NC DWQ Stream Identification Form Version 4.11							
Date: 4/13	/2022	Project/Site: Green Ridge Recycling and Disposal Facility					
Evaluator:			vski, PWD, Kristen Walls, WPIT, PE, Eric Myers, Hannah Bullens			Cumberland Co.	
Stream Name	Reach ID	Geomorphology	Hydrology	Biology	Total	Cowardin	
Reach 1	1.1	20	6.5	8.5	35	Perennial (R3)	
Reach 1	1.2	0.5	3	5	8.5	Ephemeral (R6)	
Reach 1	1.3	11	6.5	6	23.5	Intermittent (R4)	
Reach 1	1.4	17	6	7	30	Perennial (R3)	
Reach 1	1.5	7.5	3.5	5	16	Ephemeral (R6)	
Reach 1	1.6	8.5	5	7.5	21	Intermittent (R4)	
Reach 1	1.7	7.5	0	6	13.5	Ephermal (R6)	
Reach 1	1.8	4.5	3	6	13.5	Ephermal (R6)	
Reach 2	2.1	16.5	7.5	7	31	Perennial (R3)	
Reach 2	2.2	13.5	7.5	8.25	29.25	Intermittent (R4)	
Reach 2	2.3	9	4	4	17	Ephermal (R6)	
Reach 2	2.4	11	5	7.5	23.5	Intermittent (R4)	
Reach 2	2.5	10	5.5	2	17.5	Ephermal (R6)	
Reach 3	3.1	15.5	8	6.5	30	Perennial (R3)	
Reach 3	3.2	9.5	6.5	5	21	Intermittent (R4)	
Reach 3	3.3	8	6.5	4	18.5	Ephermal (R6)	
Reach 3	3.4	5.5	4.5	4	14	Ephermal (R6)	
Reach 3	3.5	9	7	4	20	Intermittent (R4)	
Reach 3	3.6	7.5	6.5	3.75	17.75	Ephermal (R6)	
Reach 4	4.1	16.5	7.5	6.5	30.5	Perennial (R3)	
Reach 4	4.1 Sec.	15.5	7.5	8.5	31.5	Perennial (R3)	
Reach 4	4.2	7.5	5.5	6.5	19.5	Intermittent (R4)	
Reach 4	4.3	3.5	4	3	10.5	Ephermal (R6)	
Reach 5	5.1	15	7	7	29	Intermittent (R4)	
Reach 5	5.1 Sec.	15	7	7	29	Intermittent (R4)	
Reach 5	5.2	9	5	6	20	Intermittent (R4)	
Reach 5	5.3	5.5	4.5	5	15	Ephermal (R6)	
Reach 5	5.4	8.5	6	9.5	24	Intermittent (R4)	
Reach 5	5.5	5.5	4.5	4	14	Ephermal (R6)	
Reach 6	6.1	5.5	8	8	21.5	Intermittent (R4)	
Reach 7	7.1	13.5	4.5	7	25	Intermittent (R4)	
Reach 7	7.1 Sec.	14.5	7.5	6	28	Intermittent (R4)	
Reach 8	8.1	9	3.5	5	17.5	Ephermal (R6)	
Reach 9	9.1	17	8.5	9	34.5	Perennial (R3)	
Reach 9	9.1 Sec.	17	8.5	9	34.5	Perennial (R3)	
Reach 9	9.2	11.5	2	6.5	20	Intermittent (R4)	
Reach 9	9.3	4.5	1	6	11.5	Ephermal (R6)	
	RR.1	15	8	5	28	Intermittent (R4)	
	RR.2	20	7.5	8.5	36	Perennial (R3)	
	RR.3	8	5	9.5	22.5	Intermittent (R4)	
	EW.1	15	7.5	8	30.5	Perennial (R3)	
	EW.2	13.5	7.5	11	32	Perennial (R3)	
	EW.3	21	9.5	9.5	40	Perennial (R3)	
	EW.4	21	8.5	7	36.5	Perennial (R3)	
	EW.5	8	9	9.5	26.5	Intermittent (R4)	
	EW.6	5.5	5	6.5	17	Ephermal (R6)	

Date: 3/25/2022		Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.55855
Evaluator:	David Kwasniewski, PWD Eric Myers	County: Cumberland Co.	Longitude: -78.12970
Total Points:	35.0	Stream Determination (circle one)	Other e.g. Quad Name: Whiteville and
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral Intermittent Perennial	Trenholm

Site ID:

1.1

1.5

1.5

1.5

1.5

0

A. Geomorphology (Subtotal 20)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal6.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 8.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3

6. FACW = 0.75 OBL = *perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: one (1) caddisfly larvae, one (1) frog and two (2) salamader were observed. OHWM = 12 inches. Benches are not active.

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0.5

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Other =

Sketch: See Wetland Delineation Mapping

22. Fish

23. Crayfish

25. Algae

24. Amphibians

Date: 3/28/2022		Project/Site: Green Ridge Recycling and Disposal Facility			Latitude:	37.55726
Evaluator:	David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.		Longitude:	-78.12694	
Total Points:	8.5	Stream Deter	Stream Determination (circle one)			Whiteville and
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

1.2

A. Geomorphology (Subtotal <u>0.5</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 3)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	2	1	0

<u>C. Biology</u> (Subtotal = <u>5</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Smilax rotondifolia and lonicevia japonica in streambed. Stream channel interupted by large headcut leading to 1.3. OHWM = 4 inches.

Date: 3/28/2022		Project/Site: Green Ridge Recycling and Disposal Facility			Latitude:	37.55723
Evaluator:	David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.		Longitude:	-78.12732	
Total Points:	23.5	Stream Deter	Stream Determination (circle one)			: Whiteville and
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

1.3

A. Geomorphology (Subtotal <u>11</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
^a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 6.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	: 0	Yes =	3
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C. Biology (Subtotal = 6)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5

26. FACW = 0.75 OBL = 1.5 Other = 0

 * perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Benches are not active. (1) one isopod observed. OHHWM = 7 inches.

Date: 3/25/2022		Project/Site: Green Ridge Recycling and Disposal Facility			Latitude:	37.55753
Evaluator:	David Kwasniewski, PWD Eric Myers	County: Cumberland Co.		Longitude:	-78.12807	
Total Points:	30.0	Stream Determ	Stroam Dotormination (circle one)		Other e.g. Quad Name: Whiteville and	
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

1.4

1.5

1.5

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A. C	Alexant	Wash	Madausta	Cturana
A. Geomorphology (Subtotal 17)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
^a artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal <u>6</u>)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 7)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: one (1) isopod, one (1) salamander and two (2) tadpole were observed. OHWM = 6 inches. Bedrock grade control present. One (1) small headcut observed. OHWM = 12 inches.

