

NC DWQ Stream Identification Form Version 4.11						
Date: 4/13/2022		Project/Site: Green Ridge Recycling and Disposal Facility				
Evaluator:	David Kwasniewski, PWD, Kristen Walls, WPIT, Emily Beacham, PE, Eric Myers, Hannah Bullens				County: 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	Ephemeral (R6)
Reach 1	1.8	4.5	3	6	13.5	Ephemeral (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	Ephemeral (R6)
Reach 2	2.4	11	5	7.5	23.5	Intermittent (R4)
Reach 2	2.5	10	5.5	2	17.5	Ephemeral (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	Ephemeral (R6)
Reach 3	3.4	5.5	4.5	4	14	Ephemeral (R6)
Reach 3	3.5	9	7	4	20	Intermittent (R4)
Reach 3	3.6	7.5	6.5	3.75	17.75	Ephemeral (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	Ephemeral (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	Ephemeral (R6)
Reach 5	5.4	8.5	6	9.5	24	Intermittent (R4)
Reach 5	5.5	5.5	4.5	4	14	Ephemeral (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	Ephemeral (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	Ephemeral (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	Ephemeral (R6)

NC DWQ Stream Identification Form Version 4.11
Site ID: 1.1

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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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 = 8.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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) caddisfly larvae, one (1) frog and two (2) salamander were observed. OHWM = 12 inches. Benches are not active.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 1.2

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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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>3</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 = <u>5</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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 rotundifolia and Isonoe japonica in streambed. Stream channel interrupted by large headcut leading to 1.3. OHWM = 4 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 1.3

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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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>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 = <u>6</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 1.4

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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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>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 = <u>7</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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, one (1) salamander and two (2) tadpole were observed. OHWM = 6 inches. Bedrock grade control present. One (1) small headcut observed. OHWM = 12 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 1.5

Date: 3/28/2022	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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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, 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>3.5</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 = <u>5</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 1.6

Date: 3/25/2022	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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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</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 = <u>7.5</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 1.7

Date: 3/25/2022	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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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, 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>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 = <u>6</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 1.8

Date: 3/28/2022	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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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>3</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 = <u>6</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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: Starts at headcut. There is indication of fluctuating water table (redox). OHWM = 4 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 2.1

Date: 3/28/2022	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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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 =	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. Macroinvertebrates (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: 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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 2.2

Date: 3/28/2022	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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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 = 8.25)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 2.3

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: 17.0 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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>4</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 = <u>4</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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 downstream section of the reach contains debris lines. Ilex opaca observed in stream channel. OHWM = 4 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 2.4

Date: 4/1/2022	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.56164
Evaluator: David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.	Longitude: -78.12748
Total Points: 23.5 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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</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 = <u>7.5</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 2.5

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

A. Geomorphology (Subtotal <u>10</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 <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 = <u>2</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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: Bear observed along reach 2.5 eating salmon. Channel pops in and out of banks. Many roots cutting across the banks. OHWM = 3 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 3.1

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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 3.2

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

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
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 <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 =	4

C. Biology (Subtotal = <u>5</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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. OHWM = 6 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 3.3

Date: 4/1/2022	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.56440
Evaluator: David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.	Longitude: -78.12762
Total Points: 18.5 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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>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 = <u>4</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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: Only worms observed. OHWM = 4 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 3.4

Date: 4/1/2022	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.56571
Evaluator: David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.	Longitude: -78.12923
Total Points: 14.0 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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. Macroinvertebrates (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 = 3 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 3.5

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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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>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 =	0	Yes =	3

C. Biology (Subtotal = <u>4</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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 macroinvertebrates observed. OHQM = 6 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 3.6

Date: 4/1/2022	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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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 = 3.75)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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. Blueeyed grass observed in stream channel. OHWM = 2 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 4.1

Date: 4/6/2022	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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) <div> Ephemeral Intermittent Perennial </div>	Other <i>e.g. Quad Name : Whiteville and Trenholm</i>

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 =	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 = 6.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 4.1 Sec.

Date: 4/6/2022	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.56706
Evaluator: Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cumberland Co.	Longitude: -78.13017
Total Points: 31.50 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) <div style="display: flex; justify-content: space-around;"> Ephemeral Intermittent Perennial </div>	Other <i>e.g. Quad Name : Whiteville and Trenholm</i>

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
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
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 4.2

Date: 4/6/2022	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.56718
Evaluator: Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cumberland Co.	Longitude: -78.12869
Total Points: 19.50 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other <i>e.g. Quad Name : Whiteville and Trenholm</i>

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
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 5.5)				
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 = 6.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 4.3

Date: 4/6/2022	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.56714
Evaluator: Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cumberland Co.	Longitude: -78.12749
Total Points: 10.50 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other <i>e.g. Quad Name : Whiteville and Trenholm</i>

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
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
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. Macroinvertebrates (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: Poorly defined bed and bank, littered with pine needles. OHWM = 3 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 5.1

Date: 4/6/2022	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.56952
Evaluator: Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cumberland Co.	Longitude: -78.12893
Total Points: 29.00 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other <i>e.g. Quad Name : Whiteville and Trenholm</i>

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
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)	Absent	Weak	Moderate	Strong
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)	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 5.1 Sec.

