
N/A <input checked="" type="checkbox"/>	Avg. DBH of Dominants: <i>(approx.)</i> 10.0 in. 1.0 in. -		
Dominant Bank Vegetation (list): White oak, northern red oak, beech, red maple, black gum, white pine, mountain laurel, pink azalea, cinquefoil, wood aster, teaberry			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Leaf packs, coarse woody debris in channel			
Aquatic Organisms Observed (list): none			
T&E Species Observed (list): none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): Culvert crossing for existing gravel road; 24" corrugated metal culvert			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			

Waterbody ID:

spoa403

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

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

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

Notes:

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

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

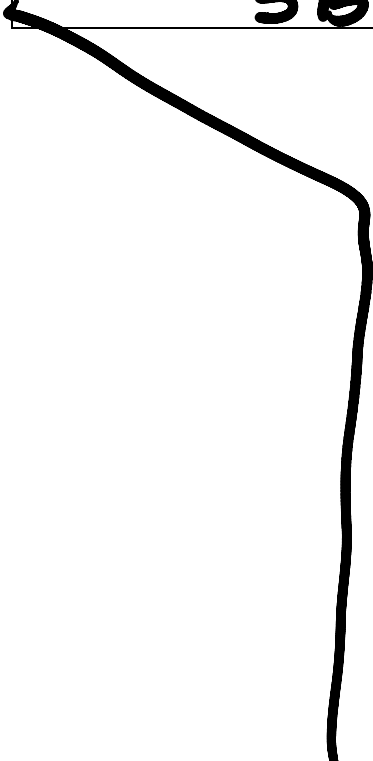
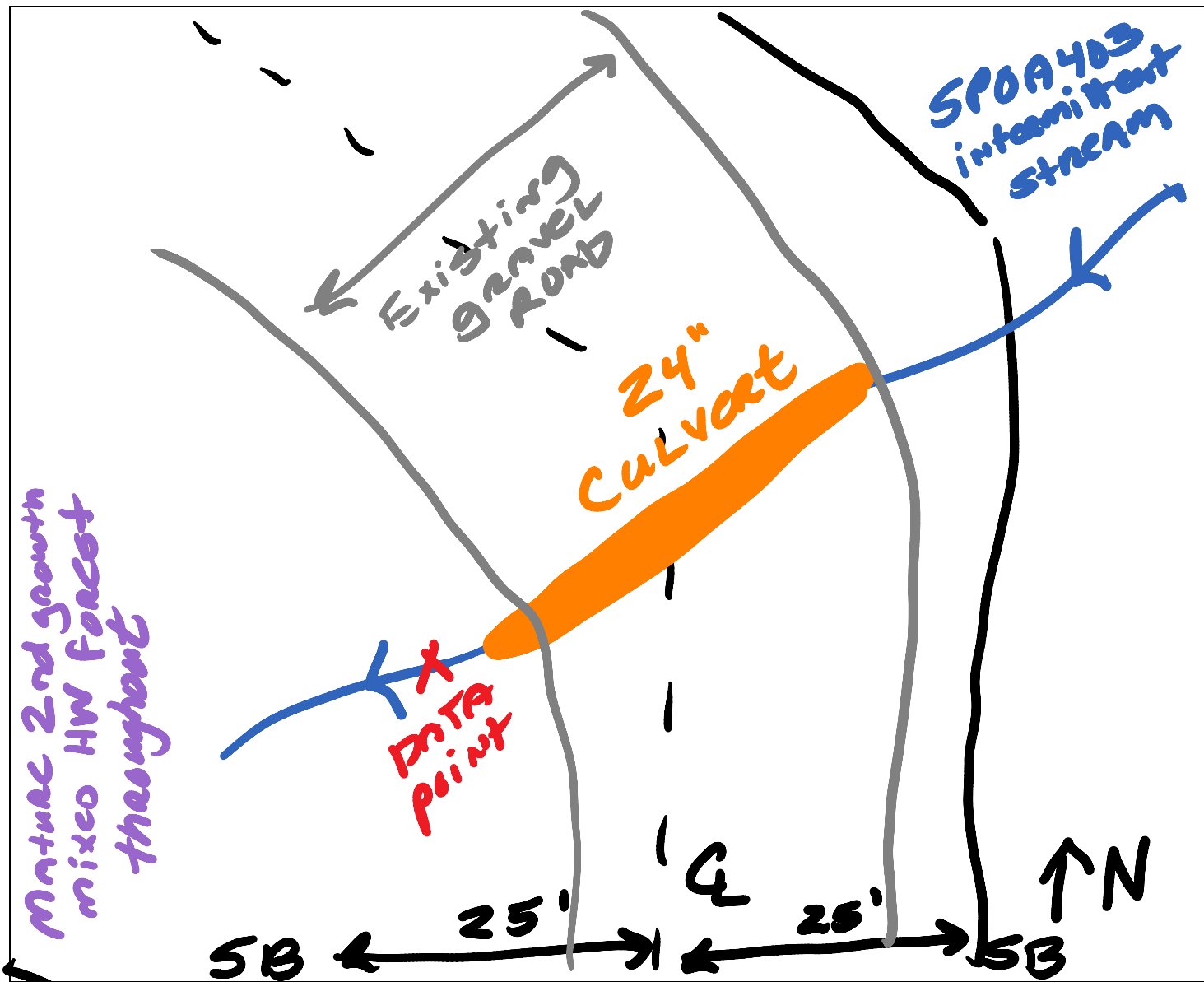
Stream Quality ^a:

(check one)

High

Moderate

Low





Waterbody SPOA403 facing east upstream



Waterbody SPOA403 facing west downstream



Waterbody SPOA403 facing south across