0

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0.5

0.5

1.5

1

Other =

Sketch: See Wetland Delineation Mapping

24. Amphibians

25. Algae

Date: 3/28/202	22	Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.55738	
Evaluator:	David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.		Longitude:	-78.12763	
Total Points:	16.0	Stream Deter	Stream Determination (circle one)		Other e.g. Quad Name :	Whiteville and
Stream is at leas perennial if ≥ 30°	t intermittent if ≥ 19 or *	Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

1.5

A. Geomorphology (Subtotal	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes = 3	
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal _ 3.5 _)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	2	1	0
10 Pooted unland plants in streamhed	7	2	1	^

C. Biology (Subtotal = 3				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Illex opeca in streambed. No surface water observed but locaiton of riffles vs. pools if water was present. OHWM = 6 inches. It was dry on 3/28 but based on grade breaks.

Date: 3/25/202	22	Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.55716	
Evaluator:	David Kwasniewski, PWD Eric Myers	County: Cumberland Co.		Longitude:	-78.12757	
Total Points:	21.0	Stream Determination (circle one)			Other e.g. Quad Name :	: Whiteville and
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

Yes =

1.6

A. Geomorphology (Subtotal <u>8.5</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
^a artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal 5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1 5

No =

0

17. Soil-based evidence of high water table? (Subtotal = **7.5**) C. Bioloav

e. Biology (Subtotat 1:5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: one (1) crayfish and one (1) sow bug were observed. OHWM = 6 inches.

Date: 3/25/202	22	Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.55756	
Evaluator:	David Kwasniewski, PWD Eric Myers	County: Cumberland Co.		Longitude:	-78.12861	
Total Points:	13.5	Stream Deter	Stream Determination (circle one)		Other e.g. Quad Name: Whiteville and	
Stream is at leas perennial if ≥ 30°	t intermittent if ≥ 19 or *	Ephemeral	Intermittent	Perennial	Trenholm	

1.5

Other =

0

Site ID:

1.7

A. Geomorphology (Subtotal <u>7.5</u>)	Absent	Weak	Moderate	Strong		
1 ^{a.} Continuity of channel bed and bank	0	1	2	3		
2. Sinuosity of channel along thalweg	0	1	2	3		
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3		
Particle size of stream substrate	0	1	2	3		
5. Active/relict floodplain	0	1	2	3		
6. Depositional bars or benches	0	1	2	3		
7. Recent alluvial deposits	0	1	2	3		
8. Headcuts	0	1	2	3		
9. Grade control	0	0.5	1	1.5		
10. Natural valley	0	0.5	1	1.5		
11. Second or greater order channel	No =	0	Yes =	3		
^a artificial ditches are not rated; see discussions in manual						
B. Hydrology (Subtotal <u>0</u>)						
12. Presence of Baseflow	0	1	2	3		
13. Iron oxidizing bacteria	0	1	2	3		
14. Leaf litter	1.5	1	0.5	0		
15. Sediment on plants or debris	0	0.5	1	1.5		
16. Organic debris lines or piles	0	0.5	1	1.5		
17. Soil-based evidence of high water table?	No =	0	Yes =	3		
C. Biology (Subtotal = 6)						
18. Fibrous roots in streambed	3	2	1	0		
19. Rooted upland plants in streambed	3	2	1	0		
20. Macrobenthos (note diversity and abundance)	0	1	2	3		
21. Aquatic Mollusks	0	1	2	3		
22. Fish	0	0.5	1	1.5		
23. Crayfish	0	0.5	1	1.5		
24. Amphibians	0	0.5	1	1.5		
25. Algae	0	0.5	1	1.5		

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: OHWM = 4 inches.

Date: 3/28/20	22	Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.55713	
Evaluator:	David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.		Longitude:	-78.12707	
Total Points:	13.5	Stream Deter	Stream Determination (circle one)			: Whiteville and
Stream is at leas perennial if ≥ 30°	Stream is at least intermittent if ≥ 19 or Ephemeral Intermittent Perennial Perennial		Trenholm			

Site ID:

Other =

0

1.8

A. Geomorphology (Subtotal 4.5)	Absent	Weak	Moderate	Strong	
1 ^{a.} Continuity of channel bed and bank	0	1	2	3	
2. Sinuosity of channel along thalweg	0	1	2	3	
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3	
4. Particle size of stream substrate	0	1	2	3	
5. Active/relict floodplain	0	1	2	3	
6. Depositional bars or benches	0	1	2	3	
7. Recent alluvial deposits	0	1	2	3	
8. Headcuts	0	1	2	3	
9. Grade control	0	0.5	1	1.5	
10. Natural valley	0	0.5	1	1.5	
11. Second or greater order channel	No =	0	Yes =	3	
^a artificial ditches are not rated; see discussions in manual					
B. Hydrology (Subtotal 3)					
12. Presence of Baseflow	0	1	2	3	
13. Iron oxidizing bacteria	0	1	2	3	
14. Leaf litter	1.5	1	0.5	0	
15. Sediment on plants or debris	0	0.5	1	1.5	
16. Organic debris lines or piles	0	0.5	1	1.5	
17. Soil-based evidence of high water table?	No =	0	Yes =	3	
C. Biology (Subtotal = 6)					
18. Fibrous roots in streambed	3	2	1	0	
19. Rooted upland plants in streambed	3	2	1	0	
20. Macrobenthos (note diversity and abundance)	0	1	2	3	
21. Aquatic Mollusks	0	1	2	3	
22. Fish	0	0.5	1	1.5	
23. Crayfish	0	0.5	1	1.5	
24. Amphibians	0	0.5	1	1.5	
25. Algae	0	0.5	1	1.5	

OBL =

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: Starts at headcut. There is indiction of fluctuating water table (redox). OHWM = 4 inches.

Date: 3/28/202	22	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.56321
Evaluator:	David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.	Longitude: -78.12915
Total Points:	31.0	Stream Determination (circle one)	Other e.g. Quad Name: Whiteville and
Stream is at least perennial if ≥ 30*	intermittent if ≥ 19 or	Ephemeral Intermittent Perennial	Trenholm

Site ID:

2.1

A. Geomorphology (Subtotal <u>16.5</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	No = 0 Yes =		3
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 7.5)	,			
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 7)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: Second order or greater channel based off field-delineation. Case-building caddisflies observed. The reach continues downstream, so other indicators like fish, crayfish, and amphibians may be present. OHWM = 12 inches.