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

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
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)	Absent	Weak	Moderate	Strong
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)	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 5.2

Date: 4/6/2022	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.56913
Evaluator: Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cumberland Co.	Longitude: -78.12844
Total Points: 20.00 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other <i>e.g. Quad Name : Whiteville and Trenholm</i>

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, 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	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. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 5.3

Date: 4/6/2022	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.56874
Evaluator: Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cumberland Co.	Longitude: -78.12831
Total Points: 15.00 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) <div style="display: flex; justify-content: space-around;"> Ephemeral Intermittent Perennial </div>	Other <i>e.g. Quad Name : Whiteville and Trenholm</i>

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
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 = 5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 5.4

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

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
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)				
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. Macroinvertebrates (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 dragonfly observed. Three (3) frogs observed. OHWM = 4 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 5.5

Date: 4/6/2022	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.56881
Evaluator: Kristen Walls, WPIT, Emily Beacham, PE and Hannah Bullens	County: Cumberland Co.	Longitude: -78.12775
Total Points: 14.00 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) <div style="display: flex; justify-content: space-around;"> Ephemeral Intermittent Perennial </div>	Other <i>e.g. Quad Name : Whiteville and Trenholm</i>

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
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. Macroinvertebrates (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 valley present on righthbank. Little trees present in channel. OHWM = 3 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 6.1

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

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 <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 = <u>8</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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) isopods and one (1) sow bug were observed below headcut. OHWM = 6 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 7.1

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

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
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>4.5</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 = <u>7</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 7.1 Sec.

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

A. Geomorphology (Subtotal 14.5)	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 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 = 6)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 8.1

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

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
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>3.5</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 = <u>5</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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 biology observed. OHWM = 4 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 9.1

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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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
20. Macroinvertebrates (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, one (1) X, and one (1) X were observed. No plants in stream. Bedrock driven grade control. OHWM = 9 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 9.1 Sec.

Date: 3/25/2022	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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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
20. Macroinvertebrates (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 macroinvertebrates observed. No plants in stream. Bedrock driven grade control. OHWM = 9 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 9.2

Date: 3/25/2022	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.56301
Evaluator: Kristen Walls, WPIT Emily Beacham, PE	County: Cumberland Co.	Longitude: -78.12431
Total Points: 20.0 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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)	Absent	Weak	Moderate	Strong
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)	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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) frog observed near confluence with 9.1. Disruptive flow. OHWM = 6 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: 9.3

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

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
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>1</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 = <u>6</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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: 9.3 and 9.2 form 9.1. OHWM = 1 inch. Very little baseflow and no well defined channel.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: RR.1

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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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
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. Macroinvertebrates (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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: RR.2

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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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

NC DWQ Stream Identification Form Version 4.11
Site ID: RR.3

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

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
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</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 = <u>9.5</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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) sowbugs and one (1) fingernail clam observed. OHWM = 6 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: EW.1

Date: 3/16/2022	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.54575
Evaluator: David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.	Longitude: -78.11206
Total Points: 30.5 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name : Whiteville and Trenholm

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
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>7.5</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 = <u>8</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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 and one (1) salamander were observed. Fish present. Stream parallels Anderson HWY (RTE. 60). OHWM = 12 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: EW.2

Date: 3/16/2022	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.54917
Evaluator: David Kwasniewski, PWD Emily Beacham, PE	County: Cumberland Co.	Longitude: -78.11155
Total Points: 32.0 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) <div> Ephemeral Intermittent Perennial </div>	Other e.g. Quad Name : Whiteville and Trenholm

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
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>7.5</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 = <u>11</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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) salamanders, three (3) frogs, three (3) isopods. Sandy substrate with gravel observed in the riffles. Roots observed along the stream bank. OHWM = 12 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: EW.3

Date: 3/18/2022	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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) <div> Ephemeral Intermittent Perennial </div>	Other e.g. Quad Name : Whiteville and Trenholm

A. Geomorphology (Subtotal <u>21</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 <u>9.5</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 = <u>9.5</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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 floodplain. No coarse 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.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: EW.4

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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) <div> Ephemeral Intermittent Perennial </div>	Other <i>e.g. Quad Name :</i> Whiteville and Trenholm

A. Geomorphology (Subtotal <u>21</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 = 4	

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

B. Hydrology (Subtotal <u>8.5</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 = 4	

C. Biology (Subtotal = <u>7</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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:

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: EW.5

Date: 3/18/2022	Project/Site: Green Ridge Recycling and Disposal Facility	Latitude: 37.55851
Evaluator: David Kwasniewski, PWD Kristen Walls, WPIT	County: Cumberland Co.	Longitude: -78.11502
Total Points: 26.5 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) <div style="display: flex; justify-content: space-around;"> Ephemeral Intermittent Perennial </div>	Other <i>e.g. Quad Name :</i> Whiteville and Trenholm

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
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
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 = <u>9.5</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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: Isopod, sow bugs, case building caddisflies, and dopsonfly larvae observed. OHWM = 6 inches.

Sketch: See Wetland Delineation Mapping

NC DWQ Stream Identification Form Version 4.11
Site ID: EW.6

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 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other <i>e.g. Quad Name :</i> Whiteville and Trenholm

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 <u>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 = <u>6.5</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (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: Rutting observed within an existing unmaintained roadway paralleling Miller Lane. Approximately ten gelatinous 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.

Sketch: See Wetland Delineation Mapping