0

OBL =

0.5

1.5

1

Other =

1.5

0

Sketch: See Wetland Delineation Mapping

25. Algae

Date: 3/28/20	22	Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.56047	
Evaluator:	David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.		Longitude:	-78.12744	
Total Points:	29.25	Stream Determination (circle one)		Other e.g. Quad Name	: Whiteville and	
Stream is at leas perennial if ≥ 30	st intermittent if ≥ 19 or)*	Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

2.2

Defening it > 50				
A. Geomorphology (Subtotal <u>13.5</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2 3	
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
^a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 7.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C Riology (Subtotal = 9.75)			•	

17. Soll-based evidence of flight water table:	140 =	U	res -	3
C. Biology (Subtotal = 8.25)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

^{*}perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Bedrock observed as grade control. Helgermite and caddisfly case buildings observed. (2) two salamander and (1) crayfish, (1) one frog observed. Sambucus Negra observed in streambed. OHWM = 6 inches.

Date: 3/28/2022 Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.55978			
Evaluator:	David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.		Longitude:	-78.12573	
Total Points:	Total Points: 17.0 Stream Determination (circle one)		Other e.g. Quad Name: Whiteville and			
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

Other =

0

2.3

A. Geomorphology (Subtotal 9)	Absent	Weak	Moderate	Strong	
1 ^{a.} Continuity of channel bed and bank	0	1	2	3	
2. Sinuosity of channel along thalweg	0	1	2	3	
3. In-channel structure: ex. riffle-pool, step-pool,	0	1	2	3	
ripple-pool sequence	U	1	2	J	
4. Particle size of stream substrate	0	1	2	3	
5. Active/relict floodplain	0	1	2	3	
6. Depositional bars or benches	0	1	2	3	
7. Recent alluvial deposits	0	1	2	3	
8. Headcuts	0	1	2	3	
9. Grade control	0	0.5	1	1.5	
10. Natural valley	0	0.5	1	1.5	
11. Second or greater order channel	No =	0	Yes =	3	
^a artificial ditches are not rated; see discussions in manual					
B. Hydrology (Subtotal 4)					
12. Presence of Baseflow	0	1	2	3	
13. Iron oxidizing bacteria	0	1	2	3	
14. Leaf litter	1.5	1	0.5	0	
15. Sediment on plants or debris	0	0.5	1	1.5	
16. Organic debris lines or piles	0	0.5	1	1.5	
17. Soil-based evidence of high water table?	No =	0	Yes =	3	
C. Biology (Subtotal = 4)					
18. Fibrous roots in streambed	3	2	1	0	
19. Rooted upland plants in streambed	3	2	1	0	
20. Macrobenthos (note diversity and abundance)	0	1	2	3	
21. Aquatic Mollusks	0	1	2	3	
22. Fish	0	0.5	1	1.5	
23. Crayfish	0	0.5	1	1.5	
24. Amphibians	0	0.5	1	1.5	
25. Algae	0	0.5	1	1.5	

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: The downstream section of the reach contains debris lines. Ilex opeca observed in stream channel. OHWM = 4 inches.

David Kwasniewski, PWD

Emily Beacham, PE

Date: 4/1/2022

Evaluator:

Stream Determination (circle one)

Project/Site: Green Ridge Recycling and

e.g. Quad Name: Whiteville and

Yes =

Trenholm

Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*

Ephemeral

Disposal Facility

County: Cumberland Co.

Intermittent

Perennial

0

Weak 11) **Absent** Moderate Strong A. Geomorphology (Subtotal Continuity of channel bed and bank 0 1 3 2 2. Sinuosity of channel along thalweg 0 1 2 3 3. In-channel structure: ex. riffle-pool, step-pool, 0 1 2 3 ripple-pool sequence 4. Particle size of stream substrate 0 3 1 2 3 5. Active/relict floodplain 0 1 2 6. Depositional bars or benches 0 1 2 3 7. Recent alluvial deposits 0 1 2 3 8. Headcuts 0 1 2 3 9. Grade control 0 0.5 1 1.5 10. Natural valley 0 0.5 1.5 1 11. Second or greater order channel 3

a artificial ditches are not rated; see discussions in manual

В	Hydro	logy	(Subtotal	5)

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
(5.1)				

No =

C.	Biology	(Subtotal =	7.5	_)

C. Biology (Subtotal – 7.3)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. FACW = 0.75	OBL =	1.5	Other =	0

^{*}perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Rained the previous day. No flow at upper bounds and end. Flow just at middle of reach. Isopod and caddisfly larvae observed. (1) one frog observed. Channel goes subsurface at some points. OHWM = 4 inches.

Date: 4/1/2022		Project/Site: Disposal Faci	Green Ridge Recyclin lity	g and	Latitude:	37.56317
Evaluator:	David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.		Longitude:	-78.12878	
Total Points:	17.5	Stream Deter	Stream Determination (circle one)			Whiteville and
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

Other =

2.5

A. Geomorphology (Subtotal <u>10</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal <u>5.5</u>)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5

10. Organic debris times of pites		0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 2)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: Bear observed along reach 2.5 eating salmon. Channel pops in and out of banks. Many roots cutting across the banks. OHWM = 3 inches.

Date: 4/1/2022		Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.56535
Evaluator:	David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.	Longitude: -78.12959
Total Points:	30.0	Stream Determination (circle one)	Other e.g. Quad Name: Whiteville and
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral Intermittent Perennial	Trenholm

Site ID:

3.1

A Coomorphology (Subtotal 155)	Absent	Weak	Moderate	Strong
A. Geomorphology (Subtotal 15.5) 1 ^{a.} Continuity of channel bed and bank	0	1	2	3 3 3
Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool,	O O	1		
ripple-pool sequence	0	1	2	3
Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
^a artificial ditches are not rated; see discussions in manual	•			
B. Hydrology (Subtotal <u>8</u>)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 6.5)	•			
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: Second order or greater according to on-site delineation. (5)+ Five plus isopods observed. Orange sheen present on top of sand. OHWM = 6 inches.

0

OBL =

0.5

1.5

1

Other =

1.5

0

Sketch: See Wetland Delineation Mapping

25. Algae

Date: 4/1/2022	!	Project/Site: Disposal Faci	Green Ridge Recyc lity	cling and	Latitude:	37.56496
Evaluator:	David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.		Longitude:	-78.12874	
Total Points:	21.0	Stream Determination (circle one)			Other e.g. Quad Name: Whiteville and	
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

3.2

A. Geomorphology (Subtotal <u>9.5</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	4
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 6.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	No = 0		4
				_

17. Soit Susca evidence of mgn video tuste.	110	O	103	•
C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5

OBL =

1.5

Other =

0

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: (1) one isopod observed. OHWM = 6 inches.

Date: 4/1/2022	2	Project/Site: Disposal Faci	Green Ridge Recyclin	ng and	Latitude:	37.56440
Evaluator:	David Kwasniewski, PWD Emily Beacham, PE	County: Cum	berland Co.		Longitude:	-78.12762
Total Points:	18.5	Stream Deter	Stream Determination (circle one)			Whiteville and
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

3.3

A. Geomorphology (Subtotal <u>8</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 6.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 4)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3

0

0

0

0

OBL =

0.5

0.5

0.5

0.5

1.5

1

1

1

1

Other =

1.5

1.5

1.5

1.5

0

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: Only worms observed. OHWM = 4 inches.

Sketch: See Wetland Delineation Mapping

22. Fish

23. Crayfish

25. Algae

24. Amphibians

Date: 4/1/2022		Project/Site: Disposal Faci	Green Ridge Recycli lity	ng and	Latitude:	37.56571
Evaluator:	David Kwasniewski, PWD Emily Beacham, PE	County: Cum	berland Co.		Longitude:	-78.12923
Total Points:	14.0	Stream Deter	Stream Determination (circle one)		Other e.g. Quad Name: Whiteville and	
Stream is at least intermittent if \geq 19 or perennial if \geq 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

3.4

1.5

1.5

0

A. Geomorphology (Subtotal <u>5.5</u>)	Absent	Weak	Moderate	Strong	
1 ^{a.} Continuity of channel bed and bank	0	1	2	3	
2. Sinuosity of channel along thalweg	0	1	2	3	
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3	
4. Particle size of stream substrate	0	1	2	3	
5. Active/relict floodplain	0	1	2	3	
6. Depositional bars or benches	0	1	2	3	
7. Recent alluvial deposits	0	1	2	3	
8. Headcuts	0	1	2	3	
9. Grade control	0	0.5	1	1.5	
10. Natural valley	0	0.5	1	1.5	
11. Second or greater order channel	No =	0	Yes = 3		
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 4.5)					
12. Presence of Baseflow	0	1	2	3	
13. Iron oxidizing bacteria	0	1	2	3	
14. Leaf litter	1.5	1	0.5	0	
15. Sediment on plants or debris	0	0.5	1	1.5	
16. Organic debris lines or piles	0	0.5	1	1.5	
17. Soil-based evidence of high water table?	No =	0	Yes =	3	
C. Biology (Subtotal = 4)					
18. Fibrous roots in streambed	3	2	1	0	
19. Rooted upland plants in streambed	3	2	1	0	
20. Macrobenthos (note diversity and abundance)	0	1	2	3	
21. Aquatic Mollusks	0	1	2	3	
22. Fish	0	0.5	1	1.5	
23. Crayfish	0	0.5	1	1.5	

0.5

0.5

1.5

OBL =

1

Other =

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: OHWM = 3 inches.

24. Amphibians

25. Algae

Date: 4/1/2022		Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.56546	
Evaluator:	David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.		Longitude:	-78.12861	
Total Points:	20.0	Stream Determination (circle one)			Other e.g. Quad Name	: Whiteville and
Stream is at least perennial if ≥ 30*	intermittent if ≥ 19 or	Ephemeral Intermittent Perennial		Trenholm		

Site ID:

3.5

A. Geomorphology (Subtotal <u>9</u>)	Absent	Weak	Moderate	Strong		
1 ^{a.} Continuity of channel bed and bank	0	1	2	3		
2. Sinuosity of channel along thalweg	0	1	2	3		
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3		
4. Particle size of stream substrate	0	1	2	3		
5. Active/relict floodplain	0	1	2	3		
6. Depositional bars or benches	0	1	2	3		
7. Recent alluvial deposits	0	1	2	3		
8. Headcuts	0	1	2	3		
9. Grade control	0	0.5	1	1.5		
10. Natural valley	0	0.5	1	1.5		
11. Second or greater order channel	No =	0	Yes =	3		
^a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 7)						
12. Presence of Baseflow	0	1	2	3		
13. Iron oxidizing bacteria	0	1	2	3		
14. Leaf litter	1.5	1	0.5	0		

B. Hydrology (Subtotal <u>7</u>)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =		Yes =	3
C. Biology (Subtotal = 4)				

<u>C. Biology (Subtotal = 4</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

^{*}perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: No macrobenthos observed. OHQM = 6 inches.

Date: 4/1/202	2	Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.56568	
Evaluator:	David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.		Longitude:	-78.12783	
Total Points:	17.75	Stream Deter	Stream Determination (circle one)		Other e.g. Quad Name: Whiteville and	
Stream is at leas	st intermittent if ≥ 19 or *	Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

Other =

0

3.6

A. Geomorphology (Subtotal <u>7.5</u>)	Absent	Weak	Moderate	Strong		
1 ^{a.} Continuity of channel bed and bank	0	1	2	3		
2. Sinuosity of channel along thalweg	0	1	2	3		
3. In-channel structure: ex. riffle-pool, step-pool,	0	1	2	3		
ripple-pool sequence	0	1		_		
4. Particle size of stream substrate	0	1	2	3		
5. Active/relict floodplain	0	1	2	3		
6. Depositional bars or benches	0	1	2	3		
7. Recent alluvial deposits	0	1	2	3		
8. Headcuts	0	1	2	3		
9. Grade control	0	0.5	1	1.5		
10. Natural valley	0	0.5	1	1.5		
11. Second or greater order channel	No =	0	Yes = 3			
^a artificial ditches are not rated; see discussions in manual						
B. Hydrology (Subtotal <u>6.5</u>)						
12. Presence of Baseflow	0	1	2	3		
13. Iron oxidizing bacteria	0	1	2	3		
14. Leaf litter	1.5	1	0.5	0		
15. Sediment on plants or debris	0	0.5	1	1.5		
16. Organic debris lines or piles	0	0.5	1	1.5		
17. Soil-based evidence of high water table?	No =	0	Yes =	3		
C. Biology (Subtotal = 3.75)						
18. Fibrous roots in streambed	3	2	1	0		
19. Rooted upland plants in streambed	3	2	1	0		
20. Macrobenthos (note diversity and abundance)	0	1	2	3		
21. Aquatic Mollusks	0	1	2	3		
22. Fish	0	0.5	1	1.5		
23. Crayfish	0	0.5	1	1.5		
24. Amphibians	0	0.5	1	1.5		
25. Algae	0	0.5	1	1.5		

OBL =

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: (1) one isopod observed. Blueeyed grass observed in stream channel. OHWM = 2 inches.

Date: 4/6/202	22	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.56705
Evaluator:	Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cumberland Co.	Longitude: -78.12971
Total Points:	30.50	Stream Determination (circle one)	Other e.g. Quad Name: Whiteville and
Stream is at least perennial if ≥ 30	st intermittent if ≥ 19 or)*	Ephemeral Intermittent Perennial	Trenholm

Site ID:

4.1

A. Geomorphology (Subtotal 16.5)	Absent	Weak	Moderate	Strong	
1 ^{a.} Continuity of channel bed and bank	0	1	2	3	
2. Sinuosity of channel along thalweg	0	1	2	3	
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3	
4. Particle size of stream substrate	0	1	2	3	
5. Active/relict floodplain	0	1	2	3	
6. Depositional bars or benches	0	1	2	3	
7. Recent alluvial deposits	0	1	2	3	
8. Headcuts	0	1	2	3	
9. Grade control	0	0.5	1	1.5	
10. Natural valley	0	0.5	1	1.5	
11. Second or greater order channel	No =	0	Yes =	Yes = 3	

^a artificial ditches are not rated; see discussions in manual						
B. Hydrology (Subtotal						
12. Presence of Baseflow	0	1	2	3		
13. Iron oxidizing bacteria	0	1	2	3		
14. Leaf litter	1.5	1	0.5	0		
15. Sediment on plants or debris	0	0.5	1	1.5		
16. Organic debris lines or piles	0	0.5	1	1.5		
17. Soil-based evidence of high water table?	No =	0	Yes =	3		
C. Biology (Subtotal = 6.5)						
18. Fibrous roots in streambed	3	2	1	0		
19. Rooted upland plants in streambed	3	2	1	0		
20. Macrobenthos (note diversity and abundance)	0	1	2	3		
21. Aquatic Mollusks	0	1	2	3		
22. Fish	0	0.5	1	1.5		
23. Crayfish	0	0.5	1	1.5		
24. Amphibians	0	0.5	1	1.5		
25. Algae	0	0.5	1	1.5		
26. FACW = 0.75	OBL =	1.5	Other =	0		

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: (2) two isopod observed. Cobbles present. 3 significant headcuts upstream. Leftbank more of a valley than rightbank. OHWM = 12 inches.

Date: 4/6/202	2	Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.56706	
Evaluator:	Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cumb	perland Co.		Longitude:	-78.13017
Total Points:	31.50	Stream Determination (circle one)		Other e.g. Quad Name: Whiteville an		
Stream is at least intermittent if \geq 19 or perennial if \geq 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

4.1 Sec.

A. Geomorphology (Subtotal 15.5)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes = 3	
^a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal _ 7.5 _)	•			
12. Presence of Baseflow	0	1	2	3

" artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 8.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: (2) two isopod observed. OHWM = 12 inches.

Date: 4/6/202	22	Project/Site: Disposal Faci	Green Ridge Recyclity	cling and	Latitude:	37.56718
Evaluator:	Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cum	berland Co.		Longitude:	-78.12869
Total Points:	19.50	Stream Deter	mination (circle or	ie)	Other e.g. Quad Name	: Whiteville and
Stream is at lea	ast intermittent if ≥ 19 or O*	Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

4.2

A. Geomorphology (Subtotal 7.5)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3

^a artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal <u>5.5</u>)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 6.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. FACW = 0.75	OBL =	1.5	Other =	0

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: (1) one isopod observed. Soil = 2.5Y 5/2 OHWM = 6 inches.

Date: 4/6/20	22	Project/Site: Disposal Faci	Green Ridge Recycl lity	ing and	Latitude:	37.56714
Evaluator:	Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cum	berland Co.		Longitude:	-78.12749
Total Points:	10.50	Stream Deter	mination (circle one	e)	Other e.g. Quad Name	2: Whiteville and
Stream is at lea	ast intermittent if ≥ 19 or 'O*	Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

4.3

Defermating 10 > 50				
A. Geomorphology (Subtotal 3.5)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
^a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 4)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5

b. Hydrology (Subtotat +)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 3)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5

OBL =

1.5

Other =

0

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Poorly defined bed and bank, literred with pine needles. OHWM = 3 inches.

FACW = 0.75

Sketch: See Wetland Delineation Mapping

26.

Date: 4/6/202	22	Project/Site: Disposal Faci	Green Ridge Recyc lity	cling and	Latitude:	37.56952
Evaluator:	Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cum	berland Co.		Longitude:	-78.12893
Total Points:	29.00	Stream Determination (circle one)			Other e.g. Quad Name: Whiteville and	
Stream is at lease perennial if ≥ 30	st intermittent if ≥ 19 or)*	Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

5.1

A. Geomorphology (Subtotal <u>15</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3

^a artificial ditches are not rated; see discussions in manual

" artificial ditches are not rated; see discussions in manua	al			
B. Hydrology (Subtotal 7)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 7)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Significant headcut 3/4 the way down. OHWM = 6 inches.

Date: 4/6/2022	2	Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.56989	
Evaluator:	Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cum	berland Co.		Longitude:	-78.12951
Total Points:	29.00	Stream Determination (circle one)		Other e.g. Quad Name: Whiteville and		
Stream is at least perennial if ≥ 30*	t intermittent if ≥ 19 or	Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

5.1 Sec.

A. Geomorphology (Subtotal 15)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3

^a artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal 7)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 7)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Relic floodplain. OHWM = 12 inches.

NC DWQ Stream Identification Form Version 4.11				Site ID:	5.2		
Date: 4/6/202	2			Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.56913
Evaluator:	Kristen Walls, WPIT, Beacham, PE and Ha Bullens	•	County: Cumberland Co.		Longitude:	-78.12844	
Total Points:	20.00		Stream Determination (circle one)		Other e.g. Quad Name: Whiteville		
Stream is at leas perennial if ≥ 30	st intermittent if ≥ 19 or *		Ephemeral	Intermittent	Perennial	Trenholm	
A. Geomorph	nology (Subtotal	9	_)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity o	of channel bed and bank			0	1	2	3
2. Sinuosity of	channel along thalweg			0	1	2	3

A. Geomorphology (Subtotal 9)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
^a artificial ditches are not rated; see discussions in manual			•	

^a artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal 5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 6)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

^{*}perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: The channel goes subsurface at some points. Significant headcut upstream edge of stream. OHWM = 6 inches.

Date: 4/6/202	22	Project/Site: Disposal Faci	Green Ridge Recycl lity	ing and	Latitude:	37.56874
Evaluator:	Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cum	berland Co.		Longitude:	-78.12831
Total Points:	15.00	Stream Determination (circle one)		e)	Other e.g. Quad Name	: Whiteville and
Stream is at least intermittent if ≥ 19 or		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

5.3

Defermat if \$ 30				
A. Geomorphology (Subtotal 5.5)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
^a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 4.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5

b. Hydrology (Subtotal 4.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	15

17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. FACW = 0.75	OBL =	1.5	Other =	0

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: OHWM = 4 inches.

Date: 4/6/2022	2	Project/Site: Disposal Faci	Green Ridge Recyc lity	cling and	Latitude:	37.56919
Evaluator:	Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cumberland Co.		Longitude:	-78.12823	
Total Points:	24.00	Stream Determination (circle one)		Other e.g. Quad Name: Whiteville and		
Stream is at leas perennial if ≥ 30°	t intermittent if ≥ 19 or *	Ephemeral	Ephemeral Intermittent Perennial		Trenholm	

A. Geomorphology (Subtotal 8.5)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	4

^a artificial ditches are not rated; see discussions in manual

artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal <u>6</u>)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	4
C. Biology (Subtotal = 9.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. FACW = 0.75	OBL =	1.5	Other =	0

^{*}perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Caddisfly casing and dragofly observed. Three (3) frogs observed. OHWM = 4 inches.

Date: 4/6/202	22	Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.56881	
Evaluator:	Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cum	berland Co.		Longitude:	-78.12775
Total Points:	14.00	Stream Determination (circle one)		e)	Other e.g. Quad Name	: Whiteville and
Stream is at least intermittent if ≥ 19 or nerennial if ≥ 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

5.5

Dereninal II > 30				
A. Geomorphology (Subtotal 5.5)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
^a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 4.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15 Sediment on plants or debris	Λ	0.5	1	1 5

artificial diteries are flot rated, see discussions in mandat					
B. Hydrology (Subtotal 4.5)					
12. Presence of Baseflow	0	1	2	3	
13. Iron oxidizing bacteria	0	1	2	3	
14. Leaf litter	1.5	1	0.5	0	
15. Sediment on plants or debris	0	0.5	1	1.5	
16. Organic debris lines or piles	0	0.5	1	1.5	
17. Soil-based evidence of high water table?	No =	0	Yes =	3	
C. Biology (Subtotal = 4)					
18. Fibrous roots in streambed	3	2	1	0	
19. Rooted upland plants in streambed	3	2	1	0	
20. Macrobenthos (note diversity and abundance)	0	1	2	3	
21. Aquatic Mollusks	0	1	2	3	
22. Fish	0	0.5	1	1.5	
23. Crayfish	0	0.5	1	1.5	
24. Amphibians	0	0.5	1	1.5	
25. Algae	0	0.5	1	1.5	

1.5

Other =

0

OBL =

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: No valley present on rigthbank. Little trees present in channel. OHWM = 3 inches.

Sketch: See Wetland Delineation Mapping

26.

Date: 3/25/202	/25/2022 Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.57034		
Evaluator:	Kristen Walls, WPIT Emily Beacham, PE	County: Cum	County: Cumberland Co.		Longitude:	-78.12663
Total Points:	21.5	Stream Determination (circle one)			Other e.g. Quad Name	: Whiteville and
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

Other =

0

6.1

A. Geomorphology (Subtotal <u>5.5</u>)	Absent	Weak	Moderate	Strong		
1 ^{a.} Continuity of channel bed and bank	0	1	2	3		
2. Sinuosity of channel along thalweg	0	1	2	3		
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3		
4. Particle size of stream substrate	0	1	2	3		
5. Active/relict floodplain	0	1	2	3		
6. Depositional bars or benches	0	1	2	3		
7. Recent alluvial deposits	0	1	2	3		
8. Headcuts	0	1	2	3		
9. Grade control	0	0.5	1	1.5		
10. Natural valley	0	0.5	1	1.5		
11. Second or greater order channel	No =	0	Yes =	3		
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 8)						
12. Presence of Baseflow	0	1	2	3		
13. Iron oxidizing bacteria	0	1	2	3		
14. Leaf litter	1.5	1	0.5	0		

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	No = 0		3
C Biology (Subtotal = 8)	<u> </u>			<u> </u>

	1,10	· ·	103	3
C. Biology (Subtotal = 8)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: two (2) isopods and one (1) sow bug were observed below headcut. OHWM = 6 inches.

Date: 4/6/2022		Project/Site: Disposal Faci	Green Ridge Recyc lity	cling and	Latitude:	37.56866
Evaluator:	David Kwasniewski, PWD Eric Myers	County: Cumberland Co.			Longitude:	-78.12401
Total Points:	25.0	Stream Determination (circle one)			Other e.g. Quad Name	: Whiteville and
Stream is at least intermittent if \geq 19 or perennial if \geq 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

7.1

A. Geomorphology (Subtotal <u>13.5</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
^a artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal 4.5 _)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
1 Codiment on plants or debrie	0	0.5	4	4.5

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes =	3

<u> </u>				-
C. Biology (Subtotal = 7)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: three (3) isopods observed. Roots acting as grade control. OHWM = 6 inches.

Date: 4/6/2022		Project/Site: Disposal Faci	Green Ridge Recyc lity	ling and	Latitude:	37.56907
Evaluator:	David Kwasniewski, PWD Eric Myers	County: Cumberland Co.		Longitude:	-78.12357	
Total Points:	28.0	Stream Determination (circle one)			Other e.g. Quad Name	: Whiteville and
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

7.1 Sec.

Absent	Weak	Moderate	Strong
0	1	2	3
0	1	2	3
0	1	2	3
0	1	2	3
0	1	2	3
0	1	2	3
0	1	2	3
0	1	2	3
0	0.5	1	1.5
0	0.5	1	1.5
No =	0	Yes =	3
0	1	2	3
0	1	2	3
1.5	1	0.5	0
0	0.5	1	1.5
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 0.5 1 0 0.5 1 No = 0 Yes =

12. Tresence of basertow	U	1	Z	J
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 6)				
10 5:6	7	2	4	

<u>C. Biology</u> (Subtotal = <u>6</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

^{*}perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Roots acting as grade control. One (1) isopods observed. Areas of bedrock observed. Not considered a second order based on past PJD mapping. OHWM = 6 inches.

Date: 4/6/2022		Project/Site: Disposal Faci	Green Ridge Recycli	ng and	Latitude:	37.56639
Evaluator:	David Kwasniewski, PWD Eric Myers	County: Cumberland Co.		Longitude:	-78.12416	
Total Points:	17.5	Stream Determination (circle one)		Other e.g. Quad Name: Whiteville and		
Stream is at least perennial if ≥ 30*	intermittent if ≥ 19 or	Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

8.1

1.5

1.5

0

A. Geomorphology (Subtotal <u>9</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
B. Hydrology (Subtotal 3.5) 12. Presence of Baseflow	0	1	2	3
	_			
13. Iron oxidizing bacteria 14. Leaf litter	0	1	2	3
1 11 111	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 5)		_		
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5

0.5

0.5

1.5

OBL =

1

Other =

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: No biology observed. OHWM = 4 inches.

Sketch: See Wetland Delineation Mapping

24. Amphibians

25. Algae

Date: 3/25/2022 Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.56334		
Evaluator:	Kristen Walls, WPIT Emily Beacham, PE	County: Cumberland Co.		Longitude:	-78.12390
Total Points:	34.5	Stream Determination (circle one)		Other e.g. Quad Name: Whiteville an	
Stream is at leas perennial if ≥ 30	st intermittent if ≥ 19 or)*	Ephemeral Intermittent P	erennial	Trenholm	

Site ID:

9.1

A. Geomorphology (Subtotal <u>17</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 8.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 9)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: two (2) case buildigns caddisfly, one (1) X, and one (1) X were observed. No plants in stream. Bedrock driven grade control. OHWM = 9 inches.

0

0

0

0

0

0

OBL =

1

1

0.5

0.5

0.5

0.5

1.5

2

2

1

1

1

1

Other =

3

3

1.5

1.5

1.5

1.5

0

Sketch: See Wetland Delineation Mapping

20. Macrobenthos (note diversity and abundance)

21. Aquatic Mollusks

22. Fish

23. Crayfish

25. Algae

24. Amphibians

Date: 3/25/20	Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.56354	
Evaluator:	Kristen Walls, WPIT Emily Beacham, PE	County: Cumberland Co.		Longitude:	-78.12343
Total Points:	34.5	Stream Determination (circle on	Stream Determination (circle one)		: Whiteville and
Stream is at leas perennial if ≥ 30	st intermittent if ≥ 19 or)*	Ephemeral Intermittent	Perennial	Trenholm	

Site ID:

9.1 Sec.

A. Geomorphology (Subtotal <u>17</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 8.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 9)				
18. Fibrous roots in streambed	3	2	1	0

C. Biology (Subtotal = 9)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: two (2) case buildigns caddisfly, two (2) other macrobenthos observed. No plants in stream. Bedrock driven grade control. OHWM = 9 inches.

Date: 3/25/202	22	Project/Site: Disposal Faci	Green Ridge Recy lity	cling and	Latitude:	37.56301
Evaluator:	Kristen Walls, WPIT Emily Beacham, PE	County: Cum	County: Cumberland Co.		Longitude:	-78.12431
Total Points:	Total Points: 20.0 Stream Determination (circle one)		Other e.g. Quad Name	: Whiteville and		
Stream is at leas	t intermittent if ≥ 19 or *	Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

Other =

9.2

A. Geomorphology (Subtotal 11.5)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 2)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5

15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 6.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: one (1) frog observed near confluence with 9.1. Disruptive flow. OHWM = 6 inches.

Date: 3/25/2022			Project/Site: Green Ridge Recycling and Disposal Facility			37.56307
Evaluator:	Kristen Walls, WPIT Emily Beacham, PE	County: Cum	County: Cumberland Co.		Longitude:	-78.12445
Total Points:	nts: 11.5 Stream Determination (circle one)		Other e.g. Quad Name: Whiteville and			
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

2

1

1

1

1

Other =

3

1.5

1.5

1.5

1.5

0

9.3

A. Geomorphology (Subtotal <u>4.5</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 1)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 6)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3

0

0

0

0

0

OBL =

0.5

0.5

0.5

0.5

1.5

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: 9.3 and 9.2 form 9.1. OHWM = 1 inch. Very little baseflow and no well defined channel.

Sketch: See Wetland Delineation Mapping

21. Aquatic Mollusks

22. Fish

23. Crayfish

25. Algae

24. Amphibians

Date: 3/25/2022		Project/Site: Green Ridge Recycling and Disposal Facility			Latitude:	37.55560
Evaluator:	David Kwasniewski, PWD Eric Myers	County: Cumberland Co.		Longitude:	-78.13362	
Total Points:	28.0	Stream Determination (circle one)			Other e.g. Quad Name: Whiteville and	
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

RR.1

Absent	Weak	Moderate	Strong
0	1	2	3
0	1	2	3
0	1	2	3
0	1	2	3
0	1	2	3
0	1	2	3
0	1	2	3
0	1	2	3
0	0.5	1	1.5
0	0.5	1	1.5
No =	0	Yes =	3
0	1	2	3
0	1	2	3
1.5	1	0.5	0
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 0.5 1 0 0.5 1 No = 0 Yes =

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	. 0	Yes =	3
C Biology (Cubtotal - E)				

17. Soit-based evidence of high water table:	NO -	U	162 -	3
C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

^{*}perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: one (1) isopod observed. No mollusks. More frequent riffle pool sequence near the bottom of the reach. Benches do not appear to be actively collecting alluvium. OHWM = 6 inches.

Date: 3/25/2022		Project/Site: Green Ridge Recycling and Disposal Facility			Latitude:	37.55986
Evaluator:	David Kwasniewski, PWD Eric Myers	County: Cumberland Co.		Longitude:	-78.13136	
Total Points:	36.0	Stream Determi	Stream Determination (circle one)		Other e.g. Quad Name: Whiteville and	
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

RR.2

		I	T		
A. Geomorphology (Subtotal 20)	Absent	Weak	Moderate	Strong	
1 ^{a.} Continuity of channel bed and bank	0	1	2	3	
2. Sinuosity of channel along thalweg	0	1	2	3	
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3	
4. Particle size of stream substrate	0	1	2	3	
5. Active/relict floodplain	0	1	2	3	
6. Depositional bars or benches	0	1	2	3	
7. Recent alluvial deposits	0	1	2	3	
8. Headcuts	0	1	2	3	
9. Grade control	0	0.5	1	1.5	
10. Natural valley	0	0.5	1	1.5	
11. Second or greater order channel	No =	0	Yes =	3	
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 7.5)					
12. Presence of Baseflow	0	1	2	3	
13. Iron oxidizing bacteria	0	1	2	3	
14. Leaf litter	1.5	1	0.5	0	
15. Sediment on plants or debris	0	0.5	1	1.5	
16. Organic debris lines or piles	0	0.5	1	1.5	
17. Soil-based evidence of high water table?	No =	0	Yes =	3	
C. Biology (Subtotal = 8.5)					
18. Fibrous roots in streambed	3	2	1	0	

C. Biology (Subtotal = 8.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

^{*}perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: one (1) crayfish, one (1) frog, two (2) case buildings caddisfly and additional caddis fly larvae observed. Algae was observed on cobbles. Areas of bedrock were observed in the riffles. Grade control was observed as bedrock. Benches do not appear to be active. Sketch: See Wetland Delineation Mapping

Date: 4/6/2022		Project/Site: Disposal Faci	Green Ridge Recyc	cling and	Latitude:	37.55523
Evaluator:	David Kwasniewski, PWD Eric Myers	County: Cumberland Co.		Longitude:	-78.12147	
Total Points:	22.5	Stream Deter	Stream Determination (circle one)		Other e.g. Quad Name	: Whiteville and
Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		Ephemeral	Intermittent	Perennial	Trenholm	

Site ID:

RR.3

A. Geomorphology (Subtotal <u>8</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 5)				
12. Presence of Baseflow	0	1	2	3
13 Iron oxidizing bacteria	Ω	1	7	3

B. Hydrology (Subtotal 5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 9.5)				
18. Fibrous roots in streambed	3	2	1	0

C. Biology (Subtotal = 9.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
FACW = 0.75	ORI =	1.5	Other =	n

^{*}perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: three (3) sowbugs and one (1) fingernail clam observed. OHWM = 6 inches.

Date:	3/16/2022	Project/Site: Green Ridge Recycling and Disposal Facility		Latitude: 37.54575
Evalua	David Kwasniewski, PWD tor: Emily Beacham, PE	County: Cumberland Co.	County: Cumberland Co.	
Total F	Points: 30.5	Stream Determination (circle one)	Stream Determination (circle one)	
	n is at least intermittent if ≥ 19 or ial if ≥ 30*	Ephemeral Intermittent	Perennial	Trenholm

Site ID:

EW.1

A. Geomorphology (Subtotal <u>15</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
^a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 7.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5

15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C. Biology (Subtotal = 8)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes: one (1) isopod and one (1) salamander were observed. Fish present. Stream parellels Anderson HWY (RTE. 60). OHWM = 12 inches.

1.5

Other =

Date: 3/16/20)22	Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.54917
Evaluator:	David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.	County: Cumberland Co.		-78.11155
Total Points:	32.0	Stream Determination (circle on	Stream Determination (circle one)		Whiteville and
Stream is at leas perennial if ≥ 30	st intermittent if > 19 or O*	Ephemeral Intermittent	Perennial	Trenholm	

Site ID:

EW.2

A. Geomorphology (Subtotal 13.5)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
^a artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal 7.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0

C. Biology (Subtotal = 11)				
17. Soil-based evidence of high water table?	No =	0	Yes =	3
16. Organic debris lines or piles	0	0.5	1	1.5
15. Sediment on plants or debris	0	0.5	1	1.5
14. Leaf litter	1.5	1	0.5	0
13. Iron oxidizing bacteria	0	1	2	3
12. Presence of Baseflow	0	1	2	3

C. Biology (Subtotal = 11)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

^{*}perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: observations two (2) ephemeroptera larva, three (3) salamaders, three (3) frogs, three (3) isopods. Sandy substrate with gravel observed in the riffles. Roots observed along the stream bank. OHWM = 12 inches.

Date: 3/18/20	022	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.55466
Evaluator:	David Kwasniewski, PWD Kristen Walls, WPIT	County: Cumberland Co.	Longitude: -78.11063
Total Points:	40.0	Stream Determination (circle one)	Other e.g. Quad Name: Whiteville and
Stream is at lea perennial if ≥ 3	ast intermittent if ≥ 19 or 'O*	Ephemeral Intermittent Perenni	al Trenholm

Site ID:

EW.3

A. Geomorphology (Subtotal 21)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 9.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3

17. Soft-based evidence of high water table?	No =	U	Yes =	3
C. Biology (Subtotal = 9.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. $FACW = 0.75$	OBL =	1.5	Other =	0

^{*}perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: US of reach appears to have a large meander. DS of reach has large straight sections. Pools observed, however large areas of runs between riffles. Not an active flooplain. No course materials observed. No Alluvial or rock lines observed in floodplain. Stream in incised. Relic benches were observed. (2) mayfly larvae, (2) salamander, and (1) dopsonflies observed. OHWM = 12 inches.

Date: 3/18/2022		Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.55480
Evaluator:	David Kwasniewski, PWD Kristen Walls, WPIT	County: Cumberland Co.		Longitude:	-78.11062
Total Points:	36.5	Stream Determination (circle one)		Other e.g. Quad Name: Whiteville and	
Stream is at leas	st intermittent if ≥ 19 or *	Ephemeral Intermittent	Perennial	Trenholm	

Site ID:

EW.4

A. Geomorphology (Subtotal 21)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	4
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal 8.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5

14. Leaf litter	1.5	1	0.5	0			
15. Sediment on plants or debris	0	0.5	1	1.5			
16. Organic debris lines or piles	0	0.5	1	1.5			
17. Soil-based evidence of high water table?	No =	0	Yes =	4			
C. Biology (Subtotal = 7)							
18. Fibrous roots in streambed	3	2	1	0			
19. Rooted upland plants in streambed	3	2	1	0			
20. Macrobenthos (note diversity and abundance)	0	1	2	3			
21. Aquatic Mollusks	0	1	2	3			
22. Fish	0	0.5	1	1.5			
23. Crayfish	0	0.5	1	1.5			
24. Amphibians	0	0.5	1	1.5			
25. Algae	0	0.5	1	1.5			

OBL =

1.5

Other =

0

*perennial streams may also be identified using other methods. See p. 35 of manual.

FACW = 0.75

Notes:

NC DWQ Stream Identification Form Version 4.11 Site ID: **EW.5** Project/Site: Green Ridge Recycling and Date: 3/18/2022 Latitude: 37.55851 Disposal Facility David Kwasniewski, PWD Evaluator: County: Cumberland Co. Longitude: -78.11502 Kristen Walls, WPIT **Total Points:** 26.5 Stream Determination (circle one) e.g. Quad Name: Whiteville and Trenholm Stream is at least intermittent if ≥ 19 or Intermittent **Ephemeral** Perennial perennial if ≥ 30*

A. Geomorphology (Subtotal <u>8</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
^a artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal <u>9</u>)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	0	Yes =	3
C Biology (Subtotal = 95)				

C. Biology (Subtotal = 9.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
FACW = 0.75	ORI =	1 5	Other =	n

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Isopod, sow bugs, case building caddisflies, and dopsonfly larvae observed. OHWM = 6 inches.

Date: 3/18/2022		Project/Site: Green Ridge Recycling and Disposal Facility		Latitude:	37.57006	
Evaluator:	David Kwasniewski, PWD Kristen Walls, WPIT	County: Cumberland Co.		Longitude:	-78.11264	
Total Points:	17.0	Stream Deter	Stroam Dotormination (circle one)		Other e.g. Quad Name:	Whiteville and
Stream is at least perennial if ≥ 30*			Perennial	Trenholm		

Site ID:

EW.6

A. Geomorphology (Subtotal <u>5.5</u>)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No =	0	Yes =	3
a artificial ditches are not rated; see discussions in manual	140 -	0	163 -	. <u>J</u>

3. Hydrology	(Subtotal	5)

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No =	. 0	Yes =	3
(C. 1) (C. 1) (C. 1)				

C.	C. Biology		(Subtotal =	6.5)		
4.0			•				

18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
FACW = 0.75	ORI =	15	Other =	Λ

^{*}perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Rutting observed within an existing unmaintained roadway parallelling Miller Lane. Approximately ten gelateneous Egg masses observed within ruts (possibly wood frog eggs). Water appears to be flowing subsurface in the downslope portion of the reach. (1) one isopod observed. OHWM = 4 inches.